American Research Journal of Humanities and Social Sciences

Volume 11, Issue 1, 1-6 Pages
Research Article | Open Access
ISSN (Online)- 2378-7031
DOI : 10.21694/2378-7031.25001

Autonomy and the Question of Free Will in the Age of Artificial Intelligence

Leo Kihoon Yeo

Bergen County Technical School, Teterboro.

ABSTRACT

For centuries, the question of free will and determinism has sparked deep debate among philosophers, scientists, and scholars from various fields. This discussion is driven not only by the apparent conflict between the two concepts but also by the complex relationship they share. Free will refers to the ability of individuals to make choices without being constrained by external forces, while determinism is the belief that events, including human actions, are shaped by preceding causes according to the laws of nature. Some philosophers, including Hobbes and Spinoza, have defended determinism throughout the course of its history by arguing that human decisions are governed by natural law and shaped by past experience. Kant, on the other hand, introduces a concept of autonomy grounded not in desire but in the principles of moral duty, which becomes the foundation of his idea of the natural man as someone who affirms a kind of freedom. More recently, neuroscience has joined this conversation by examining whether our decisions arise from conscious intention or are determined by unconscious brain activity, further complicating how we define free will.In neuroscience, researchers study whether our decisions are the result of conscious intent or unconscious brain activity, raising new questions about the reality of free will. These issues are also central to current discussions on artificial intelligence, where predictive models may influence or even override human judgment. As technology grows more capable of anticipating and shaping behavior, understanding how free will, determinism, and autonomy interact becomes more important.In the following analysis of these scientific and philosophical viewpoints, we will seek to show that, while the existence of free will may remain open to debate, the idea of autonomy is an important consideration that we should take into account in our understanding of determinism as it relates to the nature of responsibility, especially in relation to the advent of technology and AI.

FREE WILL AND DETERMINISM

The philosophical discussion regarding free will and determinism is pivotal in understanding autonomy. Free will is perceived as the power of human beings to make their own choices, free from outside influences and control, while determinism holds that human choices are determined by prior events or natural laws. The significant difference between the two greatly impacts theories of autonomy, as it raises the question of whether human behavior can truly be self-governing within a moral and ethical context.A compatibilist approach argues that free will and determinism are not necessarily in conflict, since determined behavior can still lead to autonomous actionif they reflect an individual's intentions or choices (Author, n.d.). In contrast, the incompatibilist perspective argues that free will is not possible in a deterministic framework, and therefore moral responsibility is undermined, since human actions are shaped by prior causes rather than genuine choice (Author, n.d.).

In addition, Spinoza's deterministic proposition promotes the idea that human behavior is shaped entirely by natural laws and past experiences.As such, Spinoza proposes that external causes determine human actions, making man devoid of self-causation as implied in the traditional context of free will (Yonover, 2021). This perspective implies that what we consider human choice is, in fact, the result of causal chains rooted in the present and the past, challenging the commonly held belief that decision-making involves genuine freedom. By using human exploitation of nature's laws as a reference point, Spinoza argues that human beings are governed entirely by the laws of the universe. In this view, autonomy exists only as a product of causal, determinate forces. From this perspective, autonomy persists in an unusual way, set against a backdrop of deterministic thought. This theory becomes especially relevant as human institutions, driven by technological progress, develop artificial intelligence that threatens to reverse autonomy by causally determining human decisions and actions.

In the same vein, the deterministic approach of Hobbes fits with the idea that human outcomes are influenced by external factors. The underlying principle of Hobbes's view of human nature was that human behavior is governed by the laws of

nature, such that human decisions and actions are based on previous occurrences. In this way, he presents a view of determinism that suggests human beings are not truly free if their actions are ultimately caused by forces outside their control.However, there is an interesting aspect of Hobbes's view in that he did not completely reject the idea of human freedom. He argued that people are free when their actions align with their inner desires and rational thinking, even if external factors influence their circumstances (Yonover, 2021). This remains a key idea in Hobbes's understanding of human nature, especially relevant today. With the rise of artificial intelligence, there is increasing concern about the ability of AI systems to influence or even predict human decisions, particularly if they are capable of instilling or encoding the deterministic behavior Hobbes postulated centuries ago.

Kant also provides his own distinctive understanding of autonomy that is different from the determinist views of Spinoza and Hobbes. Kant's autonomy is moral autonomy. It is not some external determinant that leads to autonomy. True autonomy, in his view, means acting out of a sense of duty rather than from personal desires or inclinations. The importance of this understanding lies in how autonomy centers on the concept of self-governance guided by moral law. Kant argues that a person is truly free when they adopt a principle of conduct that does not depend on outside pressures or personal desires, but instead arises from reason itself (Ameriks, 2019). In this sense, autonomy is not simply the freedom to choose one's own path, but the act of following the moral law. For Kant, true autonomy means choosing to follow a universal moral law rather than acting out of personal will or power. This interpretation presents a distinctive form of independence that is grounded in ethical responsibility.

NEUROSCIENCE AND FREE WILL

Neuroscience brings an important new perspective to the debate about free will—one that questions whether our choices are really as conscious as we think. Some studies suggest that decisions may start forming in the brain even before we're aware of making them. This idea became especially prominent in the 1980s through the work of Benjamin Libet, whose experiments changed how scientists thought about the link between brain activity and conscious intent. He found that activity in the brain's motor cortex—the so-called "readiness potential"—often began several hundred milliseconds before people reported deciding to act. These findings suggest that some decisions might be made beneath the surface of awareness, challenging the common belief that free will comes solely from deliberate, conscious thought (Gardner, 2019).With advances in neuroscience, the lack of prioritization of free will is significant, as it is believed that the concept may require a fundamental restructuring. It has been suggested that human consciousness, often associated with free will, is not, contrary to earlier beliefs, the ultimate determinant of human behavior and existence. While there are parallels between deterministic principles and the structure of human life, this view challenges the more traditional understanding of human nature and autonomy (Gardner, 2019).

The impact of Libet's groundbreaking work was further deepened by studies conducted by Soon et al., who found that patterns of brain activity could predict a person's decision several seconds before they became consciously aware of it (Gardner, 2019). Using fMRI technology, the researchers discovered that participants' choices could be anticipated up to 10 seconds in advance, suggesting that what we perceive as free, conscious decisions may actually emerge from unconscious neural processes (Brass et al., 2019). These findings raise serious philosophical questions about the nature of autonomy and personal agency. If decisions can be predicted before we are even aware of making them, this challenges the traditional notion of free will as an act of deliberate and independent choice.

This study raises the question of whether we are truly in control of our actions. It suggests that the brain acts like a predictive machine, producing outcomes before we even become aware of them as choices. Some argue that conscious thought can still step in at important moments, but the idea that many decisions happen outside our awareness gives support to deterministic theories. It also challenges the idea of autonomy, showing that it may be much more fragile than we once believed.Building on this idea, researchers like Friedman and others have found that signs of decision-making in the brain can appear even before people become aware of making a choice. This supports the view that unconscious processes have a strong influence on our behavior (Bzdok & Ioannidis, 2019). These findings are especially important today because of their connection to the rise of artificial intelligence. If human actions follow predictable patterns in the brain, AI could potentially anticipate or even shape our decisions. This raises serious ethical questions. It suggests that human autonomy, already challenged by what we know from neuroscience, may become even more at risk in the face of new technologies. Given all this, the idea that we are completely free to choose our actions is no longer something we can assume.

HISTORICAL PERSPECTIVES ON INFORMATION MANIPULATION

The historical precedents of such manipulation demonstrate the deterministic elements, where autonomy over information is driven by outside power, which limits and controls human choice. Throughout history, various examples of information manipulation have shown how they can shape public perception and decision-making. One clear example of this can be seen in the case of Augustus's propaganda in the Roman Empire.His use of information distortion offers a powerful example of how leaders have controlled narratives to influence public opinion. Augustus positioned himself as a divine figure and used a wide range of communication methods to deliver this message. Through

state-sponsored images and literature, he promoted ideas that tied his leadership to the strength and success of Rome. This carefully crafted messaging system shaped public values and created a predictable response, highlighting the deterministic nature of his rule.

The intentional use of information has long been a powerful tool for shaping public opinion and bringing people together around common goals.During the American Revolution, pamphlets, newspapers, and letters were used to rally support for independence and spread key ideas. One notable example is Thomas Paine's *Common Sense*, which urged colonists to stand together for liberty and reject British rule. Similarly, in ancient Rome, Augustus used propaganda to solidify his power, presenting himself as a divine leader through carefully crafted messages spread through literature and public imagery (Zhang et al., 2021). In both cases, information was used strategically to guide public sentiment and influence collective action.

These historical examples highlight how effective storytelling and persuasive messaging can shape how people think and act. They also serve as important reminders in today's context, where artificial intelligence has the potential to use similar methods to influence decisions. As AI becomes more advanced in predicting behavior and delivering targeted information, it could imitate these past techniques to manipulate perception on a larger scale. This raises serious concerns about individual autonomy, as it opens the door to new forms of control that mirror the deterministic patterns seen in history(Zhang et al., 2021).

AI AND HUMAN AUTONOMY

This establishes the connection between the growing power of artificial intelligence and its potential to pose a real threat to human autonomy by shaping decision-making. Through the ability to predict and mold humans into behaving a certain way based on algorithmic modeling, artificial intelligence aligns with the use of propaganda throughout history, whereby information control was used to sway public opinion and action.Indeed, AI technology poses a real threat to human autonomy, a concern highlighted by Yuval Harari in his article, where he argues that algorithmic systems endanger autonomy because they are highly deterministic and capable of accurately predicting human behavior and use various methods of manipulating people in their decision making (Harari, 2022). According to Harari, the deterministic nature of AI means that these technologies can predict the choices that humans are likely to make based on historical data and other elements. As such, decision-making could be externally dictated, similar to instances where people or organizations manipulate historical evidence to control human behavior and decision-making. This also relates to underlying neural processes, as neuroscience studies have shown that people often rely on unconscious mental activity when making decisions.In this context, understanding how these neural processes operate only serves to reinforce the deterministic perspective, as opposed to the free will argument. Harari emphasizes the need to establish ethical principles that define our social responsibility in protecting human autonomy, especially as AI technology risks moving beyond the bounds of human decision-making in an increasingly advanced technological society (Harari, 2022).

Yuval Harari argues that artificial intelligence poses a serious threat to human autonomy because it can recognize and exploit patterns in human behavior. By analyzing past decisions, AI systems can predict future choices, treating human responses as outcomes that can be programmed and anticipated (Harari, 2022). This reflects a deterministic view, where behavior is shaped not by free will but by recurring patterns that algorithms can detect and use. Harari compares this to propaganda, which authoritarian regimes have historically used to influence public opinion and predict reactions. In both cases, information is used as a tool to shape decisions. As AI technology becomes more advanced, this kind of influence could happen on a much larger scale, leading to a world where people's choices are increasingly guided, or even determined, by machines. Harari stresses the need for clear regulations to protect individual autonomy and ensure that AI does not undermine the dignity and self-determination that are central to being human (Nye, 2021; Harari, 2022).

PRESERVING HUMAN AUTONOMY

Yuval Harari raises an important ethical concern about whether artificial intelligence can preserve human autonomy as it becomes more reliant on behavioral data to predict and influence decision-making. He draws on a core idea in the deterministic worldview, which suggests that human actions are not entirely free but shaped by patterns and prior causes. Advanced algorithms can track these patterns and anticipate behavior, presenting a serious challenge to the idea of self-determination (Chhatre & Singh, 2024). As AI grows more capable of reducing human behavior to data, there is a pressing need for an ethical framework that protects individuals from being treated as predictable systems rather than free agents.

Recent discussions highlight the importance of creating ethical policies that ensure AI supports rather than weakens autonomy. This is especially crucial in areas like poverty alleviation, where the goal should not only be to improve conditions but also to protect individuals from forms of domination. Autonomy acts as a safeguard against being reduced to instruments of service. Legal protections must be put in place to prevent AI from being shaped by influences that compromise personal freedom, since autonomy is deeply connected to human dignity and equality.

To preserve this dignity, it is essential to find a thoughtful balance between the use of algorithms and the freedom of individuals to make their own choices. People must be able to act as independent social beings without the fear that their behavior is being shaped or predicted by unseen systems. When that balance is lost, so is a part of what makes

us human. Therefore, ethical principles must guide the development and use of AI in ways that limit its impact on personal decision-making. These principles should not only protect autonomy but actively strengthen it. Achieving this will require a collaborative approach that brings together technology, policy, and ethics to ensure that progress respects and preserves the freedom and dignity of every individual.

The second strategy highlights the importance of ensuring that human autonomy remains central in a world increasingly shaped by advanced AI technologies. When designing an ethical framework for AI, it is essential to focus on protecting individual freedom and preventing the potential loss of dignity that may result from AI-driven decisions. Establishing such a framework requires clear and comprehensive guidelines that promote transparency in both AI algorithms and the decision-making processes they support. These ethical guidelines must be grounded in the protection of human rights and should include principles that safeguard personal identity against unwarranted privacy violations and manipulation, particularly as AI systems become more capable of accessing and interpreting sensitive personal data (Lungu et al., 2024). Furthermore, addressing the ethical concerns raised by advanced AI demands international collaboration aimed at developing shared regulatory standards. These standards should reflect a collective commitment to defending human autonomy in the face of rapid technological change.

Education plays a vital role in strengthening critical thinking and supporting individuals' ability to act independently, especially in response to the growing influence of artificial intelligence. It helps people learn how to govern themselves and develop guiding principles and ways of thinking. Schools and universities can support this by including critical thinking in their teaching and curriculum. This kind of education encourages people to question information, recognize misleading content, and make informed decisions. In doing so, it helps individuals take back control over their lives in a world where artificial intelligence increasingly shapes how people think and behave (Lungu et al., 2024). In this sense, education can create a space where people are encouraged to think deeply and engage in meaningful conversations, helping them stand up for their own dignity. To make this possible, teaching should weave critical thinking into everyday learning, not just as a skill but as a way of approaching the world. When education works this way, it can help people stay grounded and make thoughtful choices, even when outside influences like artificial intelligence try to shape their decisions and behavior.

CONCLUSION

The relationship between free will, determinism, and human autonomy has gained renewed importance in the age of artificial intelligence. What was once primarily a philosophical discussion, explored by thinkers such as Spinoza, Hobbes, and Kant, now has direct relevance to technological advances that affect the everyday lives of people around the world. These developments require a renewed examination of long-standing philosophical positions, not only to understand the implications of AI but also to navigate the practical and moral consequences of a world increasingly shaped by intelligent systems.Spinoza's deterministic worldview, grounded in the idea that all events follow from natural necessity, challenges the notion that humans can act independently of causal forces. Hobbes shared this belief in a mechanistic universe but allowed for a form of freedom compatible with determinism, rooted in the absence of external constraints. Kant, diverging from both, emphasized the moral necessity of autonomy, insisting that individuals must be capable of acting according to rational self-governance to be considered ethically responsible. These positions, while historically distinct, provide the conceptual scaffolding for addressing the moral questions raised by contemporary AI.

Artificial intelligence, by its very design, operates deterministically. It processes data, identifies patterns, and makes predictions based on previous inputs. As these systems become more advanced, tracking not only behaviors and preferences but also emotions and subconscious tendencies, they begin to blur the boundary between simply predicting human actions and actively influencing them.AI does not merely respond to human choices; it can anticipate them, suggest alternatives, and in some cases, steer individuals toward specific outcomes. The question, then, is no longer whether machines can influence human decisions, but to what extent those decisions remain authentically human when mediated by machine intelligence (Rajesh Kumar, 2024).

This dilemma becomes even more complex in light of neuroscience research, which indicates that many human decisions begin to form before we are consciously aware of them. If patterns of brain activity can be used to anticipate decisions, and if artificial intelligence can achieve similar predictive abilities through the use of external data, then our traditional understanding of human autonomy may need to be fundamentally reexamined.Human agency, once assumed to reside in deliberate, reflective choice, may in fact be far more vulnerable to subtle forms of technological manipulation than previously understood. As Yuval Harari warns, the risk is not simply that AI will predict our behavior, but that it will do so more accurately than we understand ourselves, eventually guiding our actions while preserving the illusion of free will (Harari, as cited in Nye, 2021).The ethical consequences of this are profound. Autonomy has long been considered a cornerstone of human dignity and democratic society. If individuals are no longer seen as the primary authors of their thoughts and actions, the foundation of moral accountability begins to erode. Who is to be held responsible when a machine-guided suggestion leads to a harmful outcome? To what extent can we fault a person for choices they were subtly nudged into by data-driven algorithms? These questions challenge long-standing principles in law, education, medicine, and governance, making it essential to rethink the conditions under which

responsibility and autonomy can be meaningfully preserved (Esther Johnson, 2024).

In response to these concerns, education emerges as a crucial line of defense. Schools, universities, and public institutions must prioritize the development of critical thinking, ethical reasoning, and digital literacy. These are not optional skills in the age of artificial intelligence—they are necessary tools for maintaining individual agency in the face of systems designed to influence and direct behavior (Maloy et al., 2024). By teaching students how to question information sources, recognize bias, and reflect on their values, educators can help future generations become more resilient to the deterministic pull of AI-driven environments. Education also plays a crucial role in developing the self-awareness that Kant viewed as essential to moral autonomy. It enables individuals not only to make choices but also to understand the underlying reasons for their actions.

Yet education alone is not sufficient. Legal and policy frameworks must evolve to meet the demands of a changing technological landscape. Transparency in AI systems must be non-negotiable. People have the right to know how decisions affecting their lives are made, whether in hiring, lending, healthcare, or criminal justice. Data privacy must be rigorously protected to prevent the misuse of personal information for manipulative or exploitative purposes. Regulations should ensure that AI systems are able to explain their recommendations in ways that are clear and accessible to everyday users, not only to experts. Without such safeguards, individuals face the risk of being guided by opaque systems that make decisions on their behalf without their awareness or consent (Stahl & Stahl, 2021).

International cooperation is essential in addressing the ethical challenges posed by artificial intelligence. Since AI systems often operate across national borders, the absence of global standards creates opportunities for ethical loopholes to be exploited. The development of policy frameworks must be guided by shared commitments to human rights, individual autonomy, and fairness. These frameworks should include regular evaluations and updates to ensure that policies remain relevant and responsive to technological advancements. Policymakers should avoid fixed regulations that cannot keep up with the rapid pace of AI development. Instead, they should adopt flexible, principle-based approaches that can adapt to emerging ethical and legal issues (van Niekerk, 2020).

The broader societal implications of this discussion are equally important. If we accept that human choices are shaped not only by biology and environment but increasingly by algorithms, then we must confront the philosophical and moral consequences of this new reality. Determinism may no longer be a purely theoretical concept but a lived experience, embedded in the technologies that structure our daily lives. As machines become more integrated into personal, social, and political contexts, the distinction between voluntary action and automated response becomes harder to maintain. This tension forces us to reconsider how we understand freedom— not as complete independence from causation, but as the ability to navigate and shape the systems that influence us (Kanekar, 2022).Despite these challenges, the preservation of autonomy remains possible. It requires intentional effort, interdisciplinary dialogue, and a readiness to engage with difficult questions about human nature and the influence of technology. Philosophers, scientists, educators, lawmakers, and everyday citizens all have important roles to play in this ongoing conversation. The goal is not to resist technological progress but to ensure that it serves rather than subsumes the human spirit. Autonomy should be understood not as a fixed state but as an ongoing practice, one that must be protected, cultivated, and reaffirmed in the face of pressures that would quietly take it away.

In conclusion, the rise of artificial intelligence does not mark the end of the debate between free will and determinism. Rather, it brings that debate into sharper focus, giving it both practical significance and ethical urgency. As AI systems grow more capable of predicting and shaping human behavior, the importance of protecting autonomy, accountability, and human dignity becomes even more critical. We are now confronted with the task of ensuring that autonomy remains a central value in a world where determinism is not just a theoretical idea but a feature of the technologies we create. The future of autonomy will depend not only on how we develop these technologies, but also on how we choose to live with them.

REFERENCES

1. Ameriks, K. (2019). Kant on Freedom as Autonomy. In *Freiheit nach Kant. Tradition, Rezeption, Transformation, Aktualität* (pp. 95–116). brill.com. https://brill.com/downloadpdf/display/title/39249.pdf#page=103
2. https://plato.stanford.edu/archIves/win2023/entries/kant-reason/
3. Author. (n.d.). https://plato.stanford.edu/entries/freewill/
4. Bzdok, D., & Ioannidis, J. P. (2019). Exploration, inference, and prediction in neuroscience and biomedicine. *Trends in Neurosciences*, *42*(4), 251–262. https://www.cell.com/trends/neurosciences/abstract/S0166-2236(19)30007-4
5. Chhatre, R., & Singh, S. (2024). IMPACT OF AI ON HUMAN BEHAVIOUR AND DECISION MAKING; ETHICAL IMPLICATIONS OF AI. In *ETHICAL IMPLICATIONS OF AI*. papers.ssrn.com. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4869328
6. Elzein, N. (2020). Determinism,"Ought" Implies "Can" and Moral Obligation. *Dialectica*, *74*(1), 33–60. https://www.jstor.org/stable/48807315

7. Gardner, J. L. (2019). Optimality and heuristics in perceptual neuroscience. *Nature Neuroscience*, *22*(4), 514–523. https://www.nature.com/articles/s41593-019-0340-4

8. Harari, Y. N. (2022). A review of Harari's "21 Lessons" On The coming technological challenges. *Social Science Asia*, *8*(2), 94.

9. Kanekar, S. (2022). Determinism and Its Discontents: Morality, Religion, and the Need for Freedom of Will. ISBN-10: 1627343628, ISBN-13: 9781627343626,Publisher: Universal-Publishers, 2021

10. Lungu, D. C., Grigorescu, A., & Yousaf, Z. (2024). The Ethical Concerns of AI Technologies. In *Europe in the New World Economy: Opportunities and Challenges* (p. 253). books.google.com.

11. https://www.aitimejournal.com/navigating-ethical-challenges-in-ai-advancements/46636/

12. https://theawarenessnews.com/2024/11/28/the-rise-of-artificial-intelligence-opportunities-and-ethical-challenges/

13. https://technologymagazine.com/articles/ethical-and-responsible-ai-navigating-techs-new-frontier

14. https://startupsmagazine.co.uk/article-des2024-explore-ethical-and-humanistic-challenges-ai-focus-new-regulations

15. Nye, D. E. (2021). Harari's world history: Evolution toward intelligence without consciousness? *Technology and Culture*, *62*(4), 1219–1228. https://muse.jhu.edu/pub/1/article/819778/summary

16. Stahl, B. C., & Stahl, B. C. (2021). Ethical issues of AI. In *Artificial Intelligence for a better future: An ecosystem perspective on the ethics of AI and emerging digital technologies* (pp. 35–53). Springer. https://link.springer.com/chapter/10.1007/978-3-030-69978-9_4

17. van Niekerk, A. A. (2020). Building the future in the 21st century: In conversation with Yuval Noah Harari. *HTS Teologiese Studies/Theological Studies*, *76*(1). https://www.ajol.info/index.php/hts/article/view/213074

18. Yonover, J. M. (2021). Nietzsche, Spinoza, and etiology (on the example of free will). *European Journal of Philosophy*, *29*(2), 459–474. https://onlinelibrary.wiley.com/doi/abs/10.1111/ejop.12597

19. Zhang, W., Shen, Q., Teso, S., Lepri, B., Passerini, A., Bison, I., &Giunchiglia, F. (2021). Putting human behavior predictability in context. *EPJ Data Science*, *10*(1), 42. https://epjds.epj.org/articles/epjdata/abs/2021/01/13688_2021_Article_299/13688_2021_Article_299.html

20. Rajesh Kumar (2024). Ethics of Artificial Intelligence and Automation: Balancing In-novation and Responsibility

21. Esther Johnson. (2024). *Free Will, Responsibility, and Neuroscience: Philosophical Implications*.International Journal of Philosophy ISSN: 2958-244X (Online) Vol. 3, Issue No. 2, pp 14 - 26, 2024

22. Sai Gattupalli, Robert W. Maloy, University of Massachusetts Amherst, *On Human-Centered AI In Education, January 2024, DOI:10.7275/KXAP-FN13*

Citation: Leo Kihoon Yeo, "Portfolio Optimization: Exploring Markowitz Models and Modern Approaches for Effective Frontier Analysis", American Research Journal of Humanities and Social Sciences, Vol 11, no. 1, 2025, pp. 1-6.