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UNCHARTED VOYAGES: TUVALUANS' NARRATIVES AND EXPERIENCES OF STATEHOOD AND SURVIVAL DURING CLIMATE CHANGE

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ABSTRACT

Tuvalu is a tiny Pacific Island nation battling the effects of climate change, including rising sea levels, increased ocean temperatures, and more frequent weather events, threatening its existence as an independent state. Regrettably, the narratives of its people are mostly left behind in international literature. This article helps bridge the gap by documenting the viewpoints of 19 adult Tuvaluan nationals and descendants through online qualitative interviews. It adopts posthumanism as a philosophical roadmap to guide the construction of arguments. Outcomes suggest that Tuvaluan policymakers are science-fictional by planning to replicate their country in the metaverse, a virtual and permanently unfinished dimension. The scheme reveals the embodiment and embeddedness of human beings with technology, which, according to the interviewees, allows them to overcome the limits of statehood and personhood. The posthuman category of the cyborg, fusing cables, microchips, and flesh, emerged during the discussions. Furthermore, findings uncover divergent sociological and legal appraisals of climate refugees.

While the latter term is frequently used in academic discussions, it is not recognised in international law. Finally, results underscore how environmental degradation triggers the growth of (eco) hierarchies between subjects who can cope with global warming and those who cannot, persons who can afford to travel, and those unable to do so. In this context, overt and covert discrimination takes the form of sub-par jobs offered to disenfranchised individuals, a situation at the forefront of the participants' memories.

Keywords: Tuvalu, climate change, metaverse, statehood, migration

INTRODUCTION

Knight (1992) asserts that states are among the most fundamental juridico-geographical entities. He underscores that territorial ownership does not inherently define a country, but it often correlates with it. This viewpoint is reinforced by Oppenheim (2017), who posits that whereas a state's boundaries are historically constructed, the idea of not having them remains unimaginable to many people. The 1933 Montevideo Convention on the Rights and Duties of States (MCRDS) outlines the criteria for statehood: a country is an organised community characterised by a defined territory, a permanent population, a functioning government, and the capacity to open and sustain diplomacy with similar juridico-geographical entities (Grant 1998). Among existing polities, there is a customary practice of acknowledging the emergence of new ones. Such an occurrence can take two forms: de jure or official recognition and de facto recognition, which is informal but still holds legal and political value. If a country judges the domestic circumstances of a candidate for statehood as stable and aligned with international law, it will initiate diplomatic engagement. However, a state will look for low-profile contacts when it doubts the candidate's long-term stability and adherence to accepted norms (Evans 2014). Recognition can be a simple message of congratulations or an institutional note, which may come from the prime minister, the president, the minister of foreign affairs, or another national body. Welcoming a country does not mean approval of its government, especially after a military-driven regime change. Most nations do not automatically approach post-coup/revolutionary rulers to avoid having their foreign policy read as uncritically acquiescent. However, they would seek out some dialogue if the people who came into power controlled the citizenry. These factors reveal that acquiring statehood is neither linear nor homogeneous. It is a process with dramatic turnarounds

and continuous negotiations between differently situated actors with diverse and sometimes contradictory priorities (Raič 2002). In recent years, the abrupt onset of climate change has shaken these convictions.

The island nation of Tuvalu, located in the Polynesian subregion of Oceania, faces the imminent risk of losing both its territory and normative self-organisation. As a Small Island Developing State (SIDS) with Least Developed Country (LDC) status, it exemplifies how climate change challenges and potentially undermines statehood. Tuvalu is composed of nine islands, grouped into three regions: the northern islands, including Nanumea, Nanumaga, and Niutao; the central islands, comprising Nukufetau, Nui, and Funafuti; and the southern islands, represented by Nukulaelae and Niulakita. Although the name Tuvalu translates to eight united islands, this terminology is misleading because, as hinted above, there are actually nine atolls. The country gained its independence from the United Kingdom (UK) in 1978 and later became a member of the United Nations (UN) and the Commonwealth of Nations (Levine 1992). At present, Tuvalu is wrestling with a sea level rise of nearly one metre (equivalent to 39 inches). While this number remains below the highest point of the smallest and flattest atoll, it brings about heightened storm activity, tidal surges, and sea level rise that negatively impact the environment. As a constituent element of statehood, land disappearance or degradation might cause the extinction of Tuvalu as a subject of the international legal order.

For the worst projections outlined by the Intergovernmental Panel on Climate Change (IPCC), known as Representative Concentration Pathway 8.5 (RPC 8.5), temperatures could rise between 1.4°C to 4.8°C (34.52°F to 40.64°F) by the end of the century. Seawater's thermal expansion lies at the heart of this issue. Oceans act as crucial heat sinks, absorbing roughly 90% of the excess heat emitted into the atmosphere from human activities (Drake 2014). These conditions trigger a rise in average sea levels. Another contributor to the humanitarian disaster is the melting of continental ice, which increases the overall volume of oceans (Aung et al. 2009). By 2050, under these settings, approximately half of Tuvalu's capital, Funafuti, could be completely submerged. Unfortunately, international law often associates habitability with self-determination. Per Caron (1990), if freshwater reservoirs dry out or become contaminated, making the territory inhospitable, a country could forfeit security and political and economic rights. Tuvalu is not alone in this predicament. Numerous other SIDS, like Kiribati, Marshall Islands, and Maldives, cope with an analogous crisis (Islam et al. 2023).

In 2022, during the 27th session of the UN Climate Change Conference (UNFCC COP27), Simon Kofe, Tuvalu's Minister for Justice, Communication, and Foreign Affairs, made an important announcement. He suggested creating a twin version of his motherland in the metaverse, an open and interoperable virtual space (Westmore 2022). His proposal received accolades from home and abroad. Nevertheless, there has been scepticism within Tuvalu's population and diaspora communities regarding the project's viability. Concerns revolve around whether the metaverse can effectively maintain social well-being and uphold the nation's sovereignty amidst necessary constitutional amendments.

Following Rayfuse and Crawford (2011), this article uncovers the viewpoints of nineteen Tuvaluans and people of Tuvaluan descent regarding the impact of climate change on Tuvalu and their lives. It will examine the metaverse, a digitalised space where people can transcend physical limitations through the supermorphic personas of avatars while redefining the classical characteristics of statehood. It will also review positive and empowering, as well as harmful and dehumanising, narratives of home, displacement, and migration. The authors adopt posthumanism, a philosophy that places human beings back in the ecosystem as just one among other species (Cohen 2021). This perspective also enriches opinions about the metaverse and migrant experiences (Marchesini 2021). Moreover, it questions the ontological and epistemological foundations of humanity and stimulates new relationships with oneself. While mainstream media often reduce climate change narratives to singular, stereotypical frames, this article seeks to bring complexity to the debate and expand the analysis of people's meaning and sense-making.

METHODS AND METHODOLOGY

Theory

The authors endorsed posthumanism, a school of thought that challenges humans' portrayals of themselves as fixed, autonomous, and superior to others, instead emphasising the dynamic interconnectedness among all living and non-living beings. Haraway (2004) introduces the notion of the cyborg as a metaphor for this hybridity, exploring how prosthetic enhancements and drugs can blur the divide between the flesh and the machine. Jasanoff (2016) contends that transcending humanity goes beyond overcoming death and disabilities. It also incorporates a desire for ethical redemption and moral

growth. However, a paradox arises in such an endeavour. What people build (including their cybernetic bodies and selves) comes from their imaginations and hence inevitably inherits some (of their) imperfections (Jones 2021). It is not just that even the most refined creation can never be entirely foolproof and may not wholly perform as anticipated. What they construct consistently reflects their normative ideals. In other words, they are woven into the socio-technical imaginaries of a precise historical milieu. That is why each new invention carries some of the prejudices and inclinations of the era in which it was born, and any attempts to alter mankind and the world must look at these mutual influences. Learning from this, Pickering (2005) proposes a revaluation of current laws in the relationship between the human and the non-human, the individual and the community, and the citizens and the state. The same argument is endorsed by Celermajer and O'Brien (2021).

While posthumanism has not gained much traction among environmental researchers, many hypotheses can resonate with their doctrines, particularly regarding the effects of unregulated industrialisation and automation (Petersmann 2021). Cudworth and Hobden (2013), Klein (2015), and Davies (2021) claim that capitalist production and consumption methods are culpable for the decline of biodiversity. This is because capitalism dictates that only marketable species (and things) have value, and secondly, it seeks only profit and growth, ignoring all repercussions, such as pollution or climate change. Rose (1993) and Baldwin and Bettini (2017) report that millions of individuals are nowadays obliged to relocate due to ecological doom-loops caused by this logic. Furthermore, they indicate that SIDS tend to bear the brunt of the environmental emergency despite contributing minimally. Chiefly, they stress that inequalities are endemic in capitalist systems, primarily due to their racist and colonialist legacy. Danowski and De Castro (2016) assert that indigenous peoples and local communities (IPLCs) have striking climate change resilience and adaptation skills, often surpassing Western populations. IPLCs have learnt to survive and even thrive throughout history. They have coped with the epidemics introduced by the Europeans, which were exacerbated by the devastation caused by weaponry, enslavement, and the unjust seizure of their ancestral lands (Farbotko 2010). Though they have been labelled as primitive or retrograde by their colonisers, they are now leading efforts to avert further disasters. Tuvaluans stand as a poignant example. Much like the proverbial canary in the coal mine, they symbolise how individuals can navigate through terrible adversity (Farbotko and Lazrus 2012). Refusing to be powerless victims and resisting paternalistic attitudes in the West

(Fair 2022), they have adopted traditional instruments and technological innovation to cultivate a novel symbiotic relationship between humans and non-humans—an ethos akin to metanoia (Farbotko 2005).

Research Design, Enrolment, Data Collection and Analysis

The first author utilised interpretative phenomenological analysis (IPA) to assess the participants' stories and biographies, their sense-making and meaning-making (Smith 2011), while the second author contributed valuable insights. IPA permits people to talk without fear of distortion and delineates the sociological encounter as a "friendly" dialogue between the researcher(s) and the researched. The methodology allows for an in-depth understanding of someone's experiences. With it, researchers can uncover the nexus between a person's (felt) time, space/place, and taken-for-granted assumptions about them (Larkin et al. 2006). Instead of valorising coherent and easily categorised voices, IPA encourages the search for non-homogenous stories, that is, accounts that escape easy classification. Some research questions guided by IPA include: (1) How is climate change impacting Tuvalu's environment? (2) In what ways do ecological crises influence the way of life, mobility and relocation of Tuvalu's citizenry? and (3) How can the metaverse be utilised to tackle the problems Tuvalu is encountering? Regarding the intersection between IPA and posthumanism, it can be argued that both the methodology and the philosophy enhance our understanding of subjective vicissitudes. Furthermore, their synergy enables the development of the ethics and knowledge necessary to cope with the problems posed by climate change on societies, the power of technology on the human body, as well as human decisions and norms within the metaverse.

The first author built the sample using two different methods. In 2018, he met Tuvaluan individuals in Auckland, New Zealand/Aotearoa, purely by chance. Nonetheless, what had begun as a casual acquaintance soon became a genuine fascination with their culture and society. From 2020 to 2021, he reached out to these contacts, inviting them to join the investigation. He shared the research's outlines, the informed consent form, and the participant information sheet (PIS). Before and during the online interviews, the first author asked the candidates if they knew others who would like to join the inquiry. The criteria were: (1) adult age; (2) being a Tuvalu citizen or a Tuvaluan descendant or self-identifying as Tuvaluan; (3) English language competence; and (4) sufficient IT skills. The participants who signed up comprised 19 persons aged between 18 and 60 years old. Fifteen were men

and four were women. Seven were nationals, while five had relocated to New Zealand/Aotearoa and Australia in the last 10 years. Twelve were second- and third-generation foreign-born ethnic Tuvaluans living in New Zealand/ Aotearoa, Australia, and the US. The cohort comprised persons of various educational levels. Everybody completed secondary education; ten had undergraduate degrees, and five obtained graduate status. Only two of the degree holders studied in Tuvalu. The rest (members of mixed families or immigrants) studied in New Zealand/Aotearoa, Australia, and the US. All the candidates identified as Christians, although they belonged to different denominations.

The authors acknowledge potential biases and the lack of first-hand knowledge of the effects of climate change in Tuvalu, as they are not from there. Moreover, their differing nationalities—one Italian and the other Thai—and personal backgrounds may have influenced their interpretations. However, growing up in countries with extensive coastlines has made them aware of the delicate balance between land and sea and the threats posed by rising water levels. The authors also recognise the privilege of their academic positions and the relevance of amplifying the voices of vulnerable groups. They told the interviewees that as human rights activists and lecturers passionate about citizenship and migration law, they hoped their research would encourage more countries to offer a hand to Tuvalu. Moreover, they asked them to reflect upon their positionality and how their biographies affected their opinions and willingness, or lack thereof, to participate in the research project. They did so to protect the objectivity of their scholarly inputs (Savolainen et al. 2023).

The authors conducted semi-structured interviews via Zoom, Google Meet, and Webex. These lasted approximately one hour per subject and occurred between 2022 and 2023. The interview schedule was consistent for all participants but was designed to be flexible, allowing follow-up questions to gain a deeper understanding of the research problems. Like Baaz and Stern (2008), they were initially worried that these arrangements would intimidate the informants, causing them to reply according to what they thought they were expected to say and not what they wanted. However, the participants later said they felt at ease and trusted the authors. Since most had visited, studied or worked in Western and Asian countries, the observational effects of cross-ethnic differences between the first author (Italian) and the second one (Thai) and between them and the members of the sample did not allegedly affect the unfolding of the sessions. The authors invited all participants to choose a pseudonym, which they warmly accepted. Lastly,

they informed participants that any necessary edits to transcribed quotes, such as punctuation or slang adjustments for editorial consistency, would be done in consultation with them. With IPA in mind, the authors transcribed the audio files *verbatim* to capture the richness of narratives, adding verbal nuances, pauses, and non-verbal elements (Brocki and Wearden 2006). Moreover, they carefully noted any slang expressions encountered and reached out to the participants for clarification. The authors began coding by searching and annotating segments of texts that represented key phrases, statements, or significant moments within the stories. These codes were in the form of descriptive labels or short phrases. The authors then identified connections between the codes and condensed them into initial themes. After that, they organised the discoveries hierarchically, with superordinate (broad) structures that encapsulate the overarching concepts and subordinate (specific) ones, delving into the nuances of each superordinate group. The authors compared themes across personal accounts to find patterns and variations. In parallel, they reviewed their inferences and took steps to ensure they aligned with the data. Upon completing the data analysis, they commenced writing and editing the article with attention to language and style. They used NVivo software [QSR International (Lumivero), Burlington, MA, US] to improve research clarity and precision, ensuring that complex concepts were communicated effectively to a diverse audience.

Limitations and Future Directions

Endorsing web conferencing applications for interviews may favour younger individuals, who typically possess greater proficiency with information technology (IT) compared to older generations. For instance, older people in remote areas of Italy and Thailand often struggle with such technologies. However, this concern proved unfounded, as most Tuvaluans, regardless of age, are familiar with online platforms, despite varying internet access across the country. After the enrolment process, the first author noticed that the majority of participants had educational backgrounds that differed from the broader population in Tuvalu. Many of them had studied abroad. This happened because, although the enrolment process was designed to be accessible, open, and transparent, no quotas were set by the first author to ensure the inclusion of participants from diverse settings, which would have better mirrored the broader population. The article's findings offer good insight into what some Tuvaluans and their descendants think of Tuvalu but cannot be generalised due to the small sample size and the qualitative nature

of data collection. While IPA is an excellent methodology for unveiling what people think about themselves and others, it is also resource-intensive and time-consuming. This is due to the detailed transcription and interpretation of the interview material it requires. Future scholars should detail how and to what degree Western jurisprudence and the indigenous "living" rules of the Pacific Islands can interact and augment each other on the micro, meso, and macro levels. It would be interesting to study the possibility of integrating Pacific cosmologies and spiritualities into the realm of climate change law. Furthermore, they should test the interplay between normative and governance knowledge producers among SIDS, considering their social, cultural, economic, and political motives. In parallel, they could also focus on best practices for resource mobilisation and improving the consistency and quality of humanitarian initiatives.

RESULTS

Climate change presents an existential threat to Tuvalu, endangering not only its physical existence due to rising sea levels but also its status as a subject of international law. In response, Tuvalu is planning to replicate itself in the metaverse. By creating a digital twin, the nation hopes to preserve its cultural identity and enable its citizens to continue exercising their rights and responsibilities, both as individuals and as a collective nation, even in the face of potential displacement. The interviews reveal that alongside the technological transition into the metaverse, many Tuvaluans consider moving abroad as students, workers, or climate refugees. Customarily, individuals must prove a well-founded fear of persecution based on race, religion, nationality, political opinion, or social group membership. However, in the case of environmental displacement, claimants often struggle to establish a direct link between the collapse of the ecosystem and direct threats to their safety. Tuvaluans may encounter a relatively less burdensome process due to the global awareness of their suffering. Widespread knowledge of what is happening to them should make it easier to gain sympathy from decision-makers, thereby increasing the likelihood of asylum requests being accepted. Tuvaluans sometimes struggle with discrimination in finding and retaining employment in New Zealand/Aotearoa. However, this predicament is gradually easing due to the country's commitment to democracy, human rights, and collective security. The participants argue that pictures, paintings, and sculptures, make differences among people and between humans

and non-humans less intimidating and amplify underrepresented voices. By showcasing the rich cultural heritage and resilience of Tuvaluans, art can inspire greater solidarity for their cause. Moreover, integrating indigenous knowledge into climate change adaptation strategies can lead to more holistic and sustainable solutions. Most people conclude their meetings with the authors by underscoring that, even if currently, not everyone is materially affected by climate change, eventually, no one will be safe from it in the long term.

DISCUSSION

Navigating Statehood and Sovereignty Amidst Climate Change

The 1982 United Nation Convention on the Law of the Sea (UNCLOS) sets out the rules regarding the sovereignty of coastal states over their territorial waters (Bateman 2007). Articles 3 (Territorial Sea), 55 (Exclusive Economic Zone), and 76 (Continental Shelf) are indispensable for a clear comprehension of maritime entitlements (Stevenson and Oxman 1994). The territorial sea (TS) extends up to 12 nautical miles (22.2 km) from the coastlines. Beyond that is the contiguous zone (CZ), a water belt covering similar nautical miles. Another feature of UNCLOS is the creation of exclusive economic zones (EEZs), which stretch up to 200 nautical miles (370.4 km) from a coastal state's baseline or out to a maritime boundary with another coastal state. If the coastline is the boundary between coastal waters and land, UNCLOS considers the baseline as the curve along the coast from which the seaward limits of a coastal state's TS and EEZs are measured. For archipelagic countries like Tuvalu, the baseline is drawn connecting the outermost points of the atolls, and the waters enclosed within them are subjected to the government's regulations (the outer border is essentially the edge of EEZs). Inside an EEZ, a country has direct access to natural resources like fish and minerals. Moreover, it has jurisdiction over the installation and operation of artificial islands, facilities, and infrastructure, such as science centres and oil or gas platforms. On the other hand, UNCLOS describes the continental shelf as encompassing the seabed and subsoil extending beyond a coastal state's TS, either through the natural extension of its land territory or up to 200 nautical miles (370.4 km) from the baseline if the continental margin does not reach that distance. Consequently, the waters above the continental

shelf could fall within the jurisdiction of either the EEZ or the high seas (Barrett and Barnes 2018). For UNCLOS, the coastal state has the authority to govern the continental shelf within limits dictated by the necessity or special relevance to exercising its sovereign rights. However, its jurisdiction likely encompasses only activities essential for, or closely associated with, the exploration or exploitation of natural resources on the continental shelf.

UNCLOS strikes a delicate balance between the sovereign rights of coastal states within their EEZs and the rights of other nations to navigate and utilise oceans and seas for maritime and aerial activities. All stakeholders have privileges bar a unidirectional predominance of either the principle of freedom of the seas or the principle of coastal state sovereignty. While EEZs and TS are determined based on a fixed baseline from the state's shore, climate change-induced rising sea levels lead to the loss of dry land, altering the baseline and affecting maritime boundaries. This could have implications for the extent of coastal states' sovereign rights and maritime entitlements defined by UNCLOS (Strauss 2019). All the interviewees know there is no precedent for losing statehood, and MCRDS does not specify whether the territory should be wet or dry. Furthermore, they are aware that international law is flexible enough to accommodate landless or quasi-landless countries, such as the Sovereign Military Order of Malta, officially the Sovereign Military Hospitaller Order of Saint John of Jerusalem, of Rhodes and of Malta (SMOM) (Rayfuse 2011). International law also accepts functional, non-territorial sovereignty, like governments-in-exile and diasporic polities ensuing from colonisation, settlement or invasion processes. Glaring cases involve the Palestinian National Authority (PA), a transitional government with limited self-rule in the Occupied Palestinian Territories (OPT), namely the West Bank and the Gaza Strip. There are also diasporic Māori groups within New Zealand/Aotearoa (Patomäki 2023). Two informants express their emotions in this way:

> I am terrified about Tuvalu's future. Our beautiful islands are getting smaller, and I cannot help but worry about what is ahead. Tuvalu might disappear and, even worse, be forgotten. (Sione)

> Our songs, stories, and dances will always remind us of home. Tuvalu is not just a place; it is who we are. We will carry it with us wherever we go. Climate change is a global problem. We just live on the frontlines. (Selina)

Sione's dread of Tuvalu disappearing and being forgotten speaks to a state's fundamental right to exist, a principle enshrined in Article 3 of the MCRDS. Selina's dedication to safeguarding songs, stories, and dances lays bare a continuum between people's heritage and nationhood. Her desire resonates with Article 1 of MCRDS, illustrating that the idea of a nation embodies the cultural practices of its people. In Tuvalu, this essence is woven with the ocean. However, within the stories she shares, there is a paradox: water, commonly revered as the source of life and sustenance in Tuvalu, now represents a duality, not only a giver of prosperity but also a harbinger of trauma and death. Sione and Selina mourn Tuvalu's crisis but remain hopeful. They maintain that there are still reachable, accountable, and rational policies, from lowering industrial pollution to advancing the concept that maritime and land borders are dynamic, polysemic, and heterogenic. For Sione and Selina, it falls upon all persons to adopt them and open up new vistas of the world, a decision that young activists and scholars in Tuvalu and globally are already championing. They reiterate that we must avoid conflating the destructiveness and ignorance of certain individuals with that of humanity as a whole. Realising that climate change is driven by our societies should not prevent us from identifying those responsible for it and those who seek to delay further ruin. Failure to do so, aside from bordering on nihilism, would represent an extraordinary propaganda victory for the governments, companies, and communities that are making our planet uninhabitable. Many Western countries have agreed to prohibit the import of products associated with deforestation, but their laws often do not prohibit banks or investors from financing deforestation activities abroad. Moreover, accusing everyone would be unfair to the many actors in Tuvalu and elsewhere who have amended their patterns of consumption, behaviour, travel habits, and everyday choices to confront the ecological crisis.

Adapting to a Collapsing Environment: Strategies and Perspectives

Most SIDS try to prevent or adapt to coastal inundation and other ecological hazards (Connell 2003). They employ three main strategies: (1) erecting barriers to defend the integrity of their coastlines; (2) managing the retreat of properties and infrastructure; and (3) implementing mitigation measures. The choice is often determined by a cost-benefit analysis, which considers the value of assets and human capital within a SIDS (Aung et al. 2009). Tuvalu has experimented with drought-resistant and salt-tolerant crops to mitigate food shortages (Barker 2003). Furthermore, the country is now

actively taking advantage of solar energy. Converting sunlight into electricity is a workable solution for reducing greenhouse gas emissions. Among the disadvantages are the relatively low efficiencies of photovoltaic and thermal systems, specific installation spaces, the inertia concerning the discontinuity of the power source, and the limited capacity for energy storage. The production of panels may involve toxic or explosive chemicals, requiring the adoption of safety procedures and proper disposal of by-products, which, in the respondents' stories, are not widely available in Tuvalu.

> It is hard to put into words the impact of climate change on Tuvalu. The rising sea levels and extreme weather are hitting us where it hurts the most, our livelihoods and way of life. The coral reefs are fading due to warming waters. The crops (e.g., coconut, pumpkin, and taro) are struggling to grow (due to groundwater salinisation), and it is becoming tougher to feed our families. (Sosefina)

Sosefina describes the vanishing coral reefs that are the lifeblood of Tuvalu's fishing industry. Moreover, in her view, attempts to preserve soil are match for global warming. She is right because, as discovered by Nugues and Roberts (2003), coral reefs undergo severe stress when the temperature increases by more than 1°C (33.8°F) above the maximum threshold that an area typically endures and persists at that level for several months. This stress disrupts the delicate symbiotic relationship between corals and zooxanthellae, the unicellular algae they rely on for sustenance. Though corals must expel these algae to survive, doing so deprives them of vital nutrients, causing a precarious balance. Without a rapid decrease in temperature and the reintroduction of zooxanthellae, coral reefs might not survive. Moreover, greenhouse gas emissions heighten ocean acidification, whereby dissolved carbon dioxide diminishes calcium carbonate availability, weakening coral skeletons. Consequently, these structures are more susceptible to breakage, exacerbating the threat to coral reef ecosystems (Roberts 2012). Sosefina's speeches parallel Alaimo's (2010) debate over the diminishing sense of control humans have in a world that no longer submits to their authority, describing it as a moment that undermines the idea of the subject as sovereign. This serves as an invitation towards intersubjectivity or trans-subjectivity and conceivably towards a posthumanist or counterhumanist conception of the self. Her perception of Tuvalu also evokes the ideas put forth by Chakrabarty (2016), who advocates for anthropo-de-centralising practices and lifestyles. We can argue that a coral reef is an entangled ecology in which

various species of plants, bacteria, fungi, and fishes communicate with one another while dead and live matter nourish the living, inside or twisting around them.

Given that Sosefina and all other interviewees are Christian, it is relevant to mention Kempf (2017). He underlines a crucial element from the South Pacific perspective that counters feelings of despair, the tale of Noah from the Old Testament's Book of Genesis. In this Biblical story, after the flood, God promises never again to destroy the Earth with water and sends a rainbow as a visible sign to seal this covenant with Noah, his descendants, and all living creatures. From a theological standpoint, the informants agree that people should feel reassured, if not from a transforming ecology, at least knowing that God loves them. However, during the online meetings, they reiterate that Tuvaluans cannot ignore the evidence. Fair (2018) contends that spirituality and science complement each other, describing this approach to reality as a *tufala-save* (double knowledge). She thinks that survival efforts in Tuvalu and other places will succeed if people combine measurable data with wisdom, contemplation, and introspection. For Luetz et al. (2019), this complementarity is often overlooked in studies on climate change. Hence, they stress the necessity of greater (mental) openness and flexibility in defining concepts and procedures. The posthumanist turn accelerated by climate change in Tuvalu will affect Christian communities. As the island nation enters the metaverse, religious ceremonies are forced to evolve to survive. This is not completely unexpected, considering how most rites were conducted online during the height of the COVID-19 pandemic when face-to-face gatherings were discouraged. The interviewees hope that the metaverse will preserve the historical connection between the secular and the sacred and not push people to choose between technology and faith, immanence and transcendence.

Environmental (In)justice

Biermann and Boas (2008) utilise the concept of climate refugees to refer to individuals compelled to evacuate their residences, either abruptly or in the foreseeable future, owing to sudden or gradual alterations in their natural settings attributed to at least one of three outcomes of climate change: rising sea levels, extreme weather phenomena, and instances of drought or water scarcity. While climate refugees may find recourse in ad-hoc national statutes, humanitarian interventions, or the mechanisms elucidated in the UN Guiding Principles on Internal Displacement, they still confront

a conspicuous legal void. The principal instrument pertaining to refugees, namely the 1951 Geneva Convention, stipulates that the nomination refers to people crossing borders due to a well-founded fear of persecution stemming from considerations of race, religion, nationality, membership in a particular social group, or political persuasion. The impacts of climate change diverge markedly from the criteria outlined in these parameters. Consequently, all interviewees pointed out the disconnect between the academic and political consensus on environmental degradation's effects on societies and the prevailing legal frameworks intended to protect vulnerable groups.

Baldwin (2012) asserts that victim blaming against climate refugees is pervasive, often operating in subtle and insidious ways. Unlike racial accusations, it is often implicit, subtly morphing attitudes and perceptions. Through conscious and unconscious mechanisms, individuals contribute to the stigmatisation and the disenfranchisement of climate refugees, perpetuating a cycle of injustice and inequality. People often create a divide between themselves and climate refugees based on cultural, religious, or other identifiers. They may even attribute responsibility to these persons for fleeing their countries and imagine they would have acted differently in an alike scenario. Within these parameters, Hiraide (2023) considers the concept of climate refugees as negating the agency of those it refers to. However, she also accentuates the revolutionary power inherent in language and recommends replacing the expression with "ecologically displaced people" (Hiraide 2023: 269), thereby avoiding the burden of stigma associated with the conventional terminology.

Adelman (2016) and Eckersley (2015) deplore the fortification of borders across Western countries, exemplified by Australia's offshore processing camps and detention facilities in Nauru and Papua New Guinea. These intellectuals also want governments to share the financial burdens of resettling individuals from disrupted habitats. Moreover, they call for allocating aid to host countries based on their capacities and population size; a model akin to the Green Climate Fund (GCF) (Abate 2015). While these proposals are valuable and align with the concerns of the interviewees, they are difficult to implement due to the deep-seated suspicion of diversity that prevails in many states. To provide greater meaning to the inner turmoil caused by the loss of the sense of belonging due to climate change, Albrecht (2005) employs the term solastalgia. This word describes the disorientation that arises when familiar places are replaced by misery. McFarlane (2011) alleges that people can either escape a habitat that has become increasingly alien and distant or attempt to rebuild. In both cases, they must endure

the pervasive violence that is an inherent aspect of overlapping legal and governmental procedures. Haraway (2015) zeroes in on the notion of response-ability, urging us to extend care to the vulnerable and oppressed. On top of that, she brings to the centre stage the moral supremacy of solidarity over charity. While the latter typically functions hierarchically, the former takes a horizontal standpoint, prioritising mutual respect, coalition, and affinity. Instead of approaching aid recipients as mere beneficiaries, this framework treats them as equals. Morton (2013) and Jamieson (2016) contend that humanity can enact massive changes on a global scale, resulting in the erasure of entire ecosystems. However, such power also exposes humanity's vulnerability to the disruptions it provokes.

The Teitiota Case

To illustrate the hurdles climate refugees encounter, we may look at the United Nations Human Rights Committee's (UNHRC) observations on the Teitiota versus New Zealand/Aotearoa landmark case (ICCPR/C/127/D/2728/2016). In the proceedings, Mr Teitiota rebukes the New Zealand/Aotearoa court's refusal to grant him asylum, commenting that his return to Kiribati endangers the right to life, as guaranteed by Article 6(1) of the International Covenant on Civil and Political Rights (ICCPR). He cites the ramifications of rising sea levels, including coastal erosion, land salinisation, and scarcity of freshwater for agriculture and livestock. Added to this are housing gaps and land conflicts in Kiribati, feeding violence. For Mr Teitiota, these untenable conditions compel him and his family to migrate. For Pagin (2022), the UNHRC knows Kiribati is increasingly inhospitable. However, the committee believes the government could implement strategies to safeguard its inhabitants and, if necessary, facilitate relocation within the relevant timeframe. Furthermore, the UNHRC states that Kiribati aids the citizens during the events in question, rendering their decision unfavourable to Mr Teitiota. It is also observed that while everyone in Kiribati is afflicted by climate change, citizens do not universally opt to leave. Despite the outcome, the judges' integration of human rights and asylum legislation concerning non-refoulement under Articles 6 and 7 of the ICCPR is remarkable in its potential benefits as well as its unintended consequences. On the one side, the ruling moves the debate forward regarding care for people fleeing the effects of climate change. Furthermore, it reinforces the thesis that compromising essential guarantees such as access to water and food can violate the right to life and the prohibition of inhuman and degrading treatment. However, the case demonstrates biases in

New Zealand/Aotearoa's judges' decisions. If we accept their view, persons who collectively cope with climate change may find it difficult, if not impossible, to secure asylum. This conundrum stems from the lack of evidence for overt violence or discrimination in their claims. Paradoxically, if these groups were to descend into conflict or strife, they might be more likely to secure protection. This situation effectively forces individuals to exhibit extreme adversity toward one another just to qualify for asylum, adding yet another obstacle on top of the ecological disasters they already face.

Beyond Borders: Redefining Citizenship and Inclusion in the Posthuman Era

The informants insist that citizenship is an arbitrary instrument wielded by states to determine inclusion and exclusion within the population. It is also a status that could be granted or revoked, and governments use it to justify surveillance (of nearby border areas) and the suspension of rights (of citizens and aliens). They prefer a paradigm of more dynamic naturalisation, wherein individuals are simultaneously connected to and disconnected from a country. Others share a comparable view. Gray (2001), Bauböck (2005), and Schlenker and Blatter (2014), contend that citizenship should be an ever-evolving matrix of rights and duties between claimants and holders. Amid the digital cloning of Tuvalu, four interviewees proficient in sociology examine what Dedeoğlu (2023) defines as posthuman citizenship. They (re) interpret it as an extension of the metaverse, where individuals and their avatars engage in numerous interactions and boundary-crossings, both biological and artificial, transcending the predefined limits of nationhood and statehood. Coward (2012), Kymlicka and Donaldson (2014), Häkli (2018), and Dedeoğlu (2023) investigate citizenship concerning multiple territories, scales, and spatial/temporal networks. They consider extending this to animals, aligning with the decentralisation of humanity both legally and linguistically, necessitating new vocabulary and thought. Some suggest creating something entirely different from citizenship. They may be right. While it is assumed that everyone must be registered with a state and follow its laws, these are historical constructs that can be accepted, reconfigured, or dismantled.

Reimagining Gender Identity and Humanity in the Metaverse

Many participants depict the metaverse as an untapped frontier where differences from reality are almost negligible. Unexpectedly, one of them informs the authors that Stephenson (1994) uses the term "metaverse" in

his novel *Snow Crash*. He also explains that inside this computer-generated galaxy, individuals are presented three-dimensionally with customisable electronic images, limited solely by their users' imagination (Cheong 2022). These digital representations can be divided into three archetypes: (1) streamlined versions designed for web efficiency; (2) renditions tailored to enrich daily experiences; and (3) utilitarian forms with real-world applications. The terms "metaverse" and "cyberspace" are often used synonymously, but they are different. The first implies a collective online arena sustained by augmented reality (AR), virtual reality (VR), and other immersive mediums, whereas the second refers to an interconnected computer system that facilitates continuous data exchange across various locations.

The interviewees refer to the metaverse as a potential panacea to the limitations imposed by their passports. They observe that, as Tuvaluans, they wrestle with visa restrictions when travelling to many countries. However, they mention that within the metaverse, they have greater freedom. They also speculate that physical documents will become unnecessary if their society copies its entire bureaucratic system (Briggs 2020). The respondents also hope the metaverse might dissolve the gender binary categorisation of male/female (Sundén 2001) and dismantle the patriarchal system, which is still prevalent among older generations and Christian fundamentalists in Tuvalu (Bull et al. 2021). When the authors request for more clarity, the participants explain that women have long been viewed primarily as wives and mothers. LGBTQ individuals have also been sidelined and treated as if they were not full members of society. While for the participants, there is no actual homophobia or gynophobia, some people harbour moral panic about issues related to reproduction, sexuality, and gender identity.

Two informants declare that being a cyborg could represent the path ahead for Tuvaluans: a trans-organic personality above all old conceptual/ossified bodily schemes (Haraway 2016). They cite the Japanese manga *Ghost in the Shell* (Silvio 1999) as an example. They assert that Major Motoko Kusanagi, the main character, embodies the tension between being and becoming via a dual reversal. Despite being initially presented with an overtly sexualised feminine physique, she defies conventional stereotypes through her assertive and determined personality, often perceived as masculine by her friends, peers, and enemies. However, she retains the autonomy to trouble these performances by outwardly projecting a more male appearance while preserving her inherent femininity (Butler 1990). Astonishingly, she can even leave her synthetic persona altogether to merge with artificial intelligence (AI). As the respondents explicate, *Ghost in the*

Shell themes revolve around the questions: (1) What defines humanity? (2) Will the individual retain consciousness if most of the body is substituted with cybernetic components? and (3) Moreover, if the brain itself is replaced, what implications will that hold?

Promises and Realities: Immigrant Experiences in New Zealand/Aotearoa

The interviewees claim that Western people often treat indigenous groups as inferior (Kaczan and Orgill-Meyer 2020). They do not simply cast them out from their borders or exploit them but depoliticise tribal and native communities by making them mere symbols devoid of their specific contexts (Jackson 2017). This process often involves presenting them in a way that highlights their traditional practices and artefacts, while ignoring the political, legal, and cultural struggles that are central to their identity and autonomy. Eight participants underline that New Zealand/Aotearoa is unique in a positive way. The country has facilitated and not hindered mobility in the Pacific region since the 2000s via specific diplomatic channels for four states: Tuvalu, Fiji, Tonga, and Vanuatu (Bedford et al. 2010). However, there is still a discrepancy between New Zealand/Aotearoa's promised opportunities and what many foreigners and their descendants encounter. Members of diaspora communities often struggle to secure jobs that match their educational skills, leading to underemployment or unemployment. This impasse causes financial strain due to loss of income and takes a toll on self-esteem.

Many respondents bemoan that the link between climate change and immigration is often dismissed as nonsense instead of being deemed as the most direct consequence of over-industrialisation and over-pollution (Stearns 2020). The participants underscore the perpetuation of stereotypes around indigenous peoples, who are often metaphorically painted as coming from the jungle or uncivilised nations. Furthermore, they maintain that proponents of this mindset liken the West to a meticulously tended garden guarded against trespassers. There are exceptions, however. The interviewees mention that whereas poor individuals are routinely stopped at the "gates" or borders, wealthy ones, as if money makes them more acceptable or whiter, are more readily welcomed. This revelation is a portal into a darker truth: though, in theory, New Zealand/Aotearoa has non-discriminatory visa and settlement strategies, in reality, immigrants are not equal in their predicament. The informants think that one of the foremost obstacles to genuine progress lies

with individuals who profess a dedication to democratisation yet are reluctant to apply meaningful change. As the adage goes, when one is accustomed to privilege, the possibility of equality may feel like oppression. However, all the participants mention that New Zealand/Aotearoa has a solid movement of grassroots governance and social development (Houkamau et al. 2017). All of this brightens their horizon. As one of them poignantly states:

> We seek better lives, new opportunities, and a chance to call Auckland (most Tuvaluans reside in the iconic New Zealand/Aotearoa city) home. However, there are instances where we deal with discrimination. (Elisala)

Through Art and Cyber Advocacy

On the one hand, climate change exposes the fallacy of human dominance over the planet (Fox and Alldred 2020). On the other hand, it reveals our capacity to reinvent ourselves. Eight respondents contend that artists are leading this realisation. These people embrace an awakening that is both frightening and awe-inspiring, and encourages others to view humans and non-humans, like corals and fishes or even the sky and the sea, as integral parts of a whole. Shanken (2002), Malloy (2003), and Smith (2007) teach us that artists can adopt technology to create performances that would be difficult with more standard methods. For instance, they can collaborate remotely and in real-time using computer-based or mobile phone-based applications and specialised software, such as Skype, Zoom, and Microsoft Teams. They can develop and present shows online, allowing audiences to join from everywhere. Alternatively, these spectacles can be staged for local spectators in theatres, cinemas or other venues, with Tuvaluans potentially engaging in and from the metaverse. A hybrid approach is also possible, involving both remote and on-site audiences and performers, thereby, enhancing the reach and impact of the demonstrations.

Moreover, four interviewees assert that artists can create 3D video games, movies, and other media to highlight the connection between climate change and Tuvalu, bringing it to the forefront of international public awareness. While the metaverse cannot reproduce the intimate experience of viewing and feeling an original work in person—as we cannot smell anything online and often what we enjoy is just a replica—it does extend the lifespan of objects, including paintings, books, and sculptures. Furthermore, it facilitates innovative marketing strategies that boost the conservation, management, and appreciation of Tuvalu's past, present, and future. We should also

stress that in the metaverse, the aesthetic vision arises from the culmination of intellectual knowledge. Beauty here is not just about psychological empathy or the imaginative creation of virtual artefacts. It is deeply rooted in a profound comprehension of the limits of humanity and how to move beyond them. However, not everyone reacts the same way to this. Eco (1994) uses semiotics to explore how the masses interpret their interaction with innovation. His analysis reveals a mixed/ambiguous picture: some people are enthusiastic about artistic advancements because they permit everyone to consume art, opening the door to a society without distinction. In contrast, others feel offended because, in their understanding, technology massified/commodified and, hence, vulgarised art. We need to mention that the word "art" did not exist among the ancient Greeks; instead, they adopted the concept of *technē*, which is not merely technique but the ability to perform or create something in a way that is *agathos*, meaning good or honourable for society (Angier 2010). Such a philosophy reflects the efforts and hopes of many individuals in Tuvalu.

CONCLUSION

> In the end, what destroys my relatives is the fear of waking up one day and discovering that Tuvalu no longer exists. (George)

Badmington (2003) writes that posthumanism is not necessarily an antagonistic stance against humanity but rather a re-evaluation of long-standing anthropocentric notions. Rooted in philosophical inquiry, it encourages greater accountability for the contradictions and fallacies inherent in common thinking and practices (Dinerstein 2006). While it may provoke discomfort due to its radical core, such uneasiness is nonetheless productive and emancipatory. It realigns our endeavours with the world, not merely through idealised romanticism, but with commitment, respect, and an unwavering refusal to objectify non-humans (Nayar 2014). The revolution at the core of posthumanism is already here and can only accelerate (Maria Guidi 2022). The participants' speeches reflect these points, especially when they stress how the metaverse has impacted how people think about themselves. Their ideas also demonstrate how Tuvaluans and their descendants fear losing their country. Nevertheless, this anguish is balanced by confident self-orientation. The authors and interviewees chime with the assertions of Leal Filho (2020) and Fair (2018) regarding the urgent need for non-Western knowledge to have a seat at the table of climate change adaptation. They unanimously advocate

for this inclusion, contending that it would imbue initiatives with a greater sense of holistic understanding, moral respectfulness, and, fundamentally, long-term sustainability.

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This study was conducted in accordance with the ethical standards of the National Research Council of Thailand, as well as relevant Thai laws and their amendments. All participants were adults who provided informed consent, and their data were anonymised to ensure privacy. The study did not involve sensitive information or interventions that posed any risk to the participants.

NOTES

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