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Environmental Identity and Natural Resources: A Dialogical Learning Process

Frans Meijers [1,*], Reinekke Lengelle [1,2] and Helen Kopnina [1,3]

[1] The Hague University of Applied Sciences, Johanna Westerdijkplein 75, The Hague 2521 EN, The Netherlands; h.kopnina@hhs.nl
[2] Master of Arts Integrated Studies, Athabasca University, 1 University Drive, Athabasca, AB T9S 3A3, Canada; reineke@tic.ab.ca
[3] Institute Cultural Anthropology and Development Sociology, Faculty Social and Behavioural Sciences, Leiden University, Wassenaarseweg 52, Leiden 2300 RB, The Netherlands
* Correspondence: frans@fransmeijers.nl; Tel.: +31-24-300-0934

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Abstract: In this article, we elaborate on the role of dialogical learning in identity formation in the context of environmental education. First, we distinguish this kind of learning from conditioning and reproductive learning. We also show that identity learning is not self-evident and we point out the role of emotions. Using Dialogical Self Theory, we then suggest that individuals do not have an "identity hierarchy" but a dialogical self that attaches meaning to experiences in both conscious and unconscious ways. We describe the learning process that enables the dialogical self to develop itself, and we elaborate on the characteristics of a good dialogue. We conclude with some remarks expanding room for a dialogue that would foster identity learning.

Keywords: dialogical learning; dialogical self theory; environmental education; environmental identity; new environmental paradigm

1. Introduction

In discussions of how to develop a more sustainable relationship with the environment, natural resources' values are often seen as key [1]. Overall, the idea that values, especially altruism, are related to environmentalism seems well established [2–4]. The general argument is that environmental decision-making often requires us to make choices about things we have not thought much about before. In order to make a decision, we use our values as a guideline because values tell us what something is worth, how to think about that worth, and which moral principles underlie our thinking. According to the New Environmental Paradigm or NEP [5,6] values—which are seen as relatively stable, central elements of personality (although there are differences between cultures [7])—influence beliefs, which, in turn, influence the creation of "personal moral norms" that, lastly, determine actual predispositions to pro-environmental behavior. The NEP scale is a widely used measure of people's shifting worldviews from a human dominant view to an ecological one, with humans as part of nature. The Dominant Social Paradigm (DSP), positing endless progress, growth, abundance and attitudes contributing to environmental degradation, is then opposed to NEP, which highlights the disruption of ecosystems caused by modern industrial societies exceeding environmental limits. However, as has been stated [1], from the perspective of the NEP as well as more updated value theories and measurement scales of environmental attitudes [8], little can be said about the causes of value change.

In relation to a newer theory of culture, the concept of the Anthropocene is often discussed. While the scope of this article does not allow for a detailed discussion of discursive psychology, cultural

geography or social theory that engage with learning beyond constructivism of social learning theory, it takes Anthropocene as its context. The concept of the Anthropocene emphasizes that we have entered a new geological era in which humans dominate every flux and cycle of the planet's geochemistry and even its climate. In many ways, the Anthropocene has come to be associated with anthropocentrism, or human-centrism in both the practical and philosophical sense. It was argued that, in order to go beyond conventional anthropocentric practice, we need to tease out the most pertinent and significant aspects of education that opposes the dominant logic of the Anthropocene that offers more positive directions in the development of a more nature- and animal-oriented education. The Anthropocene, an informal geologic term, serves to mark the evidence and extent of human activities that have had a significant global impact on the ecosystems and even the planet's climate. Coined by Paul Crutzen, the concept of the Anthropocene emphasizes that we have entered a new era, marked by significant changes in the earth's geology and profoundly affecting the planet's flora and fauna. In the Anthropocene, humans dominate every flux and cycle of the planet's ecology and geochemistry [9]. In many ways, the Anthropocene has come to be associated with anthropocentrism, or what David Kidner [10] has termed "industrocentrism", an ideology which destroys cultural as well as biological diversity as well as freedom of thought.

For environmentalists, this is an important observation because the behavior of most humans is not based on pro-environmental values, which results in environmentally irresponsive behavior [8–10]. In order to develop theories that can explain how pro-environmental values can develop, identity theory was brought into the environmental sciences [11] because identity is seen as a primary motivator of behavior since people act in ways that are intended to verify their identity meanings [12]. We acknowledge here the fact that identity theories cannot fully "explain" how pro-environmental values can develop and hereby acknowledge the diversity and the uncertainty of the connections we describe below. However, considering the objective of this article (e.g., the promotion of a dialogical learning process), the lense through which we look is predominantly a psychological one. This does not mean that we do not acknowledge that identity is the result of a complex process in which, besides psychological, cultural and economical factors also play a role [13]. Identities are co-constructed by a psychological self and a social context. Individuals begin to form psychosocial identities by associating the psychological self with interpersonal experiences and cultural expressions. In due course, individuals consolidate these attributes into a coherent and unified whole, a gestalt that organizes their beliefs, competencies, and interests. Coherence and continuity function to form and develop identity as individuals assemble and integrate these attributes [14]. Storying is the essence of identity work, particularly stories that tell about a gap in life. Identity stories try to impose meaning on the unforeseen or inappropriate and try to make sense of these disruptions and deviations [15]. In forming an identity, individuals make choices and commitments; they "choose their relationship to the facts of their contexts" [16]. Identity responds to the contexts that evoke different selves, what [17] referred to as "geographies of self-making". So identity continuously adapts and changes in a practice of positioning, whereby "master narratives" [18] and discourses—as LaPointe [19] puts it—"position individuals and construct their identities in the interaction between narrator and audience. (. . .) Positioning refers to the process through which people can adopt, resist and offer the subject positions made available in discourses and master narratives".

Identity is formed by and expressed in narratives [20]. McAdams and Olson defined narrative identity as "an internalized and evolving life story that a person begins to develop in late adolescence to provide life with meaning and purpose" [14]. Identity, therefore, can be defined as "a set of meanings attached to the self that serves as a standard of reference that guides behavior in situations" [21]. An environmental identity then is "a set of environmentally relevant self-meanings that one projects and sustains" [21]. These self-meanings "may be seen as characteristics or attributes that individuals see as representing who they are, how they feel, and what they value" [21]. In comparison to value theories, identity theory brings social structure into the study of behavior by taking into account the fact that people have a "voice" for each of the many positions they hold in a complex society.

Because these positions cannot be activated at the same time without conflict, the various aspects are hierarchically arranged, and those identities higher in the hierarchy are activated more frequently than others. Research [21,22] shows that these self-meanings influence pro-environmental behavior significantly more than attitudes.

Other researchers in the field of environmental education have almost the same view of identity. As the topic of natural environments become increasingly salient in public discourse, they state, the relevance of environment to identity should also increase, "both directly in terms of the salience of environmental identities, and indirectly as environmental processes impact upon specific places" [23]. What research makes clear [21,22] that the self-meanings, which form one's identity, are "constructed" in interaction between an individual and the environment and that, as a consequence, individuals have multiple identities. The assumption is that individuals, in verifying their identity meanings, try to avoid conflict and therefore create an "identity hierarchy".

This assumption is contested by others [24], who offer evidence that the strength of individual identifications with nature will vary, as will the very meaning of this "nature" (which in and of itself is a social construct that varies across time and space) to which individuals relate. The environmental education classroom is a space where students engage in what one researcher [25] refers to as "ecological identity work". Ecological identity work is defined as "an individual and group process in which students both locate themselves within relation to particular, relatively preformed ecological identities (a process we call conformative identity work) while also in some ways attempting to redefine these very boundaries of ecological identity (which we refer to as critical identity work)" [24]. Identity work simultaneously involves both constructing who we are and who we are not; it is something that people do collectively as well as individually. In this way, individuals "negotiate" the boundaries of their identities: "identity work not only involves placing oneself inside and outside certain identity boundaries, but also (re)creating and defending those boundaries themselves" [24]. Their research among students studying the environment at university shows that students want to be seen as "concerned environmentalists", but at the same time resist the sort of categorization that "forces them into a religion". In other words, they want to be seen as members of the pro-environmentalist movement, but in a way that makes room for individual expression and personal experience. Almost all students expressed the belief that being exposed to a greater range of (sometimes competing) perspectives and engaging in a discussion about these perspectives was a crucial element in developing their own environmental identities.

The importance of having discussions for the development of pro-environmental behavior is stressed. In his article on the role of nature in Education for Sustainable Development, Bonnett [26] has argued that ideally environmental education should be essentially concerned with an understanding and appreciation of the environment and the significance of the natural order, in a type of dialogue between place and self. At the heart of this dialogue will be an attempt to characterize, and develop in life, what should count as a right relationship with nature and thus a fuller understanding of what truly should count as human flourishing. In their review of the literature on education for strategic environmental behavior (*i.e.*, behavior that effectively addresses environmental problems), Chawla and Flanders-Cushing [27] conclude that education is needed that not only aims to produce active citizens, but embeds democratic principles within the education process. Pro-environmental behavior is the result of a process in which students need to take personal ownership of the issues they work on, choose personally significant goals and integrate action for the common good into their sense of identity. Students need opportunities for direct experience, beginning with intimately knowing natural areas, and extending this participation into managing their schoolwork. They must also tackle community projects where they can see for themselves how local government works and where they feel they are making meaningful contributions. "In the course of these experiences, they need opportunities for discussion, analyzing public issues together, determining shared goals, resolving conflicts and articulating strategies for overcoming challenges and achieving success" [27]. The researchers conclude that, in this process, students become worthy role models for one another. Another study [24], however,

makes clear that intense interaction does not always lead to "critical identity work" but can result in "conformative identity work", too. Environmental classrooms are often involved in the process of defining and policing the boundaries of an environmental identity, and leave little space for questioning boundaries, labels and easy categorization [28,29]. Thus, not all conversations promote the formation of an environmental identity that leads to pro-environmental behavior.

Critical pedagogy of Paul Freire is particularly relevant to the conception of learning as a dialogical process between self and nature, noting that "the 'banking' concept of education," in which knowledge is deposited in student receptacles, regards people as manageable beings, and the teacher is the sole distributor of knowledge. "The more students work at storing the deposits entrusted to them the less they develop a critical consciousness" [30]. Freire takes dialogue as an essential tool of pedagogical communication, therefore supporting education must be based on sharing, through which relational opportunities are created, through educators also learning from the students. In fact, "all forms of education are political because they can enable or inhibit the questioning habits of students, thus developing or disabling their critical relation to knowledge, schooling, and society" [31]. However, the limitations of this were noted in cases where students are left with relativism [27], or when the educator relinquishes expertise and potential transformative power of knowledge to combat sustainability challenges in favor of goal-free education [32,33]. This leads us to the question of alternatives in the way "environment" can be perceived in cross-cultural contexts, through the discipline that made culture study its own, anthropology.

In this article, we elaborate the role of discussion—or what we call dialogue—in identity formation. Our main argument is that the formation of an identity is a learning process in which dialogue is essential. First we distinguish this kind of learning from conditioning and reproductive learning, which in many instances still dominate Western education [34,35]. We also show that identity learning is not self-evident and we point out the role of emotions. Using Dialogical Self Theory [36] we, then, suggest that individuals do not have an "identity hierarchy" but a dialogical self [28] that attaches meaning to experiences in both conscious and unconscious ways. We describe the learning process that enables the dialogical self to develop itself, and we elaborate on the characteristics of a good dialogue. We conclude with some remarks about the current school climate, which hitherto leaves little room for a dialogue that would foster identity learning.

2. Three Types of Learning

In literature, three types of learning can be distinguished: conditioned, reproductive, and identity learning [37,38]. Conditioning refers to learning where reward and punishment are used to support or discourage behaviors. Reproductive learning involves information being shared, though the assumed meaning of that information is transferred without questioning its content or ascribed meanings. In contrast, in identity learning, the individual is invited to learn in a dialogical way so that "information" is transformed into knowledge that is personally meaningful [39].

Each type of learning has different effects and outcomes (for an overview, see references [40,41]). The benefits of conditioned learning in terms of behavioral change are easily achieved. However, if reward or punishment fall away, so does the motivation to behave in a certain way. Indeed, this type of learning does not intrinsically motivate people to change their behaviors towards the environment. As Cobham [42] argues, it is not through scaring, blaming, and shaming that environmentalists will win the hearts and minds of the public. Conditioned learning is also rarely transferable to other contexts precisely because values are not internalized [40,41].

The benefit of reproductive learning, that dominates Western education, is that the information transferred has a clear context and learners are seen as subjects, despite the fact they have no influence on the information or the context in which that information is transferred. Reproductive learning does not invite a learner to question the meaning of the information and therefore has an inherent transfer problem as well—insights gained do not become personal insights. Indeed, as with conditioned learning, there is no intrinsic motivation cultivated by transferring knowledge in this way; the learner

is the vehicle for transferable knowledge and until he/she integrates what is learned in personally meaningful ways, knowledge stays within its original context and is not applied elsewhere. In contrast, the benefit of identity learning is that knowledge and the accompanying behavior are based on internalized learning and are therefore relatively stable and transferable. The issue with this type of learning is that a strong learning environment is needed to achieve it [39,40]. What is meant by "strong" will be explained in further detail below.

Translated into environmental education, a balance between human and nature needs can be enforced by conditioned learning, but the effects of this learning will not last long: as soon as individuals know that their behavior is not supervised or verified, they will once again pursue their old behavior. It is clear by extension that the financial as well as political and moral costs of enforcing such control would quickly become unacceptable. Instead, politicians, environmentalists and educators have tried for more than 20 years now to create awareness and aim to promote behavioral change through reproductive learning. Students are, for instance, exposed to information about (the effects of) the "hole in the ozone layer", acid rain, deforestation and the extinction of species. The effects of this strategy, however, have not been promising and continue to be less than effective [43,44]. The main reason for this seems to be the complexity of the learning process that is intended; students are expected to process the available evidence, then to "weigh" the interests of human and non-human species and then choose more pro-environmental behavior. This weighing process, however, involves complex cognitive and moral competencies [45].

Research shows that direct introspective access to higher order cognitive processes is in fact limited [46,47]. In 1955, researchers [48] already observed that people were not able to make rational decisions because they do not have all the facts, nor did they have a consistent value system, and, furthermore, most people do not possess sufficient reasoning skills. Those who support reproductive learning, portray human beings as "economic persons", *i.e.*, as people who are able to calculate short-term risks against long-term advantages. However, individuals in "risky situations" act more like "administrative persons", *i.e.*, as problem solvers, acting with a bounded rationality, and searching for satisfactory short-term solutions rather than maximizing reward. Additionally, empirical evidence suggests that, in complex situations, conscious rational thought tends to quickly overreach its bounds [49].

Instead intuition plays an important role in the decisions people make when faced with complex situations [50,51]. In fact, individuals who come to a decision by "thinking", often make choices that they are less satisfied with than individuals who make those decisions intuitively. The reason for this is that individuals "change their minds about how they feel" [52] as a result of reflecting. Furthermore, neurobiological and neuropsychological research shows that human emotional responses occur before cognitive responses [53,54]. The result is that, in complex situations, individuals simply "jump to conclusions" [55]. Humans normally choose the first option that works, *i.e.*, that they believe works [56,57]. The judgments formulated are thus based mostly on pre-programmed ways of thinking and therefore perpetuate a tendency to get stuck in pre-existing identifications in relation to the environment [36]. What has previously worked by trial and error becomes a "heuristic" that is used, not reflexively, but as a reflex—even when it is not suitable in coping with the new situation. Some [58] interpret this type of "irrational behavior" as a systematic error or shortcoming in the cognitive system. In conclusion, the idea that people will behave rationally if given accurate and scientifically sound information is not correct; information alone seldom makes people feel compelled to change their existing identifications and corresponding behavior [59].

3. Emotions and "Felt" Dilemmas

Paradoxically, the more information a person is given, the more likely he or she will actually respond via the brain's automatic response, escaping into non-rational behavior [51]. Regularly, this behavior results in the short-term satisfaction of needs that make the existing problems in the human-environmental interaction even bigger. This is why people have to be engaged in another

way and makes clear why reproductive learning does not lead to the desired behavioral change. The research about moral development—in which identity is essential and for which many scholars in the field of Environmental Education (EE) and Education for Sustainable Development (ESD) plead [60,61]—offers potential solutions. Those researching this area [62,63] show that, in order to enable individuals to give up their personal needs for the needs of others (or for the environment), a learning climate is needed in which real-life dilemmas are at the heart of learning and are not only considered real but *felt* as such. In an identity-learning process, individuals are given the opportunity not only to formulate, in an experiential way, solutions for the dilemmas faced, but more importantly, are invited into a collaborative dialogue about the meaning of the solutions they develop for themselves and others (see also reference [64]).

Why is a "felt" dilemma so important? We know that identity development occurs in response to crises because it forms a demarcation point in the life course [65]; this is also referred to as a "boundary experience" [66,67]. This is an experience whereby an individual encounters the boundaries of his or her existing self-concept and cannot cope with a situation and its exigencies. Identity-learning, therefore, starts with emotions that drive attention [68,69] that, in turn, drive learning. This type of learning should, therefore, be conceptualized "as an experience linking reason and feeling instead of an experience of controlling emotions" [70]. Based on empirical research on the "success factors" of psychotherapy, which can be seen as a form of identity learning "pur sang", it can be concluded [71,72] that attention should be paid to the physical experience emotions brings up and then attach symbols, metaphors and/or concepts to those.

Often a "felt" dilemma is a boundary experience and the essence of such a turning point can be found in the individual"s change of perspective [73,74]. In other words, a significant event occurs that causes "existential insecurity", forcing the individual to see him/herself—and often others to—in a different light [62]. Such a change in perspective may be defined as "gaining a clearer understanding of oneself by identifying dependency-producing psychological assumptions acquired earlier in life that have become dysfunctional" [75]. An example of this in environmental education can be a dialogue about a news story about an oil spill, for instance, where explicit attention is paid to the feelings of powerlessness surrounding that. In identity learning, working with a childhood memory of for instance losing a wooded area turned shopping mall can be revisited to discuss, expand, and examine the themes of powerlessness and agency. This example will be expanded and discussed more fully as the learning process is described in detail below.

The point here is that a "felt" dilemma or boundary experience is the start of a learning process that—in the case of EE/ESD—has the potential to result in new self-meanings and a changing environmental identity. Such an identity "refers to all the different ways people construe themselves in relationship to earth as manifested in personality, values, actions, and sense of self. Nature becomes an object of identification." [25]. In building such an identity, people can become reflective environmentalists. For that, a conversation as identity is not constructed by the individual alone (a constructivist process) [27] but can only emerge and exist as a result of an interaction with others (a constructionist approach) [19]. Rather than residing in the individual, identity manifests itself in discourse.

4. Dialogical Self Theory

Dialogical Self Theory [36] makes clear why discourse—and more specifically dialogue—is so important in identity learning. According to this theory, each person is a kind of "polyphonic novel": a combination of various voices embodied as one person [76]. Although expressed by one individual, the polyphonic novel is spoken by many "voices" referred to as I-positions [76]. "As different voices these characters exchange information about their respective Me's and their world, resulting in a complex, narratively structured self" [77]. The dialogical self is not static and is inherently transformed by the exchanges amongst I-positions (the internal dialogue with ourselves) or with other individuals (the external dialogue). It is noteworthy that the internal and external dialogue are only

separate in the way we conceptualize them; how we interpret our lives is very much a "psycho-social" phenomenon [78]. The external dialogue is predominantly a verbal dialogue although body language is important for mutual understanding between two individuals [79–82]. The internal dialogue, however, is primarily intuitive, making use of metaphors and analogies that provide a bridge between emotions and cognitions [83,84]. Both dialogues are closely interconnected and can only be separated conceptually. As Wilentz [85] aptly states: "We don't even know how we feel without language, and metaphorical language at that. The body's language needs to be decoded through image and symbol". However, at the same time, words and concepts have to feel true to make a dialogue possible [84]. People are motivated to engage in an internal and an external dialogue because each dialogue satisfies one of two core human needs: A "sense of autonomy and control" and on the other hand "being part of a wider community" [86,87].

An environmental identity, then, can be defined as a dynamic multiplicity of personal positions or voices regarding the natural environment. Assuming that narratives are the key schemes by which human beings make experiences meaningful [15,88] and understand temporality [89], an identity expresses itself in a story told by a person, expressing his/her life theme(s) and the way s/he identifies her/himself based on these life theme(s) with (a specific part of) the environment [39]. In this context, a life theme can be defined "as the affective and cognitive representation of a problem or set of problems, perceived or experienced either consciously or unconsciously, which constituted a fundamental source of psychic stress for a person during childhood, for which that person wished resolution above all else, and which thereby triggered adaptive efforts, resulting in an attempted identification of the perceived problem, which, in turn, formed the basis for a fundamental interpretation of reality and ways of dealing with that reality" [90]. Thus, the environmental identity of a person is the result of the discursive processing of emotionally salient experiences (or boundary experiences) that occurred earlier in life (although these experiences do not always relate directly to experiences with nature [91]. These identities can be said to be relational in many aspects: somatic, perceptual, emotional, aesthetic, spiritual. Again, this touches on the nature of dialogue itself. Thus, verbal discourse is just one of its manifestations. The experiences might be consciously processed in one's self-narrative, but more often than not are integrated in half- or unconscious ways. In the latter case, one speaks of tacit knowledge that has to be given voice because, "there can be no change without naming the problem. Putting words to it is the starting point of gaining insight into its grip on you" [92]. The struggle for voice begins when a person attempts to communicate meaning to someone else, "Finding the words, speaking for oneself, and feeling heard by others are all part of this process" [93].

We posit along with other researchers on identity that if a person has the tools to be able to re-"story" his/her identifications around nature, that he/she will be more able to deal more effectively with "felt" dilemmas and build an environmental identity [94,95] (*i.e.*, a relationship with nature that empowers him or her towards responsive and responsible behaviors). Given the fact that identity expresses itself as a narrative, acquiring an ecological identity is a learning process in which a person has to move from a first to a second story [96,97] (*i.e.*, one of personal empowerment). This is only possible if one moves out of the first story by developing an observer position: the ability to see one's self and one's struggle with some detachment. However, this act of becoming self-aware causes existential insecurity [62] and is therefore somewhat discomforting to the self, to the point where one begins to question if one has the ability or desire to develop a "second story". On the one hand, the self can perceive some existential insecurity, on the other hand, the "second story self" can handle this insecurity and sees it, more or less, as part of the process of growth. This struggle and suffering is what we believe describes the process of awakening [25] and means that one "gains insight into the harm caused to others, self, the immediate environment, and the world" [98].

Figure 1 shows the model of identity learning understood as a process in which a person moves from a first to a second story. The model makes clear that it is a learning process where emotions and cognitive aspects both play an equally important role and where the engine that drives identity development is a dialogue with oneself and others. We need to note, however, that the model should not be seen as recreating a binary of emotions and cognition, but rather as incorporating emotions into

cognition and cognitive processes. The dualism between emotion and cognition may in fact feed our ontological separation from our environments.

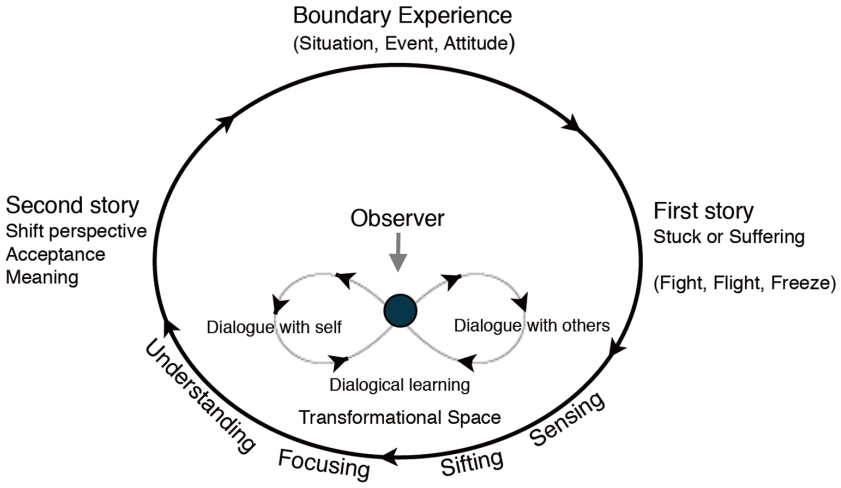

Figure 1. A model of identity learning

From the perspective of Dialogical Self Theory [36], the trajectory from a first to a second story ideally starts with the formulation of an I-position (*i.e.*, this is important to me), the subsequent broadening of this I-position by means of a dialogue to other relevant I-positions (*i.e.*, how and why it is important), and runs, via consecutive dialogical shifts, to a meta-position (e.g., an insight) and promoter-position (*i.e.*, able to take action) [36,99]. By inviting I-positions and expanded I-positions, we mean that an individual is asked to enter the dialogue in a multi-voiced way—experiences may even be discussed in ambiguous and contradictory ways. A meta-position becomes valuable as it allows the individual to look at one's I-positions from a distance; in the model the observer or witness in the center represents this position. This allows for a usefully detached overview of a situation; in the process of this meta-fueled awareness a person says, "I notice this about myself. I now realize and see something about myself I did not before." The integrative understanding gained through a meta-position is intended to lead us to action or at least the intention to act with respect for the complexity or changeability of our natural environment. The "position" that is capable of such action is called a promoter position and allows an individual to make a choice or take an action.

5. A Learning Process in Four Stages

The movement from I-positions to meta- and promoter-position by way of an internal and an external dialogue is also described in a phase-based model developed [100]. This model allows one to see the development of a second story in the interplay between the conscious, the unconscious and experiences [49], whereby experiences first result in "tacit knowledge" [101,102] that has to be made explicit in order to stimulate self-directedness. The four stages that are distinguished are: sensing, sifting, focusing, and understanding [100].

Sensing is the stage in which information is gathered (from various sources, in particular those that are emotionally compelling), but no explanation or perspective is yet developed. Sensing can also apply to all cognitions and thoughts, as exemplified by the presently popular Mindfulness technique. In this first stage, emotions are explored and described, gaining an awareness of one's feelings as they happen in the body is important [103]. This way of learning relates to the concept of mindfulness, which can be described as bringing one's complete attention to the present experience, deliberately observing one's internal experiences in an accepting, non-elaborative and non-judgmental way [104]. In this stage, the main focus is on becoming aware of feelings (and the associated memories) so that the individual might "give them voice". In the context of developing an environmental identity, one

might envision a conversation about an oil spill where a group is led to discuss the range of feelings that this news and the accompanying media images accompanying it bring up, instead of denying or rushing to analyze the possible impact of such an event. At this stage, students can be led to express small stories and I-positions (*i.e.*, what is important to me) and explore where their own response (e.g., denial, despondency) resembles an earlier life experience. A hypothetical example: "When I was a kid, I couldn't stop the destruction of a wild field by our house. I used to walk there between the trees on the way to school. Lots of ground squirrels lived there. My parents didn't seem to notice or care. I felt horrible for them. They built a shopping mall there."

Sifting is a sorting process, which moves a person towards the issue of causality [100]. Here, an individual is no longer overwhelmed and bombarded by all the thoughts and feelings that are inherent to the boundary experience and the sensing phase and starts to see larger categories. "Re-storying" often starts with helping students to find the "right" metaphors. By way of metaphors, a person can move towards creating or finding analogies, developing personal constructs and finally shaping coherent "second" stories. This idea is closely related to the notions of generative metaphor and frame restructuring [105], the concept of generative processes by analogical transfer [106], and the argument that metaphors can generate new knowledge and insight [107] by changing relationships between the things designated [108,109] and for the environmental discourse [110]. A Dutch study on effective psychotherapy [111] showed that clients used sensory symbols that have an inherent power for restructuring the life story. Note that with regards to the cognitive learning stages that they overlap and that regressions are normal as well as leaps that lift the veil on what the second story may eventually look like. Again, in the context of identity learning within an environmental context, sifting may lead to identification of insights/themes like (an hypothetical example), "always feeling disempowered to change anything on a large scale and not feeling like I had allies either. The image that comes to mind is a very small person standing in front of a bulldozer."

In the focusing stage, actual viewpoints are formulated. These viewpoints are still fragmented, but they are an attempt to string together feelings and ideas that arose during the sensing and sifting stages and the most salient themes come more fully into view. Focusing may, in the example presented, be the discovery that one does not behave pro-environmentally, because the theme "I can't really affect any real change as the change has to be enacted by powerful people and I'm not such a person" continues to dominate one's thinking. Such an example, in dialogical-self terms is an example of the formation of a metaposition (*i.e.*, "I notice this is what I do and still believe"). The focusing stage ideally segues into the understanding stage as insights and fragments start to become a second story.

The understanding stage reveals key insights that are then put together into a narrative or second story. In this example, it may be that a person discovers that even one's own personal contribution can matter with the help of others and that such help must be sought. This stage constitutes the development of a promoter position—the clear articulation of a possible action and the ability to act. The second story is the summary of the whole learning process—a story of the past, present, and possible future. It may, in this case, sound like: "As a child, I could not save the gopher field and the important others (my parents) didn't help me either. I see my story is still: I'm too small and what matters to me, doesn't matter to those who care for me. But now I see that I have to learn to ask for help when something matters to me instead of going into denial and ignoring what I see is happening to my environment."

The process referred to here is one based on episodic learning, which means that the learner puts the events into sequence and clarifies who, what, where, when, how, and "why" of what has happened [112]. This process is usually a combination of ordering the material, articulating the "big picture", and drawing conclusions and, in dialogical terms, it means coming to a meta- (insight) and promoter (action) position.

6. Characteristics of a Good Dialogue Aiming at Identity Formation

The model presented above shows how an (environmental) identity takes shape. Based on this process, there are several recommendations that can be made that can help those guiding others in this

learning process engage in dialogues and shape the "strong" learning environment in order to promote identity learning. First, one facilitating should not speak about or at but with others. This seems like common sense, but research shows this rarely happens in an educational system, which is still primarily focused on reproductive learning [99,113]. Transferring information and giving feedback, the two main activities of teachers in reproductive learning, is predominantly monological. For identity learning to occur, however, a dialogue is required where a variety of I-positions can be expressed in a felt way. The second recommendation is that the dialogue is about experiences relevant to the student and this becomes apparent when a student expresses emotion words; the presence of emotion words frequently indicate that a boundary experience is being referred to. The third recommendation is to "put emotion into motion"—in other words, make good use of what is salient to others. Again, in schools focused on reproductive learning, emotions are often neglected [99,113]. This is why it is clear that [114]:

- emotions have to be valued; in other words, all those involved in a social interaction should be grateful that emotions exist;
- emotions should be treated with caution. They are often extremely powerful motives for the behavior of individuals. When environmental issues are brought to the fore, people respond with anxiety, rage, depression and panic [115]. In addition, when an emotion is ignored or even denied, it can be turned against the person or organization that allowed this denial to occur;
- emotions demand respect or, in other words, concentrated attention. Many people feel uncomfortable when someone nearby shows some emotional involvement. The tendency to quickly move on to something else is prevalent. However, if emotions are ever to become a functional part of the learning process whereby an environmental identity may be constructed, then attention has to be paid to them. One should not try to suppress emotions but rather use them to illuminate the message that they are carrying as is explained in the section on emotions and felt dilemmas.

If emotions are not heeded, the danger is that the subsequent rationalization is a process of not perceiving reality, but of attempting to make reality fit one's emotions [116]. Leaving a first story is painful and humans are apt at reaching for ways of avoiding change and displaying the symptoms of holding on as described in the acronym "VERB"—victimization, entitlement, rescue, and blame [117]. To overcome this natural tendency, a person must be helped to talk about what happened as concretely as possible within an atmosphere of receptivity to emotions. This can be done—and this is the fourth recommendation—in the form of small stories. Fifthly, once a small story is on the table, one should invite the student to broaden and deepen it. Broadening means helping the student to look for similar occurrences in the present, while deepening it is looking for similar events that have happened in the past. Both broadening and deepening help the student to describe which happenings led them to the reaction they are having now and helps to uncover their life themes and motivation. By putting these stories side by side, the student is able—through a process of comparing—to develop analogies and on that basis to name personal constructs [16]. The sixth recommendation is then to compare—it is imperative that people are guided to make comparisons between their stories in order to uncover and articulate these personal constructs as shown in the examples above.

Youths as well as adults are seldom able to go through this process without help. Human brains are not well equipped to deal with insecurity as mentioned before; as soon as a triggering situation occurs flight, fight, and fleeing responses are likely [46]. When individuals show a response of victimization, entitlement, rescue, or blame, others usually have the tendency to ask "why" questions in an attempt to promote more rational behavior. However, a "why" question can usually only be answered once the learning process has been completed and disregards any value that might come through the "irrationality". The trigger is an indication that learning is necessary and not that an explanation is or should be forthcoming. The seventh recommendation, therefore, is not to ask "why" questions. The facilitator should instead make room for the naming of emotions—a small story does not only

describe what happened but also invites the person to speak about feelings associated with the story, as the story of the gopher field above illustrates. Research on expressive writing aimed at well-being has shown that this combination of telling what happened along with the emotions felt is indeed the winning combination in creating a beneficial "second" narrative [118]. Not only does an emotion show one what is meaningful, but naming an emotion is the first step in helping someone step into the observer position [96,97].

The final recommendation is that the person guiding others in this identity-learning process must be aware of his/her own natural tendency to reduce insecurity by trying to speak for the other. The essential part of helping someone with identity learning is to go in search of the right words with the other, which becomes evident when that person says things like: "Yes, this expresses what I really feel".

Recent research in career education shows that teachers have to be well-trained before they can and will enter a dialogue aiming at identity formation with their students because it differs considerably from their daily routines [119]. The result is that they feel insecure and under-equipped, especially with regard to value boundary experiences and the connecting emotions [120].

7. Do Schools Have Room for a Good Dialogue?

The recommendations above make clear that it is not easy to realize a good dialogue about the human-environment interaction within the existing educational system where this type of environmental learning might take place. While epistemologies of science have had plenty of room for ethics, the narrowly defined anthropocentric ethics do not always fit the epistemology of Western science where objective facts are often upheld as "truth" [24,102,103,121]. The result is that environmental education is typically housed in science classes [38]. Lastly, the absence of dialogue and the subsequent lack of control by students over their own learning activities, results in students" lack of intrinsic motivation with regards to what is taught. Most students, in fact, have a purely instrumental relationship with the curriculum and their teachers [122,123]. Students often see no other choice but to reproduce "the logic of the system" which means they continue to count on the promise that investment in education (*i.e.*, a certification) alone will ultimately pay off. On the other side of the relationship, teachers find themselves caught in a triangle of interests and imperatives [124]. This triangle requires teachers to be (a) catalysts of the promises of opportunity and prosperity of the knowledge society; (b) counterpoints to the threats posed by the knowledge society to community, security, environment, and the public good; and (c) casualties of the standardization imposed by imperatives of the knowledge society.

To realize a learning environment that would support the development of an environmental identity, then, the educational system must cross its own boundaries and stimulate the courage of students and teachers alike. "An environment-based education movement—at all levels of education—will help students realize that school isn"t supposed to be a polite form of incarceration, but a portal to the wider world", [125] and as this article makes clear, that wider world includes the inner world.

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