


Ecosocialization – an Ecological Turn in the Process of Socialization

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ABSTRACT

This paper describes a conceptual extension of the socialization process and its implications for education. The motivation to the coining of ecosocialization comes from a recent turn in different branches of science, which forces us to problematize the anthropocentric view of life. The theoretical analysis combines the frameworks of phenomenology and ecology. Phenomenology emphasizes perception and experience to remind us that we exist in the world through our bodies, while ecology examines interactions between different life forms in ecological communities. Parallel to the human-human and human-society interactions, we are ecosocialized by human-other beings and human-ecosystem interactions. These latter interactions also make us what we are, even before any intentional education efforts. Although socialization and ecosocialization are parallel processes, they are unfolded and driven by different mechanisms. The conceptualization of ecosocialization is argued to play an important role in addressing the ecorisis in an educational context, both in research and practice.

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Introduction

Human development is threatening the stability of the Earth, breaking the planetary boundaries (Rockström et al., 2009). We have already crossed four of the nine thresholds that make Earth hospitable for human life; most severely the threshold of biodiversity loss as well as the nitrogen and phosphorus flows and climate change (Steffen et al., 2015). It is justifiable to portray our time as an era of *ecocrisis*.

In light of this awareness, all sectors of society must spring into action. This has been widely recognized in different academic disciplines, in addition to environmental and biosciences, for example, in the fields of public health (Schaller & Sandu, 2011; Singer, 2009) and social studies (Boonstra, 2016; Lowe et al., 2009).

However, in many cases, the motivation still comes from the benefit to only humans, and it has been suggested that it is precisely this *anthropocentric* view

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of life that lies in the core of the ecocrisis (Kopnina et al., 2018; Plumwood, 1993). Ecocrisis can also be seen resulting from faulty interactions that humans have with each other and with other beings; environmental problems are thus problems of relationships (Kessler, 2019).

Education, as a research and practice, must change too (Foster et al., 2018; Martusewicz et al., 2014; Värri, 2018). It is necessary to see the intertwining of environmental and social violence and how this understanding should change education (Misiaszek, 2017). The target in learning should be to expand the sphere of human responsibility to include in addition to all people also nonhuman habitants of our planet (Salonen, 2014). We must also thoroughly consider what kind of ontological and epistemological beliefs, either revitalize or drain life on Earth (Howard, 2008).

We wish to take part in the ongoing conversation of finding ways out of anthropocentrism for the society in general but specifically for education (Bowers, 1993; Höppner, 2017). The request is most relevant in modern, ecologically unsustainable societies.¹ In order to accomplish the task of recognizing the human–non-human connection, there is a need for multidisciplinary models of how humans are integrated into ecological communities, which means communities consisting of human and non-human members. Our theoretical paper also joins in the aspiration in different fields of science to critically re-examine the concepts used in research and whether they could be ‘stripped’ of anthropocentric bias (Boscardin & Bossert, 2015). In our request we turn to *socialization*, one of the main concepts used in social and educational sciences.

In this paper, we ask how the definition and understanding of socialization can be extended in order to overcome the anthropocentric view of reality? After shortly introducing the anthropocentric paradigm, we lay out our theoretical analysis. By combining the frameworks of *ecology* and *phenomenology*, we aim to advance the understanding of how humans are attuned to live with other species, our co-habitants, on Earth. Instead of digging deeper into different socialization theories, we present a simple version of the socialization process and proceed to explore how the model would look if extended beyond the anthropocentric worldview. Concurrently with the presenting of the extension to socialization, we convey the criticisms of anthropocentrism from an ontological, epistemological, and ethical point of view.

To describe this extension to the socialization process, we use the concept of *ecosocialization*.² First, we aim to argue that ecosocialization can serve as an important theoretical basis for social and educational research in the era of ecocrisis. The conceptualization of ecosocialization reveals a more complete view of reality and the nature of the complex and diverse relationships that humans form with other beings. This understanding may assist research in addressing the ecocrisis in a diverse and fertile manner. Second, we emphasize the importance of ecosocialization in educational practices. We claim that

a more sustainable orientation to life can be educated and built by greater recognition and understanding of the ways we humans are connected, not just to each other but to other life forms as well. Ecocrisis may only be solved by first understanding and experiencing, and then remediating these relationships.

The anthropocentric paradigm

Anthropocentrism means a view of reality, where human is placed in the middle and all other forms of life to the margins (Rae, 2014). Anthropocentrism – and the criticism aimed at it – can be divided into three categories: ontological, epistemological, and ethical (Dzwonkowska, 2018). In ontological anthropocentrism, some particular qualities in humans make them unique and place them above the rest of nature. Ontological anthropocentrism has been criticized, for example, in *posthumanist* theories (Haraway, 1991; Wolfe, 2010).

Epistemologically anthropocentric positions argue that the human perspective is the only one we know as humans, and more specifically, it is the rational human knowledge that has access to the truth (Tyler, 2012). Critique of epistemological anthropocentrism has been discussed, for example, in *ecofeminist* literature (Plumwood, 1993).

In ethical anthropocentrism, intrinsic value is limited to humans only (Dzwonkowska, 2018). Ethical questions are then not relevant directly to the well-being of nonhuman beings, but their well-being becomes a concern when it is linked to the well-being of humans. The critique of ethical anthropocentrism has been discussed for example, from the point of view of *environmental justice* (Kopnina et al., 2018; Misiaszek, 2017). While environmental justice has been mainly concerned with the relationships between humans, more recently there has also been an aspiration to extend the field to concern justice between species (Kopnina, 2014).

The more-than-human web of life

The existing discussions in ecofeminism, posthumanism, and environmental justice have revealed what has gone wrong in the relationship between humans and the rest of nature. To move towards revitalizing this relationship, we turn to the approaches of ecology and phenomenology. Disciplinary focus does not expose the complexities of an ecosocial crisis; thus, we must initiate discussion in a multidisciplinary way. While the multidisciplinary approach creates tension, according to Toadvine (2011), ‘this is not a weakness. This is precisely what makes it a site for the production of novel and hybrid ideas that can change the world’ (p. 7).

Ecology is a strand of science that studies interactions between different life forms in an ecological community and also how those life forms are connected to biogeochemical cycles of the ecosystems (Begon et al., 1986; Elton, 2001;

Hanski, 1999). When an organism emerges into an ecological community, it adapts to the set of biotic and abiotic conditions, locates its more specific role and place in the community – called ecological *niche* (Odling-Smee et al., 1996) – and starts to interact with other organisms of both the same and different species. This interaction shapes the organism for what it becomes.

In ecology, the role of competition as a form of interaction has often been emphasized (Barbosa & Castellanos, 2005). This might have contributed to how competition is also often emphasized in lay understanding of ecology or ‘folkeecology’; a view that individuals are out there mostly to outcompete other individuals of the same or different species seems to be more common in the Western than Non-western communities (Ojalehto et al., 2015).

In recent decades scholars in ecological and evolutionary sciences have taken more interest in cooperative relationships (Bronstein, 2015). Specifically the work of Lynn Margulis has been important in this turn. According to *endosymbiosis* theory, a life as we know it – multicellular eukaryotic organisms – would not have come to being without cooperation between some ancient bacteria (Margulis, 1970). Mutually beneficial relationships are widespread throughout nature and they have a major impact on the stability of ecosystems (Bronstein, 2015; Margulis, 1998; Price, 1997).

An ecosystem is made up of all the living organisms and the non-living matter in a particular place (Schmitz et al., 2008). All the living organisms in an ecosystem depend on each other and the abiotic matter. This interdependence within an ecosystem is like a spider web – if one strand is broken, it affects the whole web. What alters one part of the ecosystem, alters the whole ecosystem in some ways. All the earth’s species get entangled in these webs as organisms form relationships with each other by preying, parasitizing, competing, and/or cooperating in mutually beneficial associations (Guimarães et al., 2017). This interdependent planetary community of all life can be called the *web of life*.

Ecology has recently reached out to other fields, too; nowadays, we are talking about the ecologies of mind, information, media, the political, and many more (Hörl & Burton, 2017). The common factor for these different ecologies is the emphasis on relations and the understanding that it is meaningful to observe an entity only in its environment and with its diverse relationships. Another element of ecology outreach is the understanding that part of those relationships is always inter-species.

This simultaneous emphasis on the primacy of relations and the multi-species view of reality is what we call the ecological turn (see also Bateson, 2000). As Mick Smith puts it:

Ecology is a reminder of a multi-species and multi-existent ‘we’ that modern humanism chose to forget, or rather struggled to exempt and/or except the human species from in countless ways. (M. Smith, 2013, p. 30)

From an ecological point of view, there is rarely harmony in relationships (Botkin, 1990); organisms, communities, and systems are not static but in constant flux. Nevertheless, ecology is interested in how relationships are endured. *Sustainability*, the capacity to endure, in ecology, describes how ecological communities and systems stay diverse and productive over time (Smith et al., 1974).

Despite the advances in ecological knowledge, the ecologically unsustainable trajectory of the modern societies does not show signs of changing (Steffen et al., 2015). It is also a fair question to ask whether this ecological understanding is reflected in educational theories and practices in ways that would cultivate values of sustainability (Quinn et al., 2016). There is a legitimate concern that ecological knowledge alone does not serve as a strong enough reminder of our interdependence with the web of life, and thus does not lead to necessary changes in education. This concern is well articulated by Patrick Howard:

The underlying belief of curriculum developers is that understanding human reliance on the natural environment, researching endangered species, and calculating ecological footprints will inculcate in children a knowledge that results in a sensitive, respectful, and restrained use of nature. However, to instill the values of sustainability, we must move beyond science while being inclusive of scientific knowledge. What is called for is a conversation designed to understand what it means to truly dwell on and care for the earth. (Howard, 2008, pp. 303–304)

Early phenomenologist Husserl (1970) argued that humans could understand the physical, material world around them (the phenomenal world) through their sensory experience. Ecology, as a discipline of natural science, cannot study the direct sensuous reality. We may have more knowledge of the ecology of nature than ever, but what does this knowledge mean to us? It is as if we were watching this mechanical machine called nature from a distance. The natural world seems alien to us, and after watching that ‘other’ for a while, we go back to our human businesses. That is why, we see it as crucial to explore how phenomenology, the philosophy of experience, can inform ecology (Abram, 1996; Howard, 2008).

French phenomenologist Maurice Merleau-Ponty describes the nature of phenomenology in the preface of his book *Phenomenology of Perception*:

It is the search for a philosophy which shall be a ‘rigorous science’, but it also offers an account of space, time and the world as we ‘live’ them. It tries to give a direct description of our experience as it is without taking account of its psychological origin and the causal explanations which the scientist, the historian or the sociologist may be able to provide. (Merleau-Ponty, 1982, p. vii)

Merleau-Ponty highlights the descriptive task of phenomenology, so the purpose is not to explain or analyze. Since all the sciences are too fundamentally based on the world as we experience it, we must begin our inquiry by reawakening our experience of the world, and only in the second place,

we should express it with the concepts of science (Merleau-Ponty, 1982). In other words, the world is already there without my awareness or analysis of it. Therefore, if we truly want to understand the world and also how we, as humans, are part of it, we cannot just create artificial analyses and syntheses out of our observations. We must profoundly understand: 'The world is not what I think, but what I live through' (Merleau-Ponty, 1982, p. xviii).

The challenge of the phenomenological approach is that we have been socialized to current customs of science, and the habits of our thoughts have become so 'naturalized' that we do not question them. The world, and the sciences describing it, are taken as 'facts,' but in contrast, the phenomenologists want to go beyond these 'facts,' 'back to the 'things themselves' (Husserl, 1970). They want to question the 'natural' attitude (Husserl, 1970) and seek the essence of existence by starting from an experience. So, in principle, phenomenology studies the essence of an experience, and more specifically, it wants to put essence back to existence (Merleau-Ponty, 1982).

The sciences, as well as the whole modernist mindset and cultural frame, are based on dualisms such as mind-body and self-other, which have led to the hyper separation of humans from other living beings. It is essential to acknowledge that it is only a recent, modern, development that humans have started to separate themselves from nature, instead of seeing themselves as part of the broader community of life. For a long time, humans have carried an active relationship not only with other people, but with other animals, plants, mountains, rivers, and weather conditions, but this relationship, in modern culture, we have mostly forgotten (Abram, 1996).

In contrast to the ancient wisdom, we now tend to talk about animals as non-humans and nature as something that we do not belong to. Ecophenomenologist David Abram (1996) coined a concept of the *more-than-human* world in order to highlight our connectedness to other beings. Abram (1996) defines that attuning to the more-than-human world is a question of an attitude, 'a style of thinking, then, that associates truth not with static fact, but with a quality of relationship' (p. 264).

According to Abram (1996), the original purpose of phenomenology was to provide a solid starting point for empirical analysis. Phenomenology has also been described as a critic of the modern, empirical, and positivist sciences (Abram, 1996; Merleau-Ponty, 1982), including ecology (Howard, 2008). However, contemporary ecophenomenologists have stated the benefits of combining ecology and phenomenology in order to make sense of the world in the time of complex ecological challenges (Abram, 1996; Toadvine, 2011).

The parallel processes of socialization and ecosocialization

Socialization is a process where we acquire knowledge, language, and skills in order to adapt and integrate into a specific community (Edles & Appelrouth,

2014). In addition to an integration process, socialization is also a personal development process. Schneewind (2001) articulates that ‘individual development is a dynamic interactional process which evolves in a sequence of reciprocally patterned person–environment transactions’ (p. 861).

There is an extensive collection of research literature on socialization. Theories may examine socialization, for example, from a historical, topical, institutional, or cultural perspective. Theories may be divided into different classes based on their theoretical, such as biological, psychological, and sociological, approaches. (Schneewind, 2001).

Our intention in this article is not to review the different theories. However, from these various points of views (Grusec & Hastings, 2014), a simplified model of the socialization process can be extracted:

- (1) Socialization of a person is driven by different human agents in the environment, such as family, peer groups, and institutions.
- (2) The subject in socialization must form a communicative relationship with the human agents in order to participate in the socialization process.
- (3) The socialization process has an outcome or an aim, and to some extent, the succession of the process can be evaluated (based on societal factors).

We intend to suggest an extension to this model of the socialization process. We argue that the view of the socialization process as something happening within just the human context is not complete, which is also preventing us from addressing the ecocrisis. We, humans, also have direct interaction with other than human organisms, as already discussed earlier. This kind of interaction is not secondary to the relationship between people but rather a parallel process. While we are integrated into human communities, we are also integrated into multispecies ecological communities. The direct interaction we have with other species make us what we become, in a similar fashion as how we build our identity as a reciprocal process with other people. To describe this process, we have named it ecosocialization.

While it is essential to recognize the simultaneity and non-hierarchical nature of socialization and ecosocialization, it is vital to identify the differences in the way they unfold. We compose a proposition of the parallelity and variation of socialization and ecosocialization in [Table 1](#).

Agents of ecosocialization – the ontology of the more-than-human

In socialization, we can identify different agents that affect the overall process of how a human becomes a social human. Socialization is an ongoing process,

Table 1. Socialization and ecosocialization; how they unfold as processes.

Paradigm	SOCIALIZATION	ECOSOCIALIZATION
	<i>Anthropocentric</i>	<i>More-than-human</i>
Agents	Family, peer groups Institutions Society	Ecological community Ecosystems Web of life
Participation	Conscious mind	Sensuous body
Aim	Social justice	Ecosocial sustainability

which is influenced by different social groups, for example, family and peer groups, institutions, and society (Grusec & Hastings, 2014). Socialization models often suggest that there are only human–human interactions that make us who we are. The key ontological question in our exploration of ecosocialization is: what constitutes our social world?

Ecological understanding reveals that the first step in ecosocialization can be seen as the forming of the human *microbiome* (Turnbaugh et al., 2007); it is the first ecological community, or any community, we are integrated into. We get our first microbes already in the womb (Aagaard et al., 2014), and the microbiome is accelerated in our birth through the birth canal (Funkhouser & Bordenstein, 2013). The web of interaction with microbes continues from our mother’s milk and skin and then from all over around us. This interaction with the microbes plays a crucial role in our development (P. A. Smith, 2015) and carries on influencing many of the psychological (Allen et al., 2017; Sarkar et al., 2018) and physiological processes (Jones, 2016), as well as behavior (Hsiao et al., 2013) during our whole life span.

The symbiosis – ‘the living together of unlike organisms’ (Oulhen et al., 2016) – of human and microbial life is so inalienable it can be looked at as a single organism. This emerging unit of life can be described as *holobiont* (Gilbert et al., 2012; Margulis, 1998). Derived from words *holos* ‘whole’ and *biont* ‘unit of life’, the holobiont hypothesis presents organisms not as individuals but as multi-species communities all working as a team for the common good; in the holobiont called a human being, there are more microbial cells than human cells (Savage, 1977; Sender et al., 2016). Recognizing that we are indeed holobionts helps us to realize that we are not anatomically, genetically, or immunologically autonomous individuals (Gilbert et al., 2012). This also challenges the autonomous notion of human subject in the socialization process.

In a sterile (of bacteria) environment, ecosocialization would be incomplete (Gilbert, 2014). In our analysis of the parallelity of socialization and ecosocialization, we argue that this would be comparable to a socialization process in the absence of families, peer groups, or other small-scale human groups. Microbial life plays a significant role in the emergence, formation,

and development of human beings (Gilbert, 2014). In addition to microbes, our lives are intertwined with other organisms, visible to humans, such as plants and other animals. This often more intentional interaction also forms what and whom we become, our bodies, and identities (MacKerron & Mourato, 2013; Nisbet et al., 2009; Signal & Taylor, 2005). Our mere being is the result of favourable cooperation between countless multi-species individuals, a manifestation of symbiotic life (Gilbert et al., 2012).

Ecosocialization process also needs diverse ecosystems in a similar way than the socialization process needs democratic institutions. Furthermore, a viable biosphere and web of life is a necessity for a successful ecosocialization process, just like a functional society is needed for a socialization process to succeed.

Participation in the ecosocial community – the epistemology of the more-than-human

An anthropocentric point of view might acknowledge our membership and interdependence in the web of life, be ecologically informed, but might still hold their position based on anthropocentric epistemological assumption.

The epistemological claim is that all knowledge will inevitably be determined by the human nature of knower and that any attempt to explain experience, understanding or knowledge of the world, of Being, of others – must inevitably start from a human perspective. (Tyler, 2012, p. 21.)

The key epistemological question in our exploration of ecosocialization is: how do we participate in our more-than-human social world?

For a modern human being, in everyday experience, it is evident that we are some kind of human individuals, with individual subjectivity, body, and a life story. However, based on the holobiont hypothesis, which we presented above, we argued that individualism and anthropocentrism are constructed and narrowed down extractions of the more-than-human web of life. These kinds of reductions of a human and its participation with the world affect the way we see each other and our relation to other living beings. Therefore, we must extend our understanding of participation with the world: this extension is a description of ecosocial participation.

Phenomenology centrally aims to question the premise of objective reality, which we are believed to have information about through rational thinking. In contrast, it starts with an acknowledgment that things appear to us in our sensory connection to the world (Abram, 1996; Merleau-Ponty, 1982). To be clear, phenomenologists do not ignore the capability and importance of human rationality, but they claim that the human mind does not exist in a vacuum; we need a sensorial beginning for our conceptual thought. In other words, the world is not primarily an object in which the

conscious human subject gains pure knowledge about, but rather which we are always a part of (Merleau-Ponty, 1982).

French phenomenologist Maurice Merleau-Ponty's work is principally a philosophy of perception. Perception is a dimension of experience, which happens in our sensuous body; it is merely a phenomenon of living among things, but it also has an intentional character. In other words, the phenomenon of perception reveals how we inhabit the world and turn into things prior to any conceptual thinking of the world. For example, when skipping from rock to rock, I can rely on my bodily skills on how to move on an uneven surface of the seashore. In my childhood my body grew into a dialogue with the rocks, and I still move habitually in this environment, without my conscious 'knowing' how to do it.

In his later theoretical descriptions, Merleau-Ponty (1968) creates a novel conceptual approach, *flesh* (chair), where the sensible and the sensed are understood as entangled. The body that senses is also sensible; it is the same flesh as the sensible world. In other words, the rocks and my body – while not falling into sameness – are different appearances of the same flesh. But precisely, because there is no gap between the sensuous body and the world, there opens up the possibility of communication.

I experience the world through my sensing body, and the world exists in me in this relationship. Interpreting Merleau-Ponty's theory of perception, David Abram (1996) summarizes that 'the event of perception, experientially considered, is an inherently interactive, participatory event, a reciprocal interplay between the perceiver and the perceived' (p. 89). He continues that the 'living powers' of others are 'actively drawn us into relation' (Abram, 1996, p. 90). It is precisely our sensuous body that participates in the world.

By talking about 'living powers,' Abram, similarly with Merleau-Ponty, highlights the active quality of the 'other.' In other words, the more-than-human world is not a passive background or an instrumental resource for humans, but it is dynamic, inherently animate. According to Merleau-Ponty (1982), empiricism forces the phenomenon of perception as a stable object of perceived and intellectualism returns the perception to the perceiving subject; neither one of these approaches recognize the pre-reflective phenomenon of perception. So, phenomenology reminds us that the wholeness of perception cannot be stabilized as a piece of knowledge or as a pure idea guiding our thinking, but in contrast, it is a dynamic entanglement of the world and our sensing body.

Drawing from Merleau-Ponty's concept of flesh, as well as from Abram's concept of the more-than-human world, ecosocial participation can be described as an *asubjective* experience (Merleau-Ponty, 2003; Värri, 2018). For example, the atmosphere that I experience in a forest, cannot be reduced to the qualities of the forest or to the psychological content of my mind. Rather, it is an *asubjective* experience inbetween of the forest and me; it is

also the closest we can get to grasp the entanglement of flesh. It is an experience that happens before things fall to the categories of object and subject. It is an experience of its fullness that cannot be reduced into the features of the object or qualities of the subject.

In other words, the meaning of the ecosocial participation should not be reduced to a question of how things become known for a human subject in cognition; but it should be rather understood as surrendering to the more complex and more vibrant meaning of existence before any reflection takes place.

Aim of ecosocialization – ethics of the more-than-human

In a socialization process, we acquire skills and capabilities for societal participation, for example, in living with other humans. We acquire knowledge of some critical functions in society and develop understanding and respect – at least for some – societal norms and laws. While some conformity is also needed for an ethical living – we cannot all play by our own rules – the ability to question, criticize and ultimately change set conditions is an equally important result of the socialization process. The continuity and development of a just society and culture are dependent on the socialization of its members.

Adapting to human set conditions and limits is, of course, not enough, but we have to adjust our lives to nature's cycles and ecosystem capacities. Importantly, while human set limits are always open for negotiations, the nature set ones are not; that is why we need to show more conformity in adjusting to ecological conditions. However, we have aimed to show that how we participate in the more-than-human-world is not just about adjusting to nature's limits but about experiencing ourselves as participants in the web of life.

While the aim of socialization could be seen as social justice, we are not convinced that the concept of justice could capture the aim of ecosocialization. Our reservation in the use of justice in ethical considerations towards nonhumans is that justice might be too attached to the idea of a human subject, or that justice assumes symmetry and certain 'sameness' between the partners. It might be relatively easy to comprehend what justice between humans and other sentient animals would look like, but for example, in human-microbes relations, how would justice be served?

As discussed in the previous chapter, the foundation for our relationships is in our sensuous, 'enfleshed' entanglement with the world. Rather than seeking ethics based on the idea of a human subject, we try to locate the foundation for ethical acting from a state that predates the forming of the categories of subject and object, human and nonhuman. When exploring what could inform us ethically from this state of pre-objective existence, we turn to emotions and *empathy*.

Emotions and empathy are, of course, highly broad concepts. In general, they are thought to play a crucial role in connecting us to others (Aaltola, 2018; Elpidorou & Freeman, 2014). Both emotions and empathy are often described through their cognitive aspects. The cognitive emotion theories suggest that emotions are determined by the evaluations a person makes about their environment (Oatley & Johnson-Laird, 2014). Empathy can also be seen to have cognitive forms: we can, for example, try to project or mentalize the mental states of others (Aaltola, 2018).

However, it is widely recognized that cognitive aspects do not fully reveal the phenomena of emotions and empathy; they have embodied aspects also that operate outside cognitive reflection (Aaltola, 2018; Spackman & Miller, 2008). Through them, we aim to go closer to the foundation of relationships in the more-than-human world. In terms of ethical consideration, affective and embodied forms of empathy are also argued to play a critical role as they help to understand the difference of others, motivate helping behaviours, and make harming others aversive (Aaltola, 2018; Patil & Silani, 2014; Takamatsu, 2018).

From a socialization point of view, the interest is in how other other-oriented, prosocial emotions and empathy are developed. Empathy is an innate capacity of humans and other empathic animals (De Waal, 2010), but it also develops in high-quality relationships with parents and peers (Boele et al., 2019). In the socialization of empathy, warmth, and supportive parenting plays a critical role (Hoffman, 2001). Equality, trust, and intimacy often associated with peer relationships offer opportunities to observe and model affectionate behaviour (Boele et al., 2019).

There is some skepticism about whether prosocial emotions and empathy are relevant to ethical questions in human-nonhuman relationships (Joye & De Block, 2011). Nevertheless, it is evident that humans have a long history in holding emotions towards nonhuman life; specifically, indigenous cultures attributed love, value, and respect to other animals, trees, and ecosystems (Albrecht, 2019; Knudtson & Suzuki, 1992). The biophilia hypothesis (Kellert, 1995; Wilson, 1984) presents that we have an innate tendency to form cooperative and emotionally positive relationships with nonhuman life. We seek a sense of belonging with the more-than-human world, and this belongingness also gives meaning to our lives (Lambert et al., 2013).

Empathy has also been found to predict pro-environmental attitude and action (Berenguer, 2007; Pfattheicher et al., 2016), and thus it can be argued to be relevant in a more-than-human context. As already discussed, intimate relationships are needed for empathy to flourish. When we develop empathy in intimate relationships with the more-than-human world, perhaps it becomes aversive for us to harm other beings? When we see forests or other ecosystems destroyed, we may feel *eco-anxiety* (Pihkala, 2018). While anxiety might sometimes lead to apathy, these eco-oriented emotions

also have the potential to spring us to ethical action (Pihkala, 2018). In addition to the painful emotions, empathy is also linked to an ability to experience a sense of *awe* (Zhang et al., 2014), which makes us feel we are part of something greater than ourselves.

Ultimately, and specifically in the era of ecocrisis, the aim of ecosocialization should be sustainability. As we participate in ecological communities, a possibility to learn to live sustainably in and from them opens up. In a modern society, scientific knowledge, which has brought to our attention, for example, the concept of holobiont, is a crucial part of this participation. Similarly, are our skills associated with rationality and reflection. However, if we forget our authentic relationship with the more-than-human world, which we experience through our bodies, and its different sensibilities – not just rational but also sensory and emotional – we risk also forgetting how to sustain this world.

Towards ecosocial education

In the processes of socialization and education, a following path in cultivating sustainable life orientation could be described: First, the learner goes through a socialization process. They acquire beneficial knowledge and skills for them to function in society but also some aspects that further cause ecological problems, such as the anthropocentric view of reality and unsustainable styles of living. Then, through education, the learners learn how to question and criticize ecologically destructive values and practices, develop capabilities to change those for better, and cultivate sustainable life orientation.

As we have described in this paper, this view is incomplete and does not recognize the diversity of the more-than-human world. Ecosocial education has to be built on the understanding of ecosocialization, of the nature of the diverse relationships we have with other beings and how those relationships can be sustained. Thinking and criticizing are essential skills, but in the more-than-human world, we also need other skills. Of course, we do not mean that rational knowledge should be abandoned; on the contrary bringing scientific knowledge into educational context is at least as important as ever.

Understanding, coping with, and resolving ecosocial problems require comprehensive insight, understanding and experiencing that humans are not detached from the more-than-human world. For this reason, education requires not only rational knowledge but also the recognition of emotions and sensory experiences.

The processes of making and experiencing art can engage different sensibilities – rational, sensory, and emotional – and that way, art can help us to move from our limited interpretation of reality to the possibility of different worlds. Therefore, art has a unique role to play in ecosocial education, in uncovering

hidden contradictions in thinking and building a sustainable future (Foster et al., 2019). Art can also serve as a tool to allow learners to reflect on their environmental emotions, such as eco-anxiety but also, and as importantly, positive nature-related emotions, such as awe and wonder.

Conclusion

In addition to the worry for existing and future generations of humans, we have started to rethink and assess our relationship with the more-than-human nature and to find ways out of the anthropocentric view of life. To do so, we must carefully examine the concepts we use, so that they do not reinforce anthropocentric views and practices. In this article, we suggested that a key concept used in educational and social sciences, socialization, needs a parallel concept, ecosocialization, which captures our interdependence in the more-than-human world. This new conceptualization may be valuable to educational, or any, research in addressing the ecocrisis.

First, we discussed how the ecological understanding of the holobiont exposes that socialization does not occur solely through the agency of humans; our social worlds are ontologically always more-than-human. Secondly, we looked at how we participate in this more-than-human social world. Our phenomenological exploration reveals that the epistemological claim that we can only know the world from a human subjective perspective is inadequate. Instead, our participation happens through our sensuous bodies and is based on an asubjective experience that happens before things fall to the categories of object and subject, of human and nonhuman. Thirdly, we suggested that we should pay attention to how emotions and embodied empathy can inform us ethically in the more-than-human world and eventually help us to form sustainable communities.

Finally, we emphasized how educational practices can benefit from the understanding of ecosocialization: it can enlighten how the relationships between humans and other life are formed, sustained and remediated. We want to conclude that specifically the role of emotions and empathy in ecosocialization should be examined further, as well as the relationship between ecosocialization and educational practices. We of course welcome any further examinations of ecosocialization, in order to develop sustainable practices that benefit both human and more-than-human communities.

Notes

1. We acknowledge that not all humanity is to blame for the ecocrisis. Some current communities may still lead ecologically sustainable lives, as evidenced for example, by indigenous studies scholars. By modern societies we refer to societies that have gone,

or are going, through the process of industrialization and rely on economic growth to sustain and justify their existence.

2. The term ecosocialization has been used before at least by Low and Gleeson (2001). Their use of ecosocialization refers to the transformation of the society and economy to obtain ecological sustainability, which differs from our use in this paper.

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