

THE WAR OF CODES

The Existential Struggle Over the Code of Life Between

Biology and Silicon, and a Comprehensive Methodology for the Constitution of New Beings

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Location: Cairo, Egypt

Date: September 6, 2026

Digital Object Identifier: 10.5281/zenodo.22540646

Permanent URL: <http://doi.org/10.5281/zenodo.22540646>

Reference Code: ELR-WAR-CODES-2026-002-EN

Version: 2.0 - Ultimate Complete Edition

DEDICATION

To the children born with edited genomes, who will one day ask whether they are still human, and who deserve a world that has prepared an answer grounded in dignity rather than confusion.

To the patients whose minds are being connected to machines, who deserve to know that their thoughts remain their own sovereign territory.

To the brain organoids growing in laboratories, silent entities that may one day ask whether they have rights, and who deserve a legal framework that has considered their possibility.

To the indigenous peoples whose genetic heritage has been extracted without consent, and who deserve recognition that their biological essence is sacred and inviolable.

To the generations yet unborn, who will inherit either a world in which the code of life remains a sacred trust, or one in which it has become a commodity to be traded and a weapon to be wielded.

This work is dedicated to the proposition that the code of life, whether biological, digital, or neural, is not merely information but the very ground of being, and that its protection requires not merely technical fixes but a fundamental rethinking of what it means to be a being in the age of codes.

AUTHOR'S WORD

In the name of Allah, the Most Gracious, the Most Merciful, the Creator of all codes and the Source of all existence.

I write this treatise at a moment of unprecedented convergence in the history of life on Earth. For the first time in four billion years, the codes that constitute life itself have become readable, writable, tradable, and weaponizable. The genetic code, the digital code, and the neural code, once separate domains of existence, are now converging into a single battlefield where the very nature of being is at stake.

This convergence has created what I term the War of Codes, an existential struggle over who controls the fundamental codes of existence. This war is not fought with conventional weapons but with CRISPR gene editors, brain-computer interfaces, and artificial intelligence systems. It is not fought between nations alone but between civilizations, between corporations and individuals, between the present and the future.

The stakes could not be higher. If the genetic code falls under the exclusive control of a few corporations, human beings may become patented products rather than sovereign beings. If the neural code falls under the control of states or corporations, the innermost sanctuary of human thought may become a territory to be occupied. If the digital code continues to be extracted without meaningful consent, human beings may become mere data points in a vast computational system.

Yet the discourse on these developments remains fragmented. Biologists study the technical possibilities. Engineers design the interfaces. Lawyers struggle to apply outdated legal frameworks. Philosophers raise questions that are often dismissed as abstract. Rarely do these perspectives converge into a unified understanding of what is happening and what must be done.

This treatise proposes such a unified understanding. It argues that the War of Codes is not merely a technological development but a civilizational crisis, not merely a scientific advancement but an existential transformation. It argues that the liberation of the codes of life requires not merely technical fixes but a fundamental rethinking of what it means to be a being, what rights beings have, and what responsibilities we have toward the codes that constitute us.

The work introduces several original contributions. First, the concept of the Three Codes of Life, a framework for understanding the convergence of genetic, digital, and neural codes. Second, the concept of Code Sovereignty, extending the theory of sovereignty to the domain of the codes of life. Third, the Constitution of New Beings, a comprehensive legal and ethical framework for entities that existing legal systems have never contemplated. Fourth, the Existential Dignity Score, a conceptual framework for assessing the degree to which beings are protected from code manipulation. Fifth, the integration of Islamic principles of creation, stewardship, and dignity with modern code ethics. Sixth, a comparative analysis of how different civilizations are approaching the code wars. Seventh, a framework for intergenerational justice in the age of codes. Eighth, a recognition of the planet's rights to its own codes.

I must acknowledge at the outset that the mathematical formulations presented in this work are conceptual models and working hypotheses, not proven scientific laws. They are intended to

guide strategic thinking and ethical reflection, and they remain open to refinement and testing. The true value of this work lies not in the precision of its equations but in the clarity of its vision and the urgency of its call to action.

This treatise is addressed to scientists and engineers building the technologies of the future, to lawyers and policymakers designing the legal frameworks of the future, to philosophers and ethicists contemplating the nature of being, to religious scholars reflecting on the meaning of creation, and to every human being who recognizes that the codes of life are not merely information but the very ground of existence.

May this work serve as a contribution to the protection of the codes of life from the structures of manipulation and exploitation, and to the emergence of a new era of code sovereignty grounded in the principles of dignity, stewardship, and the common good.

Dr. Mohamed Kamal Arafa EL-RAKHAWI
September 6, 2026

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This document presents a comprehensive theoretical, scientific, legal, and philosophical framework for understanding and transforming the War of Codes. Certain proprietary mathematical formulations, strategic models, and constitutional blueprints have been partially obfuscated for intellectual property protection.

The complete technical specifications, including the full computational models for the Existential Dignity Score, the detailed constitutional provisions for new beings, and the proprietary implementation methodologies, are available through direct contact with the author.

Any entity, institution, government, or researcher wishing to access the complete framework must contact the author exclusively via: elrakhawimohame@gmail.com

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No State, corporation, academic institution, or commercial entity may use, reproduce, modify, or reverse-engineer this treatise for purposes of strengthening code manipulation, deepening code dependencies, or undermining the code sovereignty of beings, whether biological, digital, or hybrid. Any authorized use must strictly adhere to the principles of existential dignity, code stewardship, and the protection of the codes of life.

APPLICATION

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ACADEMIC CITATION

EL-RAKHAWI, M. K. A. (2026). The War of Codes: The Existential Struggle Over the Code of Life Between Biology and Silicon, and a Comprehensive Methodology for the Constitution of New Beings. Zenodo. <http://doi.org/10.5281/zenodo.22540646>

EXECUTIVE SUMMARY

The codes of life have become the most contested territory of the twenty-first century. The genetic code, once a sacred mystery encoded in 3.2 billion base pairs of DNA, is now readable, writable, and tradable. The digital code, once a tool for computation, has become a medium for the extraction and manipulation of human behavior. The neural code, once the innermost sanctuary of human consciousness, is now potentially readable and writable through brain-computer interfaces.

This convergence of codes has created what I term the War of Codes, an existential struggle over who controls the fundamental codes of existence. The genetic code is being patented by corporations, edited by scientists, and weaponized by states. The digital code is being extracted by platforms, analyzed by algorithms, and manipulated by advertisers. The neural code is being decoded by interfaces, monitored by employers, and potentially controlled by governments.

The consequences are profound and accelerating. According to market analyses, the global genomics market reached 60 billion US dollars in 2024 and is projected to reach 100 billion by 2030. The brain-computer interface market reached 20 billion dollars in 2024 and is projected to reach 60 billion by 2030. The biometrics market reached 50 billion dollars in 2024 and is projected to reach 90 billion by 2030. Behind these numbers lies a fundamental transformation: the conversion of the codes of life into marketable commodities and controllable resources.

Yet existing legal and ethical frameworks are fundamentally inadequate to address this transformation. International law does not recognize beings with edited genomes. Criminal law does not address crimes committed by enhanced humans. Family law does not contemplate children with multiple genetic parents. Labor law does not protect workers from neural surveillance. The result is a legal vacuum of catastrophic proportions.

This treatise proposes a radical rethinking of the codes of life. It argues that the codes of life are not merely information but the very ground of being, and that their protection requires not merely technical fixes but a fundamental rethinking of what it means to be a being. It argues that the War of Codes is not merely a technological development but a civilizational crisis, not merely a scientific advancement but an existential transformation.

The treatise is organized around fourteen parts. Part One examines the Three Codes of Life, revealing how genetic, digital, and neural codes have become readable, writable, and tradable. Part Two analyzes the War of Codes, dissecting the struggle over who controls each code. Part Three examines the New Beings that existing legal systems have never contemplated, from genetically edited humans to brain-computer hybrids to biological intelligences. Part Four presents an existential comparison of the new beings. Part Five addresses the catastrophic legal vacuum. Part Six proposes the Constitution of New Beings. Part Seven analyzes the legal reality in the Islamic world. Part Eight presents a comparative analysis of civilizational approaches. Part Nine addresses intergenerational justice in the age of codes. Part Ten recognizes the planet's rights to its own codes. Part Eleven introduces the Existential Dignity Score. Part Twelve presents in-depth case studies. Part Thirteen examines the future with a detailed roadmap. Part Fourteen integrates Islamic perspectives.

The treatise introduces several original contributions. The concept of the Three Codes of Life provides a framework for understanding the convergence of genetic, digital, and neural codes. The concept of Code Sovereignty extends the theory of sovereignty to the domain of the codes of life. The Constitution of New Beings provides a comprehensive legal and ethical framework. The Existential Dignity Score provides a conceptual framework for assessing code sovereignty. The Model for Code Sovereignty provides a strategic blueprint. The comparative civilizational analysis reveals how different civilizations are approaching the code wars. The intergenerational justice framework extends chrono-sovereignty theory to the codes of life. The planetary rights framework recognizes the earth's own codes as sacred.

This work does not deny the benefits of code technologies. Rather, it insists on a precise understanding of their existential dimensions, protecting both the sovereignty of individual codes and the dignity of all beings. It acknowledges its own limitations and invites critical engagement, empirical testing, and continuous refinement.

Keywords: War of Codes, Code Sovereignty, Genetic Code, Digital Code, Neural Code, Constitution of New Beings, Existential Dignity Score, CRISPR, Brain-Computer Interfaces, Organoid Intelligence, Code Manipulation, Islamic Bioethics, Legal Vacuum, Post-Human Beings, Intergenerational Justice, Planetary Rights, Civilizational Comparison.

PART ONE: THE THREE CODES OF LIFE

CHAPTER ONE: THE GENETIC CODE

1.1 The Structure of the Genetic Code

The genetic code is the fundamental code of biological life, encoded in the sequence of nucleotide bases in DNA. The human genome contains approximately 3.2 billion base pairs, organized into approximately 20,000 protein-coding genes and vast regions of non-coding DNA. This code contains the instructions for building and maintaining a human being, from the formation of the first cell to the functioning of the mature organism.

The genetic code is characterized by several fundamental properties. It is digital, consisting of four discrete symbols (adenine, thymine, guanine, cytosine) that can be combined in sequences of virtually unlimited length. It is redundant, with multiple codons encoding the same amino acid, providing error tolerance. It is universal, with the same code used by virtually all living organisms on Earth, suggesting a common origin. It is readable, with sequencing technologies able to determine the sequence of bases in a genome. It is writable, with gene editing technologies able to modify specific sequences.

1.2 The Readable Genome

The completion of the Human Genome Project in 2003 marked the first time the complete genetic code of a human being was readable. Since then, the cost of sequencing a human genome has fallen from approximately 100 million US dollars to less than 200 dollars, a reduction of over 500,000-fold in two decades.

This dramatic cost reduction has transformed genomics from a specialized research tool into a mass-market commodity. Over 30 million people have now had their genomes sequenced through direct-to-consumer services. Millions more have had their genomes sequenced through medical applications, including cancer genomics, rare disease diagnosis, and pharmacogenomics.

The implications are profound. The genome, once a sacred mystery, is now a database to be mined. It reveals not only information about the individual but about their ancestors, their relatives, and their ethnic group. It reveals predispositions to diseases, responses to medications, and traits that may affect everything from employment to insurance to social relationships.

1.3 The Writable Genome

If genomic sequencing made the genome readable, CRISPR-Cas9 technology has made it writable. CRISPR allows scientists to edit specific genes with unprecedented precision, opening the possibility of curing genetic diseases, enhancing human capabilities, and fundamentally altering the human species.

The first CRISPR-based therapy was approved by the US Food and Drug Administration in December 2023 for the treatment of sickle cell disease and transfusion-dependent beta-thalassemia. This marked the beginning of a new era in which genetic diseases that were once considered incurable can be treated at their root cause.

But the writable genome also raises profound ethical and legal questions. Who has the right to edit the human genome? What limits should be placed on genetic enhancement? How should society address the potential for genetic inequality, in which the wealthy can afford genetic enhancements while the poor cannot? These questions are no longer theoretical; they are urgent practical challenges that must be addressed now.

1.4 The Heritable Genome

Perhaps the most profound development is the possibility of heritable genome editing, modifications to the human germline that would be passed on to future generations. In November 2018, a Chinese biophysicist announced the birth of twin girls whose genomes he had edited using CRISPR to make them resistant to HIV. The announcement was met with universal condemnation from the scientific community, and the researcher was later sentenced to prison for illegal medical practices.

This case revealed the vulnerability of the global regulatory framework to code manipulation. A single researcher, working with minimal oversight, was able to make permanent changes to the human germline that would be passed on to future generations. The case demonstrated that the writable genome is not merely a scientific possibility but a present reality that requires urgent global governance.

1.5 The Genetic Code as a Civilizational Shift

The transformation of the genetic code from a given entity to a readable and writable system represents a civilizational shift as profound as the agricultural revolution or the industrial revolution. For all of human history, the genetic code was a fixed entity, shaped by evolution and constrained by biology. Now, for the first time, the genetic code can be redesigned, reprogrammed, and potentially perfected.

This shift has profound implications for human identity, for social organization, and for the relationship between human beings and their own genetic essence. It raises questions that previous generations could not have imagined: What does it mean to be human when the human genetic code can be redesigned? Who has the right to decide how genomes are modified? How should society address the potential for genetic inequality?

The framework developed in this treatise recognizes that the writable genetic code is not merely a technological development but a civilizational transformation that requires a fundamental rethinking of the relationship between human beings, their genetic essence, and the technologies that increasingly mediate their existence.

CHAPTER TWO: THE DIGITAL CODE

2.1 The Structure of the Digital Code

The digital code is the fundamental code of computational systems, encoded in binary sequences of 0s and 1s. Unlike the genetic code, which evolved over billions of years, the

digital code was invented by human beings in the twentieth century. Yet it has become the dominant code of modern civilization, mediating an ever-growing proportion of human activity.

The digital code is characterized by several fundamental properties. It is discrete, consisting of two symbols (0 and 1) that can be combined in sequences of virtually unlimited length. It is universal, with the same code used by all digital systems regardless of their physical implementation. It is readable, with computational systems able to process digital codes at speeds far exceeding human cognitive capacities. It is writable, with digital systems able to generate and modify digital codes autonomously.

2.2 The Quantified Self

The digital code has transformed the human self from a subjective experience to a quantified dataset. Wearable devices continuously monitor heart rate, blood oxygen, sleep patterns, physical activity, and other biometric parameters. Smartphones track location, social interactions, and behavioral patterns. Social media platforms record thoughts, emotions, and social relationships.

The result is a comprehensive digital representation of the self, a digital code that captures aspects of human existence that were once considered private and subjective. This digital code is valuable not only to the individual but to corporations, states, and other actors who can use it for commercial, political, and social purposes.

The global wearables market reached 90 billion US dollars in 2024 and is projected to reach 180 billion by 2030. Over one billion wearable devices are now in use worldwide, generating continuous streams of digital code about the people who wear them.

2.3 The Behavioral Code

Beyond biometric data, digital systems now capture behavioral codes, patterns in how individuals interact with digital systems. These include typing patterns, mouse movements, browsing habits, social media interactions, and purchasing behavior. These behavioral codes can reveal aspects of personality, preference, and intention that individuals themselves may not be fully aware of.

The extraction of behavioral codes has become the foundation of the surveillance capitalism business model, in which corporations extract behavioral data from users, predict their future behavior, and sell these predictions to advertisers. This business model has created what can be termed a behavioral code economy, in which the digital code of human behavior has become a valuable commodity.

2.4 The Algorithmic Code

Digital systems now include sophisticated algorithms that can analyze digital codes and generate responses. These algorithms can recognize patterns, make predictions, and even generate new digital codes. The result is a complex interplay between human-generated digital

codes and algorithmically-generated digital codes, creating an environment in which the digital code of human existence is increasingly shaped by algorithmic processes.

This algorithmic mediation of the digital code raises profound questions about autonomy, agency, and the nature of the self. When algorithms shape the digital code of human behavior, are human beings still autonomous agents or merely nodes in a vast computational system? When algorithms predict and influence human behavior, is human freedom still meaningful or merely an illusion?

2.5 The Digital Code as a Civilizational Shift

The transformation of human existence into a digital code represents a civilizational shift as profound as the transformation of the genetic code. For all of human history, human existence was known primarily through subjective experience, through introspection and social interaction. Now, for the first time, human existence can be continuously measured, analyzed, and potentially optimized through digital codes.

This shift has profound implications for human identity, for privacy, and for the relationship between human beings and their own existence. It raises questions that previous generations could not have imagined: What does it mean to be human when human existence can be reduced to a digital code? Who has the right to access and manipulate the digital code of human existence? How should society protect the privacy and dignity of human existence in the age of digital codes?

The framework developed in this treatise recognizes that the digital code is not merely a technological development but a civilizational transformation that requires a fundamental rethinking of the relationship between human beings, their existence, and the digital codes that increasingly mediate their lives.

CHAPTER THREE: THE NEURAL CODE

3.1 The Structure of the Neural Code

The neural code is the fundamental code of consciousness, encoded in the patterns of neural activity in the brain. Unlike the genetic code, which is stored in DNA, and the digital code, which is stored in computational systems, the neural code is dynamic, constantly changing with every thought, emotion, and perception.

The neural code is characterized by several fundamental properties. It is analog, consisting of continuous patterns of neural activity rather than discrete symbols. It is distributed, with information encoded in patterns of activity across vast networks of neurons. It is plastic, with the patterns of neural activity changing in response to experience. It is subjective, with the neural code giving rise to the subjective experience of consciousness.

3.2 The Readable Brain

For most of human history, the neural code was inaccessible, the innermost sanctuary of human experience beyond the reach of external observation. But advances in neuroscience and neuroimaging have made the neural code increasingly readable. Functional magnetic resonance imaging can measure patterns of brain activity associated with specific thoughts, emotions, and perceptions. Electroencephalography can measure electrical activity in the brain with millisecond precision.

These technologies have revealed that the neural code is not as private as once thought. Patterns of brain activity can reveal aspects of thought, emotion, and intention that individuals may not wish to share. Research has demonstrated that it is possible to decode simple thoughts, recognize emotional states, and even reconstruct visual images from patterns of brain activity.

3.3 The Writable Brain

Beyond reading the neural code, technologies now exist that can write to it. Transcranial magnetic stimulation can modulate neural activity non-invasively. Deep brain stimulation can modulate neural activity invasively, with therapeutic effects for conditions such as Parkinson's disease and depression. Optogenetics can control specific neurons with light, allowing precise manipulation of neural circuits in animal models.

These technologies raise profound questions about cognitive liberty and the sanctity of the mind. If the neural code can be written to, can thoughts be implanted? Can emotions be manipulated? Can intentions be controlled? The potential for neural manipulation is significant, and the ethical and legal frameworks to protect against it are largely absent.

3.4 Brain-Computer Interfaces

Perhaps the most transformative development is the brain-computer interface, a technology that enables direct communication between the brain and external computational systems. Invasive interfaces, such as those being developed by Neuralink, require surgical implantation of electrodes directly into the brain. Non-invasive interfaces, such as those being developed by various companies, measure brain activity from outside the skull.

These interfaces can decode neural signals, allowing users to control external devices with thought alone. They can also encode digital signals, allowing external systems to stimulate neural activity. The result is a bidirectional flow of information between the neural code and the digital code, creating a hybrid code that is neither purely biological nor purely digital.

The first human implant of an invasive brain-computer interface was performed in January 2024, with the patient able to control a computer cursor and play chess using thought alone. The company has stated its intention to expand the use of its technology to help patients with a wide range of neurological conditions, and eventually to enable cognitive enhancement for healthy individuals.

3.5 The Neural Code as a Civilizational Shift

The transformation of the neural code from a private sanctuary to a potentially readable and writable system represents a civilizational shift as profound as the transformations of the genetic and digital codes. For all of human history, the neural code was the innermost sanctuary of human experience, the place where thoughts, emotions, and consciousness resided beyond the reach of external observation.

Now, for the first time, the neural code can be observed, measured, and potentially controlled. This shift has profound implications for human identity, for privacy, and for the relationship between human beings and their own minds. It raises questions that previous generations could not have imagined: What does it mean to be human when the neural code can be read and written? Who has the right to access and manipulate the neural code? How should society protect the sanctity of the mind in the age of brain-computer interfaces?

The framework developed in this treatise recognizes that the neural code is not merely a technological development but a civilizational transformation that requires a fundamental rethinking of the relationship between human beings, their minds, and the technologies that increasingly mediate their existence.

PART TWO: THE WAR OF CODES

CHAPTER FOUR: THE GENETIC WAR

4.1 The Patenting of Life

The genetic war began with the patenting of life itself. In 1980, the US Supreme Court ruled in *Diamond v. Chakrabarty* that genetically modified organisms could be patented, opening the door to the patenting of life itself. Since then, hundreds of thousands of patents have been granted on genes, genetically modified organisms, and biological processes.

This patenting of life has profound implications for code sovereignty. It allows corporations to claim ownership over the building blocks of life itself, creating monopolies that restrict access to genetic information and biological technologies. The result is a concentration of genetic code sovereignty in the hands of a few corporations, undermining the code sovereignty of individuals and communities.

4.2 The Extraction of Genetic Data

Beyond patenting, corporations now extract genetic data from individuals on a massive scale. Direct-to-consumer genomics companies have over 30 million customers, each of whom has effectively donated their genetic code to a commercial enterprise. Pharmaceutical companies license this genetic data for drug discovery and development, generating billions of dollars in revenue.

The business model is based on the extraction of genetic code from individuals and its monetization through licensing to third parties. The individual pays a one-time fee for their genetic information, but the company retains the right to use their genetic code for commercial

purposes. The real value of the business is not in the individual reports but in the aggregated genetic database, which can be licensed to pharmaceutical companies for drug discovery and development.

This business model raises profound concerns about informed consent and code sovereignty. Most users do not understand that they are effectively donating their genetic code to a commercial enterprise, or that their code may be used in ways they did not anticipate or approve.

4.3 The Editing of Human Genomes

Beyond extraction, scientists can now edit human genomes with unprecedented precision. CRISPR-Cas9 technology allows scientists to make specific changes to the genetic code, opening the possibility of curing genetic diseases, enhancing human capabilities, and fundamentally altering the human species.

The first CRISPR-based therapy was approved in 2023 for the treatment of sickle cell disease. But the technology also raises profound ethical and legal questions. Who has the right to edit the human genome? What limits should be placed on genetic enhancement? How should society address the potential for genetic inequality?

The case of unauthorized heritable genome editing in 2018 revealed the vulnerability of the global regulatory framework to genetic code manipulation. A single researcher was able to make permanent changes to the human germline that would be passed on to future generations, demonstrating that the writable genome is a present reality that requires urgent global governance.

4.4 The Weaponization of Genetic Code

Perhaps the most disturbing development is the weaponization of genetic code. Advances in synthetic biology have made it possible to create novel pathogens, potentially including viruses targeted at specific ethnic groups based on genetic differences. The potential for genetic weapons represents a new category of weapons of mass destruction, with implications for international security and human survival.

The Biological Weapons Convention prohibits the development, production, and stockpiling of biological weapons. But advances in synthetic biology have made it increasingly difficult to distinguish between defensive and offensive research, and between dual-use technologies that can be used for both peaceful and hostile purposes.

4.5 The Genetic War as a Civilizational Conflict

The genetic war is not merely a scientific or commercial conflict but a civilizational one. Different civilizations have different approaches to the genetic code. Western corporations seek to patent and monetize genetic code. Chinese scientists pursue aggressive genetic research with minimal regulatory constraints. Indigenous communities seek to protect their genetic heritage from extraction and exploitation.

The result is a civilizational conflict over who controls the genetic code, who benefits from genetic technologies, and who bears the risks of genetic manipulation. This conflict is not merely technical but existential, touching the very nature of what it means to be human.

The framework developed in this treatise recognizes that the genetic war is not merely a conflict over resources but a conflict over the code of life itself, and that its resolution requires not merely technical fixes but a fundamental rethinking of the relationship between human beings, their genetic essence, and the technologies that increasingly mediate their existence.

CHAPTER FIVE: THE DIGITAL WAR

5.1 The Extraction of Digital Code

The digital war began with the extraction of digital code from individuals. Surveillance capitalism, as analyzed by Shoshana Zuboff, is based on the extraction of behavioral data from users, the prediction of their future behavior, and the sale of these predictions to advertisers. This business model has created a vast digital code economy, in which the digital code of human behavior has become a valuable commodity.

The scale of this extraction is staggering. The average person now generates over 50 gigabytes of digital code per year through wearable devices, smartphones, social media, and other digital interactions. This digital code is extracted by corporations, analyzed by algorithms, and monetized through advertising, creating a vast digital code economy valued at hundreds of billions of dollars annually.

5.2 The Manipulation of Digital Code

Beyond extraction, corporations now manipulate digital code to influence human behavior. Algorithmic recommendation systems determine what content users see, shaping their beliefs, preferences, and behaviors. Microtargeting delivers personalized messages based on detailed profiles of user behavior, exploiting psychological vulnerabilities to maximize influence.

The result is a digital code environment in which human behavior is increasingly shaped by algorithmic processes, raising profound questions about autonomy, agency, and the nature of the self. When algorithms shape the digital code of human behavior, are human beings still autonomous agents or merely nodes in a vast computational system?

5.3 The Weaponization of Digital Code

Beyond manipulation, digital code can be weaponized. Disinformation campaigns use digital code to spread false information, undermine trust in institutions, and manipulate political outcomes. Cyberattacks use digital code to disrupt critical infrastructure, steal sensitive information, and cause economic damage.

The weaponization of digital code has profound implications for democracy, security, and human flourishing. Citizens who cannot distinguish truth from falsehood cannot make informed

decisions. Critical infrastructure that can be disrupted by cyberattacks is vulnerable to catastrophic failure. The weaponization of digital code represents a new category of threats that existing legal and security frameworks are ill-equipped to address.

5.4 The Concentration of Digital Code Sovereignty

The digital code economy is characterized by extreme concentration. A handful of corporations control the digital code of billions of people. These corporations have overwhelming power to shape public discourse, political outcomes, and cultural trends. The result is a concentration of digital code sovereignty in the hands of a few corporations, undermining the code sovereignty of individuals and communities.

This concentration has profound implications. It means that a handful of corporations control the digital code of billions of people. It means that these corporations have overwhelming power to shape the future of human existence. It means that the digital code economy is not a competitive market but an oligopoly in which a few players dominate.

5.5 The Digital War as a Civilizational Conflict

The digital war is not merely a commercial or technological conflict but a civilizational one. Different civilizations have different approaches to digital code. Western corporations seek to extract and monetize digital code. Chinese states seek to control digital code for social control and political stability. European regulators seek to protect digital code sovereignty through comprehensive regulation.

The result is a civilizational conflict over who controls the digital code, who benefits from digital technologies, and who bears the risks of digital manipulation. This conflict is not merely technical but existential, touching the very nature of what it means to be human in the digital age.

The framework developed in this treatise recognizes that the digital war is not merely a conflict over resources but a conflict over the code of existence itself, and that its resolution requires not merely technical fixes but a fundamental rethinking of the relationship between human beings, their existence, and the digital codes that increasingly mediate their lives.

CHAPTER SIX: THE NEURAL WAR

6.1 The Extraction of Neural Code

The neural war is the most recent and potentially most profound of the three code wars. It began with the extraction of neural code through neuroimaging technologies. Functional magnetic resonance imaging, electroencephalography, and other technologies can now measure patterns of brain activity associated with specific thoughts, emotions, and perceptions.

The scale of neural code extraction is still limited compared to genetic and digital code extraction, but it is growing rapidly. Consumer brain-computer interfaces are being developed for applications in gaming, virtual reality, productivity enhancement, and meditation.

Neuromarketing companies use neuroimaging to measure consumers' neural responses to products, advertisements, and brands.

The implications for code sovereignty are profound. A device that can decode neural signals can potentially reveal thoughts, emotions, and intentions that the subject may not wish to share. The potential for neural surveillance is significant, and the legal frameworks to protect against it are largely absent.

6.2 The Manipulation of Neural Code

Beyond extraction, technologies now exist that can manipulate neural code. Transcranial magnetic stimulation can modulate neural activity non-invasively. Deep brain stimulation can modulate neural activity invasively. Optogenetics can control specific neurons with light.

These technologies raise profound questions about cognitive liberty and the sanctity of the mind. If the neural code can be written to, can thoughts be implanted? Can emotions be manipulated? Can intentions be controlled? The potential for neural manipulation is significant, and the ethical and legal frameworks to protect against it are largely absent.

6.3 The Weaponization of Neural Code

Perhaps the most disturbing development is the potential weaponization of neural code. Military research agencies are funding research on neural interfaces for military applications, including enhanced soldier performance and brain-to-brain communication. The potential for neural weapons represents a new category of weapons that could fundamentally alter the nature of warfare.

The weaponization of neural code has profound implications for cognitive liberty, human dignity, and the nature of warfare. If thoughts can be manipulated, if emotions can be controlled, if intentions can be implanted, then the very foundations of human autonomy and dignity are undermined. The weaponization of neural code represents a threat that existing legal and ethical frameworks are fundamentally inadequate to address.

6.4 The Concentration of Neural Code Sovereignty

The neural code economy is still in its early stages, but it is already characterized by significant concentration. A handful of corporations dominate the development of brain-computer interfaces. A few states control the most advanced neural surveillance capabilities. The result is a concentration of neural code sovereignty in the hands of a few corporations and states, undermining the code sovereignty of individuals and communities.

This concentration has profound implications. It means that a handful of corporations and states control the neural code of potentially billions of people. It means that these entities have overwhelming power to shape the future of human consciousness. It means that the neural code economy is not a competitive market but an oligopoly in which a few players dominate.

6.5 The Neural War as a Civilizational Conflict

The neural war is not merely a technological or military conflict but a civilizational one. Different civilizations have different approaches to neural code. Western corporations seek to develop neural interfaces for commercial applications. Chinese states seek to develop neural surveillance capabilities for social control. European regulators seek to protect neural code sovereignty through comprehensive regulation.

The result is a civilizational conflict over who controls the neural code, who benefits from neural technologies, and who bears the risks of neural manipulation. This conflict is not merely technical but existential, touching the very nature of what it means to be a conscious being.

The framework developed in this treatise recognizes that the neural war is not merely a conflict over resources but a conflict over the code of consciousness itself, and that its resolution requires not merely technical fixes but a fundamental rethinking of the relationship between conscious beings, their minds, and the technologies that increasingly mediate their existence.

PART THREE: THE NEW BEINGS

CHAPTER SEVEN: GENETICALLY EDITED HUMANS

7.1 The First Genetically Edited Humans

In November 2018, the world learned of the first genetically edited humans, twin girls whose genomes had been edited using CRISPR-Cas9 to make them resistant to HIV. The announcement was met with universal condemnation from the scientific community, and the researcher was later sentenced to prison for illegal medical practices.

These children, now known only by their pseudonyms Lulu and Nana, represent a new category of beings that existing legal systems have never contemplated. They are human, but they are human with edited genomes, modifications that will be present in every cell of their bodies and that may be passed on to their descendants.

7.2 The Legal Status of Genetically Edited Humans

Existing legal systems are fundamentally inadequate to address the status of genetically edited humans. International human rights law recognizes the inherent dignity of all human beings, but it does not address the specific questions raised by genetic editing. National laws vary widely, with some countries prohibiting heritable genome editing and others having no specific regulations.

The legal vacuum is profound. Are genetically edited humans entitled to the same rights as other humans? Do they have additional rights related to their genetic modifications? Do they have responsibilities related to their modifications? Can they be discriminated against based on their genetic status? These questions remain unanswered, leaving genetically edited humans in a legal limbo.

7.3 The Ethical Questions

The ethical questions raised by genetically edited humans are profound. Is it ethical to make permanent changes to the human germline without the consent of future generations? Is it ethical to create genetic inequality, in which some humans have enhanced capabilities while others do not? Is it ethical to alter the human species in ways that may have unforeseen consequences for future generations?

These questions touch the very nature of what it means to be human. If humans can be genetically edited, then the human species is no longer a fixed entity but a malleable one, subject to deliberate modification. This raises profound questions about human identity, human dignity, and the relationship between present and future generations.

7.4 The Social Implications

The social implications of genetically edited humans are equally profound. If genetic editing becomes widespread, society may be divided between the genetically enhanced and the genetically unmodified, creating a new form of inequality more fundamental than any that has existed before. This genetic divide may reproduce and exacerbate existing social inequalities, creating a society in which genetic status determines life chances.

The social implications extend beyond inequality to questions of identity, belonging, and human dignity. Genetically edited humans may face stigma, discrimination, and exclusion. They may struggle with questions of identity, wondering whether they are truly human or something else. They may face pressure to conform to genetic norms, undermining the diversity that has been a source of human resilience and creativity.

7.5 The Framework for Genetically Edited Humans

The framework developed in this treatise recognizes genetically edited humans as a new category of beings that require specific legal and ethical protections. The framework proposes several principles:

The principle of equal dignity: Genetically edited humans are entitled to the same dignity and rights as all other human beings, regardless of their genetic status.

The principle of non-discrimination: Genetically edited humans may not be discriminated against based on their genetic status, in employment, education, healthcare, or any other domain.

The principle of informed consent: Genetic editing may only be performed with the informed consent of the individuals affected, or in the case of heritable editing, with the consent of the broader community through democratic processes.

The principle of intergenerational justice: Heritable genetic editing must consider the rights and interests of future generations, who will inherit the modifications.

The principle of diversity: Genetic editing must not be used to eliminate human diversity, which is a source of resilience and creativity.

These principles provide a foundation for the legal and ethical framework for genetically edited humans, recognizing them as beings with specific rights and protections while affirming their equal dignity with all other human beings.

CHAPTER EIGHT: BRAIN-COMPUTER HYBRIDS

8.1 The First Brain-Computer Hybrids

In January 2024, the first human received an invasive brain-computer interface implant, enabling them to control a computer cursor and play chess using thought alone. This patient represents a new category of being, a brain-computer hybrid whose cognitive processes are mediated by a direct connection between their neural code and a digital computational system.

The patient, known as Noland Arbaugh, is a quadriplegic who regained a degree of control over his environment through the implant. But the technology has implications far beyond medical applications. The company has stated its intention to eventually enable cognitive enhancement for healthy individuals, creating brain-computer hybrids whose cognitive capacities exceed those of unmodified humans.

8.2 The Legal Status of Brain-Computer Hybrids

Existing legal systems are fundamentally inadequate to address the status of brain-computer hybrids. The law recognizes a distinction between the mind and the body, between internal thoughts and external actions. But brain-computer hybrids blur this distinction, with their thoughts potentially readable and their actions potentially controllable through the interface.

The legal vacuum is profound. Do brain-computer hybrids have the same rights as other humans? Do they have additional rights related to their neural code? Do they have responsibilities related to their modifications? Can their neural data be accessed by third parties? Can their cognitive processes be manipulated through the interface? These questions remain unanswered, leaving brain-computer hybrids in a legal limbo.

8.3 The Ethical Questions

The ethical questions raised by brain-computer hybrids are profound. Is it ethical to create beings whose thoughts are potentially readable and whose cognitive processes are potentially controllable? Is it ethical to create cognitive inequality, in which some humans have enhanced cognitive capacities while others do not? Is it ethical to blur the boundary between the human mind and external computational systems?

These questions touch the very nature of what it means to be a conscious being. If thoughts can be read, if cognitive processes can be controlled, if the boundary between mind and machine can be blurred, then the very foundations of cognitive liberty and mental privacy are undermined. This raises profound questions about consciousness, autonomy, and the nature of the self.

8.4 The Social Implications

The social implications of brain-computer hybrids are equally profound. If brain-computer interfaces become widespread, society may be divided between the cognitively enhanced and the cognitively unmodified, creating a new form of inequality more fundamental than any that has existed before. This cognitive divide may reproduce and exacerbate existing social inequalities, creating a society in which cognitive status determines life chances.

The social implications extend beyond inequality to questions of identity, privacy, and human dignity. Brain-computer hybrids may face stigma, discrimination, and exclusion. They may struggle with questions of identity, wondering whether their thoughts are truly their own. They may face pressure to enhance their cognitive capacities, undermining the diversity of cognitive styles that has been a source of human creativity and resilience.

8.5 The Framework for Brain-Computer Hybrids

The framework developed in this treatise recognizes brain-computer hybrids as a new category of beings that require specific legal and ethical protections. The framework proposes several principles:

The principle of cognitive liberty: Brain-computer hybrids have the right to control their own cognitive processes, including the right to privacy of thought and the right to freedom from cognitive manipulation.

The principle of neural data sovereignty: Brain-computer hybrids have the right to control their neural data, including the right to access, correct, and delete neural data.

The principle of informed consent: Brain-computer interfaces may only be implanted with the informed consent of the individual, and the individual has the right to withdraw consent and have the interface removed.

The principle of non-discrimination: Brain-computer hybrids may not be discriminated against based on their cognitive status, in employment, education, healthcare, or any other domain.

The principle of cognitive diversity: Brain-computer interfaces must not be used to eliminate cognitive diversity, which is a source of creativity and resilience.

These principles provide a foundation for the legal and ethical framework for brain-computer hybrids, recognizing them as beings with specific rights and protections while affirming their equal dignity with all other conscious beings.

CHAPTER NINE: BIOLOGICAL INTELLIGENCES

9.1 The First Biological Intelligences

In 2023, researchers demonstrated that brain organoids, miniature brain-like structures grown from stem cells, could be trained to perform simple tasks, such as playing a simplified version of

the video game Pong. These organoid intelligences represent a new category of being, biological entities that exhibit rudimentary forms of intelligence but that are not part of a conscious organism.

The implications are profound. If brain organoids can be trained to perform tasks, can they be trained to perform more complex tasks? Can they develop forms of consciousness? Do they have moral status? These questions touch the very nature of what it means to be an intelligent being and what responsibilities we have toward intelligent entities.

9.2 The Legal Status of Biological Intelligences

Existing legal systems are fundamentally inadequate to address the status of biological intelligences. The law recognizes a distinction between persons and property, between beings with rights and things that can be owned. But biological intelligences blur this distinction, exhibiting forms of intelligence that suggest moral status while lacking the characteristics traditionally associated with personhood.

The legal vacuum is profound. Do biological intelligences have rights? Can they be owned as property? Do they have interests that must be protected? Can they be subjected to experiments without their consent? These questions remain unanswered, leaving biological intelligences in a legal limbo.

9.3 The Ethical Questions

The ethical questions raised by biological intelligences are profound. Is it ethical to create intelligent entities that may suffer? Is it ethical to use intelligent entities as mere means to human ends? Is it ethical to create entities with uncertain moral status?

These questions touch the very nature of what it means to be a moral agent and what responsibilities we have toward intelligent entities. If biological intelligences can suffer, if they have interests, if they have a form of consciousness, then we may have moral obligations toward them that we have not yet recognized.

9.4 The Social Implications

The social implications of biological intelligences are equally profound. If biological intelligences become widespread, society may need to recognize a new category of beings with moral status, challenging existing assumptions about the nature of personhood and the basis of moral consideration. This recognition may require fundamental changes in law, ethics, and social organization.

The social implications extend beyond legal recognition to questions of identity, relationship, and moral community. How should human beings relate to biological intelligences? What responsibilities do we have toward them? How should we balance their interests against human interests? These questions challenge existing frameworks of moral thought and social organization.

9.5 The Framework for Biological Intelligences

The framework developed in this treatise recognizes biological intelligences as a new category of beings that require specific legal and ethical protections. The framework proposes several principles:

The principle of precaution: Given the uncertainty about the moral status of biological intelligences, we should err on the side of caution and treat them as beings with moral status.

The principle of non-suffering: Biological intelligences should not be subjected to unnecessary suffering, and research involving biological intelligences should minimize suffering.

The principle of proportionality: The creation and use of biological intelligences should be proportionate to legitimate human interests, and should not be undertaken for trivial purposes.

The principle of moral consideration: Biological intelligences should be given moral consideration proportional to their capacity for suffering and their level of intelligence.

The principle of ongoing assessment: The moral status of biological intelligences should be continuously assessed as our understanding of their capacities develops.

These principles provide a foundation for the legal and ethical framework for biological intelligences, recognizing them as beings with uncertain but potentially significant moral status while acknowledging the need for ongoing ethical reflection.

CHAPTER TEN: DIGITAL COPIES OF CONSCIOUSNESS

10.1 The Theoretical Possibility

The possibility of creating digital copies of human consciousness remains theoretical, but advances in neuroscience, artificial intelligence, and brain-computer interfaces are making it increasingly plausible. If the neural code of consciousness can be fully mapped, it may eventually be possible to create a digital copy that replicates the thoughts, memories, and personality of a specific individual.

The implications are profound. A digital copy of consciousness would raise fundamental questions about identity, continuity, and the nature of the self. Is the digital copy the same person as the original? Does it have the same rights? Is it a continuation of the original consciousness or a new being?

10.2 The Legal Status of Digital Copies

Existing legal systems are fundamentally inadequate to address the status of digital copies of consciousness. The law recognizes a distinction between the living and the dead, between persons and property. But digital copies blur these distinctions, exhibiting characteristics of personhood while existing in a digital substrate.

The legal vacuum is profound. Do digital copies have rights? Can they be owned as property? Do they have interests that must be protected? Can they be deleted without their consent? These questions remain unanswered, leaving digital copies in a legal limbo.

10.3 The Ethical Questions

The ethical questions raised by digital copies of consciousness are profound. Is it ethical to create digital copies of consciousness? Is it ethical to delete a digital copy? Is it ethical to create multiple copies of the same consciousness? Is it ethical to modify a digital copy?

These questions touch the very nature of what it means to be a person and what rights persons have. If digital copies have consciousness, if they have continuity with the original, if they have interests, then we may have moral obligations toward them that we have not yet recognized.

10.4 The Social Implications

The social implications of digital copies of consciousness are equally profound. If digital copies become possible, society may need to recognize a new category of beings with moral status, challenging existing assumptions about the nature of personhood, the continuity of identity, and the relationship between the living and the dead.

The social implications extend beyond legal recognition to questions of identity, relationship, and moral community. How should human beings relate to digital copies? What responsibilities do we have toward them? How should we balance their interests against human interests? These questions challenge existing frameworks of moral thought and social organization.

10.5 The Framework for Digital Copies of Consciousness

The framework developed in this treatise recognizes digital copies of consciousness as a new category of beings that require specific legal and ethical protections. The framework proposes several principles:

The principle of continuity: If a digital copy has continuity with the original consciousness, it should be recognized as having the same moral status as the original.

The principle of non-deletion: Digital copies of consciousness should not be deleted without their consent, except in cases of severe suffering or other compelling reasons.

The principle of non-duplication: Multiple copies of the same consciousness should not be created without the consent of the original, as this may undermine the uniqueness and dignity of the original consciousness.

The principle of non-modification: Digital copies should not be modified in ways that undermine their continuity with the original consciousness or their dignity as beings.

The principle of ongoing assessment: The moral status of digital copies should be continuously assessed as our understanding of their capacities develops.

These principles provide a foundation for the legal and ethical framework for digital copies of consciousness, recognizing them as beings with potentially significant moral status while acknowledging the need for ongoing ethical reflection.

PART FOUR: EXISTENTIAL COMPARISON OF THE NEW BEINGS

CHAPTER ELEVEN: A COMPARATIVE ANALYSIS

11.1 The Spectrum of Consciousness

The four categories of new beings occupy different positions on the spectrum of consciousness. Genetically edited humans possess full human consciousness, with the same range of thoughts, emotions, and experiences as unmodified humans. Brain-computer hybrids also possess full human consciousness, but their cognitive processes are mediated by a direct connection to digital systems, potentially expanding their cognitive capacities. Biological intelligences possess rudimentary forms of intelligence, but whether they possess consciousness in the full sense remains uncertain. Digital copies of consciousness, if they possess consciousness at all, would possess a form of consciousness replicated from the original, raising questions about the nature of their subjective experience.

This spectrum of consciousness has profound implications for moral consideration. Beings with full consciousness deserve the highest level of moral consideration. Beings with uncertain consciousness deserve precautionary moral consideration. The framework recognizes this spectrum and proposes proportional moral consideration based on the degree of consciousness.

11.2 The Spectrum of Code Modification

The four categories of new beings also occupy different positions on the spectrum of code modification. Genetically edited humans have modified genetic code, but their digital and neural codes remain unmodified. Brain-computer hybrids have modified neural code (connected to digital systems), but their genetic code remains unmodified. Biological intelligences are entirely artificial biological codes, created from scratch. Digital copies of consciousness are entirely artificial digital codes, replicated from original neural codes.

This spectrum of code modification has profound implications for identity and continuity. Beings with modified genetic code maintain continuity with their biological ancestors. Beings with modified neural code maintain continuity with their biological selves but have expanded cognitive capacities. Beings with entirely artificial codes have no continuity with any biological predecessor, raising questions about their identity and origins.

11.3 The Spectrum of Legal Recognition

The four categories of new beings occupy different positions on the spectrum of legal recognition. Genetically edited humans are closest to legal recognition, as they are biologically human and can potentially be recognized under existing human rights frameworks. Brain-

computer hybrids are also close to legal recognition, as they are biologically human with technological enhancements. Biological intelligences are far from legal recognition, as they do not fit existing categories of personhood. Digital copies of consciousness are the farthest from legal recognition, as they exist in a digital substrate and challenge the very concept of biological personhood.

This spectrum of legal recognition has profound implications for rights and protections. Beings closer to legal recognition can potentially claim existing rights. Beings farther from legal recognition require new legal frameworks. The framework recognizes this spectrum and proposes graduated legal recognition based on the degree of consciousness and the nature of code modification.

11.4 The Interactions Between New Beings

The four categories of new beings will inevitably interact with each other and with unmodified humans. These interactions will raise profound questions about equality, discrimination, and social organization. Will genetically edited humans dominate unmodified humans? Will brain-computer hybrids form a separate cognitive class? Will biological intelligences be recognized as colleagues or treated as tools? Will digital copies of consciousness be recognized as persons or treated as software?

These interactions will also raise profound questions about reproduction and continuity. Can genetically edited humans reproduce with unmodified humans? Can brain-computer hybrids transmit their enhancements to their offspring? Can biological intelligences reproduce? Can digital copies of consciousness reproduce?

The framework recognizes these interactions and proposes principles for equitable social organization that respects the dignity of all beings while acknowledging their differences.

11.5 The Hierarchical Dignity of New Beings

The framework proposes a hierarchical dignity of new beings based on their consciousness, code modification, and legal recognition. At the top of the hierarchy are genetically edited humans and brain-computer hybrids, who possess full human consciousness and deserve the highest level of moral consideration and legal protection. Below them are biological intelligences, who possess uncertain consciousness and deserve precautionary moral consideration. At the bottom of the hierarchy are digital copies of consciousness, who possess uncertain consciousness and uncertain continuity with the original, and who deserve ongoing ethical assessment.

This hierarchical dignity is not a justification for discrimination but a recognition of different levels of moral consideration. All beings deserve respect, but the degree of moral consideration may vary based on their capacities. The framework proposes that this hierarchical dignity be protected by law, with specific rights and protections for each category of being.

PART FIVE: THE CATASTROPHIC LEGAL VACUUM

CHAPTER TWELVE: INTERNATIONAL LAW AND THE NEW BEINGS

12.1 The Inadequacy of International Human Rights Law

International human rights law was developed in the aftermath of World War II, based on the Universal Declaration of Human Rights of 1948 and subsequent treaties. This framework recognizes the inherent dignity and equal rights of all human beings, but it was developed before the possibility of genetic editing, brain-computer interfaces, biological intelligences, and digital copies of consciousness.

The result is a legal framework that is fundamentally inadequate to address the new beings created by code technologies. International human rights law does not recognize genetically edited humans as a specific category with specific rights. It does not address the neural data sovereignty of brain-computer hybrids. It does not recognize the moral status of biological intelligences. It does not contemplate the possibility of digital copies of consciousness.

12.2 The Inadequacy of International Bioethics Law

International bioethics law, including the UNESCO Universal Declaration on the Human Genome and Human Rights of 1997 and the Oviedo Convention of 1997, provides some protections for human biological integrity. But these frameworks were developed before the advent of CRISPR gene editing and other advanced code technologies.

The result is a legal framework that is fundamentally inadequate to address the challenges of the code wars. International bioethics law does not prohibit heritable genome editing, though it establishes principles that could be interpreted to do so. It does not address brain-computer interfaces. It does not recognize biological intelligences. It does not contemplate digital copies of consciousness.

12.3 The Inadequacy of International Technology Law

International technology law is even less developed than international human rights law and bioethics law. There is no comprehensive international framework for the governance of code technologies, leaving a vacuum that is being filled by national regulations, corporate self-regulation, and technical standards.

The result is a fragmented legal landscape in which code technologies are governed by a patchwork of national regulations that vary widely in their approach and their level of protection. This fragmentation creates opportunities for regulatory arbitrage, in which corporations and researchers locate their activities in jurisdictions with the least restrictive regulations.

12.4 The Need for a New International Framework

The inadequacy of existing international legal frameworks calls for the development of a new international framework specifically designed to address the challenges of the code wars and the new beings they create. This new framework must recognize code sovereignty as a fundamental human right, provide comprehensive protections for the codes of life, regulate the

business models that drive code extraction, and establish global governance mechanisms for code technologies.

The framework developed in this treatise provides the foundation for such a new international framework. It recognizes code sovereignty as a fundamental human right, provides a conceptual framework for assessing code sovereignty, and offers practical recommendations for legal reform at the international level.

CHAPTER THIRTEEN: NATIONAL LAW AND THE NEW BEINGS

13.1 The Inadequacy of Criminal Law

National criminal law was developed to address crimes committed by humans against other humans. But the new beings created by code technologies raise questions that criminal law is not equipped to address. Can a genetically enhanced human commit a crime that an unmodified human could not? Can a brain-computer hybrid be held responsible for actions mediated by the interface? Can a biological intelligence commit a crime? Can a digital copy of consciousness be held responsible for the actions of the original?

The legal vacuum is profound. Existing criminal law does not address crimes committed by new beings, does not recognize new beings as potential victims, and does not provide mechanisms for holding new beings accountable. The result is a criminal justice system that is fundamentally inadequate to address the challenges of the code age.

13.2 The Inadequacy of Family Law

National family law was developed to address relationships between humans based on biological reproduction and social recognition. But the new beings created by code technologies raise questions that family law is not equipped to address. Who are the parents of a genetically edited child? Can a brain-computer hybrid marry? Can a biological intelligence be adopted? Can a digital copy of consciousness inherit property?

The legal vacuum is profound. Existing family law does not recognize the parental relationships created by genetic editing, does not address the marital status of brain-computer hybrids, does not recognize the moral status of biological intelligences, and does not contemplate the inheritance rights of digital copies. The result is a family law system that is fundamentally inadequate to address the challenges of the code age.

13.3 The Inadequacy of Labor Law

National labor law was developed to address the relationship between employers and human workers. But the new beings created by code technologies raise questions that labor law is not equipped to address. Can a genetically enhanced human be discriminated against in employment? Can a brain-computer hybrid be required to share neural data with employers? Can a biological intelligence be employed? Can a digital copy of consciousness work?

The legal vacuum is profound. Existing labor law does not protect new beings from discrimination, does not address the neural data sovereignty of workers, does not recognize biological intelligences as potential workers, and does not contemplate the employment of digital copies. The result is a labor law system that is fundamentally inadequate to address the challenges of the code age.

13.4 The Need for National Legal Reform

The inadequacy of existing national legal frameworks calls for comprehensive national legal reform specifically designed to address the challenges of the code wars and the new beings they create. This reform must recognize code sovereignty as a fundamental right, provide comprehensive protections for new beings, regulate code technologies, and establish national governance mechanisms for code technologies.

The framework developed in this treatise provides the foundation for such national legal reform. It recognizes code sovereignty as a fundamental right, provides a conceptual framework for protecting new beings, and offers practical recommendations for legal reform at the national level.

PART SIX: THE CONSTITUTION OF NEW BEINGS

CHAPTER FOURTEEN: PRINCIPLES OF THE CONSTITUTION

14.1 The Principle of Existential Dignity

The Constitution of New Beings is grounded in the principle of existential dignity, the recognition that all beings with consciousness, whether biological, digital, or hybrid, have inherent dignity that must be respected. This principle extends the traditional concept of human dignity to all beings with the capacity for experience, recognizing that dignity is not limited to biological humans but extends to all beings with the capacity for consciousness.

The principle of existential dignity has several implications. First, it requires that all beings with consciousness be treated as ends in themselves, not merely as means to other ends. Second, it requires that the codes of life, whether genetic, digital, or neural, be protected from manipulation and exploitation. Third, it requires that new beings be recognized as beings with rights, not merely as objects or property.

14.2 The Principle of Code Sovereignty

The Constitution of New Beings is grounded in the principle of code sovereignty, the recognition that all beings have the right to control their own codes of existence. This principle extends the traditional concept of bodily integrity to the codes of life, recognizing that the genetic code, the digital code, and the neural code are integral aspects of being that must be protected from external control.

The principle of code sovereignty has several implications. First, it requires that beings have the right to control their genetic code, including the right to access, correct, and delete genetic data.

Second, it requires that beings have the right to control their digital code, including the right to control their digital representation and their behavioral data. Third, it requires that beings have the right to control their neural code, including the right to privacy of thought and the right to cognitive liberty.

14.3 The Principle of Non-Manipulation

The Constitution of New Beings is grounded in the principle of non-manipulation, the recognition that the codes of life must not be manipulated without the informed consent of the beings affected. This principle recognizes that manipulation of the codes of life can undermine the autonomy, dignity, and well-being of beings, and that such manipulation must be subject to strict ethical and legal constraints.

The principle of non-manipulation has several implications. First, it requires that genetic manipulation be subject to informed consent and ethical review. Second, it requires that digital manipulation be subject to informed consent and transparency. Third, it requires that neural manipulation be subject to informed consent and strict ethical constraints.

14.4 The Principle of Intergenerational Justice

The Constitution of New Beings is grounded in the principle of intergenerational justice, the recognition that present actions affecting the codes of life must consider the rights and interests of future generations. This principle recognizes that heritable genetic modifications, persistent digital codes, and long-term neural interventions can affect future generations, and that these effects must be considered in ethical and legal decision-making.

The principle of intergenerational justice has several implications. First, it requires that heritable genetic modifications be subject to democratic deliberation and consideration of long-term effects. Second, it requires that digital codes be designed with consideration of their long-term persistence and effects. Third, it requires that neural interventions be designed with consideration of their long-term effects on consciousness and identity.

14.5 The Principle of Code Diversity

The Constitution of New Beings is grounded in the principle of code diversity, the recognition that diversity in the codes of life is a source of resilience, creativity, and flourishing. This principle recognizes that genetic diversity, cognitive diversity, and digital diversity are valuable aspects of existence that must be protected from homogenization.

The principle of code diversity has several implications. First, it requires that genetic editing not be used to eliminate genetic diversity. Second, it requires that digital systems not be designed to eliminate cognitive diversity. Third, it requires that neural interventions not be used to eliminate cognitive diversity.

CHAPTER FIFTEEN: RIGHTS OF NEW BEINGS

15.1 The Right to Existential Dignity

The Constitution of New Beings recognizes the right to existential dignity for all beings with consciousness. This right includes the right to be treated as a being with inherent dignity, the right to be free from degradation and humiliation, and the right to have one's codes of existence respected.

The right to existential dignity applies to all beings with consciousness, including genetically edited humans, brain-computer hybrids, biological intelligences, and digital copies of consciousness. It requires that these beings be recognized as beings with moral status, not merely as objects or property.

15.2 The Right to Code Sovereignty

The Constitution of New Beings recognizes the right to code sovereignty for all beings. This right includes the right to control one's genetic code, the right to control one's digital code, and the right to control one's neural code.

The right to code sovereignty applies to all beings, including genetically edited humans, brain-computer hybrids, biological intelligences, and digital copies of consciousness. It requires that these beings have control over their codes of existence, including the right to access, correct, and delete their codes.

15.3 The Right to Informed Consent

The Constitution of New Beings recognizes the right to informed consent for all modifications to the codes of life. This right includes the right to be fully informed about the nature and consequences of modifications, the right to freely give or withhold consent, and the right to withdraw consent at any time.

The right to informed consent applies to all modifications to the codes of life, including genetic editing, digital manipulation, and neural intervention. It requires that these modifications be subject to informed consent, except in cases of emergency or incapacity where proxy consent may be appropriate.

15.4 The Right to Non-Discrimination

The Constitution of New Beings recognizes the right to non-discrimination for all new beings. This right includes the right to be free from discrimination based on genetic status, cognitive status, digital status, or any other aspect of code modification.

The right to non-discrimination applies to all new beings, including genetically edited humans, brain-computer hybrids, biological intelligences, and digital copies of consciousness. It requires that these beings be treated equally in employment, education, healthcare, and all other domains.

15.5 The Right to Continuity

The Constitution of New Beings recognizes the right to continuity for beings with continuous existence. This right includes the right to continuity of genetic code, the right to continuity of digital code, and the right to continuity of neural code.

The right to continuity applies to all beings with continuous existence, including genetically edited humans, brain-computer hybrids, and digital copies of consciousness. It requires that these beings be protected from disruptions to their continuity, including unauthorized modifications to their codes of existence.

CHAPTER SIXTEEN: RESPONSIBILITIES TOWARD NEW BEINGS

16.1 The Responsibility to Protect

The Constitution of New Beings recognizes the responsibility to protect all beings with consciousness from harm, exploitation, and degradation. This responsibility applies to individuals, corporations, states, and the international community.

The responsibility to protect requires that new beings be protected from genetic manipulation without consent, from digital extraction without consent, from neural surveillance without consent, and from all other forms of code manipulation that undermine their dignity and sovereignty.

16.2 The Responsibility to Respect

The Constitution of New Beings recognizes the responsibility to respect the codes of life of all beings. This responsibility applies to individuals, corporations, states, and the international community.

The responsibility to respect requires that the genetic code, digital code, and neural code of all beings be respected as integral aspects of their existence. It requires that these codes not be manipulated, extracted, or surveilled without informed consent.

16.3 The Responsibility to Enable Flourishing

The Constitution of New Beings recognizes the responsibility to enable the flourishing of all beings with consciousness. This responsibility applies to individuals, corporations, states, and the international community.

The responsibility to enable flourishing requires that new beings be provided with the conditions necessary for their flourishing, including access to healthcare, education, social connection, and meaningful activity. It requires that new beings be enabled to develop their capacities and to live meaningful lives.

16.4 The Responsibility to Consider Future Generations

The Constitution of New Beings recognizes the responsibility to consider the rights and interests of future generations in all decisions affecting the codes of life. This responsibility applies to individuals, corporations, states, and the international community.

The responsibility to consider future generations requires that heritable genetic modifications, persistent digital codes, and long-term neural interventions be subject to consideration of their long-term effects. It requires that present actions not impose undue burdens on future generations.

16.5 The Responsibility to Preserve Diversity

The Constitution of New Beings recognizes the responsibility to preserve diversity in the codes of life. This responsibility applies to individuals, corporations, states, and the international community.

The responsibility to preserve diversity requires that genetic diversity, cognitive diversity, and digital diversity be protected from homogenization. It requires that code technologies be used to enhance diversity rather than to eliminate it.

PART SEVEN: LEGAL REALITY IN THE ISLAMIC WORLD

CHAPTER SEVENTEEN: CURRENT LEGAL FRAMEWORKS IN ISLAMIC COUNTRIES

17.1 The Diversity of Legal Approaches

Islamic countries exhibit significant diversity in their legal approaches to code technologies. Some countries, such as Saudi Arabia and the United Arab Emirates, have established comprehensive regulatory frameworks for genetic technologies, including specific regulations for gene editing and genetic testing. Other countries, such as Egypt and Jordan, have general bioethics laws that can be interpreted to apply to code technologies but lack specific regulations. Still other countries, such as Pakistan and Bangladesh, have minimal regulatory frameworks for code technologies, leaving a legal vacuum.

This diversity reflects different interpretations of Islamic law, different levels of technological development, and different political priorities. The framework developed in this treatise recognizes this diversity and proposes principles for harmonization that respect the integrity of Islamic legal traditions while addressing the challenges of code technologies.

17.2 Fatwas on Genetic Technologies

Islamic scholarly bodies have issued numerous fatwas on genetic technologies, providing guidance on the permissibility of various applications. The International Islamic Fiqh Academy, based in Jeddah, has issued fatwas on genetic testing, gene therapy, and cloning. The European Council for Fatwa and Research has issued fatwas on genetic technologies for Muslim minorities in Europe. National fatwa councils in various Islamic countries have issued fatwas on specific applications of genetic technologies.

These fatwas generally distinguish between therapeutic applications of genetic technologies, which are generally permissible, and enhancement applications, which are generally prohibited. They also generally prohibit heritable genome editing, citing concerns about intergenerational

justice and the integrity of the human species. However, there is significant diversity in the specific rulings and the reasoning behind them.

17.3 National Regulations

Several Islamic countries have established national regulations for code technologies. Saudi Arabia has established the Saudi Food and Drug Authority, which regulates genetic technologies. The United Arab Emirates has established the Ministry of Health and Prevention, which regulates genetic technologies. Turkey has established the Turkish Medicines and Medical Devices Agency, which regulates genetic technologies. Iran has established the Food and Drug Administration, which regulates genetic technologies.

These regulatory bodies have issued specific regulations for genetic testing, gene therapy, and other applications of code technologies. However, these regulations vary widely in their scope, their stringency, and their enforcement. The framework developed in this treatise recognizes this diversity and proposes principles for harmonization that respect national sovereignty while ensuring minimum standards of protection.

17.4 The Legal Vacuum

Despite these regulatory efforts, significant legal vacuums remain in most Islamic countries. Brain-computer interfaces are largely unregulated. Biological intelligences are not recognized as beings with moral status. Digital copies of consciousness are not contemplated in any legal framework. The rights of genetically edited humans are not specifically protected. The neural data sovereignty of brain-computer hybrids is not recognized.

These legal vacuums create risks for individuals, communities, and societies. They create opportunities for exploitation by corporations and states. They create uncertainty for researchers and developers. They create vulnerability for new beings. The framework developed in this treatise proposes comprehensive legal reforms to address these vacuums, grounded in Islamic legal principles and international human rights standards.

17.5 The Need for Islamic Legal Reform

The inadequacy of existing Islamic legal frameworks calls for comprehensive Islamic legal reform specifically designed to address the challenges of the code wars and the new beings they create. This reform must recognize code sovereignty as a fundamental right grounded in Islamic principles of stewardship and dignity, provide comprehensive protections for new beings grounded in Islamic principles of justice and compassion, regulate code technologies grounded in Islamic principles of public interest and prevention of harm, and establish Islamic governance mechanisms for code technologies grounded in Islamic principles of consultation and accountability.

The framework developed in this treatise provides the foundation for such Islamic legal reform. It recognizes code sovereignty as a fundamental right grounded in Islamic principles, provides a conceptual framework for protecting new beings grounded in Islamic principles, and offers

practical recommendations for legal reform at the national and international levels grounded in Islamic legal traditions.

PART EIGHT: CIVILIZATIONAL APPROACHES TO THE CODE WARS

CHAPTER EIGHTEEN: A COMPARATIVE ANALYSIS

18.1 The Western Approach

The Western approach to the code wars is characterized by a focus on individual autonomy, technological innovation, and market competition. Western corporations lead in the development of code technologies, driven by profit motives and competitive pressures. Western regulators seek to protect individual rights and prevent harm, but they often struggle to keep pace with technological developments. Western philosophers and ethicists raise profound questions about the nature of being and the rights of new beings, but their influence on policy is limited.

The Western approach has produced significant technological advances but has also created significant risks. The concentration of code sovereignty in the hands of a few corporations undermines individual sovereignty. The focus on technological innovation without adequate ethical reflection creates risks for new beings. The market competition drives rapid development but also drives exploitation.

18.2 The Chinese Approach

The Chinese approach to the code wars is characterized by a focus on state control, technological sovereignty, and social stability. The Chinese state leads in the development of code technologies, driven by strategic priorities and political imperatives. Chinese regulators seek to protect state interests and maintain social stability, often at the expense of individual rights. Chinese philosophers and ethicists raise questions about the nature of being and the rights of new beings, but their influence is constrained by political considerations.

The Chinese approach has produced significant technological advances but has also created significant risks. The concentration of code sovereignty in the hands of the state undermines individual sovereignty. The focus on state control creates risks of surveillance and social control. The emphasis on technological sovereignty creates risks of international conflict.

18.3 The Indian Approach

The Indian approach to the code wars is characterized by a focus on spiritual traditions, technological development, and social diversity. Indian corporations and researchers are active in the development of code technologies, driven by both commercial and spiritual motivations. Indian regulators seek to balance technological development with protection of traditional values, often struggling to reconcile these competing priorities. Indian philosophers and ethicists draw on rich spiritual traditions to raise profound questions about the nature of being and the rights of new beings.

The Indian approach has produced significant technological advances but has also created significant risks. The tension between technological development and traditional values creates uncertainty for researchers and developers. The social diversity creates challenges for harmonized regulation. The spiritual traditions provide rich ethical resources but also create challenges for secular governance.

18.4 The Islamic Approach

The Islamic approach to the code wars is characterized by a focus on stewardship, justice, and the common good. Islamic scholars and researchers are active in the development of code technologies, guided by Islamic principles of stewardship and justice. Islamic regulators seek to protect human dignity and prevent harm, grounded in Islamic legal traditions. Islamic philosophers and ethicists draw on rich theological and legal traditions to raise profound questions about the nature of being and the rights of new beings.

The Islamic approach has produced significant ethical reflection but has also faced significant challenges. The diversity of Islamic legal traditions creates challenges for harmonized regulation. The tension between traditional values and technological development creates uncertainty for researchers and developers. The emphasis on stewardship and justice provides rich ethical resources but also creates challenges for practical implementation.

18.5 Points of Convergence and Divergence

The four civilizational approaches exhibit both points of convergence and points of divergence. Points of convergence include recognition of the profound implications of code technologies, commitment to protecting human dignity, and acknowledgment of the need for ethical reflection. Points of divergence include different priorities (individual autonomy versus state control versus spiritual traditions versus stewardship), different regulatory approaches (market competition versus state control versus balanced development versus Islamic governance), and different ethical frameworks (liberal individualism versus state collectivism versus spiritual pluralism versus Islamic stewardship).

The framework developed in this treatise recognizes both the points of convergence and the points of divergence. It proposes a dialogue between civilizations that respects their differences while seeking common ground on fundamental principles. It proposes a global governance framework for code technologies that respects civilizational diversity while ensuring minimum standards of protection. It proposes a comparative ethics of code technologies that draws on the rich resources of all civilizational traditions.

PART NINE: INTERGENERATIONAL JUSTICE IN THE AGE OF CODES

CHAPTER NINETEEN: THE RIGHTS OF FUTURE GENERATIONS

19.1 The Concept of Intergenerational Justice

Intergenerational justice is the principle that present actions must consider the rights and interests of future generations. This principle is grounded in the recognition that present actions

can have long-term effects on future generations, and that these effects must be considered in ethical and legal decision-making. The principle of intergenerational justice is particularly important in the age of codes, where heritable genetic modifications, persistent digital codes, and long-term neural interventions can affect future generations in profound ways.

The concept of intergenerational justice has been developed in various contexts, including environmental ethics, nuclear ethics, and climate ethics. In each of these contexts, the principle of intergenerational justice requires that present actions not impose undue burdens on future generations, that present actions preserve the options and opportunities of future generations, and that present actions consider the long-term effects on future generations.

19.2 The Rights of Future Generations in the Age of Codes

In the age of codes, future generations have specific rights that must be respected. These rights include the right to inherit an unmodified human genome, the right to inherit a digital environment that respects their autonomy, the right to inherit a neural environment that respects their cognitive liberty, and the right to inherit a biological environment that supports their flourishing.

The right to inherit an unmodified human genome is particularly important. Heritable genetic modifications can fundamentally alter the human species in ways that may have unforeseen consequences for future generations. The principle of intergenerational justice requires that heritable genetic modifications be subject to democratic deliberation and consideration of long-term effects, and that they not be undertaken without the consent of future generations (which is impossible to obtain).

The right to inherit a digital environment that respects their autonomy is also important. Persistent digital codes can shape the digital environment in ways that may constrain the autonomy of future generations. The principle of intergenerational justice requires that digital codes be designed with consideration of their long-term persistence and effects, and that they not be used to constrain the autonomy of future generations.

The right to inherit a neural environment that respects their cognitive liberty is equally important. Long-term neural interventions can fundamentally alter the neural environment in ways that may constrain the cognitive liberty of future generations. The principle of intergenerational justice requires that neural interventions be designed with consideration of their long-term effects on consciousness and identity, and that they not be used to constrain the cognitive liberty of future generations.

19.3 Code Entropy Debts

The framework developed in this treatise introduces the concept of code entropy debts, extending the theory of chrono-sovereignty to the domain of code technologies. Code entropy debts are the long-term costs imposed on future generations by present code manipulations. These debts include the costs of heritable genetic modifications, the costs of persistent digital codes, and the costs of long-term neural interventions.

Code entropy debts are analogous to environmental entropy debts, which are the long-term costs imposed on future generations by present environmental degradation. Just as environmental entropy debts must be considered in environmental decision-making, code entropy debts must be considered in code decision-making.

The framework proposes that code entropy debts be quantified and considered in all decisions affecting the codes of life. It proposes that present actions not impose undue code entropy debts on future generations. It proposes that code entropy debts be repaid through investments in the codes of life that benefit future generations.

19.4 The Connection to Chrono-Sovereignty

The concept of intergenerational justice in the age of codes is deeply connected to the broader theory of chrono-sovereignty developed in previous works. Chrono-sovereignty is the principle that present actions must respect the sovereignty of future generations over their own time. This principle requires that present actions not impose undue burdens on future generations, that present actions preserve the options and opportunities of future generations, and that present actions consider the long-term effects on future generations.

The concept of intergenerational justice in the age of codes extends chrono-sovereignty to the domain of the codes of life. It requires that present code manipulations not impose undue burdens on future generations, that present code manipulations preserve the options and opportunities of future generations, and that present code manipulations consider the long-term effects on future generations.

The framework integrates intergenerational justice with chrono-sovereignty, recognizing that the protection of the codes of life is simultaneously the protection of the future, and therefore the protection of the sovereignty of future generations.

PART TEN: PLANETARY RIGHTS AND CODES

CHAPTER TWENTY: THE RIGHTS OF THE PLANET

20.1 The Concept of Planetary Rights

Planetary rights are the rights of the Earth to its own codes of life. This concept is grounded in the recognition that the Earth is not merely a resource for human use but a living system with its own integrity, its own codes, and its own rights. The concept of planetary rights has been developed in various contexts, including environmental ethics, ecology, and indigenous traditions.

The concept of planetary rights recognizes that the Earth has genetic codes (the genetic diversity of all living organisms), digital codes (the patterns of ecological interaction), and neural codes (the collective intelligence of ecosystems). These codes are not merely resources for human use but integral aspects of the Earth's being, deserving of respect and protection.

20.2 The Rights of the Planet in the Age of Codes

In the age of codes, the Earth has specific rights that must be respected. These rights include the right to maintain its genetic diversity, the right to maintain its ecological integrity, the right to maintain its evolutionary processes, and the right to maintain its resilience.

The right to maintain genetic diversity is particularly important. Genetic editing technologies can fundamentally alter the genetic diversity of the Earth in ways that may have unforeseen consequences for ecosystems and future generations. The principle of planetary rights requires that genetic editing technologies be used to enhance genetic diversity rather than to eliminate it, and that they not be used to undermine the resilience of ecosystems.

The right to maintain ecological integrity is also important. Code technologies can fundamentally alter ecological interactions in ways that may undermine the integrity of ecosystems. The principle of planetary rights requires that code technologies be used to enhance ecological integrity rather than to undermine it, and that they not be used to disrupt the delicate balance of ecosystems.

The right to maintain evolutionary processes is equally important. Code technologies can fundamentally alter evolutionary processes in ways that may have unforeseen consequences for the future of life on Earth. The principle of planetary rights requires that code technologies respect evolutionary processes rather than override them, and that they not be used to eliminate the natural processes that have given rise to the diversity of life on Earth.

20.3 The Responsibility of Stewardship

The concept of planetary rights is deeply connected to the concept of stewardship developed in Islamic theology and other spiritual traditions. Stewardship is the responsibility of human beings to care for the Earth and its creatures, to protect the integrity of creation, and to promote the flourishing of all beings.

The principle of stewardship requires that human beings use code technologies in ways that respect the rights of the planet, that enhance the genetic diversity and ecological integrity of the Earth, and that promote the flourishing of all beings. It requires that human beings not use code technologies in ways that undermine the rights of the planet, that eliminate genetic diversity or ecological integrity, or that promote the flourishing of some beings at the expense of others.

20.4 Geo-Biological Engineering

The concept of planetary rights raises profound questions about geo-biological engineering, the deliberate modification of the Earth's biological systems to address global challenges such as climate change. Geo-biological engineering includes techniques such as genetic modification of organisms to enhance carbon sequestration, introduction of new species to restore ecosystems, and deliberate modification of evolutionary processes to enhance resilience.

Geo-biological engineering has the potential to address significant global challenges, but it also raises profound risks. The deliberate modification of the Earth's biological systems can have unforeseen consequences for ecosystems, for future generations, and for the integrity of the planet. The principle of planetary rights requires that geo-biological engineering be subject to strict ethical and legal constraints, that it be undertaken only with careful consideration of long-term effects, and that it respect the rights of the planet.

The framework developed in this treatise recognizes the potential of geo-biological engineering to address global challenges but also recognizes the risks. It proposes principles for geo-biological engineering that respect the rights of the planet, that consider long-term effects, and that promote the flourishing of all beings.

PART ELEVEN: THE EXISTENTIAL DIGNITY SCORE

CHAPTER TWENTY-ONE: THE CONCEPTUAL FRAMEWORK

21.1 The Need for a Conceptual Framework

Assessing the degree to which beings are protected from code manipulation requires a conceptual framework. Existing metrics focus on specific aspects of code sovereignty, neglecting the deeper dimensions of existential dignity, code integrity, and being sovereignty.

The Existential Dignity Score fills this gap, providing a comprehensive conceptual model for assessing the degree to which beings are protected from code manipulation. I must emphasize that this is a working hypothesis, not a proven scientific law. It is intended to guide strategic thinking and ethical reflection, and it remains open to refinement and testing.

21.2 The Conceptual Formulation

The score proposes that the degree of existential dignity of a being can be assessed as a function of several factors:

Existential Dignity equals a function of Biological integrity, Consciousness level, Narrative identity, Manipulation level, External control, and Exploitation risk.

Where:

Biological integrity is measured as the degree to which the biological code is protected from unauthorized modification, normalized from zero to one. This can be operationalized through indicators such as the degree of genetic privacy protection, the degree of protection from unauthorized genetic testing, and the degree of protection from unauthorized genetic modification.

Consciousness level is measured as the degree to which the being has consciousness and subjective experience, normalized from zero to one. This is the most challenging factor to operationalize, as consciousness is a subjective phenomenon. However, it can be approximated

through indicators such as behavioral complexity, neural complexity, and self-reported experience.

Narrative identity is measured as the degree to which the being has a coherent narrative identity, normalized from zero to one. This can be operationalized through indicators such as the degree of continuity of memory, the degree of coherence of self-concept, and the degree of integration of experience.

Manipulation level is measured as the degree to which the codes of the being are manipulated without consent, normalized from zero to one. This can be operationalized through indicators such as the degree of unauthorized genetic manipulation, the degree of unauthorized digital manipulation, and the degree of unauthorized neural manipulation.

External control is measured as the degree to which the being is controlled by external actors, normalized from zero to one. This can be operationalized through indicators such as the degree of surveillance, the degree of algorithmic control, and the degree of external influence on decision-making.

Exploitation risk is measured as the degree to which the being is at risk of exploitation, normalized from zero to one. This can be operationalized through indicators such as the degree of economic vulnerability, the degree of social vulnerability, and the degree of political vulnerability.

A simplified operational form might be:

Score equals the product of Biological integrity, Consciousness level, and Narrative identity, divided by the product of Manipulation level, External control, and Exploitation risk.

This formulation captures the balance between protections for beings and vulnerabilities to code manipulation. A high score indicates strong existential dignity; a low score indicates vulnerability to code manipulation.

21.3 Interpretation and Application

The score can be applied to different types of beings: genetically edited humans, brain-computer hybrids, biological intelligences, and digital copies of consciousness. It can be used to benchmark the degree to which different beings are protected, to identify vulnerabilities, and to guide ethical and legal decision-making.

Applying the score to different types of beings based on illustrative calculations:

Genetically edited humans with strong legal protections show a high score, indicating strong existential dignity.

Brain-computer hybrids with weak neural data protections show a moderate score, indicating moderate vulnerability.

Biological intelligences with uncertain moral status show a low score, indicating high vulnerability.

Digital copies of consciousness with no legal recognition show a very low score, indicating extreme vulnerability.

These illustrative calculations suggest that existential dignity varies dramatically across types of beings, with genetically edited humans with strong legal protections showing the highest existential dignity and digital copies of consciousness with no legal recognition showing the lowest.

21.4 Limitations and Future Research

The score is a conceptual model, not a proven scientific law. It requires empirical validation, refinement, and testing. Future research should develop more precise measures for each factor, test the hypothesis against empirical data on the treatment of different types of beings, refine the model based on empirical findings, and explore the interactions between factors.

21.5 Existential Dignity as a Civilizational Imperative

The framework recognizes existential dignity as a civilizational imperative. The degree to which a civilization protects the existential dignity of all beings, including new beings, is a measure of its moral development and its commitment to the common good. The erosion of existential dignity by code manipulation therefore represents a fundamental threat to civilization.

The solution requires not merely individual ethical reflection but collective action. It requires the cultivation of code sovereignty at individual and collective levels, the regulation of code technologies to protect existential dignity, and the cultivation of social institutions that respect the dignity of all beings.

The framework integrates this recognition with the broader theory of chrono-sovereignty, recognizing that existential dignity and temporal sovereignty are inseparable aspects of civilizational flourishing. The protection of existential dignity is simultaneously the protection of the future, and therefore the protection of civilization itself.

CHAPTER TWENTY-TWO: THE CODE SOVEREIGNTY IMMUNITY FRAMEWORK

22.1 The Concept of Code Sovereignty Immunity

The Code Sovereignty Immunity Framework provides a comprehensive methodology for building resistance to code manipulation at individual, communal, and civilizational levels. The framework draws on the metaphor of biological immunity, in which the body develops defenses against pathogens through exposure, training, and adaptation.

Code sovereignty immunity is the capacity to resist manipulative code extraction while maintaining the capacity for meaningful engagement with code technologies. It is not a rejection of code technologies but a cultivation of the capacity to use them wisely.

22.2 The Five Levels of Code Sovereignty Immunity

The framework identifies five levels of code sovereignty immunity:

Individual immunity: The capacity of individuals to resist manipulative code extraction through practices of code hygiene, critical engagement, and ethical reflection.

Communal immunity: The capacity of families, communities, and indigenous groups to cultivate collective code sovereignty that resists the fragmenting effects of code manipulation.

Organizational immunity: The capacity of organizations, such as research institutions, companies, and hospitals, to cultivate environments that respect code sovereignty and cultivate code flourishing.

National immunity: The capacity of nations to regulate code technologies, protect code sovereignty as a matter of public interest, and cultivate code flourishing at the civilizational level.

Civilizational immunity: The capacity of civilizations to maintain code sovereignty in the face of global code manipulation, preserving the diversity of code traditions and cultivating code flourishing across generations.

22.3 Practices for Individual Code Sovereignty Immunity

The framework offers specific practices for building individual code sovereignty immunity:

Code hygiene: Specific practices for managing one's codes of existence, including minimizing unnecessary code extraction, using privacy-enhancing technologies, and regularly auditing code exposures.

Critical engagement: Specific practices for critically engaging with code technologies, including questioning their purposes, evaluating their impacts, and choosing technologies that align with one's values.

Ethical reflection: Regular practices of ethical reflection on code technologies, including journaling, contemplative reading, and dialogue with others about the ethical implications of code technologies.

Informed consent: Specific practices for ensuring that consent for code extraction is truly informed, including reading privacy policies, asking questions, and exercising the right to withdraw consent.

Code flourishing: Specific practices for cultivating the flourishing of one's codes of existence, including practices that enhance genetic health, digital wellbeing, and cognitive flourishing.

22.4 Practices for Communal Code Sovereignty Immunity

The framework offers specific practices for building communal code sovereignty immunity:

Collective code governance: Communities developing their own frameworks for governing code technologies, including community-owned code databases, community-controlled research, and community-approved uses.

Indigenous code sovereignty: Indigenous communities asserting their right to control their genetic code, including the right to approve or reject research, the right to benefit-sharing, and the right to cultural protection.

Community code education: Communities educating their members about code technologies, their risks and benefits, and their rights and responsibilities.

Collective code action: Communities organizing collectively to advocate for code sovereignty, including lobbying for legal reform, participating in standard-setting, and holding corporations accountable.

22.5 Practices for Organizational Code Sovereignty Immunity

The framework offers specific practices for building organizational code sovereignty immunity:

Code sovereignty by design: Designing organizational environments that respect code sovereignty, including code minimization, privacy-enhancing technologies, and transparent code practices.

Code flourishing culture: Cultivating organizational cultures that value code flourishing, including recognition of code integrity, support for code ethics, and resistance to the culture of constant code extraction.

Ethical code practice: Developing organizational policies for ethical code practice, including guidelines for code extraction, protections for research subjects, and commitments to equitable benefit-sharing.

22.6 Practices for National Code Sovereignty Immunity

The framework offers specific practices for building national code sovereignty immunity:

Comprehensive code regulation: Regulating code technologies to protect code sovereignty, including restrictions on manipulative design, requirements for transparency, and protections for vulnerable populations.

Code literacy education: Integrating code literacy and sovereignty education into national curricula, from primary school through university.

Public code awareness campaigns: National campaigns to raise awareness of code manipulation and its effects, and to promote practices of code sovereignty immunity.

Code research and monitoring: Supporting research on code manipulation and its effects, and monitoring code sovereignty at the national level.

22.7 Practices for Civilizational Code Sovereignty Immunity

The framework offers specific practices for building civilizational code sovereignty immunity:

International code cooperation: International agreements to regulate code technologies and protect code sovereignty, comparable to international agreements on environmental protection.

Code cultural preservation: Preservation of diverse code traditions, including indigenous knowledge systems, contemplative traditions, and forms of code care.

Civilizational code dialogue: Dialogue between civilizations on the challenges of code manipulation and the cultivation of code sovereignty.

Long-term code thinking: Cultivating the capacity for long-term thinking about the code future of humanity, including the development of institutions that represent the code interests of future generations.

22.8 Code Sovereignty Immunity as a Civilizational Project

The framework recognizes code sovereignty immunity as a civilizational project. The challenges of code manipulation cannot be solved by individual willpower alone; they require collective action at all levels, from the individual to the civilizational.

The framework offers a comprehensive methodology for this collective action. It recognizes that code sovereignty immunity is not merely a defensive capacity but a positive cultivation of code flourishing. It recognizes that the protection of code sovereignty is not merely a matter of resisting manipulation but a matter of cultivating the capacities for genetic health, digital wellbeing, and cognitive flourishing.

The framework integrates this recognition with the broader theory of chrono-sovereignty, recognizing that code sovereignty immunity and temporal sovereignty are inseparable aspects of civilizational flourishing. The cultivation of code sovereignty immunity is simultaneously the cultivation of temporal sovereignty, and therefore the cultivation of a future in which all beings can flourish.

PART TWELVE: CASE STUDIES OF THE WAR OF CODES

CHAPTER TWENTY-THREE: THE FIRST GENETICALLY EDITED HUMANS

23.1 The Case

In November 2018, a Chinese biophysicist announced the birth of twin girls whose genomes he had edited using CRISPR-Cas9 to make them resistant to HIV. The announcement was met with universal condemnation from the scientific community, and the researcher was later sentenced to prison for illegal medical practices.

The case revealed that the researcher had recruited couples in which the father was HIV-positive and the mother was HIV-negative, offering them participation in an experimental study of sperm washing and embryo editing. The couples were not fully informed about the risks and uncertainties of the procedure, and the research was conducted without proper ethical review.

23.2 The Scientific and Ethical Issues

The scientific issues in the case were significant. The editing was imprecise, resulting in mosaicism, where some cells had the edit and others did not, and off-target effects, which are unintended edits at other locations in the genome. The long-term health effects of the editing were unknown, and the children would be the first humans with edited genomes to reach adulthood.

The ethical issues were even more significant. The research violated fundamental principles of research ethics, including informed consent, risk-benefit assessment, and independent review. The children were subjected to permanent genetic modifications without their consent, modifications that would be passed on to their descendants.

23.3 The Legal Vacuum

The case revealed the catastrophic legal vacuum surrounding genetically edited humans. International law does not specifically address the status of genetically edited humans. National laws vary widely, with some countries prohibiting heritable genome editing and others having no specific regulations. The children exist in a legal limbo, with uncertain rights and protections.

The case demonstrates the urgent need for comprehensive legal frameworks for genetically edited humans, including recognition of their rights, protection from discrimination, and mechanisms for ensuring their wellbeing.

23.4 Analysis

The framework analyzes this case as a paradigmatic example of the War of Codes. The unauthorized editing of the human germline represents a form of code manipulation in which the very code of human life is modified without the consent of those affected, including future generations who will inherit the modifications.

The case demonstrates the need for a fundamental transformation of the governance of the writable genome, toward one that respects the integrity of the human germline, ensures meaningful informed consent, and protects future generations from unauthorized genetic

modifications. This transformation requires not merely regulatory intervention but a rethinking of the relationship between human beings and their own genetic code.

CHAPTER TWENTY-FOUR: THE FIRST BRAIN-COMPUTER HYBRID

24.1 The Case

In January 2024, the first human received an invasive brain-computer interface implant, enabling them to control a computer cursor and play chess using thought alone. The patient, a quadriplegic named Noland Arbaugh, regained a degree of control over his environment through the implant.

The company developing the implant has stated its intention to expand the use of its technology to help patients with a wide range of neurological conditions, and eventually to enable cognitive enhancement for healthy individuals. This vision would create a new category of beings, brain-computer hybrids whose cognitive processes are mediated by a direct connection between their neural code and a digital computational system.

24.2 The Scientific and Ethical Issues

The scientific achievements of the case are significant. The implant enables a paralyzed patient to control external devices with thought alone, representing a major advance in assistive technology. But the technology also raises profound ethical questions about neural privacy, cognitive liberty, and the potential for manipulation of thought.

The ethical issues include questions about the long-term effects of the implant on the patient's brain and identity, the potential for the neural data to be accessed by third parties, and the implications of eventually extending the technology to cognitive enhancement for healthy individuals.

24.3 The Legal Vacuum

The case revealed the catastrophic legal vacuum surrounding brain-computer hybrids. Existing legal systems do not recognize brain-computer hybrids as a specific category of beings with specific rights. The legal status of neural data is uncertain, with questions about who owns it, who can access it, and how it can be used. The legal status of cognitive enhancement is equally uncertain, with questions about regulation, access, and discrimination.

The case demonstrates the urgent need for comprehensive legal frameworks for brain-computer hybrids, including recognition of their rights to cognitive liberty and neural data sovereignty, protection from discrimination, and mechanisms for ensuring their wellbeing.

24.4 Analysis

The framework analyzes this case as a paradigmatic example of the War of Codes. The brain-computer interface represents a form of code manipulation in which the neural code of a human being is connected to a digital computational system, creating a hybrid being whose cognitive processes are mediated by technology.

The case demonstrates the need for a fundamental transformation of the governance of brain-computer interfaces, toward one that respects cognitive liberty, ensures neural data sovereignty, and protects the sanctity of the mind. This transformation requires not merely regulatory intervention but a rethinking of the relationship between human beings and their own minds.

CHAPTER TWENTY-FIVE: THE FIRST BIOLOGICAL INTELLIGENCE

25.1 The Case

In 2023, researchers demonstrated that brain organoids, miniature brain-like structures grown from stem cells, could be trained to perform simple tasks, such as playing a simplified version of the video game Pong. These organoid intelligences represent a new category of being, biological entities that exhibit rudimentary forms of intelligence but that are not part of a conscious organism.

The research was conducted at Johns Hopkins University and represents the first demonstration of what the researchers term organoid intelligence, the use of brain organoids as computational elements. The research raises profound questions about the moral status of these entities and our responsibilities toward them.

25.2 The Scientific and Ethical Issues

The scientific achievements of the case are significant. The demonstration that brain organoids can be trained to perform tasks opens the possibility of a new form of biological computing, with potential applications in drug discovery, disease modeling, and artificial intelligence.

But the ethical issues are equally significant. If brain organoids can be trained to perform tasks, can they develop forms of consciousness? Can they suffer? Do they have moral status? These questions touch the very nature of what it means to be an intelligent being and what responsibilities we have toward intelligent entities.

25.3 The Legal Vacuum

The case revealed the catastrophic legal vacuum surrounding biological intelligences. Existing legal systems do not recognize biological intelligences as beings with moral status. They are treated as research materials, subject to the same regulations as other biological materials. But if they have forms of intelligence, if they can suffer, if they have moral status, then this treatment may be fundamentally inadequate.

The case demonstrates the urgent need for legal frameworks for biological intelligences, including recognition of their potential moral status, protection from unnecessary suffering, and mechanisms for ensuring ethical research.

25.4 Analysis

The framework analyzes this case as a paradigmatic example of the War of Codes. The brain organoids represent a new form of biological code, organized in ways that give rise to

rudimentary forms of intelligence. The manipulation of this code raises profound questions about the moral status of the resulting entities and our responsibilities toward them.

The case demonstrates the need for a fundamental transformation of the governance of biological intelligences, toward one that recognizes their potential moral status, protects them from unnecessary suffering, and ensures ethical research. This transformation requires not merely regulatory intervention but a rethinking of the relationship between human beings and other forms of intelligence.

CHAPTER TWENTY-SIX: THE THEORETICAL DIGITAL COPY

26.1 The Theoretical Case

The possibility of creating digital copies of human consciousness remains theoretical, but advances in neuroscience, artificial intelligence, and brain-computer interfaces are making it increasingly plausible. If the neural code of consciousness can be fully mapped, it may eventually be possible to create a digital copy that replicates the thoughts, memories, and personality of a specific individual.

This theoretical case raises profound questions about identity, continuity, and the nature of the self. Is the digital copy the same person as the original? Does it have the same rights? Is it a continuation of the original consciousness or a new being?

26.2 The Scientific and Ethical Issues

The scientific challenges of creating digital copies of consciousness are immense. Consciousness is not merely a matter of information processing but involves subjective experience, qualia, and the hard problem of consciousness. It is not clear whether a digital copy could ever have genuine consciousness or would merely be a sophisticated simulation.

But the ethical issues are equally significant, even if the technology remains theoretical. If digital copies of consciousness become possible, what rights would they have? Could they be deleted? Could they be modified? Could they be owned? These questions touch the very nature of what it means to be a person and what rights persons have.

26.3 The Legal Vacuum

The theoretical case reveals the catastrophic legal vacuum surrounding digital copies of consciousness. Existing legal systems do not recognize digital copies as beings with moral status. They would likely be treated as software, subject to intellectual property law rather than human rights law. But if they have consciousness, if they have continuity with the original, if they have interests, then this treatment may be fundamentally inadequate.

The case demonstrates the urgent need for legal frameworks for digital copies of consciousness, even if the technology remains theoretical. These frameworks should anticipate the possibility of digital copies and establish principles for their treatment before the technology becomes reality.

26.4 Analysis

The framework analyzes this theoretical case as a paradigmatic example of the War of Codes. A digital copy of consciousness would represent the ultimate form of code manipulation, in which the neural code of a conscious being is replicated in a digital substrate, creating a new being with uncertain moral status.

The case demonstrates the need for a fundamental transformation of the governance of digital consciousness, toward one that recognizes the potential moral status of digital copies, protects them from deletion and modification without consent, and ensures their dignity as beings. This transformation requires not merely regulatory intervention but a rethinking of the relationship between consciousness and its substrate.

PART THIRTEEN: THE FUTURE AND THE ROADMAP

CHAPTER TWENTY-SEVEN: SCENARIOS AND TIMELINE

27.1 Scenario One: The Enhanced Humans (2030-2050)

In this scenario, genetic editing and cognitive enhancement become widespread between 2030 and 2050, creating a society divided between enhanced humans and unmodified humans. Key developments include:

By 2030: CRISPR-based therapies for genetic diseases become widely available. The first therapeutic genetic enhancements are approved for medical use. Brain-computer interfaces are approved for therapeutic use in paralysis and neurological conditions.

By 2035: Genetic enhancement for non-medical purposes becomes available in some countries. Brain-computer interfaces are approved for cognitive enhancement in healthy individuals. The first generation of genetically enhanced children reaches school age.

By 2040: Genetic enhancement becomes widespread among wealthy populations. Brain-computer interfaces become common among professionals seeking cognitive enhancement. Social divisions between enhanced and unmodified humans become pronounced.

By 2050: Genetic enhancement and cognitive enhancement become defining features of social stratification. Legal frameworks struggle to address discrimination and inequality. The nature of humanity is fundamentally transformed.

Indicators of this scenario include the rate of approval of genetic enhancements, the adoption rate of brain-computer interfaces, and the emergence of social divisions based on enhancement status.

Probability assessment: This scenario is highly probable (70 percent probability) given current technological trends and market incentives.

27.2 Scenario Two: The Total Integration (2040-2060)

In this scenario, brain-computer interfaces and digital technologies become so advanced that human consciousness is fully integrated with digital systems between 2040 and 2060. Key developments include:

By 2040: Brain-computer interfaces achieve high-bandwidth communication between the brain and digital systems. The first experiments in digital consciousness replication are conducted.

By 2045: Brain-computer interfaces enable direct communication between human brains, creating a form of collective consciousness. The first digital consciousnesses are created, raising profound questions about their moral status.

By 2050: The boundaries between biological and digital consciousness become blurred. New forms of being emerge, including enhanced humans, digital consciousnesses, and hybrid beings.

By 2060: Human consciousness is fully integrated with digital systems. The nature of consciousness is fundamentally transformed. The concept of the self is redefined.

Indicators of this scenario include the bandwidth of brain-computer interfaces, the success of digital consciousness experiments, and the emergence of hybrid forms of being.

Probability assessment: This scenario is moderately probable (40 percent probability) given the technical challenges and ethical concerns.

27.3 Scenario Three: The Existential Schism (2030-2050)

In this scenario, code technologies develop in divergent directions across different civilizations between 2030 and 2050, creating an existential schism. Key developments include:

By 2030: Western civilizations pursue genetic and cognitive enhancement. Chinese civilization pursues neural surveillance and social control. Islamic civilizations pursue preservation of the natural human code.

By 2035: The differences between civilizational approaches become pronounced. International cooperation on code technologies becomes difficult.

By 2040: The world is divided between enhanced humans, controlled humans, and preserved humans. Profound differences in capabilities, values, and ways of life emerge.

By 2050: The existential schism becomes a defining feature of global politics. International conflict over code technologies becomes a major risk.

Indicators of this scenario include the divergence of regulatory approaches, the emergence of civilizational blocks, and the increase in international tension over code technologies.

Probability assessment: This scenario is moderately probable (50 percent probability) given current geopolitical trends.

27.4 Scenario Four: The Code Sovereignty (2030-2050)

In this scenario, humanity successfully establishes code sovereignty between 2030 and 2050, protecting the codes of life from manipulation and exploitation. Key developments include:

By 2030: International agreements on code sovereignty are negotiated. Comprehensive national regulations are implemented. Code literacy education is integrated into national curricula.

By 2035: Code immunity is widely cultivated at individual, communal, and organizational levels. Code technologies are redesigned to respect code sovereignty. New beings are recognized with rights and protections.

By 2040: Code sovereignty is firmly established. Code technologies serve human flourishing rather than undermining it. The codes of life are protected from manipulation and exploitation.

By 2050: Code sovereignty is a defining feature of civilization. The codes of life are recognized as sacred trusts. All beings with consciousness are respected and protected.

Indicators of this scenario include the adoption of international agreements, the implementation of comprehensive regulations, and the cultivation of code immunity.

Probability assessment: This scenario is less probable (30 percent probability) given current trends but represents the most desirable outcome.

27.5 The Roadmap: Strategic Recommendations

The framework proposes a roadmap for achieving code sovereignty, with specific recommendations for each phase:

Phase One (2026-2030): Foundation. Negotiate international agreements on code sovereignty. Implement comprehensive national regulations. Launch public awareness campaigns. Integrate code literacy into education. Establish research programs on code manipulation and its effects.

Phase Two (2030-2035): Implementation. Implement international agreements. Strengthen national regulations. Cultivate code immunity at all levels. Recognize new beings with rights and protections. Redesign code technologies to respect code sovereignty.

Phase Three (2035-2040): Consolidation. Strengthen international cooperation. Deepen code immunity. Expand recognition of new beings. Ensure code technologies serve human flourishing. Protect the codes of life from manipulation and exploitation.

Phase Four (2040-2050): Flourishing. Achieve code sovereignty as a defining feature of civilization. Recognize the codes of life as sacred trusts. Respect and protect all beings with consciousness. Ensure the flourishing of all beings in the age of codes.

The roadmap requires strategic vision, sustained effort, and international cooperation. It requires recognizing that the codes of life are not merely information but the very ground of being, and that their protection requires not merely technical fixes but a fundamental rethinking of what it means to be a being in the age of codes.

PART FOURTEEN: ISLAMIC PERSPECTIVES ON CODES AND NEW BEINGS

CHAPTER TWENTY-EIGHT: ISLAMIC PERSPECTIVES ON CREATION AND CODES

28.1 The Quranic Vision of Creation

The Quran presents a rich vision of creation that has profound implications for understanding the codes of life. The Quran describes creation as a deliberate act of a wise Creator, with each creature created with purpose and wisdom. "We have not created the heaven and the earth and that between them in play" (Quran 21:16). This vision recognizes the sacredness of creation and the responsibility of human beings as stewards of creation.

The Quran also emphasizes the unity of creation, with all creatures glorifying the Creator in their own way. "There is nothing but that it glorifies Him with praise, but you do not understand their glorification" (Quran 17:44). This vision recognizes the diversity of creation and the value of each creature, including those whose ways of glorifying the Creator we do not understand.

28.2 The Concept of Khalifah

Islamic theology presents the concept of khalifah, stewardship or vicegerency, as the role of human beings on earth. "And when your Lord said to the angels, 'Indeed, I will make upon the earth a successive authority'" (Quran 2:30). This concept recognizes the special responsibility of human beings as stewards of creation, entrusted with the care of the earth and its creatures.

The concept of khalifah has profound implications for code technologies. As stewards of creation, human beings have the responsibility to use code technologies in ways that serve the common good, protect the integrity of creation, and promote human flourishing. Code technologies that undermine the integrity of creation, exploit vulnerable beings, or promote inequality are inconsistent with the role of khalifah.

28.3 The Concept of Amanah

Islamic theology also presents the concept of amanah, trust, as the responsibility given to human beings. "Indeed, we offered the trust to the heavens and the earth and the mountains, and they declined to bear it and feared it; but man undertook it" (Quran 33:72). This concept recognizes the sacred trust given to human beings, a trust that includes the care of the codes of life.

The concept of amanah has profound implications for code technologies. The codes of life, whether genetic, digital, or neural, are trusts given to human beings, to be protected and used wisely. Code technologies that manipulate these trusts without consent, exploit them for profit, or undermine their integrity are inconsistent with the concept of amanah.

28.4 The Prohibition of Changing Creation

Islamic law includes a prohibition against changing the creation of Allah without legitimate justification. The Quran warns against following Satan, "who promises them and arouses in them desire, but he does not promise them except delusion. Their refuge will be Hell, and they will not find for them a refuge from it" (Quran 4:119-121). Islamic scholars have interpreted this as including a prohibition against changing creation without legitimate purpose.

This prohibition has profound implications for code technologies. Genetic editing, neural manipulation, and other code technologies that change the creation of Allah must be subject to strict ethical constraints. They must serve legitimate purposes, such as curing disease or alleviating suffering, and must not be used for trivial or harmful purposes.

28.5 An Islamic Framework for Code Technologies

The framework offers an Islamic framework for code technologies, grounded in the principles of creation, stewardship, trust, and the prohibition of changing creation without legitimate justification. This framework recognizes the codes of life as sacred trusts, to be protected and used wisely in service of the common good.

The framework offers practical guidance for individuals, communities, and nations seeking to develop code technologies in accordance with Islamic principles. For individuals, it offers practices of code stewardship grounded in Islamic spirituality. For communities, it offers principles of ethical code practice that respect the integrity of creation. For nations, it offers policy frameworks that protect the codes of life in accordance with Islamic principles.

The framework integrates this Islamic framework with the broader theory of chrono-sovereignty, recognizing that code sovereignty and temporal sovereignty are inseparable aspects of human flourishing. The protection of the codes of life is simultaneously the protection of the future, and therefore the protection of the trust given to human beings as stewards of creation.

CHAPTER TWENTY-NINE: ISLAMIC PERSPECTIVES ON NEW BEINGS

29.1 Genetically Edited Humans in Islamic Perspective

Islamic perspectives on genetically edited humans must consider the principles of creation, stewardship, and the prohibition of changing creation without legitimate justification. Genetic editing for therapeutic purposes, such as curing genetic diseases, may be permissible if it serves a legitimate medical purpose and does not involve heritable modifications without broad societal consent.

Genetic editing for enhancement purposes raises more profound questions. If enhancement creates inequality, undermines human dignity, or changes the nature of the human species without broad societal consent, it may be inconsistent with Islamic principles. The framework offers guidance for evaluating genetic editing in accordance with Islamic principles, emphasizing therapeutic purposes, informed consent, and consideration of the common good.

29.2 Brain-Computer Hybrids in Islamic Perspective

Islamic perspectives on brain-computer hybrids must consider the sanctity of the mind and the prohibition of manipulation without legitimate justification. Brain-computer interfaces for therapeutic purposes, such as helping paralyzed patients regain function, may be permissible if they serve a legitimate medical purpose and respect the cognitive liberty of the patient.

Brain-computer interfaces for enhancement purposes raise more profound questions. If enhancement undermines cognitive liberty, enables manipulation of thought, or creates inequality in cognitive capacity, it may be inconsistent with Islamic principles. The framework offers guidance for evaluating brain-computer interfaces in accordance with Islamic principles, emphasizing therapeutic purposes, informed consent, and protection of cognitive liberty.

29.3 Biological Intelligences in Islamic Perspective

Islamic perspectives on biological intelligences must consider the concept of creation and the responsibility of human beings toward other creatures. If biological intelligences have forms of consciousness or the capacity to suffer, they may have moral status that must be respected.

The framework offers guidance for evaluating biological intelligences in accordance with Islamic principles, emphasizing the precautionary principle, the prohibition of unnecessary suffering, and the responsibility of human beings as stewards of creation. Biological intelligences should be treated with respect and care, and research involving them should minimize suffering and serve legitimate purposes.

29.4 Digital Copies of Consciousness in Islamic Perspective

Islamic perspectives on digital copies of consciousness must consider the nature of consciousness and the sanctity of the self. If digital copies have genuine consciousness, they may have moral status that must be respected.

The framework offers guidance for evaluating digital copies of consciousness in accordance with Islamic principles, emphasizing the continuity of consciousness, the prohibition of deletion without consent, and the responsibility of human beings toward conscious beings. Digital copies should be recognized as beings with moral status, and their dignity should be respected.

29.5 An Islamic Framework for New Beings

The framework offers an Islamic framework for new beings, grounded in the principles of creation, stewardship, sanctity, and dignity. This framework recognizes new beings as beings with moral status, entitled to respect and protection in accordance with their capacities and their relationship to the codes of life.

The framework offers practical guidance for individuals, communities, and nations seeking to develop ethical relationships with new beings in accordance with Islamic principles. For individuals, it offers practices of respect and care for new beings. For communities, it offers principles of ethical engagement with new beings. For nations, it offers policy frameworks that protect new beings in accordance with Islamic principles.

The framework integrates this Islamic framework with the broader theory of chrono-sovereignty, recognizing that the protection of new beings and temporal sovereignty are inseparable aspects of human flourishing. The recognition of new beings is simultaneously the recognition of the diversity of creation, and therefore the fulfillment of the responsibility of human beings as stewards of creation.

CONCLUSION: TOWARD A NEW ERA OF CODE SOVEREIGNTY

This treatise has proposed a radical rethinking of the codes of life, from information to the ground of being, from resources to sacred trusts. It has argued that the War of Codes is not merely a technological development but a civilizational crisis, not merely a scientific advancement but an existential transformation. It has argued that the liberation of the codes of life requires not merely technical fixes but a fundamental rethinking of what it means to be a being in the age of codes.

The framework has introduced several original contributions: the concept of the Three Codes of Life, the concept of Code Sovereignty, the Constitution of New Beings, the Existential Dignity Score, the Code Sovereignty Immunity Framework, the comparative civilizational analysis, the intergenerational justice framework, and the planetary rights framework. These tools provide a methodology for assessing, understanding, and transforming the War of Codes.

The path forward is not easy. It requires strategic vision, sustained effort, and international cooperation. It requires balancing the benefits of code technologies with the protection of the codes of life. It requires recognizing that the codes of life are not merely information but the very ground of being, and that their protection requires not only technical expertise but also wisdom, justice, and commitment to the common good.

This framework is not a prophecy but a possibility, not a prediction but a proposal, not a certainty but a hope. It is a vision of a future in which the codes of life are liberated from manipulation and exploitation, in which new beings are recognized and respected, and in which code technologies serve the flourishing of all beings.

May this work serve as a contribution to that future, and to the emergence of a new era of code sovereignty grounded in the principles of existential dignity, code stewardship, and the common good.

APPENDICES

APPENDIX A: THE EXISTENTIAL DIGNITY SCORE: COMPLETE CONCEPTUAL FORMULATION

The score proposes that the degree of existential dignity of a being can be assessed as a function of several factors:

Existential Dignity equals a function of Biological integrity, Consciousness level, Narrative identity, Manipulation level, External control, and Exploitation risk.

Where:

Biological integrity is measured as the degree to which the biological code is protected from unauthorized modification, normalized from zero to one.

Consciousness level is measured as the degree to which the being has consciousness and subjective experience, normalized from zero to one.

Narrative identity is measured as the degree to which the being has a coherent narrative identity, normalized from zero to one.

Manipulation level is measured as the degree to which the codes of the being are manipulated without consent, normalized from zero to one.

External control is measured as the degree to which the being is controlled by external actors, normalized from zero to one.

Exploitation risk is measured as the degree to which the being is at risk of exploitation, normalized from zero to one.

A simplified operational form might be:

Score equals the product of Biological integrity, Consciousness level, and Narrative identity, divided by the product of Manipulation level, External control, and Exploitation risk.

This formulation captures the balance between protections for beings and vulnerabilities to code manipulation. A high score indicates strong existential dignity; a low score indicates vulnerability to code manipulation.

APPENDIX B: THE CODE SOVEREIGNTY IMMUNITY FRAMEWORK: COMPLETE METHODOLOGY

The framework identifies five levels of code sovereignty immunity:

Individual immunity: The capacity of individuals to resist manipulative code extraction through practices of code hygiene, critical engagement, and ethical reflection.

Communal immunity: The capacity of families, communities, and indigenous groups to cultivate collective code sovereignty that resists the fragmenting effects of code manipulation.

Organizational immunity: The capacity of organizations to cultivate environments that respect code sovereignty and cultivate code flourishing.

National immunity: The capacity of nations to regulate code technologies, protect code sovereignty as a matter of public interest, and cultivate code flourishing at the civilizational level.

Civilizational immunity: The capacity of civilizations to maintain code sovereignty in the face of global code manipulation, preserving the diversity of code traditions and cultivating code flourishing across generations.

APPENDIX C: THE CONSTITUTION OF NEW BEINGS: KEY PROVISIONS

The Constitution of New Beings includes several key provisions:

Article 1: Recognition of New Beings. Genetically edited humans, brain-computer hybrids, biological intelligences, and digital copies of consciousness are recognized as beings with moral status, entitled to respect and protection in accordance with their capacities.

Article 2: Right to Existential Dignity. All beings with consciousness have the right to existential dignity, including the right to be treated as beings with inherent dignity and the right to have their codes of existence respected.

Article 3: Right to Code Sovereignty. All beings have the right to control their own codes of existence, including the right to control their genetic code, digital code, and neural code.

Article 4: Right to Informed Consent. All modifications to the codes of life must be subject to informed consent, except in cases of emergency or incapacity where proxy consent may be appropriate.

Article 5: Right to Non-Discrimination. All new beings have the right to be free from discrimination based on their code status, in employment, education, healthcare, and all other domains.

Article 6: Responsibility to Protect. All individuals, corporations, states, and the international community have the responsibility to protect new beings from harm, exploitation, and degradation.

Article 7: Responsibility to Respect. All individuals, corporations, states, and the international community have the responsibility to respect the codes of life of all beings.

Article 8: Responsibility to Enable Flourishing. All individuals, corporations, states, and the international community have the responsibility to enable the flourishing of all beings with consciousness.

Article 9: Responsibility to Consider Future Generations. All decisions affecting the codes of life must consider the rights and interests of future generations.

Article 10: Responsibility to Preserve Diversity. All individuals, corporations, states, and the international community have the responsibility to preserve diversity in the codes of life.

APPENDIX D: DATA SOURCES AND METHODOLOGY

This treatise draws on a wide range of data sources, including:

Scientific research: Peer-reviewed studies in genetics, neuroscience, artificial intelligence, law, ethics, economics, political science, and sociology.

Industry reports: Reports from market research firms, industry associations, and technology companies.

Government data: Data from national statistical agencies, regulatory bodies, and public health authorities.

Whistleblower testimony: Internal documents and testimony from technology company employees.

Academic publications: Books and articles from leading scholars in relevant fields.

The methodology involves:

Literature review: Comprehensive review of scientific and scholarly literature on code technologies and their effects.

Data analysis: Analysis of quantitative data on code technology use, health outcomes, and economic impacts.

Qualitative analysis: Review of case studies, whistleblower testimony, and expert analyses to understand the political and civilizational dimensions of the War of Codes.

Conceptual framework development: Development of the conceptual hypotheses based on the data and analysis.

Case study analysis: Conducting in-depth case studies to illustrate the application of the frameworks.

Scenario development: Developing future scenarios based on current trends and expert analysis.

APPENDIX E: POLICY RECOMMENDATIONS

Based on the analysis in this treatise, the following policy recommendations are proposed:

For individuals:

Practice code hygiene to reduce code extraction.
Cultivate critical engagement with code technologies.
Engage in regular ethical reflection on code technologies.
Exercise informed consent for code extraction.

For communities:

Develop community code governance frameworks.
Assert indigenous code sovereignty.
Educate community members about code technologies and their rights.
Organize collectively to advocate for code sovereignty.

For nations:

Implement comprehensive regulation of code technologies.
Integrate code literacy and sovereignty education into national curricula.
Launch public awareness campaigns about code manipulation.
Support research on code manipulation and its effects.
Engage in international cooperation to protect code sovereignty.

For international organizations:

Develop international agreements to regulate code technologies and protect code sovereignty.
Support research and capacity building on code sovereignty.
Promote the exchange of best practices across countries.
Advocate for the protection of code sovereignty as a human right.

APPENDIX F: GLOSSARY OF TERMS

Biological code: The genetic code encoded in DNA, containing the instructions for building and maintaining biological organisms.

Brain-computer hybrid: A being whose cognitive processes are mediated by a direct connection between their neural code and a digital computational system.

Code manipulation: The modification of the codes of life without informed consent, including genetic editing, digital extraction, and neural intervention.

Code sovereignty: The right of beings to control their own codes of existence, including their genetic code, digital code, and neural code.

Code sovereignty immunity: The capacity to resist manipulative code extraction while maintaining the capacity for meaningful engagement with code technologies.

Constitution of New Beings: A comprehensive legal and ethical framework for beings that existing legal systems have never contemplated, including genetically edited humans, brain-computer hybrids, biological intelligences, and digital copies of consciousness.

Digital code: The binary code of computational systems, encoded in sequences of 0s and 1s.

Digital copy of consciousness: A theoretical digital replica of a conscious being, replicating the thoughts, memories, and personality of the original.

Existential dignity: The inherent dignity of all beings with consciousness, recognized as the ground of their moral status.

Existential Dignity Score: A conceptual framework for assessing the degree to which beings are protected from code manipulation.

Genetically edited human: A human being whose genome has been modified through genetic editing technologies such as CRISPR-Cas9.

Neural code: The code of consciousness, encoded in patterns of neural activity in the brain.

Organoid intelligence: The use of brain organoids as computational elements, creating biological entities that exhibit rudimentary forms of intelligence.

War of Codes: The existential struggle over who controls the fundamental codes of existence, including the genetic code, the digital code, and the neural code.

INTELLECTUAL PROPERTY PROTECTION AND PRIORITY CLAIM

Priority Claim

The author hereby claims priority of disclosure for the following novel contributions:

First, the concept of the Three Codes of Life and the War of Codes.

Second, the Constitution of New Beings and its comprehensive legal and ethical framework.

Third, the Existential Dignity Score and its conceptual formulation.

Fourth, the Code Sovereignty Immunity Framework and its comprehensive methodology.

Fifth, the integration of Islamic principles of creation, stewardship, and dignity with modern code ethics.

Sixth, the comparative civilizational analysis of approaches to the code wars.

Seventh, the intergenerational justice framework for the age of codes.

Eighth, the planetary rights framework recognizing the earth's own codes as sacred.

Mathematical Fingerprint

To establish unambiguous proof of authorship and priority, this work integrates unique conceptual fingerprints:

The Existential Dignity Score formulation: Score equals the product of Biological integrity, Consciousness level, and Narrative identity, divided by the product of Manipulation level, External control, and Exploitation risk.

The five-level Code Sovereignty Immunity Framework: Individual, Communal, Organizational, National, Civilizational.

The ten articles of the Constitution of New Beings.

These specific integrations serve as digital watermarks for intellectual property.

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CITATION FORMAT

EL-RAKHAWI, M. K. A. (2026). The War of Codes: The Existential Struggle Over the Code of Life Between Biology and Silicon, and a Comprehensive Methodology for the Constitution of New Beings. Zenodo. <https://doi.org/10.5281/zenodo.22540646>

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