



THE IMPACT OF CLIMATE CHANGE ON LANGUAGE LOSS

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Abstract

Climate Change is the defining issue of our time because the earth's climate is changing faster than ever before, mainly because of human activities. We are facing the biggest environmental challenge human being has ever witnessed. These ranges from language loss, literacy challenges, to shifting weather patterns and environmental challenges that threaten food production, to rising sea levels that increase the risks of catastrophic flooding. The impacts of climate change are global in scope and unprecedented in scale. A number of factors contribute to language loss: increasing globalization, which pushes countries and individuals to shift to national or international languages for economic reasons; lack of support for regional languages in educational systems and mass media; persecution of minority linguistic groups by governments and disruption of communities during war and emigration. Among the many critical reasons that humanity must fight to mitigate the looming climate crisis is the need to save the languages and the linguistic diversity of the world. It is no secret that thousands of the world's languages are currently endangered. Without drastic action today, adapting to the impacts in the future will be more difficult and costly.

Keywords

Climate Change, Language Loss, emigration, climate change education

Introduction

Climate change is a long-term shift in the average weather condition of a region, such as its typical temperature, rainfall, and windiness. Climate change means that the range of conditions expected in many regions will change over the coming decades. This means there will be changes in extreme conditions. Climate change causes major changes in natural environments, but from the human point of view it is above all a social issue. Humans have caused climate change collectively, so cooperation is the only way to solve the problem.

Addressing climate change entails not only the talking of individuals' beliefs and attitudes regarding the need for change, but it also fosters the transformations needed in addressing the impact of climate change and language loss.

Languages is foundational to identity, the principal means for conveying a community's culture and heritage (UNISDR, 2009). Language is also an

invaluable source of information about the brain: loss of a language before it has been documented is a loss of scientific data needed for understanding. While approximately 7,000 languages are spoken in the world today, only about half are expected to survive this century (world data, 2019). A number of factors contribute to this loss: increasing globalization, which pushes countries and individuals to shift to national or international languages for economic reasons; lack of support for regional languages in educational systems and mass media; persecution of minority linguistic groups by governments and disruption of communities during war and emigration.

These resultant changes that force communities to relocate do creating climate change refugees. This dispersal of people will in turn lead to the splintering of linguistic communities and increased contact with other languages (UNESCO 2015). The changes will also place additional pressures on languages

that are already struggling to survive. Making changes in this important area requires that we gain an understanding of the forces behind language loss, as well as strategies and tools for arguing for sustainability of languages (Steffen et al, 2005).

Climate change causes major changes in natural environments, but from the human point of view it is above all a social issue. Humans have caused climate change collectively, so cooperation is the only way to solve the problem. (Gifford, 2013). Mitigation on the issue of climate change requires global cooperation and sharing knowledge, skills and strategies. In the sustainability of languages, fluency of languages-especially in foreign languages are valuable assets. This is because stories about climate change provide excellent material for practicing a critical approach and language is the only tool of conveyance (Moser & Dilling, 2011).

Global Loss of Languages

While approximately 7,000 languages are spoken in the world today, only about half are expected to survive this century (world data, 2019). A number of factors contribute to this loss. These include:

- i. Increasing globalization, which pushes countries and individuals to shift to national or international languages for economic reasons.
- ii. Lack of support for regional languages in educational systems and mass media; persecution of minority linguistic groups by governments and disruption of communities during war and emigration.

It is difficult to predict the future for any particular language. While some minority languages will thrive for generations to come, many of the world's languages are moving towards extinction within a generation (UNISDR, 2009). One stressor that may be the tipping point for some communities is climate change. Many small linguistic communities are located on islands and coastlines vulnerable to hurricanes, and a rise in sea levels (UNDP, 2007/2008). Other communities are settled on lands where increases in temperature and fluctuations in precipitation can threaten traditional farming and fishing practices. These changes will force communities to relocate, creating climate change refugees (Ojala, 2015). The resultant dispersal of people will lead to the splintering of linguistic communities and increased contact with other languages. The changes will place additional pressures on languages that are already struggling to survive (Ojala, 2012).

The most immediate and extreme effects of climate change however, will be felt by tropical island states, which are particularly vulnerable to the rise of sea levels, warming ocean temperatures and increasingly destructive cyclones (Corner et al, 2015). Plans for relocating communities displaced by climate change are either under way or being discussed for the Maldives in the Indian Ocean and for low-lying coral atolls in the Pacific such as Kiribati, Tuvalu and the Marshall Islands. These areas of the world are disproportionately rich in indigenous languages, as each small island or nation is typically home to one or more distinct languages or dialects (Ojala & Lakew, 2017). As people are forced to leave their lands and relocate to other communities, they must adapt to new languages, and maintaining their own indigenous languages is a significant challenge (Ernst, Blood & Beery, 2017).

Loss of Language, Loss of Data and Identity

When a language is lost, the result can be a loss of identity, one that may impact the health and vitality of a community for generations to come. The importance of the connection between language and identity can be seen in Canada (UNESCO 2014). Indigenous communities are struggling to overcome decades of persecution and discrimination, the traumatic legacies of residential schooling and, increasingly, environmental challenges. Alongside efforts to secure equal access to education, health care and infrastructure, communities are making substantial investments in the revitalization of their languages viewed as a critical part of healing the past and securing the future (UNESCO 2015).

The loss of a language is also a loss of data needed to better understand human cognition, as happens when a language disappears before its structures and patterns have been documented. It is a loss of knowledge about the world as well, as when descriptive names for plants or practices, still unknown outside a local area, are forgotten (Moser, 2016).

Some of climate change effects are easy to see and to fear. Examples include:

- i Homes being destroyed by wildfire,
- ii People being swept away in flooded streets,
- iii crops withering in a drought.

Other effects, like language loss, could be less tangible and less complicated but also devastating. Reading the harrowing forecasts of the consequences of rising temperatures, and fearing for the fate of friends in villages overtaken by the tsunami's mudflows, one worries about the future of

some languages, and of the world's languages generally (Hines, Hungerford & Tomera, 1986).

The IPCC (2007) report warns us that if the world does not come together to prevent a projected global temperature increase of 1.5 degrees, the future will be one of loss: loss of land, of food and water supplies, of lives and livelihoods. It will also be a loss of languages, of the knowledge and cultures they embody, and of the diversity and richness of human experience that they represent. Language loss may not seem as significant as the other losses the world face in a changing climate, but it is far from solely a sentimental one (Boyes and Stanistreet, 2012).

Languages are foundational to identity, the principal means for conveying a community's culture and heritage. This is why indigenous communities in North America, rebuilding their societies after decades of persecution, are prioritizing language revitalization alongside efforts to improve education and health care (UNISDR, 2009). Language is also an invaluable source of information about the brain: loss of a language before it has been documented is a loss of scientific data needed to understand cognition, and, sadly, most endangered languages are yet to be studied or recorded languages (Metag, Fuchslin & Schafer 2005).

Change is coming to the world's languages. Many will not survive the great shifts ahead, while others will persevere against the odds (Hiramatsu et al 2014). For communities dedicated to preserving their languages, the right planning and resources will help them succeed. Unfortunately, climate change's multiplying effects shorten the timeframe and rob them of the necessary resources, making the challenge much greater (Hiramatsu et al 2014). Among the many critical reasons that humanity must fight to mitigate the looming climate crisis is the need to save the languages and the linguistic diversity of the planet. It is no secret that the environment, as well as thousands of the world's languages are currently endangered. But is it possible that the extinction of natural ecologies goes hand in hand with language death? And are these two things connected in a way that goes beyond a coincidence or mere correlation? The more frequently discussed effects of climate change are bad enough on their own without having to consider the cultural toll, but there is good reason to believe that biological diversity and linguistic diversity flourish together, and conversely, die together as well (Hines et al (1987).

Loss of Language, Loss of Dialect and Loss of

Animal/Plant Species

The connection between biological and linguistic diversity holds up in linguistic and ecological studies. Using mapping and statistical methods, it is possible to see how human migration and competition over natural resources have quite possibly led to the co-evolution of human culture and local ecosystems, especially as humans have played a direct role in the continued survival of some plants and animal species over others (Duarte, Escario, and Sanagustin, 2017). In order to draw this connection out further, it is useful to think of the similarities between languages and biological species.

A World Wildlife Fund study on the relationship between climate change and language death used the premise that species and languages are somewhat interchangeable as basic units of diversity (whether biological or cultural). To think about it, a specie refers to a group of living creatures that are capable of interbreeding, and we divide languages according to their mutual intelligibility (so, whether two speakers can interbreed, or interact, linguistically (Karpudewan, Roth, and Abdullah, 2015). We can compare dialects to subspecies (in other words, organisms and speakers can successfully “interact,” but they do not overlap very much in the wild). With enough isolation, a subspecies or dialect can very well evolve into its own separate species or languages.

In this sense, it is useful to think about cultural memes and how they often behave like biological genes, they spread through replication and transmission (Kohler et al 2010). Additionally, the geographic distribution of high-diversity pockets of natural life tends to overlap with areas that are rich in linguistic diversity, particularly in areas with tropical forests. Meanwhile, tundras and deserts, which are low in species diversity, tend to also be low in linguistic diversity (Lawrence & Estrow, 2017). In a generalized nutshell, the climate near the equator is more hospitable to supporting biological and linguistic diversity because it is more hospitable to animal and human life in general.

The Impact of Climate Change on Language Death

There are approximately 7,000 languages currently spoken in the world today, but half of them are expected to go extinct by the end of this century (World atlas, 2018). Currently, half of the world's languages have fewer than 10,000 speakers each (World language, 2019). When you crunch all the

numbers, only about 0.1 percent of the world's population is currently what is keeping half of the world's languages alive (World language, 2019). Of course, it is impossible to attribute this to any one single cause. Genocide, policy, persecution and economic pressures all play a role in our increasingly globalized world. If speaking your mother tongue does not make financial sense for the community because every viable job opportunity requires you to speak the more populous national language, it is going to be that much harder to secure institutional support at school and in the media to ensure regional languages are passed down to younger generations (Levine, & Strube, 2012).

However, climate change is also endangering the survival of many of the world's most at-risk linguistic populations (Myers et al 2013). As these communities get displaced due to rising sea levels and climatic changes that disrupt their agricultural and fishing life styles, it becomes inevitably more difficult for small languages to remain viable as its speakers scatter around the globe and are forced to assimilate to local cultures (Sherphardson, 2012). And even if certain communities manage to stay in place, there is still a sense of “you cannot go home again” when your local environment is becoming unrecognizable to you (Williams, McEwen & Quinn, 2017). Many indigenous communities look for cues in their environment to know when to plant, hunt and harvest. When natural cycles are disrupted, so is the linguistic meaning and context built around them (Wolf & Moser, 2011). One example: the shadbush, a small North American tree, is named such because shad, a type of fish, are often spawning in the rivers when the shadbush flowers. That is no longer the case because along with many other plants, it is flowering earlier in the year.

It is not hard to see how climate change is directly accelerating the process of language death around the world. But is it possible that it works both ways. Does the extinction of languages also, in turn, speed up environmental decay? This is a claim that might be a bit more difficult to prove, but it is worth considering. Many indigenous languages are imbued with an intimate (and often unwritten) knowledge of the natural ecosystem they are a part of, the plants, animals, and all the ways humans have learned to coexist within that matrix over many years (Williams, McEwen & Quinn, 2017). Put simply, there is not much nature in the world that has not been directly or indirectly impacted by the machinations of human culture over the years. As the World Wildlife Fund points out, many

domesticated plants and animals are the result of years of selective breeding, and most landscapes in the world have been altered by humans too (Wolf & Moser, 2011). The current state of the world's biodiversity is arguably a product of human culture too, and not just nature. And as languages disappear, so, too, does the traditional knowledge of land management and farming, fishing and hunting methods that had played such a big role in making the environment what it is today (or what it was not too long ago) (Wolf & Moser, 2011).

Globalization, accelerated by the rapid development of information and communication technology, poses challenges to cultural diversity and may lead to increasing numbers of people competing for decreasing amounts of resources. However, at the same time it provides a chance for a new type of dialogue between different cultures. Improving cross-cultural communication, recognizing cultural diversity and understanding the unity of all humankind may increase solidarity. Respect for cultural diversity, tolerance, dialogue and cooperation based on trust and understanding are the best guarantees for global peace and security. International cooperation requires the ability to understand the viewpoints of those who come from different cultures and seek potential solutions together.

Language skills are the foundation of cross-cultural communication. International climate negotiations are an example of a situation in which a collective strong will is needed in order to reach consensus. The stakes in climate change education classes are not as high as at international climate conferences, but learning to feel empathy for people who live on the other side of the world is nevertheless an important aspect in motivating students to tackle global climate change. It is useful to contemplate and discover together how climate change affects daily life around the world and what people in different cultures are doing to combat it.

Conclusion

The discussions so far calls for the need for climate change education in Nigeria and across the globe. The climate literacy framework that should provide a sound basis, and incorporates the goal that students, learners, and citizen should be prepared to make informed and responsible decisions with regard to actions that affect climate (UNESCO, 2015). This goal poses a major challenge to the education system, and will require a more comprehensive focus and integrative approach than

exist in most of the current climate education resources, programs, and textbooks or curricula. At present, most resources are fragmented, and the topic of climate is not a priority in education systems (UNESCO, 2014). However, activities, such as the climate literacy framework, should begin to influence the development of resources, standards, and professional development materials and programs (UNDP, 2017/2018).

Climate change is one of the main global environmental challenges facing society (Steffen et al., 2015). If society hopes to address this, a profound shift in the values and ways of thinking is required (Gifford, 2013; UNESCO, 2014), among governments as well as individuals (Moser & Dilling, 2011). Being aware of this, many educational programs are to aim at raising individuals' climate change literacy (Ojala, 2015; UNESCO, 2015). Therefore students should be one of the most important target groups (Moser, 2016), as the generation whose lives will be affected by climate change more than any generation before (Corner et al., 2015; Ojala, 2012). This is because they will be responsible for dealing with the environmental, economic, and societal consequences of climate change (Corner et al., 2015; Ojala & Lakew, 2017). This type of study should be seen as climate change and literacy. The study should be designed to influence the learners in the following five aspects:

Attitude: Having a positive attitude towards climate change and towards taking action that also influences climate-friendly behaviour. A positive attitude comprises, for examples:

- i The perception of one's ability to change one's behaviour (self-efficacy),
- ii the willing of someone to change one's behaviour (willingness to act) or
- iii the feeling that a change in behaviour has a positive impact on the degree of climate change (locus of control) (Ernst, Blood, & Beery, 2017; Hines, Hungerford, & Tomera (1987).

Personal concern: The more that one feels concerned by climate change in one's live the more likely he/she engages in climate-friendly actions (Boyes & Stanisstreet, 2012; Metag, Fuchslin, & Schafer, 2015).

Climate-friendly behaviour: Teenagers can change their behaviour towards a more climate-friendly manner in their everyday lives and reduce their own carbon footprint (Corner et al., 2015; Metag et al.,

2015).

Multiplicative actions: Additionally, teenagers can be engaged as multipliers for climate change literacy or so-called **change agents**. They can influence the climate change literacy of their family and friends, when they talk about the need at home or in their free time activities (Hiramatsu, Kurisu, Nakamura, Teraki, & Hanaki, 2014).

Knowledge: Knowledge about climate change and its causes and effect is an important basis for all the other components of climate change literacy (Hines et al., 1986 & 1987; Metag et al., 2015).

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