

# Changing our emotions, changing our culture

*Exploring Maturana's potential contributions to ESC.*

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**Abstract:** Based on the observation that by appealing to people's reason, with data and "rational" arguments, Environmental Education, and specifically Education for Sustainable Consumption (ESC), does not necessarily lead to changes in people's behaviour or consumption patterns, this paper explores the role of emotions in determining our actions. Particularly, it analyzes the potential contributions to ESC of the thought of Chilean biologist and epistemologist, Humberto Maturana, who highlights that only by changing our emotions do we change our actions. In this regard, the paper explores Maturana's concept of emotioning, and his analysis of the emotioning of patriarchal culture, which helps us to explain, at least in part, the origin of consumerism (appropriation, exclusion, anxiety, the need to possess in excess). The origins of appropriation are highlighted as key to understanding the current need to possess in excess and to control nature, conditions associated with consumerist behaviours. In the patriarchal culture of which appropriation is characteristic, emotions are devalued and considered to interfere with reason, whereas Maturana invites us to live in awareness of our emotions, desires and preferences. The type of education that can meet the main challenges of ESC, must integrate the rational and emotional aspects of human beings, in order to achieve the cultural change that can lead us towards a culture of sustainability. The work of Humberto Maturana offers elements that can enrich the analytical framework and practice of ESC, based on addressing emotions as pre-dating reason and as constituent elements of what it means to be human, helping us to unlearn patriarchal emotioning and to learn a new emotioning, that is, the emotioning of a culture of sustainability.

**Research Question:** How can the focus on human emotions, in the terms proposed by Humberto Maturana, contribute to Education for Sustainable Consumption?

## 1 Introduction.

My work for the past 25 years as a researcher and a professional dedicated to the practice of Environmental Education in general and of Education for Sustainable Consumption in particular, both in a university setting as well as with the environmental non-governmental organization of which I am a founding member (CEJ – *Colectivo Ecologista Jalisco*,

Ecological Collective of Jalisco),<sup>1</sup> has allowed me to corroborate through my experience that people can “understand” convincing reasons and even be exposed to scientific data and evidence that indicate the urgency of modifying our behaviours, and, even so, we often do not make those changes. Everything seems to indicate that “thinking” and “understanding” are not enough to bring about a different way of acting, and “knowing” rationally is a necessary but not a sufficient condition to trigger a change in our habits and consumption patterns.

Reflecting on why this is the case, I began to critically review my own practice with respect to this issue. This examination included the contents and results of the courses I had given for more than 10 years at the university, as well as the workshops and many other educational activities that I have designed and implemented over the past almost 26 years working with CEJ. It also included my Master’s thesis in Environmental Education, *The Construction of Responsible Consumption as an Environmental Education Strategy for the Citizen Control of Environmental Toxicity*, in which I explored the experience of having opened to the public the third eco-store in Mexico in 1996, as a space to promote responsible consumption and environmental citizenship, and in which I ventured to propose my own definition of a “responsible consumer.”<sup>2</sup>

In this thesis, I conceived responsible consumers as: “those people who make the act of consumption –of ideas, products, goods, services– subject to value judgments related to its social, economic, cultural and environmental impact. These consumers feel responsible for the consequences of their decisions and are aware that the market is precisely a space where power is in play and where political, economic and social change can be generated.

Responsible consumers become involved in this change, not motivated by guilt but by the opportunity to be creative and express solidarity, recognizing themselves as a key element in a social transition process towards a different order, that could take generations to be completed. [...]

The utopian and countercultural character that is the essence of responsible consumption places it squarely among the principles and assumptions of Environmental Education, which seeks a transformation of the values of our present civilization dominated by an economic rationality that privileges the market and self-legitimizes thanks to the scientific discourse”<sup>3</sup> (Cortés, 2000).

The central conclusion of this self-critical analysis was that my own conception of *responsible consumption* only considered the rational aspect of consumers. Where were their emotions? Moreover, this absence is not exclusive to my own practice. At least in Latin America, the focus on emotions is not generally part of the discourse or practice of Environmental Education or Education for Sustainability; emotions are sometimes mentioned or touched upon, but only tangentially (For a review of the theoretical frameworks of Environmental Education, see Gaudiano, 2007; and for a critical review of different environmental discourses see Leff, 2010, and Andrade, 2002).

This observation led me to explore the issue of emotions and to concentrate my doctoral studies in Education and Pedagogical Mediation on the research of emotional relationships between trees and human beings. This then led me to the extensive work of the Chilean biologist and epistemologist Humberto Maturana, whose theoretical framework is the basis of

<sup>1</sup> [www.cej.org.mx](http://www.cej.org.mx).

<sup>2</sup> Fifteen years after opening, the Ecotienda (eco-store) remains open to the public. [www.ecotiendagd.com](http://www.ecotiendagd.com).

<sup>3</sup> All quotes are translated from the originals in Spanish.

this paper in which I propose to sketch out notes on what I consider to be the need to rethink the fundamental role of emotions in Education for Sustainable Consumption, if we aspire to promote cultural changes. For Maturana, it is *only on the basis of changing our emotions*, that we can change our actions.

### 1.1 Emotions, marketing and consumption.

Before delving fully into the ideas of Maturana, I would like to allow myself what might seem to be a digression to discuss Neuromarketing, and the way that publicity and marketing apply the study and control of human emotions with ever increasing success. I do so precisely because, as I will argue in the following, I believe that Environmental Education in general and Education for Sustainable Consumption in particular should integrate the issue of Education about Emotions if they are to be successful in fulfilling their objectives.

Marketing experts know that emotions spur decisions (Renvoisé and Morin, 2006), and that the fastest way of influencing consumers is through the heart and not the head. Neuromarketing expert Néstor Braidot (2005)<sup>4</sup> states that emotional arguments should prevail in publicity, because these arguments guarantee brand loyalty by activating the ventral putamen region, associated with memories and experiences. At the same time, Malfitano (2005) indicates that the emotional reaction is produced much before the rational reaction, and develops responses before the rational brain acts and registers the actions in the neocortex. For Neuromarketing, it is clear that no decisions are made without emotion and that the goal is to “satisfy the consumer in a permanent and sustainable manner” (Vera, 2010), by means of developing new disciplines such as Sensory Neuromarketing, the most advanced area in applying knowledge on the functioning of the senses –optical (sight), acoustic (hearing), olfactory (smell), taste, and tactile (kinesthetic system) impressions– to strategies for product design, packaging, branding, communications, sales, and market segmentation (Vera, 2010).

On the other hand, vanguard researchers in neuroscience such as Dr. Candace Pert, in her book *Molecules of Emotion*, demonstrates that, not only in our brain but in our entire body, a great number of receptors, neurotransmitters, steroids and peptides are mobilized and continually change our biochemical configuration and, therefore, our emotional states, even making us “addicts” to those states, in the sense that we seek the conditions to repeat the events that generate certain moods, positive or negative, to once again experience the biochemical reaction that is perceived as pleasant by our brain.

The preceding would seem to allow us to conclude that, while Environmental Education frequently appeals only to the rational aspect of subjects, presenting them with figures, percentages and data and expecting behavioral changes from them that don't seem to take place at the speed or at the level that the environmental crisis requires, publicity and marketing advance in “serving” customers, focusing on dealing with their emotions, desires and preferences. Now we will move on to a brief outline of some elements of the thought of Humberto Maturana, and the way in which I humbly propose that it could contribute to the

<sup>4</sup> Neuromarketing is conceptualized by Braidot as, “a modern discipline, product of the convergence of neuroscience and marketing.” Its purpose is to incorporate knowledge on cerebral processes to understand and interpret the mechanisms by which thoughts are produced and, therefore, human conduct related to consumption, in order to optimize the relationship between an organization and its clients. It is developed based on new diagnostic technologies known as neuroimaging techniques.

understanding of and approaches to human emotions in relation to Education for Sustainable Consumption (ESC).

## 2 Emotions and Education for Sustainable Consumption (ESC).

The international agreement on the three main challenges of ESC are summarized in *Here and Now! Education for Sustainable Consumption*:

1. to respect the earth and life in all its diversity;
2. to care for the community of life with understanding and compassion;
3. to adopt patterns of consumption and production that safeguard human rights and community well-being as well as the regenerative capacities of the earth and to ensure that economic activities at all levels promote human development in an equitable and sustainable manner (UNEP, 2010).<sup>5</sup>

Now, what type of education can help us to reach these objectives and develop these abilities?

From my perspective, an education that shows us that we are emotional beings, helping us to reposition emotions in our experience as human beings, not just in a psychological but in a biological sense, can help us to reflect deeply on how we have reached the planetary state in which we find ourselves and allow us to discover what we should learn and unlearn, undertaking a critical analysis of our patriarchal vision of the world. This education should also guide us to integrate our rational and emotional facets, demonstrating that this integration is a condition without which we cannot progress towards sustainability either individually or collectively.

I also suggest that the ultimate goal of this education should be to guide us towards a cultural change as described by Maturana, to connect us with the *conversation*<sup>6</sup> on *sustainability*. Perhaps it is time to move from consumers who only make *rational* decisions to consumers who make *emotional* decisions.

## 3 Potential contributions of the thought of Maturana to Education for Sustainable Consumption.

The work of Humberto Maturana is very extensive: over the past five decades of research, intellectual production and teaching, his significant contributions to the fields of biology, psychology, education, and the theory of knowledge, among other disciplines, have led to him obtaining very diverse awards, among them an Honorary Doctorate from the Free University of Brussels and a nomination for the Nobel Prize in Medicine and Physiology together with the scientist Jerome Lettvin of MIT, with whom he first registered the activity of a directional cell in a sensory organ.

His findings coalesce in the concepts he calls the *Biology of knowledge*, the *Biology of loving* and the *Biology of emotions*. In Santiago de Chile, where he continues to live, he founded the Matriztic School, “in order to provide training on the biology of knowledge and the biology of loving, based on the understanding of their interweaving in the life we evoke

<sup>5</sup> Among the outcomes and competencies of ESC set out in this document, we find the *Ability to cope with one's emotions*, among other related competencies.

<sup>6</sup> Maturana defines as *conversations* the interweaving of *linguaging* and *emotioning* in which all human activities take place, therefore human being exist in a conversing, and all that we do takes place in conversations and networks of conversations.

and allude to when we speak of the Biological Matrix of Human Existence” (Maturana, 2003).<sup>7</sup>

Given the brevity of this document, I will only highlight certain aspects of the thought of Humberto Maturana that I believe can contribute to Education for Sustainable Consumption, with the characteristics I have outlined above: his analysis of the origin and characteristics of the patriarchal culture in which we continue to be immersed to the present time; the close relationship that exists between emotions and actions –including language–, and the transcendence of understanding and living *our emotioning* differently, to ask ourselves how to shift from “modern patriarchal culture” to a culture of sustainability or simply to sustainability.

These contributions can be summarized in three points:

- a) the emotioning of patriarchal culture is the origin of the rupture with the environment and its analysis helps us to explain, at least in part, the origin of consumerism (appropriation, exclusion, anxiety, the need to possess in excess);
- b) emotions are constituent parts of what is human and predate reason, and action is emotion and vice versa.
- c) emotioning is learned and a radical change in the emotioning of a human group constitutes a cultural change.

### 3.1 Patriarchal culture, *appropriation* and consumerism

Patriarchal culture is a condition of normality that is taken as a given in our lives as women and men, as social beings, and that we rarely reflect on. One illustrative example is the military language that permeates the work of environmental educators and, in general, environmental discourse, at least in Spanish. Words from the semantic field of war (from the Germanic *werra*) such as *struggle*, *campaign*, *truce*, *trench* and *strategy* are constantly present.

What characterizes patriarchal culture? What aspects of it persist to the present day? And, how is it related to the environmental crisis that Education for Sustainable Consumption seeks to address?

Patriarchal culture, in the words of Maturana, is, “a closed network of conversations characterized by coordinations of actions and emotions that make our daily life a mode of existence that values war, competition, struggle, hierarchies, authority, power, procreation, subordination, obedience, growth, the appropriation of resources, and the rational justification of the control and domination of others through the appropriation of the truth” (Maturana, 2003). An essential attribute of patriarchal culture, and one that is present to date, is that it treats disagreements as disputes or struggles and arguments as weapons, and it describes a harmonious relationship as *peaceful*, that is, as the absence of war, as if war itself were the most fundamental human activity.

“Based on mistrust, patriarchal culture seeks certainty in control of the natural world, of other human beings, and of our own selves; we continually speak of *controlling* our conduct

<sup>7</sup> In both the books published with Gerda Verden-Zöllner and Susan Bloch, the format is such that sections are written by only one author, and for this reason only Maturana is cited, as the quoted text is solely from his sections.

or our emotions, and we do many things to control the nature or conduct of others, in an attempt to neutralize what we call anti-social and destructive natural forces, that arise from their autonomy, living in appropriation and acting as if it were legitimate to establish by force borders that restrict the mobility of others in certain areas of action where, prior to our appropriation, they had free access” (Maturana, 2003).

For Maturana, it is precisely the backdrop of appropriation and control of linear patriarchal thought, and its flow primarily oriented to obtaining particular results, what explains the fact that it does not deal with the interactions of existence, being for this reason a “systematically irresponsible” thought and, we can add, unsustainable, in contrast with the matritic thought<sup>8</sup> which, on the contrary, “takes place in the awareness of the interconnectivity of all existence and, therefore, it cannot but be lived continuously in the implicit understanding that all human actions always have consequences for the totality of existence” (Maturana, 2003).

To explain, for Maturana, the shift from the matritic pre-patriarchal culture to modern European patriarchal culture, he suggests that our matritic ancestors were not shepherds because they did not restrict the access of other animals to the herds that they fed. He suggests that they did not do this because the emotioning of appropriation was not part of their daily lives, “in opposition to the raising of domestic animals in the home, which implies a completely different way of living than grazing, among other things because it is the care and attention in the vicinity of the home, not appropriation, what is distinct in the emotioning that defines it” (Maturana, 2003).

In the case of appropriation, which we will focus on now, it is not only paradigmatic in patriarchal terms, but it is also key to understanding the current need to possess in excess and to control nature, conditions associated with consumerist behaviours. It also illustrates what Maturana means by the affirmation that *a radical change in emotioning is a cultural change*. Thus, it allows us to discern what it may mean to seek a similar type of change in our path towards sustainability, asking ourselves, how will it be possible to unlearn “appropriation,” focusing our attention and awareness and imagining a different ordering of things?

“The first step had to have been the unconscious operation that constitutes *appropriation*, that is, the establishing of an operational border that denied the wolf access to its natural source of food, being the animals of the same herd that was the sustenance of the family that created said exclusion. The implementation of this operational border had to have led, sooner or later, to the killing of the wolf. (...)

Taking the life of an animal that one is going to eat is different from taking the life of an animal by restricting access to its food; they are actions that arise from very different emotions. The first case is a sacred act: a life is taken so that another can continue. In the second case, a life is taken to preserve a possession that becomes defined as possession in the same act. The emotions that constitute these two acts, as totally different actions, are completely opposed. In the first case, the animal is hunted as a sacred being and the hunter is thankful; in the second case, the animal whose life is taken is a threat to the artificial order that the person who becomes shepherd creates in this act” (Maturana, 2003).

<sup>8</sup> In his analysis, Maturana considers two particular cases: on the one hand, the basic culture in which all modern Western human beings are immersed, -and, therefore, our current consumption society-, that is, European patriarchal culture, and, on the other hand, matritic culture, which according to authors such as Marija Gimbutas, preceded it in Europe.

This change in the emotioning with respect to killing the wolf, by means of which there was a change from the action of hunting an animal “friend” –with whom food is shared–, to the action of killing an “enemy” animal –who threatened “property”–, must have started with a family or small group, later becoming the dominant emotioning, until it became normal. It is also worthwhile adding that, according to Maturana, this change in the emerging patriarchal family must have been lived as something innocent and without conflict, until it became part of the culture as such and extended to other spheres beyond pastoral life:

“Finally, I also maintain that, due to the human way of generalizing understanding, the network of conversations that constituted the patriarchal pastoral life became the network of conversations that constituted patriarchy as a way of living separate from shepherding, in the form of a network of conversations that entail:

- a) relations of appropriation and exclusion, enmity and war, hierarchy and subordination, power and obedience;
- b) relations with the natural world that have shifted from active trust in the spontaneous harmony of all existence to active mistrust of that harmony, and a desire for domination and control;
- c) relations with living that have shifted from trust in the spontaneous fertility of a sacred world that exists in the legitimacy of a harmonious abundance that takes place in the congruency and natural balance of all ways of living, to the anxious search for security that brings with it a unidirectional abundance that is obtained by valuing procreation, appropriation and growth without limits” (Maturana, 2003).

An in-depth analysis is not necessary to note that the network of *conversations* of patriarchy described here is at the root of the environmental crisis that ESC seeks to address. Now, we will continue with a brief look at the issue of *emotioning*.

### 3.2 Emotions and reasons.

What possibilities can ESC open up to motivate human beings to unlearn the idea that we first *think* and then *feel*? What are the implications for sustainability of the collective understanding that we are emotional beings and that by changing our emotioning we change our actions towards the biosphere that is our environment?

Maturana explains that emotioning appears first in the evolutionary history of living beings, before reasoning: emotioning appears in the origin of cells, when two relational domains arise in the motility of bacteria: backward and forward undulating flagellar motion, and a change of orientation with circular flagellar motion. Reason or reasoning, on the other hand, arises much later, with language in the origins of humans.

“(…) in general, in our patriarchal culture the discourse on our emotions and on emotioning is negative, because emotioning is seen as interference with reasoning. This is a mistake. Human beings are emotional beings as are all other animals. What is particular to us is that we are also rational, as we exist in language, and we use our reasoning, that is, the

coherences in our languaging,<sup>9</sup> in each particular experiential domain, to justify or devalue our emotioning in any sphere that we wish to do so” (Maturana and Bloch, 1996).

At the same time, Maturana affirms that emotions are not states, rather they are lived as relational dynamics in the flow of life, in such a way that changing an emotion is a total change in corporality. “In the physiological dynamic, (...) an emotional change is like changing the brain and, on changing the brain, all systemic corporal dynamics change, in such a way that one becomes a different person. And the preceding statement is not a metaphor. The nervous system does not have a fixed structure as a closed network of changes in the relations of neuronal activity. The same thing happens with the organism as a network of relations of coordination processes of cellular activity.

“(...) An emotional change is a change in the dynamic configuration of the network of relations of neuronal activity and, on producing this change, it changes both the internal organic dynamic as well as the external relational dynamic, because there is a change in the internal and external sensory-effector correlations that the nervous system generates in the organism. The physiology and the relational dynamic change” (Maturana, 1996).

Maturana also explains that the necessary condition for this “relational dynamic” to be healthy is to make contact with one’s own emotions, for which we not only do not receive adequate training, but from the time we are children we are asked to “control” our emotions, that is, to deny them, instead of learning to observe them. This is a result of the fact that patriarchal culture has made value judgments on emotions and, in this context, we are taught to judge them and be ashamed of them. In contrast, Maturana proposes to educate by saying: “look at your emotioning and act in awareness of it,” in order to open up a space for reflection as well as to make the invitation for a responsible freedom to achieve what he calls harmonious *coemotioning*, that is, a spontaneous and not an appraising emotioning, that springs from respect for emotion, for the other and for oneself.

Human living is always emotional and rational at the same time, not one or the other. All rational argument is grounded in premises accepted *a priori* that define its domain of validity. For this reason, changing our emotions changes our reasoning, and it changes our being and our world. At the same time, all rational argument is constructed in the world that emotioning defines, and with the relational changes that this involves, there are consequences for our emotioning. For this reason, all rational argumentation, although it does not determine the emotioning that arises with it, modulates emotioning.

“Emotions predate language in the history of the origin of humanity, because, as distinct modes of moving in the relation, they are constituent aspect of animals. Each time that we distinguish an emotion in ourselves as human beings or in another animal, whether human or not, we make an evaluation of the possible actions of that being, and the different words that we use to refer to different emotions, indicating the different domains of actions in which we or the other animals move or can move.

Thus, when speaking of love, fear, shame, envy, anger... we connote distinct domains of actions and we act in the understanding that, in each of them, an animal or person can only do certain things and cannot do others. In fact, I maintain that the emotion defines the action, and

<sup>9</sup> *Languaging*: to flow in coordinations of consensual coordinations of behaviour. To the extent that a conversation changes the emotion, it changes the flow of the coordinations of consensual coordinations of behaviour; and, to the extent that a conversation changes in those flows, it can change the emotioning. This interweaving of languaging and emotioning is consensual and is established in coexistence.

speaking in strictly biological terms, what we connote when we speak of emotions, are different dynamic corporal dispositions that specify in every moment the action that a certain movement or a certain conduct implies. (For example, a conduct or a gesture is received as a threat or an invitation)” (Maturana, 2003).

Maturana defines *emotioning* as the flow from one emotion to another in the flow of life. In emotioning, the relational dynamic of the living being changes by changing the configuration of its internal structural dynamic, and this change brings about change in the sphere of its possible actions. But, the flow in the emotioning of each living being is not just any flow, it is one that evolves from the coherences of its living, and the coherences of the living of a living being are not just any coherences, but those that correspond to its insertion in the biosphere. In this way, distinct classes of living beings have different possible emotionings, according to their insertion in the biosphere, and the different living beings, as individuals, carry out particular emotionings according to the particular history of their living.

“If you can see the emotioning of a living being in its sphere of existence, you will know how it lives and, conversely, if you know how it lives, you can infer its emotioning. Thus, if you want to know the emotion, look at the action, and if you want to know the action, look at the emotion” (Maturana, 1996).

What Maturana calls *action* is the relational conduct that is defined in its character by an emotion. Accordingly, the hand that touches another hand is a caress (action of caressing), or an attack (action of attacking), depending on the emotion from which the behaviour of touching arises, or according the emotion from which it is received. It is worthwhile noting that Maturana establishes six basic emotions: happiness (laughter); sadness (sorrow, crying); anger (wrath, rage, aggression); fear (anguish, terror), and the two basic forms of love, erotic love and tender love (Bloch and Maturana, 1996).

Finally, it should be specified that one of the things that differentiates us from other animals is that human beings live in language, and therefore we live emotions that are different from other animals. Due to language, we have feelings that are a, “contemplative look in which one touches oneself and appreciates the ‘corporality’ in one’s emotioning.” And, in order to do this, it is necessary to operate in language. According to Maturana, all living beings live in *emotioning*, but only human beings, by operating in language, have feelings.

### 3.3 Change the emotioning, change the culture.

As we have seen in section 3.1, with the *emotioning* of patriarchy, the learning of appropriation, domination and control became the normal way of relating to nature and to other beings, including ourselves, with the assumption that the entire biosphere is at our service. And, as we have seen in section 3.2, in patriarchal culture, we learn to delegitimize our emotions both through an education that teaches us to negatively evaluate them, as well as because emotioning is seen as interference with reason, which is considered superior.

Is it possible to change this *patriarchal culture* and move towards a *culture of sustainability*, with an *emotioning* centred on care and respect for all forms of life, an *emotioning* centred on compassion, inclusion and equality?

For Humberto Maturana, culture is a “closed network of conversations that constitute and define a mode of human coexistence as a network of coordinations of emotions and actions that is realized as a particular configuration of interweaving of the acting and emotioning of the people who live that culture. As such, a culture is inherently a closed, conservative system that generates its members to the extent that they realize it through their participation in the conversations that constitute and define it. Culture is conserved generation after generation” (Maturana, 2003).

Despite being a “closed” network of conversations, a culture is susceptible to change, given that a cultural change is a “change in the configuration of the acting and emotioning of the members of a culture, and as such takes place as a change in the same closed network of conversations that originally defined it” (Maturana, 2003).

From this perspective, in order for a cultural change to come about, the fundamental emotioning that constitutes the domains of actions of the network of conversations that make up the culture must change, as without a change in the emotioning, there is no cultural change.

Maturana alerts us to the fact that we, modern patriarchal human beings, are not aware of this interdependence between the change in emotioning and cultural change, because we are not conscious that all culture, as a network of conversations, is a particular mode of interweaving languaging and emotioning, and because we are accustomed to explaining what we do and what happens to us with our *rational* focus that excludes the consideration of *emotioning* (Maturana, 2003).

As a final point, it is worthwhile indicating that, for Maturana, it is precisely our desires and preferences that can open up for us the path to the cultural change sought by ESC:

“I believe that the history of humanity has followed and continues to follow a course determined by emotions, and in particular by desires and preferences. It is our desires and preferences that determine at any given time what do or do not do, not the availability of what today we connote when we speak of natural resources or economic opportunities, and that we treat as conditions of the world whose existence is independent of our acting. Our desires and preferences arise in us at every moment in the interweaving of our biology and our culture, determining in every instant our actions, and, therefore, what constitutes a resource, what constitutes a possibility, or what constitutes an opportunity in that moment.”

It is because of this that the reflection on our emotions, preferences and desires, discovering the way in which they constitute and guide our actions in our living, determining what we do as members of a culture, is fundamental if we seek to move deliberately towards a *culture of sustainability*.

## 4 Conclusions

As we have seen, the work of Humberto Maturana offers us elements that can enrich the analytical framework and practice of ESC, based on addressing emotions as predating reason and as constituent elements of what it means to be human, helping us to unlearn patriarchal emotioning and to learn a new emotioning, that is, the emotioning of a culture of sustainability. It opens our heart and mind to recognize the interdependence of bringing about change in our emotioning and cultural change, and it demonstrates that emotioning is learned, and therefore susceptible to being *educated*.

In this context, we can suggest that an ESC that seeks an *emotioning of sustainability* contributes to:

1. Repositioning emotions in the analysis, discourse and practice of ESC, with a focus on a non-appraising legitimation and integration with the rational sphere.
2. Deepening the reflection on patriarchal thought and its current environmental implications, such as aggression, appropriation, exclusion and war –the power to take a life– as the fundamental drive of the dominant culture.
3. Identifying the elements of the *emotioning of the culture of sustainability*, such as collaboration, care, understanding, and inclusion, to foster the change to the *sustainability conversation*, the centre of which would be the power to give and preserve life.
4. Recognizing the conditions of emotional change in which the coordinations of actions of a community may change in such a way that a new culture arises, taking into account that the action is the emotion and vice versa and, therefore, a change in the emotioning implies a cultural change.

Finally, I would like to add that I believe that if we better understand our emotional facet, rescuing it from the devaluation that labels it “irrational” and honouring it by living our emotions not as contradictions, but as a constituent element of our biology of emotioning, then we can move towards the cultural change that the imaginary of sustainability requires: an imaginary in which we are no longer *environmental warriors*, nor are we on a *crusade to save the planet*, but one in which we acknowledge ourselves as biologically loving beings, for whom love is not a virtue but a spontaneous way of relating to each other:

“Our being biologically loving beings is what, in fact, constitutes the operational basis of the well-being of our living and coexisting in all aspects, conscious and unconscious, rational and not rational, in emotion, in operational and intellectual, as well as material and spiritual, creativity, in a contemplative evolution in the conscious and unconscious spheres. And it is because we are fundamentally loving, as a result of our biological evolutionary history, that in situations of pain, threat or catastrophe, what ultimately saves us and guides us on our path to recovering well-being is the biology of loving” (Maturana, 2003).

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