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## Editorial

At the turn of 2020 to 2021, amidst the covid-19 pandemic, the Faculty of Religious Studies and Philosophy at the University of Saint Joseph, Macau (SAR), organized a lecture series on the Natural Law. Three of the contributions of this issue are further developments of the lectures given. They engage with the theory of the Natural Law from a variety of perspectives, featuring interactions with New Testament exegesis, Islamic studies, and ecological awareness.

The article of Chin Hei, Andrew, Leong, “Does Rom 2:14 Refer to the Natural Law?,” investigates the association between Rom 2:14 and the theory of Natural Law. Rom 2:14 has been one of the “go-to” biblical references for those who would invoke biblical authority of the Natural Law. One of the most recent examples is the document published by the International Theological Commission, a consultative organ of the (then) Congregation of the Doctrine of the Faith of the Roman Catholic Church at the Vatican, in 2009, *In Search of a Universal Ethic: A New Look at the Natural Law*. After reviewing the different recent exegetical works and using them to analyze Rom 2:14, the article proposes a more nuanced view on the relationship between Rom 2:14 and the Natural Law.

On September 22, 2011, Pope Benedict XVI gave an address to the German parliament. In addition to the foundation of human rights, the role of politics, the pope’s speech touches upon issues like environmental protection as well as the Natural Law. In this speech, Benedict called for a listening heart, one that listens especially to nature. Four years later, Pope Francis promulgated his second encyclical, *Laudato Si’*. It is a call by the pope to humankind to acknowledge, understand, and tackle the ecological crisis. Taking the speech by Benedict as a starting point, Franz Gassner, in his article, “‘To Listen to the Language of Nature and to Act Accordingly’: Natural Law as Beacon guiding to Human Flourishing and Ecological Civilization,” contributes to this volume by making a valid attempt to invite the speech to enter into dialogue with the encyclical by Francis.

In the article by Roberto Ceolin, “Natural Law and the Šarī‘ah: The Enclave of Reason Between Islamic ‘uṣūl al-fiqh and Al-Ghazali’s maqāṣid al-šarī‘ah,” he counters the popular conception that reason had only a limited role to play in the formation of the Shariah law in Islam. He proposes that during the development of the Islamic legal tradition, the awareness of the historical limitation of the revealed

text has never been completely absent. In this paper, Ceolin demonstrates the use of rational thinking in Islamic jurisprudence by one of its legal devices, the *maqāṣid al-ṣarīʿah*.

This volume also includes an article by Eduardo Agüero, “Sanctification and the Gift of the Holy Spirit: A Semiotic Study of 1 Thessalonians 4:1-8.” After a historical critical study on the pericope, Agüero then focuses on the key words in this pericope and studies them against their specifically Pauline background. Based on the result of this study, then Agüero moves to a diachronic and synchronic reading of the pericope, which produces insights on the nature and effect of sanctification in four different levels of relationships that a Christian finds him/herself in.

*Andrew, Chin Hei Leong*

**“To Listen to the Language of Nature and to Act Accordingly”:**

Natural Law as Beacon guiding to  
Human Flourishing and Ecological Civilization

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***Abstract***

The article sets off from a speech given by Benedict XVI in the German Bundestag in 2011, where he requested an ecological learning process to aim at sustainable human development. Appreciating the Ecological Movement, he asked to learn to listen to Nature’s language and act accordingly, which he applies analogically to “human ecology”. The article bridges elements of “Listening to Nature” and the Natural Moral Law Tradition in Benedict’s speech and in Francis’ Encyclical Letter *Laudatu Si’* in view of serving human flourishing in an ecological civilization.

Keywords: Natural Moral Law; Nature, *Laudatu Si’*, Benedict XVI, Francis; Ecological Civilization), Sustainable Development, Ecology of Man.

## Introduction

In his lecture in the German Parliament (“*Bundestag*”) in September 2011 in Berlin,<sup>1</sup> Benedict XVI asked to learn to “listen to nature” in view of sustainable human development. He emphasized the “dignity of the Earth” and acknowledged in appreciating words the Green Movement: “I would say that the emergence of the ecological movement in German politics since the 1970s [...] was and continues to be a cry for fresh air which must not be ignored or pushed aside, just because too much of it is seen to be irrational. Young people had come to realize that something is wrong in our relationship with nature, that matter is not just raw material for us to shape at will, but that the earth has a dignity of its own and that we must follow its directives.”<sup>2</sup>

The relevance of learning to listen to nature became even clearer in the context of the global pandemic crisis: “Many of the root causes of climate change also increase the risk of pandemics. Deforestation, which occurs mostly for agricultural purposes, is the largest cause of habitat loss worldwide. Loss of habitat forces animals to migrate and potentially contact other animals or people and share germs. Large livestock farms can also serve as a source for the spillover of infections from animals to people. Less demand for animal meat and more sustainable animal husbandry could decrease emerging infectious disease risk and lower greenhouse gas emissions.”<sup>3</sup> Thus, a refocus on the tradition of the natural moral law is timely, which marks one of “the oldest ethical traditions relevant to environmental ethics”.<sup>4</sup> Learning to listen to nature seems to be a primary lesson in order to survive and to build a consistent “ecological civilization”, as sustainable development is expressed in Mainland China. The article takes a closer look at selected aspects of natural law ethics and their relevance for finding and implementing comprehensive forms of sustainable human development on the macro, meso, and micro level.

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<sup>1</sup> Benedict XVI: Apostolic Journey to Germany, 22-25 September 2011, Address of His Holiness Benedict XVI at his visit to the Bundestag Building, Berlin, 22 September 2011;

<sup>2</sup> Ibid.

<sup>3</sup> T. H. Chan, Harvard University, School of Public Health, Center for Climate, Health, and the Global Environment: <https://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-climate-change/>

<sup>4</sup> Joseph DesJardins, *Environnemental Ethics : An introduction to Environnemental Philosophy*, 5th Edition (Australia : Wadsworth Cengage Learning, 2013).



## Basis of the Natural Law Tradition

Basically, natural law ethics teaches “that there are natural rights and duties prescribed by nature’s laws which direct ethical behaviour [...]. Natural laws and ethics derive standards of right conduct from the laws of nature. Preserving a species because it has an intrinsic value, or plays an important role in the balance of nature, would fit this pattern of reasoning.”<sup>5</sup> Such kind of ethical reasoning can be traced back to Aristotle’s famous definition of natural law as the dimension of the politically just which “is natural [=physei], and the other part is legal [*nomikon*, conventional, positive, written down]. The natural has the same validity everywhere alike, independent of its seeming so or not....For the natural [just] is unchangeable and equally valid everywhere – fire, for instance, burns both here and in Persia.”<sup>6</sup> The ancient Roman scholar Cicero summarizes the natural law tradition in the following: “For there is a true law: right reason. It is in conformity with nature, is diffused among all men, and is immutable and eternal; its orders summon to duty; its prohibitions turn away from offense .... To replace it with a contrary law is a sacrilege; failure to apply even one of its provisions is forbidden; no one can abrogate it entirely.”<sup>7</sup> The teaching on natural law aligns with biblical teaching, as St. Paul formulates in Romans: “When the Gentiles, who have not the [Divine revealed Jewish] law, *do by nature what the law requires* (*φύσει τὰ τοῦ νόμου ποιῶσιν*), they are a law to themselves [*ἑαυτοῖς εἰσὶν νόμος*], even though they do not have the [Divine revealed] law. They show that what the law requires is written on their hearts, while their conscience also bears witness, and their conflicting thoughts accuse or perhaps excuse them.” (Rom 2:14-15).<sup>8</sup> “The natural law, present in the heart of each man and established by reason, is universal in its precepts and its authority extends to all men. It expresses the dignity of the person and determines the basis for his fundamental rights and duties.” (CCC 1556).

Natural law takes on the third position in the famous hierarchy of four laws by Aquinas: (1) *Eternal Law* which is understood as the law existing in God, and as such is not accessible to humans; (2) the *Divine Law* which has been revealed by God to mankind as understood and expressed in different historical forms and books of religions (e.g. to the Jewish people, among others, in the form of the “Ten

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<sup>5</sup> DesJardins, *Environmental Ethics*, 23.

<sup>6</sup> Aristotle, *Nicomachean Ethics* V, 7 1134b19-30, translated with Introduction, Notes, and Glossary by Terence Irwin (Indianapolis, Indiana: Hackett Publishing Company, 1999).

<sup>7</sup> Cicero, *Rep.* III, 22, 33.

<sup>8</sup> For an exegetical analysis of this passage, see the contribution of Andrew Leong in this volume.

Commandments”); (3) *Natural law* which is understood to have been written into every human heart, and which can be discovered by human reason; it participates in the Eternal Law and does not contradict the Divine Law; and last but not least, the (4) *Positive or Civil Law* which is “man-made” and has been set down by human beings, like parliamentarians in Legislative Assemblies or Supreme Courts. Genuine positive law must follow the principle of Natural Moral Law, and thus, it is then aligning to the Divine Law and the Eternal Law! If a civil law contradicts the natural law, then such a positive law is corrupted, with all its negative long-term and serious consequences for authentic human, societal, and ecological development.<sup>9</sup>

The *Natural Law* (ethics) is, therefore, a set of principles, based on what is assumed to be the permanent characteristics of human nature, that can serve as a standard for evaluating personal conduct and civil laws or positive law. Natural Law is fundamentally unchanging & universally applicable. Some famous historical principles of Natural Law (*ius naturale*) are: to do good and avoid evil (*bonum est faciendum et prosequendum, et malum vitandum*);<sup>10</sup> to preserve life; to protect and serve the family & community; to respect the priority of the family, e.g. in the decision on the number of children, or the form of education (choice of school); to value friendship; to care for the integrity of creation, e.g. in preserving species and Biodiversity.

According to Catholic understanding, Natural law, as the foundation, principle, and guiding source for positive human law, can be discovered by human reason alone, there is no scripture or revelation necessary, although being fully aligned with it. “Unlike other great religions, Christianity has never proposed a revealed law to the State and to society, that is to say, a juridical order derived from revelation. Instead, it has pointed to *nature and reason as the true sources of law* – and to the harmony of objective and subjective reason, which naturally presupposes that both spheres are rooted in the creative reason of God.”<sup>11</sup>

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<sup>9</sup> See the discussions on the consequences of the now abolished One-Child-Policy in Mainland China; see also: The German Bishops – Commission for International Church Affairs 15A, *Population Growth and Promotion of Development: An ecclesiastical contribution to the debate*, December 1993, p. 26.

<sup>10</sup> Thomas Aquinas, *Summa Theologiae* 1-2, q.94, art. 2, c.

<sup>11</sup> Benedict XVI: Apostolic Journey to Germany, 22-25 September 2011, Address of His Holiness Benedict XVI at his visit to the Bundestag Building, Berlin, 22 September 2011;

## Natural Law and Ecological Civilization

Listening to nature requires today a global transformation towards sustainable societies as more and more extreme weather events induced by global warming are increasing in annual frequency and power dissipation, as the Synthesis Report of the 6th Assessment of the Intergovernmental Panel on Climate Change summarizes: ““Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals (*high confidence*).”<sup>12</sup>

In his Encyclical Letter *Laudato Si': Care for our Common Home* (June 2015), Pope Francis calls for a bold transformation of societies and lifestyles, which cannot be accomplished without engaging spiritual and religious resources, as they shape fundamentally worldviews, relationships, habits, and cultures. Humanity must learn to listen to nature and respect the planetary ecological boundaries. “Global materials use is projected to more than double from 79 Gt [Gigatonnes] in 2011 to 167 Gt in 2060.”<sup>13</sup> Following these facts, we have to decouple the global material use and the GDP increase. “Listening to nature” requires urgently the development of bearable forms of resource and energy use and corresponding lifestyles and consumption patterns. Francis pushes for an ecological conversion and a fundamental transformation of societies and economies, calling for a “bold cultural revolution” (Francis, *LS*, sec. 114) to reach a just and sustainable development path.<sup>14</sup> Listening to nature requires that human societies learn to live and comply with natural

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<sup>12</sup> IPCC, *Summary for Policymakers, A1. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, H. Lee and J. Romero (eds.)]. Geneva, Switzerland: IPCC, 2023, pp. 1-34, here p. 4. doi: 10.59327/IPCC/AR6-9789291691647.001

<sup>13</sup> OECD, *Global Material Resources Outlook to 2060: Economic Drivers and Environmental Consequences* (Paris: OECD Publishing, October 2018), p. 3; <http://oe.cd/materials-outlook>

<sup>14</sup> Gary Gardner, “Engaging Religions To Shape Worldviews,” In Worldwatch Institute (Ed.), *State of the World: Transforming Cultures from Consumerism to Sustainability* (London: Earthscan, 2010): 23-29; Dieter Gerten, Sigurd Bergmann, *Religion in Environmental and Climate Change: Suffering, Values, Lifestyles* (London/New York: Bloomsbury Academic, 2012); Gerhard Banse, Gordon L. Nelson, and Oliver Parodi (eds.), *Sustainable Development: The Cultural Perspective: Concepts-Aspects-Examples* (Berlin: edition sigma, 2011); Lyn Thomas, (ed.), *Religion, Consumerism, and Sustainability. Paradise Lost?* (London: Palgrave Macmillan, 2011).

limits conceived as “planetary boundaries and guard rails”.<sup>15</sup> The COP21 Paris Agreement sets 2°C (better 1.5°C) as upper limit of global temperature increase for human-induced atmospheric warming and related emissions. This has been affirmed and repeated at COP27 in Egypt in December 2022. The global human family has to learn to comply with natural boundaries and to accept living within limits, interconnectedness, in view of respecting the preciousness of biological and cultural diversity. Goal 15 of the United Nations SDGs of 2015 demands the halting of the loss of biodiversity (BD), which is so crucial for stability of nature and of societies, also of indigenous populations. The current dramatic loss of BD needs to be addressed by policymakers, administrative departments, and citizens (LS, sec. 70; sec. 137ff.) in view of implementing coherent and just policies, that respect and “listen to nature.” Francis applies the respect of boundaries not only to the biological dimension, but he has also cultural diversity in mind. The cultural riches of peoples, “their art and poetry, their interior life and spirituality” need to be preserved (LS, sec. 62f.). The Argentinian Pope calls again for a “bold cultural revolution” (LS, sec. 114), because “the disappearance of a culture can be just as serious, or even more serious, than the disappearance of a species of plant or animal. The imposition of a dominant lifestyle linked to a single form of production can be just as harmful as the altering of ecosystems” (LS, sec. 145). The Slow Food Movement of Carlo Petrini, founded in 1986 in Italy and 1989 in Paris,<sup>16</sup> translates this into practical levels in view of preserving the cultural and ecological heritage, e.g. in its project “Ark of Taste”.<sup>17</sup>

Overall, there is extreme urgency to overcome forms of a “throwaway culture” (LS, sec. 22), and push for a consistent cultural transformation towards *Sustainable Lifestyles and Societies*. The *Advisory Council for Global Change of the German Government* (WBGU) concludes, that the “consumption decision and lifestyles of the middle and upper classes are currently making the biggest contribution to the causes of global environmental problems.”<sup>18</sup> And the Director of the Potsdam Institute for Climate Change affirms that “[C]ontrary to what some have claimed, it is not the mass of poor people that destroys the planet, but the consumption of the

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<sup>15</sup> WBGU [German Advisory Council on Global Change], *Human Progress within Planetary Guard Rails: A Contribution to the SDG Debate* (Berlin: WBGU, 2014); <https://www.wbgu.de/en/publications/publication/human-progress-within-planetary-guard-rails-a-contribution-to-the-sdg-debate> ; see also: Tim Jackson, *Prosperity without Growth: Economics for a Finite Planet* (London & Washington, DC: Earthscan, 2009);

<sup>16</sup> Carlo Petrini, *Slow Food. The Case for Taste* (New York, 2001). <http://www.slowfood.com>

<sup>17</sup> <https://www.fondazioneSlowFood.com/en/what-we-do/the-ark-of-taste/> (accessed 2023/07/24);

<sup>18</sup> WBGU, *Human Progress within Planetary Guard Rails*, 3.

rich. Global warming is the consequence of this development of a few and will affect everyone, but brings devastation especially to the weakest in society.”<sup>19</sup>

The 2018 ban on foreign waste import by China – the Green Fence Policy to protect China’s own environment – revealed inconsistent political and socio-economical approaches towards material resources and energy of the so-called “developed” countries. Research on household consumption in Finland mapping a vision for 2050 reveals that material resource use needs to be cut by a factor of five, from currently 40 tons to eight tons per person a year.<sup>20</sup> According to the authors of the Finnish study, there is a “long way to go and a lot of effort required” to meet these goals to achieve a reduction in material resource use and they acknowledge an “enormous transformation task” ahead. The emergence of “Zero-Waste-Movements” indicate a move to the right direction, but consistent implementations of it leading to a “cultural revolution” are still awaiting materialization.

E-waste is the fastest growing domestic waste stream, mainly fueled due to higher consumption rates, too short life cycles, and a lack of reuse and repair options. The year 2019 saw globally 53.6 Mt of e-waste being created, an average of 7.3 kg per capita,<sup>21</sup> which increased up to 9.2 Mt since 2014 and “is projected to grow to 74.7 Mt by 2030 – almost doubling in only 16 years.”<sup>22</sup> The formally documented global collection and recycling rate in 2019 was only 9.3 Mt or 17.4% of the e-waste generated. “It grew with 1.8 Mt since 2014, an annual growth of almost 0.4 Mt. However, the total e-waste generation increased by 9.2 Mt, with an annual growth of almost 2 Mt. Thus, the recycling activities are not keeping pace with the global growth of e-waste.”<sup>23</sup>

<sup>19</sup> Hans Joachim Schellnhuber, “*Common Ground: The Papal Encyclical, Science and the Protection of Plane Earth*,” Potsdam Institute for Climate Impact Research, Germany; Santa Fe Institute for Complex Systems Research, USA. Statement at the Presentation of the Encyclical Letter *Laudato Si’* on June 18th 2015, Vatican, Rome.

<sup>20</sup> Michael Lettenmeier, Christa Liedtke, and Holger Rohn. “Eight Tons of Material Footprint—Suggestion for a Resource Cap for Household Consumption in Finland”, *Resources* 3 (2015), retrieved on Feb. 20th 2018 from: [www.mdpi.com/journal/resources](http://www.mdpi.com/journal/resources); S. Bringezu, “Possible Target Corridor for Sustainable Use of Global Material Resources”, *Resources* 4 (2015): 25-54. doi:10.3390/resources4010025;

<sup>21</sup> V. Forti, C. P. Baldé, R. Kuehr, G. Bel. *The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential*. United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR) – co-hosted SCYCLE Programme, International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam, 2021, p. 13; see also: C.P. Baldé, C.P., V. Forti V., V. Gray, R. Kuehr, and P. Stegmann, *The Global E-waste Monitor – 2017*, United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA) (Bonn/Geneva/Vienna, 2018)

<sup>22</sup> Forti et al., *The Global E-Waste Monitor 2020*, 13.

<sup>23</sup> Forti et al., *The Global E-Waste Monitor 2020*, 14.

This entails enormous environmental, social, and political implications, as the necessary energy forms and rare earth or scarce conflict materials are crucial for the production of electronic equipment. “The total value of all raw materials present in e-waste is estimated at approximately 55 billion euros in 2016, which is more than the 2016 Gross Domestic Product of most countries in the world”.<sup>24</sup> As Robertson points out:

Up to 80 percent of America’s electronic waste is exported to developing countries, where environmental and worker protection laws and enforcement are less strict.... Low-wage workers without protective gear, including children, burn components, soak them in acid baths to separate small amounts of resalable materials, breathe dioxin-filled smoke, and disassemble lead- and mercury-laden parts with their hands. Contaminated water is poured into lakes and rivers and contaminated solid waste is dumped in huge piles near villages, where toxins continue to leak into the soil and water supply.<sup>25</sup>

*Laudato Si’* warns of the injustices involved in the export of “solid waste and toxic liquids to developing countries” (*LS*, sec. 51) following an inconsistent political and economic mindset that disinterestedly harms and kills. Francis calls for a radical ecological conversion and “change of humanity” (*LS*, sec. 9 & 13), away from unsustainable policies and societies, moving towards sustainable and prophetic (*LS*, sec. 222).

One answer of listening to nature is the phasing out of the linear end-of-pipe systems of production and consumption, through which goods are produced and services delivered with a basic lack of accounting for real costs and respective consequences. The “throwaway culture” results in the overuse and waste of natural resources and energy, leading to continuously overstepping planetary boundaries. A new vision and thinking are required for managing natural resources and energy, based on a much-needed energy and resource ethics that is based on a strict implementation of the Resource and Waste Hierarchy, as developed in a Ph.D. Project in Science at the University of Saint Joseph (see Figure 1).<sup>26</sup>

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<sup>24</sup> *Ibid.*

<sup>25</sup> Margret Robertson, *Sustainability: Principles and Practice* (London & New York: Routledge, 2014): 276-77;

<sup>26</sup> WBGU = German Advisory Council on Global Change, *Humanity on the Move: Unlocking the Transformative Power of Cities* (Berlin: WBGU, 2016).

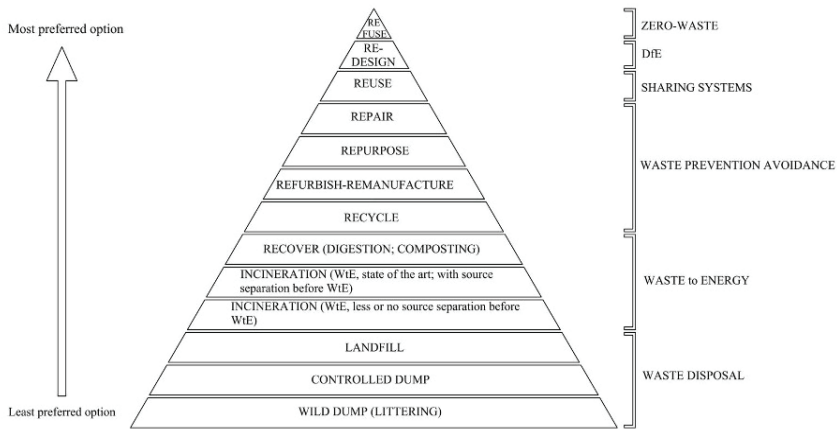


Figure 1: Resource and Waste Hierarchy [Source: Li Man Ho Li, Cop21 *Compliance and sustainable development through integrated solid waste management: implementation perspectives of the circular economy in the pearl river delta area* (Ph.D. Dissertation in Science, December 2022, University of Saint Joseph, Macau; with the permission by the author), p. 40.]

The concept “Resource and Waste Hierarchy” as normative principle promotes integrated resource and solid waste management (ISWM) with the intention to respect planetary resource boundaries better. Its goal is an “absolute reduction in the consumption of resources to sustainable levels, based on reliable measurement of resource consumption throughout the supply chain, strict application of the waste hierarchy... creating a closed loop on non-renewable resources”.<sup>27</sup> Waste Hierarchy asserts that Not Producing (Waste Prevention) comes before Minimisation and Reusing, as the latter have a higher level of resource use and emission impact. Reuse hovers on a higher (priority) level than Recycling, as the latter can demand “lengthy transport with additional energy consumption and greenhouse gas emissions. While there are energy savings in recycling, it still consumes more energy than either reusing a product or not producing it in the first place”.<sup>28</sup> A too-one-sided focus on recycling can lead to unnecessarily higher consumption rates of energy and resources and can inhibit a consistent transition towards sustainable solutions.

Recycling often has the effect of encouraging even greater consumption, known as the rebound effect. Consumers seeing the recycling symbol on a plastic container may

<sup>27</sup> European Parliament, “Resource efficiency: moving towards a circular economy”, Resolution 2014/2208(INI) from July 9th 2015, (Brussels, 2015), Art. 16.

<sup>28</sup> Robertson, *Sustainability*, 275.

assume that consuming the product is without environmental costs and may feel that consuming and discarding are environmentally-responsible actions. Recycling may point us in the wrong direction and distract us from more efficient and fundamental changes.<sup>29</sup>

This does not diminish the need for recycling efforts when it makes sense, e.g. in the case of aluminium cans. “Virgin aluminium contains an extremely large amount of embodied energy; recycled aluminium can save 75 to 96 percent of that energy”.<sup>30</sup> In addition, recycling has also an important educational role in view of raising ecological awareness among citizens:

Using recycled materials in manufacturing almost always uses less water and energy, releases less pollution, and emits less carbon dioxide than manufacturing with virgin materials. In addition, perhaps one of the greatest benefits of recycling has been its effect on public awareness of environmental issues. Recycling is the first contact many people have with issues of planetary health and the connection between their own actions and the environment.<sup>31</sup>

Energy recovery (waste incineration) and disposal of waste in landfills are the least-preferred options within the waste hierarchy, and many countries move to phase out landfills and incinerators, or at least try to reduce their scale. “In addition to having concerns about health risks, some organizations object on the basis of environmental justice since incinerators are usually built in low-income communities”.<sup>32</sup> The implementation of the waste hierarchy requires the efforts of all involved societal actors and stakeholders in view of developing and implementing consistent policies and incentives in view of sustainable energy and resource systems, nourishing sustainable habits of citizens and societies. “Rather than a single monthly fee, users are charged based on the volume they discard, an approach sometimes known as pay-as-you-throw. Some regions have taken money that would have been spent on landfills or incinerators and instead have invested in infrastructure that supports reuse.”<sup>33</sup> The change of thinking (*metanoia*) and of consumer (citizens) habits are crucial in view of a consistent transition towards a responsible and energy sensible society that “listens to nature.”

Zero Waste involves rethinking the entire production and wasting system. This approach considers the entire life cycle of a product when analyzing its costs. It stresses

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<sup>29</sup> Robertson, *Sustainability*, 275–76.

<sup>30</sup> Robertson, *Sustainability*, 277.

<sup>31</sup> Robertson, *Sustainability*, 275.

<sup>32</sup> Robertson, *Sustainability*, 272.

<sup>33</sup> Robertson, *Sustainability*, 281.



prevention, recognizing that it is more efficient and healthier to prevent waste formation in the first place than to treat waste after it has formed. At its core, Zero Waste acknowledges that humans are part of the natural world. It aims for cradle-to-cradle, closed-loop cycling of non-toxic matter that will allow the biosphere in which we are embedded to continue intact into the future.<sup>34</sup>

From a linear to a circular economy

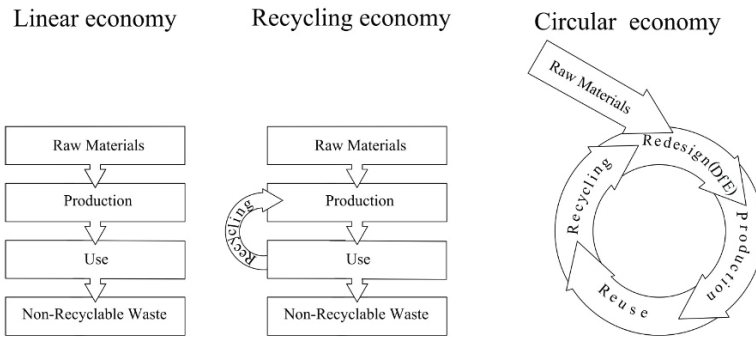


Figure 2: From a Linear to a Circular Economy (Source: Li Man Ho Li, *Cop21 Compliance and sustainable development through integrated solid waste management: implementation perspectives of the circular economy in the pearl river delta area* (Ph.D. Dissertation in Science, December 2022, University of Saint Joseph, Macau; with the permission by the author), p. 53.

For Pope Francis, “waste prevention” (LS, sec. 22 & 113), “less waste” (LS, sec. 129), “repairing” (LS, sec. 192 & 211), and “recycling” are fundamental elements of a “cultural revolution” to stop the exploitation of the planet’s resources, as this “exceeded unacceptable limits” (LS, sec. 11). Humanity has to overcome the culture of thoughtless discarding and “wasteful cities” (LS, sec. 44).

**The Principle of Efficiency-Consistency-Sufficiency**

The principles of *efficiency*, *consistency*, and *sufficiency* embody a strategy to develop and reach a sustainable development path.<sup>35</sup> Efficiency refers to the saving

<sup>34</sup> Robertson, *Sustainability*, 281–82.

<sup>35</sup> Secretariat of the German Bishops’ Conference, *Committed to God’s Creation: Suggestions for a Sustainable Approach to Energy*. Bonn, 2011; S. Samadi, M.-S. Gröne, U. Schneidewind, H.-J. Luh-

of resources and energy based on technological innovations. But due to the direct and indirect rebound or “boomerang effects” of consumption patterns, the principle of efficiency alone is not enough to reach a sustainability. The rebound effect teaches that efficiency gains, achieved for instance through technological improvements (e.g. higher fuel-efficient cars), are eaten up by *more* (direct rebound) and *new* (indirect rebound) consumption patterns of consumers and societies. The fuel efficiency of cars increased in the US by 40 percent since 1980, but fuel consumption per vehicle “remained constant since 1980 due to more driving and more (and larger) vehicles.”<sup>36</sup> The “indirect rebound effect” refers to the adoption of new consumption patterns in the follow-up of efficiency gains, e.g. people switch to *new* forms of mobility such as increased air traveling. For many scientists it is clear, that better technology is necessary, but is alone insufficient to secure a sustainable development path (*LS*, sec. 20). In addition to higher *efficiency*, like better technologies, fundamental changes in societies are necessary (*consistency*) and life-style changes at the personal level (*sufficiency*) in order to be able to comply with natural boundaries and reach SD by “listening to nature.” *Consistency* means developing and implementing innovative systems of production and consumption, e.g., a public transport system or car-sharing systems instead of using private vehicles. Also, the creation of an integrated resource and waste management system and Zero-Waste-Systems are more consistent than the current throwaway culture, leading to a myriad of social and ecological problems. Consistency favors a circular economy by following zero-waste systems and habits, which are based on the principle of internalization of external costs, as the example of a plastic bag levy or a carbon tax shows. Pope Benedict XVI formulated this *True-Cost-Principle* (German: *Kostenwahrheit*) in his Encyclical Letter *Caritas in Veritate*:

To make every effort to ensure that the economic and social costs of using up shared environmental resources are recognized with transparency and fully borne by those who incur them, not by other peoples or future generations. (*Caritas in Veritate*, sec. 50)

Inconsistent and unjust externalization policies and practices (“others should pay”) have to be radically phased out, e.g., by the implementation of the *User- or Thrower-Pays-Principle*, such as through policies promoting the Extended Producer Responsibility (EPR), as well as governmental regulations that require to take back

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mann, J. Venjakob, and B. Best, “Sufficiency in energy scenario studies: Taking the potential benefits of lifestyle changes into account”, *Technological Forecasting and Social Change*, 124 (2017): 126–134;

<sup>36</sup> Juliet Schor, *True Wealth. How and Why Millions of Americans Are Creating a Time-Rich, Ecologically Light, Small-Scale, High-Satisfaction Economy* (New York: Penguin Books, 2011), 90.

toxic printer cartridges or fluorescent lamps and to feed funds implementing proper circular, reuse, and recycling systems:

Resources are often used inefficiently because the information about the true costs to society of consuming them is not available, with the result that businesses and individuals cannot adapt their behavior accordingly. Policy measures to improve resource efficiency and overall economic competitiveness must place greater emphasis on ‘getting prices right’ and making them transparent to consumers, for instance in transport, energy, and water usage, so that prices reflect the full costs of resource use to society (e.g. in terms of environment and health), and do not create perverse incentives. In this respect, information and communication technologies can play a decisive role through, for instance, smart metering.<sup>37</sup>

But in addition to improved *efficiency* and innovative consistent systems, it is necessary to add *sufficiency* in order to reach a sustainable development path.<sup>38</sup> “Sufficiency and changes in lifestyle should rather be embedded, discussed, and quantified independently of technology decisions.”<sup>39</sup> Sufficiency refers to the personal and individual level of “listening to nature” in view of aligning and complying with life-giving limits; for example, reducing food loss and waste (FLW) – on the institutional and personal level –, or observing at least one meatless day a week as in the Green Monday Movement. Catholics are called to revive meatless Fridays in order to support and join in this global sufficiency movement. Switching to more sustainable healthy diets is requested by the IPCC Report 2023 with enormous mitigating potentials: “Food shows demand-side potential of socio-cultural factors and infrastructure use, and changes in land-use patterns enabled by change in food demand.”<sup>40</sup> Sufficiency requires a change of mindsets and a new orientation, nourished by proper spiritual values (*LS*, sec. 222), including the cultivation of a “capacity for contemplation and reverence” (sec. 127 & 237). A core message of *Laudato Si’* is that spiritual values like mindfulness, thankfulness, tenderness, and respect are crucial in overcoming the throw-away mentality and achieving sustainable development in our common home. This aligns fully with sustainability research and ethics of responsible consumption.<sup>41</sup> Some practical examples carried

<sup>37</sup> EU-Commission, *Resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (Brussels, 2011), 7.

<sup>38</sup> Thomas Princen, *The Logic of Sufficiency*, Cambridge: MIT-Press, 2005; Samadi et al., “Sufficiency in energy scenario studies,” 126–134;

<sup>39</sup> Samadi et al., “Sufficiency in energy scenario studies,” 132;

<sup>40</sup> IPCC, Summary for Policymakers (see: note 12), Figure SPM.7: Multiple Opportunities for scaling up climate action, p. 27–28; see also C.2.3 (p. 26).

<sup>41</sup> David Crocker, “Consumption, Well-Being and Capability”, in: David Crocker & Toby Linden (eds.), *Ethics of Consumption: The Good Life, Justice, and Global Stewardship* (Lanham, Maryland: Rowman

out globally by the Slow-Food-Movement have already been mentioned. Agriculture and the human food system are one of the main contributors to global Green House Gas emissions. “It is estimated that 33 percent of man-made greenhouse gas emissions stem from agriculture, if one includes both the methane and nitrous oxide produced, respectively, by cattle and rice paddies and by the use of synthetic fertilizers (14 percent), and the carbon dioxide production resulting from shifts in land use – deforestation for pastures or crop cultivation (19 percent).”<sup>42</sup> In comparison, global transportation (ships, planes, cars, bikes, trains, etc.) accounted in 2010 for 14.3 % of global greenhouse gas emissions.<sup>43</sup> There is an urgent need for raising awareness of the deep connection between the plate and the climate. The global elimination of food waste is one of the major challenges of the 21st century and can be compared to humanity’s historical achievement (at least in theory) of the abolition of slavery. “Whenever food is thrown out it is as if it were stolen from the table of the poor” (*LS*, sec. 50). Globally, “roughly one-third of the food produced in the world for human consumption every year — approximately 1.3 billion tons — gets lost or wasted.”<sup>44</sup> Food loss and waste is a burning question of social and ecological justice. If food waste were measured as if it were a country all its own, it would be the third largest emitter of CO2 equivalent emissions after China and the USA.<sup>45</sup> In Hong Kong in 2011, “over 3,500 tonnes of food waste, accounting for about 40 per cent of municipal solid waste, were disposed of at landfills every day,” originating from supermarkets, restaurants, hotels, and households. When food is wasted, the land, water, fertilizer, and labour needed to grow that food is also wasted.<sup>46</sup> The Foodwise Hong Kong Campaign is a positive initiative

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and Littlefield, 1998): 366–390; Lucia Reisch, “Sustainable consumption as a consumer policy issue”, in: Lucia Reisch & Inge Ropke (eds.), *The Ecological Economics of Consumption* (Cheltenham/Norhampton, 2004): 175–189; Juliet Schor, *True Wealth. How and Why Millions of Americans Are Creating a Time-Rich, Ecologically Light, Small-Scale, High-Satisfaction Economy*. (New York: Penguin Books, 2011).

<sup>42</sup> Olivier De Schutter, “Climate change and the human right to adequate food”, Contribution of the Special Rapporteur on the right to food, Mr Olivier De Schutter, to the meeting convened by the Friedrich-Ebert-Stiftung, with the Committee on Economic, Social and Cultural Rights, Geneva, May 13th, 2010, p. 3.

<sup>43</sup> Greenhouse Gas Emissions by Economic Sector: IPCC, *Climate Change 2014: Synthesis Report*, Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)] (IPCC: Geneva, Switzerland: 2015), 47;

<sup>44</sup> FAO, *Food Wastage Footprint: Impacts on Natural Resources* (Rome: FAO, 2013).

<sup>45</sup> M. Jones, “Foodwaste Generation and Prevention Strategy: Workshop on Food Waste Management, Prevention and Treatment Technology”, Power Point Presentation at the International Conference on Solid Waste 2015: Knowledge Transfer for Sustainable Resource Management, Hong Kong SAR, P.R. China, 19-23 May 2015, Hong Kong, 19th May 2015.

<sup>46</sup> Environmental Protection Bureau/Hong Kong Government, Foodwise Hong Kong Campaign: Invi-

to raise awareness on various societal levels. But this issue calls for systemic and structural answers, and a fundamental change of mindset, which needs the input of spiritual values for the necessary transformation of habits, lifestyles, cities, and societies, e.g. the development of food bank systems:<sup>47</sup>

Feasting and fasting are two primary ways we enact relationships. How we eat, what we eat, and how much, demonstrate what we think our responsibilities to each other, and the world should be. People who fast, learn food is a gift and is not to be taken for granted or exploited. [...] When we fast we learn that too much of the time personal life is marked by an aggressive or rapacious disposition (which is why we might develop a gentler ego and a calmer gait). When we fast, we learn that in many of our actions, we presume that the world's gifts exist for our own exclusive enjoyment (hence the need to tame the greed and develop the restraint that is at the basis of all just relationships). Fasting, in other words, leads us to a realization about the responsibilities of life together. When we refrain from eating, we not only demonstrate solidarity with those who do not have food to eat but we also demonstrate that food is the precious gift of a self-giving God. [...] Fasting, in its most fundamental aspiration, is about developing a sacrificial, self-offering life that addresses and nurtures the needs of others.<sup>48</sup>

To unlock rich spiritual traditions is fundamental for this cultural transformation of “to listen to nature and to act accordingly,” so that a sustainable development path can materialize.

## Respecting the Created Order in Human Nature

Pope Benedict XV applies his call “to listen to nature” also to the *ecology of man*. “Man too has a nature that he must respect and that he cannot manipulate at will. Man is not merely self-creating freedom. Man does not create himself. He is intellect and will, but he is also nature [with natural rights], and his will is rightly ordered if he respects his nature, listens to it, and accepts himself for who he is, as one who did not create himself. In this way, and in no other, is true human freedom fulfilled.”<sup>49</sup> The Doctrinal Committee of the Catholic Bishops of the USA empha-

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tation to Sign Food Wise Charter (Hong Kong, November 2013). <http://www.foodwisehk.gov.hk/en/> (retrieved July 24th 2023).

<sup>47</sup> Felicitas Schneider, “The Evolution of Food Donation with Respect to Waste Prevention”, *Waste Management*, 33 (2013): 755-63. <https://doi.org/10.1016/j.wasman.2012.10.025>

<sup>48</sup> Norman Wirzba, *Food and Faith: A Theology of Eating* (Cambridge et al.: Cambridge University Press, 2011).

<sup>49</sup> Benedict XVI: Apostolic Journey to Germany, 22-25 September 2011, Address of His Holiness Benedict XVI at his visit to the Bundestag Building, Berlin, 22 September 2011.

sizes, that what “is true of creation as a whole is true of human nature in particular: there is an order in human nature that we are called to respect. In fact, human nature deserves utmost respect since humanity occupies a singular place in the created order, being created in the image of God (Gen 1:27).”<sup>50</sup> The US bishops warn against manipulation of the body and inflicting serious harm to people, e.g. in the case of gender incongruence and dysphoria. “Instead, rather than to repair some defect in the body or to sacrifice a part for the sake of the whole, these interventions are intended to transform the body so as to make it take on as much as possible the form of the opposite sex, contrary to the natural form of the body. They are attempts to alter the fundamental order and finality of the body and to replace it with something else.”<sup>51</sup> This can cause serious harm to people, especially young people who can be misled by a techno-colonialist minds. “The soul does not come into existence on its own and somehow happen to be in this body, as if it could just as well be in a different body. A soul can never be in another body, much less be in the wrong body [...] The body is not an object, a mere tool at the disposal of the soul, one that each person may dispose of according to his or her own will, but it is a constitutive part of the human subject, a gift to be received, respected, and cared for as something intrinsic to the person.”<sup>52</sup>

There is no question, that persons suffering from gender incongruence and dysphoria need special attention and care, and more research and efforts have to be developed, but not with wrong and very harmful means. Dr. Kenneth Zucker, an authority on gender identity issues in children and advocate for gay and transgender rights, “believes that gender-dysphoric pre-pubertal children are best served by helping them align their gender identity with their anatomic sex.”<sup>53</sup> In fact, persons “affected by Disorders of Sexual Development do not fall outside the two categories of male and female, but they do exhibit ambiguous or abnormal indicators of sexual difference, so that the sex of their bodies is difficult to determine, though not impossible for modern medical and genetic techniques.”<sup>54</sup> Harmful interventions can lead to irreversible mutilating surgeries, than can even cause deep regret and transgender grief, upon disrespecting “the fundamental order of the human person

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<sup>50</sup> USCCB, “Doctrinal Note on the Moral Limits to Technological Manipulation of the Human Body,” Committee on Doctrine, United States Conference of Catholic Bishops [USCCB], March 20th 2023, Washington, D.C., no. 3, p. 2.

<sup>51</sup> USCCB, “Doctrinal Note,” [20th March, 2023], no. 16 (p. 11).

<sup>52</sup> USCCB, “Doctrinal Note,” [20th March 2023], no. 7.

<sup>53</sup> “Gender Dysphoria in Children,” *American College of Pediatricians*, November 2018, p. 2, Online: <https://acped.org/position-statements/gender-dysphoria-in-children> (accessed July 27th 2023).

<sup>54</sup> USCCB, “Doctrinal Note,” [20th March, 2023], footnote 8 (p. 3).

as an intrinsic unity of body and soul, with a body that is sexually differentiated. Bodiliness is a fundamental aspect of human existence, and so is the sexual differentiation of the body.”<sup>55</sup> The basic principle of Natural Law Ethics applies here: *Do no harm!* “The Hippocratic tradition in medicine calls upon all healthcare providers first and foremost to ‘do no harm.’ Any technological intervention that does not accord with the fundamental order of the human person as a unity of body and soul, including the sexual difference inscribed in the body, ultimately does not help but, rather, harms the human person.”<sup>56</sup>

This aligns with natural moral law tradition which is closely linked to the emergence and development of the historical Human Rights Tradition. “The recognition of the human rights by all nations today is convincing proof for the truth that from the common human nature common rights and duties result for all.”<sup>57</sup> But this does not dispense from the constant and continuous engagement and even struggle to protect these fundamental human rights rooted in a common human nature, as new dangers emerge in contemporary societies, threatening the very basic value, e.g. of the first group of human rights, e.g. ‘the right to life and bodily integrity,’ (Art. 3-5), but also of “marriage and family” (Art. 16).

The weakest part within the natural and human-societal bond is the child. The Natural Law Tradition emphasizes the highest regard for families, their values, duties, and responsibilities, also in view of the good for societies. In some contemporary societies, there lurks the serious danger of taking away from a child its father or mother for its entire development and life span, which constitutes a most serious violation of justice and natural law. I refer to the case of two homosexual or lesbian persons who “order” and “create” a child with the assistance of a surrogate mother and modern technology (IVF). I do not deny that two persons of the same sex are able to take care properly for a child in given specific historical life circumstances. I only want to question the case whether such a situation should be inflicted intentionally on a child yet to be born – and in the process, intentionally depriving a human person from her or his mother or father, which constitutes an extreme form of denying a basic human right. “Children enjoy another right which is of equal importance: to ‘grow up in a family with a father and a mother capable of creating a suitable environment for the child’s development and emotional maturity’ and

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<sup>55</sup> USCCB, “Doctrinal Note,” [20th March 2023], no. 18 (p.11).

<sup>56</sup> USCCB, “Doctrinal Note,” [20th March 2023], no. 20 (p.12).

<sup>57</sup> Karl-Heinz Peschke, *Christian Ethics: Moral Theology in the Light of Vatican II*, Volume 2 (Bangalore: Theological Publications in India, 2013).

‘continuing to grow up and mature in a correct relationship represented by the masculinity and femininity of a father and a mother and thus preparing for affective maturity’ (Francis, Address to Members of the Delegation of the International Catholic Child Bureau, 11 April 2014).<sup>58</sup> Depriving a child intentionally from the outset from its father or mother forever constitutes a very serious and grave violation of human rights. “Every child has a right to receive love from a mother and a father; both are necessary for a child’s integral and harmonious development. As the Australian Bishops have observed, each of the spouses ‘*contributes in a distinct way to the upbringing of a child. Respecting a child’s dignity means affirming his or her need and natural right to have a mother and a father*’.”<sup>59</sup>

The process of human development and growth is fundamentally linked with the proper experience of the male and female dimensions of human life and community. “It is precisely within the nucleus of the family unit that children can learn how to recognize the value and the beauty of the differences between the two sexes, along with their equal dignity, and their reciprocity at a biological, functional, psychological and social level.”<sup>60</sup> It seems, there is the danger in certain modern developments of a “gradual process of denaturalization.”<sup>61</sup> The “ecology of man” should not be lost, especially in view of the harmonious and “natural” development of a child, respecting fundamental realities and boundaries of nature for the good of humans and societies.

There is a need to reaffirm the metaphysical roots of sexual difference, as an anthropological refutation of attempts to negate the male-female duality of human nature, from which the family is generated. The denial of this duality not only erases the vision of human beings as the fruit of an act of creation but creates the idea of the human person as a sort of abstraction who ‘*chooses for himself what his nature is to be. Man and woman in their created state as complementary versions of what it means to be human are disputed. But if there is no pre-ordained duality of man and woman in creation, then neither is the family any longer a reality established by creation. Likewise, the child has lost the place he had occupied hitherto and the dignity pertaining to him.*’ (Benedict XVI, Address to the Roman Curia, 21 December 2012).<sup>62</sup>

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<sup>58</sup> Congregation for Catholic Education: “Male and Female He Created Them”: Towards a Path of Dialogue on the Question of Gender Theory in Education”, Vatican City (February 2<sup>nd</sup>, 2019), no. 38. (in short: *MFHCT*).

<sup>59</sup> Pope Francis, *Amoris Laetitia*, no. 172.

<sup>60</sup> *MFHCT*, no. 39.

<sup>61</sup> *MFHCT*, no. 39.

<sup>62</sup> *MFHCT*, no. 34.



## **Conclusion**

Learning to “Listen to the Language of Nature and to act accordingly” is a comprehensive and significant challenge and task for contemporary societies. The discussed issues, for sure, need further studies, consistent reflections, and sound implementation. The Natural Moral Law Tradition provides essential guidance for both Sustainable Development and for an “Ecology of Man” in view of human flourishing. Both challenges converge in the need to learn “to listen to the language of nature and act accordingly”.

