

# Arts-based education for an enchanting, embodied and transdisciplinary sustainability

By Hans Dieleman

## Abstract

*This article sketches two contrasting ideal-typical narratives of sustainability, a disenchanting and an enchanting one, and argues that current thinking in sustainability is mainly situated in the narrative of disenchantment. This narrative is based on various obsolete philosophical assumptions, and hampers the transformation process, as it distances the population from being part of this. It then sketches the narrative of enchanting sustainability and shows how this has the capacity to engage, intrigue and motivate people to be involved. It is rooted in an arts-based approach of connecting aesthetics, associative thinking, reflective practice, emotion-based working, aspiration and intentionality. The article moves on beyond the two ideal-types, making a plea for a hybridization, and proposes transdisciplinary hermeneutics as a practice of realizing this hybridization. Finally it explains how arts-based education for sustainability is, in various ways, key in the transformation process towards enchanting and transdisciplinary sustainability.*

## Introduction

When the only instrument you have is a hammer, Dennis Meadows once said to me, you will want to fix every problem with that hammer. He told me this in the beginning of this century, when I was working on games in education for sustainability (Dieleman & Huisingh, 2006). Meadows referred to mainstream thinking in sustainability, which is based on the idea of the three dimensions, environmental, social and economic sustainability, and is nearly all about innovation, science and technology, and the creation of eco-rational economies and governments (cf. Adams, 2006). When the tool you focus on is scientific and rational, you will try to solve any problem with that tool. It

is the story of mainstream sustainability and within this story there is little room for associative and intuitive thinking, and as a result, for arts-based education which draws on such thinking. It is appreciated as something sympathetic and as an “icing on the cake” (cf. Van Boeckel et al., 2011), but most scholars in sustainability do not see it as something really serious.

We need a more fundamental and paradigmatic assessment of sustainability thinking, to understand why arts-based education is often an activity in the margin. Such assessment should focus on positivism, enlightenment and rationalism, as mainstream sustainability is strongly embedded in this line of thinking. It must be contrasted with an alternative in terms of embodiment, complexity thinking, phenomenology and arts-based explorations (Dieleman, 2016). This essentially is an assessment in terms of the two contrasting ideal-types of disenchanting and enchanting sustainability.

### **Disenchanting sustainability**

According to Max Weber, disenchantment is the historical process by which the natural world and all areas of human experience become knowable and predictable, and as a result lose their mystical and wondrous character (Jenkins, 2000). The disenchanted world is rational, human-centered and – paradoxically – impersonal. Goals and objectives are realized through science, bureaucracy, law and policy-making, and in all of these systems, the person is subservient to the general rules set out by the system. In this disenchanted world, nature and the universe as well are impersonal and even sterile, stripped of emotions, feelings, angels and demons.

Disenchantment is the dominant narrative by which mankind is supposed to live today (Asprey, 2014). It is the narrative of enlightenment telling us that we can emancipate and free ourselves from nature – diseases, aging, crop failures, unpredictability – and master nature, thus improving life conditions in unforeseeable ways. It is the narrative of Cartesian rationalism, which separates our bodies from our minds. It tells us that true and valid knowledge can only be generated using science-based methods, with a language that is unambiguous and free from emotions. It is the narrative of Newtonian positivism telling us that the cosmos is a gigantic clock characterized by order and determinism, where matter and energy exist in a universe freed from chance, subjectivism or consciousness. It is the narrative of modernity and – more recently – neo-liberalism, telling us that we as individuals can acquire material wealth and possession in unlimited quantities, and that we in this way collectively contribute to a never-ending process of societal growth and development, in a straight line towards ever more progress (Dieleman, 2016).

Mainstream sustainability is essentially based on this narrative of disenchantment. The aim of mainstream sustainability is to green the development path (to make it “sustainable”), but it leaves the philosophical basis of development – modernity – unquestioned. It is a narrative of *ecological* modernization telling us that we can continue to have a society and economy based on large-scale exploitation of natural and human resources while we can have those resources available at all times (Jänicke and Jacob [Eds.], 2006). More than half a century of environmental politics, development programs and industrial environmental practices, however, show the unlikelihood and falsity of this assumption (Hennicke, 2014). Mainstream sustainability recognizes that we failed to master nature adequately in the past, yet offers a promise of mastering nature for the future based on essentially the same mechanism as before: innovation through science and technology (Kates et al., 2000). It continues to be a narrative of a sterile universe where nature, matter and energy exist independent from chance, subjectivism or consciousness, even though the insights of quantum physics, neuroscience and transdisciplinary studies convincingly show otherwise (Nicolescu, 2002; Varela, 1991).

It is a disenchanting sustainability for which I prefer to use the verb “disenchanting,” rather than the adjective “disenchanted.” In this way I seek to emphasize its procedural nature of making us little by little less involved, less engaged and less motivated to act in sustainable ways, because it made us lose a sense of connectedness and therefore, a sense of attraction and longing to be part of.

### **Towards a narrative of enchanting sustainability**

We need a new narrative that enchants us, offering a promising plot that drives and motivates us. It means writing a narrative with alternative storylines based on new notions of what nature is, society, [hu]mankind, technology or knowledge and above all, how that is all woven together. This constitutes a philosophical challenge, as it obliges us to review the ontological, epistemological and methodological premises on which mainstream sustainability is based. It equally constitutes a cultural challenge of giving new meaning to many phenomena and of realizing a major cultural transformation based on these new meanings (Soini & Dessein et al., 2016). Thinking about this narrative, it almost immediately becomes clear, that it is in many ways the exact opposite of the one of mainstream sustainability. I characterize it in terms of 3 major storylines that are all rather opposite to those of mainstream disenchanting sustainability.

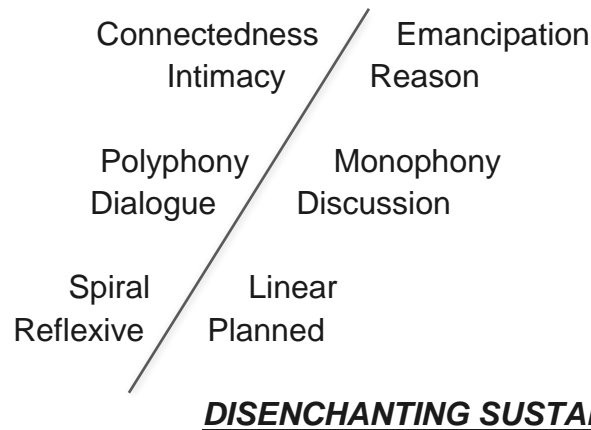
**ENCHANTING SUSTAINABILITY**

Figure 1: Keywords to characterize enchanted and disenchanted sustainability

The first storyline is about our connection with nature and with our own selves, as in being embedded and being embodied. The narrative of enchanting sustainability tells us that, instead of “emancipating” us away from nature, we should reconnect with nature, seeing our planet as our body that makes us what we are. Our existence is embedded in landscapes and spaces with trees, air, water and soil, that we should see as our extended body, which allows us to be who we are. Our culture is like our extended body and so is technology, making us what we are (Wellner, 2015). Our mind equally is embodied, in a stricter sense of embodiment, as are our senses, emotions, intuition, imagination and creativity. The Cartesian slogan I-think-therefore-I-am becomes I breath-eat-sense-do-reflect-therefore-I-am – all at once. We can analytically distinguish our mind from our body and our environment, but we cannot understand ourselves – the world, sustainability – when we do not see how all is woven together in specific and particular ways, and how this affects us and makes us what we are. Sustainability is not about creating a rational relationship of taking care for nature, as in separating wastes, reducing water consumption, investing in renewable energy or engaging in reforestation. It is about creating and establishing an intimate relationship with both ourselves and with the world around us. It involves using organs of perception other than the rational mind, such as our senses, emotions, intuition and experiences (Van Boeckel, 2015). It is rooted in a way of knowing that is phenomenological and Goethean rather than Cartesian, encountering the world in subjective ways, feeling the presence of energy, vibrations, movements, colors and forms (Frances & Wride, 2015). It implies working from our inner self, clearing our minds, thus opening our inner self to let the world come in (Dieleman, 2015).

The second storyline is about polyphony and dialogue and in this aspect as well, it is a real opposite to mainstream sustainability that is essentially monophonic, as the voice of science prevails. An important assumption of traditional science is the idea of one truth, and one best way of knowing. Logic supposedly works everywhere the same and traditional scientific epistemology has little or no eye for contextuality or perspectives (Nicolescu, 2006). Even though many practices in contemporary science escape the traditional ideas of objectivity and universally applicable knowledge, alternative voices from outside of the world of science are still largely excluded. Insights based on feelings, emotions, spirituality or esthetics are seen as having little relevance for the conceptualization and construction of sustainability. The narrative of enchanting sustainability does recognize these voices and is polyphonic, allowing for a rich fugue of multiple interacting storylines. It is hermeneutical and aims at creating meaning based on integrating various complementary perspectives, acknowledging that no single truth or perspective exists. It is rooted in Edgar Morin's complexity thinking, seeing the world as characterized by multiple logics or "dialogical" always working at the same time. A glass is half full as it is equally half empty, dependent on the perspective, and in the same way a system is both more and less than the sum of its parts. More or less, full or empty, order or disorder, development or stagnation, all depend on the context and perspective from which we see such a phenomenon (Morin, 1977). That is why polyphony is so important, it is the interaction of multiple melodic voices or storylines, creating a diverse complex of multiple points of view and voices. It is not the same as harmony, which is created when various notes go well together in a horizontal way, as in a chord. Polyphony is not about notes; it is about independent storylines woven together (Panico & Dieleman, 2014).

Therefore, the narrative of enchanting sustainability is a narrative of dialogue, rather than of discussion or debate. David Bohm contrasts dialogue with discussion that he sees as a Ping-Pong game of true-not true, constantly batting arguments back and forth with the objective to win. The word discussion, Bohm argues, has the same root as "percussion" or "concussion" meaning breaking things up. Discussions focus on arguments that are broken from or presented without making reference to the theory, worldview or belief-systems they originate from. The discussion model reflects a way of knowing that takes the world apart, and focuses on decontextualized parts and single best ways of knowing. Dialogue, by contrast, is the creation of a stream of meaning flowing among and through those engaged in the act of dialoguing. We realize it in open dialogue spaces — listening circles — that are little by little filled with heterogeneous contributions — opinions, experiences, feelings, ideas, theories, facts, words, images, movements — allowing the participants to build upon that which all bring forward (Bohm, 1996). The aim is not to arrive at one single truth or best way of seeing reality, but to arrive at shared meaning relevant for those involved in the dialogue.

The third storyline again is a real opposite to mainstream sustainability. It is about reflective practice in spiral ways, instead of planned action in linear ways. And indeed, almost all organizations involved in sustainability projects still following a traditional linear planning scheme, based on the standard sequence of “Formulate a vision → Diagnose problems → Develop solutions → Seek consensus → Take decisions → Implement and execute.” It is rooted in the idea that we first think and subsequently act, as thinking (planning, preparing) precedes acting (executing, realizing) as two rather separated activities (Dieleman, 2012). By contrast, the narrative of enchanting sustainability is written in reflective ways, applying reflective practice as a constant sequence of acting – reflecting – acting. This allows us to create a constant double dialogue, one with the world around us in which we act, and one with our inner self and more precisely with our inner mental map. It is realized in what I called “spaces of imagination and experimentation,” where reality is simultaneously explored through analysis, reflection, visualization or association, imagining solutions and testing them in spiral and iterative experimental ways. Such spaces invite us to transcend boundaries and to experience puzzlement, surprise and confusion, while they provoke multiple feedback and feed-forward loops and the combined nourishment of various forms of knowing (Dieleman, 2015). The outcome is much less predictable and because of that, reflective practice is much less accepted in a world where unpredictability is supposed to be eliminated. The spiral and iterative character of reflective practice in spaces of imagination and experimentation however, creates excellent conditions for intrigue, wonder and therefore motivation to be part of it.

Both ideal-types, disenchanting and enchanting sustainability, are based on a generic problem definition of a broken equilibrium and distorted balance. Disenchanting sustainability however presents us with a rather negative narrative of survival on this planet, based on obligations in terms of rather fixed solutions (separate your wastes!, reduce your water consumption!), which we are supposed to follow in mere robotic ways. By contrast, enchanting sustainability provides us with a positive narrative of exploring new connectivity and intimacy with the more-than-human world, listening to multiple voices creating polyphony, acknowledging the existence of more than one truth, inviting us to work in spaces of imagination and experimentation that allow us to be intrigued and puzzled.

### **Enchanting sustainability as a transdisciplinary challenge**

Nothing in the world is black and white, and neither are the above-sketched ideal-types of enchanting and disenchanting sustainability. Writing the narrative of sustainability involves – in a certain form – a combination or hybridization of disenchanting and enchanting sustainability. Surely we need to separate wastes, create circular economies and reforest, but above all we need to reconnect with the world in more than rational

ways. For me, this hybridization is a transdisciplinary challenge of contextualizing the rational in an ensemble of various levels of reality: the rational, the emotional, the experiential, the intuitive and more. The usage of the words “levels of reality” in this context, is not metaphorical or literary, but is literal and refers to levels that really exist.

According to Basarab Nicolescu, our reality exists in the form of multiple levels that are subordinate to different fundamental concepts and laws, with each having its own “space-time” (Nicolescu, 2010). These levels are really separate from each other and constitute a discontinuous, diverse and complex reality. Nicolescu bases this idea on the insights of quantum physics and the notion that quantum particles in the microphysical world do not behave at all according to the – supposedly – universal laws and fundamental concepts of nature, such as the law of gravity or the speed of light. Quantum particles shift between being particle and wave, can be at two places at the same time, interact with each other over millions of kilometers in a flash, thus completely disobeying the law of the speed of light, and more (Griffiths, 2004). Based on these (and complementary) insights, Nicolescu argues that reality is made up of multiple levels where, in some, matter, logic and cause-effect relationships prevail, in others vibrations of energy with revelations or intuition, in yet others forms and color with images and imagination.

The epistemological consequence of this ontological assumption is that it is principally impossible to know the world by only using scientific methods, as these apply to just one level of reality, the level of matter, data, logic and cause-effect relationships. We need to build an image of sustainability that equally discloses other levels, such as the one of imagination and creativity, using associative thinking and visual explorations, as we need to disclose sustainability using our senses and emotions, through feeling vibrations and rhyme. It involves working with our intuition and with revelations, through abduction and the use of rituals of knowing such as meditation, prayer or martial arts (Dieleman, 2015). It is this transdisciplinary approach that is far too absent in mainstream disenchanting sustainability, even while reality is not really black and white and some room exists for feelings, emotions and aesthetics, as for meditation, prayer and mindfulness. Some room exists indeed, but frequently it is seen as icing on the cake.

The challenge is to work with what Nicolescu calls transdisciplinary hermeneutics, as a way of knowing across various levels of reality combining formal, experiential, embodied and direct ways of knowing. It involves working with both that which is seen, observed and measured as well as that which is unseen, capturing the unseen “using a language of the imaginary thus trying to penetrate higher levels of Reality - parables, symbols, myths, legends, revelation” (Nicolescu, 2008, p. 510). Engaging in transdisciplinary hermeneutics is, following Heidegger and Gadamer, an act – or an art – of tuning in and listening to how we allow the world to disclose itself (cf. Zimmermann, 2015). Two

concepts are crucial in this context, the concept of “organs of perception” and the concept of “allowing the world to disclose itself”.

Knowing is opening us to see, understand, describe, feel or conceptualize something from the world around us. Dependent on the “instrument” or “organ of perception” we use, we allow the world to disclose itself, and see or feel certain parts while overlooking or ignoring other parts. Working with only the hammer of reason and rationality, makes us close ourselves off from seeing, feeling or understanding the more-than-rational dimensions of the world, nature, other human beings and our own body and soul alike. Practicing transdisciplinary hermeneutics asks us to learn to be open to other forms of disclosure, outside the realm of the rational or scientific. This constitutes a real challenge, not in the least because we unlearned this, and we have limited intellectual resources explaining what it is. The concept of “disclosure” plays an important role in the work of Martin Heidegger, who saw disclosure as revelations or insights that come to us from the depths of the Earth, and he assumed that these revealed by definition true knowledge because they come from deeper levels of wisdom (cf. Healy, 201, pp. 176-178). This religious/spiritual and somewhat fundamentalist interpretation has colored the concept of disclosure in negative ways. It is however not the only interpretation of disclosure that exists in the philosophical literature. I rather follow Hans-Georg Gadamer’s definition of disclosure, that as “dialogical truth” where disclosure brings insights to the surface that are still open to a dialogical process of questioning and testing, to assess their credibility (Gadamer, 1975).

Also, I prefer to extend the Goethean concept of “organs of perception” to more than an instrument of knowing the world in subjective ways (Frances & Wride, 2015). I use the concept to identify any way of knowing. Quantitative scientific methodologies form (as a group, or separately) an organ (or organs) of perception, and so do qualitative scientific methodologies. Our experiences and emotions equally are organs of perception just like our imagination or our intuition. There are multiple organs of perception that allow for the disclosure of an infinite amount of levels of reality.

Finally it is important to take into consideration that transdisciplinary knowing is not the sum of knowing through a combination of organs of perception, but is an integrative way of knowing the world (Nicolescu, 2006). It invites to use multiple organs of perception, and stimulates all kinds of interrelationships between various forms of knowing, with many feedback and feed-forward loops emerging between those ways of knowing (Dieleman, 2015). Because of that, as Nicolescu points out (Nicolescu, 2006), transdisciplinary hermeneutics has the potential to know and to see beyond any singular way of knowing in a space where the rational, the emotional, the corporal and the spiritual are united in a complex ecosystem of knowing. It is through transdisciplinary hermeneutics that the rational can be contextualized within a complex of other ways of



connecting with the world, such as the emotional, the imaginative and the ethical, and where the emotional can be contextualized within a complex of the rational and the experiential. This prevents us from approaching reality – sustainability – with a partial view that is rooted in only the rational, or only the emotional, the spiritual, etc.

### The role of the arts in enchanting sustainability

Thinking in the transdisciplinary scheme presented above, it is obvious that I do not want to exclude science and technology from the narrative of enchanting sustainability. We need science, but it is important to be aware of some obvious limitations of the traditional scientific way of knowing, which claims that true and valid knowledge can only be realized when we use a set of impersonal – scientific – methods of doing research. Only when we use impersonal validated research instruments and tools such as a microscope, a scan, a questionnaire or a carefully controlled experiment, the outcome can be regarded as valid and true. This has distanced us from the world we explore and aim to get to know better (Nicolescu, 2006). A second limitation is that it provides us with an ever more fragmented understanding of the world. This is due to its analytical/logical approach of taking the world apart and studying it parts, and to the ongoing division in ever more disciplines, sub-disciplines and specializations. Traditional science more and more discloses reality in bits and pieces without providing context, thus prohibiting us from seeing relationships and developments in perspective. As a result we ended up with a partial view on a disenchanting sustainability. It is therefore important to broaden again our view and to establish more intimate relationships with the world we study, and here I see an important role for the arts, just as for various qualitative and phenomenological approaches within science.

Gregory Bateson was among the first to signal this. In his *Mind and Nature* he asked: “What is the pattern that connects the crab to the lobster and the orchid to the primrose, and all four of them to me? And me to you?” (Bateson, 1980, p. 8). He showed that logic is very limited in answering such questions, as they escape the realm of pure logic. To properly answer them, we need to enter the world of associative and metaphorical thinking, as we need to enter the world of seeing aesthetics and developing sensibility to the patterns that connect (Kagan, 2011). Suzie Gablik, one of the pioneers of arts-based education for sustainability, talks in this respect about “*connective aesthetics*.” This is not about what an individual artist can do, she argued, but what the real essence of the arts is: creating non-logical connectivity that we feel and experience, and apprehend rather than comprehend (Gablik, 1992).

Long before Bateson however, as early as in 1908, Wilhelm Worringer observed a different function of the arts, in the same period that Max Weber wrote about the disenchantment of the rationalizing world. In his publication “Abstraction and

Empathy,” he argued that an accurate representation of the material world does not really stimulate or engage the audience in the work of art. By contrast, when the representation is incomplete or distorted, as in the abstract and expressionist art of his period, the audience gets engaged. Such art calls upon our imagination to mentally complete the image exposed, in any way we want (Hoyt, 2013, p. 3). It creates a connection with two essential elements that David Morgan later described as “immediate human experiences” and “the realization of a desirable state of affairs” (Morgan, 1996, p. 317). A way to enchant sustainability therefore is to see it as an abstract work of art, and to focus on its essence as well as its incompleteness.

And indeed, it makes a lot of sense to see sustainability in precisely this way. After all, it is an abstract work of our own imagination. It is based on a concept, a key idea and key concern, with some rough notions or sketches attempting to touch upon its essentials. Its essence is its incompleteness and we should emphasize that, as it invites humanity to seek to complete it, according to how we see and interpret it. It invites to approach sustainability from an emotional viewpoint, from the perspective of a certain intentionality and desire to change. Creation, Alfonso Montuori observes, is embedded in aspiration, in the love for knowledge and the desire to create one’s own cosmos, rather than in the mere use of specific skills or tools (Montuori, 1998). Montuori concluded this after studying all kinds of more or less formal toolbox-like approaches to creativity. His conclusion was that its essence is not to be found in the tools or special capacities; its essence lies in the way we relate to a certain part of reality. It is our openness, emotional connection and intentionality to reality that creates the base for creativity.

Mike Sharples describes the process of creation and creativity in essentially the same way, as an “emotion-driven associative work” (Sharples, 1999). Our emotions drive and motivate — move — us, and creativity manifests itself when we connect with our intentionality. It implies embodiment and compromise, as in presencing or connecting with the here-and-now to feel the emerging future (Scharmer, 2008). When we are in contact with the present on a level of sensitivity and feelings, we create the conditions to “tune in” with that what is evolving, and being part of that movement and development. Associative work equally is key, since it is about lateral thinking – as in “re-arranging” as in “trans-forming” patterns. This stands in strong contrast to vertical thinking that is “building upon” and “adding on” (De Bono, 1992). Vertical thinking is cognitive and analytical and deals with what is, while lateral thinking is embodied and imaginative, creating patterns and connections in associative rather than logical ways.

The contribution of the arts in creating ecologies of knowing for an enchanting sustainability lies in its associative and metaphorical way of working, as well as in its emotion-based working embedded in aspiration, intentionality and the love of tuning in with an incomplete presence, thus co-creating an emerging future. It equally lies in its

capacity of reflective practice and artful ways of working, with a number of specific characteristics. It was Donald Schön who created the term “artful doing” as a kind of reflective practice that does not work in a straightforward way toward a preconceived idea, but is like an open experiment that serves to change the phenomenon before us, and to generate a new understanding of that phenomenon (Schön, 1983). It involves a sequence of acts comparable to the one a painter applies while making a painting. The painter adds some color or form to the canvas, takes one step back, overlooks the result, goes back to correct or to add more color or form, takes one more step back, and so on. It essentially is doing, as in forming or transforming, reflecting and then doing again. Jan van Boeckel mentions in this context the important aspect of “emergent properties” that stem from such art-making process (Van Boeckel, 2015). Artful doing is a dialogue with the reality we work with, allowing for new forms and insights to emerge during the process. We are part of the process, but we do not control it entirely, thus allowing the process to go in unforeseen and unplanned directions. This really stimulates intrigue, surprise and wonder and therefore: enchants.

Finally, it is the narrative as work of art itself that creates – when used – a counterpoint to the scientific reports informing us on sustainability. Using the word narrative throughout this text is not without reason. The narrative sees knowledge not as a concatenation of easily verifiable facts that are accessible to everyone in the same way, but as a personal (or group) reconstruction of meaning. It mirrors transdisciplinary knowing as it is based on elements coming from various levels of reality, which often form a scattered and incoherent whole (Panico & Dieleman, 2014). The narrative by definition is polyphonic with various voices and storylines, of which the reader’s or listener’s voice is one. The reader is inside as much as outside of the narrative, involved and invited to take a stand and form an opinion and finally, to adjust the narrative to make it fit his or her own experiences and meaning. This is precisely what is needed in sustainability.

I do not want to exclude science and technology from the narrative of enchanting sustainability, but their role must be very different from what it is now. They need to be contextualized into a narrative that enables us to go beyond a mere instrumental approach. This narrative surprises and intrigues and thus: enchants. It is a narrative written in artful and arts-based ways, and as such is a real shift away from mainstream sustainability that is mainly written in science-based ways.

### **Arts-based education as the sluice towards enchanting sustainability**

I have been working with arts-based education since the beginning of this century, primarily in academic settings and mainly at the postgraduate level with non-art students. Many, if not most, students see arts-based activities as not very serious and

often feel somewhat uncomfortable when invited to participate. The best answer to this, I found, is to simply have them do certain arts-based or artful doing activities to make them feel what it does. Yet this is not that easy as it involves a mental shift from the academic to the artful or arts-based. They are trained in trusting reason, with various known activities such as logical reasoning, revising literature, creating a conceptual framework etc. They now are invited to trust a process with very distinct characteristics and unknown activities. They need to work with the embodied, with their feelings, senses and intuition, which is precisely what many unlearned in their previous education. Jan van Boeckel mentions in this context that the “normal life may contrast too sharply with a ‘letting go’ of oneself in the artistic encounter” (Van Boeckel, 2013, p. 290). He mentions the metaphor of a sluice, an in-between chamber one needs to unpack before moving from one environment to the next.

Thinking in terms of the transdisciplinary hermeneutics previously outlined, I am inclined to see it as moving from one level of reality to another and indeed, the sluice is designed to do just that. Thanks to the sluice, boats can cross the Panama Canal while constantly moving from one level to another. The in-between chambers prepare them to make such movements and the point in this is, as Van Boeckel mentions, “that it takes a period of adjusting, of familiarizing oneself to,” in my words, a new level of reality. “It is like an incubator phase,” van Boeckel writes, “of getting ready for what is to come. Likewise, once one has to fully immersed oneself in this strange new environment, one can neither hop straight back to the familiar place one was in before” (Van Boeckel, 2013, p. 291). It involves time and mental preparation that Dennis Meadows, in the context of playing games, called a three-phase model of playing games. This begins with a serious briefing of what is about to happen, playing the game and subsequently taking time for debriefing, as an exercise of evaluation and feed-back (Dieleman & Huisingsh, 2006, pp. 845-847).

Time is essential in shifting from predominantly disenchanting sustainability towards a predominantly enchanting sustainability. It will take time for people to adjust and familiarize themselves, and precisely there, arts-based education can play an important role and it should be at the heart of the incubator phase. This however, can only be done when the notion of transforming from one approach of sustainability to another, is clearly present. In order for arts-based education to escape its position of icing on the cake in sustainability, it should be seen as part of a transition process towards a new form of – essentially arts-based – sustainability, instead of as a ludic part of – essentially science-based – sustainability.

## Conclusions

This article makes a plea for a paradigm shift away from disenchanting towards enchanting sustainability. It claims that such a shift is needed as most contemporary approaches to realize sustainability are poor in engaging people in its transformation process. Those approaches are too rational and technocratic, lack imagination and intrigue and do not invite people to be part of the transformation process. As a contrast it proposes enchanting sustainability and sees that as an incomplete and abstract work of art, which invites us to be part of it and expand on it, according to how people wish it to be developed. Working towards enchanting sustainability essentially is transdisciplinary, combining logical and analytical thinking, as well as associative and metaphorical thinking, creating ecologies of knowing beyond any single or particular way of knowing. It calls upon moving from the age of mere reason and planning to a new age of imagination, wonder and intrigue.

Seeing enchanting sustainability as a work of art opens the door for art and arts-based education to be an essential part of it, and not merely icing on the cake. Within enchanting sustainability, arts-based education holds a new meaning in at least two different ways. It first of all plays a role as a sluice, an incubator period of preparing people for the new way of looking at sustainability. Secondly, it is a key component of creating sustainability, as this is seen as an incomplete and abstract work of art. Science, technology and reason are part of the process, as they are part of any artistic process, but do not define the outcome and neither the process itself. In enchanting sustainability art and arts-based education is crucial both in terms of the process as well as in terms of the way we look at the outcome.

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Dr. Hans Dieleman  
hansdieleman@gmail.com

Dr. Hans Dieleman is of Dutch/Flemish origin and works as a full professor in the Autonomous University of Mexico City. He is an external professor in the National Mexican Polytechnic Institute, postgraduate Center for Interdisciplinary Environmental Research and Studies. Previously he worked in the Center of Environmental Studies of the Erasmus University Rotterdam, as an invited professor in the “Dauphine” University in Paris, France and the Metropolitan University of Mexico City. He is a fellow of the Texas-based Association for Transdisciplinary Learning & Advanced Studies (ATLAS) and an associated editor of the *Transdisciplinary Journal for Engineering and Science* (TJES). He is a co-coordinator and honorary member of the international NGO Cultura21 and a member of the National System of Researchers of the Mexican Council of Science and Technology. He is a licensed TANTRA body worker. His main research themes are sustainability, transdisciplinarity, education and art, with an interest in epistemology, reflective practice and embodied cognition.