



# When Ethnography Meets Algorithms: Reimagining Knowledge, Power, and Authenticity

**Mariakumar David**

Assistant Professor (GF), Department of Anthropology, Sambalpur University.

E-mail: [mmariakumar@gmail.com](mailto:mmariakumar@gmail.com)

**Abstract:** The rapid expansion of artificial intelligence is unsettling long-held assumptions about what it means to know, interpret, and represent human worlds. This paper argues that the meeting of ethnography and algorithms marks not only a technological development but an epistemic turning point that compels anthropology to rethink its foundational categories. Drawing on debates in decolonial theory, sociology of knowledge, and anthropological method, the paper moves beyond binary framings of Western science versus Indigenous knowledge to show how computational and cultural knowledge systems emerge through entanglement, translation, and power. Using examples from Indian digital governance, the politics of biometric identification, tribal data vulnerabilities, and the automation of analytic labour, the paper examines how algorithmic systems actively shape categories of personhood, authority, and authenticity. Rather than viewing AI as a threat to ethnographic craft, the paper proposes a reconceptualised notion of Anthropological Intelligence as a framework for understanding the ethical, semiotic, and political complexities of contemporary human-machine relations. The analysis demonstrates how anthropology can illuminate the mutual constitution of culture and computation, and why the discipline's interpretive ethos remains essential in the context of expanding algorithmic infrastructures.

**Keywords:** Anthropological Intelligence; Algorithmic Governance; Ethnography and AI; Knowledge Systems; Digital Epistemologies

**Received :** 12 September 2025

**Revised :** 11 October 2025

**Accepted :** 17 October 2025

**Published :** 30 December 2025

## TO CITE THIS ARTICLE:

Mariakumar David (2025). When Ethnography Meets Algorithms: Reimagining Knowledge, Power and Authenticity, *Society and Culture Development in India*, 5: 2, pp. 297-315. <https://doi.org/10.47509/SCDI.2025.v05i02.07>

## Introduction

Anthropology has undergone several methodological and epistemological shifts since its emergence as a discipline, yet few developments have generated as profound a sense of uncertainty and possibility as the recent expansion of artificial intelligence. Earlier

transitions from oral to written fieldnotes, from hand-coded transcripts to digital audio, or from participant observation to multi-sited ethnography altered how anthropologists collected and interpreted data. These shifts, however, did not challenge anthropology's central assumption that interpretation is a distinctively human capacity rooted in situated experience. The arrival of large language models, predictive algorithms, and automated pattern recognition systems unsettles this assumption. AI is now capable of identifying emergent social regularities, clustering cultural data, producing synthetic narratives, and even approximating ethnographic description. These developments raise critical questions about the nature of anthropological knowledge and its claims to authority. As Geertz (1973) argued, the ethnographer's task is to produce "thick description" through interpretive labour. The growing analytic capacities of machines provoke a reconsideration of what counts as interpretation and who or what may be considered an interpreter.

Recent work in science and technology studies complicates the idea that technological systems are neutral analytic extensions of human cognition. Haraway (1988) emphasised that all knowledge is situated, partial, and embodied. This insight is essential for understanding AI, since the datasets on which models are trained bear the marks of historical inequality, linguistic dominance, and cultural privileging. Burrell (2016) demonstrated that machine learning models are characterised by "opacity" at multiple levels, from inscrutable internal operations to inaccessible training corpora. These findings highlight that AI systems participate in meaning-making processes shaped by social and political histories rather than functioning as objective analytic agents. Noble (2018) and Benjamin (2019) further illustrated how algorithmic systems reproduce racial and gendered hierarchies embedded in the societies that generate their training data. Their arguments resonate strongly with a broader anthropological critique of technologies that appear universal yet remain culturally and politically specific.

The meeting of ethnography and algorithms reveals the inadequacy of binary frameworks that separate the human from the machinic, the scientific from the cultural, or the Western from the Indigenous. Anthropologists have long challenged such dualisms. Latour (1993) argued that modernity's distinction between nature and culture is an artefact of conceptual separation rather than empirical reality. Marcus and Fischer (1986) showed how anthropological critique dismantles rigid epistemic categories by illuminating hybrid forms of knowledge production. AI intensifies the need for such theoretical work. Algorithmic systems are not external artefacts that simply analyse data. They are products of infrastructural arrangements, labour regimes,

linguistic histories, and economic power. Their outputs reflect the assumptions built into them and the social environments in which they operate. As Suchman (2007) observed, human–machine interactions are emergent relations rather than discrete exchanges. Ethnography must therefore attend to the cultural life of algorithms as well as to the forms of sociality that they generate.

India provides a particularly significant site for examining these transformations. Several scholars have demonstrated that digital infrastructures in India intersect with existing hierarchies of caste, class, and language. Ramanathan (2014) and Khera (2019) analysed how Aadhaar-based authentication systems reshape relations between citizens and the state while reproducing vulnerabilities among marginalised groups. Udupa (2018) demonstrated how digital publics mediate political expression and social conflict in ways that reflect deep-seated hierarchies. Srinivasan and Johri (2013) highlighted how information and communication technologies often amplify rather than mitigate structural inequalities when deployed without sensitivity to local contexts. Such critiques indicate that the expansion of AI-driven governance in India cannot be understood apart from the socio-historical formations in which it is embedded. These concerns extend to archival and ethnographic data, particularly the digital representation of Adivasi and other Indigenous communities whose knowledge systems have been shaped by long histories of dispossession.

The growing use of AI in ethnographic research compels renewed attention to the politics of expertise. Bourdieu (1991) maintained that symbolic power rests in the capacity to define legitimate knowledge and impose interpretive frameworks upon others. When AI tools are used to summarise interviews, classify fieldnotes, or detect thematic patterns, they participate in defining what counts as salient information. This raises concerns about authenticity. If field materials can be transformed or even simulated through automated processes, the evidentiary foundation of ethnography risks becoming unstable. Crawford (2021) argued that AI systems must be understood as extractive, since they rely on vast amounts of data collected from populations with unequal participation in shaping their use. This insight is crucial for anthropology, where the ethics of representation and the responsibility to communities have long been central. The conceptual tension between artificial intelligence and ethnographic interpretation can be approached more productively by recognising AI as part of a broader ecology of knowledge. Foucault's (1977) analysis of knowledge and power demonstrated that regimes of truth are produced through institutional practices, classificatory systems, and discursive formations. AI systems, when viewed through this lens, constitute new

regimes of truth that shape how categories of identity, risk, and value are produced. Sundaram (2016) illustrated how digital infrastructures in India generate new modes of state visibility and bureaucratic power. Punathambekar and Mohan (2019) highlighted how digital mediation in South Asia transforms public culture in ways that exceed the analytic frameworks developed for earlier media. These studies show that ethnography must now account for the changing architectures through which social life becomes legible.

The central aim of this paper is to argue that anthropology requires a theoretical and methodological framework that can account for these transformations. The concept of Anthropological Intelligence proposed here refers to an interpretive stance that foregrounds relationality, situated context, and ethical responsibility in engagements with AI systems. It recognises that meaning arises through interactions between humans, machines, and institutions, and that these interactions are shaped by historical inequalities and cultural logics. Anthropological Intelligence therefore seeks to preserve the discipline's commitment to critical interpretation while enabling new forms of engagement with computational technologies. The encounter between ethnography and algorithms is not a threat to the discipline but an opportunity to reimagine its horizons. As AI becomes increasingly embedded in governance, communication, and cultural production, anthropology is uniquely positioned to analyse how algorithmic systems participate in shaping the conditions of social life. This introduction sets the stage for a deeper examination of how knowledge, power, and authenticity are being reorganised in the age of AI, and why anthropological inquiry remains essential for understanding these transformations.

### **Beyond Binary Thinking in Knowledge Systems**

The encounter between ethnography and algorithmic systems requires a reconsideration of the epistemic binaries that have historically structured anthropological inquiry. The separation between human and machine, nature and culture, or Western and Indigenous knowledge systems has always been theoretically fragile. These binaries persist because they stabilise institutional authority and organise intellectual labour, not because they accurately reflect empirical realities. Anthropologists have consistently shown that social worlds are constituted through relations, translations, and hybridisations rather than clean divisions. Latour (1993) argued that the modern project artificially separated nature from culture while simultaneously producing networks in which humans, objects, ideas, and technologies remain deeply intertwined. His critique provides

an important starting point for understanding why artificial intelligence cannot be regarded as an external technological system isolated from cultural processes. AI is embedded in social histories, linguistic assumptions, and political structures that shape its development and use. The instability of binary classifications is also central to feminist epistemologies. Haraway (1988) emphasised that all knowledge is situated in specific bodies, environments, and histories. Her argument dismantles any claim that AI produces universal, placeless interpretations of data. Instead, it draws attention to the training materials, institutional priorities, and political economies that condition algorithmic reasoning. When AI systems are trained predominantly on English-language corpora, for instance, their capacity to interpret discourse from Odia-speaking or tribal-language contexts becomes constrained by linguistic and cultural gaps. Such gaps reflect differential material conditions rather than intrinsic differences between human and machinic intelligence. This insight helps to move beyond simplistic comparisons between ethnographic interpretation and algorithmic pattern recognition.

Anthropological engagements with knowledge production have long emphasised hybridity and co-constitution. Marcus and Fischer (1986) argued that the discipline must attend to the emergence of mixed epistemic forms produced through colonial encounter, bureaucratic expansion, media circulation, and scientific standardisation. Their critique remains relevant for analysing AI, which combines engineering practices with statistical modelling, computational optimisation, and implicit ideological frameworks. These components are neither purely technical nor purely cultural. They are hybrid assemblages that emerge from specific historical moments, including the rise of platform capitalism, the consolidation of global data infrastructures, and the standardisation of machine learning pipelines.

Contemporary scholarship in digital anthropology and science and technology studies deepens this perspective by treating AI as a site where cultural assumptions are encoded, reproduced, and contested. Seaver (2023) described algorithms as “cultural products” shaped by the tastes, values, and interpretive repertoires of the engineers who design them. Burrell (2016) examined the opacity of AI systems and demonstrated that interpretive blind spots arise not only from complex computation but also from institutional secrecy, proprietary restrictions, and uneven levels of technical literacy. These analyses reveal that AI does not constitute an alternative to human knowledge. Instead, it represents a new configuration of knowledge shaped by human decisions, organisational structures, and social inequalities. The critique of epistemic binaries is particularly important for anthropological debates concerning Indigenous and non-

Western knowledge systems. Scholars have repeatedly questioned the assumption that these bodies of knowledge exist in opposition. Instead, they show that knowledge systems evolve through long histories of translation, borrowing, adaptation, and contestation. This perspective is essential for addressing algorithmic systems, which are themselves shaped by extensive global circulations of data, programming languages, and computational practices. A large language model, for instance, is not a Western artefact in any meaningful sense. It incorporates statistical mathematics from multiple intellectual traditions, global training corpora, and diverse engineering labour distributed across countries. Treating it as a singular epistemic actor obscures the heterogeneous processes that produce its analytic capacities.

The inadequacy of binary thinking becomes particularly visible in the Indian context. Several scholars have shown that digital infrastructures in India reflect the intersections of caste, class, and linguistic hierarchy rather than a simple diffusion of Western technological forms. Srinivasan and Johri (2013) demonstrated that information technologies can reinforce structural inequalities in contexts where historical patterns of exclusion remain unresolved. Their argument counters any assumption that digital systems represent neutral or universally beneficial knowledge practices. Similarly, Udupa (2018) showed how digital platforms in India mediate political discourse through existing social stratifications, with algorithmic visibility and amplification shaped by cultural norms and ideological polarisation. These studies illustrate how knowledge systems become entangled with power relations in ways that transcend simplistic oppositions between technological and cultural domains. The movement beyond binary frameworks does not imply that all knowledge systems are equivalent or interchangeable. Instead, it highlights the need for analytic attention to the relational processes through which knowledge emerges. When AI systems are deployed in ethnographic research, their outputs must be understood as products of specific cultural logics, infrastructural histories, and institutional priorities. Their interpretations cannot be read in isolation from the contexts in which they are produced. Anthropological critique therefore remains essential for exposing the assumptions built into algorithmic systems and for situating those assumptions within broader histories of power, discipline, and representation.

In summary, the interaction between ethnography and AI requires a theoretical shift from binary classifications to relational epistemologies. Such a move allows anthropology to analyse AI as a culturally embedded system of meaning-making rather than a purely technical apparatus. It also challenges the discipline to rethink

its own interpretive commitments and to develop new frameworks for understanding how human and machinic forms of reasoning intersect. This section establishes the conceptual foundation for examining how ethnographic method, analytic authority, and representational ethics are being reconfigured in the age of algorithmic knowledge.

### **Ethnography After AI: Transformation of Method and Interpretation**

The integration of artificial intelligence into ethnographic practice has generated new methodological possibilities while simultaneously intensifying long-standing concerns about interpretation, context, and analytic authority. Prior technological transitions in anthropology introduced new forms of documentation and storage, yet they did not fundamentally alter the interpretive labour at the core of ethnography. Digital transcription software, audio recorders, and online archives accelerated aspects of fieldwork but left the ethnographer's task of constructing meaning intact. AI introduces a qualitatively different form of methodological intervention. Machine learning systems can generate real-time transcripts, classify large datasets, identify thematic clusters, and detect recurrent linguistic or behavioural patterns within seconds. These capabilities prompt renewed scrutiny of the interpretive principles underlying ethnographic knowledge. As Geertz (1973) argued, ethnographic interpretation relies on thick contextualisation, and this orientation cannot be replaced by analytic acceleration. The emergence of AI-driven transcription tools has reshaped data collection by reducing the temporal distance between interaction and representation. Automated systems can produce high-quality transcripts, mark speaker turns, and annotate prosodic features. These affordances have been welcomed as support for labour-intensive qualitative analysis. However, Suchman (2007) emphasised that representations of human action are produced through culturally specific assumptions about relevance and sequence. Automated transcription systems inevitably embed these assumptions in their processing logic. In Indian multilingual settings where code-switching, tone, silence, and culturally meaningful hesitations shape interaction, automated transcripts risk flattening communicative nuance. This problem becomes more acute in tribal or rural Odia contexts where vocal registers, kin-based honorifics, and subtle paralinguistic cues are central to the organisation of interaction.

The analytic phase of ethnographic research has also been transformed by AI-supported pattern recognition. Machine learning models can group fieldnotes or interview segments according to thematic similarity and identify recurrent terms that may escape initial human attention. While these tools can assist in scanning

large corpora, they raise questions about the nature of interpretive authority. Burrell (2016) demonstrated that machine learning operations contain layers of opacity that are difficult to resolve even for experts. When AI identifies a theme, the ethnographer must determine whether this pattern reflects culturally grounded significance or the mathematical preferences of a model optimised for linguistic clustering. Seaver (2023) argued that algorithms are cultural artefacts shaped by the epistemic assumptions of their designers. This insight provides an important safeguard against the risk of treating algorithmic outputs as neutral indicators of social meaning.

Conversation Analysis (CA) illustrates the limits of algorithmic interpretation particularly well. CA requires close attention to turn-taking, repair sequences, hesitation markers, and alignment practices. These features position participants relative to one another within locally meaningful moral and interactional orders. In Odia-speaking or tribal communities, a micro-pause may signal deference, a shift in register may indicate a change in relational status, and the repetition of kin terms may enact obligations within extended households. AI-driven CA tools can detect speech timing or word frequency, but they cannot infer culturally saturated meanings without ethnographic grounding. The risk lies not in the use of these tools but in attributing interpretive capacity to them. Schegloff (2007) reiterated that interactional order is discoverable only through detailed contextual sensitivity, and this requirement cannot be automated. AI's capacity to summarise ethnographic materials introduces further challenges for interpretation. Summaries produced by large language models often privilege coherence, thematic clarity, and narrative stability. These preferences reflect the statistical processes through which such models operate. They do not reflect the uncertainty, contradiction, and fragmentation that ethnographers routinely encounter in the field. Noble (2018) and Benjamin (2019) showed how algorithmic ordering reproduces dominant worldviews and marginalises alternative narratives. When applied to ethnography, these tendencies risk erasing the conflicting voices, contested memories, and uneven power relations that form the substance of anthropological insight. The ethnographer's responsibility lies in preserving fragmentation when it is analytically meaningful rather than smoothing it into machine-generated coherence.

The rise of AI has also shifted the social position of the ethnographer. Rather than functioning solely as observer, participant, and interpreter, the ethnographer increasingly works within assemblages that include computational agents, digital platforms, and institutional infrastructures. Suchman's (2007) notion of human-machine assemblages provides a productive lens for understanding these transformations. She showed

that interactions with technological systems emerge relationally rather than through discrete commands or intentions. Applied to ethnography, this perspective positions AI as an interpretive partner whose contributions must be critically examined rather than accepted as authoritative. It also highlights the shifting conditions under which ethnographic evidence is produced. When transcripts, classifications, or summaries originate from AI systems, their epistemic status requires explicit delineation. These shifts invite rethinking of the temporal structure of ethnographic interpretation. Traditionally, ethnographers have emphasised the importance of prolonged immersion, patient observation, and iterative reflection. AI can accelerate aspects of analysis but may also pressure researchers toward faster interpretive cycles. This acceleration risks undermining the slow, relational, and ethically grounded engagements that form the methodological backbone of anthropology. Crawford (2021) argued that AI must be understood in relation to extractive data practices that prioritise efficiency over context. The ethnographer's role in resisting these pressures becomes central to the discipline's future ethical commitments.

In sum, AI introduces methodological possibilities that must be engaged critically rather than adopted unreflectively. Ethnographic interpretation continues to depend on cultural context, social theory, and ethical accountability. AI offers new ways of processing data but does not replace the interpretive labour that underpins anthropological knowledge. Instead, it reshapes the conditions under which this labour occurs and demands renewed attention to the relational processes through which meaning is produced. The next section examines these issues in greater depth through an analysis of digital governance, hierarchy, and infrastructural power in India.

### **Knowledge, Power, and Digital Infrastructures in India**

The expansion of algorithmic systems in India has intensified long-standing debates concerning governance, identity, and social inequality. Digital infrastructures designed to render populations legible to the state often intersect with deeply embedded hierarchies of caste, class, religion, and language. These infrastructures are not neutral systems of administration. They are sociotechnical formations that reconfigure the terms under which citizens interact with state institutions. Ramanathan (2014) demonstrated that the Aadhaar system transformed administrative relations by shifting the locus of verification from human bureaucrats to automated authentication devices. This shift generated new forms of vulnerability, particularly for marginalised populations whose biometric data frequently failed to align with database requirements. Khera

(2019) further showed that Aadhaar-linked welfare systems produced exclusions that disproportionately affected the elderly, manual labourers, and rural citizens. These findings illustrate how algorithmic infrastructures embed and reproduce existing social hierarchies rather than functioning as instruments of equitable governance.

Understanding the implications of AI-driven systems in India requires attention to the cultural and historical conditions that shape how identities are categorised. Srinivasan and Johri (2013) argued that information technologies often reinforce patterns of exclusion when deployed in contexts marked by structural inequality. Their analysis is crucial for examining how digital systems classify individuals through names, addresses, and behavioural data. Caste-coded surnames, regional linguistic markers, and occupation-based identifiers frequently enter algorithmic pipelines through data collected for administrative use. When machine learning models draw inferences from such data, they risk aligning algorithmic predictions with entrenched social categories. This process does not imply deliberate discrimination but reflects the underlying structure of data collected from a hierarchical society. These dynamics are particularly salient for Dalit and Adivasi communities whose experiences of misrecognition and marginalisation often extend into digital environments. The linguistic dimension of digital infrastructures in India adds another layer of complexity. English occupies a privileged position within corporate, administrative, and technical domains. As work on digital labour in South Asia has shown, platform-mediated communication often privileges English or dominant regional languages in ways that align with elite linguistic repertoires. When AI systems are trained predominantly on English-language datasets, their interpretive capacities reflect these linguistic hierarchies. Udupa (2018) demonstrated that digital publics in India are shaped by unequal access to linguistic resources, with online discourse often reproducing ideological polarisation rooted in class and caste divides. These asymmetries raise questions about how linguistic diversity is represented in computational systems. Tribal languages and minoritised dialects, for instance, remain significantly underrepresented in training corpora. Their absence affects not only recognition accuracy but also the ability of AI systems to engage with culturally specific forms of expression.

Digital infrastructures also mediate political discourse in ways that amplify existing inequalities. Punathambekar and Mohan (2019) examined how digital media reconfigures public culture in South Asia and showed that algorithmic amplification can intensify polarisation. Their work demonstrates that platform design, ranking systems, and data-driven advertising produce new modalities of visibility and invisibility. These

mechanisms intersect with caste, religion, and regional affiliation to determine whose voices gain prominence and whose remain marginal. The incorporation of AI into these systems heightens these dynamics by automating processes of classification, recommendation, and content moderation. As a result, digital infrastructures become active participants in shaping the contours of public debate. Concerns about data sovereignty further highlight the political implications of algorithmic systems for marginalised communities. Global movements for Indigenous data sovereignty argue that communities have the right to control how their data is collected, stored, interpreted, and circulated. This principle has significant relevance for Adivasi groups in India, whose cultural knowledge, linguistic repertoires, and socio-economic information are often collected through state and NGO initiatives. Crawford (2021) emphasised that AI systems rely on large-scale data extraction and that these processes often reproduce uneven power relations between data producers and data users. When applied to tribal contexts, these concerns become even more pressing, since extractive data practices can perpetuate a history of dispossession in which communities lose control over the knowledge that describes them.

In rural and tribal settings, the introduction of AI-driven welfare, agricultural, and educational systems often occurs without adequate attention to local lifeworlds. This creates situations in which technological interventions, however well intentioned, fail to account for cultural practices, seasonal patterns, and kin-based obligations that structure everyday decision-making. Scholars of development and ICTs have shown that such interventions may inadvertently reinforce existing hierarchies when dominant groups mediate access to technology or interpret system outputs on behalf of marginalised populations. These dynamics underscore the need for ethnographic engagement with the lived experiences of individuals who navigate algorithmic systems. The intersection of AI and governance in India therefore cannot be understood merely in terms of efficiency or innovation. It must be analysed as a process that reconfigures relations of power and produces new forms of legibility and exclusion. Digital infrastructures shape how citizens are identified, how welfare is distributed, and how social categories acquire administrative significance. In this context, ethnography becomes indispensable for tracing how algorithmic systems interact with everyday life. It can illuminate not only the technical operations of these systems but also the social, linguistic, and political histories that inform their implementation. This section demonstrates that the meeting of ethnography and AI in India is shaped by deeply rooted hierarchies, institutional practices, and cultural norms. The next section examines how these developments

reshape anthropological concerns with authenticity, representation, and ethical responsibility.

### **Authenticity, Representation, and the Ethics of Anthropological Knowledge**

Anthropology's longstanding preoccupation with authenticity acquires new urgency in the context of AI-mediated research environments. The discipline has historically distinguished itself through claims to grounded presence, contextual sensitivity, and relational immersion. These commitments are threatened not because AI outperforms human interpretation but because it alters the evidentiary conditions under which ethnographic knowledge is produced and evaluated. Marcus and Fischer (1986) noted that ethnographic authority has always depended on an implicit contract between reader and researcher, in which the ethnographer's presence in the field serves as the guarantor of authenticity. When artificial intelligence participates in producing transcripts, summaries, classifications, or interpretive suggestions, this contract becomes unsettled. The ethnographer must make explicit the extent to which machine-mediated outputs shape the representation of cultural life. Questions concerning authenticity are sharpened by the proliferation of synthetic text generated through large language models. AI systems can produce fieldnote-like narratives, simulate interview dialogues, and construct plausible ethnographic descriptions from minimal prompts. Although these outputs lack the situated depth characteristic of genuine fieldwork, their surface coherence can obscure the absence of contextual grounding. Noble (2018) and Benjamin (2019) demonstrated that algorithmic systems are not culturally neutral and that their outputs often mirror dominant ideological assumptions encoded in their training data. When these systems generate ethnographic prose, they risk reproducing mainstream narratives while marginalising alternative or subaltern perspectives. This dynamic presents a fundamental challenge to anthropological representation, which seeks to foreground diversity, tension, and complexity.

The ethical implications of AI-mediated research extend beyond concerns about synthetic text. AI-based analytical tools often prioritise coherence, thematic clarity, and pattern recognition, which may conflict with the fragmented and contradictory realities that characterise many ethnographic settings. The reduction of complexity into discrete themes can inadvertently silence minor voices or erase narrative contradictions that hold analytical significance. Burrell (2016) argued that the opacity of algorithmic systems makes it difficult for researchers to determine how particular outputs are generated. When these outputs shape ethnographic interpretation, the limitations of

transparency raise ethical concerns about analytic accountability. Ethnographers must therefore remain attentive to the interpretive gaps created by automated systems and must articulate the methodological decisions that guide their use. Closely related are questions of representational justice. AI models trained on uneven data distributions tend to reflect the linguistic and cultural patterns of dominant groups. This bias becomes particularly problematic when working with communities whose languages, dialects, or communicative norms are underrepresented in training corpora. Udupa (2018) illustrated how digital platforms can amplify ideological hierarchies by privileging certain forms of expression over others. In ethnographic contexts, similar dynamics may result in misinterpretation of culturally significant speech acts, inadequate recognition of minoritised languages, or incorrect rendering of tribal or rural speech patterns. These representational distortions carry ethical consequences because they shape how communities are portrayed in academic and policy discourse.

Issues of consent and privacy also take on renewed significance in AI-assisted ethnography. Crawford (2021) highlighted the extractive nature of data practices in AI development, in which large amounts of personal and community information are collected without meaningful control by data producers. In India, where tribal and marginalised communities have historically experienced dispossession through bureaucratic and developmental mechanisms, the deployment of AI tools without adequate consultation risks reinforcing asymmetric power relations. Ethnographers must confront the ethical challenge of ensuring that data contributed by participants is not used in ways that exceed the scope of their consent or expose them to future vulnerabilities. These concerns are intensified when digital traces can be indefinitely stored, algorithmically reinterpreted, or integrated into wider data infrastructures beyond the researcher's oversight.

The ethical tensions inherent in AI-mediated ethnography are compounded by the evolving figure of the ethnographer as both interpreter and curator of machine-generated materials. Bourdieu (1991) described the exercise of symbolic power through the capacity to classify, name, and define categories of meaning. When ethnographers adopt AI tools, they share this classificatory power with algorithmic systems whose internal operations cannot be fully scrutinised. The ethnographer's responsibility therefore includes not only interpreting cultural life but also critically examining how algorithmic processes shape the visibility of particular themes, persons, or practices. This expanded responsibility underscores the need for reflexivity regarding the influence of computational systems on ethnographic evidence. Maintaining ethical integrity

requires reconceptualising the relationship between ethnographer, participant, and machine. Rather than treating AI as an external analytic device, it must be understood as an actor that participates in shaping knowledge. This perspective aligns with the broader anthropological commitment to relationality, in which meaning emerges from interactions between humans, technologies, and institutions. When AI processes field data, it alters the relational field within which representation occurs. Ethnographers must therefore articulate how these interactions influence the construction of authenticity and the framing of interpretive claims. These concerns illustrate that anthropology cannot treat authenticity as a static property of fieldwork. Instead, authenticity must be reimagined as an ethical practice that requires transparency, contextualisation, and accountability in the use of AI tools. The next section builds on this insight by outlining the concept of Anthropological Intelligence, which provides a theoretical and methodological framework for navigating the complexities introduced by AI in ethnographic research.

### **Anthropological Intelligence: A Conceptual Framework for the AI Era**

The analytic and ethical challenges introduced by AI necessitate a conceptual framework that can integrate ethnographic sensibilities with computational environments. This paper proposes *Anthropological Intelligence* as such a framework. The term does not refer to a new technological capability but to an interpretive orientation grounded in anthropology's commitments to relationality, contextualisation, and historical depth. Anthropological Intelligence recognises that meaning emerges through interactions among humans, machines, and institutions, and that these interactions are shaped by cultural logics, power relations, and sociohistorical conditions. This framework offers a way to evaluate AI's role in research without collapsing ethnographic practice into a technical operation or rejecting computational tools entirely. It is important to acknowledge that the phrase "anthropological intelligence" has an earlier presence in the discipline, though in a very different register. David H. Price's study *Anthropological Intelligence: The Deployment and Neglect of American Anthropology in the Second World War* (2008) examined how anthropologists' cultural knowledge was mobilised for military intelligence during World War II. Price used the term to describe an applied domain in which anthropological expertise became instrumental for state objectives and wartime operations. This earlier framing highlighted the ethical tensions inherent in the relationship between anthropological knowledge and state power. Although influential in debates about military anthropology and the ethics of applied research,

Price's usage did not theorise anthropological intelligence as an epistemological stance or methodological framework. The argument developed in this paper therefore represents a conceptual reorientation rather than a continuation of that lineage, shifting the meaning of the term toward a critical interpretive approach suited to the challenges of AI-mediated knowledge production.

Anthropological Intelligence, as reconceptualised here, builds on the discipline's efforts to understand interpretation as situated and relational. Haraway's (1988) argument that knowledge is always partial and embodied is foundational for assessing the interpretive status of AI outputs. When automated systems are used in research, their analytic results must be understood as inseparable from the material, historical, and institutional conditions that shape their training. These conditions influence the kinds of interpretations that AI can produce and the limitations inherent in those interpretations. Anthropological Intelligence therefore demands explicit attention to these situated dimensions whenever computational tools are integrated into ethnographic analysis. The framework also reflects Suchman's (2007) account of human machine interactions as emergent and relational. Within this perspective, AI systems become interpretive participants in research assemblages rather than inert analytic devices. Their outputs are shaped by their architectures, training corpora, and patterns of user interaction. This distributed configuration of agency requires ethnographers to examine how human and machinic contributions jointly shape the production of knowledge. Anthropological Intelligence encourages this analytic stance by foregrounding the co-constitutive nature of human machine interpretive environments.

Power remains central to the conceptualisation of Anthropological Intelligence. Foucault (1977) demonstrated that classificatory systems produce regimes of truth that govern what can be known. In computational settings, these regimes are operationalised through algorithms that structure categorisation, prediction, and decision making. The relevance of this insight for India is significant. AI systems deployed within bureaucratic, financial, and infrastructural institutions intersect with existing hierarchies of caste, class, and language. Understanding these intersections requires an approach that situates AI within networks of authority and governance. Anthropological Intelligence provides this analytic grounding by emphasising how computational classifications participate in the production of social realities. The interpretive challenges posed by AI reinforce the need for reflexivity about analytic authority. Marcus and Fischer (1986) illustrated how ethnographic representation is shaped by the researcher's positionality and the discursive conditions of knowledge production. When AI participates in

analytic processes, the ethnographer must reflect not only on personal positionality but also on the epistemic assumptions embedded in computational systems. These systems influence which patterns become visible and which remain obscured. Anthropological Intelligence insists that these influences be made explicit so that interpretive claims remain accountable and transparent.

Methodologically, Anthropological Intelligence supports pluralism. AI tools can facilitate certain analytic tasks, including thematic clustering or rapid identification of recurring patterns. However, these tools must be situated within broader ethnographic engagements that prioritise contextual nuance. Thick description, as articulated by Geertz (1973), remains necessary for interpreting the cultural significance of patterns that AI can detect but cannot contextualise. The framework therefore encourages researchers to integrate computational methods without subordinating ethnographic reasoning to automated processes. The ethical dimension of Anthropological Intelligence is especially important in contexts marked by unequal access to technological resources and historical patterns of marginalisation. Crawford (2021) showed that AI systems often rely on extractive data practices that disproportionately affect vulnerable groups. In India, where digital governance intersects with deep social hierarchies, ethnographers must attend to the risks that arise when community data enters large computational systems. Issues of consent, data sovereignty, and future use must be articulated clearly. Anthropological Intelligence foregrounds these responsibilities and emphasises the need for ethical vigilance in AI-supported research.

Finally, Anthropological Intelligence positions anthropology to engage with emerging social formations shaped by extensive algorithmic mediation. Punathambekar and Mohan (2019) demonstrated that digital infrastructures reshape public culture in South Asia and produce new forms of identity and belonging. AI intensifies these dynamics through predictive technologies, biometric governance, and automated communication systems. Anthropologists who adopt the principles of Anthropological Intelligence are equipped to analyse these transformations while maintaining the discipline's emphasis on relational context, cultural specificity, and ethical accountability. In summary, Anthropological Intelligence represents a conceptual reorientation that integrates anthropological theory with the interpretive and ethical challenges introduced by AI. It reframes the term in a way that departs significantly from its earlier usage in military anthropology and opens a new domain for methodological and epistemological reflection. The final section synthesises these insights and considers the broader implications for the future trajectory of anthropological inquiry.

### **Conclusion: Reimagining Anthropology for Algorithmic Futures**

The encounter between ethnography and artificial intelligence marks a consequential moment in the evolution of anthropological inquiry. AI does not simply introduce new tools for transcription or data analysis. It reshapes foundational questions concerning knowledge, authority, interpretation, and representation. Throughout this paper, the argument has emphasised that anthropology must resist viewing AI as either a displacement of human interpretation or a neutral technical aid. Instead, AI should be understood as part of a wider ecology of knowledge in which human and machinic processes interact to generate new interpretive landscapes. This ecological perspective requires theoretical, methodological, and ethical reorientation within the discipline. The analysis presented in earlier sections highlighted how AI unsettles classical binaries that have long structured anthropological thought. The distinction between human and machine, culture and technology, or scientific and indigenous knowledge proves inadequate for understanding algorithmic systems that draw upon global data flows, engineering cultures, and historical power relations. Ethnography that incorporates AI therefore must adopt relational rather than dichotomous frameworks. Such an approach allows anthropologists to account for the hybrid forms of meaning that emerge when computational models intersect with lived experience.

The paper also showed that the integration of AI into ethnographic practice transforms the conditions under which interpretation occurs. Automated transcription, pattern detection, and summarisation tools provide new forms of analytic efficiency, yet they introduce interpretive limitations that require careful scrutiny. AI-generated patterns can misrepresent or oversimplify culturally significant nuances, particularly in settings marked by linguistic diversity or complex social hierarchies. The ethnographer must remain attentive to these limitations and articulate the boundaries between machine-generated insights and culturally grounded interpretation. The Indian context illustrates why this vigilance is necessary. Algorithmic governance intersects with caste, class, and linguistic inequalities, producing new forms of exclusion and differential legibility. Digital infrastructures shape public culture, influence political discourse, and alter the terms of citizenship. These developments demand ethnographic engagement with the lived realities of communities that navigate computational systems. They also require anthropologists to interrogate how AI participates in the production and reproduction of structural inequalities. The discipline's long-standing concern with power becomes even more critical when knowledge infrastructures are automated and scaled.

Against this backdrop, the concept of Anthropological Intelligence proposes a framework for rethinking the role of ethnography in an algorithmic world. This framework departs from earlier uses of the term, such as Price's (2008) analysis of anthropological expertise in military intelligence during the Second World War. Rather than describing a domain of applied intelligence work, Anthropological Intelligence here refers to an interpretive stance that foregrounds relationality, contextualisation, and ethical accountability. It recognises that AI systems participate in shaping how cultural information is classified, interpreted, and circulated. By situating AI within its social and historical contexts, Anthropological Intelligence equips researchers to examine the distributed agency of human machine assemblages and the power relations embedded in computational processes. The argument advanced in this paper suggests that anthropology is well positioned to contribute to debates about AI precisely because it offers analytic tools for understanding cultural meaning, social power, and ethical responsibility. Rather than ceding interpretive authority to automated systems, anthropologists can illuminate the assumptions and consequences of algorithmic decision making. They can document the lived experiences of individuals and communities who encounter these systems in everyday life. They can develop methodological innovations that integrate computational tools without abandoning the discipline's commitment to depth, nuance, and reflexivity.

Anthropology's future in an algorithmic era will depend on its ability to adapt while remaining anchored in its core commitments. Ethnographic interpretation must accommodate the presence of AI but must do so without sacrificing the discipline's ethical and theoretical foundations. Anthropological Intelligence offers one possible framework for navigating this transition. It affirms the value of cultural context, recognises the interplay of human and machinic agency, and foregrounds the analysis of power in knowledge production. By adopting this approach, anthropologists can contribute meaningfully to understanding how AI shapes social worlds and can ensure that the discipline remains vital in the decades to come.

### *References*

- Benjamin, R. (2019). *Race After Technology: Abolitionist Tools for the New Jim Code*. Cambridge: Polity.
- Bourdieu, P. (1991). *Language and Symbolic Power*. Cambridge, MA: Harvard University Press.
- Burrell, J. (2016). How the machine 'thinks': Understanding opacity in machine learning algorithms. *Big Data & Society*, 3(1), 1-12. <https://doi.org/10.1177/2053951715622512>

- Crawford, K. (2021). *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*. New Haven: Yale University Press.
- Foucault, M. (1977). *Discipline and Punish: The Birth of the Prison*. New York: Pantheon Books.
- Geertz, C. (1973). *The Interpretation of Cultures*. New York: Basic Books.
- Haraway, D. J. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies*, 14(3), 575-599.
- Khera, R. (2019). Aadhaar's Disruption: Social Welfare in India. *World Development*, 127, 104750. <https://doi.org/10.1016/j.worlddev.2019.104750>
- Latour, B. (1993). *We Have Never Been Modern*. Cambridge, MA: Harvard University Press.
- Marcus, G. E., & Fischer, M. M. J. (1986). *Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences*. Chicago: University of Chicago Press.
- Noble, S. U. (2018). *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: NYU Press.
- Punathambekar, A., & Mohan, M. (2019). *Global Digital Cultures: Perspectives from South Asia*. Ann Arbor: University of Michigan Press.
- Ramanathan, R. (2014). Aadhaar: Digital Inclusion and Electronic Governance. *Economic and Political Weekly*, 49(39), 47-55.
- Schegloff, E. A. (2007). *Sequence Organization in Interaction: Volume 1: A Primer in Conversation Analysis*. Cambridge: Cambridge University Press.
- Seaver, N. (2023). *Computing Taste: Algorithms and the Makers of Music Recommendation*. Chicago: University of Chicago Press.
- Srinivasan, J., & Johri, A. (2013). Digital Inclusion: A Tale of Two Indias. *Information Technology for Development*, 19(3), 219-234. <https://doi.org/10.1080/02681102.2013.784649>
- Suchman, L. A. (2007). *Human-Machine Reconfigurations: Plans and Situated Actions* (2nd ed.). Cambridge: Cambridge University Press.
- Sundaram, R. (2016). Wireless Publics: The Immaterial and the Fugitive in India. *Public Culture*, 28(3), 497-520. <https://doi.org/10.1215/08992363-3511573>
- Udupa, S. (2018). Digital Media and Political Polarization in India. *Journal of Communication*, 68(2), 251-272. <https://doi.org/10.1093/joc/jqy002>