
Article

Exemplary ethical communities

A new concept for a liveable Anthropocene

Daniele Conversi

IKERBASQUE, Basque Foundation for Science

and

Departamento de Historia Contemporánea, Universidad del País Vasco /University of the Basque Country

* Correspondence: dconversi@telefonica.net

Abstract: This article argues that we need to look at living examples provided by non-state communities in various regions of the world that are, perhaps unwittingly, contributing to the maintenance of the Earth's optimal thermal balance. These fully sustainable communities have been living outside the mainstream for centuries, even millennia, providing examples in the global struggle against the degradation of social–ecological systems. They have all, to varying degrees, embraced simple forms of living that make them 'exemplary ethical communities' (EECs) – human communities with a track record of sustainability related to forms of traditional knowledge and the capacity to survive outside the capitalist market and nation-state system. The article proceeds in three steps: First, it condenses a large body of research on the limits of the existing nation-state system and its accompanying ideology, nationalism, identifying this institutional–ideological complex as the major obstacle to tackling climate change. Second, alternative social formations that could offer viable micro-level and micro-scale alternatives are suggested. These are unlikely to identify with existing nation-states as they often form distinct types of social communities. Taking examples from hunter-gatherer societies and simple-living religious groups, it is shown how the protection and maintenance of these EECs could become the keystone in the struggle for survival of humankind and other forms of life. Finally, further investigation is called for, into how researchers can come forward with more examples of actually existing communities that might provide pathways to sustainability and resistance to the looming global environmental catastrophe.

Keywords: Climate change, Nationalism, Anthropocene; Traditional ecological knowledge (TEK), Geoethics, Sustainable communities, Subsistence societies, Indigenous peoples, Anthropocene

1. Introduction

The Earth needs to be reconceived as a pluri-cultural space in which distinct types of human communities engage in different levels of ethical responsibility to allow the survival of life by transferring Earth-system knowledge to coming generations. Geoethical principles underpin this world vision that incorporates interdisciplinary collaborations including the humanities and social sciences. This article argues that we need to look at the living examples provided by non-state communities in various regions of the world that, perhaps unwittingly, are contributing to the maintenance the Earth's optimal thermal balance and planetary temperature equilibrium. These communities have been living in specific niches outside the mainstream or the 'market' for centuries, even millennia – ra-

ther than being conceived as ad hoc responses to the catastrophic combination of climate change and biodiversity loss we are now beginning to experience.

Such communities can provide living examples in the global struggle against the degradation of social–ecological systems. Their boundaries can indeed be considered as types of planetary boundaries qua ‘safe operating spaces for humanity’ [1]. In other words, these communities embody existing living thresholds of systemic sustainability. All of them have, to various extents, embraced forms of simple living that turns them into “exemplary ethical communities”, which I define as human communities with a proven track record of sustainability related to forms of traditional knowledge and capacity to survive, sometime thrive, outside the capitalist market and the nation-state system.

Their traditional ethical background varies greatly from the Christian Pietism of Anabaptist communities to the animistic beliefs of hunter-gatherers, from the mystical union with the cosmos in some Sufi orders and sections of Hasidic Judaism to the meditative lifestyle of Hindu and Muslim Bauls, to the Buddhist economics of frugality, forest monks and Dhammic agriculture. All these communities go well beyond the UN sustainable development goals (SDGs), whose limits have recently been recognised as utterly insufficient to protect the Earth [2]. This article proceeds in three steps:

First, I identify nationalism, particularly when embodied in a nation-state, as a major obstacle to tackling climate change. The section, therefore, condenses a large body of scholarly research that contemplates the limits of the existing nation-state system and its accompanying ideology, nationalism.

Second, I seek to identify alternative social formations and communities that could offer viable micro-level and micro-scale alternatives to the homogenising nation-state. These exceptional micro-societies are unlikely to be (or recognise themselves as represented by) existing nation-states and often form distinct, premodern types of social communities. I show how the protection and maintenance of these exemplary ethical communities is likely to become the keystone in the struggle for survival of humankind and other forms of life.

Finally, I call for further investigation into how researchers can come forward with more examples, perhaps less traditional, of actually existing (or utopian) communities that might provide pathways to resistance, beyond resilience, to the looming global environmental catastrophe [3-7].

I conclude by emphasising that the protection and maintenance of these exemplary ethical communities can become the crucible in the struggle for the survival of humankind and other forms of life.

I am concerned with two broad types of communities, whose lifestyles can offer insights into our future choices in regard to climate change adaptation, with or without mitigation.

On the one hand, there are subsistence societies that live and thrive outside the capitalist 'market', mostly hunter-gatherer societies, like the Hadza some of the Andaman Islanders and a few remaining 'uncontacted peoples' in Amazonia. On the other hand, there are agriculturally based religious communities, such as the Amish, Hutterites, Old Order Mennonites, traditional Quakers (with other groups, collectively known as Plain Peoples), and Doukhobours, which adopted spiritually based minimalist lifestyles grounded on ancestral forms of simple living and austere self-sufficiency.

The first, subsistence societies, are mostly indigenous peoples who live in pre-agricultural settings often without domesticating animals and plants. In the second, institutionally ensconced religious and cultural communities, rights are enshrined in local political institutions and people live within advanced capitalist societies but outside the capitalist 'market'. In cultural and technological terms, they sometimes do without most of the so-called benefits of modernity, including electricity. Agriculture is usually the main source of subsistence. The two types of society and lifestyle are strictly pre-industrial in the latter case and pre-agricultural in the former case.

I argue here that the embodied examples of these communities may come to our aid and teach us some crucial lessons that may soon be necessary for our survival. Both types of communities share a proximity with the natural rhythms of life, season after season, day after night after day, living in relative harmony within their environment, sharing an assumption that they form a continuum with nature, rather than being in opposition to it.

The social philosopher Bruno Latour recognises that the 'modern age' is predicated on the intrinsic separation of man and nature [8, 9]. In contrast, the communities I consider here offer us a glimpse of what it may mean for human beings to be at one with nature – or at least in tune with it.

2. Geoethical communities

Geoethics has recently emerged as an encompassing interdisciplinary field centred around human values in relation to the Earth's governance, cohabitation, settlement, conservation and maintenance, as well as multi-species cohabitation. Within geohumanities, geoethics can be defined as 'research and reflection on the values that underlie appropriate behaviours and practices, wherever human activities interact with the Earth system' [10] (also see the Introduction to this special issue). Geoethics can also work as 'a brand to promote geocentric human practices' [11].

A core aspect of geoethics is thus to identify those types of social organisations and human communities that are best qualified to act as ethical signposts and reference points for the preservation of life on Earth and the protection of future generations. These societies, I argue, can provide indications of possible pathways to reenvision the relationship between humans and their environment. From my viewpoint, both types of society can be reinterpreted as face-to-face communities that intrinsically differ from 'imagined' national or state-centred communities [12]. They rely on daily interactions in which community relations are more crucial than virtual relations. Not only do they seem to offer us tools to comprehend the relationship between 'human beings and nature' (and not as though they were separate entities), but of 'human beings in nature': humankind not in opposition to nature, but as part of it.

The choice between the two types of communities mentioned above may look far-fetched, perhaps even extreme, insofar as they do not reflect the ongoing trend towards both commodification and homogeneity ushered by contemporary Westernising trends. Yet, there is overwhelming scientific consensus that the current economic model is radically unsustainable [13].

2.1. *The science behind the change*

My underlying argument is that, among various types of communities, those briefly introduced here can provide suitable models and examples of simple living at an epochal geo-historical moment of radical transformation. Increasingly, research from across scientific fields confirms every day that we are confronted with a gargantuan crisis requiring revolutionary, not simply radical, solutions, with a set of worst-case scenarios first raised in the 1980s [14], then in 2009 [15, 16] and now becoming ever more pressing [17, 18] to the point of unredeemable unsustainability [19], regime shift [20] and multiple self-reinforcing feedback loops [21]. Unless addressed with unprecedented socio-economic measures, the coming changes are set to be vastly more traumatising and life threatening than the passage from agricultural to industrial society, from the pre-modern world to modernity itself [2]. In light of this, the communities

briefly described in this article can no longer be seen as anachronisms or as utopian and romantic ideals.

The movement from agricultural to industrial society, from the divinely ordained certainties–uncertainties of the pre-modern age to the self-assured, proud, optimistic hubris of modernistic hegemony, is often conceived as a radical departure and watershed. It is customarily considered the greatest shift since the agricultural revolution.

Therefore, those communities that still carry on practices dating back to previous generations (antecedent the current global anthropogenic changes) can come to our help in various ways. But, before exploring the inspiring examples of these extraordinary communities, I need to briefly show how the nation-state system has so far, together with neoliberal capitalism [22], provided one of the greatest stumbling blocks to addressing the unfolding ecological crisis [23, 24].

The geoethical limits of hegemonic institutions: the nation-state system.

The modern nation-state is founded on, and legitimated by, the ideology of nationalism [25, 26]. This has been variously defined as ‘a principle which holds that the political and national unit should be congruent’ [27] (p. 1) or as ‘an ideological movement for attaining and maintaining autonomy, unity and identity on behalf of a population deemed by some of its members to constitute an actual or potential “nation”’ [28] (p. 15). Insofar as this ideology is based on practices of cultural homogenisation [29, 30] and the pursuit of national congruence [31], it is unable to accommodate internal distinctions and cultural differences. Both the nation-state and the accompanying ideology of nationalism are core features of the modern world and are therefore hard to escape or avoid [32].

For over two centuries, the centralised state has remained the dominant political force and hegemonic organisation at the global level. At least since the French Revolution, the modern state has taken the shape of the nation-state [33]. The nation-state, in turn, is predicated on the exclusivist ideology of nationalism and is thus far from being the cosmopolitan institution initially envisioned by some Enlightenment philosophers [34]. Nationalism has thus been identified as the dominant ideology of Western (and Westernising) modernity [32, 33]. While nationalism is the chief ideological material used to put together and buoy up the nation-state [33], it is essential to remember that the ‘nation’ remains its core unit. The nation, in turn, is defined on the basis of a belief in common putative ethnic descent [35]. Moreover, nationalism thrives in a world that is widely perceived to be inescapably a world of nations [25].

Although there is no unequivocal or undisputed definition of what a nation is, it can be defined as a politicised, or politically ‘self-aware’, ethnic group [36]. The latter is, in turn, related to ethnic lineage and descent, in similar terms to the concept of ‘race’. Both nations and ethnic groups are defined on the basis of putative ancestry, that is, the belief on the part of

their members that they descend from common ancestors and thus share a common history [25, 26, 35].

A key aspect of this reasoning is subjectivity: a nation cannot be objectively defined from the outside as something tangible, only from the subjective perception of those who carry this self-definition, i.e. of belonging to the nation. There are no firmly established external criteria that can scientifically determine what a nation is.

Nationalism is therefore an ideology that relies on collective self-definition and hence a tool of boundary-raising and frontier-construction. The social philosopher and anthropologist Ernest Gellner put it rather bluntly: 'Nationalism does not exist because of nations; rather, nations exist because of nationalism' [27]. Most, although perhaps not all, national boundaries have been conceived and shaped during the transition to the modern age [37]. For nationalists, boundaries are self-evident – and need to be defended whenever they are questioned or contested by rival nationalists, the latter most often belonging to self-defined neighbouring nations.

The limits of the nation state system can only be comprehended by considering that we have now entered in a wholly different historical era, an era that is, I argue, outside history. The notion that we are in the Anthropocene, a geological epoch distinct from the Holocene, stands at the core of this change. In other words, the extremely rapid economic development over the last decades has had an indelible impact on the Earth's surface, so intense, abrupt and dramatic that humanity is now being virtually expelled from history. The Anthropocene represents an entirely new geological epoch [38, 39], hence it can hardly contain a pre-geological age like modernity that is exclusively centred on human history: the new chronology of the Anthropocene reveals the limits of modernity, particularly its standardising, uniformising homogenising connotations. Nationalism and globalisation have both led to extreme forms of homogenisation [40, 41], culminating in parallel processes of the loss of both cultural diversity and biological diversity (biodiversity). In order to assemble these distinctive dimensions, the notion of biocultural diversity has been developed over the last 20 years [42]. It is hence possible to talk about biocultural homogenization as a broader process that encompasses the biological and the cultural [43]. Here, I rejoin this line of research, adding to it the contrast between pre-modern communities and the modernising nation-state within the global neoliberal context as a supplementary tool to understand the relationship between cultural and biological diversity.

Unfortunately, the rapidly changing world we inhabit is confronting us with a series of existential threats and crises that can only be tackled by increasing levels of cooperation, coordination and eventually simultaneous action. In particular, the strictly interrelated challenges of climate change, biodiversity loss, pandemics, and unprecedented forms of pollution have shaped a global emergency, as a rapid output of scientific re-

search and accumulated evidence has revealed their life-threatening extent. From being a distant threat to be tackled by future generations, climate change and the concomitant crises of the Anthropocene now clearly appear as the greatest threat ever experienced by humankind. Moreover, climate change is accompanied by a set of associated crises that no single state can hope to solve on its own [44, 45].

From a geoethical viewpoint, this conundrum represents a major quagmire. The ethical world of nations is sometimes opposed to the geoethical imperative, mostly because the 'morality and mortality of nations' merely concerns the self-preservation of a group based on myths of lineage and descent [46]. It thus seems to be at odds with the broader moral imperative of the overarching unit encompassing each and every nation: the Earth, cosmos, or Gaia. From a geoethical perspective, the Earth is the preferential unit of analysis and the tool for understanding and experiencing reality at a time of global crisis.

2.2. *Exit the nation-state system: Alternative communities*

During the transition to industrialisation, various utopian communities were conceived and established across the world [47-49]. They were often imprinted through the principles of mutualism, social welfare and internationalism, such as anarchist internationalism [50] and communitarian anarchism [51]. However, they often proved to be transitory and impermanent and sometimes did not last more than a generation, being typically obliterated during World War I [52]. A few practised deep ecology and were constructed around principles of harmony with the surrounding environment [53]. Religious communities practising deep ecology have often been more long lasting prompting calls to explore the potential of religion for Earth Stewardship [54]. More recently, notions of food sovereignty have indicated alternative frameworks for the establishment of sustainable communitarian relationships [37].

But across the globe more enduring centuries-old and even millennial societies have remained, differentially affected by the pressures of Westernisation and modernity. Their resistance, I argue, was not in vain. At a time of radical uncertainty, when humanity is at a crossroads, both traditional religious communities and indigenous communities are providing inspiration for the rest of the world. With their sustainable technologies and reduced human population sizes [55], they could be considered among 'the possible chances of a subsistence of the future' [56] (p.123).

Considering the dismal record of nationalism in addressing the key problems of the Anthropocene, we urgently need to identify those social organisations, institutions, cultures, groups, and socio-economic formations that are better suited and ready to tackle the parallel challenges of climate change, biodiversity loss, waste accumulation, overpopulation and the other dismal legacies of the Anthropocene epoch. The communities chosen here are largely pre-modern, pre-industrial or, in some cases,

pre-agricultural. They are among the most insulated, self-sufficient and traditional communities to be found.

This does not exclude the fact that more contemporary communities could, and indeed might, slowly take shape and materialise in response to the climate emergency and other crises. But, whether or not they will emerge and consolidate (with the capacity of resilience necessary to survive), such hypothetical communities are a yet-to-be-tested response to the crises. Futuristic communities of resilience and mitigation are a real possibility, but so far remain opportunities with no tested or immediately testable demonstration of their intergenerational continuity.

Instead, the communities analysed here have been around for a long time and have demonstrated their resilience over hundreds, sometimes thousands, of years. Moreover, they are 'exemplary' in the sense that, despite their seclusion and isolation, others can learn from them without necessarily being in contact with them face-to-face. Their traditions of ecological knowledge (TEK) are being rediscovered as a potentially infinite pool of life-enhancing repertoires that can only be maintained thanks to self-sufficiency and, often, isolation [57, 58].

A few of these communities are thriving demographically, but the majority are deeply threatened by both global and state-level forces, as well by demographic pressures and other kinds of intrusions. Endangered by the demographic expansion of ethnic majorities and corporate land grabbing, self-sustaining communities such as the Hadza risk disappearing, taking with them an incomparable treasure of human wisdom, knowledge, expertise and ability. The main existential threats are introduced diseases, loggers, oil workers, miners, Christian missionaries and a few other religious groups, visitors (including tourists), as well as neighbouring farms and tribes [59].

Paradoxically, they are among the groups most vulnerable to the vagaries and destructiveness of climate change [60] despite the fact that, at the same time, their values and lifestyles are essential to both climate change mitigation and adaptation strategies [61]. Subsistence societies, in particular, thrive in densely rich bioculturally diverse environments where biodiversity holds sway [62]. It has therefore been asserted that they are the best possible guardians of biodiversity – to the extent that in some countries indigenous peoples have been officially appointed and designated as guardians, rangers and watchmen within biocultural conservation programmes of indigenous environmental governance [63].

3. Two types of communities

Here, I focus on two types of communities: indigenous communities whose economies are still based on subsistence activities, and who thus live outside the market system; and traditional religious communities, mostly in the United States and Canada, who live without consumer goods, and sometimes without electricity.

3.1. Hunter-gatherer societies

When the tsunami propelled by the 2004 earthquake in the Indian Ocean reached the Andaman Islands, one of its indigenous peoples, the Onge tribesmen, understood from ancestral knowledge what was going to come: long before the big wave or 'moving ridge' materialised on the horizon, they had already packed their belongings uphill acting, quickly enough to leave the coast and take refuge in the shelter of the highlands. In nearby islands, those coast dwellers that lacked the traditional knowledge perished. While very few among the indigenous peoples were adversely affected, this was not the case among those most deeply assimilated into Western or Indian culture. Many had in fact sedentarised as horticulturalists, converted to Christianity, adopted a more 'relaxed' lifestyle and sometimes lost all connection with the wisdom of their forefathers. The overwhelming majority of casualties occurred among non-indigenous peoples or 'invaders'. All ninety-six Onge survived. Apparently, the source of profound knowledge came from oral tales transmitted through the generations, which encapsulated previously occurring events. One of these connects ground tremors with the rise of a Great Wall of water sweeping everything in its path.

Andaman Islanders were hunter-gatherers who have lived in substantial isolation since their ancestors settled in the archipelago over 50,000 years ago, in the Last Glacial Period (LGP) c. 115,000–11,700 [58]. As Westernisation increasingly penetrated the islanders via India, alcohol and drug addiction began to affect daily life to the point of threatening their survival [64]. Other tribes had previously experienced the impact of British colonialism: immediately after the first colonial settlement in 1789, Western-imported infectious diseases such as pneumonia, measles and influenza rapidly depopulated the area of the Jarawas in South Andaman Island [65] in just four years (1789–1793). Unrelenting attempts to contact and co-opt the natives included the 1888 British policy of 'organized gift giving' culminating in episodes of attempted mass killing [66].

After India gained independence, the Indian authorities sometimes emulated British policies, while widespread deforestation threatened the islands' habitat, wildlife and pristine biodiversity [67]. In the 1990s, as globalisation engulfed the planet, contact with outsiders became more frequent, and the old problems returned: in 2018, US missionaries attempted to encroach upon the Sentinelese indigenous tribe and one was killed while ignoring Indian law prohibiting entry into the islands [65]. If isolation saved the island communities for millennia, contact rapidly decimated them. As the Cavalli-Sforza brothers explain in relation to the Andamans: 'Contact with whites, and the British in particular, has virtually destroyed them. Illness, alcohol, and the will of the colonials all played their part; the British governor of the time mentions in his diary that he received instructions to destroy them with alcohol and opium' [68].

3.1.1. Isolated tribes, traditional knowledge and advancement of science

There are between 150 and 200 human communities living in voluntary isolation across the world. The vast majority of Isolated Indigenous Peoples (IIPs) “live the Amazon rainforests of Brazil, Colombia, Ecuador, Peru, Bolivia, and Venezuela” [59]. Isolated societies often provide the reservoirs for formidable scientific advances. What can they teach us about our own safety and survival? If we could be genuinely interested in learning from them, they probably have thousands of lessons for us regarding all aspects of life including our connection to nature and how to survive and thrive in the most adverse conditions. I argue that the two types of communities analysed here not only provide shareable lifestyle patterns, but also offer universal truths about a variety of social, cultural, medical and other dimensions of life. There is much they can teach us – if only we were ready to listen [69, 70].

These reservoirs of wisdom are condensed in forms of traditional ecological knowledge (TEK) transmitted through generations spanning millennia and which often cannot be conveyed in written form ([71, 72]. Despite much activity among researchers across disciplines in gathering existing varieties of traditional knowledge before they are lost forever [73-75], only a minimal amount can be shared through communication channels other than the oral transmission that was traditionally used. Their most important distillation can hardly end up in books and articles by anthropologists, ethno-botanists and other human disciplines without losing their essence or *raison d'être*: such oral traditions, taught from one generation to the next, cannot be fully conveyed in written form. They are based on incessantly evolving observations of, and participation in, the surrounding environment via a constantly updated sustainable management of resources.

Some anthropologists have spoken about the ‘virtues of illiteracy’ [76]: this controversial notion may certainly apply to pre-agricultural societies, such as hunter-gatherers or fishing communities. But even if their knowledge can hardly be shared in written form, the very existence of such communities connected to different lifestyles has provided, and will continue to provide, new keys to the advancement of universal science.

Small-scale societies have often been depicted as conservers of biodiversity – depending on the meaning associated with the term ‘conservation’ [77]. Their ability to mitigate ‘resource overharvesting’ greatly precludes environmental degradation and indeed results in biodiversity maintenance via the ‘creation of habitat mosaics’ [78]. In the next section, for example, I show how the very existence of the Hadza (or Hadzabe) hunter-gatherers in Tanzania has been crucial to the advancement of medical science. They exemplify the contribution to universal knowledge that can only come from isolated tribes and, in general, communities that lie outside global markets of mass consumption.

3.1.2. Hazda and other hunter-gatherers

The study of human metabolism has met crucial breakthroughs thanks to the discovery of isolated communities whose metabolism directly depends on their unique lifestyle. One such study is the famous Hadza microbiome study [79, 80] (Schnorr et al. 2014; Smits et al. 2017). The Hadza hunter-gatherer societies in northern Tanzania have traditionally lived by foraging and hunting with hand-made bows and arrows, having no domesticated livestock and performing no agricultural practices. Their lifestyle habits and culture have provided unexpected opportunities for the advancement of medical science. The study showed that the Hadza's 'higher levels of microbial richness and biodiversity' (compared with both urban Italian and African rural farming control groups) were linked to a foraging lifestyle that endowed them with bacterial enrichment and enhanced their 'ability to digest and extract valuable nutrition from fibrous plant foods' [79] (Schnorr et al. 2014).

Similarly, the microbiome of uncontacted Amerindians offered a unique opportunity to uncover new connections in biology and medicine [57] (Clemente et al. 2015). The possibility of exploring this and other insulated populations has led to huge advances in biology and other sciences, allowing new ways of studying the trillions of bacteria and viruses that coexist in every individual's internal ecosystem known as the microbiome [81-83](Obregon-Tito et al. 2015; Segata 2015; Vangay et al. 2018).

It is also possible to formulate a parallel between human microbial diversity and environmental biodiversity. Both the bodily internal eco-microsystem within each individual person and the broader eco-macrosystem of the environment where she or he lives are predicated on the principle of diversity. Maximum biodiversity (and biocultural diversity) leads to maximum metabolic advantage. The mechanisms of internal body homeostasis are somehow reflected within human societies and their relationship with the natural environment as a whole. To simplify, the richer and more biodiverse our environment is, the richer and more diverse our microbiome is – which is, in turn, associated with a healthier metabolism.

Microbiological research and other findings confirm how diversity in any form is crucial to the continuity of life on earth: it has repeatedly established that the richer and more diverse the flora of our gut microbiome is, the more our immune system can defend us and make us healthier. But it also confirms that this vital microbial diversity is associated with broader external conditions of biodiversity maintenance through the consumption of a vast variety of freely available non-cultivated foods. In contrast, gut dysbiosis (i.e. depletions and perturbations of the intestinal microbiome) is associated with disease and a host of metabolic ailments, encompassing immune, metabolic, neurologic and psychiatric traits [84]. On the other hand, one must consider that environmental factors, including diet, need to be complemented by genetic factors: both environmental

factors and host factors, that is, the genetic make up of the host (i.e., human beings) influence the composition of the intestinal microbiome [85].

Besides biology and neurology, other research fields have focussed on these valuable sources of information. Some studies have confirmed that it is not simply our physical health that is at stake, but our mental well-being too. For many years, microbiologists (and neurologists) have confirmed that the gut acts as a kind of 'second brain' [86]. In other words, our mood, alertness and other neurological variables are closely related to our microbiome, which is in turn related to what we eat, which is in turn related to our environment, where a broad variety of life forms must prevail.

It is only a step further to complete our argument by complementing this vital biodiversity with the centrality of cultural diversity. Cultural diversity closely relates to biodiversity: a mutually reciprocal feedback relationship between human communities and the surrounding environment can only derive from the vast amount of existing human experiences, cultural forms and traditional knowledge.

In this process, the study of insulated populations, largely disconnected from the flow of mass-producing capitalist markets is central to the understanding of crucial facts about our collective and individual health and survival. This has become a vital matter in an increasingly unhealthy world, dominated by global food corporations [87], all-powerful pharmaceutical industries [88, 89] and other vested interests deeply inimical to human well-being [90] (pp. 25, 67 and 156).

Besides the Hadza and other subsistence societies, hunter-gatherers have also become champions and paradigms of contemporary trends such as 'low carb' or ketogenic diets [91, 92] and, in particular, 'Paleo' diets [93, 94], which are allegedly based on diets and lifestyles of the Palaeolithic age, that is, before the Agricultural Revolution [95]. These ontologically-based future diets are ultimately based on non-anthropocentric indigenous world-views and object-oriented ecosophy [96].

Some scholars argue that human life can only continue if substantial numbers of the population return to at least some of the hunter-gathering conditions of our distant ancestors [97]. This may seem extreme, as it may mean terminating the brief episode of modernity, far beyond the need to rapidly de-industrialize the economy. Yet, it is a possibility worth considering because the society of mass consumption initiated in the 1950s and 1960s [98] has devastated the planet to the extent that a return to agricultural modes of production may be insufficient to reverse the damage done.

People without electricity use their physical resources to move around, hunt and collect, but, as in the Amish case discussed in the next section, they also engage in agrarian labour [99-102]. They often need to rise early and mobilise their muscle mass before eating, that is, in a state of fasting [103]. Because of the precarious conditions of scarce availability of food, which depends on a variety of factors, the groups considered here

are also well versed in intermittent fasting (IF) [103]. The emphasis on fasting as an aspect of simple living and exemplary lifestyle is far removed from food over-consumption and the ‘metabolic morbidities’ associated with a sedentary routine [104].

One could argue that these societies could only have survived due to their capacity to endure long periods of fasting, needed to raise their perceptive awareness or proprioception towards the surrounding environment, a ‘sixth sense’ or ‘sensation of body position and movement ... typically absent from conscious perception’ [105] – largely to offset attacks from wild animals and be ready to defend themselves. Along similar lines, Western upholders of new dietary fads have become great admirers of both minimalist simple living and hunter-gatherer societies [99, 100, 102, 106].

But let us now analyse the next groups of communities engaged in inherited forms of ‘simple living’ and minimalist lifestyles.

3.2. *Traditional religious communities*

Mahatma Gandhi’s 1942 spinning wheel (charkha) weaving a plain cotton khadi is perhaps the most iconic image of the politics of simple living. Gandhian frugal philosophy was associated with ideas of rural self-sufficiency – and in the wake of the struggle for Indian independence in 1947 these practices and ideas were transformed into a low-key form of mass nationalism. The spiritual dimension, even though often opposed to institutional religion, was perhaps equally important as the nationalist anti-colonial dimension. This philosophy has acquired a renewed protagonism as the contours of a post-consumerist world are beginning to take shape.

Eastern and Western traditions abound with kindred examples and exhortations to live the life of the simple, the poor, unattached to earthly possessions, blissfully living in the present while not identifying with one’s ego. Besides the emphasis on the values of humility and simplicity of most great religions, one should also add popular forms of folk religion that sometimes coalesce around syncretistic practices, incorporating various traditions into simple ways of life. Asceticism and abstinence become stepping-stones in the pursuit of salvation and redemption. Yet, ‘simple living’ should not necessarily be read as renunciation. Indeed, instead of renunciation many of these traditions extol the contrary: an even deeper satisfactory and meaningful form of celebration and self-realisation by committing to live in the present moment, releasing the anxiety intrinsically connected with the pursuit of earthly possessions.

For instance, the singing Bauls of Bengal is a syncretistic devotional tradition eclectically encompassing Hinduism, Buddhism and Islam, with entrances into Sufism, Vasinavism and tantric teachings [107, 108] (Dimock 1959: 260-62). Here, boundaries become more permeable, indeed incompatible with the fixed norms of homogenising nationalism: some

Bauls in West Bengal (India) often prefer to identify themselves as Hindu Bauls, while others in Bangladesh see themselves as Muslim Bauls [109, 110]. Simple living and the renouncing of earthly possessions can reach metaphysical levels; many Bauls have divested from material assets, are unattached to a parcel of land and live a semi-nomadic, or at least a homeless, lifestyle sometimes carrying with them only a musical instrument to accompany their chants and a few other belongings [107, 110].

Asceticism plays a central role in unorthodox identities disassociated from established religion. Yet, an undercurrent of contemplative spiritualism and the search for simple living has been present in many societies. Creative geniuses like Leo Tolstoy and Rabindranath Tagore professed an intimate connection with nature through a mystically bounded quest for simple living [108]. In fact, a sort of spiritual connection with simple living pervades most literary traditions, or, at least, it can be perceived in their backgrounds.

In Western Europe, many such religious communities lived and thrived until they were forced into diasporic exile by the rise of homogenising 'nation-statism' with its obsessive campaigns of assimilation that often led to mass persecution [29, 30, 111, 112]. Most of these believers landed in the Americas in the 1600s, where isolated communities still thrive today without being forced into the cauldron of mass consumerism: the Amish in Pennsylvania, Old Order Mennonites (Fuhremennischt) scattered in various US states and Latin America and the Doukhobours in Saskatchewan, Canada have all adopted spiritually based minimalist lifestyles based on ancestral forms of simple living and self-sufficiency.

Like Gandhi's Satyagraha (but unlike its practice of 'active resistance'), most of these communities define themselves as 'non-resistant', that is, their youth can file as conscientious objectors insofar as they decline to be drafted for compulsory military service [113]. Being pious does not mean being righteous. These modern utopias do not see God as angry and punitive, in contrast with many fundamentalist Evangelist sects [114]. Plain peoples' Christianity is characterised by daily practices based on simple living, while separation from the broader economic system is observed.

Although many changes have occurred in Amish society, including a shift away from farming into small business [115], the "social capital" of the Amish remains intrinsically intact as expressed in thriving social networks, popular gatherings and cross-generational solidarity [116]. Thus, Old Order Amish in Lancaster County, Pennsylvania do not receive benefits from Social Security or participate in Medicare, but rather rely a genuinely sustainable ethical philosophy of mutual aid and community interdependence in which congregational alms cover most medical expenses, being exempted from the Affordable Care Act, 2010 and providing a paradigm for ways health care costs can be managed in a sustainable way [117].

Forms of simple living manifest themselves in various guises and to various degrees, from simplicity in manners to abstemiousness, sobriety in dressing and the renouncing of modern facilities, including electricity. Among many Old German Baptist Brethren (OGBB) communities, there are no radios or televisions sets (although, the adoption of the internet has been passionately debated since the mid-1990s) [113]. Exceptions may include Bruderhof Communities that own and drive cars [118]. German Pietists, settled in Amana farm colonies in east-central Iowa, make electricity from manure. Unlike the Amish, their entrepreneurial skills have led to the creation of modern facilities, including some of the first refrigerators and the first commercial microwave oven launched in 1967. Yet Amana communities remain largely agricultural [119]. So we have a religious community that contributed to the rise of new technology but never fully identified with it. Unwittingly, it also contributed to its commercialisation and mass consumerism.

Moreover, medical, biological, psychological and other research carried out among self-sufficient religious groups indicate a powerful enhancement of members' physical capacities. In the absence of elaborate usage of technologies, beyond basic mechanical tools, ascetic, self-restrained simple living has led to metabolic improvements in a variety of medical conditions and variables. The opportunity to perform high-intensity physical activity and body movement via anti-sedentary practices has resulted in more thriving metabolisms in comparison to neighbours who have access to cars, TV, electricity and other comforts.

The Plain Peoples' 'stantial' (sedentary) lifestyle, agricultural economy and labour organisation seem to be hugely different from the non-static, nomadic or semi-nomadic lifestyles of temporary settlers such as the hunter-gatherers. They may scarcely share common eschatological or ontological values – in some cases their respective value systems may indeed clash, as in the case of some religious communities that have proselytising branches, including missionary undercurrents (such as some Mennonite groups). But these do not contradict my argument about their exemplary embodiment of simple living transmitted inter-generationally by means of traditional knowledge. Moreover, the practice of active listening and learning generally prevails over the fervour and eagerness to convert non-believers [113]. In all these cases, the permeability of boundaries, practices and traditions can vary hugely from community to community, spanning missionary zeal to interfaith dialogue, including dialogue with Islam and forms of Buddhist-Christian syncretism (the latter is exemplified by the New Hutterian Brethren communities of Ōwa in Japan, whose members are ethnically Japanese).

4. From imagined to re-imagined communities

What do the human communities so far described in this article have in common? In short, they have the capacity to make us think about pos-

sible alternative ways of living. Our epochal task is therefore to fully engage in an effort to re-image communities as distinct, new and at the same time intrinsically rooted in time, vis-à-vis the fractured remains of the quintessential standard and normative 'imagined community' – the 'nation' – yet, still ready to be ignited from the embers of the nation-state system disrupted by globalisation.

The previous sentence bears a conscious resemblance to Benedict Anderson's [12] well-known notion of 'imagined community', namely, the nation. However, the old, standard nation model is undergoing irreversible changes. These changes are protruding into various areas and taking different shapes, often proceeding in a crab style, one step forward, two steps back – two steps forward, one step back – since we witnessed the rising of interstate boundaries around over 100 self-proclaimed 'nation-states'.

The enormous challenges facing humankind require us to create new paths of imagination and novel narrative scenarios into which we may move at ease while conveying more practical messages of safety and redemption. Unprecedented challenges and mutating landscapes need an entirely new vocabulary and set of neologisms – such as Anthropocene ([4, 38, 121-123] or 'planetary boundaries' [1, 124-134]. The notion of Gaia citizenship, the concept of Pachamama (Quecha for Mother Earth), the principles set in the Universal Declaration of the Rights of Mother Earth (April 22, 2010, Cochabamba, Bolivia) or the jurisprudential theory of the Rights of Nature all provide pathways to visualize and operationalise a new geoethical relationship between human societies based on the full respect of the Earth.

5. Conclusions

As recommended in the latest report by the Intergovernmental Panel on Climate Change (IPCC), the ongoing energy transition urgently calls for 'rapid, far-reaching and unprecedented changes in all aspects of society' [135]. The astonishing delay with which human societies have been able (or rather unable) to tackle the vital challenges of climate change, biodiversity loss and simultaneous crises will have long-lasting impacts on forthcoming generations. Even in the best case scenario of rapid transformation, the impact on the environment is already so extensive that a variety of adaptive responses are impellent.

Adaptation is the second-best option after mitigation in tackling climate change and related crises. Yet, even the best possible mitigation scenario will involve some form of adaptation. Where can we look for universal examples of adaptation to the harsh conditions which are most likely going to prevail in vast regions of the globe as a consequence of air, soil, and water pollution, global heating and biodiversity loss?

When writing about the current ecological conundrum, we need inspiring lights that point towards a possible direction by visualizing real, as

opposed to 'imagined', communities. Habits and customs are difficult to modify and willpower is generally insufficient to engender the vital modifications needed to tackle the flow of forthcoming challenges through widespread lifestyle changes. Some more powerful ideas and examples may be needed, but nothing can be more effective than the material examples of entire communities united in the pursuit of sustainable living in harmony with the environment – really existing communities largely detached from the mainstream economy.

The concept of 'extraordinary ethical communities' (EEC) can thus work as a paradigm to disseminate a style of life, thinking, or common practices. This concept can promote responsible 'geocentric human practices' beyond the confines of academia in broader society. Far from being univocal, the notion of EEC aggregates a multiplicity of cases spanning continents, races, cultures and concepts under a shared semiotic sign or symbol (name).

Every day, new evidence accumulates through our newsfeeds, mailboxes and desktops on the cataclysmic condition of the Earth's balance. A continuous output of paradigm-shattering data pours down on us daily from faraway disciplines often set apart by previously impenetrable barriers. Absorbing all of this vital information requires new creative notions and concepts to facilitate our capacity to visualise and communicate the new challenges. As new research appears every day at mounting speed, the gap between science and the humanities (and the arts), has become unsustainable.

The main goal of this article was to understand that some already existing communities and downshifting lifestyles already exist. They can show, like no one else, the way ahead towards a better, more liveable world. But for how long will we still be able to take advantage of this formidable pool of biological, neurological and cultural knowledge?

References

1. Rockström, J.; Steffen, W.; Noone, K.; Persson, Å.; Chapin III, F. S.; Lambin, E.; Lenton, T. M.; Scheffer, M.; Folke, C.; Schellnhuber, H. J., Planetary boundaries: exploring the safe operating space for humanity. *Ecology and society* 2009, 14, (2).
2. Zeng, Y.; Maxwell, S.; Runtang, R. K.; Venter, O.; Watson, J. E. M.; Carrasco, L. R., Environmental destruction not avoided with the Sustainable Development Goals. *Nature Sustainability* 2020, 3, (10), 795-798.
3. Cromwell, D.; Levene, M.; Theobald, J., *Surviving Climate Change: The Struggle to Avert Global Catastrophe*. Pluto Press: London, 2007.
4. Crutzen, P. J.; Stoermer, E. F., The "Anthropocene". *Global Change Newsletter* 2000, 41, 17-18.
5. Hampton, A. J. B., *Pandemic, Ecology and Theology. Perspectives on COVID-19*. Routledge: Abingdon, Oxon, 2021.
6. Levene, M., Why is the twentieth century the century of genocide? *Journal of World History* 2000, 11, (2), 305-336.
7. Lynas, M.; Burnip, R., *Our final warning : six degrees of climate emergency*. 2020.
8. Latour, B., *Down to Earth: Politics in the New Climatic Regime*. Polity Press: Cambridge, 2018.
9. Latour, B., *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. Harvard University Press: Cambridge (Massachusetts), 2018.
10. Peppoloni, S.; Di Capua, G., The meaning of geoethics. In *Geoethics: Ethical Challenges and Case Studies in Earth Sciences*, Wyss, M.; Peppoloni, S., Eds. Amsterdam: Elsevier, 2015; pp 3-14.
11. Marone, E.; Bohle, M., Geoethics for Nudging Human Practices in Times of Pandemics. *Sustainability* 2020, 12, (18), 7271.
12. Anderson, B., *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Verso: London, 1983.

13. Hoekstra, A. Y.; Wiedmann, T. O., Humanity's unsustainable environmental footprint. *Science* 2014, 344, (6188), 1114-1117.
14. Rich, N., *Losing Earth: The Decade We Could Have Stopped Climate Change*. MCD/Farrar, Straus and Giroux: New York, 2019.
15. Lovelock, J., *The Vanishing Face of Gaia: A Final Warning*. Basic Books: New York, 2009.
16. Schneider, S., The worst-case scenario. *Nature* 2009, 458, (7242), 1104-1105.
17. Ripple, W. J.; Wolf, C.; Newsome, T. M.; Barnard, P.; Moomaw, W. R., World Scientists' Warning of a Climate Emergency. *BioScience* 2019, 70, (1), 8-12.
18. Ripple, W. J.; Wolf, C.; Newsome, T. M.; Galetti, M.; Alamgir, M.; Crist, E.; Mahmoud, M. I.; Laurance, W. F.; 15, s. s. f. c., World Scientists' Warning to Humanity: A Second Notice. *BioScience* 2017, 67, (12), 1026-1028.
19. Elhacham, E.; Ben-Uri, L.; Grozovski, J.; Bar-On, Y. M.; Milo, R., Global human-made mass exceeds all living biomass. *Nature* 2020, 9 December 2020, (<https://doi.org/10.1038/s41586-020-3010-5>), (in press).
20. Scheffer, M.; Carpenter, S. R., Catastrophic regime shifts in ecosystems: linking theory to observation. *Trends in Ecology & Evolution* 2003, 18, (12), 648-656.
21. Stocker, B. D.; Roth, R.; Joos, F.; Spahni, R.; Steinacher, M.; Zaehle, S.; Bouwman, L.; Xu, R.; Prentice, I. C., Multiple greenhouse-gas feedbacks from the land biosphere under future climate change scenarios. *Nature Climate Change* 2013, 3, (7), 666-672.
22. Stoner, A. M., Critical Reflections on America's green new deal: capital, labor, and the dynamics of contemporary social change. *Capitalism Nature Socialism* 2021, 1-18 (in press).
23. Conversi, D., The Ultimate Challenge: Nationalism and Climate Change. *Nationalities Papers* 2020, 48, (4), 625-636 (doi:10.1017/nps.2020.18).
24. Conversi, D., *The Future of Nationalism in a Transnational World*. Wiley-Blackwell: 2020; p 43-59.
25. Smith, A. D., *Nationalism and Modernism: A Critical Survey of Recent Theories of Nations and Nationalism*. Routledge: London, 1998.
26. Smith, A. D., *Nations and Nationalism in a Global Era*. Polity Press: Cambridge, 1996.
27. Gellner, E., *Nations and Nationalism*. 2 ed.; Wiley-Blackwell/Oxford: Basil Blackwell/ Ithaca: Cornell University Press [1st. ed , 1983]: London, 2006.
28. Smith, A. D., *National Identity*. Penguin / Reno: University of Nevada Press: Hammondsworth, 1991.
29. Conversi, D., 'We are all equals!' Militarism, homogenization and 'egalitarianism' in nationalist state-building (1789-1945). *Ethnic and Racial Studies* 2008, 31, (7), 1286 - 1314.
30. Conversi, D., Homogenisation, nationalism and war: Should we still read Ernest Gellner? *Nations and Nationalism* 2007, 13, (3), 371-394.
31. Mandelbaum, M. M., *The Nation/State Fantasy. A Psychoanalytical Genealogy of Nationalism*. Palgrave Macmillan: London, 2020.
32. Males' ević, S. a., *Grounded Nationalisms: A Sociological Analysis*. Cambridge University Press: Cambridge, 2019.
33. Conversi, D., Modernism and nationalism. *Journal of Political Ideologies* 2012, 17, (1), 13-34.
34. Mann, M., *The Sources of Social Power. Vol. 2: The Rise of Classes and Nation States, 1760 -1914*. Cambridge University Press: Cambridge, 1993.
35. Horowitz, D. L., *Ethnic Groups in Conflict*. University of California Press: Berkeley, 1985.
36. Connor, W., From tribe to nation? *History of European Ideas* 1991, 13, (1-2), 5-18.
37. Conversi, D., Sovereignty in a changing world: From Westphalia to food sovereignty. *Globalizations* 2016, 13, (4), 484-498.
38. Zalasiewicz, J.; Waters, C. N.; Ellis, E. C.; Head, M. J.; Vidas, D.; Steffen, W.; Thomas, J. A.; Horn, E.; Summerhayes, C. P.; Leinfelder, R.; McNeill, J. R.; Gąsuzka, A.; Williams, M.; Barnosky, A. D.; Richter, D. d.; Gibbard, P. L.; Syvitski, J.; Jeandel, C.; Cearreta, A.; Cundy, A. B.; Fairchild, I. J.; Rose, N. L.; Ivar do Sul, J. A.; Shotyk, W.; Turner, S.; Wagemann, M.; Zinke, J., The Anthropocene: comparing its meaning in geology (chronostratigraphy) with conceptual approaches arising in other disciplines. *Earth's Future* 2021, n/a, (n/a), e2020EF001896 (in press).
39. Crutzen, P. J., The "anthropocene". In *Earth system science in the anthropocene*, Springer: 2006; pp 13-18.
40. Levene, M., *Devastation: Volume I: The European Rimlands 1912-1938*. Oxford University Press: Oxford, 2013; Vol. 1.
41. Levene, M., *Annihilation: Volume II: The European Rimlands 1939-1953*. Oxford University Press: Oxford, 2013; Vol. 2.
42. Maffi, L., *Biocultural diversity*. The International Encyclopedia of Anthropology 2018, 1-14.
43. Celis-Diez, J. L.; Muñoz, C. E.; Abades, S.; Marquet, P. A.; Armesto, J. J., Biocultural Homogenization in Urban Settings: Public Knowledge of Birds in City Parks of Santiago, Chile. *Sustainability* 2017, 9, (4), 485.
44. Rinawati, F.; Stein, K.; Lindner, A., Climate Change Impacts on Biodiversity—The Setting of a Lingering Global Crisis. *Diversity* 2013, 5, (1), 114-123.
45. Parenti, C., *Tropic of Chaos: Climate Change and the New Geography of Violence*. Nation Books: New York, 2011.
46. Abulof, U., *The Mortality and Morality of Nations*. Cambridge University Press: Cambridge, 2015.
47. Peterson, A. L., *Seeds of the Kingdom: Utopian Communities in the Americas*. Oxford University Press: Oxford, 2005.
48. Manuel, F. E.; Manuel, F. P., *Utopian Thought in the Western World*. Harvard University Press/Belknap Press: Cambridge, MA, 2009.

49. Holloway, M., *Heavens on Earth : Utopian Communities in America, 1680-1880*. Library Publishers: New York, 1951.
50. Kinna, R., What is anarchist internationalism? *Nations and Nationalism* 2021, n/a, (n/a), (in press) <https://doi.org/10.1111/nana.12676>.
51. Knowles, R., Political economy from below: Communitarian anarchism as a neglected discourse in histories of economic thought. *History of Economics Review* 2000, 31, (1), 30-47.
52. Knowles, R., *Political Economy from Below: Economic Thought in Communitarian Anarchism, 1840-1914*. Routledge: London, 2013.
53. Price, A., Green Anarchism. In *The Palgrave Handbook of Anarchism*, Levy, C.; Adams, M., Eds. Springer: 2019; pp 281-291.
54. Hitzhusen, G. E.; Tucker, M. E., The potential of religion for Earth Stewardship. *Frontiers in Ecology and the Environment* 2013, 11, (7), 368-376.
55. Danowski, D.; Viveiros De Castro, E., *The Ends of the World*. Polity Press /John Wiley & Sons: Cambridge, 2017.
56. Bold, R., *Indigenous Perceptions of the End of the World: Creating a Cosmopolitics of Change*. Springer: Berlin, 2019.
57. Clemente, J. C.; Pehrsson, E. C.; Blaser, M. J.; Sandhu, K.; Gao, Z.; Wang, B.; Magris, M.; Hidalgo, G.; Contreras, M.; Noya-Alarcón, Ó.; Lander, O.; McDonald, J.; Cox, M.; Walter, J.; Oh, P. L.; Ruiz, J. F.; Rodriguez, S.; Shen, N.; Song, S. J.; Metcalf, J.; Knight, R.; Dantas, G.; Dominguez-Bello, M. G., The microbiome of uncontacted Amerindians. *Science Advances* 2015, 1, (3), e1500183.
58. Thangaraj, K.; Chaubey, G.; Kivisild, T.; Reddy, A. G.; Singh, V. K.; Rasalkar, A. A.; Singh, L., Reconstructing the Origin of Andaman Islanders. *Science* 2005, 308, (5724), 996-996.
59. Ortiz-Prado, E.; Cevallos-Sierra, G.; Vasconez, E.; Lister, A.; Pichilingue Ramos, E., Avoiding extinction: the importance of protecting isolated Indigenous tribes. *AlterNative: An International Journal of Indigenous Peoples* 2021, 0, (0), 1177180121995567 (in press).
60. Baird, R., *The impact of climate change on minorities and indigenous peoples*. Minority Rights Group International: London, 2008.
61. Nyong, A.; Adesina, F.; Osman Elasha, B., The value of indigenous knowledge in climate change mitigation and adaptation strategies in the African Sahel. *Mitigation and Adaptation Strategies for Global Change* 2007, 12, (5), 787-797.
62. Levene, M.; Conversi, D., Subsistence societies, globalisation, climate change and genocide: discourses of vulnerability and resilience. *The International Journal of Human Rights* 2014, 18, (3), 281-297.
63. Reed, G.; Brunet, N. D.; Longboat, S.; Natcher, D. C., Indigenous guardians as an emerging approach to indigenous environmental governance. *Conservation Biology* 2021, n/a, (n/a).
64. Buncombe, A., Washed-up poison bottle kills eight members of island tribe. *The Independent* 2008, (unavailable online).
65. Kumar, U., Contact and Conflict: Case of Inhabitants of Andaman Islands. In *Tribal Studies in India: Perspectives of History, Archaeology and Culture*, Behera, M. C., Ed. Springer Singapore: Singapore, 2020; pp 293-309.
66. Singh, V., Cyclones, Shipwrecks and Environmental Anxiety: British Rule and Ecological Change in the Andaman Islands, 1780s To 1900s. *Global Environment* 2020, 13, (1), 165-193.
67. Pankaj, S., Deforestation in Andaman and Nicobar: Its Impact on Onge. *Economic and Political Weekly* 2001, 36, (38), 3643-3648.
68. Cavalli-Sforza, L. L.; Cavalli-Sforza, F., *The Great Human Diasporas: The History of Diversity and Evolution*. DIANE Publishing Company: Darby, PA, 1998.
69. Hosen, N.; Nakamura, H.; Hamzah, A., Adaptation to Climate Change: Does Traditional Ecological Knowledge Hold the Key? *Sustainability* 2020, 12, (2), 676.
70. van der Ploeg, J.; Sukulu, M.; Govan, H.; Minter, T.; Eriksson, H., Sinking Islands, Drowned Logic; Climate Change and Community-Based Adaptation Discourses in Solomon Islands. *Sustainability* 2020, 12, (17), 7225.
71. Johannes, R. E., *Traditional Ecological Knowledge: A Collection of Essays*. IUCN, the World Conservation Union: Gland/ Cambridge, 1989.
72. Posey, D. A.; Balick, M. J., *Human Impacts on Amazonia: The Role of Traditional Ecological Knowledge in Conservation and Development*. Columbia University Press: New York, 2006.
73. Inglis, J., *Traditional Ecological Knowledge: Concepts and Cases*. International Development Research Centre (IDRC) Ottawa, 1993.
74. Martin, J. F.; Roy, E. D.; Diemont, S. A.; Ferguson, B. G., Traditional Ecological Knowledge (TEK): Ideas, inspiration, and designs for ecological engineering. *Ecological Engineering* 2010, 36, (7), 839-849.
75. Menzies, C. R., *Traditional Ecological Knowledge and Natural Resource Management*. University of Nebraska Press: Lincoln, 2006.
76. Bright, W., The virtues of illiteracy. In *American Indian Linguistics and Literature*, 1 ed.; Bright, W., Ed. Walter de Gruyter/ Mouton: Berlin, 1984; pp 149-159.
77. Shiva, V., Women's indigenous knowledge and biodiversity conservation. *India International Centre Quarterly* 1992, 19, (1/2), 205-214.
78. Smith, E. A.; Wishnie, M., Conservation and subsistence in small-scale societies. *Annual Review of Anthropology* 2000, 29, (1), 493-524.

79. Schnorr, S. L.; Candela, M.; Rampelli, S.; Centanni, M.; Consolandi, C.; Basaglia, G.; Turrioni, S.; Biagi, E.; Peano, C.; Severgnini, M.; Fiori, J.; Gotti, R.; De Bellis, G.; Luiselli, D.; Brigidi, P.; Mabulla, A.; Marlowe, F.; Henry, A. G.; Crittenden, A. N., Gut microbiome of the Hadza hunter-gatherers. *Nature Communications* 2014, 5, (1), 3654.
80. Smits, S. A.; Leach, J.; Sonnenburg, E. D.; Gonzalez, C. G.; Lichtman, J. S.; Reid, G.; Knight, R.; Manjurano, A.; Changalucha, J.; Elias, J. E.; Dominguez-Bello, M. G.; Sonnenburg, J. L., Seasonal cycling in the gut microbiome of the Hadza hunter-gatherers of Tanzania. *Science* 2017, 357, (6353), 802-806.
81. Obregon-Tito, A. J.; Tito, R. Y.; Metcalf, J.; Sankaranarayanan, K.; Clemente, J. C.; Ursell, L. K.; Zech Xu, Z.; Van Treuren, W.; Knight, R.; Gaffney, P. M.; Spicer, P.; Lawson, P.; Marin-Reyes, L.; Trujillo-Villaruel, O.; Foster, M.; Guija-Poma, E.; Troncoso-Corzo, L.; Warinner, C.; Ozga, A. T.; Lewis, C. M., Subsistence strategies in traditional societies distinguish gut microbiomes. *Nature Communications* 2015, 6, (1), 6505.
82. Segata, N., Gut Microbiome: Westernization and the Disappearance of Intestinal Diversity. *Current Biology* 2015, 25, (14), R611-R613.
83. Vangay, P.; Johnson, A. J.; Ward, T. L.; Al-Ghalith, G. A.; Shields-Cutler, R. R.; Hillmann, B. M.; Lucas, S. K.; Beura, L. K.; Thompson, E. A.; Till, L. M.; Batres, R.; Paw, B.; Pergament, S. L.; Saenyakul, P.; Xiong, M.; Kim, A. D.; Kim, G.; Masopust, D.; Martens, E. C.; Angkurawaranon, C.; McGready, R.; Kashyap, P. C.; Culhane-Pera, K. A.; Knights, D., US Immigration Westernizes the Human Gut Microbiome. *Cell* 2018, 175, (4), 962-972.e10.
84. Halfvarson, J.; Brislawn, C. J.; Lamendella, R.; Vázquez-Baeza, Y.; Walters, W. A.; Bramer, L. M.; D'Amato, M.; Bonfiglio, F.; McDonald, D.; Gonzalez, A.; McClure, E. E.; Dunklebarger, M. F.; Knight, R.; Jansson, J. K., Dynamics of the human gut microbiome in inflammatory bowel disease. *Nature Microbiology* 2017, 2, (5), 17004.
85. Kurilshikov, A.; Medina-Gomez, C.; Bacigalupe, R.; Radjabzadeh, D.; Wang, J.; Demirkan, A.; Roy, C. I. L.; Raygoza Garay, J. A.; Finnicum, C. T.; Liu, X.; Zhernakova, D. V.; Bonder, M. J.; Hansen, T. H.; Frost, F.; Rühlemann, M. C.; Turpin, W.; Moon, J.-Y.; Kim, H.-N.; Lüll, K.; Barkan, E.; Shah, S. A.; Fornage, M.; Szopinska-Tokov, J.; Wallen, Z. D.; Borisevich, D.; Agreus, L.; Andreasson, A.; Bang, C.; Bedrani, L.; Bell, J. T.; Bisgaard, H.; Boehnke, M.; Boomsma, D. I.; Burk, R. D.; Claringbould, A.; Croitoru, K.; Davies, G. E.; van Duijn, C. M.; Duijts, L.; Falony, G.; Fu, J.; van der Graaf, A.; Hansen, T.; Homuth, G.; Hughes, D. A.; Ijzerman, R. G.; Jackson, M. A.; Jaddoe, V. W. V.; Joossens, M.; Jørgensen, T.; Keszthelyi, D.; Knight, R.; Laakso, M.; Laudes, M.; Launer, L. J.; Lieb, W.; Lusi, A. J.; Masclee, A. A. M.; Moll, H. A.; Mujagic, Z.; Qibin, Q.; Rothschild, D.; Shin, H.; Sørensen, S. J.; Steves, C. J.; Thorsen, J.; Timpson, N. J.; Tito, R. Y.; Vieira-Silva, S.; Völker, U.; Völzke, H.; Vösa, U.; Wade, K. H.; Walter, S.; Watanabe, K.; Weiss, S.; Weiss, F. U.; Weissbrod, O.; Westra, H.-J.; Willemssen, G.; Payami, H.; Jonkers, D. M. A. E.; Vasquez, A. A.; de Geus, E. J. C.; Meyer, K. A.; Stokholm, J.; Segal, E.; Org, E.; Wijmenga, C.; Kim, H.-L.; Kaplan, R. C.; Spector, T. D.; Uitterlinden, A. G.; Rivadeneira, F.; Franke, A.; Lerch, M. M.; Franke, L.; Sanna, S.; D'Amato, M.; Pedersen, O.; Paterson, A. D.; Kraaij, R.; Raes, J.; Zhernakova, A., Large-scale association analyses identify host factors influencing human gut microbiome composition. *bioRxiv* 2020, 2020.06.26.173724.
86. Young, E., Gut instincts: The secrets of your second brain. *New Scientist* 2012, 216, (2895), 38-42.
87. Hoffman, B., Behind the Brands: Food justice and the Big 10 food and beverage companies. *Oxfam Policy and Practice: Private Sector* 2013, 10, (2), 11-62.
88. Jelinek, G. A.; Neate, S. L., The influence of the pharmaceutical industry in medicine. *Journal of Law and Medicine* 2009, 17, (2), 216.
89. Ferner, R. E., The influence of big pharma. *BMJ (British Medical Journal)* 2005, 330, (7496), 855-856.
90. Crouch, C., *The Strange Non-Death of Neoliberalism*. Polity: Cambridge, 2011.
91. Masood, W.; Annamaraju, P.; Uppaluri, K. R., Ketogenic Diet. *StatPearls* 2020, <https://www.ncbi.nlm.nih.gov/books/NBK499830/>.
92. Roberts, M. N.; Wallace, M. A.; Tomilov, A. A.; Zhou, Z.; Marcotte, G. R.; Tran, D.; Perez, G.; Gutierrez-Casado, E.; Koike, S.; Knotts, T. A.; Imai, D. M.; Griffey, S. M.; Kim, K.; Hagopian, K.; McMackin, M. Z.; Haj, F. G.; Baar, K.; Cortopassi, G. A.; Ramsey, J. J.; Lopez-Dominguez, J. A., A Ketogenic Diet Extends Longevity and Healthspan in Adult Mice. *Cell Metabolism* 2017, 26, (3), 539-546.e5.
93. Wolf, R., *The Paleo Solution: The Original Human Diet*. Victory Belt Publishing: 2017.
94. Cordain, L.; Friel, J., *The Paleo Diet for Athletes: The Ancient Nutritional Formula for Peak Athletic Performance*. Rodale: 2005.
95. Cordain, L., *The Paleo Diet Revised: Lose Weight and Get Healthy by Eating the Foods You Were Designed to Eat*. John Wiley & Sons (AARP Digital Editions): 2012.
96. Mazac, R.; Tuomisto, H. L., The Post-Anthropocene Diet: Navigating Future Diets for Sustainable Food Systems. *Sustainability* 2020, 12, (6), 2355.
97. Gowdy, J., Our hunter-gatherer future: Climate change, agriculture and uncivilization. *Futures* 2020, 115, 102488.
98. Syvitski, J.; Waters, C. N.; Day, J.; Milliman, J. D.; Summerhayes, C.; Steffen, W.; Zalasiewicz, J.; Cearreta, A.; Gałuszka, A.; Hajdas, I.; Head, M. J.; Leinfelder, R.; McNeill, J. R.; Poirier, C.; Rose, N. L.; Shoty, W.; Wagreich, M.; Williams, M., Extraordinary human energy consumption and resultant geological impacts beginning around 1950 CE initiated the proposed Anthropocene Epoch. *Communications Earth & Environment* 2020, 1, (1), 32.
99. Gunasekera, H., Asthma and innate immunity in Amish and Hutterite communities. *Journal of paediatrics and child health* 2017, 53, (1), 91-92.

100. Blake, K. V.; Cardamone, E. A.; Hall, S. D.; Harris, G. R.; Moore, S. M., Modern Amish farming as ecological agriculture. *Society & Natural Resources* 1997, 10, (2), 143-159.
101. Katz, M. L.; Ferketich, A. K.; Broder-Oldach, B.; Harley, A.; Reiter, P. L.; Paskett, E. D.; Bloomfield, C. D., Physical activity among Amish and non-Amish adults living in Ohio Appalachia. *J Community Health* 2012, 37, (2), 434-440.
102. Tantoco, J. C.; Elliott Bontrager, J.; Zhao, Q.; DeLine, J.; Seroogy, C. M., The Amish have decreased asthma and allergic diseases compared with old order Mennonites. *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology* 2018, 121, (2), 252-253.e1.
103. Patterson, R. E.; Sears, D. D., Metabolic Effects of Intermittent Fasting. *Annual Review of Nutrition* 2017, 37, (1), 371-393.
104. Martin, B.; Mattson, M. P.; Maudsley, S., Caloric restriction and intermittent fasting: Two potential diets for successful brain aging. *Ageing Research Reviews* 2006, 5, (3), 332-353.
105. Tuthill, J. C.; Azim, E., Proprioception. *Current Biology* 2018, 28, (5), R194-R203.
106. Katz, E., Judaism and the ecological crisis. *The Bucknell Review* 1993, 37, (2), 55.
107. Hossain, A.; Montu, S. I.; Azad, M. A., The Baul Tradition in Bangladesh: Sustainability activism for a meatless dietary culture. In *Handbook of Research on Social Marketing and Its Influence on Animal Origin Food Product Consumption*, Diana, B.; Dora, M.; Talia, R., Eds. IGI Global: Hershey, PA, 2018; pp 163-171.
108. Dimock, E. C., Jr., Rabindranath Tagore "The Greatest of The Bauls of Bengal". *The Journal of Asian Studies (pre-1986)* 1959, 19, (1), 33.
109. Openshaw, J., The Web of Deceit: Challenges to Hindu and Muslim 'Orthodoxies' by 'Bāuls' of Bengal. *Religion* 1997, 27, (4), 297-309.
110. Salomon, C., Baul songs. In *Religions of India in Practice*, Lopez, D. S., Ed. Princeton University Press: Princeton, 1995; pp 187-208.
111. Levene, M., Annihilation. *The European Rimlands 1939-1953*. Oxford University Press: Oxford, 2014; Vol. 2, p 560.
112. Levene, M., Devastation. *The European Rimlands 1912-1938*. Oxford University Press: Oxford, 2014; Vol. 1, p 576.
113. Kraybill, D. B.; Bowman, C. F., *On the Backroad to Heaven: Old Order Hutterites, Mennonites, Amish, and Brethren*. The John Hopkins University Press: Baltimore, 2001.
114. Kraybill, D. B.; Nolt, S. M.; Weaver-Zercher, D. L., *Amish Grace: How Forgiveness Transcended Tragedy*. John Wiley & Sons: 2010.
115. Kraybill, D. B.; Nolt, S. M., *Amish Enterprise: From Plows to Profits*. The John Hopkins University Press: Baltimore, 2004.
116. Kraybill, D. B., *The Riddle of Amish Culture*. 2 ed.; The John Hopkins University Press: Baltimore, 2001.
117. Rohrer, K.; Dundes, L., Sharing the Load: Amish Healthcare Financing. *Healthcare* 2016, 4, (4), 92.
118. Spielhagen, F. R.; Cooper, B. S., Forming Social Capital: The Bruderhof Schools. *Journal of Education* 2002, 183, (2), 54-67.
119. Hoehnle, P., *Amana Colonies: 1932-1945*. Arcadia Publishing: 2016.
120. Billig, M., *Banal Nationalism*. Sage: London/Thousand Oaks, CA, 1995.

121. Steffen, W.; Crutzen, P. J.; McNeill, J. R., The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature? *AMBIO: A Journal of the Human Environment* 2007, 36, (8), 614-621.
122. Price, S. J.; Ford, J. R.; Cooper, A. H.; Neal, C., Humans as major geological and geomorphological agents in the Anthropocene: the significance of artificial ground in Great Britain. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 2011, 369, (1938), 1056-1084.
123. Steffen, W.; Grinevald, J.; Crutzen, P.; McNeill, J., The Anthropocene: conceptual and historical perspectives. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 2011, 369, (1938), 842-867.
124. Allen, M., Planetary boundaries: Tangible targets are critical. *Nature Climate Change* 2009, 1, (910), 114-115.
125. Bass, S., Planetary boundaries: Keep off the grass. *Nature Climate Change* 2009, 1, (910), 113-114.
126. Rockström, J., Planetary boundaries. *New Perspectives Quarterly* 2010, 27, (1), 72-74.
127. Biermann, F., Planetary boundaries and earth system governance: Exploring the links. *Ecological Economics* 2012, 81, 4-9.
128. Galaz, V.; Biermann, F.; Crona, B.; Loorbach, D.; Folke, C.; Olsson, P.; Nilsson, M.; Allouche, J.; Persson, Å.; Reischl, G., 'Planetary boundaries'—exploring the challenges for global environmental governance. *Current Opinion in Environmental Sustainability* 2012, 4, (1), 80-87.
129. van den Bergh, J. C. J. M.; Kallis, G., Growth, A-Growth or Degrowth to Stay within Planetary Boundaries? *Journal of Economic Issues* 2012, 46, (4), 909-920.
130. Wijkman, A.; Rockström, J., *Bankrupting Nature. Denying Our Planetary Boundaries.* Routledge: London, 2012.
131. Hughes, T. P.; Carpenter, S.; Rockström, J.; Scheffer, M.; Walker, B., Multiscale regime shifts and planetary boundaries. *Trends in ecology & evolution* 2013, 28, (7), 389-395.
132. Whiteman, G.; Walker, B.; Perego, P., Planetary boundaries: Ecological foundations for corporate sustainability. *Journal of Management Studies* 2013, 50, (2), 307-336.
133. Steffen, W.; Richardson, K.; Rockström, J.; Cornell, S. E.; Fetzer, I.; Bennett, E. M.; Biggs, R.; Carpenter, S. R.; De Vries, W.; De Wit, C. A., Planetary boundaries: Guiding human development on a changing planet. *Science* 2015, 347, (6223), 1259855.
134. O'Neill, D. W.; Fanning, A. L.; Lamb, W. F.; Steinberger, J. K., A good life for all within planetary boundaries. *Nature sustainability* 2018, 1, (2), 88-95.
135. Tollefson, J., IPCC says limiting global warming to 1.5 C will require drastic action. *Nature* 2018, 562, (7726), 172-173.