Studies on Religion and Philosophy, 2025, 1(2), 1-13
https://doi.org/10.71204/nbb3pw72

Reconstructing the Concept of Causality in Religious Philosophy under Algorithmic Rationality

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Received: 15 March 2025 /Accepted: 28 April 2025 /Published online: 4 May 2025

Abstract

In the contemporary era of algorithmic rationality, the traditional concept of causality has come under profound pressure. Predictive algorithms, data-driven analytics, and machine learning systems are rapidly transforming causality into an operational tool of correlation, surveillance, and control. This paper investigates this transformation by drawing upon two contrasting yet philosophically rich traditions: Western causal determinism and the Buddhist theory of dependent origination (pratītyasamutpāda). Through a comparative and reconstructive philosophical analysis, the paper demonstrates that Buddhist dependent origination offers a non-linear, interdependent, and ethically embedded view of causality that stands in stark contrast to the mechanistic, reductionist assumptions of algorithmic determinism. Across six chapters, the study critically examines the ontological, epistemological, and ethical stakes of algorithmic causality, the philosophical heritage of Western determinism, the liberative potential of Buddhist conditionality, and the religious reimagination of freedom in a predictive age. The paper concludes by proposing a relational, dynamic, and non-reductive theory of causality that foregrounds moral agency and metaphysical openness, offering a viable philosophical response to the deterministic tendencies of algorithmic systems.

Keywords: Religious Philosophy; Algorithmic Rationality; Buddhist Theory

1. Introduction

The contemporary world is undergoing a radical transformation in its understanding of causality. With the rise of algorithmic governance, powered by advances in machine learning, big data, and artificial intelligence, human behavior is increasingly modeled, predicted, and influenced through statistical correlations rather than philosophical reasoning (Carter & Reynolds, 2022). This transformation has significant implications not only for technology and policy, but also for longstanding metaphysical debates about determinism, agency, and freedom. The concept of causality—once a cornerstone of metaphysical inquiry—is now being reshaped by the logic of

algorithmic rationality, which replaces questions of "why" with calculations of "what next." In this context, there is an urgent need to revisit and reconstruct religious and philosophical understandings of causality.

This paper seeks to address this need by engaging in a comparative and reconstructive exploration of two distinct yet profoundly influential traditions of causal thinking: Western causal determinism and the Buddhist concept of pratītyasamutpāda (dependent origination). The former, rooted in classical metaphysics and mechanistic natural science, views causality as a linear, temporally ordered chain of necessity. The latter, emerging from early Indian philosophical contexts, presents a dynamic, relational model that emphasizes contingency, interdependence, and the absence of inherent essence in all phenomena.

The aim of this study is not merely to juxtapose these models for the sake of contrast, but to bring them into constructive dialogue within the framework of the 21st-century algorithmic regime. We argue that the Buddhist account of causality provides a powerful counter-narrative to the deterministic logic of algorithmic systems. It does so not by denying causality, but by reframing it as a web of interdependent conditions that resist closure and permit transformation. This reconceptualization has far-reaching implications for rethinking human freedom, responsibility, and the moral imagination in an era increasingly dominated by predictive technologies.

The structure of the paper is as follows. Chapter 2 analyzes the nature of algorithmic rationality and its impact on causal reasoning. Chapter 3 reconstructs the history and metaphysical underpinnings of Western causal determinism. Chapter 4 elaborates the Buddhist theory of dependent origination, emphasizing its philosophical sophistication and ethical implications. Chapter 5 brings these perspectives together to explore how religious philosophy can offer a renewed account of human agency in the face of algorithmic determinism. Chapter 6 concludes by outlining a framework for a relational, ethical, and non-reductive theory of causality suited to the challenges of our time.

2. Algorithmic Rationality and the Contemporary Crisis of Causality

In the early decades of the 21st century, we have entered what can be described as the age of algorithmic governance. In domains as diverse as criminal justice, credit scoring, public health, hiring, education, and political communication, decision-making processes are increasingly delegated to automated systems powered by machine learning and big data. These systems operate under a new form of rationality ─ algorithmic rationality ─ which displaces traditional epistemic frameworks rooted in deliberation, interpretation, and ontological depth. The defining feature of this new logic is its treatment of causality not as a metaphysical or ethical relationship, but as a matter of predictive association based on patterns extracted from vast datasets. This shift marks a significant reconfiguration of how causality is understood and operationalized. Traditional philosophical conceptions of causality—especially within religious and metaphysical traditions—have regarded causality as a relation between entities grounded in necessity, teleology, or moral purpose. In contrast, algorithmic systems treat causality as statistical regularity, often

reducing it to correlations that "work" for purposes of prediction, regardless of whether they reflect any ontological or ethical reality. The question is no longer "Why did this event occur?" but "Given these inputs, what output is most probable?"

2.1. From Causal Explanation to Predictive Utility

Machine learning systems—especially those based on supervised learning algorithms—function by identifying patterns in labeled datasets that can be used to classify or predict future outcomes. In doing so, these systems often make no claim to causal understanding in any classical sense. Indeed, many of the most effective models, such as deep neural networks, are celebrated precisely for their predictive power despite being opaque or non-interpretable. This situation has given rise to what some scholars have called "black box epistemology" (Kvanvig, 2018), in which predictions are prioritized over explanations, and model performance takes precedence over model transparency.

This instrumental approach to causality resonates with a neo-Humean epistemology, which denies that we can ever perceive causal necessity and instead defines causality as nothing more than constant conjunction. In algorithmic systems, causality is neither experienced nor explained; it is inferred probabilistically from co-occurrence and statistical weight. Such a model displaces agency, intentionality, and teleology, and replaces them with probabilistic expectation.

The danger here is not simply epistemological but ontological. When causal relations are framed as mere statistical regularities, there is a loss of depth in our understanding of the world. The metaphysical richness of causality—as that which binds the moral, physical, and spiritual dimensions of existence—is flattened into a computational artifact. This epistemological flattening leads to what we may term the ontological impoverishment of causality.

2.2. Recursive Feedback and Self-Fulfilling Prediction

One of the most insidious features of algorithmic rationality is its recursive nature. Predictive systems do not merely observe or describe the world; they intervene in it. A predictive policing algorithm, for instance, may indicate that a certain neighborhood is likely to experience high levels of crime. As a result, police are disproportionately deployed to that area, increasing the likelihood of recorded incidents, which then feed back into the system and "confirm" the original prediction (Cunningham et al., 2024). This process creates a self-fulfilling prophecy in which the model reshapes reality to fit its predictions.

This recursive dynamic effectively closes the causal loop, reinforcing existing patterns and foreclosing alternative futures. Human behavior becomes locked into feedback cycles that reduce spontaneity and restrict possibilities. The result is a form of behavioral determinism in which individuals are no longer treated as moral agents but as data points whose future actions are prefigured by past behaviors.

More disturbingly, these systems are rarely subject to scrutiny by those affected. The opacity of predictive models, combined with their aura of objectivity, renders them nearly immune to critique. This leads to a subtle yet pervasive form of technological fatalism, wherein individuals begin to accept predictive outcomes as inevitable or even natural. Over time, the predictive logic

of algorithmic systems conditions not only institutional behavior but also personal self-understanding, eroding the space for reflection, choice, and transformation.

2.3. Optimization over Understanding

The shift toward algorithmic causality is also linked to a broader cultural shift toward optimization. The primary goal of algorithmic systems is not to understand the world in a deep sense but to optimize outcomes according to predefined metrics—efficiency, accuracy, profit, risk mitigation, or user engagement. This shift aligns causality with instrumental rationality, as famously critiqued by Max Weber and the Frankfurt School, wherein the pursuit of means eclipses the question of ends (Specter, 2019). Causality, in this context, becomes a tool for management and control. Rather than being a bridge to moral or existential insight, it becomes a mechanism for regulating conduct and minimizing uncertainty. This instrumentalization of causality reflects a broader technocratic ethos in which values are subordinated to metrics and deliberation is displaced by automation. This ethos pervades not only industry and government but also personal life. Recommendation engines, for example, predict what media we will enjoy, what products we will buy, and even whom we might fall in love with. These predictions subtly shape our desires and choices, leading to a world in which freedom is experienced not as open possibility but as curated predictability.

2.4. The Metaphysical Consequences of Predictive Systems

The transformation of causality into prediction has profound metaphysical consequences. At stake is the very nature of human agency. If actions can be reliably predicted by machines, does it follow that they are determined? If choices are modeled as outcomes of past behavior and environmental stimuli, where is the space for moral responsibility, creativity, or transcendence? These questions echo the classic freedom-determinism debate in philosophy but are now raised in a new key—through the operations of technical systems rather than the decrees of metaphysical doctrines. The algorithm replaces the divine as the site of foreknowledge, yet unlike God, it offers no grace, no forgiveness, and no eschatology (Jackson, 2015). It merely predicts, evaluates, and classifies. Religious traditions, particularly those with robust philosophical-theological frameworks for causality, are uniquely positioned to challenge this reductive view. Buddhism, as we shall see in Chapter 4, offers a concept of causality that is non-linear, ethically embedded, and open-ended. It neither denies the reality of causation nor collapses it into mechanistic determinism. Instead, it affirms a world of interdependence and transformation, where freedom is found not in the absence of causes but in the cultivation of conditions.

2.5. The Need for Philosophical and Religious Reclamation

Given the epistemic and ethical stakes of algorithmic rationality, it is imperative that we reclaim causality as a subject of philosophical and religious reflection. The conceptual tools offered by metaphysical traditions — particularly those rooted in relational ontology, process philosophy, and contemplative practice—provide alternative frameworks for understanding cause, responsibility, and freedom. Religious philosophy insists that causality is not just about prediction but about meaning. It connects events not only in time but in moral space (Habermas, 2008). It affirms that the world is not merely a system to be optimized but a field of ethical becoming. In

reclaiming this vision, we resist the impoverishment of causality by reasserting its depth, complexity, and transformative power.

3. Western Causal Determinism and Its Philosophical Trajectory

The concept of causality has occupied a central place in Western philosophy since antiquity, evolving through successive metaphysical, scientific, and theological frameworks. From Aristotle's multi-dimensional causal theory to the mechanistic universe of Newtonian physics, from Hume's skeptical empiricism to Kant's transcendental analysis, Western thought has progressively shaped a dominant image of causality as linear, temporally ordered, and ontologically necessary. This chapter examines the historical evolution of causal determinism in the Western tradition, showing how a once multifaceted concept was gradually narrowed into a closed system of efficient causation, and how this model re-emerges today in algorithmic form.

3.1. Aristotle's Four Causes: A Pluralist Beginning

The classical point of departure for causal thinking in the West is Aristotle's doctrine of the four causes: material, formal, efficient, and final. In this schema, causation is not restricted to mechanical interactions but includes intrinsic purpose and teleology. For example, to explain a statue, one must understand its material (marble), form (its shape), efficient cause (the sculptor), and final cause (the purpose or reason for its existence). This framework allowed for an integrative vision of reality, combining physics, metaphysics, and ethics.

Importantly, Aristotle's account positioned causality within a relational and purposive cosmos, where each entity had a natural place and goal (telos). Causality was not merely about motion or change but about the realization of potential. Thus, causality and meaning were intimately intertwined, laying the groundwork for theological interpretations in medieval Christian philosophy.

3.2. The Rise of Mechanistic Causality: Galileo and Newton

The Scientific Revolution of the 16th and 17th centuries initiated a decisive break with this holistic view. Influenced by the success of mathematics in describing natural phenomena, thinkers like Galileo and Descartes began to strip the natural world of qualitative properties, reducing it to extension, motion, and quantity. Final causes were rejected as anthropomorphic and unscientific, and efficient causality—the production of one event by another in space and time—was elevated to sole legitimacy.

This transformation reached its apex in Isaac Newton's Philosophiæ Naturalis Principia Mathematica (1687), where the universe is described as a vast machine governed by immutable laws of motion. In Newtonian physics, the state of a system at any given time determines its future with complete certainty, provided that the laws and initial conditions are known. This deterministic worldview found its philosophical expression in Pierre-Simon Laplace's famous thought experiment: "An intelligence which could know at a given instant all the forces that animate nature and the position of all the beings that compose it... would embrace in the same

formula the movements of the greatest bodies of the universe and those of the lightest atom." Laplace's demon represents the ideal of perfect predictability, a vision in which freedom is illusion and all events are necessary consequences of preceding states. This is strong causal determinism, and it became the metaphysical backdrop for Enlightenment rationalism, scientific materialism, and even certain forms of Protestant theology.

3.3. Hume's Skepticism and the Epistemological Turn

Despite its dominance, the deterministic model faced internal philosophical challenges. David Hume, writing in the 18th century, launched a devastating critique of causal necessity (Milton, 1982). According to Hume, we never observe causality itself—only the constant conjunction of events. When we say that A causes B, what we really mean is that B always follows A in our experience. The notion of a necessary connection is a psychological habit, not an observable feature of the world.

This skeptical account reduces causality to habitual inference, undermining the metaphysical foundations of determinism. Yet paradoxically, Hume's empiricism laid the groundwork for modern statistical modeling, which also relies on the regular association of variables without asserting any deeper necessity.

In this sense, Hume anticipates the epistemic logic of algorithmic systems, which operate without metaphysical commitments but produce highly reliable predictions. His legacy is a kind of causal minimalism, where explanation is replaced by predictive regularity—a view that aligns well with the goals of machine learning.

3.4. Kant's Transcendental Causality

Responding to Hume, Immanuel Kant attempted to salvage the necessity of causality by arguing that it is not derived from experience but imposed by the mind upon it (De Pierris & Friedman, 2008). In his Critique of Pure Reason, Kant posited that causality is an a priori category of understanding — a condition of the possibility of experience. We do not perceive causality in the world; we perceive the world as causal because our minds structure it that way.

Kant's account saved the pragmatic necessity of causal reasoning without committing to its metaphysical reality. However, it also reinforced a fundamental epistemic split: while causality is essential for science, it cannot be said to describe things-in-themselves (noumena). This dualism marked the beginning of modern scientific positivism, which increasingly bracketed metaphysical questions in favor of operational utility.

3.5. Theological Ramifications: Predestination and Divine Omniscience

The rise of causal determinism also generated theological tensions. In Christian theology, particularly within Augustinian and Calvinist traditions, divine omniscience and omnipotence raised difficult questions about human freedom and moral responsibility. If God knows — and indeed determines — all future events, then human actions appear to be preordained. This led to doctrines of predestination that emphasized salvation as a matter of divine will rather than human choice. Yet other traditions, including Thomistic thought, sought to reconcile divine

foreknowledge with free will through intricate distinctions between God's eternal knowledge and temporal causality (Manurung & Pane, 2024). Nevertheless, the deterministic impulse was hard to contain. As science became the new epistemic authority, divine causality was gradually supplanted by natural causality, and eventually by secular determinism. Thus, the theological dilemmas of determinism were not resolved; they were displaced into the philosophical and scientific discourse. Today, algorithmic systems that claim to predict behavior with high accuracy echo the same tension between foreknowledge and freedom, but without the moral vocabulary or soteriological stakes that once framed the debate.

3.6. Determinism in the Age of Algorithms

In the contemporary world, causal determinism has returned in digitally mediated form. While quantum mechanics and chaos theory have undermined strict determinism in physics, the pragmatic determinism of algorithmic systems is more entrenched than ever. Predictive models used in finance, medicine, and policing assume that the future can be known and managed through sufficient data, mirroring Laplace's ideal with computational means. The logic of these systems rests on statistical inference, but their societal impact reflects a metaphysical assumption: that individuals are predictable and therefore governable through optimization. This is not determinism as a physical theory, but as a mode of control—a way of organizing knowledge, institutions, and behaviors according to the imperatives of prediction and efficiency. In this sense, algorithmic determinism is the re-encoding of Enlightenment rationality in computational form. It revives the dream of a fully knowable and manipulable world, but now without the philosophical self-awareness that once tempered its ambitions. The machine, not the philosopher or the theologian, becomes the arbiter of causality.

4. Buddhist Dependent Origination as a Non-Linear Causal Model

In response to the linear and deterministic models of causality dominant in Western metaphysics and now replicated in algorithmic systems, Buddhist philosophy proposes an alternative: the doctrine of dependent origination (Sanskrit: prat ī tyasamutp ā da; Pali: pa ṭ iccasamuppāda). Central to all major Buddhist schools, this concept articulates a view of causality that is fundamentally relational, non-linear, and ethically transformative. Rather than positing a world governed by fixed laws or isolated causal chains, Buddhist thought understands reality as a web of interdependent processes, wherein no phenomenon arises independently or exists inherently.

4.1. Conditionality without Determinism

At the core of dependent origination is the claim that all phenomena arise due to causes and conditions, yet not in a way that entails strict necessity. The canonical formulation—"When this exists, that arises; when this ceases, that ceases"—articulates a model of conditionality, not of mechanical determination. This distinction is vital. Unlike Western determinism, which often assumes that a given effect must follow from a given cause, Buddhist thought maintains that conditions are enabling but not constraining. They make phenomena possible, not inevitable. The

classical expression of this model is found in the twelve links of dependent origination (dvādaśāṅga pratītyasamutpāda), which describe the cyclic process by which suffering arises in the human experience. These links—ranging from ignorance (avidyā) to death (maraṇa)—are not simply chronological stages but function as mutually reinforcing processes. They highlight how suffering is perpetuated through the recurrence of ignorance, craving, and attachment. Importantly, this cycle is breakable. The arising of one link is dependent upon the presence of the previous one, but by cultivating insight into this process, one can intervene. In other words, causality in Buddhism is not a prison but a pathway—a structure that, once understood, can be transformed. This stands in sharp contrast to the closed-loop logic of algorithmic systems, which tend to reinforce pre-existing patterns and foreclose agency.

4.2. Interdependence, Emptiness, and the Denial of Inherent Existence

Dependent origination is inseparable from the Buddhist doctrines of non-self (anattā) and emptiness (śūnyatā). These concepts jointly challenge the notion of inherent existence, which underlies both classical essentialism and modern algorithmic identity. According to Buddhist thought, nothing—whether persons, objects, or events—possesses an independent, unchanging core. Everything arises through interdependent co-arising and lacks fixed substance. The Mādhyamaka school, articulated most famously by Nāgārjuna, deepens this insight. Nāgārjuna argues that causality itself is empty of intrinsic nature. That is, causes and effects do not exist in isolation, nor can they be reduced to linear transmission. Instead, all causal relations are dependently designated and context-bound. This undermines the metaphysical foundations of both essentialist identity and determinist control. From this perspective, causal networks are open, relational, and dynamic (Köhne, 2020). Each phenomenon is what it is only in relation to others. This view not only dissolves the illusion of individual autonomy (crucial to liberal notions of freedom) but also challenges the implicit essentialization in algorithmic profiling, which tends to treat users or data subjects as coherent, stable entities with predictable preferences. In emphasizing relationality over identity, Buddhism offers a radically different ontology—one that aligns more closely with process philosophy and systems thinking than with classical substance metaphysics. It recognizes the fluidity of beings and the contingency of outcomes, thereby retaining space for transformation.

4.3. Ethical Transformation and the Soteriology of Causal Insight

The final and perhaps most profound dimension of dependent origination is its ethical orientation. Unlike algorithmic systems, which extract causal patterns to optimize behavior or control populations, the Buddhist approach to causality is oriented toward liberation (nirvāṇa). Understanding the web of conditionality that sustains suffering is not merely an intellectual exercise — it is a moral imperative.The Buddha's awakening is traditionally described as the realization of the three knowledges, the last of which is full insight into the operation of dependent origination and the cessation of suffering. This insight empowers practitioners to recognize how their actions, perceptions, and attachments are conditioned — and therefore malleable. By cultivating wisdom (prajñā), ethical conduct (śīla), and concentration (samādhi),

one can begin to disrupt habitual patterns, loosen the grip of craving (taṇhā), and ultimately step outside the cycle of rebirth and dissatisfaction (saṃsāra).

This ethical structure of causality is diametrically opposed to the value-neutral logic of algorithmic systems. Whereas predictive models aim to forecast behavior without concern for moral intention or spiritual meaning, the Buddhist model insists that causality must be understood in light of intention, context, and consequence. Actions matter not because they produce predictable outcomes, but because they shape the moral and existential trajectory of beings.

5. Religious Philosophy and the Reconstruction of Freedom in a Predictive Age

The rise of algorithmic rationality has posed a profound challenge to classical understandings of freedom. In a world increasingly governed by predictive systems—where actions are inferred from past behaviors and choices are subtly curated by data-driven algorithms—human agency appears less autonomous and more determined. The freedom-determinism debate, long a central concern of Western metaphysics, is now being recast in computational terms. Yet within this technologically intensified determinism, religious philosophy reasserts a crucial counterpoint: that freedom is not an abstract independence from causality, but a cultivated capacity to act wisely within conditions.

5.1. The Illusion of Autonomy in Predictive Systems

Modern liberalism and much of Western political thought have historically grounded freedom in the idea of individual autonomy: the capacity to choose freely, independently of external constraints (Beck, 1999). This view has been codified in rights discourse, moral philosophy, and economic theory. However, the predictive turn in digital culture profoundly unsettles this notion. Recommendation engines, behavioral nudging, and predictive profiling gradually erode the experiential basis of autonomy by shaping desires before conscious deliberation can occur. In predictive systems, choices are often prefigured—curated based on probability distributions, not value judgments. The result is what we might call algorithmic soft determinism, wherein agency is statistically inferred and optimized, rather than freely enacted. In such a context, the traditional libertarian model of freedom — as the capacity to act contrary to causal influence — proves inadequate. Religious philosophy, in contrast, offers a non-dualistic reorientation: freedom is not found in denying causes, but in understanding and transforming them.

5.2. Buddhist Insight and the Freedom of Conditional Transformation

In Buddhist thought, particularly in the doctrine of dependent origination, freedom is understood not as causeless spontaneity, but as the skillful transformation of conditions (Das & Sahu, 2018). Because phenomena—including the self—arise dependently and are devoid of fixed essence, they are malleable. Thus, liberation (nirvāṇa) is achieved not by escaping causality, but by penetrating its nature through insight (prajñā) and practicing ethical discipline (śīla) and concentration (samādhi). The key to this form of freedom lies in mindfulness (sati): the capacity to observe how craving, aversion, and ignorance perpetuate suffering through conditioned responses. Through meditative practice and ethical cultivation, the practitioner learns to interrupt

automatic patterns, creating a space for intentional, compassionate response. This space is the ground of freedom ― not metaphysically absolute, but existentially real. This is a form of relational freedom ― what we might call freedom-in-conditions. It acknowledges that the individual is embedded in a web of causes and conditions, but also insists that by understanding and skillfully engaging those conditions, one can change the trajectory of one's life. It is not "free will" in the Western metaphysical sense, but a dynamic moral agency rooted in wisdom and presence. This view sharply contrasts with the behaviorist assumptions underlying algorithmic systems. Whereas predictive models reduce action to past patterns and probability, Buddhist philosophy posits that understanding conditions dissolves compulsion. Knowledge becomes liberation, not control. In this way, the Buddhist model offers a philosophical and spiritual rebuttal to the epistemic closure of predictive determinism.

5.3. Christian Existentialism and the Courage of Freedom

A parallel line of thought emerges in Christian existentialism, particularly in the works of Søren Kierkegaard, Paul Tillich, and Gabriel Marcel. These thinkers grappled with the conditions of human freedom not as metaphysical abstraction but as lived experience under existential threat—sin, despair, guilt, anxiety. For Kierkegaard, freedom is not the mere capacity to choose, but the task of becoming a self before God. It requires embracing the anxiety that comes with possibility and taking responsibility for one's existence. Tillich described freedom as the "courage to be"—to affirm one's being in the face of non-being, uncertainty, and meaninglessness. Freedom, in this tradition, is never absolute; it is won in relationship—with God, others, and one's own finitude. This existential view resonates with Buddhist insights in two crucial ways. First, both reject essentialist views of the self. For Buddhists, the self is empty; for existentialists, it is a task to be realized. Second, both frame freedom as a response to conditions rather than a denial of them. Freedom is not given but must be cultivated ― through faith, authenticity, or mindful practice. Crucially, Christian thought also emphasizes grace ― the idea that transformation is possible not only through self-effort but through divine relationality. In a world governed by algorithms, where the future seems already written in code, the concept of grace reintroduces metaphysical openness and affirms that newness is always possible.

6. Conclusion

The preceding chapters have explored the deep philosophical tensions between algorithmic rationality and religious-philosophical conceptions of causality. In a world increasingly governed by predictive systems that operationalize correlation as causality and repackage determinism as optimization, the metaphysical and moral assumptions underlying our understanding of cause and effect are in urgent need of critical reconsideration. As we have argued, algorithmic systems do not merely model the world; they shape it through recursive logics that reduce freedom to behavioral patterns and causality to data associations. Confronting this challenge requires a conceptual framework that reclaims causality as ethically meaningful, ontologically open, and relationally constituted. In this final chapter, we synthesize the insights developed across the text and propose a theory of causality grounded in Buddhist dependent origination and informed by

broader religious and existential traditions. This relational, non-reductive, and ethical model of causality offers an alternative to the deterministic tendencies of both classical science and contemporary algorithmic technologies.

(1) From Reductionism to Relational Complexity

One of the most pernicious features of algorithmic causality is its reductionism: the tendency to simplify complex phenomena into tractable variables and computable predictions. While such reductions are epistemically useful, they often come at the cost of ontological flattening. Human beings are reduced to behavioral data, actions to outputs, and causality to probability. This simplification becomes especially problematic when embedded in systems of governance, policing, finance, or health care, where it produces predictive determinism disguised as neutral optimization. The Buddhist model of dependent origination resists this reductionism by foregrounding relational complexity. In place of linear chains of cause and effect, it posits webs of interdependent processes ― dynamic, contingent, and multifactorial. Importantly, this model does not deny causality but insists that causation is always situated within a broader field of conditions, contexts, and perspectives. It replaces certainty with conditionality, and necessity with emergence. By emphasizing this complexity, a relational theory of causality allows for plural explanatory levels ― biological, psychological, social, ethical ― without collapsing them into a single computational logic. It creates space for interpretive depth, moral deliberation, and cultural specificity, all of which are absent from algorithmic thinking. It also reaffirms that what matters is not just what caused what, but how causality is interpreted and for what purpose.

(2) Causality as Ethical Responsibility

A second core insight emerging from the Buddhist and religious philosophical tradition is that causality is not merely a descriptive mechanism but also an ethical relationship. The Buddhist concept of karma, though often misunderstood, exemplifies this view: actions have consequences not because of metaphysical fate but because of their embeddedness in moral and existential conditions. To act is to participate in a network of causes and effects that impact others, the environment, and oneself. This ethical conception of causality stands in direct contrast to the value-neutrality of algorithmic systems. Predictive analytics, for instance, classify individuals based on statistical likelihoods without regard for justice, dignity, or the possibility of transformation. By contrast, an ethical causal model demands that we consider not only what is likely, but also what is right. It invites us to take responsibility for the systems of conditioning that we inhabit and perpetuate. Within this framework, human freedom is not framed as a rejection of causality, but as the capacity to shape causal chains intentionally and compassionately. Agency becomes a function of awareness and care rather than control or domination. The relational theory of causality thus transforms responsibility from a burden into an opportunity: to participate ethically in the becoming of the world.

(3) Human Agency in the Age of Prediction

Finally, this relational and ethical view of causality offers a renewed philosophical foundation for human agency in the algorithmic age. In predictive systems, the future is increasingly treated as a knowable extension of the past, rendering human action as prefigured and optimizing choices

toward statistically efficient outcomes. This generates a form of technological fatalism, in which people accept algorithmic outcomes as inevitable and begin to internalize their own predictability. A Buddhist-informed causal theory resists this closure. Because dependent origination denies fixed essences and affirms conditional openness, it reasserts that transformation is always possible. Even deeply entrenched patterns of suffering can be altered if the conditions that sustain them are understood and disrupted. Insight into causality becomes a means of liberation, not surveillance. Practice becomes a way to change not only one's behavior, but the very conditions under which behavior arises. This orientation has practical implications. In design, education, governance, and ethics, we can begin to move away from systems that treat people as reducible to data and instead cultivate environments that support reflection, unpredictability, growth, and care. It reminds us that what matters is not just modeling the future, but making it differently.

To conclude, causality is not a neutral or merely technical concept. It is a philosophical and moral lens through which we interpret the world, act within it, and imagine its future. The challenge posed by algorithmic rationality is not only to our privacy or autonomy, but to our very conception of what it means to be a cause, an agent, and a moral being. In reclaiming causality from reductionism and re-rooting it in relational and ethical terms, religious philosophy ─ especially Buddhist dependent origination─offers a critical resource. This reconstructed theory of causality does not reject science or technology, but grounds them in a deeper awareness of interdependence and ethical consequence. It affirms that in a world of predictive systems, the most radical act is to recognize that nothing is fixed, and that by understanding conditions, we can always begin again.

Author Contributions:

Conceptualization, Z. O; methodology, Z. O; software, Z. O; validation, Z. O; formal analysis, Z. O; investigation, Z. O; resources, Z. O; data curation, Z. O; writing—original draft preparation, Z. O; writing—review and editing, Z. O; visualization, Z. O Wang; supervision, Z. O; project administration, Z. O; funding acquisition, Z. O. 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:

Not applicable.

Conflict of Interest:

The author declares no conflict of interest.

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