


Climate change and languages: the threat of climate-induced migration to the world's vulnerable languages

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Abstract

The concepts of “loss” and “damage” relate to the effects of anthropogenic climate changes that affect people’s livelihoods. This short communication proposes that these concepts should be broadened to include cultural intangibles such as language. Migration caused by climate change is a known phenomenon, as are the potentially negative effects migration has on language vitality. We link these concepts together to argue that climate change can have a direct negative impact on the relative health of endangered languages. Focusing on Pacific islands and atolls, it is demonstrated that migration away from these homelands results in decline of use of the associated language. With the effects of climate change on these islands well documented, there is a distinct possibility that climate migration could cause language loss in the near future. We suggest that culturally protective public policies alongside climate policies are needed to support languages (and by extension, cultures) from “loss” and “damage”.

Keywords: endangered languages; climate migration; Pacific; loss and damage; language vitality; cultural policy

It's a reality, and now we are facing it and people should be well-educated about it and also at the same time trying to do something for the next generation to come because otherwise, [...] where are they going to go?

-Lisa Murgatroyd, Maïi speaker, Epi Island, Vanuatu

Introduction

Climate change is a threat to vulnerable indigenous languages, through climate-induced migration. It is well documented that climate change is rendering some areas uninhabitable such that native populations must migrate from those areas. In many cases, the destination location is one where the migrant language is not natively (or commonly) spoken. Immediate or long-term pressures on this migrant population can then result in language shift and endangerment. We posit a simple proposition: Climate change can negatively impact language vitality.

Given the significant consequences of climate change for peoples and cultures, we identify climate-induced language (and cultural) endangerment as an increasingly significant issue. In this short communication, we advocate for the issue to be addressed at a policy-making level, in effect widening the scope of the concepts of “loss” and “damage”, concepts which normally cover the effects of climate change which directly (or indirectly) impact people’s livelihoods, and not intangibles such as cultural loss [1]. Despite climate change being a long-standing problem, and the fact that the potential for climate change to trigger migration has

been known for decades, we suggest that the connection to language endangerment outlined above has gone largely unnoticed [2,3], and call for renewed attention on this pressing issue for Pacific island nations.

Climate migration affecting Pacific nations

The net effects of anthropogenic climate changes are well known, and include rising sea levels, coastal erosion, increased severity of meteorological events like storms, increased ocean acidity and salinity, and salt-water inundation of freshwater lenses. For people living in affected areas, these environmental effects result in diminished potable water and a reduced ability to grow crops (leading to food insecurity), encroachment on coastlines making managed retreat impossible for smaller atolls, the destruction of infrastructure, and reduced economic mobility. This yields a set of potentially inhospitable conditions such that individuals, and possibly entire communities, may be forced to migrate. The multifaceted nature of migration makes it impossible to disconnect climate migration from migration induced by other factors [4]. Crucially, however, the role that migration plays for smaller communities is a growing concern.

It is widely acknowledged that human migration will be a significant effect of climate change on human society. For instance, by 2050, displaced populations are projected to reach anywhere from 31–143 million in Central and South America, sub-Saharan Africa, and South Asia; by 2100, those at risk of displacement

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from rising sea levels rise are estimated to be from the tens to hundreds of millions. These estimates are still only a small percentage of the 3.3–3.6 billion people currently living in areas which are considered highly vulnerable [5]. Pacific island countries and territories are some of the areas most vulnerable to climate change effects [6]. Atolls are under particular threat, as coastal erosion, degradation of land, increased flooding events and freshwater contamination will make these regions uninhabitable by destroying infrastructure and usable agriculture land [7,8]. In addition, sea level rise and warming are expected to change natural marine ecosystems, and will reduce fish numbers [9]. As Pacific island countries are some of the most marine resource dependent countries in the world, this will impact food security [10]. These climate effects exacerbate the vulnerability of already precarious communities. Pacific island countries are often underdeveloped technologically [11], and have low diversity in their revenue streams [12]. Additionally, many are still suffering from the aftereffects of Covid-19 [13], illustrating the fragility of these economies, unsuited for large-scale climate defence.

We have chosen to focus on the Pacific region since it is home to the majority of inhabited atolls and small islands; i.e. those geographic features most vulnerable to the threats listed above. The islands in the Pacific exhibit a clear correlation between climate change and climate migration [14]. However, obtaining outright numbers for climate-migration is notoriously difficult. Combined with the fact migration is rarely due to a single factor, migration due to climate change may occur on an individual level, or as a large-scale organized event. Both of these types are attested in the Pacific.

In Kiribati, the government is taking proactive measures against the threat of uninhabitability of the local atolls by purchasing land on Vanua Levu, in Fiji, and planning the long-term migration of I-Kiribati away from the traditional homeland [15]. This comes with a multitude of legal, political and social issues, including sovereignty, citizenship and self-determination. Many Pacific island states have developed strategies or guidelines for adapting to the impacts of climate change; some, such as Vanuatu and Fiji, have established national policies on disaster-induced displacement. Other likely sources of migration include the Marshall Islands, Tuvalu, Federated States of Micronesia, Palau, Papua New Guinea, and the Solomon Islands [16]. On an individual level, migration with a view to climate change is already occurring. In one study, migrants in New Zealand from Tuvalu and Kiribati were interviewed about migration influences; all mentioned climate change as either a reason to leave, or a reason not to return [17].

Language endangerment due to migration

With climate migration a near certainty, it becomes necessary to address the effects of this on migrant cultures and languages, which may be left without a homeland in the future. The context for this discussion is a world where languages are *already* under threat. The widely-cited estimates are that 10% of languages over the course of the present century will not survive [18], with already 360 languages listed as recently extinct [19]. However, language speakers are not distributed equally. Four percent of the global population speak 6530 languages (96% of all languages), while 96% of the population speak the remaining 270 languages (4% of the total number of languages) [20]. The result is a smaller total number of people speaking most languages, meaning many of these languages are classified as endangered. Vitality-related figures for the Pacific include: Melanesia (17% in trouble, 8%

dead or dying), Micronesia (19% in trouble, 11% dead or dying), Polynesia (58% in trouble), and Australia/New Zealand (9% in trouble, 82% dead or dying) [21]. Thus, what is apparent is that there are a vast number of languages which are under threat in the Pacific region.

The reasons for language death are varied, though can include migration, natural disasters, resettlement, physical danger, and other forces which induce cultural change [22, 23]. There are certain pressures that accompany migration, including pressures to assimilate in terms of culture, which can be detrimental to language. Migration results in languages being in contact, which can trigger new dialect formation, pidginization, or language replacement/death [24]. Even contexts of displacement (i.e. the migration of peoples within a nation or area, even if to the borders or margins) can have a negative impact on language [25].

There are many examples where the partial or total relocation of a peoples has drastically impacted language vitality. In Vanuatu, the Rutan language was spoken in Lombal on Malakula island. In the early 1900s, local Dirak people invaded, pushing the Rutan speakers to various other locations in Malakula. The displaced people adopted the local language, with the Rutan language now extinct. Similarly, movement of the nearby Gëlo people from their homeland to Tautu in Malakula also led to the loss of the Gëlo language due to the dominance of the Northeast Malakula language in Tautu [26]. These case studies demonstrate that in mass relocation events, language is vulnerable. With climate change expected to cause similar mass relocations, especially for small island states, other languages may suffer the same fate as Rutan and Gëlo.

There are also current cases of relocation where the effect on language is already evident. Assisted migration from Tokelau to New Zealand was initiated after a major tropical cyclone devastated the already fragile atolls in 1966 [27]. Although much of the population remained, the New Zealand diasporic population is now four times the size of that of the atolls. However, the New Zealand population is experiencing a loss of language: of the ~6000 Tokelauans in New Zealand, only 2500 speak the language, with many second and third generation individuals having lost it or never learnt it. Only 53% of New Zealand based Tokelauans were able to hold an everyday conversation in Tokelauan in 1996, a figure that reduced to 44% by 2001 [28]. In a survey conducted in Hawaii, another relocation destination, only 8% felt their language ability was “native-like,” with Tokelauan the first language for only 7.2% [29]. The situation for Tuvaluan in New Zealand is similar: In the 2013 census, 44% of New Zealand based Tuvaluans spoke Tuvaluan, down from 55% in the previous (2006) census [30]. The reduced language use is due to several factors, including a lack of a strategic national language policy in New Zealand relating to Pacific languages, competing with other Pacific languages for legitimacy, and lack of opportunities to learn their native language.

Climate change in the Pacific threatens languages

Thus, as climate migration increases, there will be increased pressures on languages. Minority languages, often from smaller regions, will become more threatened. Our argument is therefore that climate migration will affect language, and will negatively impact language vitality. Given the alarming rate at which languages are disappearing, and given the alarming rate at which climate change is affecting the Pacific, we as linguists urge for the scientific community to advocate for culturally protective

public policies alongside climate policies. In this way it can be argued that intangibles, such as languages (and by extension, cultures), be included within the scope of what is considered “damage” and “loss” in the context of climate change.

Policies which protect indigenous languages are already being introduced in some areas. The federal government in Canada introduced Bill C-91 in 2021, which aims to “respect” indigenous languages, by aiding in revitalizing, maintaining and strengthening indigenous First Nations’ (Métis and Inuit) languages. Likewise, the Māori Language Act (1987, updated in 2016) in New Zealand, recognizes Māori as an official language and lists it as *taonga* (treasured possession) of the indigenous people. While innovative in some ways, these policies remain focused on the native language(s) of those countries; languages pushed to reside in other countries do not receive the same protection.

Furthermore, it may be difficult to protect a language, which is an abstract cultural concept. One potential innovative way is to reconsider it as something more tangible; this has been achieved for a river in New Zealand. In 2017, the Whanganui River was given equal legal rights as a human being by the New Zealand Government [31]. As a precedent, it is envisionable that a similar legal status could be given to a language, creating an easier pathway towards its protection.

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John Middleton (Conceptualization [equal], Formal analysis [equal], Project administration [equal], Writing—original draft [equal]) and Jason Brown (Conceptualization [equal], Formal analysis [equal], Project administration [equal], Writing—original draft [equal])

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