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Climate change, migration, and language endangerment in the Pacific

Jason Brown and John Middleton

The problem

Climate change is disproportionately affecting Pacific nations, in part, due to their fragile island environments. This change indirectly threatens Pacific *languages*, with a mass migration of populations occurring and climate-related language policy still in its infant stage. This work aims to outline the problems and prospects for policy development in this area, with an aim to solving the associated problem of language loss through migration.

The consequences of climate change are vast for small islands and atolls. However, a common misconception is that migration out of a region for climate change only occurs when low-lying areas become uninhabitable due to rising sea levels. This phenomenon is indeed a significant danger; for example, it is conceivable that atolls like Tokelau and Tuvalu, whose highest points are, respectively, only 5 m and 4.6 m above sea level, are in immediate danger of being overcome by the sea. Due to the large circumference of the atolls and their overall low elevation, even a fraction of sea-level rise will disproportionately decrease the land available for habitation. However, while a genuine threat, the "sinking" of these atolls is perhaps a lesser overall concern. There are much broader effects of climate change that influence and motivate the migration of indigenous people away from their homelands. Higher average global temperatures cause increases in climate variability, meaning rainfall patterns, temperature, and cyclones become more variable and less predictable. With a significant weather event, the fresh water on a small island or atoll can be contaminated, destroying its natural water source for days. The apparent consequence is that although these locales are still technically inhabitable, growing crops and maintaining a consistent freshwater supply becomes increasingly difficult.

To escape from these hardships, including the related threats to financial health, many people choose to migrate. In the short term, migration may be restricted to individuals and families, but whole communities may need to migrate as time passes. Migration caused by climate change is estimated to reach 200 million by 2050 (Campbell and Warrick, 2014).

Climate change intersects with the problem of language death. Migration itself is not necessarily a factor in language loss. Typically, when members of a language population leave the community, a population that speaks the language remains in the homeland, meaning the language is maintained. That is not to say that the use of these migrant languages will not reduce because of outside pressures, such as political, social, or economic factors (Romaine, 1989; Schmidt, 1990; Pawley, 1991). However, with the potential loss of the homeland, languages will be forced to migrate to another part of the world. When a language is nondominant in a community, pressures on the language become exacerbated, such as negative perceptions of the language and inequalities between speakers, leading to the decline of the vernacular and threatening its vitality (Tsunoda, 2006). In the Pacific, the increase in environmental refugees is an emerging issue, which directly affects the endangerment of languages in this part of the world.

There are a significant number of threats to the existence of languages. With around 6,000 languages overall, the vast majority (95 per cent) of the world's languages are spoken by only 5 per cent of the population (Crystal, 2000). This dynamic means a tiny population of people speak most languages, so any destruction in their habitat, livelihoods, or culture could send a language toward endangerment and possibly extinction. Estimates are that 20–50 per cent of the world's 6,000 languages are moribund, 40–75 per cent are weakening, and only 5–10 per cent are safe (Krauss, 1992, 1998). Language death presents a critical problem related to the loss of human diversity and loss of identity. The loss of a language is paralleled by the loss of a species and loss of biodiversity. Language death amounts to the irretrievable loss of indigenous knowledge (including ethnobiological knowledge), ways of understanding the world, and people's lifeways. Not only is this a problem for science, but it is a social problem, as the loss of one's language also constitutes the erosion of one's identity.

Language death has dramatically increased during the era of globalization. The expected rate of language death averages out at one language dying every two weeks (Crystal, 2000). Despite this, language death is surprisingly rare in the Pacific given the diversity of languages in this region. For instance, of the languages spoken in the Solomon Islands, Taiwan, Papua New Guinea, Micronesia, and Polynesia (which is a representative sampling), only 305 are threatened, with 59 seriously endangered (Wurm, 2003). It is, however, well known that island environments are incredibly fragile. Climate change in the Pacific translates into climate variability, where rainfall patterns, temperature, and cyclones become more variable and less predictable (Campbell and Warrick, 2014). Consequently, the Pacific faces a new threat, unique in terms of the world's languages: environmental destruction of atolls and

islands, causing the migration of people and the subsequent loss of language and culture.

Research evidence

To better understand the dynamics involved in climate-based migration in the Pacific and how this impacts the vitality of languages, two case studies are outlined here. First, Halia is an Austronesian language spoken in the Carteret Islands, comprised of six small islands 86 km away from the mainland of Bougainville Island. The islands are politically part of the Autonomous Region of Bougainville, Papua New Guinea. Estimates are that there are 2,500 Halia speakers in the Carterets. Due to the tiny land area of the atolls (0.6 km²) and low elevation (1.2 m above sea level at the highest point), sea-level rise is a significant issue (Edwards, 2013). Talks of relocations and several attempts for mass migration have occurred since the 1970s. In 2006, a relocation strategy was formed for 1,700 Carteret Islanders to relocate to the mainland of Bougainville to live on land donated by the Roman Catholic Church (Peisa, 2011).

Issues with the planned migration were widespread. Among these was the issue of landownership, which does not resemble Western ideals of land that can be bought and sold (Petit, 2011). Further problems came from trauma the islanders experienced by leaving behind their land and culture. Despite these factors affecting the actual migration, one critical point in this case study is that Halia is also spoken (by an estimated 17,500 people) on the mainland in the area chosen for relocation. This dynamic makes the situation unique, in that the climate-caused migration allowed the Carteret Islanders to move to a land where their language is native. While the islands are in danger of becoming uninhabitable, the language itself is less under threat due to its existence on the mainland. When climate change causes people to relocate, the danger is when there is no physical landmass where the language natively occurs. In the case of Halia, there are many obstacles for relocation to occur. However, one less problematic factor is that the targeted relocation area has Halia as the native language. This relocation example highlights a case where climate-influenced migration may be more successful in language maintenance.

In contrast, with around 4,000 speakers, Tokelauan is an endangered language, only spoken (by about 1,500) as the dominant language in the Tokelau Islands. The physical landmass of Tokelau comprises three atolls, Atafu, Nukunonu, and Fakaofo, with a combined total of 12 km². Of important note is that the entire nation is less than 5 m above sea level (Lefale, Faiva, Anderson, 2017). The risk of climate change for Tokelau has been deemed critical since the 1990s (McLean and d'Aubert, 1993). Sea levels have risen, and there has been an increased frequency and intensity of extreme

weather events like cyclones, which threaten the existence of the atolls themselves. Like all examples of climate problems in island communities, rising seawater is just one issue. Scarce freshwater sources, diminished crop survival, and the lack of drinkable water are further threats to the islanders' livelihoods. A major weather event, such as a cyclone, is a severe short-term threat, just as the rising sea levels are a serious long-term one. As such, migration is a genuine option for Tokelauans living in the islands.

Today, more Tokelauan speakers (totaling around 2,500) live in New Zealand than the atolls themselves. This fact is partly due to the close relationship between the countries: Tokelauan is a non-self-governing territory of New Zealand, meaning that access to New Zealand for Tokelauans is relatively easy. The migration of this language across to the more stable landmass of New Zealand is a trend that will only continue with the decreasing inhabitability of the atolls. In New Zealand, there is little policy for the protection and maintenance of the language, with the front line of language maintenance sitting mainly with the communities themselves.

Simply put, the environmental factors that threaten the existence of the atolls pressure the languages spoken there too. The examples discussed here illustrate the potential for a migration and language crisis. While the languages are still being maintained in these cases, it is easy to understand how as the climate situation becomes more extreme, language loss is inevitable due to climate migration.

Recommendations and solutions

These two cases share certain core similarities but differ concerning the language makeup of the new homeland and the level of policy in place to protect these migrants. These cases have been selected not only because they are typical in regards to the larger problem, but also because atoll nations are on the front lines of the climate crisis. While the effects of climate change are global, few experience these effects as directly as those living in low-lying atolls and island nations. This is not an experience limited to the Pacific, as indigenous and nonindigenous populations in other regions also grapple with climate change. What is seen in the Pacific can easily be connected to places like the Mississippi River delta region in Louisiana (for example, Isle de Jean Charles, elevation 61 cm, where the Biloxi-Chitimacha-Choctaw are being resettled) or the Maldives in the Indian Ocean. Thus, resettlement projects will be a necessary long-term solution in many areas of the world.

The intricacies of this situation require several policies to address the problem. An obvious solution is a preventive climate change policy that attempts to reverse or slow down the effects of climate change. Much has been written about this type of policy development across various regions globally, and we will not focus further on this topic here.

Policy measures must address the migration of people due to climate change. Within the policy, climate refugees' movement and the protection of their languages must be ensured (as guaranteed by the Declaration of Human Rights), and these policies are currently lacking (Glahn, 2009). Some countries, such as New Zealand, are better placed to provide a haven for climate refugees in the Pacific than others. Tokelau is a New Zealand protectorate, and all Tokelauans automatically receive New Zealand citizenship, meaning that migration policy to and from the atolls is already sanctioned. However, with increasing political instability in the Pacific islands, the difficulty in creating policy to protect indigenous languages also increases. In Tokelau's case, a proposal for independence from New Zealand has been discussed for years, which, if passed, would create complications for climate refugees from the atolls. Furthermore, under current policy, recognition and maintenance of the Tokelauan language needs strengthening through New Zealand government policy as migration increases.

Even the infrastructure to support climate refugees in other Pacific nations is problematic, as illustrated by the Carteret Islands. The relocation site for the Carteret Islanders is in the Autonomous Region of Bougainville, which is in the middle of significant government upheaval, having voted in a referendum to become independent from Papua New Guinea. There is ineffective socioeconomic planning for the relocated islanders. Under the current legal framework, Bougainville remains an autonomous region, potentially reducing the power for Bougainville to provide land for the refugees (Displacement Solutions, 2008).

Language revitalization is another process that requires specific policies from governments to address. Language revitalization has mainly addressed protecting and promoting indigenous languages; never before has there been such a reason to promote the revitalization of displaced languages that are not native to that nation-state. Critically, for a country like New Zealand, where there is comprehensive policy covering the indigenous Māori language, the policy is not fully enacted to protect languages not indigenous to New Zealand. The needed policy must include languages that are not native to the country, which puts policymakers in a sensitive position. On the one hand, the country's policy must vigorously address the indigenous language due to its endangered status. However, on the other hand, there must also be an attempt to protect languages that have arrived through climate change migration. There is little anticipating how many or which languages will end up settling in the country as migrants in many contexts.

A commonly agreed-upon diagnostic for assessing language endangerment is the United Nations Educational, Scientific, and Cultural Organization's methodology for assessing *language vitality* and endangerment, created in the early 2000s (Ad Hoc Expert Group on Endangered Languages, 2003). These diagnostics include: (1) the absolute number of speakers; (2) the proportion of speakers within the total population; (3) intergenerational language transmission; (4) community members' attitudes toward their language; (5) shifts in the domains of language use; (6) governmental and institutional language attitudes and policies, including official status and language use; (7) the type and quality of documentation; (8) responses to new domains and media; and (9) the availability of materials for language education and literacy. These nine factors can also apply to policies on language revitalization, such that increasing each factor will protect the vitality of any given language. This therefore provides a framework for policy to be developed and implemented. A policy that considers all aspects of a language has more chance of protecting the language's health in the long term, even if it resides in a country where it did not originate.

Many of the policies created for indigenous languages are unlikely to be applied to "displaced" languages. Such policy as using the language in government and mass media, or even in business, is unlikely to gain traction. As such, native citizens may not have the same patriotism or positive attitudes toward these displaced languages. However, a policy can promote language use within the displaced community, allowing the language to become embedded into the national psyche. For example, Reyhner et al's (1999: vi–vii) recommendations for languages that are used within a community are as follows: "Offer literacy in minority language. Promote voluntary programs in the school and other community institutions to improve the prestige and use of the language. Use language in local government functions, especially social services. Give recognition to special local efforts through awards, etc." These recommendations could work equally well for native indigenous languages as displaced languages.

The balancing act between indigenous language policy and displaced language policy is critical. New Zealand policy with regard to the indigenous Māori language is advanced. A language strategy has been laid out, which includes recognizing Māori as an official language and providing financial support for promotion of the language. A key focus has been on "language nests," which involve Māori language preschools, meaning nonfluent parents are able to provide their children with the opportunity to learn the language. This policy has been successful, not only in New Zealand, but also in Hawaii for the Hawaiian language. While the focus has remained on ethnically Māori people to revitalize their language, more recently, it has become recognized that non-Māori may be more included in this policy than before. In fact, the language has become part of the New Zealand identity for all New Zealanders, hence the increased positive attitudes toward the language by non-Māori.

This demonstrates what type of policy might be adopted for displaced languages to thrive. While it may be straightforward to place the burden of language maintenance on its people, bringing the language to *all* people in the host country will be vital. Financing language preschools is a strong way to support the displaced language. Not only does this provide a place for the youth of the displaced people to learn the language, but it also allows the language to be learned by the children of the host nation. Increasing the accessibility of language learning will provide a platform for host-nation citizens to hear the language, increasing positive attitudes toward the displaced group. As time passes, such policies as official recognition of the language and use in mass media become possible due to the change in attitudes of the host nation. If the peoples of the host country look at the displaced language as one of their own, treating the language as semi-indigenous becomes significantly easier.

Finally, legal action is a possible solution. Torres Strait Islanders are currently taking legal action against the Australian government, claiming that the protection of communities against climate change is a legal obligation (where the basis of the claim is identity and culture). The Australian federal government oversees the Torres Strait Islands, meaning that this legal pathway is accessible. This claim is being modelled on a similar claim from a group in the Netherlands who took legal action, and won, against the government there. This action was to protect the citizens of the country from climate change, and the subsequent action from the Dutch government reduced carbon emissions significantly. For islands like those in the Torres Strait, such actions as reducing carbon emissions may be too late in terms of protecting the languages there. However, the precedent has been set for legal action against a government on climate change. As such, we suggest that legal action is a possible pathway for displaced communities to obtain funding for the protection of their islands and their languages. If the endangered nation is under the protectorate of a larger government, as Tokelau, the Cook Islands, and Niue are for New Zealand, legal action may force the hand of the larger state to support these languages in its territory. This could be through the creation of language schools, the promotion of the language in the media, and the use of the language in formal settings. The case studies outlined earlier illustrate that climate-induced migration and the resulting threat to Pacific languages require immediate attention, particularly concerning policy relating to both migration and language maintenance.

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