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AI through the lens of social anthropology

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The growing presence of artificial intelligence (AI) in everyday life challenges our understanding of human cognition, identity, and the boundaries between humans and non-humans. Once the domain of science fiction, AI systems now perceive, process, and learn, actively shaping decisions and practices, influencing cultural production, and contributing to the collective symbols through which societies make meaning.

AI occupies a prominent place in everyday discourse and practices, and serves as a recurring motif in cinematic and literary narratives. All the while, it is continually reimagined. AI thus exists simultaneously as a material phenomenon—manifest in circuits and algorithms—and as a construct within the social imaginary, shaped and reshaped through cultural processes. Furthermore, the embodiment of normative assumptions and conceptualizations regarding life, technology, sociality, governance, and ethical frameworks within AI and robotics positions these technologies as particularly privileged objects for anthropological inquiry (Becker 2021, p.107). They not only reflect but also actively participate in the negotiation and reproduction of social values, thereby offering a privileged vantage point from which to interrogate the mutual constitution of technology and culture.

For anthropologists, examining AI calls for an engagement with the social, historical, and epistemological foundations from which these systems arise. Algorithms are not merely technical constructs; they emerge from cultural assumptions, values, and practices embedded in their design and implementation. From an anthropological standpoint, AI should not be seen as a neutral tool but as an evolving socio-technical system shaped by human and not-human relations and institutional structures (cf. Pfaffenberger 1992)

Over the past several decades, ethnographic research has substantially advanced critical scholarly engagement with computational intelligence systems, extending beyond examination of technical outputs to investigate the socio-material contexts in which these socio-technological assemblages are conceptualized, operationalized, and situated within broader institutional frameworks. Through participant observation and qualitative inquiry, anthropologists have analysed the situated nature of AI production — from research laboratories and content moderation hubs to the everyday practices of user communities. They have also critically reflected on the role of computing technologies in shaping anthropological research methods and analytical practices.

From the mid-20th century to the digital present, the relationship between anthropology and computers has been one of both ambivalence and transformation. Initially introduced as tools for data analysis and formal modelling, computers have since evolved into objects of anthropological inquiry in their own right. This shifting dynamic reflects broader changes within the discipline, as well as the increasing centrality of digital technologies in contemporary life.

The connection between anthropology and computing began to take shape during the early 1960s, most notably at the 1962 Wenner-Gren Symposium. There, anthropologists, linguists, and semioticians explored emerging computational methods in the study of folklore, kinship, and language. Their engagement with technical aspects—from programming languages to memory architecture—revealed a serious ambition to integrate computational tools into anthropological practice (Seaver 2021, p.45).

Dell Hymes' 1965 volume *The Use of Computers in Anthropology* highlighted computing as essential for the discipline's future, warning that without adopting systematic, quantitative methods, anthropology risked falling behind other social sciences. This drive for formalization was exemplified by early initiatives like Murdock's Human Relations Area Files during the 30s at Yale, which aimed to standardize cultural data for large-scale comparison—an early form of what we now call big data. However, critics cautioned that such approaches could narrow the scope of inquiry, favouring what was easily quantifiable over deeper cultural insights, concerned that computational methods might overshadow the interpretive depth of ethnographic fieldwork. Claude Lévi-Strauss captured this balance, noting that while anthropology must begin and end with personal experience, "in between there is room for plenty of computers" (cited in Hymes 1965).

By the late 1970s, computing had become a normalized part of academic life (Seaver 2021, p.46-47). Personal computers enabled anthropologists to incorporate data collection directly into fieldwork, blurring the boundaries between field and office. This integration of digital tools marked a practical shift, but also a conceptual one: anthropologists began to study computing not only as a method but as a social and cultural domain. Following Laura Nader's call to "study up" (1972) and under the influence of science and technology studies, researchers increasingly turned their attention to high-tech environments, digital infrastructures, algorithmic systems, and, finally, AI.

At the base of these developments lies a significant, though often overlooked, genealogy: anthropology's early involvement in the emergence of cybernetics. During and after World War II, cybernetics developed as an interdisciplinary field focused on systems, feedback, and communication across biological, mechanical, and social domains. Anthropologists Margaret Mead and Gregory Bateson played pivotal roles in shaping this discourse, particularly through their participation in the Macy Conferences on Cybernetics (1946–1953), supported by the Josiah Macy Jr. Foundation. These conferences brought together key thinkers—including Norbert Wiener, Heinz von Foerster, and Kurt Lewin—to theorize feedback and control in a context shaped by the rise of early computing and general systems theory.

Mead and Bateson's work on systems thinking, communication, and cultural patterning laid foundational ground for exploring recursive relationships between humans and machines—relationships that continue to inform anthropological approaches to AI. Mead helped keep questions of communication and cultural transmission central to cybernetic thinking, she was also a central figure at the founding of the American Society for Cybernetics; while Bateson applied cybernetic principles to anthropology and social systems, examining how ideas spread and how societies self-regulate. Through his *Theory of mind* (1972) his emphasis on feedback loops as mechanisms of both stability and change has had a lasting impact on how we understand human behaviour and interaction within complex systems.

This early anthropological engagement with cybernetics paved the way for more recent critical approaches to AI as socio-technical systems. A pioneering example is found in the work of Diana Forsythe, who conducted ethnographic research in Silicon Valley AI labs during the 1990s. Forsythe revealed how designers' cultural assumptions become embedded within AI systems, influencing how these technologies operate and interpret the world (Forsythe 2001). Building on this foundation, more recent studies have expanded the critique to encompass the broader ecology of AI examining not just design, but also the infrastructures, resource extraction, and labour intertwined with these technologies (Crawford 2021). They underscore the need for anthropological inquiry that moves beyond code and algorithms to encompass the entire sociomaterial assemblage that underlies and configures AI technologies.

Rather than being purely technical, the development and deployment of AI systems are embedded in and reflective of prevailing

techno-scientific and societal paradigms. These dominant frameworks often obscure or exclude alternative ways of knowing, particularly those rooted in Indigenous, feminist, or non-Western epistemologies (Escobar 1995; Birhane 2023). As such, understanding AI requires interrogating the cultural assumptions and power relations that structure its design, use, and governance. These entanglements between cultural assumptions and technological systems also extend to the tools social scientists themselves use, including AI, which increasingly shapes not only the subjects of anthropological inquiry but also its methods.

Algorithms as culture, AI as rule

The problem of method begins with identifying what, precisely, AI is as an object of ethnographic study. Anthropologist Nick Seaver (2017) has highlighted the "problem of the object" in the anthropological study of algorithms and AI, questioning what exactly is being studied: are algorithms agents or models, culture or material, subjects or objects, processes or atmospheres? To navigate this ambiguity, Seaver contrasts two perspectives. One treats algorithms as discrete, bounded objects that operate alongside culture but remain fundamentally distinct from it. The other, which he advocates, understands *algorithms as culture*—unstable, evolving processes shaped through everyday practices of design, implementation, and use. This view collapses the distinction between technical and cultural domains, emphasizing that algorithms are embedded in and co-constituted by the social worlds they inhabit.

This perspective is especially relevant in contemporary discussions of AI governance, where the creation of "AI Constitutions"—frameworks intended to guide the ethical behaviour and decision-making of AI systems—reflects efforts to align AI with societal values. Such initiatives are part of broader governance mechanisms aimed at regulating AI development. Simultaneously, we are witnessing the rise of *governance by AI*, as algorithmic systems increasingly influence decisions in legal, financial, humanitarian, and administrative domains (Sapignoli 2021). These dual processes expose the cultural and political stakes of AI technologies, reinforcing the need for critical, anthropological engagement.

Anthropology and AI: relational futures and epistemic pluralism

In response to the challenge of AI governance, a growing body of scholarship calls to *decenter* and *decolonize* AI by challenging the universalist and technocratic assumptions embedded in mainstream systems. This includes foregrounding alternative epistemologies—such as Indigenous, African diasporic, and Global South perspectives—that resist extractive logics and racialized hierarchies (Birhane 2023; Brown et al. 2024). Together, these approaches align with scholars' call to study algorithms not as isolated technical forms, but as culturally and politically situated processes, deeply entangled with histories of power and practices of meaning-making.

Crucially, these approaches do not merely advocate for more inclusive datasets or ethical guidelines; —they demand transformative engagements with infrastructures, knowledge systems, and power. For instance, Indigenous approaches to AI envision plural, situated, and reparative futures in which technologies are accountable to the communities they affect and guided by values such as justice, self-determination, and inter-relational sovereignty.

As anthropologists increasingly interrogate AI not only as a technical artifact but as a sociocultural formation, indigenous approaches to AI offer a vital reframing of dominant epistemological and ontological assumptions. Rather than adapting Indigenous knowledge to fit within existing AI paradigms, scholars such as Jason Edward Lewis (2023) and colleagues propose designing AI from within indigenous worldviews. For instance, the Māori concept of *whakapapa* (genealogy) grounds intelligence in relationality—linking humans, non-humans,

ancestors, land, and environment in interdependent networks of responsibility and reciprocity. This stands in contrast to mainstream conceptions of AI, which often isolate intelligence as a function of individual cognition or computational optimization.

Within this relational ontology, AI is not simply a tool or agent but part of a living ecology of responsibilities. Māori-led initiatives in Aotearoa/New Zealand—such as the *Maori Algorithmic Sovereignty Principles*—have foregrounded *algorithmic sovereignty* as a core principle, asserting the right of Indigenous peoples to control the development and deployment of algorithms in accordance with their cultural values. These projects challenge extractive data practices and reframe algorithmic governance through customary law (*tikanga*), emphasizing relational accountability (*whakapapa*), and communal well-being (*whanaungatanga*) (Brown et al. 2024).

Projects such as Indigenous AI resist both assimilation into dominant technological paradigms and reduction to symbolic resistance. Instead, they open space for *epistemic pluralism*: the coexistence of multiple, situated ways of knowing and relating to technology. By framing AI as a relational and culturally embedded process, Indigenous perspectives invite a rethinking of what it means to develop and live with intelligent systems—beyond efficiency and control, toward reciprocity, care, and cultural sovereignty.

Ultimately, the question is not whether AI can replicate "human-like" intelligence, but rather: *Can AI reflect the plurality of human and more-than-human worlds?* Anthropology, attuned to the entanglements of culture, power, and technology, is uniquely positioned to engage with these questions and to support the articulation of technological futures grounded in diverse ontologies and ethical commitments. By embracing these questions, we move beyond a narrow debate about AI's technical capabilities and toward a richer, more nuanced exploration of how AI can coexist with human societies in ways that respect and enhance our multiple ways of knowing and being.

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