



Veritatis Gaudium:
Multidisciplinary Journal of Postgraduate Studies

College of Postgraduate Studies,
Veritas University, Abuja, Nigeria

ISSN: 3043 - 5285

Volume 1, Number 5, September, 2026

DOI: 10.13140/RG.2.2.17243.12322

**GENETIC MODIFICATION AND HUMAN ESSENCE: A QUALIFIED
CRITIQUE OF SAUL KRIPKE'S ESSENTIALISM**

Innocent, Chikemagwa Justine & Emina, K. A., PhD

Department of Religious Studies and Philosophy, Delta State University, Abraka, Delta State

Abstract

Genetic modification has intensified a longstanding metaphysical question: what makes a human being the kind of being that he or she is? The question becomes especially important when genetic constitution is treated as the basis of human essence. This paper critically examines that assumption through Saul Kripke's essentialism. It postulates that Kripke's distinction between essential and contingent properties does not entail that human genetic constitution is immutable. Biological significance, causal influence and metaphysical necessity are distinct claims and should not be treated as equivalent. Using analytical, hermeneutical and normative methods, the paper brings Kripke's essentialism into dialogue with Aristotelian hylomorphism, African relational ontology and hermeneutic ontology. The study finds that genetic modification can produce significant biological change without necessarily producing a change in human essence or individual identity. In particular, therapeutic genetic engineering can correct pathological genetic conditions without altering the individual's originating history or substantial continuity. Hence, the paper proposes a qualified essentialist position: human essence is real, but it cannot be reduced to an immutable genome. Genetic modification should consequently be understood as a possible alteration within human nature rather than, in itself, a transformation of human nature.

Keywords: Gene, Genetic Modification, Saul Kripke, Essentialism, Human Essence

Introduction

Developments in genetic engineering, especially CRISPR-Cas9 gene editing, have made targeted modification of genetic material increasingly possible (Uzomah, 2023). The development is scientifically significant, but its deepest philosophical implication concerns human nature. If genetic material can be deliberately altered, does altering the genome also alter what a human being essentially is? This question is more fundamental than the ethical question of whether particular interventions should be permitted. It concerns the metaphysical conditions under which a human

being remains the same kind of being despite biological change. The problem arises partly from the tendency to move directly from genetic importance to genetic essentialism. Genes influence development, bodily characteristics and susceptibility to disease. Yet the fact that a property has significant biological effects does not establish that it is metaphysically essential. A property may be causally important without being a property that an entity cannot lose while remaining the kind of entity it is. Genetic causation and metaphysical necessity must therefore be distinguished.

This distinction is important for understanding Kripke's essentialism. Kripke (1980) opines that some properties are essential rather than merely contingent and that identity cannot be reduced to changing descriptions. His discussion of rigid designation, necessary identity and the necessity of origin provides valuable resources for analysing human identity. However, Kripke does not establish that every biologically significant property is essential, nor does his account entail that an individual's genetic template must remain unchanged throughout life. To derive genetic immutability from Kripkean essentialism thus requires an additional argument. The distinction between origin and subsequent genetic state is chiefly important. Kripke's discussion of the necessity of origin suggests that the particular origin of an individual is not simply interchangeable with another origin while preserving the identity of that individual. Yet the fact that an individual's origin is necessary does not mean that every biological condition subsequently possessed by that individual is necessary. Therapeutic genetic engineering occurs within an already existing individual. It may alter a genetic condition without replacing the individual's origin, history or numerical identity. Thus, necessary origin does not entail necessary genetic immutability.

The existing literature provides important resources for this problem but leaves a significant metaphysical question insufficiently resolved. Scientific studies evince the possibility of genetic modification, while ethical literature examines its risks and permissible uses. Philosophical discussions address essentialism, identity, human nature and genetic determinism. However, less attention has been given to the precise inference from genetic modification to modification of human essence. The central issue is whether changing genetic constitution necessarily changes the kind of being that changes.

This paper addresses that question through a dialogue among Kripke's essentialism, Aristotelian hylomorphism, African relational ontology and hermeneutic ontology. Hylomorphism distinguishes material alteration from substantial change. African relational ontology provides a non-reductive conception of personhood in which embodied and relational existence cannot be reduced to genetic constitution (Gbadegesin, 1991; Gyekye, 1997; Cordeiro-Rodrigues, 2022). Hermeneutic ontology cautions against treating scientific description as a complete metaphysical account of the human being (Heidegger, 1962; Gadamer, 2004).

Consequently, the paper postulates that genetic modification does not necessarily constitute modification of human essence. This is not a rejection of essentialism. Rather, it is a qualified critique of genetic essentialism and of any attempt to derive genetic immutability directly from Kripke. Therapeutic genetic engineering may thus be metaphysically compatible with human identity where the intervention changes a pathological genetic condition without destroying the conditions constitutive of the individual's substantial continuity. Human essence remains real and constraining, but it is not reducible to the genome.

Literature Review

Scholarship on genetic modification and human nature cuts across philosophy of biology, metaphysics, biotechnology and African philosophy. Hence, a useful review must distinguish three related but different claims: that genes are biologically important, that genetic properties may contribute to individual identity, and that genetic properties are metaphysically essential. The literature does not justify treating these claims as equivalent.

1 Genetic Modification, Genetic Essentialism and Human Nature

The development of CRISPR-Cas9 has made genetic modification a significant subject of philosophical reflection. Jinek et al. (2012) demonstrated the programmable capacity of the CRISPR-Cas9 system, while Doudna and Sternberg (2017) examined the broader possibilities created by gene editing. These works establish the scientific capacity to modify genetic material, but they do not establish what such modification means metaphysically. The technological ability to change a genetic sequence does not itself determine whether the altered property is essential to the human being.

This distinction is important because genetic essentialism can easily become confused with genetic determinism. Genetic determinism attributes human characteristics primarily to genetic factors, whereas genetic essentialism makes the stronger claim that genes constitute fundamental features of what an entity is. Harden (2023) argues that debates about genetic determinism, essentialism and reductionism require conceptual precision because causal genetic explanations do not automatically support stronger claims about identity or essence. The distinction supports the present study's central claim that genetic significance cannot simply be converted into metaphysical necessity. Dupre and Nicholson (2018) similarly challenge static conceptions of biological entities through a process-oriented philosophy of biology. Their approach is relevant because organisms are dynamic systems rather than fixed molecular structures. Human beings undergo continuous biological development while remaining recognisably the same organisms. This weakens any account of identity that depends upon the preservation of an absolutely unchanged biological constitution.

Consequently, the literature establishes an important premise for this study: genetic constitution matters profoundly to human biology, but its biological importance does not settle whether it constitutes human essence. The unresolved question is not whether genes matter, but what kind of metaphysical importance genes possess.

Kripkean Essentialism, Identity and Origin

Kripke's *Naming and Necessity* provides one of the most influential modern accounts of essential properties and necessary identity. Kripke (1980) rejects the view that identity depends merely on contingent descriptions and develops the idea of rigid designation. His distinction between essential and accidental properties provides a useful parameter for asking which changes an entity can undergo while remaining the same entity. His discourse of the necessity of origin is especially relevant. An individual cannot simply have originated from entirely different conditions while remaining numerically that very individual. This principle has implications for discussions of human identity because it directs attention to the conditions through which an individual comes into existence. However, it does not follow that every subsequent biological property is equally necessary.

This distinction is often overlooked in discussions that connect Kripkean essentialism with genetic identity. An individual's origin and subsequent genetic condition are not identical concepts. A person may originate through particular biological circumstances and later experience genetic, physiological and bodily changes. Thus, the necessity of origin cannot by itself establish the necessity of an unchanged genome. The literature provides the essentialist framework, but it does not establish genetic immutability as its necessary consequence. Belshaw (2000) is relevant here because his discussion of identity and disability demonstrates how a broadly Kripkean approach can distinguish personal identity from particular bodily conditions. The implication is that not every biological alteration should be interpreted as a loss of identity. This supports a more cautious approach to genetic modification.

Hylomorphism, Relational Ontology and Human Personhood

Aristotelian hylomorphism offers a different route into the problem. Aristotle (1984) understands material beings through the relationship between matter and form. This distinction permits substantial change to be distinguished from alteration in material properties. Its relevance to genetic modification

is immediate: a change in biological material need not automatically constitute a change in the substantial identity of the organism.

African philosophy provides an additional non-reductive perspective. Gbadegesin (1991) and Gyekye (1997) present accounts of personhood that cannot be reduced to isolated physical characteristics. The human being is embodied but also exists within a wider relational and normative order. Contemporary African relational ontology develops this position further. Cordeiro-Rodrigues (2022) roots for an account of personhood in which relationality has constitutive metaphysical significance. This perspective is of paramount value in the context of genetic modification because it prevents the genome from being treated as an exhaustive account of human being. Genetic constitution is one dimension of embodied existence, but human personhood cannot simply be reduced to molecular structure. Ewuoso (2023) evinces the relevance of this African philosophical orientation to contemporary discussions of germline gene editing by bringing Afro-communitarian thought into dialogue with genetic intervention.

These approaches do not deny the biological importance of genes. Rather, they challenge the assumption that biological constitution alone settles questions of essence and personhood. Hylomorphism distinguishes material change from substantial change, while relational ontology broadens the metaphysical account of the person beyond genetic constitution.

Hermeneutic Ontology and the Metaphysical Interpretation of Genetic Change

Hermeneutic ontology provides a further corrective to genetic reductionism. Heidegger (1962) places the question of Being before narrower accounts of entities, while Gadamer (2004) asserts the interpretive character of understanding. Applied to genetic modification, their significance lies in distinguishing scientific description from metaphysical interpretation. Genetic science can identify sequences, mutations, biological functions and mechanisms of inheritance. It cannot, by scientific description alone, establish which properties are metaphysically essential to human existence. That requires philosophical interpretation. The fact that a genetic property can be identified empirically does not therefore determine its ontological status.

Literature Gap

The foregoing literature review reveals a clear gap. Scientific scholarship has established the increasing capacity to modify genetic material; philosophical scholarship has developed sophisticated accounts of essence and identity; and African scholarship has provided relational approaches to personhood and genetic intervention. Yet these bodies of literature have not sufficiently resolved whether genetic modification necessarily entails modification of human essence.

The missing argument concerns the transition from genetic alteration to metaphysical transformation. The present study tackles this gap by postulating that the transition is not logically necessary. Kripkean essentialism establishes the importance of distinguishing essential from contingent properties, but it does not establish that the genome is an immutable human essence. Hylomorphism, African relational ontology and hermeneutic ontology provide complementary grounds for interpreting genetic modification as a possible alteration within human nature rather than an automatic transformation of human nature.

Aim and Objectives

The aim of this paper is to critically examine whether genetic modification necessarily entails a modification of human essence through a metaphysical critique of Kripke's essentialism. Hence, the specific objectives of the study include to:

1. examine the relationship between genetic properties and metaphysical essential properties;
2. analyse Kripke's account of necessity, identity and origin in relation to genetic modification;
3. determine whether genetic modification necessarily constitutes a change in human essence;

4. apply Aristotelianhylomorphism, African relational ontology and hermeneutic ontology to the problem; and
5. deductively defend a metaphysical account of therapeutic genetic tinkering that preserves the possibility of human identity and essential continuity.

Methodology

This is a qualitative philosophical study based on critical analysis of primary and secondary literature in metaphysics, philosophy of biology, genetic modification and African philosophy. It employs three complementary methods. They include Analytical, Hermeneutical and Normative methods.

The analytical method clarifies concepts such as human nature, human essence, genetic constitution, identity, necessity and essential properties. This method is specifically useful for testing the inference from genetic significance to genetic essentiality. The hermeneutical method interprets Kripke's account of necessity and identity alongside Aristotelian, African and hermeneutic accounts of human existence. It also distinguishes empirical descriptions of genetic structure from their metaphysical interpretation (Gadamer, 2004; Heidegger, 1962). The normative method evaluates the explanatory adequacy of competing metaphysical positions. The appraisal is basically metaphysical rather than ethical. Its central question is whether therapeutic genetic modification can occur without necessarily destroying the essential continuity of the human being.

Significance of the Study

The study contributes to the philosophy of genetic modification by challenging the assumption that genetic alteration is necessarily equivalent to alteration of human essence. It clarifies the distinction between biological significance and metaphysical essentiality and thereby offers a more precise interpretation of genetic essentialism. It also contributes to the interpretation of Kripke. Rather than rejecting essentialism, the study opines that Kripke's distinction between necessary and contingent properties should not be extended into a doctrine of genetic immutability without additional justification. This preserves the explanatory value of essentialism while avoiding genetic reductionism.

Finally, the study brings Aristotelianhylomorphism, African relational ontology and hermeneutic ontology into dialogue with contemporary genetic modification. This provides a broader metaphysical framework within which therapeutic genetic engineering can be understood as a possible modification within human nature rather than an automatic transformation of human essence.

Findings and Discussion

The study revealed the following:

1. Genetic Modification Does Not Entail Genetic Essentiality: The first finding is that genetic modification and modification of human essence are not conceptually identical. The distinction rests on the difference between biological significance and metaphysical essentiality. Genes have undeniable biological importance. They influence development, physiological functions and disease susceptibility. However, a property does not become metaphysically essential merely because it has significant causal effects. An essential property must satisfy a stronger condition. Its absence or alteration must be incompatible with the entity remaining the kind of entity it is. This condition cannot be established simply by demonstrating that the property contributes to biological development. The claim that a gene causes a particular trait is thus different from the claim that possession of that gene is necessary for being human. The former is an empirical proposition; the latter is a metaphysical proposition.

This distinction exposes the weakness of genetic essentialism when it treats the genome as a complete metaphysical blueprint of the human being. Human organisms are dynamic. Their cells, tissues and physiological conditions change continuously without normally producing a change in species or

individual identity. If identity required the preservation of every biological property, ordinary human development would itself constitute repeated changes of identity. Genetic constitution should therefore not receive an automatic metaphysical privilege merely because it plays a fundamental role in biological inheritance. This does not make genetics metaphysically irrelevant. Genetic constitution is an important dimension of embodied human existence. Some genetic properties may also have greater metaphysical significance than others. The point is narrower: the essentiality of a genetic property must be demonstrated rather than presumed.

2. Kripkean Essentialism and the Limits of Genetic Immutability: Kripke's essentialism provides an important framework for making this distinction. Kripke (1980) asserts that some properties are essential while others are accidental. He also distinguishes rigid designation from descriptions whose reference may vary across possible circumstances. These arguments establish that identity cannot be reduced to the contingent properties through which an entity is ordinarily described.

The relevance to genetic modification is clear. If a human being can undergo changes in bodily appearance, physical condition and other properties without becoming a numerically different individual, then not every biological property is essential to identity. Hence, Kripke gives us a reason to distinguish properties that an individual necessarily possesses from properties that the individual happens to possess. Yet Kripke's essentialism does not identify the genome as the essence of the human being. Nothing in the distinction between essential and accidental properties entails that all genetic properties are essential. To derive genetic immutability from Kripke, one must introduce an additional premise: that a particular genetic constitution is necessary for an entity to remain human or to remain the same individual. That premise is not established merely by Kripke's account of essence.

This point is especially important when considering the necessity of origin. Kripke's argument suggests that an individual's particular origin cannot simply be replaced with another origin while preserving the identity of that individual. The principle has considerable significance for human identity, but it should not be confused with the claim that every subsequent genetic condition is necessary. The distinction can be stated simply:

Necessary origin does not entail necessary genetic state: An individual's origin concerns the conditions through which that individual comes into existence. A genetic state may describe a condition of that individual after existence has begun. Therapeutic genetic engineering operates at the latter level. It may alter a genetic condition without altering the individual's originating history.

This distinction limits the argument that genetic modification necessarily destroys identity. A person who undergoes therapeutic gene editing is not brought into existence by the intervention. The intervention takes place within an already existing individual. If the individual's origin remains unchanged, and if the genetic property being altered is not independently demonstrated to be essential, then there is no sufficient Kripkean basis for concluding that the intervention produces a different individual. Consequently, the finding is a qualified defence of Kripke's essentialism. The theory remains valuable because it requires us to distinguish necessary from contingent properties. Its limitation appears only when it is extended beyond what it establishes and converted into a theory of genetic immutability.

3. Hylomorphism and the Difference between Material and Substantial Change: Aristotelian hylomorphism provides a second reason to reject the automatic identification of genetic modification with modification of essence. Aristotle (1984) explains material entities through the relationship between matter and form. This framework allows a distinction between changes occurring in the material constitution of an entity and changes that constitute substantial transformation.

The distinction is important because genetic modification is, at least initially, a modification of biological material. It changes DNA or the expression of genetic information. But the fact that matter changes does not establish that the substantial form of the entity has changed. Human beings undergo extensive material changes throughout life. Their bodily matter is continuously replaced, reorganised and developed, yet such changes do not ordinarily make them cease to be human beings.

Consequently, hylomorphism prevents a genetic version of material reductionism. If the human being is understood solely in terms of a molecular configuration, every sufficiently significant genetic alteration could appear to threaten human identity. If the human being is instead understood as a substantial unity of form and matter, genetic modification must be assessed according to whether it destroys that substantial unity. This does not mean that genetic modification could never produce a metaphysical change. A sufficiently radical intervention might raise a different question. The point is that the metaphysical status of the intervention cannot be determined solely by the fact that genetic material has changed. The relevant question is whether the change reaches the level of substantial form and thereby alters the kind of being involved.

For therapeutic genetic engineering, the distinction is especially useful. Correcting a mutation responsible for a pathological condition can be understood as modifying the material and functional condition of an existing human organism (Uzomah, 2021). It need not amount to replacing that organism's substantial identity. Therapeutic modification can thus be interpreted as a change within human nature rather than necessarily a transformation of human nature.

4. African Relational Ontology and the Non-Reductionist Human Person: African relational ontology strengthens this argument by providing a conception of personhood that cannot be exhausted by biological constitution. African philosophical accounts of personhood assert the embeddedness of human existence within relationships and a wider order of being (Gbadegesin, 1991; Gyekye, 1997). Contemporary relational approaches make this metaphysical claim more explicit by treating relationality as constitutive rather than merely external to individual existence (Cordeiro-Rodrigues, 2022).

The relevance of this perspective is not that African philosophy rejects biology. Rather, it challenges the reduction of the human being to one dimension of biological existence. A human person is embodied, but embodiment is not necessarily equivalent to a genetic sequence. The human being is understood through a richer unity of bodily, personal and relational existence. This has an important implication for genetic essentialism. If human essence is understood within a broader metaphysics of personhood, the genome cannot automatically be regarded as an exhaustive specification of what a human being is. Genetic constitution belongs to human embodiment, but it does not follow that every genetic feature constitutes an essential property of the person.

Ewuoso's (2023) engagement with germline gene editing and Afro-communitarian philosophy further evinces the relevance of African thought to contemporary genetic debates. Although the ethical implications of gene editing are important, the underlying conception of the human being has metaphysical significance. Genetic intervention takes place within an already existing human subject whose existence cannot be adequately represented by genetic information alone. Thus, African relational ontology complements hylomorphism. Hylomorphism explains why material alteration need not constitute substantial change, while relational ontology explains why the human person cannot be reduced to material constitution in the first place. Together, they provide a stronger metaphysical basis for resisting genetic reductionism.

5. Hermeneutic Ontology and the Limits of Genetic Description: Hermeneutic ontology provides a further corrective. Heidegger (1962) places the question of Being at the centre of philosophical inquiry, while Gadamer (2004) postulates that understanding is interpretive rather than a simple

reproduction of objective facts. Their relevance to genetic modification lies in the distinction between scientific description and metaphysical interpretation.

Genetic science can establish that a particular sequence exists, that a mutation affects a biological process, or that a sequence can be altered. These are legitimate empirical claims. They do not, however, by themselves establish that the relevant genetic property is metaphysically essential. The conclusion requires an ontological interpretation that science alone cannot supply. This distinction is important because the genome can be described with extraordinary precision while the meaning of that genome for human essence remains philosophically contested. Scientific knowledge can tell us what genetic material does. It cannot, without philosophical premises, determine what must remain unchanged for a human being to remain human. Therefore, hermeneutic ontology helps prevent a category mistake. The question “What genetic sequence has been altered?” is different from the question “What has the human being become?” The first is primarily scientific; the second is metaphysical. Confusing them encourages the assumption that every change detectable at the genetic level must correspond to a change at the level of essence.

6. Therapeutic Genetic Engineering and the Continuity of Human Essence: The combined analysis supports a more precise interpretation of therapeutic genetic engineering. Therapeutic intervention seeks to correct, prevent or mitigate a pathological genetic condition. Its immediate object is therefore a biological condition of an existing human organism. The intervention may be profound, but profundity does not equal essential transformation. The metaphysical question is whether the intervention destroys the conditions that make the individual the kind of being that the individual is. If it does not alter the individual's substantial identity, originating history or fundamental embodied personhood, then there is no sufficient reason to classify the intervention as a transformation of human essence.

This position does not imply that every genetic intervention is harmless or metaphysically neutral. Genetic changes can have extensive consequences, and some interventions may raise serious questions about identity and human nature. The argument is instead that such conclusions must follow from the particular metaphysical characteristics of the intervention. They cannot be inferred simply from the fact that DNA has been modified. As a result, therapeutic genetic engineering occupies a distinctive position. Its purpose is ordinarily restorative rather than constitutive: it seeks to correct a pathological condition within an existing human being (Uzomah, 2022). From a hylomorphic perspective, such intervention can occur at the level of material and biological functioning without necessarily destroying substantial form. From an African relational perspective, the individual remains an embodied and relational person rather than becoming a different kind of being. From a Kripke's perspective, the individual's essential identity need not be affected merely because a contingent genetic property has changed.

7. Toward a Qualified Essentialist Account: The findings support neither unrestricted genetic modification nor a rejection of essentialism. They support a qualified essentialist position. Human beings have an essence, and that essence places real limits on what changes are compatible with remaining human. However, those limits cannot be identified simply by treating the genome as an immutable metaphysical blueprint. The position has three central claims. First, human essence is not reducible to genetic constitution. Second, genetic modification does not necessarily constitute substantial transformation. Third, therapeutic genetic engineering can, under appropriate metaphysical conditions, be understood as modification within human nature rather than modification of human essence.

This position also provides a more defensible interpretation of Kripke. His essentialism remains useful, precisely because it prevents identity from being reduced to contingent properties. What must be rejected is not essentialism itself but the unsupported inference from essentialism to genetic

immutability. The human genome may contain properties of considerable biological and perhaps metaphysical significance, but their essential status must be asserted individually rather than assumed collectively.

Consequently, the central finding of the study is that the metaphysics of human essence cannot be settled by genetics alone. Genetic knowledge is indispensable to understanding human embodiment, but the question of essence requires a broader ontological account. Kripke's essentialism, Aristotelian hylomorphism, African relational ontology and hermeneutic ontology, when brought into critical dialogue, provide grounds for understanding human identity as more than the preservation of an unchanged genetic sequence. Therapeutic genetic tinkering can consequently be defended metaphysically without abandoning essentialism. Its legitimacy at the metaphysical level depends not on whether genetic material changes, but on whether the intervention destroys the substantial and constitutive features of human existence. Where those features remain continuous, genetic modification need not amount to a modification of human essence.

Contributions to Knowledge

This paper makes five specific contributions to the metaphysical debate on genetic modification and human nature.

1. It distinguishes genetic change from essential change: The paper demonstrates that altering a genetic property does not, by itself, amount to altering human essence. Genetic properties may have significant biological and causal functions without being metaphysically essential. This distinction challenges the assumption that every significant genetic alteration constitutes a transformation of human nature.

2. It provides a qualified critique of Kripke's essentialism: The paper shows that Kripke's distinction between essential and accidental properties does not entail genetic immutability. In particular, it distinguishes the necessity of an individual's origin from the genetic conditions subsequently possessed by that individual. This provides a more precise application of Kripke's necessity-of-origin thesis to genetic modification.

3. It develops a non-reductive metaphysical account of human essence: The paper brings Kripke's essentialism into dialogue with Aristotelian hylomorphism, African relational ontology and hermeneutic ontology. This synthesis explains why material or genetic alteration need not constitute substantial change and why human personhood cannot be reduced to genetic constitution alone.

4. It establishes a metaphysical basis for understanding therapeutic genetic engineering as compatible with human essence: The paper opines that therapeutic gene editing can constitute a modification within human nature without necessarily constituting a modification of human essence. This distinction separates the correction of a biological condition from a transformation of the kind of being that undergoes the intervention.

5. It introduces African relational ontology as a substantive resource for the metaphysics of genetic modification: The paper demonstrates that African philosophical accounts of embodied and relational personhood can contribute directly to contemporary debates on biotechnology. This perspective challenges genetic reductionism by locating human identity within a broader account of embodied and relational existence.

In the final analysis, these contributions advance a qualified essentialist position: human essence is real and metaphysically significant, but it cannot simply be identified with an immutable genome. Genetic modification may alter biological properties without necessarily altering the essential identity or substantial continuity of the human being.

Conclusion

This study has examined whether genetic modification necessarily entails a modification of human essence through a critical engagement with Kripke's essentialism. The central argument is that genetic alteration and essential alteration are not logically equivalent. Although genetic constitution is fundamental to human biological development, its biological significance does not by itself establish metaphysical essentiality. Therefore, a genetic property can be altered without necessarily changing the kind of being that the individual is.

Kripke's distinction between essential and contingent properties provides an important basis for making this argument. However, his account does not entail that the human genome must remain genetically immutable. In particular, the necessity of origin should not be confused with the necessity of every subsequent genetic condition. Therapeutic genetic engineering intervenes in an already existing individual and may alter a pathological genetic condition without replacing that individual's origin or numerical identity. Kripkean essentialism therefore supports a distinction between identity and genetic state rather than requiring their identification.

The dialogue with Aristotelian hylomorphism, African relational ontology and hermeneutic ontology strengthens this conclusion. Hylomorphism shows that material change does not necessarily constitute substantial change. African relational ontology presents human personhood as embodied and relational rather than reducible to genetic constitution. Hermeneutic ontology further demonstrates that scientific descriptions of DNA cannot, by themselves, settle the metaphysical question of human essence. These perspectives collectively support a non-reductive understanding of human nature.

Consequently, the study defends a qualified essentialism. Human essence is real and places limits on what changes are compatible with continued human identity. Yet human essence cannot simply be equated with an immutable genome. Genetic modification may produce profound biological changes while leaving the essential identity of the human being intact. Therapeutic genetic engineering can therefore be understood, under appropriate conditions, as a modification within human nature rather than a transformation of human essence. The broader philosophical implication is that advances in genetic technology do not eliminate the metaphysical question of human nature; they make that question more urgent. The proper response is neither genetic reductionism nor the abandonment of essentialism. It is a more careful account of the relationship between biological constitution, identity, substantial continuity and human essence.

Recommendations

Based on the findings of this study, the following recommendations are proposed.

1. **Genetic modification should be distinguished from modification of human essence:** Philosophical and scientific discussions should avoid treating every genetic alteration as a transformation of human nature. Genetic change should first be assessed in relation to the particular biological and metaphysical property affected.
2. **Kripke's essentialism should be applied with conceptual precision:** The distinction between essential and contingent properties remains useful in discussions of genetic identity. However, the necessity of origin should not be extended without argument to the claim that every genetic state is necessary or immutable.
3. **Therapeutic genetic engineering should receive greater metaphysical attention:** Philosophical research should distinguish therapeutic interventions from claims that genetic modification necessarily creates a different kind of human being. The metaphysical status of an intervention should depend on whether it affects substantial human identity, rather than merely on whether genetic material has been altered.
4. **African philosophical resources should be integrated into biotechnology debates:** African relational ontology should receive greater attention in contemporary discussions of genetic

engineering. Its account of embodied and relational personhood provides a valuable corrective to genetic reductionism and enriches global philosophical discussions of human nature.

5. **Interdisciplinary research should maintain a clear distinction between empirical and metaphysical claims:** Genetic science can establish what genetic modifications do biologically, but it cannot by itself determine what constitutes human essence. Hence, future research should place genetic findings in dialogue with metaphysics, philosophy of biology and African philosophy before concluding human nature.
6. **Further research should examine the limits of qualified essentialism:** Future philosophical studies should investigate which properties, if any, can legitimately be regarded as essential to human beings in light of advances in gene editing. Such research would help determine the precise metaphysical boundaries within which genetic modification remains compatible with human identity.

References

- Aristotle. (1984). *The complete works of Aristotle: The revised Oxford translation* (J. Barnes, Ed.). Princeton University Press.
- Baillie, H. W. (2003). Genetic engineering and our human nature. *Philosophy & Public Policy Quarterly*, 23(1-2), 28-31.
- Belshaw, C. (2000). Identity and disability. *Journal of Applied Philosophy*, 17(3), 263-276. <https://doi.org/10.1111/1468-5930.00161>
- Cordeiro-Rodrigues, L. (2022). African relational ontology, personhood and immutability. *South African Journal of Philosophy*, 41(3), 306-320. <https://doi.org/10.1080/02580136.2022.2095165>
- Cordeiro-Rodrigues, L., & Ewuoso, C. (2023). Metz on enhancement: A relational critique. *Ethical Theory and Moral Practice*. <https://doi.org/10.1007/s10677-023-10419-8>
- Cordeiro-Rodrigues, L., & Molefe, M. (2024). Looking back and forward: Relational African bioethics and why personhood is not dead. *The American Journal of Bioethics*, 24(1), 62-64. <https://doi.org/10.1080/15265161.2023.2278556>
- Dar-Nimrod, I., & Heine, S. J. (2011). Genetic essentialism: On the deceptive determinism of DNA. *Psychological Bulletin*, 137(5), 800-818. <https://doi.org/10.1037/a0021860>
- Doudna, J. A., & Sternberg, S. H. (2017). *A crack in creation: Gene editing and the unthinkable power to control evolution*. Houghton Mifflin Harcourt.
- Dupré, J., & Nicholson, D. J. (2018). A manifesto for a processual philosophy of biology. In D. J. Nicholson & J. Dupré (Eds.), *Everything flows: Towards a processual philosophy of biology* (pp. 3-45). Oxford University Press.
- Ewuoso, C. (2023). Germline gene editing applications and the Afro-communitarian Ubuntu philosophy. *Filosofia Theoretica: Journal of African Philosophy, Culture and Religions*, 12(1). <https://doi.org/10.4314/ft.v12i1.1>
- Fine, K. (2022). Some remarks on the role of essence in Kripke's "Naming and Necessity." *Theoria*, 88(2), 403-405. <https://doi.org/10.1111/theo.12363>
- Gadamer, H.-G. (2004). *Truth and method* (J. Weinsheimer & D. G. Marshall, Trans.; 2nd rev. ed.). Continuum. (Original work published 1960)
- Gbadegesin, S. (1991). *African philosophy: Traditional Yoruba philosophy and contemporary African realities*. Peter Lang.
- Gyekye, K. (1997). *Tradition and modernity: Philosophical reflections on the African experience*. Oxford University Press.
- Harden, K. P. (2023). Genetic determinism, essentialism and reductionism: Semantic clarity for contested science. *Nature Reviews Genetics*, 24(3), 197-204. <https://doi.org/10.1038/s41576-022-00537-x>
- Heidegger, M. (1962). *Being and time* (J. Macquarrie & E. Robinson, Trans.). Blackwell. (Original work published 1927)

- Jinek, M., Chylinski, K., Fonfara, I., Hauer, M., Doudna, J. A., & Charpentier, E. (2012). A programmable dual-RNA-guided DNA endonuclease in adaptive bacterial immunity. *Science*, 337(6096), 816-821. <https://doi.org/10.1126/science.1225829>
- Kripke, S. A. (1980). *Naming and necessity*. Harvard University Press.
- Kanu, I. A. (2025). "Metaphysics of Business: Core Concepts and Organizational Identity". In Kanu, Ikechukwu A.; Adidi, T. D.; Kanu, C. C., & Isanbor, P. O. (Eds.). *Philosophy of Entrepreneurship: Intersections and Insights* (pp. 96-111). Abuja: Veritas University Press.
- Kanu, I. A. (2015a). *African philosophy: An ontologico-existential hermeneutic approach to classical and contemporary issues*. Nigeria: Augustinian Publications.
- Maung, H. H. (2020). Epistemic possibility and the necessity of origin. *Metaphilosophy*, 51(5), 685-701. <https://doi.org/10.1111/meta.12455>
- McConnell, T. (2010). Genetic enhancement, human nature, and rights. *The Journal of Medicine and Philosophy*, 35(4), 415-428. <https://doi.org/10.1093/jmp/jhq034>
- Russell, B. (1915). *The problems of philosophy*. Oxford University Press.
- Uzomah M. M. (2021). The naturalness in/of the artificiality of cloning", *Euromentor Journal Studies About Education*, Volume xii, No.4/December, ISSN2068-780X. 90-113
- Uzomah M. M. (2022). Mankind's future in the providence of bio-science: A nostalgia for the eugenic teleology of genetics and genomics. *Journal of Emerging Technologies*, 2(1). 18-29. <https://journals.jfppublishers.com/jet/article/view/147>
- Uzomah, M. M. (2023), Human germline biotechnological tinkering: A violation of the right to autonomy of future progeny?. *Albertine Journal of Philosophy*. Vol. 7, June. 11-21. Online: www.albertinejournal.org