Digital Humanitarianism and the Ethical Dilemma of Data Colonialism

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Abstract- ***The rapid digitization of humanitarian practices has transformed how aid organizations respond to crises, gather information, and deliver assistance. This phenomenon, often referred to as digital humanitarianism, encompasses the use of data-driven technologies such as artificial intelligence, biometrics, satellite imaging, and crowdsourced platforms to facilitate emergency response and long-term humanitarian support. While these tools have generated efficiencies and offered novel possibilities for global aid, they have also intensified concerns about data colonialism. Data colonialism refers to the extraction, commodification, and control of personal and community data by powerful entities—often located in the Global North—without adequate consent or equitable distribution of benefits. This paper critically examines the ethical dilemmas that arise when humanitarian data practices replicate colonial patterns of resource extraction and domination. It argues that the current reliance on digital infrastructures dominated by Western corporations and institutions risks perpetuating inequalities under the guise of aid. By interrogating case studies, analyzing theoretical frameworks, and situating digital humanitarianism within the broader history of colonial knowledge practices, this study highlights the urgent need for ethical safeguards, community-driven data governance, and decolonial approaches to humanitarian technology. The findings underscore that while digital humanitarianism carries transformative potential, its legitimacy depends on dismantling extractive data relations and ensuring that vulnerable populations retain agency over their information.***

Index Terms- ***Digital Humanitarianism, Data Colonialism, Ethics, Decoloniality, Humanitarian Aid, Surveillance***

I. INTRODUCTION

The twenty-first century has witnessed a profound reconfiguration of humanitarian practice. Traditionally, humanitarianism centered on the physical presence of aid workers, the distribution of tangible resources such as food and medicine, and the mobilization of international institutions to address crises. In recent decades, however, the increasing availability of digital technologies has dramatically altered the landscape. This transformation has been particularly visible in disaster response scenarios where mobile technologies, satellite imagery, social media analytics, and biometric registration systems have become integral to aid operations. The phenomenon of "digital humanitarianism" has emerged to describe this convergence of humanitarian work and technological innovation (Meier, 2015).

Digital humanitarianism refers not only to the adoption of technological tools but also to a shift in how crises are conceptualized and managed. Information has become as critical as food or shelter in humanitarian contexts. Whether in mapping damaged infrastructure after an earthquake or tracking the spread of infectious disease, the capacity to collect and analyze large-scale data now shapes the effectiveness of humanitarian response. Global networks of "digital volunteers" contribute by tagging satellite images or translating crisis-related content, enabling aid organizations to act with unprecedented speed. Governments and international agencies increasingly rely on data infrastructures managed by private technology companies, blurring the line between humanitarian need and corporate interest.

This evolution has prompted both optimism and skepticism. On the one hand, digital humanitarianism holds the promise of more efficient, transparent, and inclusive forms of aid. On the other hand, it raises urgent questions about the ethics of data collection, ownership, and use, especially when the subjects of data are among the most vulnerable populations in the world. These tensions cannot be understood in isolation from broader historical and

structural dynamics, particularly the enduring legacies of colonialism.

The concept of data colonialism has emerged as a critical lens through which to understand the extractive tendencies of the digital economy. Nick Couldry and Ulises Mejias (2019) argue that just as historical colonialism enabled the appropriation of land, labor, and resources from colonized territories, data colonialism operates through the large-scale appropriation of human life in the form of data. Under this model, personal information is treated as a raw material that can be captured, commodified, and monetized by powerful actors. The asymmetry lies not only in who controls the technological infrastructure but also in who reaps the benefits from its use.

When applied to humanitarian contexts, the idea of data colonialism reveals how well-intentioned aid practices can reproduce exploitative dynamics. Refugees, disaster victims, and marginalized communities often have little choice but to surrender their personal information in exchange for assistance. This data is then stored, analyzed, and sometimes shared with third parties—including private corporations and state security agencies—without meaningful consent or oversight (Madianou, 2019). In many cases, communities in the Global South become dependent on digital infrastructures owned and operated by institutions in the Global North, reinforcing existing geopolitical inequalities.

The ethical dilemma is stark: humanitarianism seeks to protect and empower vulnerable populations, yet its digital turn may subject them to new forms of surveillance and control. Understanding this contradiction requires examining both the promises and pitfalls of digital humanitarianism within the context of global power relations.

The relationship between humanitarianism and colonialism has long been a subject of debate. Scholars have argued that humanitarian aid, while often framed in universalist terms, has historically been entangled with imperial projects (Barnett, 2011). Colonial powers frequently justified their presence in foreign lands under the guise of benevolence, claiming to bring civilization, development, or relief. While the contexts of the twenty-first century differ markedly from those of formal colonial rule, certain parallels remain.

Digital humanitarianism risks replicating these patterns if it fails to account for the power asymmetries embedded in global data infrastructures. The reliance on Western corporations to provide technological tools, the absence of local participation in data governance, and the prioritization of efficiency over autonomy all point to continuities with colonial modes of extraction. The danger lies not only in the misuse of data but also in the erosion of agency among those whose lives are most directly affected. Vulnerable populations may find themselves subject to technological interventions designed elsewhere, with little opportunity to shape how their data is collected, interpreted, or applied.

This ethical dilemma is not merely theoretical. Recent controversies underscore the stakes of the debate. For instance, the partnership between the United Nations High Commissioner for Refugees (UNHCR) and Palantir Technologies, a U.S.-based data analytics firm, raised concerns about the potential misuse of refugee data for surveillance purposes. Similarly, the biometric registration of refugees in Kenya and Bangladesh has sparked debate about the risks of data breaches and the lack of informed consent. These cases illustrate how digital humanitarianism, when uncritically embraced, can entrench inequalities rather than alleviate them.

This paper aims to critically examine the ethical dilemmas posed by data colonialism in the context of digital humanitarianism. It seeks to analyze how the collection, management, and use of humanitarian data can reproduce colonial patterns of extraction and domination. The key objectives are as follows:

1. To trace the evolution of digital humanitarianism and its role in contemporary aid practices.
2. To situate the concept of data colonialism within both historical and theoretical frameworks.
3. To evaluate specific case studies where humanitarian data practices have raised ethical concerns.
4. To explore potential frameworks for ethical, decolonial approaches to digital humanitarianism.

By pursuing these objectives, the paper contributes to ongoing debates about the future of

humanitarianism in a digital age. It argues that ethical digital humanitarianism is possible only if data practices are reimagined in ways that prioritize community agency, transparency, and justice.

The paper is organized into six sections. Following this introduction, the first section explores the evolution and current practices of digital humanitarianism, highlighting key actors, tools, and case studies. The second section outlines the concept of data colonialism and situates it within broader debates about the digital economy. The third section delves into the ethical dilemmas that arise when humanitarian data practices intersect with colonial legacies. The fourth section presents case studies that exemplify these dilemmas in practice. The fifth section offers a critical analysis of how digital humanitarianism can perpetuate inequalities under the guise of aid. Finally, the sixth section proposes frameworks for ethical digital humanitarianism, including decolonial approaches and community-led data governance. The paper concludes by reflecting on the implications for the future of humanitarian practice.

Through this structure, the paper develops a comprehensive argument about the risks and possibilities of digital humanitarianism in the era of data colonialism. While acknowledging the transformative potential of digital tools, it insists on the need for ethical vigilance and structural change.

II. EVOLUTION OF HUMANITARIAN PRACTICES IN THE DIGITAL ERA

Humanitarianism has never been static; it has consistently adapted to shifting global realities. In the nineteenth and early twentieth centuries, humanitarian work largely relied on missionary networks, colonial administrations, and international organizations such as the Red Cross. Aid was often delivered through hierarchical structures that mirrored broader imperial power relations (Barnett, 2011). By the mid-twentieth century, humanitarianism became more professionalized, institutionalized, and global in scope, particularly after the establishment of the United Nations and the codification of international humanitarian law.

The digital turn of the twenty-first century represents one of the most significant transformations in humanitarian practice. Following the proliferation of mobile phones, internet access, and satellite technologies, humanitarian organizations began to integrate digital tools into their operations. These tools were initially used to supplement traditional methods, such as mapping disaster zones or coordinating logistics. However, as data-driven technologies advanced, they came to shape how crises are understood and managed.

Humanitarianism increasingly depends on the collection, processing, and analysis of digital data (Meier, 2015).

One of the most symbolic moments marking this transition was the 2010 earthquake in Haiti. International responders relied heavily on digital volunteers who used social media, crowdsourced mapping platforms, and SMS systems to identify affected areas and coordinate aid (Munro, 2013). This event demonstrated that information flows could directly influence humanitarian outcomes. It also illustrated the emergence of a “networked humanitarianism” in which private citizens, technology companies, and grassroots initiatives played critical roles alongside established aid organizations.

Digital humanitarianism can be understood as the application of digital technologies and data-driven methods to humanitarian action, encompassing both emergency response and long-term assistance (Burns, 2019). It involves actors ranging from international organizations such as the UN to volunteer communities like the Standby Task Force, as well as private corporations offering technological platforms. Tools used include satellite imagery, drones, geospatial mapping, big data analytics, machine learning, and biometric identification systems.

Importantly, digital humanitarianism is not merely about technological efficiency; it also reflects a broader epistemological shift. Crises are increasingly conceptualized as data problems that can be solved through information collection, visualization, and analysis. Populations in distress are frequently rendered into datasets, and humanitarian challenges are reframed in terms of data gaps rather than structural inequalities. While this approach can yield faster and more targeted responses, it risks reducing complex human experiences to digital abstractions (Madianou, 2019).

Digital humanitarianism is therefore both a practice and an ideology. It promotes the belief that digital innovation is inherently beneficial to humanitarianism, despite the ethical, political, and cultural complexities involved. Recognizing this duality is essential to understanding why digital humanitarianism is simultaneously celebrated as a breakthrough and critiqued as a new form of dominance.

The digital humanitarian ecosystem involves a wide range of actors, each contributing in distinct ways.

1. International Organizations: Institutions such as the UN, World Food Programme (WFP), and International Organization for Migration (IOM) increasingly depend on digital infrastructures for crisis management. For instance, the WFP's "Building Blocks" initiative uses blockchain technology to deliver cash-based transfers to refugees (World Food Programme, 2019).

2. Non-Governmental Organizations (NGOs): NGOs often adopt digital tools to improve accountability and transparency. Organizations like Médecins Sans Frontières (MSF) use data analytics to monitor disease outbreaks and evaluate the effectiveness of medical interventions.

3. Governments: State actors utilize humanitarian data for disaster preparedness, refugee management, and border security. However, government involvement raises concerns about the militarization of humanitarian data, particularly when refugee registries are shared with security agencies (Jacobsen, 2015).

4. Private Technology Companies: Firms such as Google, Facebook, and Palantir provide critical infrastructures for digital humanitarianism. Their involvement introduces both technical capacity and commercial interests into humanitarian spaces. The reliance on proprietary platforms raises issues of sovereignty and dependency.

5. Volunteer and Grassroots Networks: Digital humanitarianism has enabled the rise of "crowdsourced" participation. Groups like the Humanitarian OpenStreetMap Team (HOT) allow volunteers to map remote areas during crises, democratizing humanitarian engagement while also raising questions about data quality and sustainability.

This constellation of actors illustrates that digital humanitarianism is not controlled by any single institution. Rather, it emerges from interactions between state, corporate, civil society, and grassroots initiatives. The multiplicity of stakeholders adds both richness and complexity, particularly when considering accountability and ethical responsibility.

Haiti Earthquake (2010)

The Haiti earthquake remains a landmark in the history of digital humanitarianism. Platforms such as Ushahidi and OpenStreetMap enabled volunteers worldwide to contribute to crisis mapping efforts. The resulting maps guided aid distribution and search-and-rescue operations (Munro, 2013). This case highlighted the transformative potential of crowdsourcing while also exposing challenges, such as verifying information accuracy and ensuring that local populations benefited from these data efforts.

Syrian Refugee Crisis

The mass displacement caused by the Syrian conflict spurred humanitarian organizations to adopt biometric technologies for refugee registration. The UNHCR deployed iris-scanning systems in Jordanian camps to streamline aid delivery (Jacobsen, 2015). While these technologies improved efficiency, they also raised questions about data privacy and potential misuse. Refugees often had little choice but to comply with biometric registration, raising concerns about informed consent.

Ebola Outbreak in West Africa (2014–2016)

During the Ebola outbreak, digital tools were used to monitor disease spread, coordinate health responses, and dispel misinformation. Mobile phone data helped track population movements, while social media platforms were leveraged to disseminate health information (Tatem et al., 2014). These efforts demonstrated how data-driven approaches could save lives, yet they also underscored the risk of surveillance creep if data were later repurposed for non-humanitarian objectives.

COVID-19 Pandemic

The COVID-19 crisis accelerated digital humanitarianism on a global scale. Contact-tracing apps, digital vaccination certificates, and predictive analytics became central to pandemic management. While these tools enhanced crisis response, they also magnified concerns about surveillance, government overreach, and the role of private tech companies in managing public health data (Milan & Treré, 2020).

Benefits of Digital Humanitarianism

Digital humanitarianism offers several tangible benefits that explain its growing adoption.

- Speed and Efficiency: Digital platforms enable real-time data collection and analysis, allowing aid organizations to respond more quickly to emergencies.
- Global Participation: Crowdsourced platforms empower individuals worldwide to contribute to humanitarian efforts, fostering a sense of global solidarity.
- Transparency and Accountability: Digital records can increase accountability by tracking aid flows and monitoring corruption.
- Innovation and Scalability: Emerging technologies like AI and blockchain create opportunities for innovative solutions that can be scaled across contexts.

These benefits should not be dismissed, as they demonstrate the transformative potential of digital humanitarianism when implemented responsibly.

Limitations and Ethical Challenges

Despite its advantages, digital humanitarianism introduces significant limitations and ethical challenges.

- Data Ownership and Consent: Humanitarian data is often collected from vulnerable populations without genuine consent. Power imbalances make it difficult for affected individuals to refuse participation.
- Dependency on External Actors: Reliance on proprietary platforms owned by corporations in the Global North creates dependency and undermines local sovereignty.
- Data Quality and Reliability: Crowdsourced information may be inaccurate or manipulated, complicating decision-making during crises.
- Risk of Surveillance and Misuse: Humanitarian data can be shared with state security agencies or private actors, potentially endangering the very populations it is meant to protect.

These challenges illustrate that digital humanitarianism cannot be viewed simply as a technical fix. Instead, it must be critically assessed within broader social, political, and ethical frameworks.

Understanding digital humanitarianism requires situating it within the broader dynamics of data colonialism. Both phenomena involve the extraction and exploitation of resources—in this case, human data. Just as colonial powers historically justified their dominance through narratives of civilization and development, digital humanitarianism risks legitimizing data extraction through narratives of aid and benevolence.

For example, when refugees are required to provide biometric data in exchange for food or shelter, their personal information becomes a resource that can be appropriated and controlled by powerful institutions. The asymmetry lies not only in who owns and profits from this data but also in the lack of agency for those who generate it. By framing data collection as essential for humanitarian response, digital humanitarianism can obscure the colonial logic underlying these practices.

Recognizing this connection does not mean dismissing the value of digital humanitarianism altogether. Rather, it calls for critical vigilance to ensure that technological innovation does not replicate patterns of exploitation. Addressing these concerns requires confronting the ethical dilemmas at the heart of humanitarian data practices, a task that will be further explored in subsequent sections.

III. HISTORICAL ROOTS OF COLONIAL EXTRACTION

To fully appreciate the concept of data colonialism, it is essential to ground it in the broader history of colonialism itself. Colonialism was not merely a political arrangement in which one territory exerted control over another; it was a system of extraction and domination in which the colonized were systematically dispossessed of their land, resources,

labor, and cultural autonomy (Loomba, 2015). The logic of colonialism rested on the asymmetry of power: European empires justified their conquest through narratives of civilizing missions and economic development while engaging in violent appropriation and exploitation.

A critical aspect of colonialism was the production of knowledge about colonized peoples. Empires invested heavily in cartography, ethnography, and bureaucratic record-keeping as tools of governance (Said, 1979). Knowledge and power were intimately linked; by classifying, quantifying, and documenting colonized populations, imperial powers could exert control over them. This epistemic dimension of colonialism illustrates how domination was not limited to material resources but also extended to information and representation.

In many ways, contemporary practices of data collection and analysis replicate this historical dynamic. Just as colonial administrations used maps and censuses to govern subject populations, modern institutions use digital technologies to gather detailed information about individuals and communities. The difference lies in scale and speed: today's data infrastructures enable forms of surveillance and extraction that are global, instantaneous, and continuous. The analogy between historical colonialism and contemporary data practices is not perfect, but it provides a powerful lens for understanding the persistence of extractive logics in the digital age.

The popular metaphor of data as the "new oil" has become a shorthand for describing the economic centrality of data in contemporary society (Morozov, 2019). Just as oil fueled industrial capitalism in the twentieth century, data fuels informational capitalism in the twenty-first. Corporations such as Google, Meta, and Amazon derive immense value from their capacity to extract, analyze, and monetize user data.

However, the metaphor is more than economic; it carries colonial connotations. Oil extraction often involved the exploitation of Global South territories by Global North corporations, reinforcing geopolitical inequalities. Similarly, data extraction disproportionately affects populations in the Global South, who become sources of raw informational material without sharing in the profits generated from it (Couldry & Mejias, 2019). The metaphor obscures the fact that, unlike oil, data is generated by human life itself—through everyday actions, communications, and movements. This makes data extraction uniquely intimate and invasive.

By framing data as a natural resource, the metaphor of "new oil" naturalizes its extraction, obscuring the ethical issues surrounding consent and agency. Just as colonial empires once treated colonized lands as terra nullius—empty lands available for appropriation—data colonialism treats human life as a free resource to be mined. The assumption that data is simply "out there" waiting to be collected erases the rights of individuals and communities to control their digital footprints.

The term "data colonialism" was popularized by Couldry and Mejias (2019), who argue that digital capitalism represents a new stage of colonial appropriation. They define data colonialism as the appropriation of human life through data, an arrangement in which the everyday activities of individuals are continuously monitored, captured, and transformed into value for corporations and states. This process is not merely economic but also social and political, as it reshapes how people relate to one another, to institutions, and to themselves.

Data colonialism operates through several key mechanisms:

1. Extraction: Data is harvested from individuals, often without explicit consent. This occurs through platforms, apps, biometric systems, and surveillance infrastructures.
2. Commodification: Once extracted, data is packaged and sold as a commodity, generating profits for corporations.
3. Control: Data infrastructures enable institutions to monitor, predict, and influence human behavior, reinforcing asymmetries of power.

This framework highlights that data colonialism is not a metaphor but a concrete system of domination. It builds on the infrastructures of surveillance capitalism described by Shoshana Zuboff (2019), but it extends the analysis by situating these practices within a longer history of colonialism. Surveillance capitalism describes how corporations profit from predicting human behavior, while data colonialism emphasizes how these practices reproduce colonial

logics of appropriation and control.

Although data colonialism is a global phenomenon, its impacts are unevenly distributed. Populations in the Global South often experience the most acute forms of data extraction while having the least power to resist or regulate them (Milan & Treré, 2019). For instance, large technology firms frequently conduct pilot projects in African or Asian countries, experimenting with biometric systems, digital ID cards, or mobile payment infrastructures. These initiatives are often justified as tools for development or inclusion, yet they simultaneously generate valuable data for corporations while exposing local populations to risks of surveillance and exclusion.

An example is India's Aadhaar program, one of the largest biometric ID systems in the world. While Aadhaar has been celebrated for facilitating access to services, it has also faced criticism for privacy violations, data breaches, and exclusionary effects on marginalized populations (Khera, 2019). Similarly, the use of biometric technologies in refugee camps across Africa has raised concerns about consent and dependency on external technology providers (Jacobsen, 2015).

These cases illustrate how data colonialism is not simply about corporate profit but also about geopolitical hierarchies. The Global South often functions as a laboratory for digital experimentation, echoing colonial dynamics in which peripheral regions were sites of resource extraction and testing for metropolitan centers.

Data colonialism is not only about economic exploitation but also about epistemic domination. Just as colonialism imposed categories of knowledge that marginalized indigenous ways of knowing, data colonialism privileges computational logics over other forms of understanding. Human experiences are translated into data points, stripped of context, and subjected to algorithmic analysis. This epistemic reduction erases complexity and diversity, reinforcing a worldview in which quantifiable data is equated with truth.

Critical scholars argue that this epistemic dominance constitutes a form of "technocolonialism" (Madianou, 2019). Humanitarian organizations, for instance, increasingly frame crises in terms of data deficits rather than structural inequalities such as poverty, conflict, or political marginalization. By prioritizing data-driven solutions, they risk overlooking the lived realities of affected communities. This reinforces a top-down approach in which external actors define problems and solutions, sidelining local knowledge and agency.

One of the most troubling aspects of data colonialism is the double use of data. Information collected for humanitarian or development purposes can later be repurposed for commercial or security objectives. For example, refugee biometric data gathered to facilitate aid distribution may also be shared with government agencies for border control or counterterrorism (Latonero, 2019). This dual-use dynamic mirrors colonial practices in which infrastructures built under the guise of development often served strategic or exploitative purposes.

The double use of data raises profound ethical questions. Populations in crisis are often in no position to refuse data collection, making their participation coerced rather than voluntary. When this data is later used for purposes beyond humanitarian aid, it undermines trust and exposes vulnerable communities to new forms of harm. This dilemma highlights the need for robust safeguards and governance mechanisms to ensure that humanitarian data is not weaponized.

While the concept of data colonialism underscores the pervasiveness of extractive logics, it also invites consideration of resistance and alternatives. Scholars and activists have called for decolonial approaches to data, emphasizing community ownership, participatory governance, and the recognition of diverse epistemologies (Couldry & Mejias, 2019; Milan & Treré, 2019). Initiatives such as "data sovereignty" movements among Indigenous communities exemplify efforts to reclaim control over digital resources.

These approaches challenge the inevitability of data colonialism by proposing models in which data is treated not as a commodity but as a collective resource to be managed in accordance with ethical and cultural values. They also emphasize the importance of building technological infrastructures that are locally owned and accountable, reducing dependency on external corporations.

The concept of data colonialism provides a critical framework for analyzing the ethical dilemmas of digital humanitarianism. By situating contemporary data practices within the historical legacies of colonial extraction and epistemic domination, it highlights the risks of reproducing inequalities under the guise of aid. Data colonialism is not an abstract metaphor but a concrete system of extraction, commodification, and control that disproportionately affects vulnerable populations. Recognizing this dynamic is essential for reimagining digital humanitarianism in ways that prioritize agency, justice, and decoloniality.

IV. CRITICAL ANALYSIS

Digital humanitarianism has transformed crisis response, offering tools that enable faster, more targeted, and potentially life-saving interventions. Yet, as explored in the previous sections, these innovations are deeply entangled with the ethical dilemmas of data colonialism. The cases of Rohingya refugees, African biometric systems, the UNHCR–Palantir partnership, and disaster zone surveillance illustrate that while technology can enhance humanitarian efficiency, it also reinforces asymmetries of power, limits consent, and creates dependency on external actors. This section critically analyzes these dynamics, emphasizing the intersection of humanitarian intent, technological infrastructure, and the structural inequalities embedded in global aid systems.

At the core of the ethical challenges of digital humanitarianism lies the persistent asymmetry of power between aid providers and recipients. The concept of the "humanitarian gaze" (Barnett, 2011) describes the ways in which aid organizations and global actors interpret and manage populations in crisis. Digital technologies amplify this gaze, enabling continuous monitoring and categorization of vulnerable communities. The capacity to capture granular data on individuals—ranging from biometric identifiers to geolocation—renders populations visible and legible to distant actors while offering little reciprocal visibility or influence for those observed.

This asymmetry is intensified by the dominance of Global North institutions and technology companies in humanitarian data infrastructures. Platforms and software that manage refugee registries, aid distribution, and crisis mapping are predominantly developed and controlled by organizations headquartered outside the communities they serve (Couldry & Mejias, 2019). Consequently, humanitarian interventions are shaped not only by ethical principles but also by technological affordances, corporate priorities, and geopolitical hierarchies. The imbalance challenges the premise of impartiality in humanitarian action and raises critical questions about who ultimately benefits from data collection.

A recurring theme across case studies is the tension between operational efficiency and ethical responsibility. Humanitarian organizations frequently adopt digital tools to optimize logistics, prevent duplication, and respond rapidly to crises. For instance, biometric registration can streamline aid distribution and prevent fraud, while satellite imagery allows for immediate assessment of disaster zones (Meier, 2015). These efficiencies, however, are often pursued at the expense of ethical safeguards, such as informed consent, data sovereignty, and privacy.

The ethical tension arises from the imperative to act quickly in crises, where delays can cost lives, versus the moral obligation to respect the autonomy and dignity of affected populations. In practice, this often results in the normalization of "coerced consent," where vulnerable communities provide personal information as a condition for receiving life-saving aid. Such practices underscore the double-edged nature of digital humanitarianism: technologies that are intended to serve populations can simultaneously constrain their agency and expose them to unforeseen risks.

Digital humanitarianism, while technologically advanced, often reproduces structural inequalities that predate the digital era. The reliance on Global North corporations, proprietary platforms, and externally controlled data infrastructures mirrors historical patterns of colonial extraction. Just as colonial empires appropriated land, labor, and resources from colonized territories, contemporary humanitarian data practices extract personal and community information from populations with limited capacity to govern or contest its use (Milan & Treré, 2019).

The Rohingya case exemplifies this dynamic. Refugees are compelled to provide biometric data for access to aid, yet the management, storage, and potential secondary use of this data remain largely beyond their control (Latonero, 2019). Similarly, African refugee camps depend on proprietary technologies developed by multinational corporations, creating technological dependence and limiting local governance. These patterns reinforce the broader critique of data colonialism: digital humanitarianism, without structural safeguards, risks replicating inequities under the guise of benevolent intervention.

A critical but often overlooked aspect of digital humanitarianism is epistemic domination. By privileging data-driven analysis, algorithmic decision-making, and computational models, humanitarian organizations risk reducing complex human experiences to quantifiable datasets. This epistemic reduction marginalizes local knowledge, community priorities, and context-specific understanding, echoing what Madianou (2019) terms "technocolonialism."

Technocolonial practices extend beyond data collection to influence problem framing, decision-making, and resource allocation. Humanitarian organizations, guided by data analytics and predictive models, may prioritize interventions based on algorithmically derived assessments rather than community-identified needs. For instance, disaster response may focus on areas highlighted by satellite imagery, potentially neglecting smaller or less visible communities. In this sense, data not only mediates humanitarian action but also structures what is recognized as a crisis and whose needs are considered legitimate.

The potential for humanitarian data to be repurposed for non-humanitarian objectives represents a profound ethical dilemma. Biometric data, geolocation information, and digital identity records collected under the premise of aid can later be accessed by state security agencies, commercial entities, or research institutions (Jacobsen, 2015; Latonero, 2019). This "double-use" risk transforms data from a tool of assistance into a potential instrument of surveillance, exclusion, or coercion.
For example, the UNHCR–Palantir partnership illustrates the tension between operational efficiency and ethical oversight. While predictive analytics and integrated data systems can enhance aid coordination, they also concentrate sensitive information in the hands of private corporations, raising questions about privacy, consent, and accountability. The case highlights that technological sophistication does not automatically equate to ethical responsibility; without governance frameworks, data practices may inadvertently harm the very populations they intend to protect.

Addressing these ethical dilemmas requires moving beyond technical solutions to embrace structural, ethical, and decolonial frameworks. Several principles emerge as critical for responsible digital humanitarianism:

1. Community-Led Governance: Populations affected by crises should participate in decisions regarding the collection, storage, and use of their data. Mechanisms for consent, oversight, and accountability must be accessible and culturally sensitive.
2. Transparency and Accountability: Organizations must clearly articulate the purposes of data collection, potential risks, and the entities with access to information. Transparent reporting fosters trust and reduces the likelihood of misuse.
3. Decentralization and Data Sovereignty: Local actors should be empowered to manage data infrastructures, reducing dependency on external corporations and enhancing resilience.
4. Ethical Risk Assessment: Data collection must be accompanied by systematic evaluations of potential harm, including secondary uses, breaches, and long-term consequences.
5. Recognition of Diverse Epistemologies: Humanitarian organizations must integrate local knowledge and community perspectives into decision-making, avoiding the reduction of lived experiences to algorithmic outputs (Madianou, 2019).

Implementing these principles challenges the prevailing model of digital humanitarianism, which often prioritizes efficiency, scalability, and corporate partnerships. However, it also offers a pathway for reconciling technological innovation with ethical responsibility, fostering practices that respect the dignity, agency, and sovereignty of vulnerable populations.

The critical analysis of digital humanitarianism and data colonialism underscores the need for a reframing of humanitarian practices in the digital age. Rather than viewing technology as inherently beneficial, organizations must approach innovation with an awareness of power asymmetries, structural inequalities, and ethical risks. Digital tools should serve communities, not extract or control them.

This reframing requires integrating ethical reflection into every stage of humanitarian operations: from the design of digital systems to the management of data and the evaluation of outcomes. It also demands attention to the geopolitical context, including historical legacies of colonialism, contemporary dependencies on Global North infrastructures, and global inequalities in technological capacity. Only by confronting these structural factors can digital humanitarianism realize its potential without reproducing the harms it seeks to mitigate.

Digital humanitarianism represents a transformative evolution in global aid, offering unprecedented opportunities for speed, precision, and reach. Yet, as the preceding analysis demonstrates, it is deeply entangled with the ethical dilemmas of data colonialism. Power asymmetries, epistemic reduction, dependency on external technologies, and the double-use of data all pose significant challenges to ethical humanitarian practice.

The critical analysis reveals that these dilemmas are not incidental but structural. They stem from the interaction of technological systems, organizational practices, and historical legacies of extraction and domination. Addressing these challenges requires more than technical fixes; it necessitates community-led governance, transparency, decolonial approaches, and the recognition of local knowledge.

Ultimately, the legitimacy of digital humanitarianism depends on its capacity to prioritize human dignity, agency, and justice over efficiency, profit, or external control. By critically engaging with the ethical complexities of data colonialism, humanitarian actors can develop frameworks that harness the potential of digital tools while minimizing harm, fostering a model of aid that is both technologically innovative and ethically responsible.

V. TOWARDS ETHICAL DIGITAL HUMANITARIANISM

The preceding analysis has highlighted both the transformative potential of digital humanitarianism and the ethical dilemmas posed by data colonialism. While technological tools can improve aid efficiency, transparency, and scalability, they also reproduce power imbalances, marginalize local knowledge, and expose vulnerable populations to risks of surveillance and coercion. Addressing these challenges requires reimagining digital humanitarianism through ethical, decolonial, and participatory frameworks. This section outlines strategies for responsible data governance, community-led interventions, and policy recommendations that aim to reconcile technological innovation with human dignity and social justice.

To foster ethical digital humanitarianism, several guiding principles must be embedded into practice:

1. Informed and Meaningful Consent

Informed consent is central to ethical humanitarian practice, yet it is often constrained in crisis contexts. Vulnerable populations may comply with data collection because access to aid depends on participation, undermining the voluntariness of consent. To address this, humanitarian actors should adopt participatory consent processes that are transparent, culturally sensitive, and ongoing. Communities should understand what data is collected, why it is collected, how it will be used, and the potential risks involved (Latonero, 2019).

Technologies such as digital consent dashboards, community briefings, and multi-language documentation can support these efforts.

2. Community-Led Governance

Decentralizing control over data empowers communities to participate actively in decision-making processes. Local data governance committees or advisory councils can oversee collection, storage, and usage practices, ensuring that aid aligns with community priorities. Such mechanisms reduce dependency on external actors and promote accountability (Madianou, 2019). Furthermore, community-led governance fosters trust, which is essential for effective humanitarian engagement.

3. Transparency and Accountability
Transparency regarding data processes—including who accesses data, for what purposes, and under what conditions—is essential. Humanitarian organizations should adopt policies that allow affected communities to monitor and challenge data practices. Auditable platforms, open reporting, and public documentation of data policies contribute to accountability and reduce the likelihood of misuse. Transparency also facilitates ethical oversight by regulatory bodies, civil society, and international watchdogs.

4. Decentralization and Technological Sovereignty
Reliance on proprietary platforms from Global North corporations can reinforce structural dependencies and compromise sovereignty. To counter this, humanitarian actors should invest in locally owned and open-source technological infrastructures. This includes community-hosted databases, locally managed cloud solutions, and open-source software for data analysis. Decentralized systems not only reduce dependence on external actors but also allow local stakeholders to tailor technology to context-specific needs.

5. Ethical Risk Assessment
Systematic ethical risk assessments should accompany all digital humanitarian interventions. Organizations must anticipate secondary uses, data breaches, unintended surveillance, and socio-cultural harms. By embedding risk assessment into project design, organizations can proactively identify potential ethical conflicts and implement mitigation strategies.

Decoloniality in digital humanitarianism seeks to disrupt extractive and hierarchical dynamics that reproduce colonial legacies. Several strategies can facilitate decolonial practices:

1. Centering Local Knowledge
Decolonial approaches recognize the value of local epistemologies and lived experiences. Humanitarian interventions should prioritize community insights in problem identification, solution design, and data interpretation. This reduces epistemic reductionism and ensures that aid reflects culturally and contextually relevant needs (Milan & Treré, 2019).

2. Equitable Data Partnerships
Partnerships between humanitarian organizations and technology providers must be structured to benefit local populations. Data sharing agreements should include clauses that protect community interests, limit commercial exploitation, and ensure local access to infrastructure. Equitable partnerships challenge power asymmetries and promote mutual accountability.

3. Data Sovereignty Movements
Data sovereignty emphasizes that communities should control their data as a collective resource. Indigenous and marginalized groups have pioneered frameworks for asserting data sovereignty, including local data trusts, community-managed registries, and participatory mapping initiatives. Humanitarian actors can adopt similar practices to ensure that vulnerable populations retain control over the data generated in their contexts.

Emerging technologies offer opportunities to operationalize ethical and decolonial approaches:

- Blockchain and Distributed Ledger Technologies: Blockchain can enable secure, transparent, and decentralized data management, giving communities ownership of their records and reducing reliance on centralized corporate platforms (World Food Programme, 2019).
- Privacy-Preserving Data Analytics: Techniques such as differential privacy and federated learning allow organizations to analyze data for operational insights without exposing sensitive personal information.
- Digital Identity Solutions: Ethical digital identity systems should prioritize portability, privacy, and user control, ensuring that individuals can manage how their data is used and accessed.
- Participatory Mapping and Crowdsourcing: Engaging communities in mapping, monitoring, and data collection empowers local stakeholders and ensures that humanitarian interventions reflect local realities.

These innovations, however, must be implemented with attention to socio-cultural context, inclusivity, and the avoidance of replicating extractive practices. Technology alone cannot resolve ethical dilemmas; it must be paired with governance, accountability, and community engagement.

Policy Recommendations

To support ethical digital humanitarianism at scale, policy interventions are necessary at multiple levels:

1. International Standards for Humanitarian Data

Global institutions should develop binding standards for the collection, storage, sharing, and analysis of humanitarian data. These standards should address consent, privacy, security, and ethical risk assessment, and should be applicable to both public and private actors.

2. National Regulatory Frameworks

States hosting humanitarian operations should enact policies that protect data sovereignty and regulate foreign access to sensitive information. Legal frameworks should prioritize the rights of affected populations while enabling efficient humanitarian operations.

3. Corporate Accountability Mechanisms

Corporations providing technological platforms for humanitarian work must be held accountable for ethical practices. This includes auditing data use, preventing secondary exploitation, and ensuring equitable partnerships with local actors.

4. Capacity Building for Local Actors

Investing in local technological, administrative, and ethical capacity ensures that communities can manage digital humanitarian interventions independently. Training programs, technical support, and knowledge transfer initiatives strengthen resilience and reduce dependency on external actors.

5. Ethical Evaluation and Reporting

Humanitarian organizations should integrate ethics into monitoring and evaluation frameworks. Regular reporting on data practices, risks, and community impact ensures transparency and continuous improvement.

Implementing ethical and decolonial practices requires a cultural shift within humanitarian organizations. Efficiency and speed must be balanced with dignity, agency, and justice.

Digital tools should be positioned not as ends in themselves but as instruments for empowering communities.

The future of digital humanitarianism depends on integrating ethical principles across all stages of intervention: from design to deployment, from data collection to analysis, and from decision-making to accountability. Communities should be co-creators of technological interventions, shaping both the tools used and the ways in which their data is governed.

Decolonial and participatory approaches ensure that digital humanitarianism does not merely replicate historical patterns of extraction and domination. Instead, it becomes a model for ethical, inclusive, and sustainable aid that recognizes the sovereignty, knowledge, and dignity of affected populations.

CONCLUSION

Digital humanitarianism holds transformative potential for crisis response, offering unprecedented opportunities to save lives, coordinate aid, and enhance transparency. However, the ethical dilemmas highlighted throughout this paper demonstrate that without careful consideration, these technologies risk reproducing the extractive logics of data colonialism. Power asymmetries, epistemic reduction, technological dependency, and the double-use of data present significant ethical challenges that must be addressed through decolonial and participatory frameworks.

By embedding principles of informed consent, community-led governance, transparency, decentralization, and ethical risk assessment, humanitarian organizations can reconcile technological innovation with ethical responsibility. Furthermore, integrating local knowledge, equitable partnerships, and data sovereignty initiatives ensures that aid is not only effective but also just and empowering. Ethical digital humanitarianism is achievable, but it requires a deliberate, sustained commitment to prioritizing the dignity, agency, and rights of the populations it serves.

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