Digital Tuvalu: state sovereignty in a world of climate loss

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An island state existing purely in the metaverse; such was the image of a possible future that went viral after the video release by Tuvalu's government of a new programme entitled *Te Ataeao Nei* (known in English as Future Now).[1] The video was launched by Simon Kofe, then minister for justice, communication and foreign affairs,[2] at COP27, the UN climate conference (Conference of the Parties of the UN Framework Convention on Climate Change) held in November 2022 in Sharm-El-Sheikh, Egypt.[3] At the beginning of the recording, Kofe appears to be standing on the beach of a Tuvaluan atoll (the small state comprises just nine separate low-lying islands, including six atolls). At the end of his speech, however, the camera slowly pans out to reveal that the minister is not standing on a real, physical island, but on a virtual, computer-animated one. This dramaturgical trick visually supports the introduction of *Te Ataeao Nei*[4] and the idea of a virtual nation.[5]

The video, and the *Te Ataeao Nei* / Future Now programme more broadly, can be seen as a partial embodiment of Tuvaluans' resistance to their state being framed as an inevitable victim of global climate change. As Pacific scholars and others have argued, an imaginary of an inevitable victim rests at least partly on

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1 Future Now, *The Future Now project: preparing today to secure tomorrow*, project brief, 2021, https://drive.google.com/file/d/1F8Ksc99AsokFJRChQS7lluCiciC-ftny/view. (Unless otherwise noted at point of citation, all URLs cited in this article were accessible on 22 Jan. 2024.) Tuvalu's Future Now project that we analyse in this article is not associated with the external organization Rising Nations Initiative.

2 Kofe stepped down from his ministerial position on 28 July 2023 but continues to serve as a parliamentarian and as a spokesperson for the Future Now project.

3 Simon Kofe for Government of Tuvalu, 'The first digital nation', https://www.tuvalu.tv. In November 2023, the Government posted another video message on the status of the Digital Tuvalu proposal on the occasion of COP28 in Dubai in 2023.

4 To do justice to our claim to focus on Pacific Indigenous thinking, we use the original Tuvaluan names in this article.

5 Simon Kofe, 'Protecting Tuvalu's statehood', *Chain Reaction*, no. 141, 2021, p. 21, https://assets.nation-builder.com/friendsofearthmelbourne/pages/6435/attachments/original/1645596811/Chain_Reaction_Summer_2022.pdf.

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colonial and Eurocentric perceptions of Pacific islands as small, isolated, remote and resource-poor, and of their Indigenous inhabitants as 'noble savages'.[6] In contrast, the *Te Ataeao Nei* programme seeks to reclaim agency in the worst-case scenario of complete territorial loss. Rather than passively surrendering to fate or hoping for external salvation, Tuvalu's government is actively seeking to challenge the traditional understanding of legitimate statehood in the era of the climate crisis.

In this article, we take the example of Digital Tuvalu as a paradigmatic case to advance existing debates on international relations in the Anthropocene, tracing how the two processes of climate catastrophe and digital state formation juxtapose. We ask how the Tuvalu government aims to maintain and protect state sovereignty, language, knowledge and culture —both materially and virtually— in the face of existential climate-related loss. The Anthropocene refers to the latest geological epoch, defined by humankind's massive impact on the environment and the entire Earth system, the traces of which will remain visible for thousands of years.[7] Recent works in International Relations (IR) have examined how this new condition of the Anthropocene challenges core institutions, norms and forms of governance in international politics.[8] We contribute to this debate by linking climate loss and state extinction in the Anthropocene[9] to notions of virtual sovereignty and statehood.[10] We theorize this interplay as the emergence of a new strategy of *digital state preservation*, being attentive to the infrastructural power of large information and communication technology providers, while at the same time acknowledging the agency of Indigenous actors in navigating the challenges of the Anthropocene.

Our approach is conceptual, exploratory and speculative. As such, it draws mainly on secondary literature of relevant debates, supported by Tuvaluan *fenua*

[6] Epeli Hau'ofa, 'Our sea of islands' in Eric Waddell, Vijay Naidu and Epeli Hau'ofa, eds, *A new Oceania: rediscovering our sea of islands* (Suva, Fiji: School of Social and Economic Development, University of the South Pacific, and Beake House, 1993); Charlotte Kate Weatherill, 'Sinking paradise? Climate change vulnerability and Pacific Island extinction narratives', *Geoforum*, vol. 145, 2023, https://doi.org/10.1016/j.geoforum.2022.04.011.

[7] Robyn Eckersley, '(Dis)order and (in)justice in a heating world', *International Affairs* 99: 1, 2023, pp. 101–19 at p. 108, https://doi.org/10.1093/ia/iiac259.

[8] See for example Dahlia Simangan, 'Where is the Anthropocene? IR in a new geological epoch', *International Affairs* 96: 1, 2020, pp. 211–24, https://doi.org/10.1093/ia/iiz248.

[9] For a discussion of the Anthropocene as an age of loss and existential risk, see Cameron Harrington, 'The eternal return: imagining security futures at the doomsday vault', *Environment and Planning E: Nature and Space* 6: 4, 2023, pp. 2614–35; https://doi.org/10.1177/25148486221145365; Dahlia Simangan, 'How should IR deal with the "end of the world"? Existential anxieties and possibilities in the Anthropocene', *Review of International Studies* 49: 5, 2023, pp. 855–71, https://doi.org/10.1017/S0260210523000220. On the threat of state extinction, see Ori Sharon, 'To be or not to be: state extinction through climate change', *Environmental Law* 51: 4, 2021, pp. 1041–83, https://law.lclark.edu/live/files/32820-51-4-sharonpdf; Milla Emilia Vaha, 'Drowning under: small island states and the right to exist', *Journal of International Political Theory* 11: 2, 2015, pp. 206–23, https://doi.org/10.1177/1755088215571780.

[10] Maryanne Kelton et al., 'Virtual sovereignty? Private internet capital, digital platforms and infrastructural power in the United States', *International Affairs* 98: 6, 2022, pp. 1977–99, https://doi.org/10.1093/ia/iiac226; Kurt Mills, 'Cybernations: identity, self-determination, democracy and the "internet effect" in the emerging information order', *Global Society* 16: 1, 2002, pp. 69–87, https://doi.org/10.1080/09537320120111915; Piia Tammpuu and Anu Masso, '"Welcome to the virtual state": Estonian e-residency and the digitalised state as a commodity', *European Journal of Cultural Studies* 21: 5, 2018, pp. 543–60, https://doi.org/10.1177/1367549417751148; Roy Smith, 'Place and chips: virtual communities, governance and the environment', *Global Environmental Politics* 3: 2, 2003, pp. 88–102, https://doi.org/10.1162/152638003322068236.

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philosophy, which is central to our commitment to pluralize IR.[11] To develop and illustrate our conceptual arguments, we draw on various empirical sources including project home pages, policy briefs, background papers and video recordings of speeches, as well as on one co-author's lived experiences of the *fenua* philosophy, supported with literature about *fenua* and related Tuvaluan Indigenous concepts.

The article is structured as follows. In the next section, we outline how existing works in IR have treated changing forms of statehood, and related understandings of sovereignty, territoriality and citizenship under conditions of globalization, environmental change and digital transformation. In the third section, we mobilize this literature to explore the case of Tuvalu and the Future Now project. The fourth section uses the paradigmatic case of Digital Tuvalu to develop an ideal-typical model of 'digital state preservation', tracing its pragmatic, performative and geopolitical dimensions. In the final section, we conclude by answering our research question.

Statehood in a world of environmental and technological change

The idea of a virtual state is not a new concept.[12] Examples range from rather modest initiatives for moving individual government institutions and services into virtual space to utopian visions for genuine cyber states. As early as the 2000s, different countries started operating in virtual environments. For example, in 2006 the Maldives was the first country that opened an embassy in the virtual world of Second Life; others, including Sweden and Estonia, followed.[13] Second Life, a 'metaverse before the metaverse' according to Luciano Floridi,[14] was a virtual online world in which users could create their own avatars and travel between islands. In this setting, virtual embassies served mainly representative and economic functions—for example, attracting tourists and investors through online nation-branding.

Compared to earlier experiments with virtual embassies, the online representation of Estonia was more complex. For example, it involved administrative services, including visa applications. It is often quoted as an example of a more ambitious vision of a 'virtual state'.[15] As part of its programme, which commenced in 2014, the Estonian government is handing out so-called 'e-Residency' or virtual

[11] The notion of *fenua* relates to the wholeness of Tuvalu's communities constituted in a relationality of spirituality, culture, people and territory. See also Elaine Stratford, Carol Farbotko and Heather Lazrus, 'Tuvalu, sovereignty and climate change: considering *fenua*, the archipelago and emigration', *Island Studies Journal* 8: 1, 2013, pp. 67–83, https://doi.org/10.24043/isj.277. The concept is discussed in more detail in a later section of this article.

[12] Tammpuu and Masso, '"Welcome to the virtual state"'; Stina Bengtsson, 'Virtual technologies of the nation-state: state administration in Second Life', in Göran Bolin, ed., *Cultural technologies: the shaping of culture in media and society* (New York and Abingdon: Routledge, 2012), pp. 170–88; Mills, 'Cybernations'.

[13] Bengtsson, 'Virtual technologies of the nation-state'.

[14] Luciano Floridi, 'Metaverse: a matter of experience', *Philosophy & Technology* 35: 73, 2022, https://doi.org/10.1007/s13347-022-00568-6.

[15] Tammpuu and Masso, '"Welcome to the virtual state"', p. 2. See also Primavera De Filippi, 'Citizenship in the era of blockchain-based virtual nations', in Rainer Bauböck, ed., *Debating transformations of national citizenship* (Cham, Switzerland: Springer International Publishing, 2018), pp. 267–77 at p. 274.

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residency to nationals of other countries. Holders of e-Residency have access to Estonian online services via a digital identity card, and thus have the possibility of opening businesses in the country's growing digital economy. The aim is to attract up to ten million 'e-residents', which would virtually enlarge the small Baltic country without these e-residents having the right to physically enter the country or enjoy other citizen rights on Estonian soil. Pointing to the strong anti-immigration policy of the Estonian government, Piia Tammpuu and Anu Masso argue that the country is creating a second, virtual, national space that is functionally and legally distinct from its national territory. Accordingly, 'the idea of "making Estonia bigger" in digital terms and the vision of a deterritorialised digitalised state are … defended through the idea of an intact territorial nation-state'.[16]

While Tammpuu and Masso are critical of the 'e-Estonia' project, and demonstrate how it depends on the existence of a protectionist physical territory, others see it as part of a larger trend toward the emergence of genuine 'cyber states' or 'cyber nations'—understood as 'non-territorially bound imagined communities'.[17] Roy Smith refers to the Principality of Sealand[18] and the Dominion of Melchizedek[19] as examples of online nation-building. These are both cases of elite-driven projects in which a small group of actors tries to exploit the vagueness of international law to further their interests. Other projects originate from online social movements. For example, Bitnation 'describes itself as a decentralized borderless voluntary nation that anyone can join or leave as they wish'.[20] Other than e-Estonia and Sealand, these projects rely on decentralized blockchain technologies and are thus 'not located in any given jurisdiction'.[21] According to Liav Orgad, these platforms challenge established models of the state through the provision of state services and the emergence of collective identities.[22]

As the above examples show, there were various articulations of virtual statehood before the digital Tuvalu proposal. However, such ideas acquire a different meaning in the context of the Anthropocene and irreversible territorial, ecological and cultural loss. The Tuvaluan proposal links existing ideas about virtual states to the debate on deterritorial sovereignty to reclaim Indigenous agency and self-determination against the looming threat of state extinction. In this context, legal scholar Maxine Burkett has developed the concept of '*ex-situ* nationhood'—a 'status that allows for the continued existence of a sovereign state, afforded all of the rights and benefits of sovereignty amongst the family of states, in perpetuity'.[23] Crucially for the proposal of a digital Tuvalu, Burkett suggests that

[16] Tammpuu and Masso, '"Welcome to the virtual state"', p. 14.
[17] Smith, 'Place and chips', p. 93. The criterion for distinguishing between cyber nations and cyber states is whether the respective community is bound by the articulation of a joint national identity or not. See Liav Orgad, 'Cloud communities: the dawn of global citizenship?', in Bauböck, ed., *Debating transformations of national citizenship*, pp. 251–60.
[18] See 'Welcome to Sealand: the world's smallest country', 2024, https://sealandgov.org/en-eu.
[19] 'Dominion of Melchizedek', 2021, https://www.melchizedek.com.
[20] De Filippi, 'Citizenship in the era of blockchain-based virtual nations', p. 270.
[21] De Filippi, 'Citizenship in the era of blockchain-based virtual nations', p. 271.
[22] Orgad, 'Cloud communities', p. 258.
[23] Maxine Burkett, 'The nation *ex-situ*: on climate change, deterritorialized nationhood and the post-climate era', *Climate Law* 2: 1, 2011, pp. 345–74 at p. 346, https://doi.org/10.3233/CL-2011-040.

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such a state could exist in the form of a virtual, deterritorialized state, in which a government in exile could exercise authority over a diffuse people located in different places across the world. She argues that social media could help to hold this diffuse population together as a virtual community—foreshadowing the idea of maintaining a national community in the metaverse in Tuvalu's 2022 *Te Ataeao Nei* proposal. To further unpack this model in the following section, we briefly review the literature on changing forms of statehood and postcolonial approaches to state-building in IR.

Virtual statehood in International Relations theory

Within IR, the political proposals and conceptual debates around the idea of deterritorial or virtual statehood described above tie in with ongoing discussions about changing forms of the state. The ideal-typical model of post-Westphalian statehood is enshrined in the 1933 *Montevideo Convention on the Rights and Duties of States*.[24] Article 1 of the Convention defines four essential qualifications of sovereign nation-states: a permanent population, a clearly defined territory, an independent government and the capacity to enter into relations with other states in the international system. After the end of the Cold War, in the context of globalization and digital transformation, this ideal-typical model of the nation-state was perceived to be increasingly challenged.[25] The nation-state became more and more understood as historically contingent, rather than as a natural constant.[26] In the dominant Westphalian model of the state, its sovereignty is linked to a physical territory with fixed, internationally recognized borders, home to a population defining itself as a nation. John Agnew was the most prominent critic of this 'merging of the state with a clearly bounded territory'; he claimed that the discipline of IR was stuck in a 'territorial trap'[27] and that, under the influence of economic globalization and related transboundary flows of goods and 'bads'—from commodities to people, viruses or greenhouse gases—the 'territorial congruency between nation, state, society, and economy'[28] was crumbling. Rather than being replaced by a new model of political authority, globalization scholars argued that the Westphalian state would become increasingly *deterritorialized*. This process would involve the diffusion of authority below and above the national level in multilevel governance arrangements as well as the emergence of collective identities detached from territorial borders, for example in cyberspace.[29] Processes of (re)territorialization would simultaneously develop alongside

[24] Stratford, Farbotko and Lazrus, 'Tuvalu, sovereignty and climate change', p. 68.
[25] See, for example, Mathias Albert, David Jacobson and Yosef Lapid, *Identities, borders, orders: rethinking International Relations theory* (Minneapolis, MN: University of Minnesota Press, 2001).
[26] Ayelet Banai, Margaret Moore, David Miller and Cara Nine, 'Symposium "theories of territory beyond Westphalia"', *International Theory* 6: 1, 2014, pp. 98–104 at p. 101, https://doi.org/10.1017/S1752971914000013.
[27] John Agnew, 'The territorial trap: the geographical assumptions of International Relations theory', *Review of International Political Economy* 1: 1, 1994, pp. 53–80 at p. 56, https://doi.org/10.1080/09692299408434268.
[28] Mathias Albert and Lothar Brock, 'What keeps Westphalia together? Normative differentiation in the modern system of states', in Albert, Jacobson and Lapid, *Identities, borders, orders*, pp. 29–49 at p. 36.
[29] Albert and Brock, 'What keeps Westphalia together?', p. 46.

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processes of deterritorialization. A prominent example is the territorial demarcation of ocean space through the adoption of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which divides oceans into 'distinct segments within which states are assigned differentiated bundles of sovereign rights'.[30] Another example is the various attempts at territorializing cyberspace through national demarcations such as national firewalls.[31]

The prevailing understanding of territory in IR is directly linked to the concept of sovereignty.[32] In this context, it is important to distinguish between *de jure* and *de facto* understandings of sovereignty.[33] While the former refers to the legal right of exercising coercive power over a defined territory based on international recognition by other states, the latter refers to the capability of effectively exercising such authority. Transnational corporations, supranational organizations or commercial security providers can all assume functions that fall within the realm of *de facto* sovereignty—thereby leading to new forms of 'hybrid sovereignty' in international relations.[34] In the context of the Anthropocene, Rohan D'Souza observes that:

> The 'trans-boundary character' of current environmental anxieties (such as climate change in particular) not only disorients and dilates the notion of an unalloyed national territory but more pointedly announces the urgency for the 'pooling' of sovereignty itself … In effect, engaging with environmental issues will require evolving common understandings between states, who have to coordinate in concert rather than attempt a 'drawbridge' approach in which unilateral actions are carried out in the name of national security.[35]

To theorize this pooling of sovereignty, Agnew has proposed the notion of 'sovereignty regimes'.[36] Such regimes refer to distributed spheres of political authority and allow one to conceive of central state authority in varying degrees, which 'challenges the supposition that sovereignty is absolute and indivisible'.[37]

These debates on changing forms of statehood help to contextualize and further understanding of the various articulations of virtual statehood. They are

[30] Elizabeth Havice, 'Unsettled sovereignty and the sea: mobilities and more-than-territorial configurations of state power', *Annals of the American Association of Geographers* 108: 5, 2018, pp. 1280–97 at p. 1283, https://doi.org/10.1080/24694452.2018.1446820.

[31] Daniel Lambach, 'The territorialization of cyberspace', *International Studies Review* 22: 3, 2020, pp. 482–506 at p. 484, https://doi.org/10.1093/isr/viz022; Kelton et al., 'Virtual sovereignty?', p. 1981.

[32] See for example Stephen D. Krasner, *Sovereignty: organized hypocrisy* (Princeton: Princeton University Press, 1999); Daniel Philpott, 'Sovereignty: an introduction and brief history', *Journal of International Affairs* 48: 2, 1995, pp. 353–68.

[33] See for example Fiona McConnell, 'The fallacy and the promise of the territorial trap: sovereign articulations of geopolitical anomalies', *Geopolitics* 15: 4, 2010, pp. 762–68 at p. 764, https://doi.org/10.1080/14650041003717533.

[34] Swati Srivastava, *Hybrid sovereignty in world politics* (Cambridge, UK: Cambridge University Press, 2022); see also Hilary Matfess, 'Review of *Hybrid sovereignty in world politics* by Swati Srivastava', *International Affairs* 99: 3, 2023, pp. 1313–4 at p. 1313, https://doi.org/10.1093/ia/iiad073.

[35] Rohan D'Souza, 'Nations without borders: climate security and the South in the epoch of the Anthropocene', *Strategic Analysis* 39: 6, 2015, pp. 720–8 at p. 720–1, https://doi.org/10.1080/09700161.2015.1090678; see also Simon Dalby, 'Unsustainable borders: globalization in a climate-disrupted world', *Borders in Globalization Review* 2: 2, 2021, pp. 26–37, https://doi.org/10.18357/bigr22202120051.

[36] John Agnew, 'Sovereignty regimes: territoriality and state authority in contemporary world politics', *Annals of the Association of American Geographers* 95: 2, 2005, pp. 437–61 at p. 456, https://doi.org/10.1111/j.1467-8306.2005.00468.x.

[37] McConnell, 'The fallacy and the promise', p. 762.

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embedded in broader transformations of statehood that involve processes of de- as well as reterritorialization. A key assertion of Burkett's deterritorial state, and that of other international law scholars, is that the national identity and sovereignty of Pacific Island states can be detached from their territory.[38] In this reading, the Montevideo definition of statehood would have to be adapted to the new realities of the Anthropocene to prevent the threat of state extinction. The debate on virtual states and cyber nations supports this claim: this process of detachment is already happening, for instance through virtual communities taking up various government functions of the state. At the same time, such developments are accompanied by processes of reterritorialization, including the creation of boundaries and borders in cyberspace.

Performing statehood (through digital media)

While the discussed accounts of changing statehood are helpful in contextualizing and qualifying models of virtual states, they are limited in that they start from a single, western, notion of sovereignty. As stressed by anthropological and postcolonial scholarship, there are multiple ways in which the relation between territory and sovereignty can be articulated and practised.[39] By studying various processes of state formation empirically, such approaches have been able to show how any form of statehood relies on a whole variety of practices, discourses, symbols and tokens.[40] In short, this highlights the performative dimension of state formation and, importantly in our case, state preservation. Sovereign statehood is not fixed. Rather, it needs to be constantly re-enacted through national symbols, parades, architecture, diplomatic rituals and so on. In the age of social media and the internet, many of these state performances are mediated by digital technologies and media.[41] While some performances of sovereignty and statehood, such as diplomatic rituals, are often highly conventionalized, others are highly contextual, related to local, Indigenous customs, cultures and environments, thus bringing about a plurality of forms of statehood and 'lived sovereignty'[42] beyond the Westphalian model.[43] In the context of islands, postcolonial literature has for instance shown how Pacific and Caribbean forms of statehood emerge through Indigenous cultures, philosophies and a relational understanding

[38] Burkett, 'The nation *ex-situ*', p. 356.

[39] Veena Das and Deborah Poole, 'State and its margins: comparative ethnographies', in Veena Das and Deborah Poole, eds, *Anthropology in the margins of the state* (Santa Fe, NM: School for American Research Press, 2004), pp. 3–34; Thomas Blom Hansen et al., *States of imagination: ethnographic explorations of the postcolonial state* (Durham, NC: Duke University Press, 2001); Martin Hall, 'Steppe state making', in Jens Bartelson, Martin Hall and Jan Teorell, eds, *De-centering state making* (Cheltenham: Edward Elgar Publishing, 2018), pp. 17–37.

[40] Sarah A. Radcliffe, 'Imagining the state as a space: territoriality and the formation of the state in Ecuador', in Blom Hansen et al., *States of imagination*, pp. 123–48.

[41] See the introduction to this special section: Jethro Norman, Matthew Ford and Signe Marie Cold-Ravnkilde, 'The crisis in the palm of our hand', *International Affairs* 100: 4, 2024, pp. 1361–79, https://doi.org/10.1093/ia/iiae128.

[42] Matfess, 'Review of *Hybrid sovereignty in world politics*', p. 1314.

[43] Stratford, Farbotko and Lazrus, 'Tuvalu, sovereignty and climate change'.

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of culture and land.[44] As argued by Taukiei Kitara in the context of the Pacific:

> Our ancestors travelled the vast ocean on long voyages in search of land. It is not an empty space, but rather respected … as a space full of life just as much as life on land. In other words, sovereignty is perceived and understood differently by Pacific islanders than perhaps others in the international system.[45]

As equally poignantly described by Sophie Chao and Dion Enari, from the perspective of Indigenous epistemologies, sovereignty does not merely concern self-determination and a sense of attachment to the physical space we live in; it is about the collective of 'plants, animals, elements, mountains, forests, oceans, rivers, skies, and ancestors' in relation to which identity, feelings of responsibility and rights to self-determination are defined.[46] Hence, in the context of the Pacific, international norms of statehood gain a different meaning as they become related to Indigenous cosmologies, traditions and practices.

Digital Tuvalu

Since the 1990s, Tuvaluan representatives have been at the forefront of the UN climate change negotiations, advocating chiefly for global emissions reductions and adaptation in the context of sea-level rise.[47] Key to Tuvalu's climate change efforts has been the need to recognize climate change as a risk not only to land and sea territory, but also to self-determination and political independence.[48] As argued by Kitara:

> We all know that Pacific Islanders are fighting against climate change as a direct threat to our land and our ocean. But how many of us realise that climate change means we must also fight for our political independence and our identity? This is our sovereignty; we cannot let it be taken away from us, even if our land is highly at risk.[49]

In this context, Tuvalu has been addressing the notion of an existential threat to nationhood in UN Security Council debates to raise awareness of the urgent need for climate action.[50]

[44] Samid Suliman et al., 'Indigenous (im)mobilities in the Anthropocene', *Mobilities* 14: 3, 2019, pp. 298–318, https://doi.org/10.1080/17450101.2019.1601828; Mimi Sheller, 'Island ceremony and submerged worlds', *Dialogues in Human Geography* 11: 3, 2021, pp. 424–8, https://doi.org/10.1177/20438206211017452; Stratford, Farbotko and Lazrus, 'Tuvalu, sovereignty and climate change'.

[45] Taukiei Kitara, 'Climate change and Tuvalu's sovereignty', *Chain Reaction*, no. 137, 2019, pp. 20–21 at p. 20, https://search.informit.org/doi/10.3316/ielapa.814192016449232.

[46] Sophie Chao and Dion Enari, 'Decolonising climate change: a call for beyond-human imaginaries and knowledge generation', *eTropic: Electronic Journal of Studies in the Tropics* 20: 2, 2021, pp. 32–54 at p. 34.

[47] Carol Farbotko, Elaine Stratford and Heather Lazrus, 'Climate migrants and new identities? The geopolitics of embracing or rejecting mobility', *Social & Cultural Geography* 17: 4, 2016, pp. 533–52 at p. 537, https://doi.org/10.1080/14649365.2015.1089589.

[48] Tekau Frere, Clement Yow Mulalap and Tearinaki Tanielu, 'Climate change and challenges to self-determination: case studies from French Polynesia and the Republic of Kiribati', *Yale Law Journal*, vol. 129, 2020, pp. 648–73, https://www.yalelawjournal.org/pdf/Frere-Mulalap-Tanielu_ClimateChangeandChallengestoSelf-Determination_4xccksue.pdf.

[49] Taukiei Kitara, 'Climate change and sovereignty', ToDa Peace Institute, 16 Oct. 2020, https://toda.org/global-outlook/2020/climate-change-and-sovereignty.html.

[50] Shirley V. Scott, 'Implications of climate change for the UN Security Council: mapping the range of potential policy responses', *International Affairs* 91: 6, 2015, pp. 1317–33 at p. 1329, https://doi.org/10.1111/1468-

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Considering this history, the *Te Ataeao Nei* programme represents a critical juncture in Tuvalu's climate policy. Though it remains committed to notions of self-determination and agency that have informed the country's climate change strategy, it breaks with previous approaches by providing a defined worst-case strategy if Tuvalu's territory becomes uninhabitable. In the past, such a scenario was acknowledged but not addressed in Tuvaluan climate policy. To retain self-determination under conditions of extreme climate change, the *Te Ataeao Nei* programme[51] involves three main strategies: the first initiative is the mainstreaming of key Tuvaluan values and norms in all the state's diplomatic activities and international climate negotiations. It is hoped that notions such as *fale pili* (being a good neighbour) and *kaitasi* (shared responsibility) will encourage other nations to 'understand their shared responsibility to address international issues like climate change and sea level rise'.[52] The second pillar of the programme is a diplomatic initiative to secure international recognition of Tuvalu's statehood as permanent. Furthermore, along with a number of other (and larger) ocean states, Tuvalu is campaigning for an amendment to the 1982 UNCLOS that stipulates that states will not lose their right to their designated exclusive economic zones (EEZs) due to climate change and rising sea levels.[53] Working towards this reform, the government insists that all countries forming relations with Tuvalu recognize the statehood of the nation as permanent and its existing maritime boundaries as set.[54] The third pillar of the *Te Ataeao Nei* programme is the proposal for building a virtual Tuvalu. This would involve 'digitization activities on appropriate platforms to create a digital Government administrative system'.[55] Under a worst-case scenario, this would enable a future government to continue performing governance functions and providing services for a dispersed Tuvaluan people. Another important part of this strategy is the digitization of important political, cultural and historical documents, artefacts and practices to preserve them in the event of territorial loss.

The proposal for a virtual Tuvalu did not receive much international attention before its video release at COP27. The announcement was combined with a strong message to the international community that the world urgently needs to act together in drastically reducing greenhouse gas emissions, and, even if the sea takes Tuvalu's territory, its spirit, culture and statehood—its *fenua*—will not break.[56] In this context, Tuvalu's key intent is to ask the international community to imagine—not only for itself—an undesirable future in which states 'permanently move online, and disappear forever from the physical plane' as without 'a

2346.12455.

[51] See Future Now, *The Future Now project*.

[52] Future Now, *The Future Now project*.

[53] The UNCLOS defines the ocean within 200 miles of a coastal state's territory as the EEZ of the respective state. See Kitara, 'Climate change and sovereignty'.

[54] Kofe, 'Protecting Tuvalu's statehood'.

[55] Future Now, *The Future Now project*.

[56] Simon Kofe, 'Tuvalu's Future Now project: preparing for climate change in the worst-case scenario', Development Policy Centre, 10 Nov. 2021, https://devpolicy.org/tuvalu-preparing-for-climate-change-in-the-worst-case-scenario-20211110.

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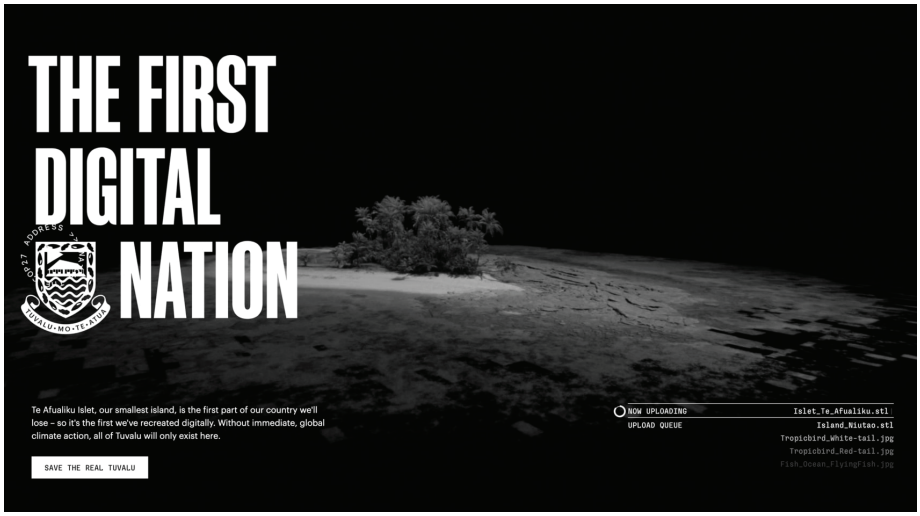
global conscience and a global commitment to our shared wellbeing we may find the rest of the world joining us online as their lands disappear'.[57]

Figure 1: Virtual Tuvalu project homepage



Source: https://www.tuvalu.tv.

The performative dimension of the proposal becomes clear when one considers the elaborately designed project webpage.[58] When opening the website, an introduction with three consecutive sentences appears first: 'Rising sea levels will swallow Tuvalu in a matter of decades. [pause] What happens to a country without land? [pause] Where will we call home?' Then the original homepage appears with the title 'The first digital nation'. It shows a small, uninhabited island with a sandy beach and a few palm trees against a black background (see figure 1). This island—Te Afualiku Islet, Tuvalu's smallest—is the first to be threatened by sea-level rise, and therefore was the first to be digitally recreated. The GPS coordinates of Tuvalu are displayed at the top left. On the right-hand side of the homepage, the local time and information about weather and tides appear. Most importantly, at the bottom right there is an animated graphic representing the process of digitally archiving Tuvalu—from recipes of traditional dishes to native species, to songs and physical landscapes.[59]

The website informs the international community that the Tuvalu government will digitally safeguard Tuvalu's landscape, culture, language, practices and statehood online, in the case that comprehensive *in situ* adaptation measures fail. The strategy links and recombines several existing concepts discussed in the previous sections of this article. Specifically, these include Burkett's concept of the deterri-

[57] Kofe, 'The first digital nation'.
[58] Kofe, 'The first digital nation'.
[59] With the latest update this animation has been removed, but the original is visible in figure 1.

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torial state, approaches to virtual nation-building and digitizing cultural heritage in the face of ecological threats. The proposal attempts to answer an open question in Burkett's concept of the *ex-situ* state: namely, where the government of such a state would be located. If we conceive of the government as a virtual government providing digital services to a 'non-territorially bound imagined community' of Tuvaluans, this question starts to be answered.[60] Another point is central from Tuvalu's perspective: the spatial computing technologies behind the development of the metaverse would make it possible to link virtual space with physical space. On the project homepage, for example, this is indicated by the GPS coordinates at the top of the screen. The proposal of a digital state is thus crucially linked to Tuvalu's claim for fixing its EEZ independently from its future physical territory. Rather than a decoupling of statehood and territory, the proposal describes a complex process of de- and reterritorialization. While the Tuvaluan people and its government may become mobile, dispersed across the globe and extended across cyberspace, we see simultaneous attempts at reterritorializing ocean- and cyberspace, for instance linking the EEZ to a virtual version of Tuvalu in the metaverse.

A contested proposal

Since Kofe's video presentation at COP27, the Tuvalu government's proposal has received much attention, meeting with some criticism from political and public commentators, including in Tuvalu itself. For example, on 31 May 2023 the leader of the opposition group in the Tuvaluan parliament released a media statement stating that:

> The concept for the creation of a digital nation of Tuvalu in the metaverse implies that Tuvalu will disappear because of sea level rise and that we should make a digital copy of it. There is no basis of such proposition in international law, and there is absolutely no reason to believe that Tuvalu will disappear even with sea level rise.[61]

In support of that statement, Maina Talia, a climate action advocate, scholar and former director of the Tuvalu Association of NGOs,[62] expressed similar concerns:

> We should not send a signal to the international community that it's okay if Tuvalu drowns, if Tuvalu submerges, because they can always go to New Zealand or Australia … I'm not sure how it's possible to go into another country and practice our own culture. That is impossible. Saving Tuvalu is literally saving our culture, saving our land, saving our people.[63]

[60] Burkett, 'The nation *ex-situ*'.
[61] Enele Sopoaga, 'Press release: save Tuvalu is no joke', Leader of the Opposition group in the Tuvaluan parliament, 31 May 2023.
[62] During the Tuvalu elections in January 2024, after this article was written, Maina Talia was elected to parliament and currently serves as the Minister of Home Affairs, Climate Change, Culture, Environment & Waste Management in the Government of Tuvalu.
[63] Maina Talia, quoted in Andrea Woo, 'Can Tuvalu be saved?', *Globe and Mail*, 30 July 2023, https://www.theglobeandmail.com/canada/article-the-island-nation-of-tuvalu-could-disappear-the-government-is-building.

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Such critics support Tuvalu's strategies of pressuring other countries to reduce their emissions, while seeking ways to adapt its own islands to rising sea levels.[64] Indeed, a priority for Tuvalu is to physically adapt by expanding and heightening the islands through land reclamation from the ocean.[65] It was at the same Conference of the Parties in Sharm El-Sheikh that Tuvalu released a video—entitled *Te Lafiga o Tuvalu*/Tuvalu's Long Term Adaptation Plan—explaining and visualizing what this strategy would look like, while asking for international support to guarantee its feasibility.

However, other Tuvaluan reactions to the proposal were more positive with respect to the digital proposal, acknowledging the need to develop a worst-case strategy and preserve Tuvaluan cultures and traditions online. A 2023 article in the *Guardian* quotes Kelesoma Saloa, a Tuvaluan emigrant who has been living in New Zealand for more than 10 years, as being 'enthusiastic about the idea of a digital twin' as a possibility for deepening his engagement with his homeland and its culture:

> Tuvalu is at the crossroads of Polynesia, Micronesia and Melanesia and we have learned a lot from each other: we are all brothers and sisters … And the sea. The sea has always been our lifeline but now it has become a threat … so what do we do? Create this space![66]

The diversity of Tuvaluan reactions testifies to the contested nature of the digital Tuvalu proposal. This is also reflected in the strong repercussions of Kofe's speech in the international media landscape. According to the professional services company Accenture, which developed the first pilot version of Tuvalu's digital twin as showcased at COP27, the speech 'reached more than 2.1 billion people globally, and to date, concerned citizens from 160 countries (118 countries in less than 48 hours) have engaged with Tuvalu's advocacy website'.[67] It also stressed that nine—as yet unnamed—nations had already agreed to officially recognize a digital Tuvalu as a sovereign state. In addition to these political reactions, the proposal has also attracted the interest of different tech companies, which reached out to Kofe to offer their services. Reactions within the international media, on the other hand, were often critical. These voices warned of the dangers of a 'technological solutionism' that would be 'exactly the kind of thinking that got us here'.[68] Indeed, the question arises of how self-determined and sovereign a

[64] Stephen Wright, 'The metaverse won't save Tuvalu from higher seas, but land reclamation might', Benar News, 6 Aug. 2023, https://www.benarnews.org/english/news/pacific/land-reclamation-06082023125530.html.

[65] Carol Farbotko et al., 'Reclaiming open climate adaptation futures', *Nature Climate Change* 13: 8, 2023, pp. 750–51, https://doi.org/10.1038/s41558-023-01733-1; Liam Saddington, 'The chronopolitics of climate change adaptation: land reclamation in Tuvalu', *Territory, Politics, Governance*, 2023, pp. 1–20, https://doi.org/10.1080/21622671.2023.2216732.

[66] Kelesoma Saloa quoted in Kalolaine Fainu, 'Facing extinction, Tuvalu considers the digital clone of a country', *Guardian*, 27 June 2023, https://www.theguardian.com/world/2023/jun/27/tuvalu-climate-crisis-rising-sea-levels-pacific-island-nation-country-digital-clone.

[67] Accenture, 'Case study—Tuvalu: climate change gets real in the metaverse', undated, https://www.accenture.com/us-en/case-studies/technology/tuvalu.

[68] Nick Kelly and Marcus Foth, 'An entire Pacific country will upload itself to the metaverse. It's a desperate plan—with a hidden message', *The Conversation*, 17 Nov 2022, https://theconversation.com/an-entire-pacific-country-will-upload-itself-to-the-metaverse-its-a-desperate-plan-with-a-hidden-message-194728.

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digital country would be. In the early days of the internet, cyberspace was often envisioned as a new anarchic space that would eventually 'replace the traditional territorial order of states'.[69] Today, many authors paint a more complex picture of the changing nature of sovereignty and territory in cyberspace. For example, authors point to new forms of sovereignty emerging in virtual space, exercised by powerful digital platforms such as Meta, Google or Amazon.[70] In the age of platform capitalism, the internet has emerged as an asymmetrical space in which a few platforms have become the necessary passage points of global flows.[71] At the same time, states such as the United States or China, as well as supranational bodies like the European Union, are trying to regain sovereignty in virtual space through regulations, control mechanisms or national firewalls. The result is a complex landscape of overlapping sovereignty regimes, which is dominated by a few digital superpowers like the US and China and the big tech businesses operating on their territories or within their national economies. Uploading crucial government services or cultural resources to the cloud would create whole new dependencies on transnational corporations and IT infrastructures in other countries.

Towards a digital fenua

We deem it important to consider these points of criticism and caveats related to platform capitalism and the metaverse when discussing the digital Tuvalu proposal. At the same time, it is important to stress that Tuvalu and other Pacific islands are actors in larger economic and geopolitical structures. While the idea of a virtual state has been articulated by big tech companies, western libertarians and neo-liberal governments (as in the case of Estonia), such actors are not forcing this model upon the Tuvaluan government. Rather, the latter actively appropriates and rearticulates such imaginaries in relation to its demands, visions and traditions. Syncretism has a long tradition in the Pacific region, where local populations have historically succeeded in merging Indigenous cosmologies with western modernist institutions, such as territorial statehood.[72] With a view to Pacific climate discourses and the appropriation of western scientific concepts, Crook and Rudiak-Gould observe how Pacific peoples demonstrate an 'adept skill in accepting external interests and turning them into home-grown initiatives'.[73]

Other works, albeit with a focus on the Caribbean, have outlined how that region's island states exert agency by 'manoeuvring the spaces that global capitalist processes open', for example, by using their sovereign territories as offshore

[69] Georg Glasze et al., 'Contested spatialities of digital sovereignty', *Geopolitics* 28: 2, 2023, pp. 919–58 at p. 920, https://doi.org/10.1080/14650045.2022.2050070.
[70] Kelton et al., 'Virtual sovereignty?', p. 1985.
[71] Kelton et al., 'Virtual sovereignty?'; Lambach, 'The territorialization of cyberspace'.
[72] See Margaret Jolly, 'Engendering the Anthropocene in Oceania: fatalism, resilience, resistance', *Cultural Studies Review* 25: 2, 2019, pp. 172–96, https://doi.org/10.5130/csr.v25i2.6888.
[73] Tony Crook and Peter Rudiak-Gould, 'Introduction: Pacific climate cultures', in *Pacific climate cultures* (Warsaw, Poland: De Gruyter Open Poland, 2018), pp. 1–20 at p. 2; see also Margaret Jolly, 'Engendering the Anthropocene in Oceania'.

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financial centres to attract increasingly nomadic forms of capital.[74] This is not to compare directly the proposal for a virtual Tuvalu with offshore financial centres, nor to ignore the differing histories of Pacific and Caribbean island states. Yet, this literature shows that populations of island states are not mere passive consumers, depending on big tech, but that they may strategically exploit the possibilities of emerging digital capitalism. Drawing on the philosophy of Elizabeth Grosz, we propose to define the virtual, or virtuality, less in relation to a set of concrete digital technologies (such as virtual reality or the metaverse) and more as a space of potentiality.[75] In her work on architecture, Grosz describes how the virtual 'brings richness to reality by allowing future possibilities to resonate in the present'.[76] Hence, virtuality is linked with potentiality—the possibility of becoming otherwise—and with 'the idea of an indeterminate, unspecifiable future, open-endedness'.[77] Understood in this way, embracing the idea of a virtual Tuvalu would mean keeping the future open, thus opposing imaginaries of disappearing islands—and multiplying possibilities. Following this reading, the idea of a digital Tuvalu is neither a concrete policy proposal nor a communications stunt—a desperate cry for help, as many international commentators claimed.[78] Quite the contrary: the most important aim is to maintain Tuvaluan agency—even if the country's territory may not be maintained. This is the essence of radical ownership of the future: even the most dystopian futures should be Tuvaluan ones.[79] Seen in this light, a virtual Tuvalu is a perfect example of what others have described as radical hope in the Anthropocene.[80] Radical hope stands in opposition to both optimistic and pessimistic—utopian and dystopian—imaginaries of the future in the Anthropocene. Radical hope combines the acknowledgement that the future will bring radical, potentially catastrophic, change with a refusal to take the latter as a fixed destiny: 'We give our people some sense of hope to continue on, maybe here or maybe elsewhere and that is the most important thing.'[81] Radical hope in this view is a 'commitment to possibility … a commitment to something completely indeterminate and currently unimaginable'.[82] In

[74] Kristina Hinds, 'Invisible on the globe but not in the global: decolonising IR using small island vistas', *Review of International Studies* 49: 3, 2023, pp. 368–78 at p. 369, https://doi.org/10.1017/S0260210523000153.

[75] Elizabeth Grosz, *Architecture from the outside: essays on virtual and real space* (Cambridge, MA: MIT Press, 2001).

[76] Lauren Beitler, 'Grosz, Elizabeth, "Cyberspace, virtuality, and the real", in *Architecture from the outside*. Cambridge, MIT Press, 2001. Annotation by Lauren Beitler (Theories of Media, Winter 2004)', http://csmt.uchicago.edu/annotations/grosz.htm.

[77] Grosz, *Architecture from the outside*, p. 88.

[78] See for example Vasanth Seshadri, 'Why Tuvalu's digital twin plan is a cry for help, not a sustainable solution', *illuminem*, 28 Dec. 2022, https://illuminem.com/illuminemvoices/why-tuvalus-digital-twin-plan-is-a-cry-for-help-not-a-sustainable-solution.

[79] Wright, 'The metaverse won't save Tuvalu'.

[80] David Chandler, 'The politics of the unseen: speculative, pragmatic and nihilist hope in the Anthropocene', *Distinktion: Journal of Social Theory* 25: 1, 2024, pp. 1–16 at pp. 6–8, https://doi.org/10.1080/1600910X.2023.2235916; Colette Mortreux, 'Finding hope in Tuvalu's digital nation', *East Asia Forum*, 21 Feb. 2023, https://www.eastasiaforum.org/2023/02/21/finding-hope-in-tuvalus-digital-nation.

[81] Oregon Tanaki, quoted in Greg Navarro, 'Tuvalu digital nation: Pacific island nation seeks to preserve identity online in the face of climate change threat', CGTN, 28 June 2023, https://news.cgtn.com/news/2023-06-28/VHJhbnNjcmlwdDczMTk5/index.html.

[82] Fernando Flores and B. Scot Rousse, 'Ecological finitude as ontological finitude: radical hope in the Anthropocene', *Telos*, no. 177, 2016, pp. 127–43 at p. 135, http://doi.org/10.3817/1216177127.

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this sense, a position of hope requires the ability to conceive of 'alternative worlds even in their empirical absence'.[83]

Following this perspective, the distinction between the digital Tuvalu proposal and the country's physical adaptation strategy is less clear-cut than they are presented by critics. Both land reclamation and a digital nation are virtual realities—both are speculative futures of Tuvalu beyond state extinction. As argued by Colette Mortreux, neither strategy is the expression 'of a country reconciled to displacement as a result of climate change. These are the actions of a country determined to safeguard its future as best as it can, while simultaneously protecting against the worst-case scenario'.[84] As evidence of this, in September 2023 Tuvalu completed the process of amending its definition of statehood in its constitution to account for either direction in which it might redevelop itself, despite rising sea levels.[85] The new definition stresses that the state of Tuvalu shall remain despite the impacts of climate change or anything else that will affect its physical territory.[86]

Taken together, this demonstrates how the imaginary of a digital Tuvalu as a speculative Indigenous future adopts existing (western) notions of the virtual state and related technological imaginaries (i.e. the metaverse discourse) but links them to Indigenous Tuvaluan notions of territory, sovereignty and identity, each considered as relational and dynamic.[87] At the heart of the digital Tuvalu proposal is the idea of mapping complex relations between people, ancestors, stars, the ocean and its islands, in virtual space, within the specifically Tuvaluan concept of *fenua*. The networked, relational character of virtual space might make it possible to translate some elements of *fenua* philosophy into the virtual realm. At the same time, geolocation technologies could allow it to link this virtual space with the physical homeland.

Like other Indigenous philosophies around the world, Tuvaluan philosophy is simultaneously ancient, dynamic and lived, coexisting with and working around and between the Tuvaluan state.[88] *Fenua* allows for a more relational concept of territory and the state. What might now be called territory in a state-centric

[83] Harrington, 'The eternal return', p. 10.

[84] Mortreux, 'Finding hope'.

[85] ConstitutionNet, 'Tuvalu amends constitution to protect its statehood should its territory disappear due to rising sea levels,' 19 Sept. 2023, https://constitutionnet.org/news/tuvalu-amends-constitution-protect-its-statehood-should-its-territory-disappear-due-rising-sea.

[86] After this article was written, in November 2023, Tuvalu signed a treaty with Australia called the *Falepili Union*, which commits Australia and Tuvalu to work together 'in the face of the existential threat posed by climate change', recognizing that 'the statehood and sovereignty of Tuvalu will continue, and the rights and duties inherent thereto will be maintained, notwithstanding the impact of climate change-related sea-level rise'. The treaty prioritizes the 'desire of Tuvalu's people to continue to live in their territory where possible', while also establishing 'a special human mobility pathway' for citizens of Tuvalu to live, study and work in Australia. The treaty stipulates that Australia shall 'provide assistance to Tuvalu in response to a major natural disaster', but also that Tuvalu 'shall mutually agree with Australia any partnership, arrangement or engagement with any other State or entity on security and defence-related matters'. Not yet ratified, the treaty has drawn criticism in Tuvalu and the region for implicating Tuvalu's sovereignty in Australia's geopolitical interests in the region.

[87] Hau'ofa, 'Our sea of islands'; Stratford, Farbotko and Lazrus, 'Tuvalu, sovereignty and climate change'.

[88] Maina Vakafua Talia, *Am I not your* tū akoi [neighbour]*? A Tuvaluan plea for survival in a time of climate emergency*, PhD diss., Charles Sturt University, 2022, https://researchoutput.csu.edu.au/en/publications/am-i-not-your-tuakoi-a-tuvaluan-plea-for-survival-in-a-time-of-cl.

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system was once, before colonization, fully understood in Tuvalu as the land and sea of the *fenua*. Within Tuvaluan *fenua* philosophy, which was made to coexist with externally imposed concepts of statehood and territory following colonization, the relationality of people and place is only fully understood when it is also seen as having a third, spiritual, aspect. Land and ocean speak with their people as a spiritual form, and people in turn look after the land and ocean. Thus, any threat to 'territory' is more fully understood as a threat to land and ocean, people and their spirituality, which are all inseparable within Tuvaluan *fenua* philosophy.

Through this relational lens, Tuvaluan *fenua* philosophy is important in understanding the specific context in which Tuvalu is reimagining and appropriating digital and climate imaginaries. Digital adaptation, specifically, does not imply letting go of connections with the seas, surroundings, or parts of the territory that may remain, but instead represents a way for Tuvalu as a nation and its spiritual connections with people and place to remain intact through language, knowledge, culture, ocean, (virtual) surroundings and other socio-material dimensions of its *fenua*.[89] The proposal for digital adaptation should in that context not be seen as separate from Tuvalu's wider mitigation and physical adaptation policy planning, including Tuvalu's efforts to fix its EEZ, as a way to maintain livelihoods as well as spiritual connections to the seas. Its suite of adaptation policies, covering both physical and digital adaptation, are one and the same—*fakafetauiga*—which can be translated as 'to adjust', 'change to fit' or 'harmonize', relational and not compartmentalized, in *fenua* philosophy.[90]

Digital state preservation: reclaiming agency in an age of climate loss

Te Ataeao Nei signals, we argue, a new model of digital state preservation in the Anthropocene which has far-reaching implications for international relations. The Anthropocene is not only an age of increasing entanglement and complexity, but also an age of irreversible loss. As Dahlia Simangan argues, the radically uncertain futures of this epoch cause existential anxieties, 'or what Rumelili described as being "unsettled, unable to keep up with change, and experiencing a loss of Self and meaning"'.[91] Our case-study has shown that this existential anxiety also affects nation-states whose territories, populations, cultures, heritage, valued ecosystems and native species are threatened by global warming and other anthropogenic environmental changes. In a world of accelerating, unmitigated climate change, this will affect many countries around the world, beyond the Pacific region.[92] The paradigmatic case of digital Tuvalu indicates how irreversible loss in the Anthropocene could intersect with digital technological transformation. As we argued in the last section, we should understand this proposal for a virtual state neither as a policy programme nor as a concrete technological plan. Rather, Tuvalu's specula-

[89] Tafue Lusama, *Vaa fesokotaki—a theology of God for a new Oceanian climate change story* (Suva, Fiji: PTC Press, 2022).
[90] Lusama, *Vaa fesokotaki*.
[91] Simangan, 'How should IR deal with the "end of the world"?', p. 2.
[92] Eckersley, '(Dis)order and (in)justice in a heating world', p. 117.

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tive strategy of digital state preservation can be seen as an attempt to counter the dominant future imaginary that seems to know only one possible outcome: the disappearance of Tuvalu as a sovereign state. Drawing on the literature on postcolonial state formation and cyber statehood, we argue that one can distinguish three intersecting dimensions of digital state preservation: pragmatic, performative and geopolitical.

First, digital state preservation can be understood as a *pragmatic response* to the challenges posed by climate change and other anthropogenic environmental threats to the functioning of states and their bureaucracies. In many regions, climate change and its effects will make it harder for states to maintain critical governance functions and administrative tasks, thereby diminishing the output legitimacy of governments and fostering state fragility. Furthermore, affected populations may find it harder to maintain local traditions, cultures and knowledges. At a pragmatic level, digital state preservation thus refers to the digitization of administrations and state institutions to maintain governance functions under extreme climate change scenarios.[93] The digital archiving of local knowledge, cultures and traditions to prevent their loss from climate change follows the same pragmatic rationale: 'Anything that you can think of in terms of data that is collected in Tuvalu, it can all be uploaded onto the digital twin.'[94] At this pragmatic level, digital state preservation follows a logic of *preparedness* that we also know from contexts such as disaster-risk reduction and resilience-building.[95] Radical ownership of the future in this sense means being prepared for and thinking through possible worst-case scenarios: 'This is what we are trying to teach our people, get them ready to face the unexpected.'[96]

Second, the programme also has an important *performative dimension*. This is about the nation-state of Tuvalu as an imagined community with a collective identity. As described in the theory-focused section of this article, statehood is based on a variety of performative practices—including symbols, icons, rituals and other visual practices. In a digitally mediatized world, this performative dimension of the state is increasingly shifting into online space. Practices of online nation-branding are a case in point. Moreover, during the COVID–19 pandemic, many diplomatic practices took place in virtual space. This applied not only to negotiations and exchanges between government members, but also to symbolic appearances by the state. A good example is the video launch of 'virtual Tuvalu' at COP27. This performative dimension is central to the idea of a deterritorial state: since the diaspora population of Tuvalu could be geographically dispersed into other nation-states, maintaining a collective identity would become a major challenge. Building on the notion of *fenua*, the virtual state envisioned by the programme would enable a mobile, and likely dispersed, Tuvaluan diaspora to

[93] See for example Fainu, 'Facing extinction'.

[94] Simon Kofe, quoted in Lilian Bernhardt, 'The first digital nation', *The Long Now*, 25 Jan. 2023, https://longnow.org/ideas/the-first-digital-nation.

[95] See for example Jon Coaffee, 'Protecting vulnerable cities: the UK's resilience response to defending everyday urban infrastructure', *International Affairs* 86: 4, 2010, pp. 939–54, https://doi.org/10.1111/j.1468-2346.2010.00921.x.

[96] Rev Fitilau Puapua, quoted in Fainu, 'Facing extinction'.

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maintain connections with its community and homeland via social network ties.[97] The performative function of digital state preservation is thus both inward and outward: internally, it enables the preservation of a common identity through virtual relationships among Tuvaluans and shared national symbols and traditions; externally, it involves virtual performances that increase the international acceptance of (a deterritorial) Tuvalu as a legitimate state.

Third, digital state preservation has an important *geopolitical dimension*. The first two dimensions aim to maintain *de facto,* effective sovereignty, by preserving administrative services, cultural heritage and national identity in the face of the climate crisis. On the other hand, the third dimension of the programme aims to safeguard the *de jure* sovereignty of the state, which has far-reaching implications for international relations and international law. With its Future Now programme and the underlying notion of *fenua*, Tuvalu challenges existing international norms of sovereignty and territoriality. The programme challenges what conventionally is seen as a state, imagining new and relational possibilities for what a state can be in a scenario of extreme climate change impacts making physical land uninhabitable. By linking virtual networked space with physical space using spatial computing and related emerging technologies, Tuvaluan territory would become differently located (in cyberspace) and fixed (as a permanent EEZ) at the same time. The concept of sovereignty would become detached from Tuvalu's current physical land territory. However, it would not become entirely deterritorialized. Sovereign claims for the country's EEZ would remain untouched, and the ocean would enact Tuvalu's sovereignty. At a geopolitical level, the programme is therefore not so much about the performativity of the state, but about representation. Representation is to be understood here in the double sense of the word: as depicting something (as in the German verb *darstellen*) and as standing in for something (as in the German *vertreten*). In the words of Kofe:

> Our hope is that we have a digital nation that exists alongside our physical territory, but in the event that we lose our physical territory, we will have a digital nation that is functioning well, and is recognized by the world as the representative of Tuvalu.[98]

In sum, the proposal for a digital Tuvalu illustrates the fundamental nature of change required to deal with the challenges of the Anthropocene, including climate loss and state extinction. At the same time, the proposal also points to the contradictions and conflicts that might arise from the combined processes of global anthropogenic change and digital transformation.

Conclusion

The starting-point of this article was the proposal by the government of Tuvalu to move their state into virtual space should its national territory become uninhabitable due to climate change. At first glance, the idea of a virtual state may seem

[97] See Navarro, 'Tuvalu digital nation'; Fainu, 'Facing extinction'.
[98] Kofe, quoted in Bernhardt, 'The first digital nation'.

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disturbing and far-fetched. But a number of technological dystopias of the past have long since become reality—and seem natural in many ways. Against this backdrop, we view the proposal for a virtual Tuvalu as an imaginary that opens up a speculative space. For the government of Tuvalu, this speculative space enables the exploration of strategies for reclaiming agency in the face of existential catastrophe.

We have used the proposal for a digital Tuvalu as a paradigmatic case to reflect on the juxtaposition of climate loss and digital transformation in the Anthropocene. Key to this juxtaposition is how the idea of a virtual, deterritorial state is linked to the Tuvaluan Indigenous philosophy of *fenua*. *Fenua* links land, people and culture in a relational understanding of territory and sovereignty. The proposal for a digital Tuvalu, then, envisions mobilizing emerging digital technologies to rebuild Tuvaluan *fenua* in virtual space and thereby regain agency in the face of existential climate threats.

Taken together, our article demonstrates how Digital Tuvalu puts forward a new model of digital state preservation that has profound implications for how we see and understand international relations and climate loss. By drawing on Indigenous and, in particular, postcolonial island epistemologies, key concepts of our international world order in the Anthropocene are becoming further pluralized and are increasingly seen through a relational perspective. As the case of Digital Tuvalu shows, the state and state sovereignty are not just about physical territory, but also about a state's relations to the seas, its peoples, culture, knowledge and ancestors—just as the digital endeavours and climate imaginaries are plural, actively connecting the human and non-human, life and the spiritual world. This relational thinking allows us to think more creatively and inclusively about what digital state preservation, and international relations more generally, can mean under the condition of the Anthropocene.

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