

Article

Algorithmic Mediation, Trust, and Solidarity in the Post-Secular Age

George Joseph ^{1,*} and András Máté-Tóth ² ¹ Liberal Arts and Sciences, Indian Institute of Management Ranchi, Ranchi 834008, India² Department of Religious Studies, Faculty of Humanities and Social Sciences, University of Szeged, 6722 Szeged, Hungary; matetoth@rel.u-szeged.hu

* Correspondence: george.joseph@iimranchi.ac.in

Abstract

This article examines how algorithmic mediation reshapes social trust and solidarity in the post-secular age. Historically grounded in shared moral horizons shaped by religion, tradition, and communal practices, trust has increasingly been displaced by technocratic governance, market rationality, and algorithmic systems that mediate work, cognition, communication, and political life. Through a critical analysis of contemporary developments—including algorithmic labour management, neurotechnology, large language models, digital public spheres, technological sovereignty, and global AI governance—the article argues that algorithmic mediation intensifies the fragility of trust by instrumentalizing human agency, fragmenting public reason, and concentrating power within opaque technological infrastructures. Against technological determinism and purely procedural approaches to ethics, the article advances a normative framework rooted in solidarity and the common good. Drawing on post-secular perspectives, a retrieval of natural law normativity, and the resources of Catholic Social Teaching, it contends that trust cannot be sustained through efficiency, prediction, or regulation alone. Instead, social trust depends upon relational goods—dignity, responsibility, participation, and truth—that resist reduction to data-driven optimization. Reclaiming solidarity therefore requires re-embedding AI within moral horizons capable of guiding technological development toward integral human flourishing. In this sense, the governance of AI emerges not merely as a technical challenge but as a decisive moral and political task for post-secular societies.

Keywords: algorithmic mediation; social trust; solidarity; common good; post-secular ethics



Academic Editor: Randall Reed

Received: 9 February 2026

Revised: 25 March 2026

Accepted: 30 March 2026

Published: 1 April 2026

Copyright: © 2026 by the authors.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.

1. Introduction

Historically, social trust and solidarity were sustained by shared moral horizons rooted in religion, tradition, and community ethos.¹ Here, social trust is understood as the broader relational expectation that persons, institutions, and social systems will act in ways that are intelligible, responsible, and oriented toward the common good. Such trust functions as a background condition of social cooperation, enabling citizens to participate in economic, political, and cultural life with the reasonable expectation that others will not systematically exploit their vulnerability. With the advent of secular modernity, these foundations were gradually displaced by political and economic projects that sought to institutionalize solidarity—most notably through ideological frameworks such as Marxism and through the integrative promises of liberal market economies.

In the contemporary post-secular condition, however, religion re-emerges not as a return to pre-modern unity but as a transformed and plural presence within public life. By post-secular the article refers to a social and intellectual context in which secular institutions remain dominant, yet religious traditions continue to shape moral reasoning and public debate rather than being confined to the private sphere. Within this context, a post-secular normative framework denotes an approach to social ethics that acknowledges this plural moral landscape and seeks shared principles capable of guiding public life without excluding religious sources of moral insight. This context demands, on the one hand, coherent political and economic frameworks capable of sustaining social cooperation, and on the other, a renewed cultivation of virtues that can mediate pluralism without erasing difference. Yet, this task becomes deeply contested when the epistemological validity of truth itself is rejected, undermining a shared normative pursuit. The challenge is further intensified in an age of algorithmically mediated power, where digital infrastructures governed by Big Tech increasingly shape social relations, public reasoning, and patterns of trust, raising urgent questions about solidarity, responsibility, and the common good in post-secular societies.

To address this challenge, this article advances a normative argument that the erosion of social trust in the algorithmic age can only be countered through a deliberate retrieval of solidarity and the common good. Methodologically, the paper follows a two-stage conceptual procedure: first, it conducts a critical analysis of specific thematic domains—selected because they represent the primary sites where power, opacity, and instrumental rationality most acutely restructure human agency; second, it turns constructively toward a normative retrieval of moral horizons. Theoretically, the study is situated within a post-secular framework, which acknowledges a plural moral landscape where religious insights and secular scholarship engage in public dialogue. Within this framework, natural law serves as a vital conceptual bridge, providing a shared grammar to integrate secular critiques of digital infrastructures with magisterial sources from the Catholic Social Teaching tradition. In this dialogue, magisterial sources are positioned as enduring normative resources that offer an anthropological vision of the human person capable of orienting technological development toward integral human flourishing. The article argues that the relational goods are irreducible to technological optimization, and it aims to show that sustaining trust in an algorithmically mediated world is not merely a matter of technical regulation but a fundamentally moral and political task.

2. Mediated Relations: Algorithms, Power, and the Fragility of Social Trust

2.1. Work Under Algorithms: The Question of Human Dignity and Technological Design

One of the most consequential spheres where algorithmic mediation reshapes social trust today is the domain of human work. Contemporary discourses on Artificial Intelligence are often dominated by claims about efficiency, productivity, and innovation, yet such techno-economic narratives risk obscuring deeper anthropological and ethical questions. As *Caritas in Veritate* reminds us, technology is never merely instrumental: it reveals the human person and expresses aspirations toward development (Benedict XVI 2009, §68–70). Properly understood, technology must function as stewardship rather than self-serving power, remaining ordered to the dignity of the human person and to integral human development. The critical challenge, therefore, is how societies might move from techno-centric systems toward genuinely human-centric designs that sustain trust, responsibility, and social cohesion.

A persistent difficulty in addressing this challenge lies in the widening gulf between technological capability and ethical reflection. Technological innovation advances at extraordinary speed, shaped largely by positivist and empirical logics, while ethical discourse—grounded in freedom, responsibility, and moral deliberation—develops more slowly and

remains structurally fragile (Jonas 1984, pp. 26–28). This asymmetry generates a chronic dilemma: technologies increasingly structure social life before societies have articulated the normative frameworks needed to govern them. In the sphere of work, this lag contributes directly to the erosion of trust, as workers experience technological systems not as instruments of empowerment but as opaque forces beyond democratic or moral accountability.

Historically, human work has been central to social questions because it mediates between economic systems and human dignity (John Paul II 1981, §§1–6, 9–10). In contemporary economies, the shape of work is increasingly defined by expertise. Industrialization replaced artisanal knowledge with mass expertise; the computer revolution, in turn, displaced mass expertise with intensified professionalization. Expertise—understood as domain-specific competence enabling the achievement of valuable goals—commands high wages when scarce and economically strategic, while non-expert labour, abundant and substitutable, is systematically devalued (International Labour Organization 2024). This dynamic has encouraged the commodification of labour, particularly in industrialized economies where labour’s share of GDP remains high, while in regions where labour is cheap, automation is neither economically attractive nor ethically scrutinized. The absence of automation in contexts such as artisanal weaving in Bangladesh or cobalt mining in the Democratic Republic of Congo exposes a global asymmetry: technological progress follows capital incentives rather than human need.

Algorithmic mediation intensifies these asymmetries through the rise of digital labour platforms and the gig economy (Pontifical Academy for Life et al. 2020, p. 3). These platforms operate with limited transparency, enabling algorithmic manipulation of workers’ time, wages, and availability while extracting unpaid or underpaid labour at scale. Such conditions weaken social trust by transforming work into fragmented, individualized transactions governed by opaque systems rather than reciprocal social relations. The resulting precarity contributes to what may be described as “technological captivity,” wherein advanced technologies operating within market frameworks displace unskilled workers and redirect income toward owners of machines and data infrastructures.

Against these trends, a normative account of work insists that dignity must take precedence over utility. The value of work does not derive from the nature of the task performed but from the fact that the worker is a subject rather than an object (Pontifical Council for Justice and Peace 2004, §§270–273). Even when work involves toil, it remains a formative and creative human activity linked to responsibility and social participation. Work sustains families, shapes communities, and serves as a primary site of civic formation. Yet, history also testifies to the capacity of work to be turned against the human person: as punishment, exploitation, or systematic degradation of dignity (John Paul II 1991, §34). Algorithmic systems, if left unchecked, risk reproducing these pathologies under the guise of efficiency and innovation.

Closely connected to the ethics of work is the question of rest, which technologically saturated cultures often marginalize (Francis 2015, §237). When rest is subordinated entirely to productivity, human agency erodes and trust weakens, as workers experience themselves as permanently instrumentalized. Traditions that affirm limits to work—whether through sabbatical practices or cultural rhythms of festivity—underscore that meaningful rest is necessary for learning, social bonds, and moral reflection. In hyper-functional algorithmic environments, the erosion of rest further intensifies alienation rather than resilience.

If algorithmic mediation is not to undermine social trust further, workers must be educated about AI and actively involved in its integration into the workplace (UNESCO 2024). This requires worker-centric data practices, empowering interfaces, and culturally aware AI systems that adapt to local forms of work rather than imposing paradigms shaped in Silicon Valley or the Global North. Special attention must be given to rural workers

and populations otherwise excluded from digital transformation, ensuring that AI serves inclusion rather than deepening structural neglect.

The distinction between automation and collaboration is decisive in this regard (Floridi et al. 2018, pp. 693–94). Poorly designed automation erodes expertise and deskills labour, while collaborative AI systems can act as force multipliers that augment human competence. The contrast between beneficial applications—such as diagnostic tools or carefully designed autopilot systems—and catastrophic failures illustrates that the future of work depends less on technological capacity than on normative design choices. The question, therefore, is not whether work will be replaced, but how work will be reconfigured. The future of work is not a forecasting problem but a designing problem.

This insight challenges technological determinism, which advances two equally flawed claims: that technological trajectories are fixed and workers must simply adapt, and that AI's development is inevitable due to market forces and geopolitics. Historical experience—such as the abolition of child labour, the implementation of wage laws, and the expansion of workers' rights—demonstrates that collective intervention can reshape technological and economic forces. Today, similar efforts are required. Workers must be collaborators in shaping technological trajectories, not passive recipients of displacement.

Finally, utopian visions of a post-work society sustained by radically capable AI risk distorting the dignity of labour (Pieper 1952, pp. 35–37). While repetitive work may appear trivial from a technological perspective, it has historically provided sustenance, identity, and meaning for families and communities. Humanization occurs not in the absence of work but through work carried out under dignified conditions. The ethical task, therefore, is not replacement but improvement—enhancing conditions, recognition, and participation.

Measuring AI against the dignity of human work requires paying attention to patterns of innovation. Much contemporary AI development serves already privileged professionals, driven by purchasing power and market incentives, while the needs of low-paid and vulnerable workers remain neglected. Technology, however, is not predetermined destiny. Human agency remains possible if societies are willing to act. Reorienting AI toward the dignity of work is thus not only an ethical imperative but a condition for restoring social trust in an algorithmically mediated age.

2.2. Neurotechnology, Cognitive Integrity, and the Fragility of Human Agency

If algorithmic mediation reshapes trust in the domain of work, neurotechnology extends this mediation into the interior landscape of human cognition, perception, and social relations themselves. Neurotechnologies—defined as tools that measure, interpret, and modulate neural systems—operate both as external aids and as instruments capable of transforming consciousness from within (Yuste et al. 2021, pp. 159–60). By capturing and manipulating brain activity through machine learning and data-driven AI, these technologies have found applications across medical, consumer, and military domains.

Among the most striking advances are optical neurotechnologies, which use lasers to manipulate neural circuits in animal brains. Such techniques can control individual neurons, influence neuroplasticity, and affect memory and motor skills. Experiments with mice, for instance, have demonstrated that visual hallucinations can be induced artificially, effectively “teaching” the animal to perceive what is not there and controlling its behaviour (Yuste 2015, pp. 491–93). As neuroscientist Rafael Yuste reflects, the implications of these experiments extend beyond the laboratory: what is possible in a mouse today may, with time, become feasible in humans, raising profound ethical and societal questions.

When combined with AI, neurotechnologies gain further predictive and interpretive capacities. Electrical neurotechnologies, such as EEG-based headsets, can now decode aspects of a person's speech, emotions, and facial gestures during cognitive tasks, opening the

door to unprecedented cognitive profiling (Farahany 2023, pp. 45–46). If misapplied, these technologies threaten the integrity of mental life, enabling external actors to manipulate, monitor, or even alter human thought. The phenomena of cognitive augmentation and cognitive debt illustrate this double-edged potential: while stimulation of memory or other capacities can enhance human capabilities, overreliance on AI-driven neurotechnology may undermine independent thinking, weaken freedom of thought, and compromise mental integrity (Carr 2020, pp. 115–20).

The risks extend beyond individual cognition to social trust and collective life. Cognitive profiling—where neural data can reveal private thoughts or assign characteristics to individuals or groups—carries the potential for abuse, particularly when consumer platforms commodify brain data. In such contexts, neurotechnologies intersect with social and ethical norms, challenging the foundations of human dignity, personal agency, and autonomy.

To address these challenges, the emerging concept of neuro-rights has sought to anchor neurotechnological development within human rights frameworks (Yuste 2025). The brain, as the organ responsible for generating all cognitive and mental activity, is central to human identity. Neuro-rights therefore include protections for mental privacy, mental integrity, and agency: ensuring that thoughts cannot be decoded or manipulated without consent, that personality cannot be externally altered, and that individual decision-making remains sovereign. International human rights principles, such as Article 27 of the Universal Declaration of Human Rights—which guarantees participation in cultural life and equitable access to scientific advancement—offer a normative anchor for these rights (United Nations 1948, art. 27).

Effective governance of neurotechnology requires anticipatory, inclusive, multilateral, and multi-stakeholder approaches that integrate legal, ethical, and technological instruments (Pontifical Academy of Social Sciences 2022, sect. 1.2, 4.1). Practical examples of such regulation already exist: countries such as Chile, Brazil, and the U.S. have begun to codify protections for neurotechnology and brain data (Yuste et al. 2021). Ultimately, aligning neurotechnological innovation with the common good and establishing robust safeguards for cognitive and mental autonomy is critical, not only for individual well-being but for sustaining the social trust and solidarity upon which societies depend.

2.3. Large Language Models, Cognitive Loss, and the Erosion of Social Trust

This already suggests the next aspect that we wanted to discuss. Among contemporary AI systems, Large Language Models (LLMs) occupy a particularly influential role in mediating social trust because they operate at the level of language itself. Language is not merely a vehicle for information exchange; it is the medium through which meaning, identity, and shared reality are constituted (Benedict XVI 2010, para. 24). When linguistic practices are increasingly shaped by algorithmic prediction, the conditions under which trust is formed and sustained are altered. At the core of this challenge lies a question about the nature of language and thought: what becomes of our capacity to think, reflect, and communicate when language itself is increasingly mediated by statistical prediction and operational efficiency? Fernando Pessoa’s dictum, “My homeland is my language,” gestures toward the intimate link between language, identity, and worldview (Pessoa 1998, p. 259). Yet, LLMs, which amalgamate vast linguistic corpora into a single predictive system, risk eroding this human grounding, privileging efficiency over meaning and subtly reshaping the contours of understanding.

Language, as Toni Morrison reminded us in her Nobel Lecture, is not merely a tool but a “word-work” that secures human difference and generative capacity (Morrison 1993, pp. 6–7). Through reading and writing, humans do more than communicate; they cultivate imagination, judgment, empathy, and moral reflection. LLMs, in contrast, risk short-circuiting these

processes. As John Warner observes, writing and reading are acts of thinking involving exploration, revision, and the formation of neural circuits necessary for judgment (Warner 2025, p. 11). Outsourcing these acts to AI diminishes the cognitive work that sustains reflective agency, replacing deep engagement with surface-level interaction.

This raises the question of cognitive plasticity in the digital age. The human brain is adaptable, capable of reorganizing itself in response to educational and linguistic environments. Yet, digital reading, particularly when mediated by AI, appears to compromise deep reading—the immersive engagement with texts that cultivates analogical thinking, inference, and ethical imagination (Wolf 2018, pp. 45–48). Shallow processing, accelerated by algorithmic interfaces, reduces attention, memory, concentration, and reflective capacities, thereby weakening the cognitive foundations of empathy and moral reasoning. Early exposure to screen-based learning compounds these vulnerabilities, diminishing attentiveness to others' perspectives, increasing susceptibility to misinformation, and eroding the shared basis for democratic deliberation.

The implications of this cognitive transformation extend beyond individual mental processes and strike at the heart of the social fabric. When reality is increasingly interpreted through cybernetic realism—where humans are reduced to information processors and problems framed as optimization challenges—functionalism and reductionism dominate, centralizing power and monetizing attention. Such a framework reshapes cognitive habits and social relations alike, undermining trust, solidarity, and responsible participation in communal life.

Yet, within this threat lies the possibility of renewal. As Friedrich Hölderlin observed, “Where the danger is, also grows the saving power” (Hölderlin 2004, p. 51). Human creativity, reflection, and moral imagination persist precisely where the risks of cognitive diminishment are most acute. Preserving the poetry, generativity, and transcendence of language—resisting the purely instrumental logic of algorithmic mediation—is therefore both a cognitive and ethical imperative. In confronting the rise of LLMs, we are called not only to reconsider our practices of reading, writing, and thinking but also to safeguard the social bonds that depend upon these uniquely human capacities.

2.4. Natural Law in the Algorithmic Age: AI, Normativity, and the Vulnerability of Social Peace

With the foregoing remarks, we have already anticipated the question that AI raises vis-à-vis social stability. Social peace has historically been grounded in a shared moral horizon that precedes political arrangements. When we talk about the moral horizon, we do not mean the moral decisions of individuals and the ethical principles behind them. Rather, we are thinking of socio-ethical dimensions that create ethical conditions that are decisive for moral judgment. Christian social teaching speaks of structural sin in connection with the latter. This also implies the possibility of raising the issue of structural virtue. Within the classical tradition, natural law functioned as a foundation for peace insofar as human beings understood themselves as participants in a common natural moral order grounded in human nature (Aquinas 1988, I–II, q. 94, a. 2). While formulated in a medieval intellectual context, this account continues to offer a conceptual grammar for thinking about the conditions under which diverse societies can recognize certain moral goods as intelligible and shareable. Contemporary debates on AI raise analogous questions at a new technological level: whether the infrastructures that increasingly mediate knowledge, communication, and judgment presuppose any common orientation toward truth and the good, or whether they amplify the fragmentation of moral reasoning. Read in this light, the natural law tradition provides not a direct historical template but a normative framework for reflecting on how technological systems shape the moral ecology within which social trust and the common good become possible.

The emergence of Artificial Intelligence—particularly Large Language Models (LLMs)—raises a decisive normative question in this regard: does AI contribute to the recovery of a shared moral orientation, or does it intensify the epistemic and moral fragmentation characteristic of late modernity? This question is sharpened by the fact that the overwhelming majority of training data governing contemporary LLMs originates within a modern Western epistemic framework that is often agnostic toward, or dismissive of, natural law normativity (Alford 2025). This stands in tension with the lived moral experience of much of the world's population, whose ethical reasoning remains shaped by religious and metaphysical conceptions of order, meaning, and obligation. As such, AI systems risk universalizing a culturally narrow vision of normativity while presenting themselves as neutral mediators of human reason.

This tension becomes especially acute in democratic life. Democratic decision-making presupposes a robust public sphere sustained by informed, respectful, and truth-oriented deliberation (Benedict XVI 2009, para. 53). Yet, contemporary public discourse increasingly unfolds within algorithmically mediated environments that systematically undermine these conditions (Zuboff 2019, pp. 395–98). Social media platforms frequently foster polarization, misinformation, and affective hostility. The circulation of fake news, extremist content, anonymity, and the algorithmic amplification of outrage over reasoned argument contribute to the erosion of shared reality and civic trust. Although the internet was initially heralded as an agent of democratization, its dominant platforms now often accelerate the fragmentation of truth.

At the structural level, this crisis cannot be explained merely by individual misuse. Digital platforms present themselves as neutral intermediaries, yet they are governed by opaque algorithmic logics optimized for engagement and monetization (Francis 2024, para. 41). This produces a persistent tension between freedom of expression and content moderation. While freedom of expression is indispensable to democracy, it does not in itself secure rationality or equality within the public sphere. Absent thoughtful institutional and technological design, expressive freedom can devolve into domination by the most inflammatory or algorithmically privileged voices. Content moderation thus emerges not simply as censorship but as a problem of normative design.

In response, interest has grown in deliberative technologies—platforms intentionally structured to support reflective, participatory exchange on contested issues (Rahwan 2018). Unlike conventional social media, these systems prioritize issues rather than identities and expose participants to competing perspectives in structured ways. By combining collective intelligence and AI-assisted facilitation, such platforms aim to mitigate polarization and foster more responsible forms of public reasoning, without displacing human judgment.

Nevertheless, the limits of current AI architectures remain decisive. Contemporary evaluation frameworks for LLMs rely heavily on benchmarking—standardized tests measuring performance in areas such as reasoning, language comprehension, coding, and abstraction. Advanced benchmarks, including FrontierMath, demonstrate impressive technical gains, yet they also reveal the incompleteness of prevailing assessment models. Benchmark outcomes are often overinterpreted, shaped by artificial test conditions, or compromised by data leakage. More fundamentally, such measures fail to assess understanding, moral reasoning, or performance within real social contexts.

Efforts to make LLMs more “realistic” often focus on predictive linguistic refinement. Yet, democratic life depends on norms that exceed fluency, including accountability, justice, representation, and deliberative responsibility. While AI systems may exhibit politeness or coherence, these traits do not guarantee meaningful communication or trust. Moral life is governed by richer norms—truthfulness, responsibility, and fidelity—that resist reduction to statistical regularities.

These limitations become most visible in relation to truth itself. By aggregating vast quantities of heterogeneous data, LLMs contribute to the fragmentation of knowledge. Although they generate persuasive linguistic outputs, they lack the capacity to orient knowledge toward meaning or purpose (Bender et al. 2021). In a cultural context already marked by moral and existential uncertainty, the resulting “maelstrom of data” risks obscuring rather than clarifying shared ends. This dynamic may inadvertently reinforce the tendency—identified in broader philosophical debates—to treat knowledge as primarily the product of prevailing consensus rather than engagement with enduring normative questions (John Paul II 1998, para. 86–87). If uncritically adopted, this orientation risks narrowing the understanding of the human person and weakening the shared moral horizons that sustain social trust and political community.

2.5. AI Knowledge, Technological Sovereignty, and the Fracturing of Global Trust

One of the less visible yet deeply consequential ways in which algorithmic mediation weakens social trust today is through its reconfiguration of technological sovereignty. Artificial intelligence is not merely a set of tools or applications; it is an infrastructure-intensive form of knowledge production that binds together energy systems, computational capacity, data regimes, and geopolitical power (Azadégan et al. 2023, pp. 4–6). As a result, questions of AI capability are increasingly inseparable from questions of sovereignty, dependency, and global solidarity.

At the infrastructural level, contemporary AI development is marked by extraordinary concentrations of material power. The rapid expansion of hyperscale AI data centres illustrates this dynamic (International Energy Agency 2023, pp. 102–5). Strategic partnerships such as that announced by NVIDIA and OpenAI—envisaging massive future AI data-centre capacity—signal not only technological ambition but also a new scale of resource appropriation. Even allowing for the fact that these figures represent projected capacity rather than present load, the direction is clear: advanced AI increasingly depends on energy-intensive infrastructures that few countries can host, regulate, or afford. This concentration deepens asymmetries between those who control computational capacity and those who merely consume AI services, transforming knowledge production itself into a site of geopolitical inequality (United Nations Conference on Trade and Development 2021, pp. 17–20).

These asymmetries are intensified by the strategic centrality of advanced semiconductors. AI performance is tightly coupled to access to specialised hardware, rendering computational capability a matter of national security rather than ordinary commerce. Yet, production and control remain highly concentrated across a small number of firms and regions. The result is a fragile global architecture in which technological progress depends on narrow geopolitical chokepoints, amplifying vulnerability and mistrust.

This fragility has reconfigured global power relations. Dependencies cascade across the digital economy: most countries rely on a small number of cloud providers, who in turn depend on proprietary hardware and fabrication ecosystems beyond their control. In this context, technological interdependence no longer functions as a stabilizing force for cooperation, as earlier theories of globalization suggested. Instead, it has become a source of strategic mistrust, as disruption or exclusion at any point in the chain carries systemic consequences.

The intensifying rivalry between the United States and China around AI technologies exemplifies this shift (Allison 2017, pp. 29–33). For the United States, China’s advances represent a potential threat to military and economic dominance; for China, access to advanced AI capabilities is essential to technological self-determination. Export controls, investment restrictions, and corporate blacklisting have transformed AI infrastructure into an arena of economic conflict. Efforts to accelerate domestic capacity and reduce reliance on

foreign ecosystems reflect a broader turn toward technological sovereignty under conditions of exclusion.

Because AI systems underpin surveillance infrastructures, autonomous weapons, cyberwarfare, and strategic command architectures, dominance in AI capability is increasingly perceived as a prerequisite for future military superiority. This perception fuels fears of an AI arms race, reinforcing a security logic that prioritizes national advantage over shared ethical constraints. The result is a feedback loop in which mistrust justifies further technological enclosure, eroding the cooperative foundations necessary for global governance of AI.

In response to these vulnerabilities, states have embraced industrial policy and forms of technological nationalism (Mazzucato 2018, pp. 97–101). Governments subsidize domestic production, restrict technology transfers, and form selective alliances to secure critical capabilities. While these strategies may reduce short-term exposure to risk, they also mark a departure from decades of economic integration. Fragmentation of research ecosystems and standard-setting processes threatens to deepen divides between technological “core” and “periphery,” particularly disadvantaging countries in the Global South.

Sovereignty concerns extend beyond infrastructure to AI models themselves. The dominance of proprietary large language models—whose architectures, training data, and internal operations remain opaque—concentrates epistemic authority in a handful of corporations (Pasquale 2015, pp. 3–6). While such models often achieve superior performance through scale and exclusive data access, their black-box character undermines transparency, accountability, and democratic oversight. Open alternatives promise greater adaptability and public scrutiny, yet they raise new questions about governance and responsibility once control is dispersed. This tension mirrors broader struggles over who is entitled to shape the symbolic and relational spaces increasingly mediated by AI.

Against this backdrop, some countries have begun to explore strategies of infrastructural non-alignment. Analogous to political non-alignment during the Cold War, this approach seeks to avoid total dependence on any single technological bloc by diversifying partnerships, developing domestic capacities, and retaining agency over critical data and infrastructures. Such strategies represent attempts to preserve technological pluralism in a world increasingly structured by binary rivalries.

For the Global South, the stakes of digital sovereignty are particularly acute (Pontifical Academy of Social Sciences 2022, para. 31–34). Sovereignty here does not imply technological autarky, but the capacity to understand, govern, and adapt digital infrastructures in accordance with local priorities and social goods. Without algorithmic and data-processing capabilities, countries remain dependent on external actors for basic functions of economic and social life. Data becomes a source of extraction rather than empowerment when access to AI remains mediated by proprietary ecosystems controlled elsewhere.

India’s experience with digital public infrastructure offers a partial counterpoint (Reserve Bank of India 2021, pp. 14–16). The development of the Unified Payments Interface (UPI) illustrates how technological sovereignty can be pursued through institutional design rather than isolation. By separating public infrastructure from private applications, India retained regulatory authority, limited the concentration of economic rents, and enabled financial inclusion at unprecedented scale. This example demonstrates how digital infrastructures can serve solidarity-oriented goals when governed as public goods rather than exclusively as profit-maximizing platforms.

Taken together, these developments reveal that algorithmic mediation reshapes not only markets and labour but the very conditions of collective trust. When knowledge infrastructures are enclosed within opaque corporate systems or instrumentalized through geopolitical rivalry, social trust is eroded both within and between societies. A post-secular normative perspective brings this erosion into sharper relief by recalling that trust ultimately

presupposes shared commitments to truth, dignity, and the common good—commitments that cannot be sustained by technical efficiency or strategic dominance alone. Technological sovereignty, understood in this broader sense, concerns not merely control over machines, but the safeguarding of the moral and relational conditions under which solidarity remains possible in an increasingly algorithmic world.

2.6. *AI, Big Tech, and the Military–Industrial Nexus: Power, Trust, and the Erosion of Social Mediation*

One of the most consequential dimensions of algorithmic mediation today is the unprecedented concentration of technological, political, and symbolic power in the hands of a small number of Big Tech corporations. Artificial Intelligence, particularly in its data-intensive and large-scale deployments, has not merely introduced new tools into existing social structures; it has reconfigured the very architecture through which power is exercised, knowledge is produced, and trust is negotiated (Bratton 2016, pp. 5–8). The digital platforms do not merely supply technologies to the state; they increasingly shape the informational infrastructures through which governance, security, and public communication are conducted. Unlike earlier military–industrial arrangements centered on weapons production, contemporary AI systems operate within everyday digital environments such as search engines, cloud services, data infrastructures, and social media, thereby integrating economic power, informational control, and security functions. As a result, the boundaries between civilian communication systems, commercial data extraction, and national security operations become increasingly blurred. Therefore, the convergence of AI development with state security interests, military infrastructures, and global digital platforms marks a qualitative shift in the relationship between technology, governance, and social mediation.

Unlike earlier technological revolutions, the contemporary AI ecosystem is characterized by the fusion of multiple domains of power. Major technology firms today operate simultaneously as providers of critical digital infrastructure, contractors for military and intelligence agencies, gatekeepers of public communication, and influential actors in political processes (Srnicek 2017, pp. 43–47). Their collaboration with state institutions such as defence departments, intelligence agencies, and national security apparatuses—particularly visible in the United States—signals the emergence of a renewed military–industrial complex, now intensified by algorithmic systems capable of large-scale surveillance, behavioural prediction, and automated decision-making. What is novel here is not merely the scale of this collaboration, but its opacity and speed, which significantly outpace democratic deliberation and public accountability.

This concentration of power has direct implications for social trust. Digital platforms mediate public discourse through algorithmic curation, shaping what is seen, amplified, or rendered invisible. In doing so, they exert a subtle yet pervasive influence over public opinion, political mobilization, and even the affective tone of collective life. Campaign management, micro-targeted political messaging, and attention-economy logics blur the line between persuasion and manipulation, eroding the conditions for informed consent and shared deliberation (Nemitz 2018, pp. 9–11). Trust, once grounded in relatively stable social institutions, becomes increasingly contingent upon opaque systems whose criteria remain inaccessible to those most affected by them.

Beyond political mediation, Big Tech’s algorithmic infrastructures have also been implicated in the quantitative expansion of addictive behaviours and compulsive consumption patterns, ranging from gaming and gambling to excessive screen time and the digital facilitation of substance markets (Sachs 2025). This observation does not rely on moralistic judgments but on empirical correlations between platform design, behavioural engineering, and patterns of dependency. Such dynamics further weaken social trust by fragmenting

attention, undermining agency, and dislocating individuals from shared temporal and relational rhythms essential for social solidarity.

The current configuration of AI power recalls, with renewed urgency, President Dwight D. Eisenhower's warning in his 1961 Farewell Address concerning the "unwarranted influence" of the military-industrial complex (Eisenhower 1961). Eisenhower recognized that the conjunction of military, economic, and political power could exert not only material but also "spiritual" influence over society, reshaping its very structure. In the algorithmic age, this warning acquires a deeper resonance. AI-driven systems extend such influence into cognitive, communicative, and relational domains, raising the risk of a "misplaced power" that operates beneath the threshold of explicit coercion while profoundly shaping human behaviour and social imaginaries.

From the perspective of a post-secular normative framework, this development poses a fundamental question about human dignity and social mediation. When algorithmic systems are optimized primarily for efficiency, security, or profit, they tend to instrumentalize human beings as data points, behavioural inputs, or risk profiles. Such reductionism stands in tension with anthropological traditions—both religious and humanistic—that affirm the irreducible mystery of the human person (John Paul II 1995, para. 22–25). The erosion of trust, therefore, is not merely institutional or political; it is also moral and symbolic, reflecting a deeper crisis in how societies understand responsibility, freedom, and the common good under conditions of technological globalization.

Addressing this crisis requires more than technical fixes. Proposals such as stronger privacy protections, anti-surveillance legislation, antitrust measures, platform interoperability, and the reclassification of digital platforms as public utilities are important steps toward rebalancing power (Sachs 2023, pp. 201–4). Similarly, limiting corporate financing of politics and developing dedicated public institutions for digital governance could help restore democratic oversight. Yet, these measures, while necessary, remain insufficient without a broader normative reorientation—one that situates AI within a framework of solidarity rather than domination, and technological innovation within a moral horizon that transcends purely instrumental rationality.

In this sense, the challenge posed by AI, Big Tech, and the military-industrial nexus is emblematic of the wider tensions we encounter vis-à-vis AI development. It exposes how algorithmic mediation can undermine social trust when detached from shared ethical commitments, while simultaneously revealing the urgency of reclaiming solidarity and normativity in a post-secular age. The task ahead is not simply to regulate technology, but to re-embed it within a vision of human coexistence oriented toward truth, responsibility, and the common good.

2.7. International Standards for the Governance of Responsible AI: Trust, Power, and Global Coordination

We come now to the seventh and last aspect that we consider in this section. One of the decisive arenas in which algorithmic mediation reshapes social trust today is the emerging field of international governance of Artificial Intelligence. The rapid diffusion of AI systems across borders has exposed a fundamental asymmetry: while technological power operates globally, the ethical, legal, and political frameworks meant to constrain it remain fragmented, uneven, and often subordinate to economic or geopolitical interests (Innerarity 2022, pp. 45–48). This gap between power and responsibility has significant implications for social trust, particularly in an age where digital infrastructures increasingly mediate work, communication, governance, and decision-making.

At a basic level, the governance of AI confronts a perennial ethical insight: whatever is technically possible is not necessarily morally permissible (Benedict XVI 2009, para. 70–71). Ethical reflection is therefore indispensable. Yet, ethics alone lacks binding force. Without gov-

ernance mechanisms—regulation, oversight, accountability, and institutional enforcement—ethical principles remain aspirational rather than operative. The deeper question, then, is whether algorithmic societies will be ordered by the rule of law or by the rule of power: financial, platform, military-technological, or data power. This question concerns the structural organization of globalization itself.

Several contemporary AI applications illustrate the urgency of this governance challenge. Social scoring systems, most prominently associated with the Chinese social credit framework, demonstrate how large-scale data aggregation and machine learning can be mobilized to evaluate the “trustworthiness” of individuals and institutions (Carozza 2021, pp. 55–58). By integrating financial records, administrative data, and behavioural traces, such systems blur the boundary between social coordination and moral surveillance. Trust, traditionally grounded in social institutions and interpersonal relations, risks being displaced by algorithmic reputation metrics enforced through state or market authority.

Predictive governance provides a parallel illustration in liberal democratic contexts. In the United States, AI-driven analytics are increasingly deployed in policing, taxation, and public administration. Machine-learning models assist in identifying crime “hotspots,” detecting fraud, or selecting tax audits. While such systems promise efficiency, they expose structural vulnerabilities. Bias embedded in historical data can reinforce inequality; opaque models undermine accountability; and automated decision-making risks displacing human judgment in morally consequential domains. Their legitimacy depends not on technical accuracy alone, but on transparency, contestability, and legal oversight (O’Connell 2020, pp. 211–14).

Beyond state applications, the dynamics of surveillance capitalism reveal how algorithmic power operates within market-driven environments. As Shoshana Zuboff has argued, contemporary digital capitalism increasingly treats private human experience as raw material for behavioural data extraction. While some data collection enhances services, a significant portion feeds machine-intelligence systems designed to predict and shape future behaviour (Zuboff 2019, pp. 8–10, 376–80). This form of power differs from classical coercion: rather than operating through force, it modifies conduct through automated architectures, social comparison, and behavioural nudging. In this process, the erosion of privacy undermines the capacity for independent intention, weakening the foundations of trust without overt repression.

A further risk lies in what may be termed “zombie AI”: systems that continue to operate beyond their intended contexts without adequate monitoring or updating. Such models may rely on outdated assumptions, generate flawed recommendations, or introduce security vulnerabilities. In critical sectors—finance, healthcare, governance—unmonitored AI undermines not only operational reliability but also institutional credibility, particularly when algorithmic decisions cannot be meaningfully explained or challenged.

These risks highlight the necessity of coordinated AI governance at the international level. In the absence of shared regulatory baselines, fragmentation generates compliance uncertainty, amplifies global inequality, and entrenches a hierarchical AI order in which a small number of technologically advanced states and corporations dominate development and control. Low- and middle-income countries risk becoming dependent adopters of imported systems, with limited capacity to influence their design or consequences.

Current governance efforts reflect this tension between aspiration and enforceability. Soft-law instruments such as the OECD AI Principles or the G7 Hiroshima Process articulate values such as transparency and accountability, yet struggle to produce interoperable and enforceable rules (Organisation for Economic Co-Operation and Development 2019; G7 2023). United Nations initiatives similarly emphasize rights-based language but lack coercive authority. By contrast, the European Union’s AI Act represents a hard-law ap-

proach: restricting certain applications, imposing transparency obligations, and enforcing compliance through legal sanctions. Such frameworks frame AI governance as a matter of democratic legitimacy rather than market optimization.

The divergence between the United States and the European Union reflects a broader contrast between market-driven and rights-driven digital orders. The dominant American model has favoured techno-optimism, minimal regulation, and weak antitrust enforcement, relying on market dynamics to self-correct. The European model seeks to embed technological development within a rights-based legal framework through instruments such as the GDPR, the Digital Markets Act, and the AI Act. Importantly, differences in technological competitiveness cannot be explained by regulation alone; structural factors such as capital concentration, market fragmentation, and innovation ecosystems play a more decisive role.

From a normative standpoint, this debate exposes the limits of a purely “light-touch” regulatory approach, which often externalizes social costs such as polarization, addiction, and cognitive manipulation. By contrast, enforceable governance frameworks can mitigate these harms by constraining the concentration of power and clarifying institutional responsibility.

Taken together, these governance debates demonstrate that AI is not merely a technical artifact but a political and juridical force. The central challenge is not only to regulate technologies, but to determine the institutional conditions under which trust can persist in an increasingly algorithmically mediated global order.

3. Reclaiming Solidarity: Search for the Common Good in the Post-Secular Age

3.1. Contemporary Social Arenas Calling for Solidarity

So far, we have discussed how algorithmic mediation reshapes social relations across work, cognition, language, governance, global power, and international coordination, and we have described how these transformations—driven by opacity, concentration of technological power, instrumental rationality, and technocratic governance—systematically erode the fragile foundations of social trust. The analysis in the first section has shown that algorithmic systems do not merely function as neutral tools but actively reconfigure agency, responsibility, and meaning, often displacing human judgment, dignity, and shared moral horizons in favour of efficiency, prediction, and control. Now we are in a position to interpret these developments not only as technical or institutional failures, but as symptoms of a deeper normative crisis concerning the common good, one that becomes particularly visible in contemporary post-secular societies. This is because diverse moral and religious traditions continue to shape public reasoning, yet no shared normativity exists to integrate these perspectives into a stable moral consensus. In such contexts, the tension between plural normative sources and technologically mediated forms of governance makes the fragility of the common good especially evident.

If algorithmic mediation has intensified the fragility of social trust across various social spheres, then reclaiming solidarity requires identifying the concrete social arenas where trust has been most deeply eroded and where moral repair is urgently needed. To clarify the normative implications of this argument, the discussion engages selected recent magisterial texts associated with the pontificate of Pope Leo XIV. These texts are not introduced merely as illustrative moral exhortations; rather, they are treated as sources within the tradition of Catholic Social Teaching that articulate a coherent anthropological and ethical framework for evaluating contemporary technological transformations. Within the post-secular framework adopted in this article, magisterial teaching functions as a normative interlocutor in dialogue with secular scholarship, offering conceptual resources—such as solidarity, the common good, and the dignity of the person—that help illuminate the moral implications of algorithmically mediated social systems. From this perspective, the following discussion does not

attempt to provide an exhaustive survey of social concerns. Instead, it examines a limited set of social arenas in which the tensions identified in Section 1 become especially visible: economic organization, labour relations, global governance, religious freedom, education and the digital environment, migration, ecological responsibility, and the ethics of care. These arenas are analytically significant because they represent institutional contexts in which algorithmic infrastructures increasingly shape decision-making and social coordination, thereby affecting the conditions under which trust and cooperation can be sustained.

Solidarity, in this sense, is not an abstract sentiment but a socially embedded practice oriented toward the common good, capable of resisting the logics of calculation, exclusion, and indifference that increasingly shape algorithm-mediated relations in contemporary life. Finally, we need to consider how a retrieval of normativity, particularly within the natural law tradition, may offer resources for re-embedding algorithmic mediation within a framework of human dignity, participation, and integral flourishing. While not the only possible framework for addressing these questions, it provides enduring normative resources that can help orient technological development toward forms of social cooperation compatible with human flourishing.

Solidarity in the economy emerges as a primary site of this struggle. The acceleration of digital capitalism and algorithmic management has normalized an ethic that idolizes profit and efficiency while marginalizing human dignity. Against this tendency, solidarity demands an ethic of responsibility that places the human person—rather than productivity metrics or market autonomy—at the centre of economic life. This means that modern technological power imposes objective duties to protect human life, dignity, and the conditions for future human existence (Jonas 1984, pp. 37–38). What is at stake here is the recognition of what may be called *social sin*: the consolidation of structures of selfishness and indifference that render the suffering of the marginalized invisible and organize economic systems primarily for the benefit of the powerful (Máté-Tóth 2024, pp. 219–25). Such structures contribute to what has been described as a “globalization of indifference,” where entire populations are rendered disposable by financial speculation and technological extraction (Leo XIV 2025e).

Authentic solidarity therefore requires moving beyond provisional welfare measures toward the eradication of the structural causes of poverty. Access to land, housing, and dignified work must be defended not as optional social goods but as foundational rights, especially for those located at the peripheries of global power. Denouncing an “economy that kills” entails rejecting ideologies that defend the absolute autonomy of the marketplace and expose societies to a new tyranny of financial abstraction (Leo XIV 2025c). Ethical management of global progress must counter structural indifference by grounding economic responsibility in the recognition of a shared humanity and a common destiny.

Closely related is solidarity in labour relations, particularly in contexts increasingly shaped by algorithmic surveillance, automation, and performance optimization. Workplaces must be reclaimed as humane and fraternal communities rather than sites of extraction and control. Solidarity here requires recognizing safety at work as a moral obligation—essential to human dignity, like the air one breathes—rather than as a negotiable cost. In contrast to algorithmic rationalities that reduce labour to data points, post-secular solidarity introduces a *logic of gratuitousness*, freeing human relations from pure calculation and reopening the space for fraternity, mutual recognition, and shared responsibility.

At the level of international relations and governance, solidarity calls for a decisive rejection of diplomacy based on force in favour of dialogue, consensus, and the strengthening of the rule of law (Leo XIV 2026a). In a global order increasingly mediated by digital power asymmetries and informational control, peaceful coexistence depends on legal and institutional frameworks capable of preventing both armed conflict and algorithmically

amplified instability. International cooperation must be rethought so that the voices of poorer nations are heard without filters imposed by technological or economic dominance.

Within this horizon, religious freedom emerges as a crucial condition for social trust (Leo XIV 2025d). In pluralistic societies, many citizens may not share religious convictions, and therefore the contribution of religion to public life cannot simply be presumed. Yet, the protection of religious freedom performs a deeper civic function: it safeguards the space in which individuals and communities can form and articulate their moral convictions, including those that motivate solidarity and reconciliation. When religious freedom is denied or instrumentalized, trust gives way to suspicion, and social cohesion deteriorates. In post-secular societies, religious freedom thus functions not as a private concession but as a public good essential to pluralistic coexistence.

Education and the digital sphere constitute another decisive arena for solidarity, particularly as algorithmic platforms increasingly shape cognition, attention, and identity formation. Solidarity here takes the form of *intellectual charity*: educating young people to inhabit digital spaces as arenas of fraternity and creativity rather than as zones of escape or addiction (Leo XIV 2025a). Addressing the spiritual vacuum in contemporary education requires renewed attention to interior life and moral formation, helping the young recover a sense of limits in environments designed to exploit compulsive behaviour (Leo XIV 2025b). Safeguarding children and adolescents in the age of AI demands ethical standards and policies that protect them from manipulation while encouraging adults to rediscover their vocation as artisans of education. AI must serve as an ally in human development rather than as an architecture of dependency or control.

Within this context, a theology of wisdom offers a distinctive contribution to post-secular solidarity. Theology, understood as intellectual charity, is not merely speculative reasoning but a service to persons and to the common good: by seeking truth about God and the human person, it guides critical reasoning toward wisdom rather than domination and grounds ethical action in an anthropological vision adequate to the complexities of AI-mediated life. In this sense, theological inquiry becomes an act of love that illuminates ethical discernment, safeguards human dignity, and assists communities in interpreting the moral meaning of emerging technologies. Humanizing the digital environment therefore requires safeguarding the uniqueness of human faces and voices as carriers of sacred identity, while resisting the anthropomorphising of technological systems. Large language models and conversational agents, though persuasive, must be recognized as tools rather than interlocutors, lest they become deceptive architects of emotional life and trust.

The university bears a particular responsibility in this landscape. Scientific rigor must be placed at the service of real human struggles rather than confined to abstraction or technical self-reference. Academic formation should aim to cultivate persons capable of building a world of solidarity and fraternity, resisting the fragmentation of knowledge and the commodification of truth.

Solidarity further extends to migrants, refugees, and marginalized itinerant peoples, who expose the moral limits of communities that prioritize narrow interests over shared responsibility (Leo XIV 2025f). Rather than being treated as problems to be managed, migrants and refugees must be recognized as witnesses of resilience and hope, calling societies to greater hospitality. Marginalized communities are not merely recipients of aid but protagonists of epochal change, whose distinctive gifts are indispensable to humanity. This perspective resists paternalism by insisting that social and economic systems be designed *with* the poor rather than merely *for* them.

This commitment includes defending the dignity of work and family life, opposing exploitative practices such as the violent extraction of technological minerals through child labour and displacement, and condemning technological forms of control that undermine the

sovereignty of poorer states. Solidarity with persecuted communities—especially religious minorities—requires embracing the truth that shared suffering binds humanity together. Such communities must be recognized as agents of their own liberation and meaning-making, not objects of distant charity. While almsgiving cannot substitute for justice, it retains value as a personal encounter capable of softening hardened hearts within profit-driven societies.

Food security and global justice represent another urgent arena, particularly in war-affected regions. Food must be reaffirmed as a fundamental right rather than a privilege, and the use of hunger as a weapon of war must be unequivocally condemned (Leo XIV 2025g). Crises of hunger are often rooted not in material scarcity but in institutional failure and social fragmentation, underscoring the need for robust global networks of solidarity.

Solidarity with the sick and elderly challenges contemporary societies to reject deceptive forms of compassion that obscure abandonment under the guise of autonomy. Authentic solidarity responds concretely through palliative care, social support, and policies that honour vulnerability. In medical contexts increasingly shaped by AI, the common good requires safeguarding the personal relationship between patient and caregiver, protecting the ontological dignity of those at fragile stages of life, and responding to the loneliness that characterizes even affluent societies.

An integral ecology further expands the scope of solidarity to include creation itself. Ecological transition must place both people and the environment—especially disadvantaged communities—at the centre, prioritizing regenerative practices that sustain biodiversity and food security. Solidarity with creation also entails intergenerational responsibility, viewing AI and technological development as part of a shared apprenticeship through which truth is integrated into moral life.

Finally, reclaiming solidarity demands a retrieval of the meaning of language (Leo XIV 2026b). In a public sphere increasingly marked by semantic ambiguity and the weaponization of words, trust depends on rediscovering language as a medium of encounter rather than domination. Freedom of expression must be anchored in truth and shared meaning rather than ideological exclusion. Communication itself becomes a path to peace when words are “disarmed and disarming,” attentive to the voices of the weak and consistent with human dignity—a responsibility that weighs especially on media institutions.

Across these arenas, solidarity in a post-secular age ultimately converges in the Good Samaritan model: a refusal to look away from suffering, to delegate responsibility to systems, or to treat vulnerability as an inconvenience. In a world increasingly mediated by algorithms, solidarity reasserts the primacy of encounter, responsibility, and shared humanity as the conditions for rebuilding trust and orienting technological power toward the common good.

3.2. *Practicing Solidarity in a Post-Secular Age: A Retrieval of Natural Law Normativity*

If algorithmic mediation has contributed to the erosion of trust by reconfiguring social relations in terms of efficiency, optimisation, and control, then any credible response must move beyond technical fixes and address the normative foundations of social life itself. The common good refers to the set of social conditions that enable persons and communities to flourish together rather than merely the aggregation of individual utilities (Maritain 1947, pp. 44–45). It therefore functions as a normative horizon for evaluating institutions, policies, and technological developments. Solidarity can be understood as the moral disposition and social practice through which individuals and groups actively orient their actions toward this horizon. In this sense, solidarity does not generate the common good by itself, rather, solidarity is the virtue through which the common good becomes socially operative in concrete relationships and institutions.

The common good cannot be reduced to the aggregate of individual preferences or utilities (Maritain 1947, pp. 44–45). It names the good that arises from a shared social life and is

realised only through relationships that enable persons and communities to flourish together (Máté-Tóth 2024, pp. 81–90). In this sense, the common good is intrinsically relational: it concerns *relational well-being*, the good that emerges when human beings participate in social bonds ordered toward mutual recognition, cooperation, and trust (Donati 2011, pp. 52–55).

In the context of algorithmic societies, evaluating technological benefits and risks solely through metrics of efficiency, productivity, or growth is inadequate. Technological progress must instead be assessed according to its contribution to the *integral development of the human person and society*. Economic expansion that intensifies inequality, marginalisation, or loss of agency undermines rather than advances the common good (Stiglitz 2012, pp. 29–31). Unlike a “total good” that merely sums individual advantages, the common good has a multiplicative character: if even one member is systematically excluded or reduced to zero, the good of the whole is compromised. This insight is particularly salient in digital ecosystems where algorithmic decisions can invisibly exclude, rank, or silence entire groups.

The common good presupposes solidarity. Solidarity may be understood as the modern expression of *social love*: an inner commitment by each member of society to the good of all (Francis 2020, §§94–95). Because the human person is social by nature, solidarity is not an optional moral supplement but a constitutive condition for human growth and social trust. To practice solidarity is to acknowledge the inherent and inalienable worth of every person, always and everywhere, and to move beyond relationships governed exclusively by self-interest. In algorithm-mediated contexts, where interactions are increasingly abstracted, quantified, and depersonalised, solidarity resists the reduction of persons to data points, risk scores, or market segments. It reasserts the moral claim of the other as a brother or sister rather than a competitor, consumer, or instrument.

At its foundation, solidarity entails a universal responsibility: the conviction that “all are responsible for all,” across borders, social divisions, and generations. In a global digital order marked by deep asymmetries of power and access, this responsibility takes concrete form in a preferential option for the poor (Gutiérrez 1973, pp. 299–301). Where rights are denied or structurally undermined, the common good summons societies to prioritise those who are most vulnerable to exclusion—those rendered invisible or disposable by market-driven and algorithmic systems. Such solidarity requires reciprocity and openness. No one may be treated as expendable, whether through economic marginalisation, digital exclusion, or technological neglect. In this way, solidarity directly confronts the erosion of trust produced when institutions appear indifferent to those they govern or serve.

Solidarity is inseparable from subsidiarity and participation. Authentic inclusion demands that individuals and communities become dignified protagonists of their own destiny. Subsidiarity ensures that persons are not absorbed into distant systems of control—whether bureaucratic or algorithmic—but are empowered to participate meaningfully in shaping their own lives and the common good of their communities. Efforts to address marginalisation must therefore begin at the grassroots, through participatory processes that restore agency, particularly among the poor. Access to decent work remains the primary gateway to self-reliance and the recovery of human dignity. Solidarity is not fulfilled by episodic charity that stabilises dependency, but by practices that enable autonomy. Integration requires both the willingness of those in need to act and the conversion of helpers into advisers and collaborators rather than controllers.

In this respect, Amartya Sen’s capabilities approach provides a valuable bridge between contemporary social analysis and classical ethical thought (Sen 1999, pp. 19–20). By focusing on the real opportunities people have to pursue meaningful ends, it shifts attention from abstract goods to human agency and flourishing. Rooted implicitly in Aristotelian conceptions of the good life in community, the capabilities approach resists purely utilitarian models and aligns closely with a solidaristic vision of social trust.

The difficulty of reclaiming solidarity today is inseparable from the eclipse of the common good in modern moral and political thought. The Enlightenment's exaltation of the autonomous individual, combined with methodological individualism in economics, has narrowed social deliberation to questions of personal preference and incentive (MacIntyre 1981, pp. 11–12). A utilitarian mindset privileges competition, consumption, and efficiency, often at the expense of moral virtues and communal bonds.

This reduction is intensified by the technocratic paradigm, which frames economic and technological intervention almost exclusively in terms of productivity while bracketing questions of purpose and dignity. Means—such as financial value, data extraction, or optimisation—are treated as ends in themselves. As a result, technological development far outpaces the development of human responsibility and moral conscience. Market ideology further compounds these tensions when it is tacitly absolutized, assuming that self-interest will spontaneously generate justice. Empirically, such assumptions are not borne out. When profit becomes the overriding criterion, social exclusion and ecological destruction follow. Markets remain useful instruments of exchange, but only when oriented toward the common good rather than allowed to function as autonomous moral orders.

The logic of exclusion culminates in what has been described as a “throwaway culture,” in which both things and people are valued only for their utility (Francis 2015, p. 16). Those excluded are no longer merely exploited; they become leftovers, deprived even of the “right to have rights.” This culture, driven by convenience and immediacy, corrodes social bonds and deepens mistrust, particularly in digitally mediated societies where exclusion can occur silently and at scale.

The challenges posed by the Fourth Industrial Revolution intensify these concerns. Conventional economic and ethical frameworks struggle to keep pace with digital platforms, data-driven governance, and algorithmic decision-making. Issues of impartiality, transparency, and accountability become urgent when algorithms shape access to work, knowledge, and political participation. Without a normative orientation toward the common good, such systems risk institutionalising distrust rather than mitigating it.

These concerns highlight the importance of what has been described as relational realism (Donati 2011). According to this perspective, social relations possess a real explanatory status: they are not merely the by-product of individual choices but constitute the primary medium through which goods such as trust, cooperation, and recognition emerge. Trust, for example, is not an individual possession but a relational good that exists only within networks of mutual expectation and reliability. When algorithmic systems restructure interactions primarily in terms of competition, ranking, and performance metrics, they risk transforming relational goods into relational evils—suspicion, rivalry, and exclusion.

Within this framework, the retrieval of natural law normativity provides a conceptual bridge between post-secular pluralism and shared moral evaluation. Natural law does not function primarily as a confessional doctrine but as a rational account of the moral orientations embedded in human nature and social life (Finnis 2011, pp. 23–27). By identifying basic goods—such as life, knowledge, sociability, and practical reason—it offers a grammar for articulating why certain forms of social organization foster human flourishing while others undermine it. This grammar remains accessible across religious and secular perspectives because it appeals to common features of human experience rather than to revealed premises alone. In technologically mediated societies, such a framework enables critical evaluation of algorithmic systems according to whether they strengthen or weaken the relational conditions necessary for human flourishing, participation, and trust.

Empirical studies suggest that solidarity is fragile: individuals are more likely to act selfishly when shielded by uncertainty or when they perceive unequal contributions. Because solidarity is not automatically robust, it requires institutional support and moral

formation. This underscores the importance of understanding solidarity not merely as a sentiment but as a virtue—a firm and persevering determination to commit oneself to the common good.

Because these moral orientations do not automatically translate into social practice, they require cultivation through virtue. Solidarity can therefore be understood not merely as an emotion or political slogan but as a stable disposition—a habit of acting for the common good even under conditions of uncertainty or asymmetry. Natural law identifies the goods toward which human action should be directed, while virtue ethics describes the character formation necessary to pursue them consistently. Religious traditions have historically played an important role in sustaining this moral formation by affirming the intrinsic dignity of every person and by nurturing practices of responsibility, reciprocity, and care. In this way, the combined retrieval of natural law and virtue ethics provides a normative and anthropological framework capable of guiding technological development while renewing social trust in the post-secular age.

4. Conclusions

This article has argued that algorithmic mediation constitutes one of the most decisive forces reshaping social trust and solidarity in the post-secular age. Across domains as diverse as work, cognition, language, governance, global sovereignty, and geopolitical power, AI-driven systems increasingly structure social relations according to the logics of efficiency, prediction, and control. Detached from shared moral horizons, these logics erode trust by instrumentalizing human agency, fragmenting public reason, and concentrating power in opaque institutional and technological infrastructures.

Yet, the crisis of trust generated by algorithmic mediation is not merely technical or institutional; it is fundamentally normative. It reflects the weakening of shared conceptions of truth, dignity, and the common good that historically sustained social cooperation. Against technological determinism and market absolutism, this article has contended that AI remains subject to human agency, institutional design, and moral judgment. The future of algorithmic societies is therefore not preordained but contested.

Reclaiming solidarity in this context requires more than regulatory compliance or ethical add-ons. It demands a retrieval of the common good as a relational good and a renewal of natural law normativity capable of mediating pluralism without dissolving moral meaning. Solidarity, understood as a virtue and a social practice, reasserts the primacy of encounter, responsibility, and participation against abstraction and domination. In a post-secular age, such a retrieval offers a credible normative framework for re-embedding technological power within horizons of trust, dignity, and shared human flourishing.

Author Contributions: Writing—original draft, G.J. and A.M.-T. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest.

Note

- ¹ The concept of religion is incredibly multifaceted. In this study, we use the concept of religion as defined by Ninian Smart, with particular emphasis on the doctrinal, moral, and legal dimensions.

References

- Alford, Helen. 2025. Digital Rerum Novarum: Artificial Intelligence for Peace, Social Justice, and Integral Human Development. In *Final Statement of the Workshop on Digital Rerum Novarum: Artificial Intelligence, Peace, Social Justice and Integral Human Development*, Vatican City, October 16–17. Vatican City: Pontifical Academy of Social Sciences (PASS). Available online: <https://www.youtube.com/watch?v=Dq2wlxe7a8k> (accessed on 4 February 2026).
- Allison, Graham. 2017. *Destined for War: Can America and China Escape Thucydides's Trap?* Boston: Houghton Mifflin Harcourt.
- Aquinas, Thomas. 1988. *Summa Theologiae*. Translated by Fathers of the English Dominican Province. New York: Benziger Brothers.
- Azadégan, Amir, Fariborz Jalali, and Tobias Kretschmer. 2023. Digital Infrastructure and Power Asymmetries. *Journal of Information Technology* 38: 1–12.
- Bender, Emily M., Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell. 2021. On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*. New York: Association for Computing Machinery, pp. 610–23.
- Benedict XVI. 2009. *Caritas in Veritate*. Vatican City: Libreria Editrice Vaticana. Available online: https://www.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20090629_caritas-in-veritate.html (accessed on 4 February 2026).
- Benedict XVI. 2010. *Message for the 44th World Communications Day: The Priest and Pastoral Ministry in a Digital World*. Vatican City: Libreria Editrice Vaticana.
- Bratton, Benjamin H. 2016. *The Stack: On Software and Sovereignty*. Cambridge: MIT Press.
- Carozza, Paolo. 2021. Human Dignity in the Age of Artificial Intelligence. *Journal of Catholic Social Thought* 18: 45–60.
- Carr, Nicholas. 2020. *The Shallows: What the Internet Is Doing to Our Brains*. New York: W. W. Norton & Company.
- Donati, Pierpaolo. 2011. *Relational Sociology: A New Paradigm for the Social Sciences*. London: Routledge.
- Eisenhower, Dwight D. 1961. *Farewell Address to the Nation*. Washington: National Archives.
- Farahany, Nita A. 2023. *The Battle for Your Brain: Defending the Right to Think Freely in the Age of Neurotechnology*. New York: St. Martin's Press.
- Finnis, John. 2011. *Natural Law and Natural Rights*, 2nd ed. Oxford: Oxford University Press.
- Floridi, Luciano, Josh Cowls, Monica Beltrami, Raja Chatila, Patrice Chazerand, Virginia Dignum, Christoph Luetge, Robert Madelin, Ugo Pagallo, Francesca Rossi, and et al. 2018. AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds and Machines* 28: 689–707. [CrossRef] [PubMed]
- Francis. 2015. *Laudato Si': On Care for Our Common Home*. Vatican City: Libreria Editrice Vaticana. Available online: https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html (accessed on 4 February 2026).
- Francis. 2020. *Fratelli Tutti: On Fraternity and Social Friendship*. Vatican City: Libreria Editrice Vaticana. Available online: https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20201003_enciclica-fratelli-tutti.html (accessed on 24 March 2026).
- Francis. 2024. *Message for the 58th World Day of Social Communications: Artificial Intelligence and the Wisdom of the Heart: Towards a Fully Human Communication*. Vatican City: Libreria Editrice Vaticana. Available online: <https://www.vatican.va/content/francesco/en/messages/communications/documents/20240124-messaggio-comunicazioni-sociali.html> (accessed on 24 March 2026).
- G7. 2023. *Hiroshima AI Process: International Guiding Principles for Organizations Developing Advanced AI Systems*. Hiroshima: Group of Seven.
- Gutiérrez, Gustavo. 1973. *A Theology of Liberation: History, Politics, and Salvation*. Translated by Sister Caridad Inda, and John Eagleson. Maryknoll: Orbis Books.
- Hölderlin, Friedrich. 2004. *Selected Poems and Fragments*. Translated by Michael Hamburger. London: Penguin Classics.
- Innerarity, Daniel. 2022. *Politics for the Perplexed: Governing in Turbulent Times*. London: Bloomsbury.
- International Energy Agency. 2023. *Electricity 2023: Analysis and Forecasts*. Paris: IEA.
- International Labour Organization. 2024. *Global Wage Report 2024–2025: Is Wage Inequality Decreasing Globally?* Geneva: International Labour Organization. [CrossRef]
- John Paul II. 1981. *Laborem Exercens*. Vatican City: Libreria Editrice Vaticana. Available online: https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_14091981_laborem-exercens.html (accessed on 4 February 2026).
- John Paul II. 1991. *Centesimus Annus*. Vatican City: Libreria Editrice Vaticana. Available online: https://www.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_01051991_centesimus-annus.html (accessed on 4 February 2026).
- John Paul II. 1995. *Evangelium Vitae*. Vatican City: Libreria Editrice Vaticana.
- John Paul II. 1998. *Fides et Ratio: Encyclical Letter on the Relationship Between Faith and Reason*. Vatican City: Libreria Editrice Vaticana.
- Jonas, Hans. 1984. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. Translated by Hans Jonas, and David Herr. Chicago: University of Chicago Press.
- Leo XIV. 2025a. *Address of His Holiness Pope Leo XIV to Educators on the Occasion of the Jubilee of the World of Education*. Vatican City: Leo XIV.
- Leo XIV. 2025b. *Address of His Holiness Pope Leo XIV to the Participants in the Conference "The Dignity of Children and Adolescents in the Age of Artificial Intelligence"*. Vatican City: Leo XIV.
- Leo XIV. 2025c. *Address of Pope Leo XIV at the FAO Headquarters on the Occasion of World Food Day*. Vatican City: Leo XIV.
- Leo XIV. 2025d. *Address of the Holy Father Leo XIV to the Participants in the 3rd World Meeting on Human Fraternity*. Vatican City: Leo XIV.
- Leo XIV. 2025e. *Apostolic Exhortation Dilexi Te of the Holy Father Leo XIV to All Christians on Love for the Poor*. Vatican City: Leo XIV.

- Leo XIV. 2025f. *Message of Pope Leo XIV for the 111th World Day of Migrants and Refugees 2025*. Vatican City: Leo XIV.
- Leo XIV. 2025g. *Message of Pope Leo XIV to Participants in the 44th Session of the FAO Conference*. Vatican City: Leo XIV.
- Leo XIV. 2026a. *Address of Pope Leo XIV to Members of the Diplomatic Corps Accredited to the Holy See*. Vatican City: Leo XIV.
- Leo XIV. 2026b. *Message of His Holiness Pope Leo XIV for the 60th World Day of Social Communications*. Vatican City: Leo XIV.
- MacIntyre, Alasdair. 1981. *After Virtue: A Study in Moral Theory*. Notre Dame: University of Notre Dame Press.
- Maritain, Jacques. 1947. *The Person and the Common Good*. Translated by John J. Fitzgerald. Notre Dame: University of Notre Dame Press.
- Mazzucato, Mariana. 2018. *The Value of Everything*. London: Allen Lane.
- Máté-Tóth, András. 2024. *Az Irgalom Kultúrája. Konvivencia Kelet-Közép-Európában*. Budapest: Gondolat Kiadó.
- Morrison, Toni. 1993. *Nobel Lecture*. Stockholm: Nobel Foundation.
- Nemitz, Paul. 2018. Constitutional Democracy and Technology in the Age of Artificial Intelligence. *Philosophical Transactions of the Royal Society A* 376: 20180089. [CrossRef] [PubMed]
- O'Connell, Mary Ellen. 2020. *The Power and Purpose of International Law*. Oxford: Oxford University Press.
- Organisation for Economic Co-Operation and Development. 2019. *OECD Principles on Artificial Intelligence*. Paris: OECD.
- Pasquale, Frank. 2015. *The Black Box Society*. Cambridge: Harvard University Press.
- Pessoa, Fernando. 1998. *The Book of Disquiet*. Translated by Richard Zenith. New York: Penguin Classics.
- Pieper, Josef. 1952. *Leisure: The Basis of Culture*. South Bend: St. Augustine's Press.
- Pontifical Academy for Life, Microsoft, IBM, FAO, and Ministry of Innovation. 2020. *Rome Call for AI Ethics*. Rome: Pontifical Academy for Life. Available online: https://www.vatican.va/roman_curia/pontifical_academies/acdlife/documents/rc_pont-acd_life_doc_20202228_rome-call-for-ai-ethics_en.pdf (accessed on 4 February 2026).
- Pontifical Academy of Social Sciences. 2022. *Social Justice in the Digital Age*. Vatican City: PASS.
- Pontifical Council for Justice and Peace. 2004. *Compendium of the Social Doctrine of the Church*. Vatican City: Libreria Editrice Vaticana. Available online: https://www.vatican.va/roman_curia/pontifical_councils/justpeace/documents/rc_pc_justpeace_doc_20060526_compendio-dott-soc_en.html (accessed on 4 February 2026).
- Rahwan, Iyad. 2018. Society-in-the-Loop: Programming the Algorithmic Social Contract. *Ethics and Information Technology* 20: 5–14. [CrossRef]
- Reserve Bank of India. 2021. *Payment and Settlement Systems in India: Vision 2025*. Mumbai: RBI.
- Sachs, Jeffrey. 2023. *Ethics, Artificial Intelligence, and Sustainable Development*. New York: Columbia University Press.
- Sachs, Jeffrey. 2025. Digital Rerum Novarum: Artificial Intelligence for Peace, Social Justice, and Integral Human Development. In *Final Statement of the Workshop on Digital Rerum Novarum: Artificial Intelligence, Peace, Social Justice and Integral Human Development, Vatican City, October 16–17*. Vatican City: Pontifical Academy of Social Sciences (PASS). Available online: <https://www.youtube.com/watch?v=kRyQklQ2f2I&list=PLPHLdH2gKE0eDrtX5oKUsLgj0AJXFtH5&index=16> (accessed on 5 February 2026).
- Sen, Amartya. 1999. *Development as Freedom*. New York: Alfred A. Knopf.
- Srnicek, Nick. 2017. *Platform Capitalism*. Cambridge: Polity Press.
- Stiglitz, Joseph E. 2012. *The Price of Inequality: How Today's Divided Society Endangers Our Future*. New York: W.W. Norton & Company.
- UNESCO. 2024. *Artificial Intelligence, Skills and the Future of Work: Empowering Learning and Labour in an AI Era*. Paris: United Nations Educational, Scientific and Cultural Organization. Available online: <https://www.unesco.org/en/digital-education/artificial-intelligence> (accessed on 4 February 2026).
- United Nations. 1948. *Universal Declaration of Human Rights*. Paris: United Nations.
- United Nations Conference on Trade and Development. 2021. *Digital Economy Report 2021*. Geneva: UNCTAD.
- Warner, John. 2025. *More than Words: How to Think About Writing in the Age of AI*. New York: Basic Books.
- Wolf, Maryanne. 2018. *Reader, Come Home: The Reading Brain in a Digital World*. New York: Harper.
- Yuste, Rafael. 2015. From the Neuron Doctrine to Neural Networks. *Nature Reviews Neuroscience* 16: 487–97. [CrossRef] [PubMed]
- Yuste, Rafael. 2025. AI and Cognitive Integrity. In *Workshop Presented at "Digital Rerum Novarum: Artificial Intelligence for Peace, Social Justice, and Integral Human Development," Vatican City, October 16–17*. Vatican City: Pontifical Academy of Social Sciences (PASS). Available online: <https://www.youtube.com/watch?v=-PVnIp1OCxM&list=PLPHLdH2gKE0eDrtX5oKUsLgj0AJXFtH5&index=27> (accessed on 16 March 2026).
- Yuste, Rafael, Sara Goering, Borja A. y Arcas, Guoqiang Bi, Jose M. Carmena, Adrian Carter, Joseph J. Fins, Phoebe Friesen, Jack Gallant, Jane E. Huggins, and et al. 2021. Four Ethical Priorities for Neurotechnologies and AI. *Nature* 551: 159–63. [CrossRef] [PubMed]
- Zuboff, Shoshana. 2019. *The Age of Surveillance Capitalism*. New York: PublicAffairs.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.