

Essay

# About the Triggering of UN Sustainable Development Goals and Regenerative Sustainability in Higher Education

Giulia Sonetti <sup>1,\*</sup> , Martin Brown <sup>2</sup> and Emanuele Naboni <sup>3</sup>

<sup>1</sup> Interuniversity Department of Regional & Urban Studies and Planning, Politecnico di Torino and Università di Torino, 10124 Turin, Italy

<sup>2</sup> Fairsnape, Lancashire PR3 2LE, UK; fairsnape@gmail.com

<sup>3</sup> Institute of Architecture and Technology, School of Architecture, Design and Conservation, Royal Danish Academy of Fine Arts, 1435 Copenhagen, Denmark; emanuele.naboni@kadk.dk

\* Correspondence: giulia.sonetti@polito.it; Tel.: +39-348-0575-395

Received: 13 November 2018; Accepted: 2 January 2019; Published: 7 January 2019



**Abstract:** Humans are at the center of global climate change: The United Nations Sustainable Development Goals (SDGs) are igniting sustainability with proactive, global, social goals, moving us away from the Brundtland paradigm ‘do nothing today to compromise tomorrow’s generation’. This promotes a regenerative shift in the sustainability concept, no longer only considering resources and energy, but also significant human-centric attributes. Despite this, precise ecological and sustainable attitudes have little prognostic value regarding final related individual human behavior. The global cultural challenge, dominated by technological innovations and business imperatives, alongside the mirroring technological fallacy and lack of ethical reasoning, makes the role of small actions, at individual and at academic scale even harder. This paper outlines the context in which universities can collaborate and contribute to triggering sustainability values, attitudes, and behavior within future regenerative societies. This contribution consists in three main areas: the first analyzes the issue of sustainability transitions at the individual scale, where influencing factors and value–behavior links are presented as reviewed from a number of multi and transdisciplinary scholars’ works. The second part enlarges the picture to the global dimension, tracing the ideological steps of our current environmental crisis, from the differences in prevailing western and eastern values, tradition, and perspectives, to the technological fallacy and the power of the narratives of changes. Finally, the task of our role as academics in the emerging ‘integrative humanities’ science is outlined with education promoted as an essential driver in moving from sustainability to regenerative paradigms.

**Keywords:** education for sustainable development; academic organizational change; transformative learning; behavioral change; SDGs; regenerative approach; university

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## 1. Introduction

As reported in the latest Intergovernmental Panel on Climate Change (IPCC) paper, humans are at the center of global climate change: causing anthropogenic climate breakdown, and social factors identified as key to effectively respond to current challenges [1].

The United Nations Sustainable Development Goals (SDGs) are igniting sustainability with proactive, global, social goals, moving us away from the ‘do nothing today’ Brundtland paradigm and promoting a regenerative shift of the sustainability concept, no longer only considered with resources and energy, but significantly human-centric [2].

The phrase ‘sustainable development’ has been so abused that it has maybe lost meaning. This gives room for an initial explanation in the societal domination of a particular epistemology, it can be an opportunity to diagnose the present by the past, using a Foucaultian approach [3], often referred as “history of the present” [4].

Using Habermas’ ideas of the system colonizing the lifeworld [5], we agree with Fergus and Rowney when they state that the meaning of sustainable development changed before it could be fully explored through an inclusive and diverse discourse [6]. An inclusive discourse based on the comparison of different epistemological perspectives is therefore the aim of this paper, exploring the ethics of individual and society as a whole having a choice and a responsibility in terms of a new sustainability narrative [7].

Universities can play an important role in this narratives’ shift, triggering new sustainability values, attitudes, and behavior in future regenerative societies [8,9]. However, higher education institutions (HEIs) are often lacking in holistic visions and incentives have a strong anti-transdisciplinary attitude and a tendency for academics and departments to focus on silos approaches in teaching and researching activities [10].

Between these philosophical discourses, global values, and individual attitudes, this contribution aims at highlighting the role of HEIs in a regenerative sustainability transition in four main moments: in the introduction, old and new definition of sustainability are depicted from a policy/abstract level. Then, the second section analyzes the issue of sustainability transitions at the individual scale, where influencing factors and value-behavior links are presented as reviewed from a number of multi and transdisciplinary scholars’ works. The third section enlarges the picture to the global dimension, tracing the ideological steps of our current environmental crisis from the differences in prevailing western and eastern values, tradition, and perspectives, to the technological fallacy and the power of the narratives of changes. Finally, the task of our role as academic in the next revolutionary “integrative humanities” science is outlined, as education is envisaged as an essential element of moving towards regenerative paradigms [11].

### 1.1. Toward a New Definition of Sustainability

The Brundtland report in the 1980s defined sustainable development as a process that meets today’s needs without compromising future generations [12]. Further sustainability definitions stated that sustainability should be intended as a dynamic equilibrium within humans and ecosystem [13,14]. The regenerative paradigm pushes forward the positive balance, aiming for restoring environments and communities, and to enable conditions for regenerative growth [15–17], and sustainability efficiency [18]. In this paradigm shift, Figure 1, not only technological solutions, but also humanistic and ecological values are embraced [19,20].

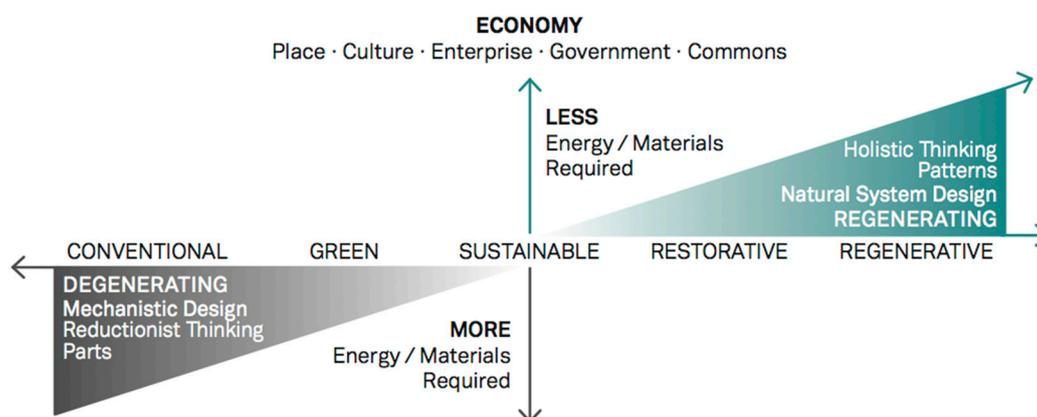


Figure 1. Stages of development, from conventional to the regenerative economy according to [19].

This shift has recently been witnessed in a new normal at legislative and governmental levels: while in the Paris Agreement (December 2015) 197 countries agreed to reduce any increase in global warming to “well below 2 °C above pre-industrial levels” [21], with an aspiration to cap temperatures at 1.5 °C. The latest Intergovernmental Panel on Climate Change (IPCC) report (October 2018) stressed the importance of demand-side measures to achieve consistent pathways toward global CO<sub>2</sub> mitigation [22].

Hence, humans are at the center of global climate change: their actions cause anthropogenic climate change, and social change is key to effectively respond to climate change [23–25]. Potential synergies and trade-offs between 1.5 °C mitigation pathways and different sustainable development (SD) individual dimensions are an emerging field of research: in Section 5.4, the IPCC 2018 report assesses interactions between individual mitigation measures with other societal objectives. The same adaptation strategy is supporting the sustainable development goals (SDGs) call for behavioral change and institutional capacity, as social learning strengthen is key for longer-term changes [26–28].

The SDGs have the potential for igniting sustainability with proactive, global, social goals, moving us away from the do nothing today Brundtland paradigm toward a regenerative paradigm [29,30]: the regenerative sustainability is indeed defined as the one enabling social and ecological systems to maintain a healthy state and to evolve [31]. Its key related topics (place, energy, carbon, water, resources, wellbeing, equity, education) are synoptically displayed in Table 1.

**Table 1.** Regenerative sustainability key topics. Reproduced from to [31].

Key Topics	Vision	State of Art	Gap
Place	Earth as a community, not a commodity	Regenerative approaches departing from the recognition that each place is a unique dynamic entity.	To evolve towards a harmony between people and space in which the human activity generates zero net waste and uses renewable resources to assure sustainable development for current and future generations. To restore the connection of people to nature and to the planet.
Energy	Local/renewable ownership and management	Focus on renewable energy production, energy efficient construction, and green goods and services industries (green economy) and less on the role of energy for the ecosystem restoration.	To move from a green economy to a balanced economy this implies the preservation and restore of the planet's health. Energy as part of a coherent restoration approach aiming to increase the quality of the ecosystem contributing at the same time to sustainable economic growth.
Carbon	Carbon working with natural systems	Strategies oriented to the remediation of the damage caused to the environment (e.g., revegetation).	Strategies oriented to the restoration of the damaged ecosystems, comprehending activities aimed at the increase of carbon stocks and the reduction of the emissions of carbon dioxide, which would contribute for slowing the process of climate change.
Water	Building and cities to participate in water cycles, local watersheds	Buildings and sealed areas prevents the functioning of the water cycle. Approaches dealing with water as if the human owns it.	Innovative approaches in which cities incorporate natural cycles in the way they are built, function, and grow. Develop urban concepts that mimic nature as a requirement for a balance and healthy life. Transform the human relationship with water, which implies the respect of its natural processes.
Resources	Local, accessible, and low-cost resources and building responsibility of managing the commons	Resources exist for human use. Management of resources based on an economic rationality: damage to the ecosystem can be compensated through a monetary payment.	Policies based on the idea that it is impossible to compensate damages; so, damages have to be avoided. Resources are to be maintained for the future generations, which implies a responsible public management and an increasing participation of the society on the collective choices.
Wellbeing	Happiness that con-tributes to individual, community, and/or global well-being without exploiting other people, the environment, or future generations	“Instant” happiness instigated by the consumer society that sustains the idea that more goods means higher individual and collective well-being, without considering the social and environmental impacts of their production and distribution.	Sustainable well-being as an opportunity to enhance quality of life and contribute to individual, community, and society well-being. Wellbeing from acknowledging that human are part of a living system and a damaged planet impacts negatively on the health of people and communities, today and for the future (a biophilic approach towards the well-being of the earth). The well-being of society as being interconnected to the achieved well-being of the planet.
Equity	All voices shall be heard; equity beyond human community	Groups with economic power that exert lobby activities near governments guarantee for themselves economic and environmental advantages over the society without considering the depletion of the planet's resources.	To share the well-being between present people and future people, generating an intergenerational fairness in allocating resources between current competing interests.
Education	Bottom-up cultures/initiatives (permaculture, urban gardening, local currencies, urban pioneer movement, placemaking)	Top-bottom approaches to deal with imbalances and damages in nature.	Bottom-up approaches which give voice to different sectors and interests of the society, and creates a forum for the promotion of a proactive collaboration to foster restoration actions, involving those affected in the process of change. Education for eco-literacy as a precursor of public participation.

### 1.2. Regenerative Behaviors

Following the conceptual framework outlined above, regenerative behaviors are introduced as additional, positive behaviors, intentional or otherwise, created through regenerative sustainability interventions [31]. We focus on social aspects of decision making considering that some of the challenges related to sustainable development are social in their core identity [32,33]. They are social regarding the motivations towards our consumption, the configuration in which we shape the institutes and companies we interact with and the behavioral assumptions behind many of the strategies and interventions for the transition to better consumption and production pathways [34–36]. Indeed, eloquent collective changes start with individual transformation.

Emerging theories, like the “Theory U” by Otto Schirmer [37], are social field theory that makes visible the source from which we operate—i.e., individuals, as teams, as organizations, and as larger systems—and the impact depending on which source we are operating from: [38].

Our feelings will affect our actions towards climate change issues [39]. While negative feelings can reinforce adaptation [40], positive feelings may be counterproductive in terms of protective attitudes [41]: people are more willing to take action for climate change when they are directly affected and concerned [42], and when they can be rewarded somehow from their actions [43].

For many years, policies have presumed that humans make a decision and act in logical and foreseeable ways; however, in reality, how and why we (as individuals, communities, and entities) behave is due to the confluence of many factors. For instance, individual conduct is extremely entrenched with our social circumstances, formal settings, religious and cultural rules, together with many contingent mental dynamics [44–46].

A recurrent outcome from behavioral and attitudinal surveys is that people are increasingly caring towards the planet and concerned about the need for an ecologically sound lifestyle [47,48]. However, values and attitudes may not always be mirrored by actual actions and choices. This is not only related to sustainability: our practices, instincts, and wish for comfort and opportunities challenge much even with our best intents and trusted views. This gap is well recognized in behavioral and cognitive science, and it unlocks concerns regarding the confidence we have on surveys and qualitative information-based policies aiming at behavioral changes [49–51].

Nevertheless, the need for a focus on human values, attitudes, and behaviors to establish the basis for a sustainability transition is urgent [33,52,53]. Even if the drivers vary, this remains the case both at individuals’ level and at public/private entity level. Higher education institutions, as education providers, have a crucial role in cultivating sustainability awareness and values within in future generations of citizens, entrepreneurs, and policy makers [8,54,55].

### 1.3. Between the Individual and Global Dimensions

Although the topic of individual ecological shift is well researched and debated, people sometimes can feel powerless in applying their principles in capitalist systems. However, individual inner self-observation and awareness can create the basis for a collective change in a social, economic, and environmental sustainability [56–59].

The evolution of economic thought can be regarded as a system moving from traditional ego-system awareness (something we still teach today at business schools around the world) to a new stage of awareness, an “eco-system awareness” focusing on the well-being of not only a few but the well-being of all [60–62].

The EGO-ECO-SEVA scheme illustrates these three worldviews [63–65]. The path from EGO to ECO to SEVA begins by stepping up from our EGO dimension, realizing the connectedness of all ECO spheres, arriving to a SEVA position for a life on earth via a regenerative approach. The regenerative sustainability shift therefore requires a radical turn of our worldview, from a mechanistic to ecological one [15].

## 2. Individual Dimension

According to Leiserowitz et al., “Values are abstract ideals, such as freedom, equality, and sustainability. They often evoke emotional reactions and are typically expressed in terms of good or bad, better or worse, desirability or avoidance. Values define or direct us to goals, frame our attitudes, and provide standards against which the behavior of individuals and societies can be judged. Attitudes refer to the evaluation of a specific object, quality, or behavior as good or bad, positive or negative. Attitudes often derive from and reflect abstract values. Finally, behavior refers to concrete decisions and actions taken by individuals and groups, which are often rooted in underlying values and attitudes” (p. 414, [33]).

All these converge progressively toward a proper value system: a set of values assumed by an individual or a society inducing the conduct of (often unaware) associates [5,66]. We rank our decisions with judgment categories that can become private, shared, monetary, civil, or religious based. Our values make us who we are and whom we want to appear to be and eventually who others see in us: collectively, they are the driving factors that can change the relationship between us and ourselves, us and society and us with the ecosystem in which we live [67,68]. There is much investigation that confirms how personal well-being, curiosity, empathy, kindness, and non-materialistic values are linked with more sustainable behaviors [59,69,70]. Sustainability thus really condenses into nurturing and allying values, beliefs, and behaviors with ecological stewardship and with collective responsibility. Through our everyday choices, we can choose either to improve or weaken the planet, our society, and commercial wealth. Emerging from these, global attitudes toward the Millennium Declaration Values are envisaged in freedom and democracy, fairness, solidarity, acceptance, respect for nature, and shared responsibility [71]. A study by Pappas defines ‘individual sustainability’ as follows:

Sustainable individuals are characterized by creating harmony, interconnection, and relatively high levels of self-awareness in their values, thoughts, behaviors, and actions as well as cultivating continued individual growth in their physical, emotional, social, philosophical, and intellectual abilities. Individual sustainability includes possessing a well-developed and demonstrated value system that acknowledges the importance and interconnectedness of all global biological and social systems, and our appropriate place within them. (p. 12, [72])

A number of research projects comment that people with self-enhancing, money-oriented goals and values concentrating on accomplishments, wealth, control, prestige and image have more adverse attitudes to the environment, and are less expected to be moved into eco-friendly behaviors [73]. The conclusions presented in the work of Lavelle et al. [74] show the heterogeneity and richness of ecological behaviors [73,75]: according to studies by Martinsson et al. [76], (infra)structural and cultural factors are found to be a significant aspect in shaping behavioral change. This means that working upon strategies tailor-made for a specific target of people can be far more effective than promoting general policies for sustainable consumption [77]. Moreover, from a social cognitive perspective [78] it has been found that personal agency (as the ability to deliberately select, perform, and achieve personal intentions and desires) is crucial to obtain visible results in sustainable behavioral change. From an environmental psychology point of view, positive circumstantial conditions and ecological self-efficacy, visible outcomes are stressed to foster an individual’s expectations and more stimulating goals. The work by Shapiro et al. [79] explores mindfulness practices at schools as useful tools to help illuminate one’s values, to learn how to think more impartially, so that students can experience and understand attitudes that may be truer and responsive to real intentions. According to Rosenberg [80], mindfulness training can help to become more attentive of believed processes and so more critical when receiving an external narrative/influence. This approach can also be found in the INDICARE model [55]. As a sustainability assessment framework, it aims at stimulating the sustainability debate in higher education, suggesting a more holistic approach emphasizing the interconnectedness of

human–nature relationships, combined with meditative workouts that help the transformative process both at individual and institutional level.

Inspired by biophilic ideas, transformative learning theories, and participatory evaluation, INDICARE is an evaluation framework that seeks an eco-centric and integrative approach toward our inner being, the earth and its communities. Outlines proposed by [81] also draw from transformative learning concepts and propose key competencies including: “*Gestaltungskompetenz*” [82,83]; heads, hands, and heart tools [84]; values, knowing, skills, understanding [85–87]; and a few others [88].

### 3. The Global Dimension

In the previous paragraph, sustainability values, attitudes and behaviors are tracked, mirroring the culture, as socially transmitted behavior. Here we explore the connection of the local focus on sustainability transition to a wider value dimension, sense of responsibility and identity given by a new alternative culture (as, quoting Clyde Kluckhohn, it would not have been fish who discovered the existence of water [89]). The individual dimension is not enough to understand real opportunities for the desired paradigm shift. A third part of this essay attempts to depict, from a higher level of “*Weltanschauung*”, why we need to observe the meta-culture of change against current narratives of positivism and technology fallacies.

#### 3.1. Values Beyond Sustainable Development

Sustainable development, at its most theoretical level, highlights the values of economic development, environmental, and social thriving. Whilst this three pillars model has been generally accepted, it is now clear that tough trade-offs between these values, conflicting value promises, and main concerns are rarely openly or debated, leading to increased misinterpretation, intensified disagreement, and confusion.

Integrated sustainability values strategy aims to reconcile these constructively. Considering the language of the UN General Assembly, the World Summit on Sustainable Development, the Earth Charter, and the Global Scenario Group, values for sustainable development include ‘freedom, equality, unity, tolerance, regard for nature, and joint responsibility’. More specific and practical translation of these aspirations were posed to echo more specific actions for achieving a global peace, equitable development, diffuse human rights, African protection, and so forth. It was through this lens that the United Nations in 2015 took the very ambitious step of setting its 17 Sustainability Development Goals (SDGs).

The 17 SDGs address social and economic development whilst incorporating poverty, hunger, health, gender equality, water, sanitation, education, climate change, energy, environment, and social justice issues. They differed from their forerunners—the eight UN Millennium Development Goals (MDGs) set in 2000—in crucial ways. Their focus was on social issues in developing countries and success was limited to areas such as impacting poverty, HIV and malaria. In setting the SDGs, the most extensive global consultation in history was launched to gauge opinion on what they should include, embracing governments, international organizations, academia, civil society, businesses, and individuals around the world. With the world’s population set to exceed 8.5 billion by 2030, growing demands on resources will in turn heighten risks of insecurity, poverty, and disadvantage. The rapid advances in digital technology and artificial intelligence brings to light new risks and impacts the way we work. As Spangenberg [90] warns, the SDGs can be seen re found to be weak on ‘agency’, since public administrations have limited duties on reporting and achievements, while business or consumers almost none (which is why success of SDGs is seen to be through the private, not public sector).

SDGs have made a big effort on compromise and discussion among nations and rights. However, being so wide they can just focus on a single state and impact, overlooking the burdens and in the end allowing contemporary counterproductive drivers. In order to allow positive interaction between the different targets, the means of implementation must set legally binding guidelines and criteria

for all important stakeholders and entities (importantly including business), for ruling the market second equity principles, for a transparent governance of the public–private partnership instead of deregulation, and for a stronger role of public bodies and citizens and all main civil society assemblies.

The attitudes pursuing the values carried by SDGs should address the root causes of the inequalities and climate breakdown we live in. This requires behaviors taking more radical steps than corporate social responsibility (CSR) reports or the frequent intellectual exercises of greenwashing. For success with the SDGs, we need to go to the roots of our analysis, be visionary in willing change and stop defending the status quo, individually and as a society.

But what is at the root for change?

### 3.2. Three Main Narratives of Change

While SDGs condense the values and bring attitudes for radical change in society and ourselves towards sustainability, three main narratives of this change are taking place, as envisaged by Sörlin and here redrawn in more general terms.

#### 3.2.1. The Anthropocene “Weltanschauung”

One such narrative of change is the Anthropocene “*Weltanschauung*”, a German word for a fundamental concept of German philosophy and epistemology referring to a wide world perception.

In the case of Anthropocene, it defines the radical new phase of earth history that begun when human activities started to have a significant global impact on the Earth’s geology and ecosystems. In the words of the eminent geographers and sociologists, we need to start thinking in revolutionary terms about the opportunities to impact this earth with a regenerative switch [91–93].

Jason suggests we live in the ‘age of capital,’ the Capitalocene [94], seen as arrangement of control, profit, and re/production as the essence of life. The troubled binary relationship of human/nature is one cause of our reluctance to consider human organizations—in addition to capitalism—as part of nature [95]. Societal post-war transformations must be viewed also in the light of how they work into procedures of power, capital, and nature established four centuries earlier, which have at their bases values such as the scientific progress and anthropocentrism.

Such values misled humanity in the believing of possessing an intellectual culture very far from giving us a better knowledge of our life conditions, since our relationship with our cultural instruments is strongly mediated by technology [96]. In other words, we are prisoners of the culture (as a mix of values, attitudes, and behaviors) we produced, and we live in, like fish in a stream of water. However, unlike other species, we are also able to see where we are heading.

While the meta-culture is usually a very difficult operation, being wide, branched, and enveloping, we, as members of the academic sector and elements delivering culture, must reflect upon this issue and be aware of the power of this narrative. Ethics and values lie at the very heart of the SDGs and can be seen as a vision for how we want to share the earth’s resources among the whole of humanity. We now are aware that earth’s resources are finite and that the human population is on track to reach approximately 10 billion by the middle of this century. Ethically, it is hard to argue that any one individual has more or less right to development than any other person on earth. For not exceeding planetary boundaries while increasing social justice [97–99], we need to be well-informed and develop brave imagination, responsible reflexivity, and a market with a sense of direction [100]. The last centuries’ myths demonstrated that laws of economic motion produce intentional inequality, and that is why it is an incredibly exciting time to redesign the economy so that we meet the needs of all within the means of the planet. Drawing from the Kluckhohn fishes’ metaphor, we must imagine to proceed in the counter stream [68] and observe how the ‘dominion’ of man over nature finds its root very far, and show its limit with all the clarity of natural disaster and diffused unhappiness of individuals.

### 3.2.2. The 'Extended Now' and the Right to Development

The second great transformative narrative is the directionality of this change [97]. In the book "*Regimes d'historicité*" [101], Francois Hartog describes the years after 1989 as a period when time had lost track, since the past and future appear of no importance in a system destroyed in its inner values. Before 1789, the past strongly informed the current life. Between 1789 and 1989, the fascination with the future. According to Hartog, our time is trapped between fears and senses, of one of emptiness, against a scenario where the earth ecosystem is devastated by a market still running as it was created in the initial capitalism. The 'extended now' is a well detected phenomenon, but we can still influence and heal the future, with narratives of positive change (for example through resilience) and improving the environment through principles of regenerative sustainability [14].

A regenerative sustainability shift allows for profound personal, societal, and global renewal, likened to the deeply religious, but perhaps heretical, sense that Franciscans claimed as the spiritual independence of all parts of nature. Fairness, equality, respect between humans and all other natural components are revolutionary values proposed by St. Francis. His belief in the value of humility, not merely for the individual but for man as a species, set up a form of democracy of all God's creatures, putting human beings in a system of equality. It is perhaps regrettable that our current science and technology are so entangled with a certain Christian/western arrogance towards nature, that any solution from here alone cannot be trusted [102].

That concept of domination over nature re-emerged fiercely between 1500 and 1600 and was enshrined in Western culture until recently, where our values allow investing in more and more technological power than political wisdom (the vested interests became stronger than public ones), giving authority to lineal causal planning instead of holistic approaches, giving privilege to arrogance and not to scientific understanding of complexity, prioritizing the short-term, instead of the long-term strategic vision [103,104].

### 3.2.3. The New Epistemology for Transdisciplinarity

The third great transformative narrative is the epistemological widening of the domain of knowledge, that is often the tool called into action for the big climate change challenge. Recent research is composed of specialists of multifaceted analysis, dealing with what Ronald Barnett called "supercomplexity" [105,106]. A new epistemology is needed above all in the places of knowledge transfer and sharing.

Great utopias like the Tommaso Campanella "*La città del sole*" or the "New Atlantis" by Francis Bacon have generated a mentality that is technically possible [107,108], regardless of a duty of respect for the created world that has been "entrusted to man's responsibility for its conservation and the maintenance of its beauty". The perspectives and promises of the socio-technical system in which we are still immersed are retraceable also in the discourses of the great intellectuals of the 17th century ([109], p. 168).

A key to that future utopia, a non-place, cannot be found in human nature: the key must in a revolutionary relationship between human culture and nature. The true utopia is our modernity, our techno-scientific vision of the world was that of Descartes, connecting that of the Renaissance alchemists and the research groups of our laboratories. This utopia is an intentional narrative accountable for the prevailing and furious alterations to the terrestrial landscape up to today's ecological and individual/psychological crisis. The contemporary rise of fundamentalists can be intended as a way to recover a sort of identity from the past, where the society has lost all its norms and values (*anomia*), and broke down all its social structures (*atomia*) [110,111], and seeks for a new epistemology.

The epistemological widening of the domain of knowledge is often the tool called into action for this big "supercomplexity" challenge of sustainability, embracing social, economic, and environmental issues in uncertain and unpredictable ways [106]. A new epistemology is needed in the knowledge transfer and sharing, communicating values of openness, boldness, community

engagement, accessibility, and that should give to students occasions to learn how to solve societal challenges through experience

Such a new transdisciplinary epistemology should teach how to listen to many points of view and embrace uncertainty. The branch of integrative humanities emerged for understanding of such contemporary complexity and against the supremacy of any functionalist rhetoric as another symbolical turning point for this movement.

Aldo Leopold [112] can be viewed as a tipping point for such change in thinking: “We abuse the land because we regard it as a commodity belonging to us. When we see the land as a community to which we belong we may begin to use it with love and respect” (p. 373, [113]). Other attempts to articulate the *zeitgeist* of regenerative sustainability can be seen in Henry David Thoreau’s *Walden* [114], in the rewilding of the land called for by George Monbiot [115], in Rachel Carson’s 1967 “*Silent Spring*” [116] and in Brown’s “*FutuREstorative*” [14], as well as in the recent “*Doughnut Economics*” from Kate Raworth [96].

This awareness brought the discourse to the third part of this paper, exploring the task of our role as academics in regenerative and revolutionary ‘integrative humanities’ science, with education outlined as an essential element for moving from sustainability to regenerative paradigms.

#### 4. The Role of University

A “Great Transformation”, in the words of Karl Polanyi, is needed to reorganize our knowledge, our education and our markets [117]. Drawing from Arendt’s claim, science must now arise as a matter of political debate [118].

An essential element for this shift education [88,112,119]. This means rethinking, from a “change in education” to an “education for change” [120]. Eco-literacy in this sense may be the new seed to plant in future generations moving towards a collaborative, cooperative, and responsible approach [121–123].

##### 4.1. The Importance of Words and Practices in Sustainability Education

Universities may take the responsibility of injecting behavioral change in future citizens and decision makers, considering the “acting”, the “going”, as a form of responsibility itself [124]. Communication is crucial since responsibility arises first by making all sustainability actions visible, and by creating a common language for sustainability, since a language deficit brings an attention deficit [125].

As suggested in the international literature, to act in an integrated lens is essential to develop a proper sustainability plan [126–128]. The University could, and should be the place of value transition, proceeding with coordinated actions on two fronts: implementing sustainability education, stressing its potential and in practicing what it preaches the classroom.

Transition theories also focus on the process of change [129] and transition (such as enroll in a new university, moving, getting a new job, or retiring). University-based policy initiatives could leverage into these ‘moments of change’ that characterize each new academic year.

The University can ultimately be an actor in society, being the place to reflect upon the relationship between the *tecnè* (τέχνη), our know-how on how cultural instruments should be used, and the *ethos* (ἦθος), the value system that should be able to control it. With integrative humanities support [130], a future university can overcome disciplinary silos, merging Social Science and Humanities (SSH) and Science, Technology, Engineering and Mathematics (STEM) in a problem-based knowledge transfer and co-creation systems [131–133].

The change in the teaching/research system requires interdisciplinary studies to replace the conventional lecture, or course-based education: more open (including external, green, and biophilic) spaces providing place for cooperation, interactions, workshops, co-study and greater academic recognition for qualitative studies will be needed [134,135]

In addition, any education agenda for regenerative sustainability will need to rethink the scientific mindset and tools to enable change curriculum networks at all levels of education, from kindergarten

to university, in vocational training schools and in business. The educational system should strengthen the bonds between nature, biophilic design, biodiversity, buildings, and other ecosystems which have impacts on us as humans [31,136,137]. Citizens will take an important task working with experts and researchers from the academia and other research institutions and organizations to understand the scientific effects of climate change [138].

#### 4.2. Four Practicable SDGs Recommended for Implementation in Higher Education Institutions

As practical examples of implementation, we propose four actions per each of the issues envisaged in Leiserowitz [33,139,140] as current barriers for behavioral change. For each issue, a specific university action is proposed:

1. SDG 4: Individuals (and the institutions they are affiliated with) can claim they do not have the time or background knowledge, or skills, or they do not think their single act may be effective. The university should offer courses for students, administrative staff, and professors regarding sustainable behaviors and their social, economic, and environmental impacts while suggesting practical tips for a wiser energy and resource consumption both at work and at home.
2. SDG 17: People will claim for physical obstacles to reach sustainability goals inside the university: the lack of an eco-friendly mobility infrastructure, or technology for renewable energy production, laws allowing a more flexible purchase of goods selected upon green criteria, elevated cost for the 'greener' choice. The coalition of national universities for sustainability may be the collector of single intentions to ask energy providers for lower renewable energy costs, or national governments for more flexible rules for green purchases.
3. SDG 12: Even when not acknowledged, habit and routine are strong barriers for people and institutions willing to change their behaviors. Even the simple disposing of recyclable waste, or switching off lights when exiting the office, can require time to change habits. However, recent evidence suggests that we act irrationally very often and that a stringent law in response to a shocking event can change the habits from one day to another.

The introduction of the smoking ban inside public buildings, hard punishment for drunk driving, mandatory seat belts, are all cases of single behaviors that saw a relatively quick change. Aside from this top-down strategy, the concept of 'bounded rationality' has been proposed by psychological economics claiming that logical decision-making is frequently imperfect for lack of time, or for the high number of alternatives that leads to postponement [141]. This 'paradox of choice' can be intensified when dealing with the complexity of defining green behavior. In this case, the university may support new habits taking the responsibility of selecting, with the help of in-house environmental experts, the products and the consumption behavioral path that are scientifically found more sustainable, thus inducing a 'forced' but informed new greener, choice.

4. SDG 13: As also argued by Shove [142], the complexity of sustainable behavior cannot be tackled just by placing independent driving features, such as value systems and organization settings, into simple causal models. Behavioral change is reciprocally encouraging. Dynamic and visible management cared by a dedicated unit in universities may foster the making of positive feedback loops, essential to support and accelerate the impact of a single behavioral change. A more active approach that considers not users, but humans as part of the set-up they live and work in, is also encouraged by the theory-U [37] for the co-creation of values. Shove's 'three elements model' (material—meanings-procedures) highlights the value of little gestures that can be easily promoted and performed by universities: for instance, providing physical items that allow or make easy a green behavior (such as waste points collections or energy consumption displays). A prosumer strategy put in place by communication offices in universities may profit of the co-creation with students and professors of a self-tailor-made strategy for effective sustainability communication, and increased wellbeing of all. Prosumer in the same institutions

may easily identify a key field of action where the university can improve its environmental footprint—both in campus operations (estate management, procurement, etc.), and in teaching, research, and public impact—identify methods to communicate objectives to target audiences and enable individual communications projects to contribute towards a coordinated student engagement campaign.

## 5. Conclusions

Humans are at the center of global climate breakdown: The United Nations Sustainable Development Goals (SDGs) have ignited sustainability with proactive, global, social goals, moving us away from the ‘do nothing today to compromise tomorrow’s generation’. This Brundtland paradigm promotes a regenerative shift in the sustainability concept, no longer only considering resources and energy, but also the significant human-centric attributes. Despite this, precise ecological and sustainable attitudes have little prognostic value regarding final related individual human behavior. The global cultural contest, dominated by technological innovations, anthropocentric imperatives, the mirroring technological fallacy and the oblivion of ethical reasoning, makes the role of small actions, both at individual and academic scale even harder. To outline the context in which universities can collaborate to trigger sustainability values, attitudes, and behavior in future regenerated societies, this contribution is articulated in three main parts.

The first part analyzes the issue of sustainability transitions at the individual scale, where influencing factors and value-behavior links are presented as reviewed from a number of multi and transdisciplinary scholars’ works. Structural and cultural factors are found to be a noteworthy part in behavioral change shaping. This means that working upon strategies tailor-made for specific target of people is far more effective than promoting general policies for sustainable consumption. Moreover, personal agency (as the ability to deliberately select, perform, and achieve personal intentions and desires) is crucial to obtain visible results in sustainable behavioral change. Mindfulness practices are found to be very useful tools to help illuminate one’s values, to learn how to think more impartially, so that students can re-experience and gather attitudes that may be truer and respondent to real intentions. Mindfulness training can also help us to become witnesses of our mind processes, and thus more critical when receiving an external narrative/influence/desire.

The second part enlarges the picture to the global dimension, tracking the ideological steps of our current environmental crisis from the differences in prevailing western and eastern values, tradition, and perspectives, to the technological fallacy and the power of the narratives of changes. The heretical and revolutionary figure of St. Francis, recalled by the last Pope encyclic, breaks the attitudes of domination, derived from Genesis, with his belief in the value of humility, not merely for the individual but for man as a species, setting up a sort of democracy of all God’s creatures.

The epistemological widening of the domain of knowledge is often a tool called into action for the big “supercomplexity” challenge of sustainability. A new epistemology is needed above all in the places of knowledge transfer and sharing like the university of the future, that should communicate values of openness, boldness, community engagement, accessibility, and that should give to students occasions to learn how to solve societal challenges by experiencing them in the streets. A new transdisciplinary epistemology should teach to listen to many points of view and embrace uncertainty. The branch of integrative humanities emerged precisely for the quest for much more authoritative and suitable understanding of such contemporary complexity and against the supremacy of the functionalist rhetoric.

This awareness brought the discourse to the third part of the paper, exploring the task of our role as academics in the revolutionary ‘integrative humanities’ science, as education is outlined as an essential element for moving from sustainability to regenerative paradigms.

Eventually, universities may take the societal role of injecting behavioral change in future citizens and decision makers, considering the ‘acting’, the ‘going’, as a form of responsibility itself.

Scaling up from the individual shift towards sustainability into a global shift must address the issue of responsibility. We may cite Edgar Morin in the beginning of his book [143]: “I felt in touch with the heritage of the planet, animated by the religion of what unites, from the rejection of what he refuses; animated by an infinite solidarity” ([143], p. 1). The aspiration and the intent of a planetary humanism offers the values, attitudes, and behavior not only as origin and purpose of complex thought, but also as a concrete journey of individual and global regeneration for exiting the crises of our time.

As suggested in the international literature, to act in an integrated optic is essential to develop an effectively-communicated sustainability plan. The University could, and should, be the place of value transition, proceeding with coordinated actions on two tracks: one, by implementing sustainability education, stressing the potential it has to orientate the civic sense; the other, for practicing what it preaches in its classrooms, by profiting of the transition moment of students enrolling or new staff hiring, experiencing concrete sustainable practices take place in the daily campus operations.

**Author Contributions:** G.S. is the main researcher. E.N. shaped the paper contents according to the aim of the RESTORE COST action in which this research spread out. M.B. contributed in respect to regenerative sustainability and refined the writing style.

**Funding:** This research received no external funding but the APC was funded by the COST Action CA16114 ‘RESTORE: Rethinking Sustainability towards a Regenerative Economy’. More information can be found at [www.eurestore.eu/](http://www.eurestore.eu/).

**Acknowledgments:** The authors acknowledge the great influence in structuring this article after attending enlightening seminars by Francesco Remotti, Viriato Soromenho-Marques, Joachim Spangenberg, Sverker Sörlin, Sebastian Thomas, Dario Padovan, Andrea Bonaccorsi, Carlo Olmo, and the lovely conversation with Didac Ferrer-Balas, Julie Newman, and Davis Bookhart. Interesting aspects emerged while participating in the COST Action CA16114 “RESTORE: Rethinking Sustainability towards a Regenerative Economy”, the COST Action TD1408 “INTREPID: Interdisciplinarity in research programming and funding cycles”, and the H2020 funded project SHAPE-ENERGY “Social Sciences and Humanities for Advancing Policy in European Energy”.

**Conflicts of Interest:** The authors declare no conflict of interest.

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