

Shaping the Noosphere: Geoethical values and spiritual resistance in Terres de l'Ebre, Catalonia, Spain

Moldeando la Noosfera: geoética y resistencia espiritual en les Terres de l'Ebre, Catalunya, España

 **Francesc Bellaubi**
Universidad Iberoamericana Puebla - Mexico
Puebla, Mexico
bellaubi@hotmail.com

Abstract

The concept of the Noosphere is of great importance when looking at the values underpinning the technocratic artifacts and technocracies (human physical technological objects and knowledge processes) by which Humans relate to the Geosphere through other human beings. In this sense, the Noosphere may inform geoethics as an environmental, social, and spiritual praxis and thinking aiming at ecological justice. The concept of the Noosphere represents the coexistence and coevolution of Humans and the Geosphere, overcoming the dichotomy between instrumental materialistic and intrinsic ecocentric values but considering the meaning of a constitutive dimension. Thus, the Noosphere becomes a concept for reconnection with the human community, the natural world, and the Divine, and develops into an ecological mysticism that, in turn, unfolds in resistance in hope as a kind of spiritual activism. The theoretical framework is illustrated with the case study of the Terres de L'Ebre in Catalonia (Spain).

Keywords: geosphere, noosphere, geoethics, mystical ecology, resistance.

Resumen

El concepto de Noosfera es de gran importancia cuando se analizan los valores que sustentan los artefactos tecnocráticos y las tecnocracias (objetos tecnológicos físicos humanos y procesos de conocimiento) mediante los cuales los Humanos se relacionan con la Geosfera a través de otros seres humanos. En este sentido, la Noosfera puede informar a la geoética como una praxis y pensamiento ambiental, social y espiritual que apunta a la justicia ecológica. El concepto de Noosfera representa la coexistencia y coevolución de los Humanos y la Geosfera, superando la dicotomía entre valores instrumentales e intrínsecos, considerando una dimensión constitutiva de los mismos que da significado a la existencia humana y a la geosfera. Así, la Noosfera se convierte en un concepto de reconexión con la comunidad humana, el Mundo natural y lo Divino, que se desarrolla en un misticismo ecológico y una praxis en forma de resistencia en la esperanza como activismo espiritual. El marco teórico se ilustra con el caso de estudio de las Terres de L'Ebre en Cataluña (España).

Palabras clave: geosfera, noosfera, geoética, misticismo ecológico, resistencia

1. Introduction: Technopoly and the ecological wars

Today, more than ever, it is evident that Humankind has broken the ancient harmony with Nature, which means a rupture of the human being with himself, since Nature shapes the space in which humans develop as such, not as individuals of a collectivity but as persons of a community, creating a space of interpersonal relationships, a community in a social geospheric space. Whilst “the growing power of humankind poses the problem of a selection of strategies of social development which are capable of guaranteeing not only an existence but also the joint evolution of Humankind and the environment” (Moiseev et al., 1983, p. 1), human’s dependence on Earth is a matter of fact (Archer et al., 1987).

The Anthropocene undeniably makes the importance of the Geosphere in providing mining and energy of raw materials in technological manufacture, bearing different land uses for urban development, agriculture..., as well as being the sinkhole of waste and used manufactured products. Thus, the Geosphere is key in maintaining the current development paradigm of Technopoly (Postman, 1993). Under Technopoly, extractivism (Acosta, 2016) appears as a kind of pragmatic and sometimes opportunistic management (Bellaubi and Boehm, 2018) through intensive and massive exploitation as well as use of natural resources. Extractivism becomes intimately related to pervasive and chronic poverty, an integral poverty that is not only material but spiritual; extractivism is sustained in consumption patterns that have cleared and colonized human mind and soul (McIntosh, 2020). The Global Technopoly represents a paradigm (Kuhn, 1970) sustained in the scientist fallacy that makes us believe in a permanent economic growth. Science and technology appear as absolute truths in order to control, dominate and profit from Nature for the sake of human satisfaction. However, as stated by H. Daly (1987), a change in production technology would not be sufficient even to achieve a steady-state economy (Daly, 1980). Indeed, as pointed out by Tortosa (2011), what we can observe is that the development paradigm is in fact a poor-development paradigm since it is based on an idea of efficiency that tries to maximize results, reduce costs and achieve the incessant accumulation of capital. Although, in the recent years a number of development alternatives such as green growth (OECD, 2015) are enlarging the concept of sustainable development, the concept remains very controversial which help keep groups with very different, even opposing, interests and values in roughly the same conversation (Hadsell, 1995). Furthermore, trying to tie the environment with development may have unpredictable consequences following the Principle of Uncertainty that states in non-linear systems where determinism does not apply, the uncertainty in the measurement of the initial state causes the quality of the information to deteriorate rapidly over time (Riechmann et al., 2019). Thus future states of the system cannot be predicted with certainty.

Latour (2019) points to globalization, the increase in social inequalities and climate denialism as phenomena that characterize the postmodernist and transhumanist Anthropocene: injustice, poverty and ecological collapse are all related issues. Ongoing elaboration of epistemologies of the South (de Sousa Santos, 2011) calls for confronting and resisting the whole of the western economic and academic neocolonial development paradigm by taking into consideration a values approach. For Gudynas and Acosta (2011), Harmonious Coexistence or Good Living paradigms are not new instrumental development alternatives, but options based on features like the rejection of classical developmentalism and distinct ethics (e.g. intrinsic values in Nature) that go further than a simple degrowth, as proposed by Latouche and Harpagès (2011). Harmonious Coexistence recovers the idea of well-being in a broader sense, transcending the limitations of material consumption, and recovering the emotional and spiritual aspects of Human in Nature. Far from a mere aspiration of return to the past, or of indigenous mysticism, Good Living shares and interacts with other world-views in the search for different relationships between Human and Nature as a space of encounter.

The Anthropocene has brought humans’ relationship with the Geosphere to the limit. This limit can be expressed in terms of diverse kinds of ecological wars (Yanitsky, 2020), meaning “all kinds of harm which is caused by natural, human and complex disasters to the natural and social ecosystems.” (Yanitsky, 2020, p. 3), endangering the coevolutionary patterns of the Biosphere (Vernadsky, 1926). Furthermore, negative impacts of anthropic activities on Nature, as a result of current development patterns, are responsible for the misery of other humans (Oleksa, 2019; Ballesteros, 1995) and, although there is no causality or correlation, but an ethical imperative, the way in how we relate to other humans defines our relationship with the natural World. Indeed,

Any vision of the world that does not recognize the central role of the anthropogenic impact on terrestrial subsystems and as a consequence does not attribute to humanity the responsibility to take action to safeguard itself and the planet, highlights a profound cultural and material crisis in human beings. (Peppoloni & Di Capua, 2020, p. 3).

As stated by Peppoloni and Di Capua (2020), “geosciences are an indispensable support for society to identify effective strategies and solutions to current global environmental problems.” (Peppoloni & Di Capua, 2020, p. 1). In turn, geoethics “consists of research and reflection on the values which underpin appropriate behaviors and practices, affecting Human-Earth system interactions” (Peppoloni & Di Capua, 2020, p. 2) dealing with the ethical, social and cultural implications of geoscience knowledge, research, practice, education and communication, and with the social role and responsibility of geoscientists in conducting their activities (Di Capua & Peppoloni 2019). The same authors portray geoethics as an ethic of virtues with the principle of responsibility at its core, to ensure recognition and protection of the intrinsic value of any living and non-living element with which the human being interacts on the planet. This recognition dimension highlights the importance of ecological justice (Kortetmäki, 2016) in geoethics.

Perceiving, sensing, feeling geological landscapes as the result of the constant dialogue between human beings and the Geosphere reinforces the idea that there are no wild places, only places of encounter and mutual transformation, where geospheric places are not only political arenas and spaces of power or environmentalities (Rutherford, 2017), but also grant meaning values that highlight the geological and spiritual power of the space reframing ecological justices as spatial justice (Soja, 2010). This underlying thinking moves the human agent-centered vision of geoethics towards a more decentered humanism.

A decentered humanism is a humanism which is not anthropocentric, is not a type of humanism where human beings feel separate from or above Nature, but rather encourages the sense of being very much within Nature, and building a form of symbiosis with it. This thinking overcomes the paradigm “subject-object” which derives from a concept false status of the essence of the human. We can say that the first truth of the being human shows us as Nature, and at the same time as radically different from things. Versus all attempts to reduce the human to exalt Nature, or to save what is human at the expense of Nature, true naturalism coincides with true humanism, with true personalism (Riechmann et al., 2019, p. 14).

The objective of this research paper is not to explore the hows in overcoming integral poverty or the whats in fighting ecological injustice, but the whys of exploring a “transit” from the Anthropocene to the Anthropophany (Cortazar, 1963). Understanding the Human as Nature, not only from a constitutive biological sense but a spiritual essentialist in a metaphysical sense, the Geosphere constitutes a path of Humankind transcendence, giving meaning to his existence; Humankind’s goal is to become a universal being, to know himself through creation. This “mode of being” provides the hope to transform the present as P. Ricoeur would say (Clawson, 2013) and suggest a geoethics that is deeply inserted in a Philosophy of Nature (Nasr, 1997). Thus, the paper seeks to understand the values that sustain technocratic artifacts, the relationship between human beings and the Geosphere through the relationships with other humans, the transmission of these values through identities, their transformation in ideologies, and finally the transfiguration of values in technocratic instruments.

The method in how the research has been carried out follows an abductive reasoning. Abduction involves interpretative epistemologies which insist that ‘reality’ cannot be understood independently of how we observe and interpret it (Carson, 2008), establishing a diatopical hermeneutics (Panikkar, 2000), through an anadialectic methodology (Dussel, 1997). The research results in an interpretation of lived experiences where the author of the paper is both an observer and subject of his own research following a sociological intervention technique (Touraine, 1980). Sharing the views of McIntosh (2008), a well-known scholar and activist in radical human ecology, the interest of the author of this paper is to achieve findings that stimulate awareness of spirituality, a useful definition of which might be the dynamics of that which gives life.

2. Theoretic framework: The Geosphere and the Noosphere

The Geosphere results from the interface between biogeochemical cycles of the lithosphere, the hydrosphere, and the atmosphere (Williams & Ferrigno, 2012). Vernadsky (1926) divided the Earth into envelopes identifying the upper Geosphere with the Biosphere, “named Nature by Humboldt or Gaia by Lovelock” (Grinevald, 1998). According to Vernadsky, the Biosphere connects living organisms, the cosmic energy flow and the cycling of chemical elements.

The Earth System is constituted by the Geosphere and Biosphere (Williams & Ferrigno, 2012). “The biosphere represents an integrated system, whose evolution is determined by the interaction of its biotic and abiotic components. Humankind is a natural element of the Biosphere, and his existence outside the Biosphere is unthinkable.” (Moiseev et al., 1983, p. 1). Humans relate to the Geosphere through technocratic artifacts and its technocracies on the basis of scientific-technological knowledge and institutional frames (Bellaubi & Lagunov, 2020; Bellaubi & Arasa, 2020; Bellaubi et al., 2021), defining a reality shaped by human and geosphere agency. This reality is formed by a diversity of organizational autopoietic subsystems (Luhmann, 1995, in Salcedo & Ortiz, 2014), which under Anthropocenic conditions are characterized by a rapidly growing alteration of biogeochemical cycles by human actions (impacts) that, in turn, disturb geodynamic processes affecting anthropic socio-economic activities (vulnerability). These socio-biotechnological subsystems (SBTs) (Yanitsky, 2020), behave as self-referential dissipative systems that are capable of finding an internal equilibrium within larger complex systems (Prigogine, 1996), co-evolving far from equilibrium into new equilibriums when unexpected disruptions happen, thus, “dynamical instability provides the conditions to generate a coevolutionary pattern of nature” (Prigogine, 1996, p. 125).

The Geosphere is not only the substrate of the Biosphere in a biogeochemical sense, but also sustains communities of life, through which men and women through work and words relate to each other, and in communion with the Geosphere, conform the Land as a symbolic representation of this union. Therefore, the Geosphere supports communities of life not only in a biological sense, but also a spiritual sense. This essentialism (McIntosh, 2008) represents the essence of the Human or the profound interconnection to a geospheric place along with the stories of men and women that shape the history of a place through time. The “sense of place gives rise, respectively, to a sense of identity, values and responsibility. The latter feeds back into reinforcing community of place.” (McIntosh, 2008, p. 9). The essentialism dimension brings together the human soul and geospheric soil, which far from having a reductionist or determinative translation, are inclusive (McIntosh, 2012), highlighting the capacity of the human soul to belong to a place in the World. Furthermore, this dimension recognizes Geosphere manifestations as common beings (Bellaubi & Bustamante, 2018) giving a hierarchical sense and reclaiming their intrinsic values considering the predominant utilitarian-instrumental views where water, minerals and soil, as georesources, are presented as independent components of the Geosphere. Álvarez (2019) refers to intrinsic value is the value within an object itself, whilst instrumental value refers to the value in the use of an object to accomplish something.

By adopting an essentialism view to look at the Human-Geosphere relationship means considering constitutive meaning values that give a sense of community that is bound to geospheric memories. Indeed, the human being relates to other human beings through labor and language as energizing cultural forces in a geospheric space, and identifies with this space through his experiences, memories, folklores and future dreams in his ability to relate and transform the Geosphere of which the human being is also a part. Therefore, the Geosphere offers the human being the ability to interpret himself. Lakes, seas, mountains... constitute the substratum and support of life and, as such, of the human being in the most spiritual constitutive dimension of it. Yet, the human being in trying to understand himself faces the obviousness that the answer is not the conscious self or ego (Jung, 1969, in McIntosh and Carmichael, 2016), nor in a quantifiable empirical reality, but in the spiritual hierarchic interconnectedness with the World, the Creation, or whatever name we want to give it. This way of seeing things inevitably refers us to the transcendent. Our authentic existence refers us to a hermeneutic process in the historical coevolution of a geospheric space that unfolds as we walk through it. In this sense, life constitutes a mystery not to be understood but to be lived, building a symbolic narrative as the most basic way of making sense and interpreting our lived experience (Ricoeur, 1959).

However, the Human-Geosphere dialogue does not only refer to the relationship between the Human and Geosphere, because they are constitutively the same, but it expands inwardly and towards other human beings. Indeed, from a physical point of view, we are made up of the atoms of innumerable biogeochemical cycles that make up the Geosphere, but we are more than atoms borrowed from rocks (Tucker, 2004). The emergence of acts (perceiving, sensing and feeling) embodied in a human being defines the person as a human identity, (González, 2021) so the human being becomes the personified emergence of the Geosphere that looks at herself. Our perception of the World through the senses, and specially the feelings of love and suffering towards others, refers us to our deep inner Self or our human soul that is not separated from our material body. A human's dialogue with the Geosphere refers to the most intimate within the human being, a process that is shared not by an organized collectivity of individuals, but a community of persons in a collective unconsciousness shaping archetypes: a 'sobornost' or the "communion through a common attitude towards this or that spiritual value" (S. Frank, 1930, in Bischof, 2007). This collective and personal lived experience leads the human being to humbly accept in his heart that the geospheric reality of "being" exposes us into a transcendence that surpasses us, the sensing of the Oneness as a radical alterity that transforms us. This openness transcends into the realm of the sacred (Velasco, 2007), the Divine, and the Geosphere becomes "The Way" to it (Bellaubi, 2021a; Bellaubi, 2021b). To look at the Geosphere is to recognize in it the face of the Other human being, the Infinity (Levinas, 1997). The rupture of the harmony between Human and the Geosphere is, thus, the rupture with the Human himself, a negation of himself, of his de-humanization, the de-religation of this World and, therefore, a rupture with the Whole, God, the Creator or the name for the transcendent is.

In this way, the Earth System becomes a multiple and interlinked conglomerate of socio-biotechnological spiritual subsystems (SBTSs), where the Human-Geosphere relationships expand in three dimensions forming a cosmotheandric reality: cosmic, human and divine (Pannikar, 1999) or material, social and spiritual, which is something of fundamental importance when we want to have a geoethical approach to the Human-Geosphere relationship on the grounds of ecological justice. In the same vein, McIntosh (2008) sees the interface of the Human and Geosphere under the Triune Basis of Community, as the interconnection between the "Soil", "Society", and "Soul"; a "community that is made with place (soil), with one another (society) and with deep human values and meaning (soul)" (McIntosh, 2008, p. 22). This view of reality unfolds in the cycle of belonging (McIntosh & Carmichael, 2016): 1) rediscovering a sense of place and recovering memories that link us to the Land, 2) that contributes to give us a sense of identity recognizing us within a human community, 3) that in turn encodes a sense of values in how we relate to others - and through them with the Geosphere, underpinning the technocratic artifacts and technologies of knowledge and institutions, 4) reconciling Humans with the Geosphere by activating a sense of responsibility to revise how the future could be. All these elements are at the core of a spatial ecological justice, nourishing geoethical thinking. These approach at the Human-Geosphere relationship surpasses an ethic based on the responsibility principle (Jonas, 1984) and goes beyond ecocentrism (Leopold 1949; Naess 2008) Gaian lovelockian or animistic views (Taylor, 2009), or an ecology of stewardship (Francis, 2015). It goes also further ecosocialism (Kovel, 2001) and social ecology (Bookchin 1982). By using a radical human ecology approach and putting justice at the core of geoethical thinking, geoethics may aim to conform to a critical geospheric pedagogy that transforms the human being into a "Noospheric Human" (Sikorskaya et al., 2016; Khairullina et al., 2019) as anthropophany, by rebuilding the sense of community and reclaiming the intrinsic value of the Geosphere.

In spite of this rationale, "we lack a comprehensive theory that explains the integration of culture and natural science as a global phenomenon." (Westbroek, 1991, in Samson & Pitt, 1999), and it is here where the concept of the "Noosphere represents a unified interpretation of humanity's relationship with Nature" (Serafin, 1987). The concept of the Noosphere has multiple interpretations between scholars (Bellaubi 2021a). Initially coined in parallel by the Russian geochemist V.I. Vernadsky and the French Jesuit paleontologist Pierre Teilhard de Chardin in the middle of the XXth century, "The noosphere broadly interpreted as the world transformed by humans and human thought. It is produced and maintained by increasing complexity of human interaction in cultural, social, biological and physical environments" (Wyndham, 2000, p. 87). Scholars have emphasized different dimensions of the Noosphere in that it seems to be an interesting complementarity with the understanding of SBTSs: 1) the active shaping of the planet through reflexive human thought (Vernadsky, 1938, 1945); 2) the spiritual embodiment of human thought into a unified whole, an evolving collective human consciousness (Teilhard de Chardin, 1959); and

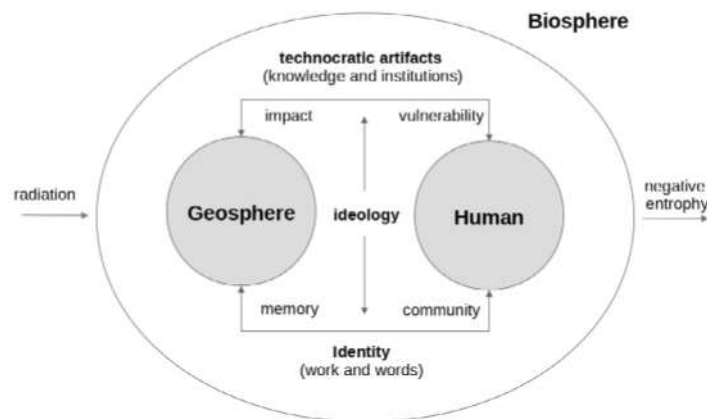
3) a self-organized, self-regulating system of planetary scale (autopoiesis), characterized by structural and functional unity of natural and social subsystems (Khairullina et al., 2019).

Considering the most materialistic understanding of the Noosphere by V.I. Vernadsky was influenced by the Slavophiles' spiritual concept of sobornost (Bischof, 2007) and the diverse complementarity of contributions by different scholars, the Noosphere may be revisited as a coevolutionary Human-Geosphere concept, considering not only the human physical objects and processes in their interaction with the Geosphere (hereby technocratic artifacts) that transform biogeochemical cycles and geodynamic process affecting human activities, but also the identity values that underpin these technocratic artifacts. Values in the relationship with the Geosphere are transmitted by identities that transform in ideologies and transfigure into technocratic artifacts (Bellaubi, 2021b). Human values in the relationship with the Geosphere may be utilitarian/instrumental or intrinsic, but taking an essentialism perspective (McIntosh, 2008), allow overcoming the utilitarian-intrinsic dichotomy. Considering the values underpinning technocratic artifacts may also lay in meaning constitutive values (James, 2019) that, embedding intrinsic and instrumental values (Healing Earth, 2020), define identities as the collective unconscious in the history of humankind, and the multiple and unknown stories of humans in their spiritual communion with the Geosphere as the geological substrate of life.

Thus, the Geosphere becomes a constitutive entity of the Human whilst the Humans modify the biogeochemical cycles, the memory of the Geosphere as a morphic resonance (Sheldrake, 2012), through time. This Human-Geosphere embodiment emerges as an identity for human communities in communion with the Geosphere in the spiritual sense of ultimacy, recovering the connection with the Whole, the Transcendent, the Divine, through the Land. The Land is the geospheric place where the human "being", as part of the humankind community, inwardly experiences the intimate feelings towards the past in the memory of these places in the relationship to our ancestors, and from the future backwards as a way to transform the present, a geopotential (Archer et al., 1987). The Land as a symbolic representational space gives the sense of place, a feeling of wonder, amazement and reverence, grounding us in this World but that trespasses the World. In this way, the Land becomes sacred, a place of revelation of life, as novel gift, a hierophany or a manifestation of the Divine that unfolds in a love creating power against the suffering of the ecological wars; the identity is transformed into an ecological mysticism ideology. The idea of a Divine as a Creator (God) of a "creatio ex nihilo" typical of the Judeo-Christian tradition shifts into a God that, "did not make the things, but made them make themselves" (Frederick Temple, 1884, in Casadesús, 2012, p 71): a *creatio continua* (Moltmann, 1985). The inseparable cosmotheandric union between Humans and the Geosphere, shaping the Biosphere, exposes a gnostic or metaphysical knowledge, a hierarchy under a principle of unity that penetrates all levels, so that the perceiving, sensing and feeling of the Geosphere constitutes a mystical experience of revelation to humankind. In this way, the Noosphere preserves an integral vision of the universe, and the World, the Creation, and constitutes a path of the Human's transcendence giving meaning to his existence; the Human's objective is to become a universal Human and to know himself through Creation.

The ability for humankind as a species, to shape the Biosphere through energy of the human culture (Vernadsky, 1938, 1945), makes a new state of planetary organization possible and the Noosphere becomes the active moral geospheric force of the planet through reflexive human thought. Following on this idea, Moiseev (1989) stated the concept of the Noosphere as the governance of the Earth System under a moral ecological imperative, which becomes a key concept in geoethical thinking. The main condition for the coevolution of the Noosphere is the deep transformation of the vector of civilization's development from the material into the spiritual dimension of the human being (Khairullina et al., 2019).

Figure 1. The Earth System as a global social biotechnical spiritual system under the concept of the Noosphere



Source: Elaborated by the author

3. Geoethical dilemmas

The Human-Geosphere relationship may be expressed as a dialogue: a noospheric production of space (Lefebvre, 1991) mirroring the three dimensions of the SBTs. The material geospheric place, a physical perceived and sensed landscapes and geomorphologies, is conceptualized as a territory or a social construction by the human reason, and spiritually felt and experienced by the human being in a symbolic way in the collective unconsciousness making sense to us as lived space; the Land as a constitutive identity value for human beings, not as single individuals but as a community. These three geospheric spaces coexist and coevolve giving a sense of unity where the Land constitutes a symbolic spiritual reality that can be only apprehended by the soul as a human act shared by a community and defining cultural identity (Álvarez, 2019) as something extended to humankind.

The Noosphere allows a “photographic” icon as representational lived space (Bellaubi, 2019) in the form of Land holding identity values. Geoethical dilemmas allow to express a diversity of images of the reality, noospheric spaces, as contingent scenarios. Geoethical dilemmas do not look at the Geosphere only in the physical sense, but in terms of physical, social and spiritual production of space, meaning how Humans relate to the Geosphere manifestations through other Humans within a representational space. This dialectical production of space (Günzel, 2019) makes it evident that reality perceptions of the Geosphere by sensations differ from reality as conceptual construct and the reality experienced and lived collectively, all being the same reality. “How we perceive objects is always shaped by how we conceive and act on the object with the sets of tools, concepts, expectations, and values that we bring to the object” (Riechmann et al., 2019). Geoethical dilemmas are a method to deconstruct a conceptual reality to understand and sense, to interpret, the values underpinning technocratic artifacts and their technocracies (Bellaubi & Lagunov, 2020; Bellaubi & Arasa, 2020; Bellaubi et al., 2021; Peppoloni et al., 2019). Technocratic artifacts do not direct human actions; rather, humans, although they may be affected by their outputs, are free to make decisions (Prada-Rodriguez, 2019). Thus, it is possible to correct the technocratic artifacts in how Humans relate to the Geosphere and the resurgence of a new Human (Gonzalez, 2021).

The main goal of a geoethical dilemma is to take a prospective vision on how Humans wish to relate to the Geosphere, through other humans, by seeing the problem scientifically, evaluating the ethical attitudes, reflecting on their meaning, and acting to attain ecological justice, following the steps of the Ignatian Pedagogy (Healing Earth, 2020). The geoethical dilemma develops as a critical geospheric pedagogy (Freire, 1970) creating value. The value that pedagogy creates (Kumagai, 2000) is solidarity based on identity allowing the recovery of memories, the recognition of the Geosphere as a common being and the Human reconciliation with it, through rebuilding community and, thus, influencing cultural change. Largely forgotten in the discussion about ethics, solidarity (Tischner, 2005) acts a leverage point (Meadows, 1999) that facilitates the practice of a values-based ecologic dialogue as a critical thinking process (Postman &

Weingartner 1969) that seeks to comprehensively achieve a common value for an envisioned future (Küng, 1991). Solidarity does not aim to share benefits but to relieve the burdens (Bellaubi, 2021b). A values-based ecologic dialogue means a dialogic, as opposed to dialectic, dialogue where positions that are believed to hold true values may be enlarged, complemented and enriched with the others' values (Melloni, 2011).

Cultural change (Knott et al., 2008) works on attitudes, values and aspirations between human beings, when Humans' relationships build up trustful relations and create a sense of community. Cultural change has its base in cultural capital (Bourdieu & Passeron, 1978), where the human capacity to create change is not only based on knowledge and capacities (productive capital) that largely have failed in addressing behavioral change, but develops a self-critical spiritual attitude towards the relationship with the Geosphere that defines credibility to the others and the role of each of us in leadership (McIntosh & Carmichael, 2016).

Considering the work of Knott et al. (2008) and Stern et al. (1999), geoethical dilemmas consider individual or collective values are rationalized as attitudes that confront social costs and gains and, in turn, become potential actions in the use of certain technocratic artifacts. The rationalization of values tries to give a sense of coherence to the human agency (Antonovsky, 1987, in Golembiewski, 2010) in terms of apprehension, conceptualization and sense of self in the space but equally considering Geosphere agency. However, as attitude is the result of a rationalization of values, it may or may not mirror the stakeholders' values (e.g. a park or a protective fence is a technocratic artifact whereby underlying intrinsic values are rationalized through the need to protect a specific place with an associated social cost or gain).

Geoethical dilemmas are presented in form of a payoff matrix representing the two main stakeholders' attitudes reflecting instrumental and intrinsic values in their relation with the Geosphere, leading to four possible scenarios; although possible outcomes are multiple depending on how we formulate the geoethical dilemma. Scenarios are geopropective, possible and/or desirable situations of the Noosphere and may be represented through maps (Bellaubi & Arasa, 2020; Bellaubi et al., 2021). Scenarios are quantitatively described in terms of Geosphere governability, meaning human impact (I) on the biogeochemical cycles of the Geosphere and the resulting socio-economic vulnerability (V) of the population exposed to the alteration of the geodynamic process. Scenarios can be quantified in terms of credibility as a result of humans' attitudes considering the values regarding the Geosphere when relating to other humans, the latter expressed in terms of social costs and gains by an external observer over the impact and vulnerability of the scenario. The human's attitude scores 1, otherwise it scores 0. Social costs or gains score 1 or 0, and are subtracted (if the actor's attitude is 1) or added (if the actor's attitude is 0), respectively (Bellaubi et al., 2021). Social costs and gains are related to socio-cultural reciprocity. It is possible to assume that within social groups with strong cultural links, to break the rules or to have an attitude that does not follow socioculturally accepted standards has a social cost (portrayed as the "rebel" attitude). Therefore, humans may not be interested in reproducing their values in their attitudes. Conversely, for groups with less social cohesion or a more open-mind, the social costs transfer into social gains, or the "innovator" attitude (Bellaubi et al., 2021). Scenarios scored with attitude 1 for both stakeholders correspond to the current Geosphere governability situation, whilst scenarios with higher credibility may be associated to ecological justice. When current Geosphere governability shows a situation of "ecological war", then it is necessary to examine the identity values in detail to increase credibility towards a scenario of ecological justice. Scenarios' credibility may change when considering solidarity, reducing the involved social cost to related attitudes, or changing the attitudes themselves, inducing cultural change. An illustrative example of a geoethical dilemma may be given from the well-known classic drama of Romeo and Juliet by Shakespeare (Table 1).

Table 1 The Romeo and Juliet ethical dilemma

The Montague and the Capulet families	Romeo follows family's advice	Romeo follows his heart
Juliet follows family's advice	Scenario 1 Disgrace for Romeo and Juliet and confrontation between the families Credibility Juliet = $0+0 = 0$ Credibility Romeo = $0+0 = 0$ Credibility alternative = 0	Scenario 3 Juliet quits, disgrace for Romeo Credibility Juliet = $0+0 = 0$ Credibility Romeo = $1-0 = 1$ Credibility alternative = 1
Juliet follows her heart	Scenario 2 Romeo quits, disgrace for Juliet Credibility Juliet = $1-0 = 1$ Credibility Romeo = $0+0 = 0$ Credibility alternative = 1	Scenario 4 Romeo and Juliet die and reconciliation between the families Credibility Juliet = $1-0 = 1$ Credibility Romeo = $1-0 = 1$ Credibility alternative = 2

Source: Elaborated by the author

The Tragedy of Romeo and Juliet is well known because they both follow their values and have authentic attitudes that lead to the last consequences. Although their attitudes do not make them very credible to their families in the short term, their death - as an act of solidarity - will suppose the reconciliation of the Montagues and Capulets, two families at odds in the Middle Ages city of Verona and the “real” tragedy of the story. If Romeo and Juliet would have followed their families’ advice, they would have been unhappy for the rest of their lives, and their families would have remained confronted. Romeo and Juliet hold a “rebel” attitude and they did not remain loyal to the establishment values expressed by guarding lineage and honor. Scenario four, the most credible, portrays Romeo and Juliet sharing their own suffering carrying the social cost of being repudiated by their own families; the same social cost that will allow the families to reconcile. How could Romeo and Juliet have avoided their tragic end? Or what could have been the “happy ending” to the love of Romeo and Juliet? One way might have been to show their respective families that their relationship was a means to resolve disputes between Verona’s nobles. Eventually both families would benefit in terms of creating a more stable political situation by reinforcing identity values, not by exclusion but by mutual inclusion, not looking only at the interest of two noble families but at the whole community trade of Verona. In doing so, Romeo’s and Juliet’s love could have been consented and their social cost removed. The interesting point of this example is that dialogue is key in understanding, sensing and reconciling different values that lead us to cultural change.

4. Places of resistance and hope

Geoethical dilemmas constitute a geopropective approach aiming to establish possible and desired future on the basis of ecological justice scenarios that overcome the instrumental/intrinsic values dichotomy in the Human relationship with the Geosphere. In this context ecological justice implies the recognition of the intrinsic values of the Geosphere as well as the instrumental values of georesources as commodities and their redistribution to attain social justice, thus ensuring human capabilities develop opportunities that a person finds valuable (Kortetmäki, 2017). However, ecological justice is only possible when Humans rebuild the sense of community through the power of work (Weil, 1994) and the discursive power of words framing community relations - Weil gives the greatest spiritual significance to physical labor and places it at the center of all social organization that aspires to justice (Weil, 1994) - in communion with the Geosphere. Remembering the meaning values of our ancestors in relation to a geospheric place that forges an identity, reconciling the old with the new or what is given to us by a legacy of ecological wisdom and knowledge with the new technological creations of the human mind, thus, gives sense to the energy of human culture. Correcting the technique and sustaining it with identity values is possible when the spiritual connection between Humans and the Geosphere resurfaces giving birth to a new Human, the Anthropophany. This is expressed in the form of ecological mysticism (Bellaubi, 2021b) and has a deep spatial dimension of justice as the interconnectedness of communities to a place in the most essentialism sense of being a Human “incarnated” in the World (or the sense of grounding according to McIntosh, 2008). Perceiving, conceptualizing and sensing the experience of the Geosphere as constitutive of the Human being, the Geosphere awakes spiritual feelings in a way that can be interpreted as a hierophany within the community, opening a way to the Divine that manifests in all that has been created.

Geoethical dilemmas allow recovering a lived geospheric space, remembering what happens in a place through re-establishing memories and rebuilding communities, thus recognizing the symbolic power of the Land and her identity values. Resisting on identity values provides hope not only as a consolation in suffering, but also against suffering (Moltmann, 1967). This is a hope of ecological justice that in turn inspires hope, a hope against all hope that breaks into our present day as transformation, opening the horizon and making sense of our history (Bohlinger, 2017). Our attitudes become truly authentic, credible and illuminate the legitimacy of our actions; a constellation, or meaningful pattern of plausibility values and attitudes that allow a path of action or holding of position to be truly ecologically accepted (McIntosh, personal communication). Instead, when our attitudes do not refer to our identity values, our actions lack of legitimacy.

Ecological mysticism (Bellaubi 2021b) arises from the profound understanding of the constitutive values of human beings, resulting in the spiritual relation with a geospheric place that holds timeless memories and puts us in contact with transcendent feelings. These feelings can move us to foster a desire to nurture our surroundings as a Whole, and are expressed by attitudes of being authentic and credible, giving legitimacy to our actions (Verschuuren et al., 2021). These attitudes confront the Technopoly paradigm, and thus call for an inward resistance, a resistance within a geospheric place, the land and their people, as a single unity of two beings, in hope. According to Taylor (1995), “ecological resistance is an evolutionary expression of self-defense, a necessary adaption for re-harmonizing the human and nonhuman words.” Ecological mysticism conforms a collective state of the soul expressed in relation to a geospheric place, so the embodiment of the community in a geospheric place, where the land constitutes a space of liminality or transition (Turner, 1969). Places of ecological mysticism are “Great living Museums”, heterotopias (Foucault, 1967), places of “nostalgia” (Robinson, 2006) that act as a mirror reflecting the knowledge based on one’s own spiritual experience with reality through the emergence in our soul of a spatial collective unconsciousness, recovering memories; but also, look at the horizon fostering imaginaries of hope, moving from an old order to a new one, a change of time, where the inner emerges (This is the idea of Pachakuti: a vision of cyclical time according to Andean cosmology).

4.1 Spiritual resistance in Les Terres de l’Ebre (Low Ebro Lands)

Located in the South of Catalonia, the irrigated valley of the Ebro River, and the olive trees at the foothills of the Tortosa-Beceit mountain range, shape the distinct Mediterranean landscape of the lowlands of the Ebro River Basin. The region was populated from the Neolithic and Bronze Ages, as shown by the existing cave paintings (Garcia i Rubert, 2005), and later by the Ilercavons (ancient Iberian pre-Roman people). The main settlements follow the riverbanks, one of which is the historical city of Tortosa, the main center (circa 36000 inhabitants in 2017). Tortosa and the region have a long history of splendor during the Muslim rule, the Middle Ages and the Renaissance.

The name of Terres de l’Ebre defines a territory that approximately corresponds to the “Veguería de Tortosa”; the vegueries were the administrative divisions of the Catalan principality during the Middle Ages until 1716 and, nowadays, corresponds to the Baix Ebre, Montsià, Terra Alta and Ribera d’Ebre counties. Terres de l’Ebre, as a territorial designation was, popularized as a result of the citizens’ movement around the Platform in Defense of the Ebro (Plataforma en Defensa de l’Ebre) (Herrera et al. 2002). In 2005, the Platform successfully managed to unite the people to stop the Spanish National Hydrological Plan that was planning to divert large amounts of water downstream of the Ebro putting the fluvial ecosystem survival and the delta in danger (Vidal et al., 2002; Tarroja et al., 2003). Despite its historical roots, Terres de l’Ebre is coined as a socio-political constructed territory (a conceptual space) providing a feeling of unity around the challenges faced by the Catalan territories that the Ebro River crosses in its lower section; challenges that concern water management and governance issues. Terres de l’Ebre is a territory with extraordinary natural and cultural heritage, recognized for its cultural significance, which recalls the importance of the region’s history as a “land of passage and metissage” between cultures. The region has two unique ecosystems, Els Ports Natural Park (in the mountain range of Tortosa-Beceit) and the Ebro Delta Natural Park.

In spite of its natural richness, Terres de l’Ebre suffers of socio-economic impoverishment is the socio-economic impoverishment resulting from historically marginalized and exploited counties in the southern periphery of Catalonia. Furthermore, it was always the opinion that people from southern Catalonia do

not share equally the thoughts on Catalan nationalism (Vidal, 2005). Since the Spanish Civil War, Terres de l'Ebre experienced a continuous loss of demographic and economic weight within Catalonia (Tarroja et al., 2003). Terres de l'Ebre is perceived by its inhabitants with a feeling of historic determinism (Arbo, 1932) - this feeling is described in the novel of S.J. Arbo "Terres de l'Ebre" about the fatalities of the peasants of the Ebro delta- where the future is seen by the local dwellers as something that unfolds in the same way as in previous generations, a repetition of their history, with a negative economic impact for the development of the region. The people accepted their stories as given without the possibility of transforming them because it is the place where they were born. The feeling of historic determinism was, until recent years, very noticeable amongst the younger generation who saw Barcelona (the capital of Catalonia) as a metropolis of better opportunities, causing the subsequent depopulation of Terres de l'Ebre. Although this feeling may still remain today, especially in some of the rural areas of Terres de l'Ebre, there is a relative territorial revitalization by a motivated diaspora with a number of on-going citizens' initiatives in place aiming for a new social-ecological development model.

In Terres de l'Ebre, most of the human well-being has been achieved by "conquering" and dominating the main flow of water, the Ebro River, through the construction of weirs, norias and ditches (azuts, senies, sequies), creating a truly hydro-social network. Starting with the construction of Assut de Xerta-Tivenys in the mid-XVth century and up to the finalization of the Ebro Right and Left irrigation channels in the late XIXth century (Fabregat & Vidal, 2007), water flows to the Ebro Delta, providing an irrigation culture that has flourished along the riverbanks as well as an extensive rice agriculture in the Ebro Delta. These rice fields form the distinctive landscape of the Delta with 21,000 ha. of cultivation, almost 65% of the surface of the delta. Since centuries a culture of water has shaped people's lives and the flows of water have been worked by human hands. It created a landscape as a sensing of the land¹ that is a production of the continuous Human-Geosphere dialogue, an entire ecogenesis that holds in the technocratic irrigation and agriculture artifacts' identity values, which certainly make a strong feeling of union of communities with the Geosphere. The ensemble of channels and ditches that crosscut the territory is not only of capital importance from an economic point of view, but it also shapes the character of the people of Terres de l'Ebre at social, cultural, and spiritual levels (Bellaubi & Arasa, 2020). In this sense, it is possible to assert that the communities of Terres de l'Ebre had a strong ecological practices even when unnoticed (e.g., there was a culture of reusing cooking oils or refilling containers for food, refilling of milk bottles in the dairy or the use of all the parts of an animal for food, fat...). However, it is a paradox that in spite of all the attempts to conquer and master the Geosphere, there was also a deep feeling of respect for the River, due to the recurring flooding and the wild landscapes of a mighty river, encased in a narrow valley awakening impressions of respect towards "the dark side of Nature": the river gives you everything, but also may take everything from you. Although, far from any form of animism, a Gaian Dark Green Religion or the responsible duty to care for Nature as a green religion (Taylor, 2009), the identity feelings of the people of Terres de l'Ebre represent a spiritual connection with the Geosphere, configuring the Land; as being part of it in an essentialism sense, expressed by an ecological mysticism and attitudes of spiritual resistance (Bellaubi, 2021b) portrayed by the immobility of certain sectors of local society. This resistance is not passive but a very proactive attitude, a spiritual activism in hope of an ecological justice, by being faithful and authentic to the identity values.

Nevertheless, the idea to control and master the Geosphere in Terres de l'Ebre is still on people's minds when looking at how to address social-ecological challenges under the Technopoly paradigm, and most of the wise knowledge of their ancestors has vanished. Yet, trying "to fix" these challenges, at the expense of degrading the Geosphere, increases the uncertainty of unexpected geodynamic processes affecting the vulnerability of human activities when these impact the biogeochemical cycles of the Geosphere. Nowadays, the existing geoethical dilemmas in the Terres de l'Ebre confront authentic attitudes of spiritual resistance by those locals who have not forgotten about the Geosphere as a place of identity and reverence, embedding utilitarian and intrinsic values of the Geosphere, and also those who either experience the geospheric place as a space to dominate and to exploit under materialist values (e.g., tourism or agricultural production), or to preserve it under ecocentric views. The current SBTs of the Ebro Delta are a good example, where possible technocratic artifacts' solutions are discussed by stakeholders in Taula del Consens [Consensus Table for the Delta] to tackle the regression and subsidence of the delta

¹ The notion of landscape may be linked to early medieval practices of working and living with the land (etymologically 'scape' means in old English 'sceppan' or 'to shape') with the Greek term of 'skopos' (to look).

confronting utilitarian and intrinsic values (Franquet et al., 2017; Arasa & Guillen, 2019; Blay & Avila, 2020). The dedication of the book “Problems of the Ebro River in its final Section” (Franquet et al., 2017) is good proof of the above-mentioned geoethical dilemma, which is presented in Table 2.

To the people of Ebre... and, particularly, to our Delta farmers who, day after day, with their work, effort and sacrifice, keep it alive and productive despite the challenges of nature and secular administrative inaction.

Table 2. Possible scenarios for the geoethical dilemma of the Ebro Delta

Strongly anthropized delta by extensive agriculture affecting coastal dynamics, with subsidence and marine regression. Ecologists and farmers as main stakeholders, local dwellers as observers		
Locals dwellers (observers)	Ecologists adopt green engineering (e.g. sediment removal, costal barriers, dune corridors, land reclamation)	Ecologists adopt environmental planning (e.g. land evaluation, zonification, stewardship and Nature-based solutions)
Delta's farmers keep current agricultural intensive land-use	Scenario 1 I: increasing coastal dynamics disruption V: considerable economic losses and costs Credibility farmers = $1 - 1 = 0$ Credibility ecologist = $1 - 1 = 0$ Credibility alternative = 0	Scenario 2 I: small recovery in short term V: economic cost due to investments Credibility farmers = $1 - 1 = 0$ Credibility ecologist = $0 + 1 = 1$ Credibility alternative = 1
	Interpretation: farmers and ecologists are penalized, current situation	Interpretation: ecologists get social gain
	Scenario 3 I: decreasing coastal disruption V: political and economic cost Credibility farmers = $0 + 1 = 1$ Credibility ecologist = $1 - 1 = 0$ Credibility alternative = 1	Scenario 4 I: steady state in long term V: political cost Credibility farmers = $0 + 1 = 1$ Credibility ecologist = $0 + 1 = 1$ Credibility alternative = 2
	Interpretation: farmers get a social gain	Interpretation: maximum credibility, ecological justice
	Credibility farmers/ecologists = attitude $\pm$ social cost/social gain Credibility scenario = credibility farmers + ecologists	

Source: Elaborated by the author

The geoethical dilemma shows scenario 1 as the current ecological tragedy, whilst scenario 4, the most credible, represents a situation of ecological justice. The geoethical dilemma attempts to interpret and reflect on what values lay behind attitudes underpinning technocratic artifacts that drive to the ecological tragedy and what identity values would allow overcoming the tragedy. Through a values-based dialogue, it is possible to enable a cultural change taking solidarity into account, either by changing attitudes to move into scenario 4 or, removing social costs towards “a lesser evil”, scenarios 2 and 3. Whilst Nature-based solutions (Cohen-Shacham et al., 2019) are not always discussed by involved stakeholders, the delta is seen as a “thing”, reification; a zone of extensive rice production or intended for ecotourist use. Thus, the symbolic power of the Land is converted into a “money-machine”, forgetting that the delta is alive and constitutes a common being that has its own coastal dynamics and a geologic time evolution. However, above all, the Ebro Delta is the result of a co-evolutive dialogue between Humans and Geosphere that has been shaped along the centuries through the work of fishermen and farmers, words and narratives expressed in folklores, recreating the memories of a place that sustains communities in communion with the Geosphere. In other words, the “being” of a “pages” (Catalan farmer) is indissoluble from the delta and forms a single perichoretic unity but still two separate beings: the “pages” is embodied in the Delta and the Delta “exists” as long as it is inhabited by the human being. This makes possible the perfect harmony of the human work with the splendor and magnificence of the Geosphere, creating the exceptional privilege of cultivating the fields of the Delta de l'Ebre within a unique park in the World.

Figure. 2. Panoramic view of the Ebro valley from Ports of Tortosa-Beceit



Source: A. Baygusheva

4.2 “Tortosinisme” as identity

Boulding (1966) points out the importance of identity as making a link between the past, the present and future of a community, saying: “there is a great deal of historical evidence to suggest that a society which loses its identity with posterity and which loses its positive image of the future loses also its capacity to deal with present problems, and soon falls apart”. (Boulding, 1966, p.12).

In spite of different attitudes and values, the geoethical dilemma of the Ebro Delta highlights the existence of a common past and a shared identity, transmitting values that transform into an ideology, and its importance in underpinning attitudes towards technocratic artifacts presenting possible solutions to social-ecological challenges (Bellaubi 2021b) in the Terres de l'Ebre. At the core of these identity values, there is the concept of “tortosinisme” (to have the feeling of “belonging to” Tortosa rather than “being from”), which is understood more as a state of mind and spiritual feeling than as political movement (Vidal, 2005; Agramunt, 2019). “Tortosinisme” refers in the field of politics to a different personality of a territory that did not fit into the parameters of the nationalist construction of the Catalan culture at the end of the XIXth century” (Vidal, 2005, p. 3; Agramunt, 2019) and has been used with different political interests for Catalanists and conservative social classes, especially since the mid-XXth century. Indeed, “tortosinisme” was used to oppose the influencing centralist power of Barcelona with regard to Madrid. It means behind the idea of “tortosinisme” sometimes there would be strong vindication of a local cultural fact within Catalonia, whilst other times it would represent a patriotic Spanish attitude instead of Catalanism. The origin of this identity tried to be justified during the episodes of the Catalan reconquest during the XIIth century of the Arab kingdoms, when the nobles of Catalonia granted the city of Tortosa wide freedoms in self-government. Instead from a cultural point of view, “tortosinisme” seems to have its origin in cultural geographic features, such as being a land of passage across the Ebro River, as “métissage” crossroads of cultures, where its peripheral location forced its inhabitants to seek different organizational forms from the rest of Catalonia (Vidal, 2005).

The question remains if the identity concept of “tortosinisme” may be extended beyond the city of Tortosa to the rest of Terres de l'Ebre. During part of its history, Tortosa was a city-territory and still today the city has a diocesan head, which carries a considerable importance to a place in a profoundly conservative-catholic society. “Tortosinisme” is not advocated to represent a specific geographic place (a conceptual space), but a collective sense of identity of belonging to a geospheric place becoming a land, which today refers to Terres de l'Ebre, expressed through specific cultural values. There was, without doubt, the success of the citizens' movement of the “Plataforma en Defensa de l'Ebre” that revoked the Spanish National Hydrological Plan (2001) in 2005 (Herrera et al. 2002), in invigorating the renaissance of a regional identity (Vidal et al., 2002). The old concept of tortosinisme under the new label “being from Terres de l'Ebre” or “Ebrece” appears as the vindication of a historical obliteration and subordination of peripheral regions through construction of a symbolic and emotional story (Sancho, 2014). Territories are not only perceived and conceived spaces of power, but lived spaces, symbols of power in themselves, where human-experienced feelings are the radical place of the Human-Geosphere embodiment, framing

identity values on how the people relate to their land (Nogué & Vicente, 2004). The recovering of identity values in Terres de l'Ebre ultimately lies in recognition of the Ebro River as a common being that acts as a symbolic reconciling and unifying identity, a representational/lived space, where all the water ramifications of channels, ditches, boreholes and other technocratic artifacts acquire a meaning, carrying the river's water as source of community in communion with the geospheric place: the Land (Bellaubi & Arasa, 2020). Without doubt, the unifying feeling of "tortosinimse" can be extended to the whole of the Terres de l'Ebre: the Ebro Lands, the Land of the Ebro People.

Fig. 3. Following the Ebro River valley



(Source: A. Baygusheva)

Fig. 4. Landscape in the Ebro Delta



(Source: A. Baygusheva)

4.3 Ecological mysticism as an expression of identity

In Tortosa and the Terres de l'Ebre, the expression of identity values is embedded in religious beliefs. The devotion to the "Mare de Deu de la Cinta" [Our Lady of the Girdle], protector and patron of Tortosa, sits deeply in the people's hearts, minds and the culture of "Terres de l'Ebre", thus protecting and blessing believers and their habited land (e.g., the protection of mothers during pregnancy wearing a blessed girdle around their belly) (Figure. 5). We can say that Tortosa and surroundings counties have developed its socio-cultural life entrusted to the "Mare de Deu de la Cinta". The devotion is documented in the "Ancient Inventory of the Holy Relics" of the Cathedral of Tortosa in 1347, which relates the existence of a Girdle that, according to popular tradition, would be made by Our Lady and given by her in the course of a theophany to a priest of the Cathedral of Tortosa in what is known as "La Baixada de la Mare de Deu de la Cinta" [The Descent of Our Lady of the Girdle]. From 1870, the miraculous apparition is considered to have taken place on the night of March 24-25, 1178 (Vidal, 2008). Devotees to the "Mare de Deu de la Cinta" are identified with this feeling of belonging to a specific geospheric place. Indeed, "Devotion becomes an element that characterizes the identity of a group, either in the form of an image - such as the figures of the Virgin or the saints - in the form of ritual or festivity" (Capdevila & Fava, 2008, p. 7), or as hierophany. Capdevila and Fava (2008) clearly point out: "Devotion to Mare de Deu de la Cinta transcends the religious meaning of a

sign, and becomes an identity symbol, representing a whole group that does not have to be a believer.” Thus, the devotion to Mare de Deu de la Cinta is related to an identity, and becomes the symbol of all “tortosins”/“ebrencs” (Capdevila & Fava, 2008, p. 7), as clear identification land and belief, a “geo-phanie”.

However, it is difficult to say if the devotion to Mare de Deu de la Cinta extends to all people of Terres de l'Ebre, further than the old county of Tortosa (Vidal, personal communication); although it is possible to find religious representations in different parts of the diocese of Tortosa. Terres de l'Ebre is a lands of deep spirituality with a long tradition of Marian devotion through hermitages and prayer paths with around 48 hermitages over the dioceses² (Bisbat de Tortosa, 2011; they highlight a popular spirituality linked to the seasons of the year, to the work in the countryside... all narratives of communities and villages and, ultimately, interpretations of a reality that point at the religation of humans with a geospheric place. This Marian devotion is for the Christian faith a way to reach the Son of God through his Mother, “ad Jesum per Mariam”. The theophany (Brown, 2019) of Mare de Deu de la Cinta makes a hierophany of the Geosphere, which enhances and reshapes the identity of a community that transcends to the Divine with religious fervor.

Terres de l'Ebre is a powerful land that holds the memory of identity values and transmits the remembering of ancestors to future generations through rich spiritual folklore and imaginary religious narratives. The Land stages the Human-Geosphere union, the essence of the human itself, and a strong sense of identity fills the souls of the local dwellers that feel the river and the mountains as a part of themselves. Local dwellers experience the land as sacred, a manifestation of the Divine thought of the theophany of the Mare de Deu de la Cinta, in a perichoretic unity expressed in a collective ecological mysticism (Shano, 2001). Indeed, “Ebrencs” profess strong spiritual feelings that tie them with the land and with the Divine. In this ecological mysticism, the sensing within the Geosphere is spiritually internalized in a way that enhances identity feelings of belonging to a place and the contact with the Whole through religious rituals and liturgies, but also in the way a Human relates to the Geosphere through technological artifacts. Thus, the deep constitutive religation of the human being is no longer an intangible, but a historical reality manifested through a geospheric place: the Land as sacred, where Divinity manifests. Indeed, Durkheim (1915) pointed this characteristic of the sacred as,

...an ideal that transcends everyday existence, something extra-ordinary and awe inspiring that is made sacred because some community has deemed it to be sacred. Sacredness may be attached to a god, a rock, a creature, a ceremony or something else entirely. Once made sacred, that object or activity also becomes a symbol. (Durkheim, 1915, cited in Kiernan, 2014).

An example of this ecological mysticism is in the lyrics of Himne de la Cinta (Anthem to Our Lady):

*Sigue'l sagrat Cíngul la cadena d'or,
cadena de roses, cadena d'amor,
que al cor de la Verge lligue els nostres cors,
fent que'l d'Ella i'ls nostres, en vida i en mort,
al Cel i a la terra siguin un sol cor.*

[May the sacred Girdle be the golden chain,
chain of roses, chain of love,
that in the heart of the Virgin binds our hearts,
making her and ours, alive and dead,
in Heaven and on Earth be one heart.]

Through centuries, the people of Terres de l'Ebre have safeguarded their values and identity. Another good example is the Procession of the Mare de Deu de La Cinta that takes place on the first Sunday of

² The diocese of Tortosa has an area of 6,450 km² that belongs to the counties of Baix Ebre, Bajo Maestrazgo, Montsià, Ribera d'Ebro, Terra Alta, and part of the counties of Alto Maestrazgo, Baix Camp, Ports of Tortosa and Beceit and the Priorat. From these, Baix Ebre, Montsià, and Ribera d'Ebre i Terra Alta constitute Terres de l'Ebre, and Baix Ebre i Monstsià was the former old county of Tortosa.

September each year, with fervor and reverence, to exhibit Terres de l'Ebre as a land of resistance in hope, a hope in a horizon of ecological justice. An expression of this spiritual resistance is also the standing monument at the highest point of the Tortosa mountain range (Caro Peak, 1447m), surrounded by threatening telecommunication antennas (Fig. 6), almost imperceptible to human consciousness as being used to it. The small silent statue of Mare de Deu de la Cinta was erected in 1955 by Unio Excursionista de Catalunya (Trekking Club of Catalonia) and the place dominates the Ebro River valley all the way to the Mediterranean Sea.

Figure 5. Image of the Mare de Deu de la Cinta the patrons of Tortosa, watching over the city



Source: Real Archifodradia de Santa Maria de la Cinta

Figure 6. Expression of spiritual resistance in Caro Peak image of Mare de Deu de la Cinta.



Source: A. Baygusheva

Concluding, the concept of the Noosphere allows us to interpret the relationship between the Human and the Geosphere, from the identity values underpinning technocratic artifacts. . In Terres de l'Ebre, a deep spiritual interconnection feeling exists with a geospheric place; a land fulfilled with memories that gives a sense of community unfolding in an ecological mysticism. The Ebro River, as a unifying element, a "cami de sirga" [towpath]³ from the Ebro Delta to the Ports of Tortosa-Beceit, gives rise to a meaning sense stemming from a culture and generator of culture (Vidal, 2005) that echoes in a spiritual devotion to Mare de Deu de la Cinta and that, at the same time, portrays Terres de l'Ebre as a Land of resistance in

³ Cami de sirga (towpath) is a path built along rivers or canals to which people or animals (donkeys, mules, oxen, or draft horses) pull cargo boats by means of a towpath. On the river Ebro, the "llaguts" (small wooden boats) pulled by mules transporting coal from the Ports and rice from the Delta were a trade route for centuries (Moncada, 1988).

hope. “Terres de l’Ebre” is a place in transition, between the past and future that seeks to restore a spatial ecological justice, overcoming the geoethical dilemmas, correcting the values of technocratic artifacts and finding ways through the challenges derived from the relationship between the Human and Geosphere. It remains to be seen how this can be done. Perhaps the Peoples of “Terres de l’Ebre” would need to embark on a path of critical geoethical pedagogy and leadership, such as the one started by a teacher in a secular school for the poor in Roquetes (near Tortosa) in the early XXth century, Marcel·li Domingo, who would later become Minister of the Spanish Republic in 1933. Nonetheless, whatever the task to be undertaken, it will only be attainable if, as said by the theologian of Tortosa, Mossèn Manyà (1884-1976) (Moreso, 2005), belonging to a certain community is defined by placing the conception of pluralism at the center: a space where different reasonable conceptions of human life can live together.

5. Conclusion

In this research, the Noosphere is developed as a coevolutionary biogeochemical, social and spiritual concept, where the Land becomes a representational symbolic space of Socio-BioTechnical Spiritual subsystems. Using a diatopical hermeneutics, the research interprets modes of being, to understand humans’ lived experiences, that are sensed and expressed as an ecologic mysticism that activates attitudes of resistance in a place, lands of resistance, revealing and transmitting identity values that, when transformed into ideologies, transfigure in technocratic artifacts and their technocracies defining “ideo-eco-techno-logies”. Land is not static or a rigid symbolic space but a liminal space that coevolves defining porous identities with the ability to identify with the values of others. Identities are at the base of our relationship with the Geosphere through other human beings, based on the labor and the language, rebuilding communities on the basis of mutuality and reciprocity (McIntosh, 2001). Communities recover the memory of a geospheric place, forging the Land. In turn, the Land is able to inspire an ecological mysticism when the energy of human culture is embedded with a geospheric place as a hierophany. Ecological mysticism appears as the way to the anthropophany of the human being, the self-encounter embodiment with the World, the Creation, and finally the radical opening to the Transcendent, to God.

In Terres de l’Ebre, the concept of “Ebrenc”, as replacing the old concept of “tortosinisme”, may foster a common ground to overcome tragedies of geoethical dilemmas. Being “Ebrenc”, as a geoethics branding for sustainable practices (Bohle & Marone, 2021) and heading to ecological justice and tackling integral poverty, could easily be put at the core of civic entrepreneurship, social cooperativeness, private stewardship initiatives, spurred by community unionism and re-municipalization as being key towards deliberative democracy. In other words, the current consumer-social contract must be replaced by a socio-ecological contract (Jennings, 2016), based on an ecological dialogue of values that fosters a shared future, and triggers cultural change by taking solidarity identity values as a principle to preserve ecosystems and their communities, their natural and cultural heritage, inspiring Geosphere-based Solutions. Taking from anadialektics, dialogue becomes a task that allows us to develop possible and credible futures as a learning process in our relationship with others and with the Geosphere. However, we live in a complex World intertwined by multiple relationships, where the only way to find anchor points is by rebuilding community, a community that is intimately connected, in communion, to the Geosphere. We must be able to discern between the paths of consolation that open us towards a spatial and ecological justice guided by the prudence of our decisions or those of desolation that lead us towards ecological wars and suffering. The future is uncertain but it is up to us to build one with one voice; a values-based ecological dialogue that accepts that each of us has a part of truth that can be fulfilled with the truth of the other. Would we be able to understand this? Would we be able to commit ourselves to seeking the truth amongst many truths? May we build a ecological dialogue of values to make a common future? May we find, once and for all, the values that respect the Geosphere that is alive and, at the same time, captures the values of what we are?

The stability of the Biosphere as resulting from the the relationships of the Human with the Geosphere is only possible if human beings identify not only with a community in space, but also with a community extending over time from the past into the future. Geoethical thinking offers the best type of reasoning necessary in managing the contingency of SBTs, constructing future imaginaries using geoethical dilemmas under a geoprospective approach.

REFERENCES

- Acosta, A. (2016). Aporte al debate: El extractivismo como categoría de saqueo y devastación. *fiar*, 9(2), 25-33. http://interamerica.de/wp-content/uploads/2016/09/o_fiar-Vol.-9.2-Negotiating-Nature-Imagaries-Interventions-and-Resistance-Complete-Issue.pdf
- Agramunt, A. B. (2019). El Tortosinisme i el Passat Dissenyat. *Plecs d'història local*. 172, 5-7. <https://raco.cat/index.php/Plecs/article/view/360566>
- Álvarez, P. (Ed.). (2019). Healing a Broken World. In *Promotio Iustitiae no. 106, Social Justice and Ecology Secretariat (SJES)*. General Curia of the Society of Jesus.
- Arasa-Tuliesa, A., & Guillén, J. (2019). Gestió dels sediments del riu Ebre: optimisme vs mesures pal·liatives. Grup EbreRecerca. *Informatiu del Parc Natural del Delta de l'Ebre. Estiu-Tardor Especial*, 50, 28-30.
- Arbo, S. J. (1932). *Terres de l'Ebre*. Edicions.
- Archer, A., Lüttig, G., & Snezko, I. (1987). *Man's dependence on the earth: The role of the geosciences in the environment*. Springer-Verlag.
- Ballesteros, J. (1995). *Ecologismo personalista*. Technos S.A.
- Bellaubi, F. (2019). Photographs of Turgoyak: Exploring spiritual awareness and eco-resistance. *Rachel Carson Center Blog*. <https://seeingthewoods.org/2019/06/03/photographs-of-turgoyak-exploring-spiritual-awareness-and-eco-resistance/>
- Bellaubi, F. (2021a, in press). Exploring the relevance of the spiritual dimension of the Noosphere in Geoethics. In M. Bohle & E. Marone (Eds.), *Geo-societal Narratives: Contextualising Geosciences*. Springer.
- Bellaubi, F. (2021b). Spiritual Dimensions in Exploring the Human-Geosphere Relationship under a Values-Based Approach in Lake Turgoyak, Southern Urals, Russia. *Sibirica Interdisciplinary Journal of Siberian Studies*, 20(10), 202. <https://doi.org/10.3167/sib.2021.200104>
- Bellaubi, F., & Arasa, A. (2020). Geoethics in groundwater management: The geoethical dilemma in La Galera aquifer, Spain. In G. Di Capua (Ed.), *Geoethics: Status and Future Perspectives*. <https://sp.lyellcollection.org/content/early/2020/09/22/SP508-2020-125>
- Bellaubi, F., & Boehm, F. (2018). Management practices and corruption risks in Water Service Delivery in Kenya and Ghana. *Water Policy*, 20(2), 388-409. <http://wp.iwaponline.com/content/20/2/388>
- Bellaubi, F., & Bustamante, R. (2018). Towards a New Paradigm in Water Management: Cochabamba's Water Agenda from an Ethical Approach. *Geosciences*, 8, 177. <https://doi.org/10.3390/geosciences8050177>
- Bellaubi, F., & Lagunov, A. (2020). Value-Based Approach in Managing the Human-Geosphere Relationship: the Case of Lake Turgoyak (Southern Urals, Russia). *Human Ecology: An Interdisciplinary Journal*. <https://link.springer.com/article/10.1007/s10745-020-00174-0>
- Bellaubi, F., Mallarach, J. M., & Sardá, R. (2021). A Geoethical Approach to Unlock a Social-Ecological Governance Problem: The Case of the Tordera River (Catalonia, Spain). *Sustainability*, 13(8), 4253. <https://doi.org/10.3390/su13084253>
- Bisbat de Tortosa. (2011). *Pregaries I senderes. Ermites del Bisbat de Tortosa*. Fundacio Compte Fibla.
- Bischof, M. (2007). Vernadsky's Noosphere and Slavophile Sobornost. In *Biophotonics and Coherent Systems in Biology* (pp. 279-297). https://link.springer.com/chapter/10.1007/978-0-387-28417-0_20
- Blay, J., & Àvila, A. (2020). Els efectes del temporal Glòria: una mostra de la necessitat d'actuació urgent al delta de l'Ebre. *Treballs de la Societat Catalana de Geografia*, 89, 163-189. <http://revistes.iec.cat/index.php/TSCG> DOI: 10.2436/20.3002.01.195
- Bohle, M., & Marone, E. (2021). Geoethics, a Branding for Sustainable Practices. *Sustainability*, 13(2), 895. <https://doi.org/10.3390/su13020895>
- Bohlinger, T. (2017). Hermeneutics of Hope: Paul Ricoeur and Jürgen Moltmann in Dialogue. *The LAB, The Logos Academic Blog*. <https://academic.logos.com/hermeneutics-of-hope-paul-ricoeur-and-juergen-moltmann-in-dialogue/#comments>
- Bookchin, M. (1982). *The Ecology of Freedom* Cheshire Books.
- Boulding, K. E. (1966). The Economics of the Coming Spaceship Earth. In H. Jarrett (Ed.), *Environmental Quality in a Growing Economy* (pp. 3-14). Resources for the Future/Johns Hopkins University Press.
- Bourdieu, P., & Passeron, J. C. (1978). Reproduction in Education, Society and Culture. Review by T. Broadfoot, *Comparative Education*, 14(1), 75-82.
- Brown, J. M. (2019). Charged Moments: Landscape and the Experience of the Sacred among Catholic Monks in North America. *Religions*, 10(2). <https://doi.org/10.3390/reh0020086>

- Capdevila i Werning, C., & Favà, C. M. (2008). Devoció, art i identitat. La capella de la Mare de Déu de la Cinta a Santa Maria del Pi. *Recerca*, 12, 195-224. <https://www.raco.cat/index.php/Recerca/article/view/179347>.
- Carson, D. (2009). The abduction of Sherlock Holmes. *International Journal of Police Science and Management*, 11(2), 193-202. <https://doi.org/10.1350/ijps.2009.11.2.123>
- Casadesús, R. (2012). *Creación y conservación en Santo Tomás de Aquino: dos conceptos fundamentales para entender la creación continua*. Lletres de filosofia i humanitats. Revista digital de la Facultat de Filosofia de Catalunya. Universitat Ramon Llull, IV.
- Clawson, J. (2013). Imagination, Hope, and Reconciliation in Ricoeur and Moltmann. *Anglican Theological Review*, 9(2), 293-309.
- Cohen-Shacham, E., Andrade, A., Dalton, J., Dudley, N., Jones, M., Kumar, C., Maginnis, S., Maynard, S., Nelson, C. R., Renaud, F. G., Welling, R., & Walters, G. (2019). Core principles for successfully implementing and upscaling Nature-based Solutions. *Environmental Science & Policy*, 98, 20-29. <https://doi.org/10.1016/j.envsci.2019.04.014>
- Cortazar, J., (1963). *Rayuela*. Pantheon Books.
- Daly, H. E. (1980). *Economics, ecology, ethics: essays toward a steady-state economy*. W.H. Freeman.
- Daly, H. E. (1987). The Economic Growth Debate: What Some Economists Have Learned But Many Have Not. *Journal of Environmental Economics and Management*, 14, 323-336. [https://doi.org/10.1016/0095-0696\(87\)90025-8](https://doi.org/10.1016/0095-0696(87)90025-8)
- de Sousa Santos, B. (2011). Epistemologies of the South. *Utopía y Praxis Latinoamericana*, 16(54), 17-39. <https://dialnet.unirioja.es/ejemplar/328637>
- de Unamuno, M. (1902). *En torno al casticismo*. Espasa Calpe, S.A.
- Di Capua, G., & Peppoloni, S. (2019). *Defining geoethics*. International Association for Promoting Geoethics. <http://www.geoethics.org/definition>
- Durkheim, E. (1915). *The elementary forms of the religious life*. Translated [from French] by Joseph Ward Swain. Allen & Unwin.
- Dussel, E. (1996). *Filosofía de la Liberación*. Editorial Nueva América
- Fabregat, E. G., & Vidal, J. F. (2007). La Canalització De l'Ebre A La Regió De Tortosa (1347-1851). *Quaderns d'Història del' Enginyeria*, 8. <https://raco.cat/index.php/QuadernsEnginyeria/article/view/83734>
- Flix, M.J. (1973). *Tortosa. Testimonio histórico-gráfico*. Dertusa.
- Foucault, M. (1984[1967]). Des espace autres [Of other spaces]. Trans. J. Miskowiec. *Architecture/Mouvement/Continuité*, 5, 46-49. <https://foucault.info/documents/heterotopia/foucault.heterotopia.en/>
- Francis. 2015. *Laudato Si': On Care for Our Common Home*. Rome: The Vatican.
- Franquet Bernis, J. M., Albacar Damian, M. A., & Tallada De Esteve, F. (2017). *Problemática del Río Ebro en su tramo final. Informe acerca de los efectos sobre el área jurisdiccional de la Comunidad de Regantes – Sindicato agrícola del Ebro*. UNED-Tortosa. C/Cervantes, no: 17.
- Freire, P. (1970). *Pedagogy of the oppressed*. The Continuum International Publishing Group Inc.
- Frodeman, R. (1995). Geological reasoning: geology as an interpretive and historical science. *Geological Society of America Bulletin*, 107, 960-968. [https://doi.org/10.1130/0016-7606\(1995\)107%3C0960:GRGAAL%3E2.3.CO;2](https://doi.org/10.1130/0016-7606(1995)107%3C0960:GRGAAL%3E2.3.CO;2)
- Garcia i Rubert, D. (2005). *Ulldecona. Abrics de l'Ermita*. Museu Arqueologia De Catalunya.
- Golembiewski, J. (2010). Start making sense: Applying a salutogenic model to architectural design for psychiatric care. *Facilities*, 28(3/4), 100-117.
- González, A. (2021). Oikos Kai Physis: Hacia un nuevo paradigma ecológico. *Perifèria. Cristianisme, Postmodernitat, Globalització*, 8(8), 17-32. <https://raco.cat/index.php/PeriferiaCPG/article/view/381650>
- Grinevald, J. (1998). Introduction: the invisibility of the Vernadskian revolution. In V. I. Vernadsky (Ed.), *The Biosphere* (pp. 20-32). Copernicus.
- Gudynas, E., & Acosta, A. (2011). La renovación de la crítica al desarrollo y el buen vivir como alternativa. *Utopía y Praxis Latinoamericana*, 16(53), 71 - 83. <https://www.redalyc.org/articulo.oa?id=27919220007>
- Günzel, S. (2019). What Do They Represent? Computer Games as Spatial Concepts. In E. Aarseth & S. Günzel (Eds.), *Ludotopia: Spaces, Places and Territories in Computer Games*. Verlag.
- Hadsell, H. (1995). Profits, parrots, peons: ethical perplexities in the Amazon. In B. Taylor (Ed.), *Ecological resistance movements: The global emergence of radical and popular environmentalism* (pp. 70-86). State University of New York Press.
- Healing Earth. (2020). *International Jesuit ecology project*. Loyola Chicago University. <https://healingearth.ijep.net>

- Herrera, E., Maxè, V., Mena, E. and Pont Vidal, J. (2002). El moviment a les Terres de l'Ebre. El Pla Hidrològic Nacional i la resposta ciutadana. *Revista Catalana de Sociologia*, 17, 27-100. <http://revistes.iec.cat/index.php/RCS/article/view/4059/35909>
- James, S. P. (2019). Natural meanings and cultural values. *Environmental Ethics*, 41(1), 3-16. <https://doi.org/10.5840/enviroethics20194112>
- Jennings, B. (2016), *Ecological governance towards a new social contract with the earth*. West Virginia University Press.
- Jonas, H. (1984). *The Imperative of Responsibility. In search of an Ethics for the Technological Age*. The University of Chicago Press
- Jung, C. G. (1969). The Archetypes and the Collective Unconscious. In J Schmonsky (guest), *Ecology Global Network*. <http://www.ecology.com/2012/10/24/ecological-importance-folklore/>.
- Khairullina, E. R., Makhotkina, L. Y., Svetlakov, A. P. , Emelina, E. D., Vyatkina, I. V., Lipatova, I. A., Pavlushin, A. A., & Sorokoumova, E. A. (2019). Noosphere Concept Implementation in Methodology of Modern Ecologically Oriented Higher Education: Theoretical Aspect. *Ekoloji*, 28(107), 713-720. <https://www.silene.org/wp-content/uploads/2019/12/noosphere-concept-implementation-in-methodology-of-modern-ecologically-oriented-higher-education.pdf>
- Kiernan, K. (2014). Landforms as Sacred Places: Implications for Geodiversity and Geoheritage. *Geoheritage*, 7(2). <https://link.springer.com/article/10.1007/s12371-014-0128-6>
- Knott, D., Muers, S., & Aldridge, S. (2008). *Achieving culture change: A policy framework*. Cabinet Office.
- Kortetmäki, T. (2016). Is Broad the New Deep in Environmental Ethics? A Comparison of Broad Ecological Justice and Deep Ecology. *Ethics and the Environment*, 21(1), 89-108. <https://www.jstor.org/stable/10.2979/ethicsenviro.21.issue-1>
- Kortetmäki, T. (2017). *Justice in and to Nature: An Application of the Broad Framework of Environmental and Ecological Justice*. PhD thesis. The Faculty of Humanities and Social Sciences of the University of Jyväskylä.
- Kovel J (2007) *The Enemy of Nature: The End of Capitalism or the End of the World?* Zed Books
- Kuhn, T. (1970). *The structure of scientific revolutions*. 2nd edn. Chicago University Press.
- Kumagai, K. (2000). Value-creating pedagogy and Japanese education in the modern era. In *Ideas and Influence of Tsunesaburo Makiguchi* (pp. 29-45). The Institute of Oriental Philosophy.
- Küng, H. (1991). *Global responsibility: In search of a new world ethic*. SCM Press Ltd.
- Latouche, S., & Harpagès, D. (2011). *La hora del decrecimiento*. Octaedro.
- Latour, B. (2019). *Dónde aterrizar*. Taurus.
- Lefebvre, H. (1991[1974]). *The production of space*. Blackwell.
- Leopold, A. (1949). *A sand County Almanac and sketches here and there*. Oxford University Press
- Levinas, E. (1997). *Totalidad e infinito: ensayo sobre la exterioridad*. Ediciones Sígueme.
- Luhmann, N. (1995). *Social systems*. Stanford University Press.
- Naess A (2008) *Ecology of Wisdom*. Penguin, London
- Nasr, S. H. (1997). *Man and Nature*. Chicago: ABC International Group.
- Machado, A. (1912). *Campos de Castilla* [Castile fields]. Letras Hispánicas.
- Margenot, M. R. (2009). Intrahistoria en Unamuno e intratiempo en Machado. [Intra-story in Unamuno and Infra-time in Machado]. *Speculum: Journal of Literary Studies* 42. <http://www.ucm.es/info/especulo/numero42/intrahis.html>.
- McIntosh, A. (2001). *Soil and soul people versus corporate power*. Aurum Press Ltd.
- McIntosh, A. (2008). *Some contributions of liberation theology to community empowerment in Scottish Land Reform 1991 – 2003*. PhD thesis. University of Ulster.
- McIntosh, A. (2012). Chapter 2: The Challenge of Radical Human Ecology to the Academy. In L. Williams & R. Roberts (Eds.), *Radical Human Ecology Intercultural and Indigenous Approaches* (pp. 31-55). Ashgate.
- McIntosh, A. (2020). *Riders on the storm: the climate crisis and the survival of being*. Birlinn Limited.
- McIntosh, A., & Carmichael, M. (2016). *Spiritual activism: Leadership as service*. Green Books.
- Meadows, D. H. (1999). *Leverage points: places to intervene in a system*. The Sustainability Institute.
- Melloni, J. (2011). *Hacia un tiempo de síntesis*. Fragmentos.
- Moiseev, N. N. (1989). The Study of the Noosphere—Contemporary Humanism. *International Social Science Journal*, 122, 595-606.

- Moiseev, N. N., Aleksandrov, V. V., Krapivin, V. F., Lotov, A. V., Svirezhev, Y. M., & Tarko, A. M. (1983). *Global models, The Biospheric approach (Theory of the Noosphere)*. IIASA Collaborative Paper. <http://pure.iiasa.ac.at/2349/>
- Moltmann, J. (1985). *God in creation: an ecological doctrine of creation: The Gifford lectures 1984-1985*. SCM Press Ltd.
- Moltmann, J. (2009[1967]). *Theology of hope: on the ground and the implications of Christian eschatology*. Trans. J. Leitch. Fortress Press.
- Moncada, J. (1988). *Camí de sirga*. Edicions.
- Moreso, J. J. (2005). El Pensament Social De Mossèn Manyà. *Revista Catalana de Teologia* 30(1), 117-130. <https://raco.cat/index.php/RevistaTeologia/article/view/71481>
- Nogué, J., & Vicente, J. (2004). Landscape and national identity in Catalonia. *Political Geography*, 23, 113-132. <http://www.politicalgeography.com>
- OECD. (2015). *Towards green growth? Tracking progress*. OECD. <https://doi.org/10.1787/9789264234437-en>
- Oleksa, Fr., M. (2019). *The face of God film: The Orthodox Church on climate change*. Interview. Orthodox Fellowship of the Transfiguration.
- Panikkar, R. (2000) *The interreligious dialogue*. Paulist Press.
- Peppoloni, S., & Di Capua, G. (2020). Geoethics as global ethics to face grand challenges for humanity. In G. Di Capua, P. T. Bobrowsky, S. W. Kieffer & C. Palinkas (Eds.), *Geological Society* (p. 508).
- Peppoloni, S., Bilham, N., & Di Capua, G. (2019). Contemporary geoethics within the geosciences. In M. Bohle (Ed.), *Exploring Geoethics*. Palgrave Pivot.
- Postman, N. (1993). *Technopoly the surrender of culture to technology*. Vintage Books.
- Postman, N., & Weingartner, C. (1969). *Teaching as subversive activity*. Dell Publishing.
- Prada-Rodríguez, M. L. (2019). ¿Orientan los aparatos tecnológicos las acciones humanas? Una postura praxeológica. *Trilogía Ciencia Tecnología Sociedad*, 11(21), 67-89.
- Prigogine, I. (1996). *The end of certainty*. The Free Press.
- Ricoeur, P. (1959). Le symbole donne a penser. *Esprit*, 275(7/8), 60-76. <https://www.jstor.org/stable/24254991>
- Riechmann, J., González Faus, J. I., & Magallón, C. (2019). *Wake up! Proposals for a decentred humanism*. Christianisme I Justícia.
- Robinson, J. M. (2006). *The sacred cinema of Andrei Tarkovsky*. Crescent Moon Publishing.
- Rutherford, S. (2017). Environmentality and green governmentality. In D. Richardson, N. Castree, M. F. Goodchild, A. Kobayashi, W. Liu & R. A. Marston (Eds.), *The international encyclopedia of geography* (pp. 1-5). John Wiley & Sons.
- Salcedo, M., & Ortiz, A. (2014). Aplicabilidad de la teoría de sistemas autorreferentes de Niklas Luhmann al pensamiento humano. *Psicogente*, 17(32), 269-282. http://www.scielo.org.co/scielo.php?pid=So124-01372014000200003&script=sci_abstract&lng=es
- Samson, P. R., & Pitt, D. (Eds.). (1999). *The Biosphere and Noosphere reader: Global environment, society and change*. Routledge.
- Sancho, J. S. (2014). *El marcel·linisme a les Terres de l'Ebre (1914-1939)*. UAM.
- Serafin, R. (1987). *Vernadsky's Biosphere, Teilhard's Noosphere, and Lovelock's Gaia: Perspectives on human intervention in global biogeochemical cycles*. IIASA Working Paper WP-87-096.
- Shano, P. (2001). Mysticism and Ecology: Ignatian Contemplation and Participation. *The Way*, 102, 37-46. <https://www.theway.org.uk/back/s102Shano.pdf>
- Sheldrake R (2012). *The Science Delusion: Feeling the Spirit of Enquiry*. Coronet.
- Sikorskaya, G. P., Akimova, O. B., Dorozhkin, E. M., & Yakhneeva, I. V. (2016). Noospheric Pedagogy: The Expansion of the Humanitarian Space of Vocational and Pedagogical Education. *International Journal of Environmental & Science Education*, 11(14), 6963-6975. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2848747
- Soja, E. W. (2010). *Seeking spatial justice*. University of Minnesota Press.
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism. *Human Ecology Review*, 6(2), 81-97. https://cedar.wvu.edu/hcop_facpubs
- Tarroja, A., Domingo, L., Herrero, M., Lozano, G., Paül i Carril, V., & Saladié, S. (2003). Terres de l'Ebre: una identitat i un projecte de futur. La posició geogràfica, el riu, el paisatge i el capital social, motius d'un nou model de desenvolupament social i ambiental. *Papers, Regió Metropolitana de Barcelona*, 39, 151-181. <https://raco.cat/index.php/PapersIERMB/article/view/103924>

- Taylor, B. (1995). *Ecological resistance movements. The global emergence of radical and popular environmentalism*. State University of New York Press.
- Taylor, B. (2009). *Dark green religion: Nature spirituality and the planetary future*. University of California Press.
- Teilhard de Chardin, P. (1959). *The phenomenon of man*. Collins.
- Tischner, J. (2005). *Etyka solidarności* [The ethics of solidarity]. http://www.tischner.org.pl/content/images/tischner_4_ethics_years_later.pdf
- Tortosa, J. M. (2011). *Maldesarrollo y mal vivir: Pobreza y violencia a escala mundial*. Ediciones Abya-Yala.
- Touraine, A. (1980). The Voice and the Eye: On the Relationship between Actors and Analysts. *Political Psychology*, 2(1), 3-14. <http://www.jstor.org/stable/3790967>
- Tucker, T. (2004). Ecology and the Spiritual Exercises. *The Way*, 43(1), 7-18. <https://www.theway.org.uk/back/431Tucker.pdf>
- Turner, V. (1969). *The ritual process: Structure and anti-structure*. Aldine de Gruyter.
- Velasco, J. M. (2007). *Introducción a la fenomenología de la religión (Estructuras y procesos, religión)* [Introduction to the phenomenology of religion (Structures and Processes, Religion)]. 7th edn. Editorial Trotta, S.A.
- Vernadsky, V. I. (1938). The Transition from the Biosphere to the Noösphere. Excerpts from Scientific Thought as a Planetary Phenomenon, *21st Century Science & Technology*, 25(1, 2). https://21sci-tech.com/Articles_2012/Spring-Summer_2012/04_Biospere_Noosphere.pdf
- Vernadsky, V. I. (1945). The Biosphere and Noosphere. *American Scientist*, 33(1), 1-12.
- Vernadsky, V. I. (1998[1926]). *The biosphere*. Copernicus.
- Verschuuren, B., Mallarach, J.-M., Bernbaum, E., Spoon, J., Brown, S., Borde, R., Brown, J., Calamia, M., Mitchell, N., Infield, M., & Lee, E. (2021). *Cultural and spiritual significance of nature: Guidance for protected and conserved area governance and management*. IUCN.
- Vidal, J. F. (2005). El tortosinisme. Unes impressions. *Plecs d'història local*, 19, 3-6. <https://raco.cat/index.php/Plecs/article/view/282714>
- Vidal, J. F. (2008). La Baixada de la Cinta, 500 anys. Algunes qüestions d'iconografia. *Recerca*, 12, 11-64. <https://raco.cat/index.php/Recerca/article/view/179342>
- Vidal, J. P., Herrera, E., Maxè, V., & Mena, E. (2002). El moviment a les Terres de l'Ebre. El Pla Hidrològic Nacional i la resposta ciutadana. *Revista Catalana de Sociologia*, 17, 27-100. <https://raco.cat/index.php/RevistaSociologia/article/view/222365>
- Voiron, C. (2012). L'anticipation du changement en prospective et des changements spatiaux en géoprospective. *L'Espace Géographique*, 41(2), 99-110.
- Weil, S. (1994). *C. Ortega - Introduction to "Gravity and Grace"*. Editorial Trotta.
- Westbroek, P. (1991). *Life as a geological force: dynamics of the earth*. Norton.
- Williams, Jr., R. S., & Ferrigno, J. G. (Eds.). (2012). *State of the Earth's cryosphere at the beginning of the 21st century: glaciers, global snow cover, floating ice, and permafrost and periglacial environments*. U.S. Geological Survey Professional Paper 1386-A.
- Wyndham, F. S. (2000). The Sphere of the Mind: Reviving the Noösphere Concept for Ecological Anthropology. *Journal of Ecological Anthropology*, 4(1), 98-91. <http://dx.doi.org/10.5038/2162-4593.4.1.5>
- Yanitsky, O. N. (2020). The Ecological Wars: The Notion, Concept and Dynamics. *Advances in Social Sciences Research Journal*, 7(6), 477-488. <https://doi.org/10.14738/assrj.76.8445>

AUTHOR

Francesc Bellaubi. PhD in Natural Sciences (Institute for Environmental Systems Research, University of Osnabrück, Germany) and MSc in Agricultural management and environment (International Center for Advanced Mediterranean Agronomic Studies, France). Former research fellow at South Ural State University (Russia) and MA in Interreligious, Ecumenical and Intercultural Dialogue (Higher Institute of Religious Sciences of Barcelona, Universitat Ramon Llull). Member of Silene. Geologist (BSc.) and Mining Tech. Eng. with a long experience providing technical assistance to development organizations and international agencies, NGOs and research institutions from different countries in the Americas, Africa and Asia-Pacific on natural resources management and climate change.

Conflict of interest

No potential conflict of interest is reported by the author.

Funding

No financial assistance from parties outside this article.

Acknowledgments

To my grandparents who cultivated in me the love for the Land.