

Perspectives on Diversity in Education – an Appeal for Change and Justice

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Abstract

Prevalent educational schemes contain problematic, one-dimensional understandings of diversity inclusive only of mainstream human cultures based on the growth paradigm. Natural entities and nonhuman animals are predominantly excluded and human cultures with truly sustainable lifestyles ignored or devalued. Recent studies and psychological insight have shown that lack of compassion for minorities and nonhuman life has disastrous impact on biodiversity, the global community ('biosocial complex') and is highly destructive to a liveable future on this planet. This paper attempted to determine how the understanding of diversity can be widened through education to be inclusive of more than mainstream human lifestyles. Comparing the understanding of diversity in social and natural sciences, this paper explored the current situation. The food system based on large-scale monocultures and animal-agriculture was identified as a threat to diversity with the belief in human supremacy at its core, destroying the foundation of life. The urgent change towards a more inclusive, holistic and compassionate paradigm, increasingly demanded for by publications and organisations, was discussed. The results indicated that educational schemes must aim at creating a foundation of ecological democracy, plant-based food systems and solidarity on international and local level. Cultural stories need to be re-framed into positive utopias, based on just rights for all beings and thereby halt destruction of diversity. High-quality education, with topic-specific advanced training for teachers and educators, and empowerment for active democratic participation is recommended. A new paradigm in education is needed, combining insights of social and natural sciences in a relatable manner.

keywords: diversity, education for compassion, sustainability, biosocial complex

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1. INTRODUCTION

The term *diversity* is being defined and understood in quite divergent ways in social and natural sciences. Pointing out perspectives, underlying belief systems, and possibilities for change, as well as highlighting the potential impact of education is the core purpose of this paper. The hypothesis proposed here is that understandings of *diversity* need to be adapted in our societal apprehension and hence taught differently in all applicable institutions of education. This is imperative to tackle current and future (ecological) challenges and to effectively halt diversity loss.

In recent years diversity has been widely discussed and researched in both the natural and social sciences. The keyword search for 'diversity' shows about 489 million hits on Google Germany and roughly 4.7 million scientific publications in the library database of Freie Universität Berlin. However, it still seems uncommon that the findings from the natural and social scientific fields are being brought into conversation with one another, remaining distinctly bound within their disciplines.

In a publication in the field of conservation biology in 2019 on embracing diversity, the authors point out the necessity of "leading societies toward a more sustainable, equitably shared, and environmentally just future [which] requires elevating and strengthening conversations on the nonmaterial and perhaps unquantifiable values of nonhuman nature to humanity" and hereby granting importance to all living members of the so-called 'biosocial complex', including all relationships and interactions between all living species on this planet (Kohler, (Kohler et al. 2019). This understanding of 'diversity' should urgently be incorporated into modern-day education if we want to create a more sustainable, ethical, and peaceful future for ourselves and those generations to come.

However, large-scale and global education goals, such as the 17 Sustainable Development Goals (SDGs), set up by the UN in 2015 (aiming to promote diversity, end poverty, inequalities and tackle climate change through education and further a more sustainable future (United Nations 2021)), are unfortunately not inclusive in its strategies of the *biosocial complex* as an interdependent system. From this point of view, the UNESCO paper on 'Rethinking Education' (UNESCO 2015:29ff) fails to clearly and actively address the challenge of bringing together human and nonhuman diversity in a fundamentally insightful way to protect nature and hence all human life on this planet.

The potential depth of a shift in the societal understanding of *diversity*, away from human-centric views, so far remains under-represented. This is reflected in teaching, as well as the ways leading research institutions, such as the German Max-Planck Institute (n.d.), are still focusing solely on human diversity e.g., in a recent series of published books on diversity in society, regardless of the urgency of biodiversity loss.

The following research questions will guide the remainder of this paper, offering a framework for the speculative exploration of this topic:

- How can we change and widen the understanding of diversity through education?
- Who is part of the group we talk about when referring to *diversity*?
- What is needed within education to be able to teach about *diversity* differently?

To start this essay the term *diversity* is defined according to the two scientific perspectives at hand, in an attempt to find common ground between these. Subsequently, in part 3 the problematic current concept of *diversity* is described. The two different outlooks on *diversity* in natural and social sciences are compared in part 4, further problematising the separation of these fields and suggesting the potential benefits of a combined approach. The interlinked problems, with diversity loss in the natural world and the implications on cultural diversity and social stability, are then further analysed and discussed, referring to and focusing mainly on critical and forward-thinking recent publications on the importance of the entire *biosocial complex*, its intrinsic value and rights. Part 6 is pointing out what is needed to take the topic to education and to teach about it differently. The conclusion sums up the main points, providing prospects.

2. DEFINITIONS OF TERMS

Within social and natural sciences, the term *diversity* is defined in different ways, to some degree excluding the other field's definitions. In social sciences *diversity* mainly refers to conscious behaviour concerning diversity in various aspects of modern human societies (culture, ethnicity, belief system, age, gender, sexuality etc.) and treating each other with respect as well as appreciation.

"Diversity means conscious handling of plurality in society: it is an organisational as well as socio-political concept, which puts forth an appreciative, intentional and respectful interaction concerning differences and individuality" (Hochschule München n.d.).

Within the field of natural sciences, the definition of *diversity* more generally talks about all forms of life with their genetic and ecological varieties, not further specified for human societies.

"Biological diversity means the variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (Convention on Biological Diversity 2006).

A general but to-the-point definition of *diversity* can be found in the Cambridge Dictionary: "The fact of many different types of things or people being included in something" (Cambridge Dictionary n.d.). However, the term 'things' should be altered to the categories of 'nonhuman animals' and 'natural entities', which will be discussed. Below are definitions of some of the key terms used repeatedly throughout this paper:

Modern-day/mainstream human:

Used to describe most humans, living a life not consistent with natural cycles but following (industrial) agriculture, consumerism, and capitalistic growth, according to Feeney (2019).

Hunter-gatherer:

Human who still lives in harmony with nature (Feeney 2019; Harari 2015).

Food systems:

The entire production, transportation, manufacturing, retailing, consumption, and waste of food. Includes impacts on nutrition, human health, well-being, and the environment (Benton et al. 2021)

Nonhuman animal:

Used here as synonym for 'animal' to stress the equality and interconnectedness of human animals and all other animals.

Natural entities:

Inanimate natural objects, such as rivers, mountains or forests (Kothari, Margil and Bajpai 2017).

Biosocial complex:

According to Kohler et al. (2019) all relationships and interactions between all living species on this planet.

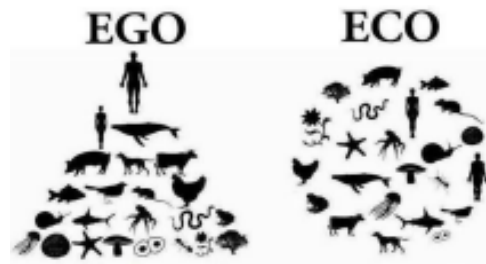
Regenerative agriculture:

Farming practices that protect and recover soil and essential micro and macro life-forms in a vegan and organic way (Grow-Biointensive n.d.).

3. THE CURRENT AND PROBLEMATIC CONCEPT OF DIVERSITY

Understandings of *diversity* need more holistic and inclusive discourse in social and natural sciences to enable necessary change both generally and within diversity education specifically. The effects of such a fundamental shift in understanding could help to address some of the most challenging issues of our time in radical ways: equality and peace, the climate crisis, biodiversity loss, degradation of arable land and ultimately the general question of the worth and meaning of human work. In contrast to the predominant reluctance in social sciences, study-fields like ethology, conservation biology, ethics, animal rights as well as agroecology, are increasingly pointing out and asking for a shift towards more equal rights for nonhuman animals and natural entities and hence the recognition of the worth of nonhuman diversity. This development also pays long overdue tribute to ancient indigenous knowledge (Papenfuss 2017), showing the somewhat hidden diversity within the human species itself.

Figure 1. Opposing concepts of human living. Retrieved on 23.12.2020,
source: <https://notbuyinganything.blogspot.com/2012/04/ego-vs-eco.html>



If humans are divided into two simplified categories, there are those who understand themselves to be part of the ecosystem, interconnected with all other beings and those who are disconnected, seemingly ruling over others (see figure 1). The Western majority are leading a rather 'ego-based', disconnected life, following the story of consumerism and the socially constructed value of 'money' as the universal language in which we trust (Harari 2017b). In contrast, a few remaining humans lead a hunter-gatherer life, based on true sustainability, in remote areas such as the Amazon rainforest (Worley 2016). Recently there are increasing numbers of publications on awareness and empathy concerning all the diverse life-forms on this planet, such as the aforementioned publication by Kohler et al. (2019), the work of the International Association of Vegan Sociologists and Yuval Noah Harari. These publications question deep-rooted human beliefs and explore what *diversity* could mean, if it were not limited to current human cultures and societies, but encompassed the communities of all humans, nonhuman animals and natural entities alike. In harsh contrast to this ethical ideal of an equal and sustainable world community, the current agricultural system is one main factor which decreases diversity and destroys planet earth. Natural habitat is destroyed, soils depleted through intensive monocultures, tremendous pollution caused, and food varieties are systematically annihilated. Foremost the animal agriculture sector has become a destructive driver in this disaster (Benton et al. 2021). Globally, these issues are not openly discussed, or taught, within dominant discourses and educational curricula. In this system, nonhuman animals and natural entities tend to be portrayed as soulless things so modern-day humans can morally justify the destructive system of animal agriculture and human consumerist behaviour (Ebert 2021). Moreover, social disruption is happening, as small-scale farmers are forced to adapt to an economically brutal capitalist system, whereby they are left to choose whether to abandon their less destructive agricultural practices or quit altogether and potentially face displacement, thereby further destabilizing whole regions, as has been the case in Syria (Lund 2014).

Cumulatively these factors are leading to a massive loss in diversity in culture and nature, without the potential of fast enough regeneration, reinforcing the effects of the global climate crisis (Watson 2019). As stated by Benton et al. (2021) the big questions concerning agricultural practice and food systems must be addressed systemically within mainstream society. The outcome and insights of this systemic analysis subsequently must be taken to education, to further an all-embracing understanding and appreciation of diversity, in order to generate radical change and global stability for future generations.

4. DIVERSITY IN THE LIGHT OF TWO SCIENTIFIC FIELDS

As established, there are conflicting definitions of *diversity*, depending on the field of study, connected to some extent also to a scientist's subjective view of the world. Humans tend to regard their own species' societies as culturally highly diverse, meanwhile overlooking the fact that any human society depends on the (functioning) global ecosystem and its biodiversity to provide for all needs (Herrmann 2019). Only about five percent of the world's human population today are indigenous people, who follow a significantly distinct and diverse ways of living compared to mainstream humans. It is indigenous communities who culturally value biodiversity, demonstrated in the way in which these communities are protecting 80 percent of the world's remaining biodiversity; of these remaining indigenous communities, many have been displaced and live in poverty, excluded from and unrecognised by mainstream society (The World Bank n.d.). The ancestral and highly sustainable hunter-gatherer life (Feeney 2019), uninfluenced by western consumerism, is presumably only being followed by a small fraction of those remaining five percent. Harari (2017b) states that about 94 percent of all humans follow the anthropocentric, capitalist idea of progress which tells the story of money, growth and profit, dictating the working of societies and the world's economy. Whether these people follow it devotedly or respectively, due to circumstances unwillingly, remains unanswered.

As already stated, there are challenging, deeply systemic questions, concerning the system modern-day humans created, especially in relation to agriculture. Agriculture has arguably had a highly negative outcome for humans in general, despite all technological advances, by causing more intense work, compared to the less labour-intensive traditional hunter-gatherer lifestyle (Harari 2015:86ff). However, living a sustainable life which reduces harm to the rest of nature has become almost impossible for most humans, due to the ever-increasing standard of living, ongoing expansion, and resource depletion. So far, industrialised countries have been the main driving force behind this, yet with more countries from the global south aiming for 'development', in addition to population growth, the need for even more space and resources increases further (Göpel 2020:26-33).

During the UN *Decade of Education for Sustainable Development*, which ended in 2014, sustainability was supposed to be integrated into worldwide educational schemes to help ensure a sustainable future (UNESCO n.d.). Currently, we are in the *UN Decade on Ecosystem Restoration*, which is claimed to be "a chance to revive the natural world that supports us all" (UN decade on ecosystem restoration, n.d.), and again education is a key part of the strategy. Unfortunately, the intrinsic value and inclusion of the entire *biosocial complex* in preserving diversity is still not a clear and central part, despite what prospective recent publications like Kohler et al. point out:

To be effective, conservation policies and programs need to take a pluralistic approach and recognize cultural differences in what motivates people in their biosocial relations ... [it] is humanity's best chance to motivate and lead societies toward a more sustainable, equitably shared, and environmentally just future (2019).

4.1 Diversity in Natural Sciences

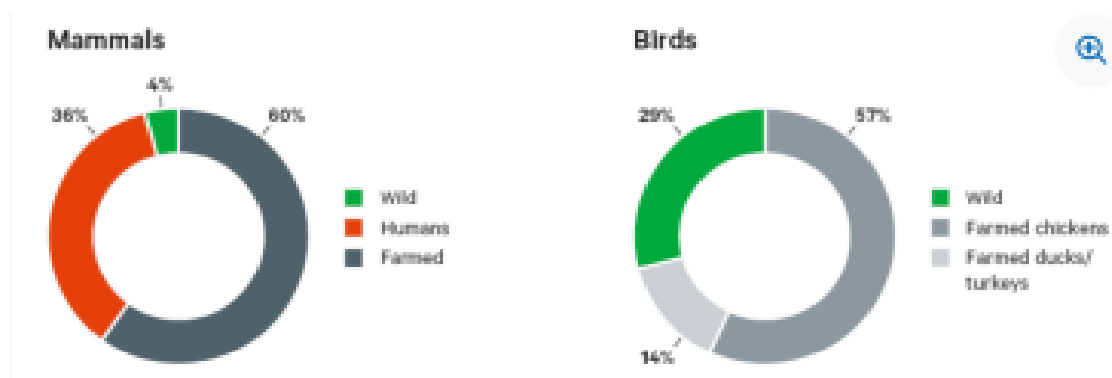
A closer look at the natural science community, which has been debating biodiversity loss for decades, reveals the stagnancy of change to be staggering. However, within the last decade an increasing number of studies concerning the destructive impact of human activities on the natural world and pointing out necessary and radical steps emerged.

The idea of 'sustainable development' to secure (bio)diversity was first widely articulated in the 1987's Brundtland Report (World Commission on Environment and Development). This report defines sustainable development as: "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs". It also points out that the only truly sustainable form of progress is that which simultaneously addresses the interlinked aspects of the economy, environment and social well-being (Santillo 2007). After the first alarming report on *The limits of growth* had been published in 1972 (Meadows 1972), foremost wealthy, western societies continued their push for destructive 'development' as opposed to any form of radical change, developing an 'ethical' framework based on anthropocentric and materialistic commodification of nature (Kohler et al., 2019).

After five decades of debate, mainstream human interests seemingly remain at the centre of basically everything, leaving little space for the needs of nonhuman life-forms. Mainstream humans rule over other animals and nature in a generally ungentle, disconnected, unsustainable manner. One of the most smothering facts is the normalisation of anthropocentrism - planet earth is predominantly populated by humans and their farmed animals, and this is regarded as 'normality' (Harari 2017a:101-103). This 'normality' has caused the global biomass of wild vertebrate species to rapidly decrease, for wild mammals by 82 percent during the last five decades. Only four percent of total current mammal biomass consists of wild animals, whereas humans make up 36 percent and the animals humans farm constitute 60 percent (figure 2).

Figure 2. Current global biomass distribution of mammals and birds.

Retrieved 15.2.2021, source: Bar-On, Y. M., Phillips, R. and Milo, R. 2018. "The biomass distribution on Earth", *Proceedings of the National Academy of Sciences of the United States of America*, 115(25): pp.



This is coupled with the fact that currently 78 percent of all agriculturally used land is used for keeping or feeding (Benton et al. 2021:9) farmed animals. Devastatingly, around 70 billion farmed animals are being bred and killed annually for global human food production, with demand rising (Compassion in World Farming 2013). There is something profoundly shocking about these numbers, considering the decades in which environmentalists, activists and many others have spent debating and protesting the tremendous destruction caused to nature, habitats, and wild species. As the FAO report *Livestock's long shadow* already established in 2006, food choices in favour of animal products cause the conversion of extended natural habitat into agriculturally used land in tropical and highly diverse rainforest areas in Latin America, Sub-Saharan Africa and Southeast Asia (FAO and LEAD 2006:90). Animal agriculture can, for example, be directly linked to 75-91% of Amazon rainforest deforestation, depending on the exact parameters of the cited study, and it has a very pressing political dimension (Butler 2020).

For the few remaining indigenous communities, there are therefore numerous conflicts to tackle. The pacific coastal area of Colombia for example is home to indigenous and afro-Colombian communities who are trying to protect around 500,000 hectares of hyper-diverse rainforest with about 97 percent of this area being protected land. Yet the threat of illegal land grabbing, caused by industries such as mining, logging or agriculture is horrendous. The communities are aiming at sustainable agricultural practises, food security and self-sufficiency while trying to preserve their own culture by empowering younger generations (Stand For Trees n.d.).

People within such communities, fighting biodiversity loss and rainforest destruction, are being threatened and occasionally even assassinated for trying to rise against the interests of the powerful multinational corporations behind the illegal land-grabbing activities (The Guardian n.d.). These communities are not only trying to protect their livelihood but also the rainforest itself, recognising humanity's reliance on the rainforest's capacity to produce oxygen and regulate weather systems across the globe (BBC Bitesize n.d.).

An influential Oxford study points out: "(the) single most effective way to preserve our planet's and also our health is to stop animal agriculture and eating animals and change to a plant-based diet" (Springmann et al. 2016). In transforming our global food systems to a plant-based, organic, sustainable agricultural practice - and thereby preventing the further expansion of human-used land - we could take pressure away from nature. Large amounts of agricultural land could become available to nature and wild animals, to regenerate for global stability. These measures would also support indigenous communities and human cultural diversity.

So far, the potential of plant-based agriculture is under-represented and initiatives promoting veganism and plant-based living still experience defamation, with the tremendous transformative and preventative potential a change of diet could hold being overlooked and wasted (Morrison 2021). Concepts like *Grow-Bio-Intensive®*, a highly productive vegan organic growing method for healthy soils and produce, are essential models to aspire to. Water usage, energy and fertiliser usage can be reduced, whilst diversity and local and internationally connected community-knowledge, based on cooperation, are promoted (Grow-Biointensive n.d.).

At the end of the year 2020 and with a lot of uncertainty ahead in the midst of the global COVID-19 pandemic, the UN Secretary-General António Guterres urged humanity to protect nature in order to save us from climate disaster, biodiversity collapse and more pandemics. He stressed that “the continued encroachment of people and [their] livestock into animal habitats risks exposing us to more deadly diseases” (UN 2020).

4.2 Diversity in Social Sciences

The emerging shift towards a more holistic approach in natural sciences is dealing with the inter-relations of human and nonhuman animals, nature, our food systems and the political as well as societal dimensions. Social sciences seem still predominantly preoccupied with human-based, anthropocentric research and theories concerning ‘diversity’. Diversity is being discussed in terms relating to societal culture and traditions, with attention being paid to social hierarchies of ethnicity, age, social class, gender, disabilities, sexual identity, belief systems, values, and languages.

Current discourse surrounding diversity is becoming increasingly diverse, whilst also sparking controversy. An important question within this discussion speaks to how a society can grant equal rights to all humans, reduce discrimination and transform into an inclusive and democratic system, based on participation (Gregull 2018).

In the current system, there is a gap between reality and the stories society teaches us about itself. With industrial productions methods, mainstream humanity has not only pushed other human lifestyles to the brink of existence but also turned nonhuman animals into mere production units, who must suffer a horrific life - such suffering that is justified on the basis of maximum profit and production, despite all the insights gained on other animal's minds and feelings (Harari 2015:342). Vasile Stănescu, a scholar at the International Association for Vegan Sociologists, calls this paradigm a '*world on fire*' and demands a social justice approach, working against *speciesism* (discrimination or unjustified treatment based on an individual's species membership) as well as anthropocentrism and such an approach calls for us to establish solidarity between animal rights and other social justice (or diversity) movements to create change rapidly, as there is not much time left (Wrenn 2021).

Social sciences need to take a closer look into the connection between the tendency to devalue nonhuman animals in their right to live a life free of suffering and the thereby reinforced tendency for racist attitudes. Both ideologies have a pattern: that the suffering of others is too different to be considered (Cordeiro-Rodrigues and Mitchell 2017).

Shaikh (2020) critically assesses current power structures through pointing out the positive potential impact that around 1.2 billion Muslim people are and could further be having through their religiously motivated food choices, treatment of nature and animals, pointing at theological concepts that argue to grant rights to nonhuman animals and natural entities. Shaikh (2020) references Peter Singer in particular - a moral philosopher who argues for animal ethics and liberation. Singer (2015) describes *speciesism* as resembling other types of discrimination, such as sexism and racism, and points out that being part of a type of species is morally as irrelevant as other characteristics, such as sex and ethnicity. Arguably these

discriminatory thoughts can, according to Singer, be connected to religious teachings in Christianity and other religious belief systems. Harari (2015:359) points out that in society structures in premodern times, individuals and the state were rather weak, while families and (religious) communities were dominating and keeping power structures in place, while currently neo-liberal, capitalistic power structures create strong states, markets and individualistic individuals, thereby producing weaker communities (figure 3), threatening human cooperation and supporting alienation. Neither of these two identified systems (seen in modern and pre-modern society) have been able to create a peaceful and diverse global community for all beings. However, David Graeber and David Wengrow criticise these kinds of descriptions of human societies, pointing out that history was more diverse and simplified narratives can create access to power and hinder crisis intervention (Priestland 2021). David Nibert (2003) additionally criticises that sociology predominantly excludes the experiences of other species and is too narrow in approach, supporting the establishment of more oppressive systems.

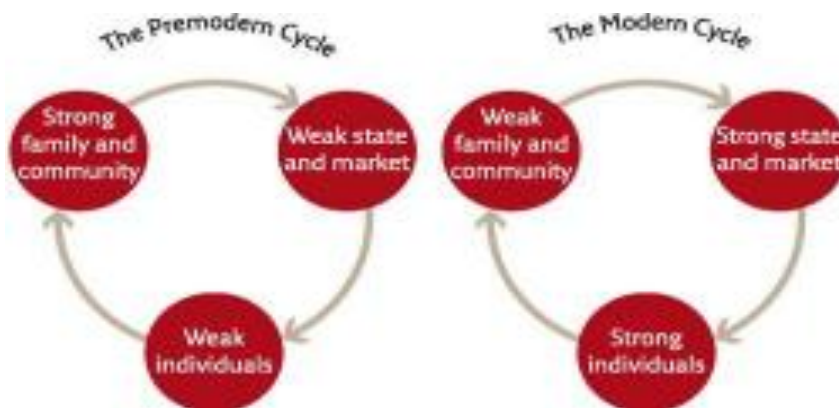


Figure 3. The premodern and modern cycle in human societies
Harari, Y. 2015:360. *Sapiens: A brief history of humankind* (First U.S. ed.). New York: Harper.

Therefore, this paper proposes that it is time to critically reflect on the current state of 'diversity', and to grant nonhuman animals (Beauchamp 2012) and natural entities (Kothari et al. 2017) rights of their own, calling for unity despite religious and cultural differences, based on scientific insight, empathy and uniting narratives.

5. DISCUSSION

This paper illustrates the extent of our entanglement, as humans, with nature and other animals. Critically re-assessing understandings of diversity in mainstream society and altering educational content accordingly is key to creating the structural change we need to ensure a safe global future.

To address the highly emotional process of challenging narratives of human superiority and domination, it seems indispensable to specify what the term 'diversity' means by definition. It is highly problematic that *diversity* is being defined and understood in divergent ways, with even ecologists not agreeing on what the term 'biodiversity' entails in detail (Holt 2006). This definitional ambiguity does not help with the formation of effective strategies to tackle the (bio)diversity crisis. It

seems as though the COVID-19 pandemic has brought forward new critical awareness and research into the complex and dangerous global situation humanity has induced over the past decades. Benton et al. state that “our food system today is driving both environmental harm and deteriorations in public health. Its current design is also amplifying external risks to society, as COVID-19 has demonstrated. The pandemic has highlighted the high degree of risk...” (2021:24).

Furthermore, the UN Secretary-General António Guterres has stressed how the protection of nature and society from climate disaster, biodiversity collapse and more pandemics, is the top priority of the 21st century. This can be achieved by preventing further habitat destruction “through the continued encroachment of people and livestock” (UN 2020). While these are clear demands in line with the hypothesis of this paper, it seems as though the UN, yet again, fails to unapologetically name the massively destructive impact of animal agriculture and consumption of animal products and therefore the urgent need to fundamentally change the unquestioned dominance of this food system to achieve their aims. Despite this, the UN has demonstrated some commitment to this movement, particularly through supporting scholars such as Benton et al. (2021), who emphasise the need for a shift in the global food system towards a nature friendly, diverse agricultural system based on plant-based diets, produced, and marketed at community level (UN Environment Programme 2021).

If humanity, led by science and politics, was brave enough to create a shift towards a plant-based diet, give back large amounts of farmland to nature to regenerate and re-grow, and thereby help to stop biodiversity loss, putting life as we know it at risk could be prevented, or at least stalled. It has been discussed for years that changing our diet away from animal products would be the most efficient way of reducing the negative impact on our planet (Carrington 2018). However, defamation campaigns attacking vegan/plant-based initiatives are societally persistent; these must be stopped through reference to scientific findings in support of plant-based lifestyles, to create positive, inclusive and utopian stories for the future.

The current course of humanity must be re-evaluated as soon as possible to initiate the necessary global systemic changes before we reach a state of forceful emergency. This paper suggests that the measures of the past decades have not been nearly radical enough. By now, enough studies have been carried out, reports and papers published, to effectively understand the kind of change necessary to overcome the global ecological and social crisis. Now scientists, government officials, decision-makers, and society at large must all deepen and expand their understanding of diversity on this planet, as Kohler et al. (2019) point out. It is necessary to rethink neoliberal capitalist structures, which are destroying democratic structures, and are pushing degradation and destruction of nature (Fitchett 2018), instead of promoting a visionary, radical, and ecological democracy. There are leading fields of research within natural sciences that promote change towards an inclusive understanding of diversity and the acknowledgment of the intrinsic value of the entire biosocial complex (Kohler et al. 2019). In social sciences the urgency of the matter needs to be addressed intensively, daring to question the status quo.

Humans may, of course, have human-specific needs and to some extent fulfilling these needs is legitimate. Excessively harsh criticism of anthropocentric views is not constructive. The difference in the severity of negative impact, caused by individual

humans, should be acknowledged and inequalities challenged. Striving for self-love and fulfilment as an individual should be legitimate, while also raising awareness for direct personal benefits of protecting nature as a solidary collective effort (Kopnina et al. 2018).

The remaining indigenous communities, who value and enact the protection of nature, offer direction and inspiration towards novel approaches to societal structures; yet, thus far these have been widely ignored and undervalued. Indigenous communities are forced into a very uncomfortable position, existing in a state of tension between tradition and modernity, whilst suffering the consequences of mainstream consumerism. As the effort to protect natural land from illegal, destructive activities executed by corporations, has become a dangerous endeavour for local communities and individual activists (Ulmanu, Evans and Brown 2018), it is understandable that the main driver for most deforestation is rarely openly named or criticised, which allows ruthless destruction and profit making to carry on (Wasley, Heal and Phillips 2020). Apparently, The World Bank (n.d.) is now, supposedly, striving to support indigenous communities in their resilience and livelihoods, by making their voices and concerns heard and providing financial support. However, the motivations behind this remains unclear – if this is being done out of respect for ancestral traditions or yet again, due to financial interests concerning nature and the value of ecosystem-services.

Humanity has ancient indigenous, holistic as well as sustainable wisdom, which mainstream societies must first acknowledge and then value. Combined with technology and scientific insight a truly sustainable, healthy and fair global community could be built. To be able to start dismantling current power structures we must work to include all beings in discussions of diversity, and to grant nonhuman animals and natural entities basic rights (Kothari et al. 2017). As Blount-Hill (2021) argues, political power structures, which cause discrimination against human minorities also cause discrimination against nonhuman animals, enhancing anthropocentric privilege and speciesism. This is a challenge since granting rights to animals does not align with ideas deeply rooted in mainstream religious and social beliefs whereby humans are seen to rule over other animals and nature, who are seen as 'soulless' and inferior in relation to humans (Harari 2017a:129).

All these challenges and potential obstacles of the current paradigm considered, young people need to be educated on how to be compassionate, solve conflicts respectfully and be defenders of equal rights for all human animals, nonhuman animals and nature – the entire *biosocial complex*. For this to be achievable, we need to teach about moral emotions and bring the 'emotional' into academia, with a focus on proactive (self-) compassion (Latzko and Malti 2010:194-195).

We need to educate about science and critical thinking and challenge traditional education, which does not aim at creating an ecologically resilient future. Regenerative agricultural, ecology and plant-based diets need to be discussed in all educational institutions and hands-on experiences must be made possible. It is essential to create enthusiasm for ecological democracy, which unifies international ecological movements and local democracy in solidarity and teaches active participation as well as the intrinsic value of all beings (Peters 2017). We must reach a state in which a positive utopia is desirable and achievable (Maahs 2019). As long as influential scientific institutions are promoting the anthropocentric paradigm when referring to diversity in societies (as seen in the Max-Planck-Institute (n.d)), changing

the predominant story of humanity remains an illusion. The survival of objective entities, like nature and nonhuman animals, depends on the extent to which we can re-invent our stories to be more ecologically sound and inclusive (Harari 2017c).

The tendency of people to retreat into private life, away from political participation and creative co-creation, needs to be met with engaging and exciting new stories and ideals with the hope to be able to excite people for the potential of a thriving democracy (Maahs 2019:296). Bregman states that we should never underestimate capitalism's ability to come up with more ideas – but also that every milestone of civilisation was once a utopian fantasy. We just need to come up with new utopian, "crazy", radical visions (Double Down News 2018).

6. RECOMMENDATIONS FOR EDUCATION

The discussed topics should be urgently employed for constructive action with the aim of changing the general attitude of humans through education in order to grant, regardless of their culture or religion, basic rights to every being of the *biosocial complex*. The multi-layered interrelations concerning the *biosocial complex* need to be systematically and critically debated in social sciences, based on sociological findings combined with those of the natural sciences. The outcomes of such debates must then be translated into sound educational schemes.

Mainstream human societies need to acknowledge and support indigenous communities in their rights and their efforts of protecting nature by incorporating their teachings into curricula, as NGOs such as Amazon Watch (n.d.) have been demanding for a long time. Furthermore, humanity must start teaching about universal morality as well as ethics, change old paradigms and stop the further exploitation of nature through animal agriculture. Basic rights need to be granted to nonhuman animals and natural entities, to protect them from exploitation as they cannot effectively advocate for their own interests in a system dominated by human animals.

This paper proposes that open-source and easily accessible knowledge is the way forward, ensuring that local and international communities are able to access and contribute to such databases, empowering individual and community knowledge-generation and dissemination, as opposed to those based on the neo liberal capitalistic growth paradigm. To ensure the quality of education, teacher and educator training must be transformed into holistic, hands-on training, with self-reflection, empathy, solidarity, and a strong democratic and ecological framework at its core.

7. CONCLUSION

In conclusion, on how we might change and widen the understanding of diversity through education, this paper has stressed the importance of bringing together insights from both the social and natural sciences in order to formulate new, brave and utopian stories, which can be incorporated into the education system.

Mainstream societies need to adapt their understanding of and teaching on *diversity*, to be able to address current and future challenges in a scientifically sustainable as well as morally and ethically sound way.

To be able to deal with ecological and societal challenges in a globally peaceful way, humanity must learn to be able to handle complex interrelations and to holistically include and value the whole *biosocial complex*. We need to grant equal rights to minorities, certain rights to nonhuman animals and intrinsic value to natural entities. Diversity in species, nature and agriculture facilitates cultural diversity and enables human life since our planetary system is a cyclic and interconnected one. If we destroy this basis for life, civilisation as we know it will vanish too.

So, what is needed in education to teach about *diversity* differently? This paper has proposed that we must find a way to integrate essential indigenous knowledges about planet earth in a way that positions them as equally important as other stories that are widely accepted as truth. Teaching about what exactly can be done for conservation and for protecting diversity, so everyone feels competent in their effort, is essential to be able to create tangible meaning for this discussion, and to establish a new ethical and moral framework inclusive of all living beings.

Highly qualified and enthusiastic educators are necessary all over the globe, who educate on how to grasp a very complex world, teach how to be compassionate (for oneself and others), how to be involved in the community and see value, which is not based on capitalistic ideas of ever-expanding growth. We need a shift towards an ecological democratic framework, which understands a healthy natural world to be the absolute highest good of all, aims at ecological functionality and grants basic rights to every being – and still, within its moral ecological boundaries, allows individual freedom of choice and coexistence with personal religious beliefs.

This paper has explored, and taken seriously, the scope of multiple published reports and papers warning us about biodiversity loss and the climate crisis, generating linkages between such findings to propose a foundational global transformation. If we are to maintain 'diversity' in all its forms, we must switch to regenerative agriculture and a plant-based diet, educating people as to why not eating animal products is morally, ethically and environmentally coherent and matters for every being.

Our future depends on a truly ethical, sustainable and resilient global framework. Of course, how to implement these conclusions could be discussed at great length. Powerful resistance and counterarguments hindering this kind of change must be expected and further research is necessary to explore how we can go about implementing such changes in tangible, effective ways.

7.1 Prospects

There already are community initiatives out there, such as *Riverford* in the UK, the *Grow-Bio-Intensive®* movement, or *Plantage* in Germany, that are busy leading the way on how to organise food production in a socially and ecologically sound manner. They locally produce organic or vegan-organic vegetables incorporating community principles, through working with their members and nature in its flow, instead of forcing industrial methods upon natural systems. The work they are doing should be fairly paid, and their efforts to protect natural systems must be supported by politics and legislation, valued financially through agricultural subsidies, and backed by societal acknowledgement and appreciation.

Also, the increasing numbers of rewilding initiatives are to be mentioned here. The UK and other industrialised countries are trying to give back degraded areas to nature and wild animals to regenerate, whilst also aiming to educate people on the benefits of this.

Amazon Watch for instance is using its reach as an established NGO to educate on the connection of rainforest protection, our climate and the importance of solidarity with indigenous communities of southern America. This crucial message needs to be conveyed in education more intensely as mentioned before. Pedagogical concepts such as the *Ubuntu* philosophy from sub-Saharan Africa, encompassing interdependence, social awareness as well as the responsibility for all natural beings and the environment, the *13 teachings* on Indigenous pedagogy, extensively compiled by *The Centre for the Advancement of Teaching and Learning* at the University of Manitoba in Canada, or projects such as the *8ways framework* on Aboriginal Pedagogy in Australia depict alternatives to the individualistic and consumerist thoughts mostly dominating the Western world (Bhuda and Marumo 2022). They can provide a starting point to learn about indigenous teachings and community values far-off (colonialist) stereotypes.

When we establish a culture of discussion and reflection, based on scientific evidence, and integrate this into educational frameworks targeted towards community action, it is likely that forms of systemic change will follow. John Dewey (1940) wrote in his essay *Creative Democracy* that truly democratic skills can enable humanity to overcome unjust power systems and inequality. Brazilian pedagogue Paulo Freire describes learning in his work *Pedagogy of the Oppressed* as a transformational process of internalising knowledge through a dialogue between the individual and the social world (Freire 2020; Singer 1974). There lies tremendous power in combining these two statements, expanding them to include nonhuman animals and natural entities when we refer to individuals or the social world and speak of unjust systems.

Colourful, open-minded, project-based education supports the creation of new stories full of diversity, community, and compassion for all kinds of human and nonhuman animals, fostering courage to think and act differently - a kind of radical thought and movement that we are ethically and morally obliged to work towards.

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