

## ADVANCED REVIEW

# Climate change reception studies in anthropology

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## Abstract

The past decade has seen increased anthropological attention to understandings of climate change not only as a biophysical phenomenon but also as a discourse that is traveling from international policy making platforms to the rest of the planet. The analysis of the uptake of climate change discourse falls under the emergent subfield of climate change reception studies. A few anthropological investigations identify themselves explicitly as reception studies; others only mention the term with little explanation. Our review discusses a fuller range of anthropological studies and ethnographies from related disciplines that treat climate change as a discursive reality, which is not independent from how it is intimated through close observations of the environment. The following themes emerged: language and expertise; place and vulnerability; modernity, morality, and temporality; alterity and refusal. The review suggests that the interaction of observation and reception is still not well understood, and that there is scope for more systematic methodological and theoretical synthesis, taking lessons into account from geographies of reading and empirical hermeneutics. By exploring the hermeneutical problem of upholding scientific integrity while being open to other ways of knowing, climate change reception studies' emancipatory potential lie in opening up knowledge spaces for multi-directional and democratic approaches to living (with) climate change. In closing, we propose an interdisciplinary research agenda highlighting the potential generativity of *translation* as an idiom for theory and praxis relating to how people come to know climate (change)—through both perceptual engagement with the natural world and interpretations of discursive manifestations.

This article is categorized under:

Social Status of Climate Change Knowledge > Sociology/Anthropology of Climate Knowledge

## KEYWORDS

anthropology, climate change discourse, knowledge encounters, power, reception studies, translation

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## 1 | INTRODUCTION

The beginning of anthropology's recent phase of engagement with weather and climate change over the past two to three decades can largely be characterized by a preoccupation with *observation studies* (Baer & Singer, 2014; Crate, 2011; Crate & Nuttal, 2009).<sup>1</sup> The central focus of observation studies is to understand how people around the globe observe—and also perceive, experience, give meaning, adapt, or respond to—changes in weather and climate patterns (Barnes et al., 2013, p. 541; S. J. Fiske et al., 2014; Peterson & Broad, 2009). Since Peter Rudiak-Gould's (2011) call for further engagement with *reception studies*, there has been growing anthropological attention to understandings of weather and climate that come not only from direct sensorial, or first-hand observation of weather and other effects of climate patterns. In an increasingly interconnected world, understandings of weather and climate also come from indirect, or second-order information, “mediated by science” (Rayner, 2003, p. 280) and received via communicators, brokers and translators including scientists, journalists, non-governmental organisations (NGOs), consultants, churches, governments, and activists. The last decade has seen a growth in social studies of the reception of climate change as a scientific narrative, discourse, or idea (Hulme, 2008, 2009; Jasanoff, 2010; Lahsen, 2008), which is “traveling” (S. De Wit, 2018; Said, 1983; Weisser et al., 2014) from conventional “centers of calculation” (Latour, 1987) and international policy making platforms to the rest of the planet. The appreciation of a new “global planetary imaginary” (Hastrup, 2013b) calls for a renewed research agenda that explores climate change not only as a lived atmospheric experience, but also as a linguistic “token” and “form of life” (Callison, 2014, p. 11).

The idea of climate was not invented with the birth of modern science, but played a central role in discourses about human civilization for millennia (Barnes & Dove, 2015; Dove, 2014, pp. 1–2; Glacken, 1967; Hulme, 2015a, 2015b). An array of conditions enabled the emergence of the contemporary idea of climate change at the international level. While public concern came in the wake of the environmental movement in the 1960s and 1970s, the idea of a global climate only received widespread public attention as a viable public policy object after the fall of the Berlin wall in 1989 (and a severe US drought in 1988). It became an idiom of “one-world” international relations (Rayner, 1994), as new knowledge infrastructures facilitated “thinking globally” about climate change (Edwards, 2010). A “politics of the earth” (Dryzek, 2012) emerged and climate change gained worldwide recognition at the 1992 Earth Summit (United Nations, 1992). Rayner and Heyward (2014) draw attention to “the political work that *the idea of nature* is calling upon to *perform* here, not least because of the light it casts onto different ways in which climate change is perceived in different parts of the world” (our emphasis, Rayner & Heyward, 2014, p. 131). The idea of global climate change increasingly gained political potency, with implications for North–South relations as the Global South has become, once again, “the locus of Western moral concern” (Daniels & Endfield, 2009, citing Cosgrove, 2008).

Climate change reception studies in anthropology have contributed to understanding contextual factors through empirical examples and ethnographies of the uptake, translation, and/or rejection of scientific climate discourse and information in different cultural contexts. To open new avenues for research and critical interdisciplinary reflection, we ask in this review what we can learn by bringing these ethnographic approaches into conversation with geographies of reception, empirical hermeneutics, and literary scholarship—fields that have a longstanding history of dealing with the reception and dissemination of texts. For this narrative review, selection of materials has been informed by author experience and existing theoretical currents, and analysis based on qualitative interpretation (Hulme, 2018). Our initial review process (including Web of Knowledge/Science database keyword searches for “reception,” “climate,” “anthropol\*,” “ethnog\*”) revealed that only a few anthropological investigations identify themselves explicitly as “reception studies,” and some only mention the term with little explanation. We therefore expanded our selection to a fuller range of anthropological studies and ethnographies from related disciplines that either directly refer to reception (with respect to climate change) or indirectly engage with it, according to the approaches defined above. To ensure coverage of key salient works, this included using Google Scholar searches for texts citing Rudiak-Gould's (2011) call for such studies; and reviewing those texts described as reception studies in the American Anthropological Association's Climate Change Task Force report (S. J. Fiske et al., 2014). All in one way or another treat climate change as a discursive reality, which is not independent from how it is intimated through close observations of the environment.

Our analysis highlights the following themes: (1) understanding reception, (2) locating reception, (3) moralizing reception, and (4) pluralizing reception. The review suggests that the interaction of observation and reception is still not well understood, and that there is scope for more systematic methodological and theoretical synthesis, taking into account lessons from the field of empirical hermeneutics, which explores text and “ordinary reader” in dialectical relationship. By combining observation with reception, two different modes of apprehension are brought together, the “active perceptual engagement with components of the dwelt-in-world” (Ingold, 1993, p. 40), and *interpretations of the*

idea of climate change.<sup>2</sup> While these modes are generally studied in isolation, our review suggests growing evidence that their interaction has an important influence on whether and how climate change is rendered meaningful and actionable. In closing, we propose a forward-looking interdisciplinary research agenda highlighting the potential generativity of *translation* as an idiom for theory and praxis relating to how people come to know climate—through both the perceptual engagement with the natural world and interpretations of discursive manifestations—as part of meaning-making and world-making.

## 2 | WHAT ARE RECEPTION STUDIES?

Our starting point for this review is Rudiak-Gould's definition of climate change reception studies as attending to: “the acquisition of climate change information via media, educational, governmental, NGO, or other channels that disseminate the scientific notion of anthropogenic global warming” (Rudiak-Gould, 2013a, p. 7). He references historical geographer Bravo's (2009) call for “geographies of reception” that build on histories of the translation and understanding of scientific texts in different contexts and languages (see also, Rupke, 2000). The basic argument here is that, as historian and geographer David Livingstone makes clear, “*where* scientific texts are read has an important bearing on *how* they are read. This realization points to a fundamental instability in scientific meaning and to the crucial significance of what might be called located hermeneutics” (Livingstone, 2005, p. 391). The prioritization of contextual interpretation in this idea of reception must be understood in light of the paradigm shift from text- to reader-centered hermeneutic approaches that took place in the 1970s, after Gadamer and his student Jauss called attention to the neglected but influential role of the reader and their “horizon of expectation”<sup>3</sup> (Gadamer, 2004; Jauss, 1982; Jauss & Benzinger, 1970). The “turn to reader” asked what readers themselves do with texts, yet faced criticism that a lot was spoken *about* the reader, implying an ideal or model—implicitly, a well-educated, Western reader (H. De Wit, 2012, p. 8)—while the reader was rarely engaged in conversations and empirical research was nearly absent (Jauss, 1982). Hence, interpretive disciplines shifted their attention to the so-called “empirical reader.” Notably, cultural theorist S. Hall (1980) developed the communication model of encoding and decoding as a form of literary analysis in media studies. Hall focused on the active role of the reader/viewer in creating meaning, exploring possible degrees of hegemony, negotiation, and opposition (1980). Owing much to the work of Clifford Geertz (1973, 2000), interpretive anthropology moved beyond hermeneutics towards “thick descriptions” of empirical observations with a stronger focus on power relations developing along with practice and discourse theory (Ortner, 1984).

The historical tendency to neglect audience agency has also affected the field of climate/science communication. Reflecting on a reception controversy around a paper published in *Nature Geoscience* (R. J. Millar et al., 2017), linguist and sociologist of science Brigitte Nerlich (2017) notices that much has been written about the production and interaction aspects of climate change knowledge and information, but a focus on reception (reading/interpreting/understanding) is nearly absent. Audience studies tend to center around tailoring messages to implied readers, rather than considering the possibility of oppositional readings (S. Hall, 1980; Nerlich, 2017). Another trend in climate change communication studies seeks to improve scientific literacy among lay audiences (Bostrom et al., 2013; Moser, 2010, 2016)—an approach seemingly underpinned by what has been termed the (cognition)-deficit model (e.g., R. Millar & Wynne, 1988), also implied in certain models of public understanding of science or public education (Callon, 1999). This assumes that the lack of scientific understandings requires correction through provision of more information and better education (Eden, 2010; Nerlich et al., 2010, p. 99; Rayner, 1992, p. 85). Thus while communication studies are firmly rooted in reception studies, the policy and research realms of climate change/science communication have not escaped this cognitive-deficit trend (Dudman & de Wit, 2021). Like the modern hermeneutical paradigm, our approach to reception studies diverges from this unidirectionality and opens up a text and reading dynamic to scrutiny. By exploring the moment of appropriation (Ricoeur, 1976, pp. 43–44) the emergence of multiple possible meanings can be accounted for and appreciated as a fruitful moment (Gadamer, 2004, p. 271).

The hermeneutic commitment to understanding “interpretive communities” and the collective character of reception (Fish, 1989, pp. 141–142) is well-aligned with anthropological attention to cross-cultural translation. Many social scientists have argued that (western/industrial) science is only one “mode of existence” (Latour, 2013) which, as “a source of definitive prescriptions” for responding to climate change, is inadequate and needs to be complemented with a focus on how this science is interpreted and translated (Finucane, 2009). Here, anthropology's tendency to privilege ethnographic approaches and social dynamics over methodological individualism, and to center analyses of the production of meaning and/or negotiation of power in cultural encounters (Callison, 2014; Di Giminiani & Haines, 2020;

Fairhead & Leach, 1996; Tsing, 2005; West, 2005), departs from many other communications and behavioral sciences and offers potential new insights. The discipline's long and often difficult history of its own cultural encounters across the world opens up substantive and ethical questions about the circulation, contestation and rejection of climate science (Eguavoen et al., 2016; Goldman et al., 2011; Klepp & Chavez-Rodriguez, 2018; Weisser et al., 2014)—and of anthropological knowledge, although that is not our focus here. Attending to reception raises critical questions about “accurate” reading of a text, and brings notions of representation and truth-making to the fore: who holds the power and responsibility to translate what climate change means to whom, and whom do particular climate change narratives serve (Bravo, 2009)? How does climate change become meaningful in different contexts of reading and interpretation, and what are the implications in different times and places?

### 3 | FROM OBSERVATION TO RECEPTION IN CLIMATE ANTHROPOLOGY

In the aftermath of the climate determinism that held sway throughout the 18th and 19th centuries, an 80-year gap in the social sciences' engagement with climate has been observed (Rayner, 2003, p. 286). With the resurfacing of climate as a key area of investigation, anthropologists have sometimes continued to play a role in reproducing or giving further salience to victimhood (Hughes, 2013, p. 571) and other framings that have been criticized for determinism and reductionism (Bravo, 2009; Hulme, 2011, p. 247), such as the “Endangered Other” (E. F. Hall & Sanders, 2015, p. 443), and for isolating and homogenizing “culture” (Hastrup, 2013b, 2015). Guided by international policy frameworks and underpinned by globally circulating discourses combined with the increasing visible adverse effects of warming (Baer & Singer, 2014, p. 32), observation studies took shape as part of a new research agenda that came to be known as *climate anthropology* (Brown, 1999; Nelson & Finan, 2000) or *climate ethnography* (Crate, 2011; Dove, 2014). Anthropologists were tasked with bringing vulnerabilities into view through the discipline's distinctive ethnographic method. In Kirsten Hastrup's words, in many of these studies “(...) climate is no longer seen to make places but rather mostly to destroy them, with anthropologists called upon to mediate local understandings through their incomparable method of field-work” (2015, p. 146). The proliferation of observation studies can best be explained by the philosophical truism that we tend to find what are looking for. This does not mean to say that they are false but rather that reality tends to reveal itself through the perspectives with which it is engaged (Morgan, in S. De Wit, 2019, p. 25). Reception studies are as a timely enrichment to observation studies, as it moves beyond the narrow parameters of global climate change as crisis narrative.

As Peterson and Broad have observed, while anthropology has explored impacts and adaptations to weather and seasonal climate impacts in a wide range of locations, huge uncertainty remains in our understanding of “how the very public science of climate change will be perceived and acted upon, and the intended and unintended consequences of action” (2009, p. 81). The apparent historical shortage of reception studies in climate anthropology may be further explained by the tenacious conviction that imported ideas and institutions are not “authentically local” and thus fall outside of the realm of anthropological scrutiny (Rudiak-Gould, 2011, p. 10). The initial omission has arguably been eroded by increasing ethnographic encounters with the dissemination and interpretation of the *idea* of climate change, leading to research that asks “how, why, and when climate change does come to matter” (Callison, 2014, p. 10). While Marin and Berkes (2013) argue that the media play a marginal role in shaping local communities' perceptions of climate change, our review suggests that such traveling discourses can permeate and shape life far beyond the realm of environmental knowledge. The media and other sources of information can play a significant role in how people observe, perceive, and talk about climate and environmental change (S. De Wit, 2015; Lazrus, 2009, p. 240; Rudiak-Gould, 2011, p. 12). They are also implicated in broader shifts in epistemic and cultural politics related to globalization and modernity and experienced as loss of morality across the world (Jacka, 2009; Rosengren, 2018; Rudiak-Gould, 2009, 2014). The scholarship that explores traveling ideas, models, discourses, and technologies emerged to analyze such global entanglements and how change in one place is related to developments elsewhere, and is also instrumental in explaining why ideas take root in some contexts and not in others (Behrends et al., 2014, p. 1).

An increasing focus on the production, circulation, and negotiation of weather and climate knowledge has involved growing engagements between anthropology and science and technology studies (STS) (Broad, 2000; Haines, 2019a; Hastrup & Skrydstrup, 2013; Krauss & von Storch, 2012). The case is being made for anthropological contributions to global dialogue on the science and policy of climate change, for example in a 2013 programmatic statement noting that questions about receptivity to science are increasingly vital for productive debate (Barnes et al., 2013, p. 541). The WMO's Global Framework for Climate Services (launched 2011) has stoked recent interest in such approaches,

provoking critical reflections on such initiatives' epistemic politics, colonial legacies, and ethical implications (Haines, 2019b; Krauß, 2020; Nost, 2019; Webber, 2019). Increasing traction for anthropological work on radical alterity has created conditions for attention to different ways of being as well as knowing (de la Cadena, 2010; Descola, 1994; Holbraad & Pedersen, 2017; O'Reilly et al., 2020; Povinelli, 2001; Viveiros de Castro, 1998). Indeed, the American Anthropological Association's Climate Change Task Force report refers to reception studies as a component of the "interdisciplinary research frontier" of the ontological turn. The report describes reception studies as those that examine the "contrast between local and scientific understandings of climate," and notes that the anthropology of science can elucidate the "reception and use of climate science within policy and social settings" (S. J. Fiske et al., 2014, p. 68). This calls for approaches that avow diverse climate change knowledges, and take seriously the prospect that phenomena classified as climate—and climate change—can *be* (and become) different things with multiple valences and affordances across cultural contexts. Finally, the move towards reception has been buoyed by the realization that treating climate change merely as a sub-field of environmental anthropology risks obscuring crucial issues. Its implications are better understood in concert with anthropologies of "communication, of translation, of prophecy, of trust, of expertise, of blame, of historical narrative, of ideology, of religion, of homeland" (Rudiak-Gould, 2011, p. 12); of cognition and risk perception (Friedrich, 2018); of emerging social and legal orders, citizenship, migration and solidarity (Bravo, 2009; Klepp, 2018); and of capitalism, resource extraction and energy ethics (Cross, 2019; Howe, 2014; Stensrud & Eriksen, 2019).

## 4 | WHAT CAN WE LEARN FROM RECEPTION STUDIES?

### 4.1 | Understanding reception: Language, expertise, and performativity

Whereas climate communication efforts have developed from persuading people that climate change is real to persuading people to adopt practical measures to deal with it (Nerlich et al., 2010, p. 98; for a notable exception see Brüggemann & Rödder, 2020), reception studies have pursued critical analysis of language use, and the moral relationship between text and audience. We address here two levels of analysis at which anthropological studies of climate change reception have approached this, sometimes simultaneously: (1) what cultural meaning-making processes are elicited—through language and other expressive forms—in the reception and translation of climate change discourse; and (2) who produces texts and whom do climate change narratives serve? Thinking with language in a literal sense, some studies have explored what is lost and found in translation when climate change is rendered in different languages. In many cultures and languages, the word climate (change) encompasses much more than atmospheric conditions, including elements of the social, spiritual and moral dimensions of human society (e.g., Friedrich, 2018; Hofmann, 2018). This raises questions of who translates what for whom—"what stories tell stories" (Haraway, 2019)—and draws attention to "more-than-human sociality" (Tsing, 2013). Translation always involves transformation as it is not "merely a medium of transfer but a mental meeting point where barriers of language and cultures are crossed" (Rupke, 2000, p. 209); it is also an encounter inflected with power dynamics and asymmetries (Asad, 1986).

The history and politics of language and expertise are crucial to understand the reading dynamics within which reception takes place. Languages can develop into hegemonic systems of expression and reflect historical and political trajectories of domination and subjugation. For example, technical terms translated by experts may remain largely incomprehensible to the local population, as happened with the highly technical coinage of the term climate change in Swahili in Tanzania (Wisner et al., 2012). In Peru, Ben Orlove (2009, pp. 131–132) has demonstrated that the term "adaptation" serves international organizations far better than the local communities who feel the impacts most directly. A significant body of literature in climate anthropology is concerned with the language of expertise as it relates to the uptake of weather and climate information; this might be described as the reception of forecasts. From the 1990s, such work marked a shift in focus from concerns with local impacts towards more engagement with global information flows and the different ways of knowing that constitute "ethnometeorology" and "western science" (Cruikshank, 2006; Orlove et al., 2002; Peterson & Broad, 2009, p. 75). With increasing scientific understanding of the role of the El Niño Southern Oscillation (ENSO) and associated improvements in the skill of seasonal climate forecasts, anthropologists have worked alongside meteorologists, policy scholars, hydrologists, agronomists and modelers to explore the social/institutional factors affecting access to and use of climate predictions (e.g., Broad et al., 2007; Crane et al., 2010; Lopez & Haines, 2017; Orlove et al., 2004; Pennesi, 2011; Peterson et al., 2010; Rayner et al., 2005; Roncoli, 2006;

Taddei, 2013). These studies have exposed social, cultural, and political factors that underpin the reception of climate information, highlighting themes of risk perception, trust, (in)equality, authority, and accountability.

In a study of the workings of meteorology in northeast Brazil, Renzo Taddei (2013) argues that climate forecasts are socially performative (cf. Beck & Mahony, 2017). This claim builds on speech act theory (Austin, 1975), whereby an utterance made in a particular social context actively affects it or brings a new situation into being. Taddei considers not only how particular forecasts influence people's actions, but also how forecasting practices affect experiences of reality, and ideas about human agency in the universe. Meteorological forecasts, he argues, order the atmosphere in ways that can flatten space and time and thus constrain imaginative and creative ways of living in the world. Sarah Vaughn's (2017) study of climate adaptation projects in Guyana considers what is at stake when changes are observed that are not easily understood or explained from within conventional disciplinary bodies of knowledge. As such, she posits that an "inverse performativity" is at work, whereby material changes in the world force different types of expertise to engage with one another. Astrid Stensrud (2019), writing about an adaptation program in the Peruvian Andes, notes that encounters among different knowledges often fail, and might be better understood as "disencounters" that can exacerbate inequalities and depoliticize climate change by silencing its connections with inequality and poverty. Drawing on ethnographic research in Bangladesh, Camelia Dewan (2020, p. 13) examines the "strategic maneuvering" of development brokers, finding that competing knowledges can co-exist in a single person, sometimes manifesting in linguistic codeswitching. Georgina Endfield (2011) draws attention to the historical work of British geographer and meteorologist Gordon Manley, who particularized climate and infused studies of meteorology with culturally specific and spatially varied dimensions in post-war Britain, which has renewed significance as these particularities are increasingly being erased and replaced by the scientific metanarrative of global climate change.

## 4.2 | Locating reception: Vulnerability, adaptation, and knowledge encounters

Critical approaches to language and the production of discourse have also highlighted important interactions with the perception and construction of places (Kempf & Hermann, 2014). By drawing attention to histories of the "geographical imagination," Mahony & Randalls (2020, pp. 4–5) contend that it is crucial to understand the spatial practices by which scientific knowledge and its epistemic authority is produced, circulated, received and interpreted (see also Bravo, 2009; Livingstone, 2005). Anthropological climate reception studies have also engaged questions of space and place, recognizing that concern about climate change is not a straightforward reflection of environmental/biophysical dynamics; it is historically situated and constructed, leading to uneven attention to climate change across different scales, places, and ecosystems (Orlove et al., 2014, p. 249). These debates have been preceded by very similar discourses about nature conservation and other ecological concerns, often embedded in broader development discourses, framing the relationship between local knowledge and science (Agrawal, 1995; S. De Wit, 2018; Krauss, 2015). This has led to a selective (re)production of *vulnerable* places and people, salient for the Global South in general, and in particular for places now identified by the intergovernmental panel on climate change (IPCC) as "vulnerable," for example the small-island developing states, Arctic regions and sub-Saharan Africa (Niang et al., 2014). The IPCC has identified an "adaptation deficit" for Africa (Boko et al., 2007; IPCC, 2014)—a framing in which *adaptation* has become the only way forward for Africa's survival, giving way to an "adaptation imperative" (Smucker et al., 2015). The adaptation to climate change discourse, and interlinked notions of resilience and vulnerability, have received criticism for an unfolding hegemonic framing that largely obscures significant political effects (Gesing et al., 2014; Goldman et al., 2018; Klepp & Chavez-Rodriguez, 2018, p. 3; Paprocki, 2016; Taylor, 2015).

Anthropologists and others have cautioned against the disempowering potential and colonial continuities of discourses that foster dependency and (re)inscribe inequalities through an imaginative geography that renders project beneficiaries vulnerable, while seeking to transform them into model adaptation subjects (Carey, 2010; Davis, 2002; Li, 2007; Mahony & Randalls, 2020; Mikulewicz, 2020; Mitchell, 2002). This may be imposed through the reproduction of vulnerability in North–South relations (Eguavoen et al., 2016; Gesing et al., 2014; Morchain, 2018), and the imposition of hierarchies of "local" and "universal" (scientific) knowledge. The dominant politics of knowledge about nature and culture have roots at least in the colonial era (Dove, 2014, p. 2), sometimes with long histories of being co-produced through the interaction of people in positions of power and at the margins (Cruikshank, 2014; Orlove et al., 2015). Taddei (2013) demonstrates how the authoritative narratives that emerge from meteorology in northeast Brazil are intertwined with histories of marginalization and colonization. Scientific forecasts are seen by local communities as a product of the elite, and associated with state control (Taddei, 2012). When speaking about *located* knowledge

(Hastrup, 2015), it is important to recognize that “scientific” and “local” knowledge systems that are often thought of as separate, somewhat static entities embedded in distinctive epistemologies and ontologies, in fact have long histories of mutual influence (Cruikshank, 2001, 2006; Herrera, 2018; Orlove et al., 2015). Julie Cruikshank works through oral histories to uncover how climate science and detailed knowledge about glaciers have been mutually shaped during the colonial encounter between scientists, travelers, and local populations, arguing that, “local knowledge is not something to be discovered but is continuously made in situations of human encounter” (Cruikshank, 2014, p. 263). In Uganda, “Local people get entangled with scientists and mountaineers in their data gathering exercise” (Diemberger et al., 2012, p. 236), sharing visions and anxieties about ice loss and environmental changes that nonetheless rest on very different ideas about “climate” and “change” (Diemberger et al., 2012, p. 237).

While observation studies have yielded valuable insights, the approach has also arguably contributed to defining certain communities' accounts according to “western mythologies of island laboratories” (Farbotko, 2010); defining them as “canaries” (Hamblyn, 2009) or proxies (Bravo, 2009) of climate change that render the looming catastrophe visible. Two such ostensible “sentinel sites” are the Pacific Islands and the Arctic.<sup>4</sup> It is perhaps unsurprising that the majority of “reception ethnographies” come from these regions. This may in part reflect the influence of Rudiak-Gould's well-known Marshall Islands case; it also demonstrates the potential of research that addresses the social and political effects of the global construction of vulnerability where adaptation has emerged as a powerful assemblage (Klepp & Chavez-Rodriguez, 2018, p. 4).

The Pacific Islands are a case in point for exploring reception processes, not only because circulating climate change discourse is omnipresent, but also because it has led to denial of local actors' agency (Barnett & Campbell, 2010, p. 2; Lazrus, 2015). The climate change predicament for the Pacific is that it might become uninhabitable in the present century (Barnett & Adger, 2003, pp. 325–326). Sophie Webber (2013) notes that the Pacific Islands have seen an extraordinary “performance of vulnerability” to attract donor money, drawing on images of sinking islands and climate refugees (Farbotko, 2010; Farbotko & Lazrus, 2012),<sup>5</sup> notions of insularity and a “litany of smallness” (Hau'ofa, 1993). Official development discourses are underpinned by the idea that there is a general knowledge deficit among people in the Pacific, which forms an obstacle for effective adaptation (UNDP 2013, in Hemstock et al., 2018). Social scientists and educators have also been critiqued on the grounds of unilinearity and reductionism, for stating that faith and belief are obstacles in the pursuit of adaptation rather than a potential resource (Donner, 2007, p. 233; Fair, 2018, p. 2; Hulme, 2017; Kempf, 2017). Anthropologists have juxtaposed these macro-level narratives with ethnographies that draw attention to counter-narratives emerging at micro-scales in the encounter with this new “scientific prophecy” (Crook & Rudiak-Gould, 2018, p. 16; Mortreux & Barnett, 2009; Kempf, 2020).

Focusing too narrowly on the dangers of climate change may bring new vulnerabilities and unsustainable development practices into being; impacts may be felt as much if not more through the idea than the material changes in ecosystems driven by climate processes (Barnett & Adger, 2003). In Tuvalu, sensationalist discourses have led to discussions about displacement rather than careful consideration of adaptation options that would meet peoples' values and needs (Farbotko, 2005; Mortreux & Barnett, 2009); in Kiribati, adaptation thinking now informs political decision-making at all scales, leading to profound socio-economic changes as national budgets and aid programs are reframed (Klepp & Chavez-Rodriguez, 2018, p. 3), also invoking emotions of worry over land that already constitute “a stress factor that must be dealt with” (Hermann, 2017, p. 52). The World Bank funded Kiribati Adaptation Project (KAP), has been held up as a prime example of major investments being wasted because the local population's needs were insufficiently taken into account (Klepp, 2014; Webber, 2013).

Analyzing reception at different levels of engagement more closely, emancipatory potential comes into view when people appropriate these discourses. Hermann and Kempf (2018), exploring reception in Kiribati through songs, demonstrate that while the external discourse of climate change as an existential threat has become hegemonic—“a rising ocean that causes more and more land to be flooded” (2018, p. 22)—the same discourse that has led to feelings of powerlessness (MacKenzie, 2004, p. 4) has become a fruitful resource endowed with “the power of anticipation.” It is the specific context of Kiribati's song culture, the authors argue, that ultimately renders this reading possible, thinkable and plausible (Hermann & Kempf, 2018, pp. 22–23). Such accounts suggest that when climate change is translated through locally meaningful repertoires (Fair, 2018; Hermann & Kempf, 2018; Hetzel & Pascht, 2017; Kempf, 2017), new readings may contain a “praxiological effect.” This recognizes that the creative ways in which Pacific peoples combine old understandings with more recent influences might lead to theological or ontological innovation (Rubow & Bird, 2016, p. 161; Salmond, 2017, p. 221).

Bravo's (2009) early connection of the “geography of reception” with climate impact narratives in the Arctic exemplifies the prevalence of polar regions as well as small island states as geographical icons of climate change impacts.

Bravo argues that dominant global narratives' contemporary focus on the Arctic and the people who live there as "intrinsically at risk" (2009, p. 256) limits the abilities of northern communities to participate meaningfully in policy responses. Emphasizing the 2004 Arctic Climate Impact Assessment's (ACIA) grounding in earth systems science, he calls for studies of its reception among varied audiences, and of its implications for questions of citizenship. The framing of Indigenous people in the Arctic through the lens of vulnerability and tradition has arguably impeded critical attention to the impacts of colonialism, shipping, and resource extraction (Cameron, 2012). Bravo highlights diverse civic spaces in which climate change and sea ice loss is observed, discussed, understood and mobilized: "the issue of climate change in Iqaluit is not just formed by observing the sea ice; people formulate their opinions by discussing movies, reading newspapers, and looking out over the bay when driving to work—as well as hearing what hunters observe out on the ice" (2009, p. 274). Cruikshank's (2006) engagement with storytellers in the Yukon also emphasizes the situatedness of local knowledge, and the complications that can arise when elders and scientists are concerned with the same issues but have divergent objectives and causal explanations.

Like Bravo, Callison (2014) examines Alaska as one of the key sites where climate change is experienced and, at least since the ACIA publication, acknowledged—in the UN Framework, for example. In her terms, the ACIA represents a "hybridity of expertise," bringing "traditional knowledge into constructive relations with various scientific fields" (2014, pp. 54–55; cf. Schnegg, 2019). In the context of climate change, and the particularities of science in the Arctic, science is here a "translator of relational knowledge" (2014, pp. 54–55); a discourse with its own vernacular. Callison highlights the role of Indigenous activists and spokespeople in translating traditional knowledge, science, and claims to self-determination.<sup>6</sup> While visions of the Arctic as early warning system (Bravo, 2009, p. 257), witness, canary, bellwether, barometer, or example of crisis for the rest of the world (Callison, 2014, p. 55; Diemberger et al., 2012, p. 232; Marino & Schwritzer, 2016) characterize its utility as viewed from "outside," the framing and use of the report by Inuit leaders not only added traditional knowledge as "evidence" to support emerging scientific consensus but also "tie[d] the Arctic region to Arctic peoples and specifically to the Inuit" (Callison, 2014, p. 55). Hastrup's ethnographic work in Greenland also opens up questions of multiple agencies in emergent forms of knowledge. *Sila*—the life force of the Arctic landscape—demands acknowledgement of ice as an argument in itself, in terms of its effect on histories, theories and experiences of the Arctic (Hastrup, 2013a). She shows how early scientific iterations of "glacial theory" were assembled from situated observations and planetary science. Her account reveals that it is not only the *narratives* of climate change that are received in influential ways in the Arctic—the material scientific practices of ice-core drillers are also producing climate histories.

We found remarkably few (explicit) reception studies in Africa, perhaps due to the perception in international discourse that climate change is the biggest 21st century development challenge (Ombati, 2017). The largely unquestioned adaptation imperative (Taylor, 2015) might unwillingly lead to a reproduction of old development narratives and doomsday scenarios pertaining to Africa (Roe, 1998, p. 5)—resulting in predominantly problem-solving oriented approaches. The geography of reception studies warrants scrutiny of why they emerged in specific regions over others. It also opens up avenues for further comparisons and considerations of *where else* insights might be revealed, for example: in regions of Africa (S. De Wit, 2018; Kwashirai, 2019; Sheridan, 2012); in Antarctica (O'Reilly, 2017); in modeling labs, training workshops, and expert forums (Haines, 2019a; Lahsen, 2005, 2016); and with recognition of multiple, dynamic human and non-human agencies.

### 4.3 | Moralizing reception: Modernity, temporality, and horizons of expectation

The best-known case study of climate change reception in anthropology comes from the Marshall Islands, based on the work of Rudiak-Gould. His ethnographic work has brought Mary Douglas' work on Cultural Theory of risk (Douglas, 1992, 2013; Douglas & Wildavsky, 1983) into conversation with literature on "trajectory narratives" of progress and decline—moral visions for a society's future (Rudiak-Gould, 2013a, p. 8). Cultural Theory explores how particular kinds of danger come to be selected for attention and posits that risk perception is a social process: people select their awareness of certain dangers to conform to a specific way of life (Douglas & Wildavsky, 1983, pp. 6–8; Rayner, 2003, p. 288). A trajectory narrative is about "whether a society or the world is believed to be upward or downward bound, and, if downward, who is to blame for this trend" (Rudiak-Gould, 2014, p. 143). Although situated in a non-Western setting, Rudiak-Gould (2014) speculates that the trajectory narrative as "prior commitment" might also be applicable to Western contexts, and more convincing to account for public (dis)belief, concern, blame and response,



than the dominant ideological stances that have been explored so far, such as just-world belief, system justification, and liberalism/conservatism.

Rudiak-Gould explores the reception of climate change through a constellation of local ideas about cultural decline, or “modernity the trickster”: “an impressively mighty yet morally problematic America and its modernizing influence, powerful but untrustworthy scientists, and an ancestral Marshallese tradition under siege by internal imitation of these seductive and destructive foreign ways” (2013a, pp. 6–7). The Marshallese—and arguably all societies across the globe—hold their own pre-existing, dominant attitude that can largely account for (and thus predict) how climate-change will be received. Moreover, the collective belief in and worry about climate change among the Marshall Islanders can be explained through their tendency to adopt in-group blame, an idea that foregrounds the culpability of islanders themselves (Rudiak-Gould, 2014, p. 145; see also Eguavoen, 2013; Smith, 2007). There is a praxiological effect, as the islanders devote their attention to mitigation and reduction of their own footprint, instead of casting blame on other countries (Rudiak-Gould, 2014, p. 148). This tendency is not explained by pragmatism or ignorance, but through the narrative of decline—“a prime rhetorical touchstone in Marshallese society” (Rudiak-Gould, 2014, pp. 149–150) that builds on past experiences with outside influences when islanders have fallen prey to the seduction of modernity. A process of hermeneutical circulation occurs: an “old narrative” becomes endowed with new meaning. For the Marshallese, climate change discourse becomes an anti-modernist narrative of decline (Rudiak-Gould, 2014, p. 152).

Climate change skepticism has largely received academic attention from the field of psychology, rooted in the assumption that it stems from human universals rather than cultural particulars (Donner, 2007, 2011; Rudiak-Gould, 2013b). Drawing on historical and ethnographic sources, geographer Simon Donner (2007) suggests that reluctance to accept climate science is due to the idea that humans can control and influence the weather/sky is extremely novel as in ancient mythology, Indigenous belief systems and organized religions, the sky has always been the domain of the Gods, separated from the Earth (Donner, 2007). While Donner (2011) in a later publication concedes that the sky-dwelling Gods may not be a universal phenomenon, we also note that the separation of earth and sky might not be as distinct as suggested (see also Rudiak-Gould, 2013c). For example, in many Judeo-Christian belief systems, weather can manifest as an outcome of someone's or some group's behaviors, mediated by a deity (Douglas, 1992; Taddei, 2012, p. 256). In some Indigenous societies including Yanomami, Inuit, San, and Ihanzu, the group itself or its ritual specialists have roles in maintaining sky, society and atmosphere in place (Hitchcock, 2009; Kopenawa & Albert, 2013; Leduc, 2007; Sanders, 2003; Taddei, 2014). If climate is a mirror of societal behavior, and thus operates as “a direct source of moral feedback for behaviour, desirable or undesirable” (Hulme, 2009; Rayner, 2003, p. 278; van Beek, 1999), the idea that humans can be held accountable for bad weather or climate, albeit indirectly for moral ills, is not necessarily at odds with the (scientific) idea of anthropogenic climate change. Michael Schnegg and colleagues also observe that communities across the globe often merge scientific explanations with local knowledge in hybrid ways, because both blame humans for causing climate change (Schnegg et al., 2021).

Rudiak-Gould (2013c, p. 1703) makes a similar observation and argues that human influence on the climate is in fact intuitive and widespread—it is rather the idea of a *separate* meteorological realm that is the cultural oddity and historical novelty. Some anthropologists have analyzed cultural and societal contexts contributing to stances of climate change skepticism, for example citing the nature-culture dichotomy, and/or societal dynamics of environmentalism, science and policy, or religious conviction (S. Fiske, 2016; Lahsen, 2013; Norgaard, 2011; Rudiak-Gould, 2013c, p. 1710; Webster, 2013). Notwithstanding these exceptions, we are not alone in observing that rejection and denial have largely been under-examined or approached in unfruitful ways in the scholarly and policy literature (Fair, 2018; Hermann & Kempf, 2018; Kempf, 2017), for which a turn to questions of ontology alongside epistemology may prove instructive.

#### 4.4 | Pluralizing reception: Alterity, refusal, and change

The recent turn to ontology alongside reception in climate anthropology has largely been motivated by questions that seek to account for (radical) *alterity*, including refusal and change among the cultural and material worlds that shape and are shaped by perception and reception. How to make sense of varied agentive and relational qualities attributed to nature, and how they are constituted in and mediated through environmental and other material engagements (Dürr & Pascht, 2017; Kempf, 2017)? Crook & Rudiak-Gould's edited volume aims towards understanding of “the mutually constitutive relationship between cultural concepts and ecologies” and how they are newly combined through context-specific forms and action (Crook & Rudiak-Gould, 2018, p. 1). The authors invoke “living climate change”—not simply discussing “living *with* climate change” (2018, p. 1, emphasis in original), but pointing to “different forms, sources and

registers of knowledge [as they] are being brought into new relations through climate change, and combined and made living in particular ways” (2018, p. 2). In similar moves to dismantle static dualisms (external/internal, nature/culture, North/South), studies by Callison (2014), Kempf (2017, 2020), Burman (2017), and S. De Wit (2018) follow climate-change in a variety of manifestations on its travels. Employing the idiom of translation, these authors examine moments and places where climate is formed and assembled anew, revealing shifting positionalities of translators and readers, and the friction, multiplicity, instability, “ontological conflict” or “disobedience” (Burman, 2017) and transformation of meaning. In a special issue on the reception of climate change in Oceania, Kempf (2020) explore the rarely studied connection between Christianity and climate change in the Global South. Through rich ethnographies they bring into view a “polyphony” of interpretations, which attest to the importance of Pacific Christianities as resources for indigenous agency to co-construct new worlds (Kempf, 2020, p. 216).

What such studies share is the acceptance that different ways of being and knowing should be taken seriously, and that caution is warranted when hierarchies and purifications of knowledge and truth are pursued, often based on singular claims to scientific objectivity. Recent criticism of acts of purification aligned with the aforementioned cognitive-deficit model has furthered the rapprochement between reception and the anthropological subfield of ontology. This entails a commitment to transform the ethnographic mode of translation itself (Salmond, 2017, p. 220, 223; Viveiros de Castro, 2004); or to envisage how one might bring about better futures (Woolgar & Lezaun, 2013, p. 326). In Marilyn Strathern’s words: “Anthropologists are generally ... alert to the nontranslatability of different types of knowledge across conceptual universes while continuing to communicate that very sense of difference ... each perspective creates its own problematic—the question, then, is how does ‘one problem’ (climate change) emerge?” (in Diemberger et al., 2012, p. 239). Ethnographies that explore such emergent spaces seek to bring insight into the implications of the politics of knowledge (Yusoff & Gabrys, 2011, p. 522)—epistemology alongside ontology—by exploring movement, translation, friction, contradiction, incommensurability and equivocation, across different ways of knowing and being that are hybrid and plural (Schneeg, 2019, 2021), including across scientific disciplines (Bodenhorn, 2013; Povinelli, 2001; Taddei & Haines, 2019; Tsing, 2005), and in relation to the way that children in different places around the world learn engage with climate change (Irvine et al., 2019). Drawing on work with activist scientists and government actors, Hannah Knox (2015) proposes “thinking like a climate” as a way to move past explanations of how facts are established or challenged, and towards recognition of how a distinct “ontology of climate”—understood as a material process inseparable from social relations—frames political imagination and action.

The longstanding academic prevalence of a deficit model that renders “alternative” understandings of climate change (science) flawed, may explain why refusal has received relatively little attention (Fair, 2018; Kempf, 2017; Nunn, 2017). Based on his work in the Peruvian Andes, Dan Rosengren argues that indifference towards Indigenous perspectives can be attributed to “the modernist incomprehension of their ontological standpoints” (Rosengren, 2018, p. 609; see also Goldman et al., 2016). He compares two groups who dwell in a similar environment, but have adopted radically different views on climate change: the Indigenous Matsigenka who practices a typically Amazonian mode of subsistence, and the *colonos*—Andean migrants with a modernist ambition to open up the region to exploitation. Rosengren ascribes these distinctions in part to different understandings of nature. The *colonos* embrace scientific knowledge with faith that it will resolve the climate problem—an affirmation that becomes a marker of superiority to disassociate themselves from the Matsigenka. In Matsigenka mythology, however, embedded in an unstable and agentive universe, climate change is not a meaningful concept (2018, p. 614–616).

In her study among the Maasai in northern Tanzania, S. De Wit (2020) finds that, while the majority of the Maasai have converted to Christianity, climate change is translated through a constellation of old and new horizons of expectations. In Maasailand, rain is not only scarce but also extremely variable: hence, the future is a mystery that belongs to the domain of *Eng’ai*, which simultaneously means rain, heaven/sky and God:

I don’t know the meaning of science (...). But if these scientists are saying that climate change is happening, it may be true (...). But if those scientists are saying there is no God, they are wrong. (Maasai pastoralist, Tanzania, in S. De Wit, 2017, p. 247)

The Maasai rejection of climate science is not set in stone as the herder probes the conditions for accepting the story of climate change in alliance with his existing worldview. The crucial point here is that how texts are *explained* and translated, the power dynamics under which this occurs—and the possibility of a contested or “negotiated reading” (S. Hall, 1980)—are of vital importance for how they are received. It is possible to both believe in and reject parts of a new narrative: the explanation that God has nothing to do with climate change is refused, and can be seen as a

“Latourian double separation of the world”: a purification in which Nature and Culture are disentangled and God relegated to the margins (S. De Wit, 2018, p. 37; cf. Fair, 2018; Latour, 1993, p. 13). In Chuuk, in the Federal States of Micronesia, Rebecca Hofmann (2018) found that “climate-change” was largely a “non-topic”: the word *ééréni* invokes worries about the way people live rather than changes in the environment or climate (2018, pp. 50–51). Some Chuukese do not believe in climate science because the scientists do not believe in the Bible. Crucially, accepting and engaging with the science of climate change here seems to have more to do with trust in institutions than “faith in correctness” (Haines, 2019b; Hofmann, 2018, p. 54; Rayner et al., 2005; Rosengren, 2018, p. 608).

The biblical story of Noah (Genesis 6:9) has become exemplary for the idea that religion inspires climate denial in the Pacific, grounded upon the misconception that religion is antithetical to science, and thus a mere obstacle or instrument in the pursuit of adaptation (Gemene & Shen, 2009; Kuruppu & Liverman, 2011; Paton & Fairbairn-Dunlop, 2010; Rudiak-Gould, 2009, pp. 99–100).<sup>7</sup> Geographer Patrick Nunn has argued that the “side-lining of God” may in part explain the fact that over the past 30 years most interventions in the Pacific have proved “neither effective nor sustainable” (Nunn, 2017). Recent hermeneutical attention to the variety of re-readings of Noah draws attention to the refusal, plurality and partiality of climate reception that can co-exist within one society. Rejecting a reductionist reading of Noah’s “climate-skeptical story” in Kiribati, Kempf argues that espousing a relational ontology is a way to “do justice to the emic perspective of this minority [i.e. skeptics] of Pacific Islanders,” as it “opens up the possibility of conceptualising the agency unfolded by the Noah Story as the product of its reticulation with human and non-human actants” (Kempf, 2017, p. 23). What does a contextual reading of Noah and other climate stories look like if climate change, sea-level rise and cyclones—but also emotions—are treated as hybrids and actants, or assemblages in motion (Hermann, 2017; Kempf, 2017; Rubow, 2018; Rubow & Bird, 2016, p. 162)?

Through Biblical exegesis, Hannah Fair identified three different articulations of Noah’s flood rendered possible in the Pacific. Her fieldwork in Vanuatu revealed that people pluralize and navigate these different articulations through Indigenous knowledge and practice of *kastom* (Fair, 2018, p. 6). First, “the rainbow covenant” as the basis for climate denial (God promised Noah to never flood again); second, Noah as icon of preparation (that became possible after cyclone Pam); third, multi-species compassion (with those outside the ark). While the first reading reveals apparent antagonism between science and religion, the second deploys the icon of a resilient and resourceful Noah against the dangers of denial itself, using local knowledge (or science) and placing the responsibility on islanders to prepare for extreme events (Fair, 2018, p. 9). In the third reading, the islanders foreground the responsibility for climate injustice caused by industrialized nations (out-group blame). Against the common and simplistic interpretations of denial in the first reading, alternative interpretive strategies propose that *refusal* can be a form of agency that embraces continuity over radical rupture as envisaged in global discourses of disappearing islands (Fair, 2018, p. 9; Hermann & Kempf, 2018; Kempf, 2017, pp. 34, 43; Rubow & Bird, 2016). Recent theorizations of refusal as political and methodological, strategic and generative may be instructive (McGranahan, 2016; Simpson, 2014). The praxiological effect here lies in the act of self-determination—“the reclaiming of control over Pacific Island futures” (Fair, 2018, p. 9)—or in the idea of lived connectedness, a hope and “waiting faith” in the durability of the world (Rubow & Bird, 2016, p. 160). By taking the polysemic potential of scripture and other narratives seriously, unexpected forms of agency and alternative ways of constituting truth (too often obscured in pursuit of an accurate reading) may become apparent (Kempf, 2017; Rubow & Bird, 2016, p. 160).

## 5 | TOWARDS FUTURE CLIMATE ANTHROPOLOGIES: INTERDISCIPLINARITY AND PRAXIS IN TRANSLATION

The literature reviewed above demonstrates that although the field of self-identifying climate change reception studies in anthropology is not voluminous, it can be broadened to encompass a growing body of work that engages its major concerns. We have reviewed a range of approaches and studies that reveal different ways of thinking with and through reception as a concept that goes beyond a vision of a passive “receiver.” While some examples highlight how climate-change discourse and information shape life, culture, and power relations, others emphasize how histories of oppression, and existing norms and values shape the acceptance or (partial) rejection of information. Others point towards multi-directional processes of negotiation, co-production, appropriation and translation.

Reception studies largely share a commitment to move beyond the linear and monolithic idea that asks how scientific “texts” can best be explained or tailored to the public/local communities. A growing critique of epistemic purification in the name of the climate-change crisis has resulted in an explicit turn to the reader, similar to the paradigm shift

that took place in hermeneutics in the 1960s. As part of the broader aim of reception studies, empirical hermeneutics seeks to show the transcendence of a text by mapping the multiplicity of meanings that emerge when “ordinary readers” interpret a text, a practice that results in a “fusion of horizons.” This moment of interpretation is analyzed not as an obstacle to achieve “accurate” understanding, but is instead appreciated as a fruitful moment through which the hermeneutical problem (i.e., texts are polysemic) can be made insightful.

The “hermeneutical problem” of reception in climate anthropology may consist of the inherent tension between “maintaining fidelity to science and expanding beyond it” (Callison, 2014, p. 5), or finding the potential for “more-than-scientific yet not anti-scientific responses that are locally meaningful and morally compelling” (Fair, 2018, p. 119). On the face of it, “reception” has a somewhat passive and dualistic undertone (Kirsch, 2020; Schorch & Pascht, 2017, p. 110); we speculate that this has resulted in criticism that belies the field’s more complex generative shifts. Interpretation occurs through hermeneutic circulation between text and reader, implying a double transformation, as “lay audiences” discover new significances. By engaging with the theoretical background of reception, with empirical hermeneutics, and with anthropological insights into friction, (in)commensurability and translation, we have explored the possibility of taking the negotiated, agentive and generative dimensions of reception theory seriously, as a way to build better understandings of the multidirectional engagements and transformations that might be brought to bear. Thus, instead of moving beyond reception per se, we suggest there is potential for deeper interdisciplinary engagements around reception within and beyond the social sciences that incorporates material and symbolic realms of life. Following the linguistic turn, that invited reflection on the dialectical relation between “observer” and “observed,” reception studies further opens up scrutiny to the intimate relationship between texts (climate change in the form of information) and audiences (communities who interpret that information). Furthermore, recent debates relating to the ontological turn have drawn attention to the relationship between ways of knowing and ways of being that form part of communities’ horizon of expectations. Our focus on the socio-material resonances of translation—via STS as well as reception studies—is a call to recognize the “worlding” effects of knowledge negotiations and to reveal its political implications.

More thorough engagement with the methodologies employed in *empirical hermeneutics*—might prove valuable in developing a more systematic approach to understanding histories of reception, and developing cross-cultural and regional comparisons. This theoretical practice, analyses and compares what different interpretive communities do with (the same) text (in many cases the Bible). It has developed rubrics to understand what happens in the reception *moment* by paying attention to (1) circumstantial information about the group; (2) reading dynamics (who explains, receives, translates); (3) exegesis (how are texts interpreted); (4) appropriation (what the text means for readers’ lives); (5) praxis (the effect of reading) (H. de Wit, 2004). To understand cultural translation implicated in media and other forms of science communication, further interdisciplinary engagements may be sought between anthropology, media theory, and communication studies (Brüggemann & Rödder, 2020); STS-inspired approaches can enable reflection on science and climate as co-constituted with social, political, material and affective relations—illuminating how diverse forms of climate knowledge and ontology are integral to the reception of climate science and its public services and effects (Callison, 2014; Carabajal, 2018; Déri, 2014; Haines, 2019a; Knox, 2015; Krauss & von Storch, 2012). A located hermeneutics can explore the conditions within which in/commensurabilities emerge—not as an a priori condition but as the result of specific reading practices, histories and power dynamics—and ask how incongruences can be brought into fruitful “equivocations” (Viveiros de Castro, 2004) as they fuse in emergent shared knowledge spaces (Hastrup, 2015, p. 142).

As reflections on cultural translation have acknowledged, anthropologists are themselves deeply implicated in these processes and power dynamics, including those relating to environmental transformations and climate change (Asad, 1986; Callison, 2014; Di Giminiani & Haines, 2020; Mathur, 2017). Describing the birth of an initiative (Rising Voices) to foster social justice via intercultural collaboration among indigenous experts, earth scientists, ecologists, anthropologists, and others, Maldonado and Lazrus refer to the crucial and active roles of the (multiple) receivers of stories: “... stories do not innately become a conduit of change. A story is not just told, put out into the atmosphere, and change happens. There needs to be a receiver. There need to be many receivers, many who bear witness” (2019, p. 34). They note that anthropologists must recognize the privilege and the responsibility that comes with so often being the receivers of stories, and that meaningful collaboration and translation involves taking diverse knowledges seriously and cultivating trust, solidarity, responsibility, and the maintenance of relations that extend beyond project participants to much broader human and non-human constituencies (Maldonado & Lazrus, 2019). Nayanika Mathur (2017) posits that anthropologists are well-placed to take on the role of “climate translators,” by looking beyond explicit and conventional climate change narratives to illuminate wider historical, human and more-than-human relations that have explanatory power for understanding the current predicament. Others, too, might be considered translating subjects in the

explanation and production of social and material worlds, for example interdisciplinary practitioners (Taddei & Haines, 2019) and environments themselves (Di Giminiani & Haines, 2020).

This review demonstrates that attending to reception (whether using terminology of reception and hermeneutics or not) does not necessarily imply a shift from realism to constructivism; nor is it about “improving scientific literacy.” Rather, it can elucidate climate change as a complex and powerful field of knowledge practice that “comes to matter” in different ways to different people and groups (Callison, 2014), extending beyond nature-society dualisms (Dürr & Pascht, 2017). This knowledge is “located” (Hastrup, 2015, p. 142)—emergent in changing environments and “weather-worlds” (Ingold, 2010) as well as circulating and shifting through political and moral translations. It is therefore productive to consider it as a material, phenomenological, imaginative and discursive phenomenon. With the increasing hegemony and widespread circulation of climate science and discourse to shape worlds, reception studies’ emancipatory potential lies in opening up knowledge spaces for multi-directional and democratic approaches to living (with) climate change. Giving more prominence to understanding the values and contextual ways of knowing climate of various “audiences” that are brought to bear on climate change discourse as it powerfully circulates across the globe, will be vital for public participation and new interdisciplinary conversations.

## 6 | WEBSITES

- AnthFOR. “The Network for Anthropologies of Forecasting Weather and Climate.” <https://www.anthfor.org>
- Weather Matters. “Understanding the Human Implications of Climate Change.” <http://www.weathermatters.net>

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The authors have declared no conflicts of interest for this article.

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**Sara de Wit:** Writing – original draft (equal). **Sophie Haines:** Writing – original draft (equal).

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Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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## ENDNOTES

<sup>1</sup> For a noteworthy exception to this observation trend that highlights the importance of discourses, see Strauss and Orlove (2003).

<sup>2</sup> IPCC reports are only one instance of the circulation of climate-change-as-text, other textual renditions of climate change are circulating through policy documents and popular media, and further translated and interpreted by NGOs, governments, religious leaders, and so forth, which ultimately may be translations of translations and interpretations of translations, also through oral transmission.

<sup>3</sup> Instead of the more familiar term “prior commitments” (Jasanoff, 2010, p. 240), we employ Jauss’s term “horizon of expectation” [*Erwartungshorizont*] that was fundamental for his reception theory, which presupposes a certain world attitude but also a desire (Jauss & Benzinger, 1970, p. 13).

- <sup>4</sup> Others include the Caribbean and Indian Ocean islands, and the Sundarbans and other coastal areas of India and Bangladesh.
- <sup>5</sup> See Harms (2018) for an example from India.
- <sup>6</sup> Rudiak-Gould (2013b) notes that not just anthropologists but also some Indigenous activists have been strong advocates for the “visibilist” position that climate change is observable without scientific instruments/education, and that this standpoint is not uncontroversial. He sees it as primarily an elite position, taken by activists well-versed in climate change discourse, which may not represent more marginalized groups.
- <sup>7</sup> For Webster (2013), the Noah story also offers a fulcrum for conflicts between scientists/environmentalists and non-conformist Protestant Christians in a Scottish fishing village—the latter of whom saw climate change as a “demonic conspiracy”—a “false eschatology” and a heretical distraction from Christian salvation. Nonetheless, these two forms of millenarianism also offer points of articulation among different groups sharing experience of searching for signs of “the end times.”

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[A critical political ecology of human dimensions of climate change: Epistemology, ontology, and ethics](#)

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