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Digital Imaginaries, Lived Experiences, and Arctic Ocean Futures:
Between Global Representations and Situated Knowledges

Research Notes

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Digital Imaginaries, Lived Experiences, and Arctic Ocean Futures: Between Global Representations and Situated Knowledges

Laetitia Barbu^{*} & Yang Jiang[†]

Abstract

Digital environments increasingly shape how Arctic Ocean futures are imagined, represented, and discussed. Through social media, digital storytelling, video games, and immersive media such as virtual and augmented reality, representations of the Arctic circulate across diverse social, cultural, and geographical contexts, influencing understandings of environmental change, sustainability, governance, and development. Drawing on sociotechnical imaginaries (Jasanoff & Kim, 2015) and participatory culture (Jenkins, 2006), this research note examines how globally circulating digital representations of Arctic futures relate to situated forms of knowledge grounded in lived experiences, local ecologies, cultural practices, and long-term relationships with northern environments. Particular attention is given to the role of young people as participants in contemporary digital cultures who engage with both globally circulating imaginaries and locally grounded experiences. While digital environments can create opportunities for participation and alternative forms of representation, the visibility and influence of different perspectives remain shaped by unequal distributions of technological, economic, and cultural power. The paper argues that ethical collaboration and reciprocal engagement provide important frameworks for critically examining questions of representation, authority, and responsibility, and points toward practice-led, research-creation approaches as concrete sites for situated voices in discussions of Arctic Ocean futures.

Digital Imaginaries, Lived Experiences, and Arctic Ocean Futures

The Arctic and North Atlantic are imagined, discussed, and represented through a range of digital environments. Online platforms, social media, digital storytelling, video games, and

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immersive media such as Virtual Reality and Augmented Reality contribute to shaping how Arctic and North Atlantic places, peoples, and futures are understood. These representations matter because imaginaries – the collectively held visions, narratives, experiences, and assumptions through which people make sense of the world - influence public perceptions and engagement, decision-making, and future possibilities (Calogiuri et al., 2025; Weber et al., 2022). In this research note, digital imaginaries refer to visions of Arctic Ocean futures that emerge through the production, circulation, and interpretation of representations within digital environments and across different social, cultural, and geographical contexts, understood as a form of sociotechnical imaginaries shaped by digital media, participatory platforms, and networked communication. This perspective draws on Jasanoff and Kim's (2015) concept of sociotechnical imaginaries, defined as collectively imagined futures that shape understandings of technology, governance, and social change. “Representations” refers to the material and visual forms through which imaginaries are expressed in digital environments. Recent reviews demonstrate the continued relevance and expansion of this concept across diverse technological, environmental, and societal contexts (Hendriks et al., 2025).

As debates surrounding climate change, governance, resource development, and sustainability intensify, digital environments have become sites where Arctic Ocean futures are imagined as well. Digital media create opportunities for multiple representations of Arctic futures to circulate simultaneously, reflecting what Jenkins (2006) describes as a participatory media environment in which diverse actors contribute to cultural production and circulation. Yet participation does not necessarily translate into equal visibility or influence, and digital circulation remains shaped by asymmetries in access, visibility and communicative power (Mager & Katzenbach, 2021).

The growing influence of global digital representations raises important questions about visibility and knowledge production related to Arctic futures. The Arctic is frequently represented through narratives produced by governments, media organizations, corporations, cultural and creative industries, and research institutions located far beyond the region itself (Bravo & Sörlin, 2002; Young, 2017; Wilson Rowe, 2018). These representations circulate globally at a scale that local communities cannot easily match. As a result, dominant imaginaries of Arctic futures may become detached from the lived experiences, contextual understandings, and place-based knowledge of those most directly connected to Arctic Ocean and northern environments.

This research note examines how representations of Arctic futures circulating globally across digital environments relate to situated, place-based forms of knowledge and experience, with particular attention to the role of young people as participants in contemporary digital cultures. While focused on the Arctic Ocean, this paper also considers North Atlantic contexts, acknowledging the important role of North Atlantic communities and perspectives in broader discussions of northern futures. The ideas presented here were further developed during the authors’ UArctic Congress session exploring digital imaginaries and Arctic Ocean futures (Jiang & Barbu, 2026).

This paper is informed by the authors' practice-led work in design research and immersive media, considering how research-creation and participatory approaches might support situated voices in these digital landscapes. Digital environments and experiences can create opportunities for alternative perspectives, community storytelling, and locally grounded forms of representation. However, the visibility and influence of such representations remain shaped by broader asymmetries of power, resources, and audience reach. Ethical collaboration and reciprocal engagement are therefore considered here not as solutions to these inequalities, but as critical frameworks for questioning whose knowledge becomes visible, whose futures are imagined, and whose voices shape discussions of Arctic Ocean futures.

Digital imaginaries and Arctic Ocean futures

Digital virtual environments play an important role in shaping public understandings of the Arctic. The Arctic is continuously represented and reconfigured through circulating visual and narrative forms, including images, videos, interactive and immersive media content (e.g. documentary films, streaming series, social media content, globally circulating video games such as Minecraft, used for participatory mapping and storytelling, or Genshin Impact, presenting Arctic-inspired regions, and immersive VR/XR experiences through installations in museum contexts such as the XR nature experience Fixing Our Broken Planet - Visions of Nature at the Natural History Museum in London). These digital media do not merely communicate information about the Arctic; they also contribute to shaping imaginaries of Arctic futures. Through these representations, global audiences encounter narratives about environmental change, sustainability, resource extraction, technological innovation, and geopolitical competition in the Arctic. Young people engage with these representations through everyday digital media and participatory online cultures, positioning them at the intersection of globally circulating imaginaries and locally grounded lived experiences, ranging from mediated to direct environmental engagement. This intersection is particularly significant for young people, who will be most directly affected by the long-term consequences of how the Arctic will be shaped in the future.

These imaginaries influence how Arctic futures are envisioned. They shape assumptions about what the region is, what it might become, and which forms of intervention are considered necessary or desirable. In this sense, imaginaries are not merely descriptive; they actively participate in the construction of future possibilities. However, the production of imaginaries is uneven. Large media organisations, technology firms, entertainment industries, governments, and international institutions possess significant resources for creating and disseminating narratives at global scales, shaping how Arctic issues are understood. Communities living within Arctic and North Atlantic regions may contribute alternative perspectives, yet these voices frequently circulate within far more limited networks (Wilson Rowe, 2018; Bravo & Sörlin, 2002).

This imbalance is particularly relevant in contemporary discussions surrounding sustainability and environmental transition. Emerging scholarship on green colonialism highlights how externally generated visions of environmental futures may be imposed on northern regions without fully engaging local priorities, histories, or understandings of place

(Wilson Rowe, 2018; Whyte, 2017). Narratives of progress, innovation, and sustainability can mask underlying questions of power and representation.

Digital technologies do not necessarily eliminate these inequalities. Rather, they frequently provide new mechanisms through which dominant narratives are amplified or even embodied through virtual immersion. Unlike traditional media, digital environments combine circulation, participation, interactivity, and immersion, and enable forms of cultural production that extend beyond traditional institutional gatekeepers (Jenkins, 2006; Murray, 1997), enabling users not only to consume representations of Arctic futures but also to engage with, reshape, and co-produce them through interactive and participatory practices. However, such participatory affordances do not necessarily translate into greater visibility, legitimacy, or influence. These processes remain shaped by existing economic, technological, and cultural power (Couldry & Mejias, 2019; Gillespie, 2018).

Lived Experiences and Situated Knowledges

If digital imaginaries contribute to shaping visions of the future, lived experiences provide insight into how environmental change is encountered in everyday life. Imaginaries are shaped not only by political and technological visions but also by emotions, attachments, hopes, and anxieties that influence how futures are experienced and understood (Hughes, 2024). Across Arctic and North Atlantic regions, knowledge emerges through long-term relationships with marine environments, local ecologies, cultural practices, and community histories. Such understandings are deeply contextual and tied to the places in which they are produced (Haraway, 1988; Smith, 1999; Degai et al., 2021).

Situated knowledges offer perspectives that challenge generalised representations of the Arctic. Recent work in Indigenous futures thinking similarly emphasises the importance of community-led approaches to imagining and shaping futures grounded in local knowledge systems, relationships, and responsibilities (Cheok et al., 2025). They illuminate how environmental transformations are experienced locally, how communities adapt to changing conditions, and how social and cultural relationships influence responses to uncertainty. Rather than presenting a singular Arctic reality, they reveal a diversity of experiences that often remain hidden within broader narratives.

Importantly, situated knowledge should not be understood simply as local data that can be incorporated into pre-existing frameworks. It represents alternative ways of knowing and relating to environments. Their significance lies not only in the information they provide but also in the relationships, responsibilities, and histories through which knowledge is produced. Digital environments can support the visibility of such perspectives through collaborative storytelling initiatives, participatory media projects, and collaborative digital platforms. From the perspective of participatory culture (Jenkins, 2006), such practices create opportunities for communities and participants to become active contributors rather than passive subjects of representation. Yet visibility alone does not resolve deeper questions concerning authority and representation. Contributions of stories and experiences may not necessarily translate into

influence over how those narratives are interpreted, circulated, or mobilised within wider discussions.

Consequently, the challenge is not simply one of inclusion. It is also a question of how different forms of knowledge are valued and how relationships between knowledge holders are structured. Attention to situated knowledges therefore requires engagement with the ethical and political dimensions of knowledge production itself.

Ethical collaboration in unequal digital landscapes

Discussions of ethical collaboration and reciprocity have become increasingly prominent within Arctic research and community-engaged scholarship (e.g., co-design, participatory research, and knowledge co-production). Such approaches seek to move beyond extractive models of knowledge production by emphasising relationships, mutual learning, and engagement with community and participant-defined priorities. However, it is important to recognize the limits of these approaches within contemporary digital environments. Reciprocity does not eliminate structural inequalities. Communities, researchers, and cultural organisations continue to operate within systems shaped by uneven access to resources, technological infrastructures, institutional authority, and public visibility. The capacity to produce, legitimise and circulate representations remains profoundly uneven, reflecting enduring disparities in institutional authority, technological access, and cultural influence (Jasanoff & Kim, 2015; Couldry, 2012).

For this reason, ethical collaboration should be understood less as a solution than as a critical practice. Its value lies in creating opportunities to reflect on power, representation, and responsibility. Rather than promising balanced relationships, ethical collaboration encourages awareness of the asymmetries that shape knowledge production and dissemination. Creative and participatory methods can contribute to this process. Collaborative storytelling (e.g., oral history and co-created narratives), participatory media production (e.g., digital storytelling platforms), digital heritage projects, and research-creation initiatives (e.g., art–research collaborations, interactive gaming, immersive installations, virtual reality, XR) may provide spaces in which alternative perspectives can be articulated and shared. Such approaches cannot fully counterbalance the influence of dominant actors, but they can create opportunities for dialogue, reflection, and relationship-building across different communities and knowledge systems.

Young people occupy a particularly important position within these discussions. As active participants in digital culture, they engage with globally circulating representations while simultaneously drawing upon local experiences, identities, and relationships (boyd, 2014; Ito et al., 2010). Their perspectives highlight the intersections between digital imaginaries and everyday life, making youth engagement an important site for examining how future narratives are interpreted, negotiated, and contested (Appadurai, 1996).

Conclusion

The influence of these representations is uneven. Powerful institutions and media producers continue to shape dominant narratives, while many situated knowledges remain less visible within broader public discussions. Understanding Arctic futures therefore requires attention not only to what is represented but also to who has the power to represent. The tension between global representations and situated knowledges reveals the political dimensions of digital knowledge production and highlights the importance of critically examining how Arctic futures are imagined.

Ethical collaboration and reciprocal engagement cannot fully resolve these inequalities. Nevertheless, they remain important frameworks for questioning dominant narratives, supporting dialogue across knowledge systems, and foregrounding the lived experiences that too often remain at the margins of discussions about Arctic Ocean futures. Attention to digital imaginaries therefore requires attention to the power relations through which some futures become visible and actionable while others remain marginalised, but also to the participatory digital environments through which Arctic futures can be actively produced, circulated, and negotiated. This points toward practice-led, research-creation approaches to immersive and participatory media not as neutral tools, but as concrete sites where situated voices can begin to take part in shaping Arctic futures.

Future research should examine how digital environments, including participatory platforms, video games, digital storytelling initiatives, and immersive media (VR, AR, and XR), shape which Arctic Ocean futures become visible, credible, and actionable, and how these processes interact with situated forms of knowledge across northern contexts. This includes ongoing collaborative work in digital, immersive, and participatory research exploring how Arctic Ocean futures are represented, experienced, and negotiated.

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