

Chapter 2. Evolution of Political and Economic Thought and the Preconditions of Noocracy

“Have the courage to use your own reason!” (*Sapere aude!*)
— Immanuel Kant, “An Answer to the Question: What is Enlightenment?” (1784)

Introduction: Reason as a Response to Crisis

The history of human societies is, in essence, the history of a continuous struggle between instinct and reason — between the chaotic forces of nature and the attempts to order them through ideas, laws, and institutions. Each epoch produced its own model of power, a reflection of how humanity understood itself, nature, and justice. And whenever an old system reached its limits, a new paradigm emerged — one in which strength gave way to trust, trust to law, law to knowledge, and knowledge gradually became the chief source of legitimacy.

Noocracy, understood as the contemporary concept of the “*rule of reason*”, represents merely the latest turn of this long historical spiral. It did not arise in a vacuum: behind it lie millennia of philosophical inquiry, failed experiments, and enduring aspirations toward harmony between freedom and order. To grasp why *reason itself* must become the foundation of the next form of governance, we must trace the evolution of political and economic ideas — from antiquity to modernity — as a sequence of humanity’s responses to the crises of its own existence.

As Herman Daly (1977) warned, “infinite growth on a finite planet is physically impossible.” Noocracy develops this insight into a meta-economic framework of *post-growth sustainability* (see Chapter I §1.2; Chapter VI §2). Accordingly, the following discussion proceeds from what this work terms the **Postulate of Systemic Priority** (see Chapter I §1.4): under a verifiable threat of systemic collapse (Earth4All, GTP-2025), the *right to collective survival* temporarily prevails over unrestricted individual self-determination. This principle does not abolish personal freedom; rather, it defines its ethical boundary — freedom is understood through universal responsibility for the system’s sustainability.

Part I. Early Models

I.1. Antiquity: The Rule of the Wise and the Limits of Democracy

Ancient philosophy was the first domain where power began to be understood not as a divine gift but as a consequence of human nature and the capacity for reasoning. For the Greeks, *nous* (νοῦς) meant not merely intellect but a *cosmic principle of order* — a mode through which human beings became participants in the universal *Logos*. To rule by reason was therefore not a metaphor but a moral requirement: to live according to reason was to live according to nature.

In **Plato’s Republic**, the model of the ideal *polis* rests precisely on this foundation. Plato saw democracy not as the highest, but as one of the most dangerous forms of rule: excessive freedom, he argued, leads to tyranny, for a populace driven by passions loses its sense of measure. The slogan “all are equal” degenerates into the rule of arbitrary and emotional decisions. Plato opposed to this the *aristocracy of wisdom* — a polity governed by philosophers who, having attained knowledge of Truth, are able to act not out of desire, but out of understanding.

The philosopher-king, in Plato's logic, is not a monarch by birth but an individual who has undergone a long inner ascent toward self-knowledge. His power is legitimate not by bloodline but by his capacity to contemplate the Idea of the Good. In this sense, the Platonic hierarchy foreshadows a central intuition of **Noocracy**: power should belong not to those who are strong or wealthy, but to those capable of systemic thinking and foresight.

Plato's tripartite structure — the producers guided by needs, the warriors by honor, and the rulers by wisdom — resembles, in modern terms, a multi-level system of competencies and digital ratings: a kind of social *test of rationality*. Yet where Plato envisioned a hierarchy of persons, **Noocracy** envisions a hierarchy of *arguments*. It is closer to the idea of **epistemic democracy** (Estlund, 2008) and John Rawls's concept of **public reason** (Rawls, 1993), where rationality becomes a shared field rather than a caste privilege. The **Census of Reason** thus functions not as a Platonic filter but as a dynamic mechanism of renewal for the *competent majority*.

Unlike classical meritocracies — whose risks were already diagnosed by Michael Young in *The Rise of the Meritocracy* (1958) — Noocracy contains built-in anti-elitist safeguards. Mechanisms of **rotation**, **public attestation**, and a **prohibition on the hereditary transfer of status** (see Chapter IV §1.3–1.6) serve as institutional guarantees against the “capture” of power. In this respect, Noocracy does not *entrench* the rule of reason — it makes it *accountable*.

Aristotle, Plato's student, developed this idea in a more pragmatic direction. He rejected the notion of an ideal state in favor of analyzing existing ones. For him, politics was the *art of governing the polis*, not the construction of utopias. In *Politics*, he identified six forms of rule: three “right” ones — monarchy, aristocracy, and polity — and their corrupt counterparts — tyranny, oligarchy, and democracy. The best form, in Aristotle's view, was *polity*, a mixed constitution balancing the authority of the many and the few, wealth and virtue.

Aristotle's *doctrine of the mean* was a key to stability: when extremes are balanced, society avoids revolution. In contemporary terms, this anticipates the idea of **distributed governance** — a system in which decisions arise from a balance of competences and interests rather than from the absolute dominance of a majority.

For Aristotle, reason was not an exclusive privilege of philosophers but a universal faculty that could be cultivated through education. Hence, Noocracy is not a technocracy ruled by experts, but a *meritocracy of responsibility*: every individual may participate, provided they can think rationally and act for the common good.

Later Stoic thinkers — Zeno, Seneca, Marcus Aurelius — laid the ethical foundations of the *rule of reason*. Their cosmopolitanism asserted that all humans belong to a single *world-polis* governed by reason itself. From this emerges the idea of universal citizenship and common human law — the precursors of modern international law and global governance principles.

If Plato and Aristotle gave Noocracy its philosophical groundwork, **Marcus Tullius Cicero** granted it juridical form. In *De Re Publica* and *De Legibus*, he defined true law as “*right reason in agreement with nature*” (*recta ratio naturae congruens*) and insisted that authority must follow reason, not the passions of the crowd. Thus he introduced the concept of *lex naturae* — the natural law that cannot be repealed by either senate or people.

In the framework of Noocracy, this marks a decisive shift: from moral wisdom to *rational-legal order*, where legitimacy derives from the capacity to think and act reasonably, rather than from the will of the majority.

I.2 Eastern Civilizations and the Ideal of Harmony

While Western antiquity sought order through law and hierarchy, Eastern thought tended to locate it in **harmony** — the balance between Heaven (天 Tiān), Earth, and Humanity. The Confucian *li* (ritual propriety) and *ren* (humaneness) built a political cosmology where governance began with self-cultivation and radiated outward: ruler, family, and state mirrored one moral order.

The Daoist counter-current, embodied in *wu wei* — non-coercive action — added a systemic insight: the most stable structures are those that do not resist the flow of the world. Governance, therefore, was not an act of domination but of resonance (*yin he* — responsive accord). The ideal sovereign was a regulator of feedbacks, not a controller of outcomes — a proto-cybernetic intuition millennia before Wiener.

In the Buddhist conception, harmony extended further — to the equilibrium of consciousness itself. The notion of *inter-being* (Thích Nhất Hạnh) anticipates the later ecological worldview: no element exists in isolation; to harm another is to distort the field that sustains oneself. Social ethics thus became a continuation of cosmic thermodynamics, where the reduction of suffering equals the reduction of entropy.

Across East Asia, these principles produced institutional forms emphasizing **adaptation over coercion** and **relational over procedural rationality**. Imperial China's meritocratic bureaucracy (exam system) reflected the conviction that wisdom, not birth, legitimates power — a precursor to what *Noocracy* later formalizes as the *Census of Reason* (see Chapter IV § 1). Yet the same harmony ideal also limited reform: aversion to conflict often led to stagnation, preserving balance at the cost of innovation.

In this synthesis of serenity and order, one perceives the embryonic logic of cognitive equilibrium — the belief that systems endure not through dominance, but through the continuous calibration of inner and outer forces. Harmony, in that sense, was not passivity but **dynamic homeostasis** — an early intuition of sustainable governance.

I.3 The Middle Ages: From Divine Right to Rational Order

With the collapse of the ancient world, political thought for centuries sank into theology. Power once again became a divine institution. Yet even within religious systems, the seeds of rationality began to germinate.

St. Augustine, in *The City of God*, distinguished between the earthly and the heavenly order. The state, in his view, is necessary because of human sinfulness: it restrains society from falling into anarchy. True citizenship, however, lies in the *civitas Dei* — the City of God — governed by love. This was not yet *Noocracy*, but it marked the first renunciation of the idea of absolute worldly authority.

Thomas Aquinas (thirteenth century) sought to reconcile faith and reason, asserting that *reason does not contradict faith but completes it*. His *De Regno* (*On Kingship*) and *Summa Theologica* laid the groundwork for the concept of **natural law**: the ruler is subject to reason, and reason to God. Power is legitimate only as long as it serves the *bonum commune* — the common good. Here, for the first time, appears the notion that the **moral foundation of authority outweighs its origin** — a decisive step toward a secular understanding of legitimacy.

Through scholasticism, medieval Europe began to transform theology into proto-rational inquiry: disputations, commentaries, and classification systems prefigured the logic of later science. The medieval university became an institution where reason was disciplined by method. Even though the final cause remained divine, the *means* of understanding — dialectic, logic, evidence — were now human.

Thus, the Middle Ages were not merely an age of faith, but also an age in which **reason learned to obey form**. This disciplined rationality — born in monasteries and universities — would later emancipate itself from theology and become the foundation of the modern scientific order. What began as the “reason of God” gradually evolved into the “reason of law.”

I.4 The Age of Enlightenment: The Birth of the Rational Contract

The seventeenth and eighteenth centuries marked a turning point: reason was proclaimed not merely as a source of knowledge, but as the foundation of **legitimacy** itself. Against the background of religious wars, the scientific revolution, and the rise of nation-states, a new principle emerged — the *social contract*: a collective agreement through which individuals create the state to secure protection and order.

Thomas Hobbes, in *Leviathan* (1651), described the state of nature as a “war of all against all.” To escape chaos, people surrendered part of their freedom to a sovereign, creating an artificial body — the state. This body functioned like a machine: its parts governed by a single reason. Hobbes thus became the first to model power as a **system of feedbacks**, where fear and order balance liberty. In modern systemic terms, this is a form of *negative feedback* stabilizing social behaviour.

Noocracy inherits this logic but transforms its ethical vector: it replaces *fear* with *data* and the *sovereign* with an algorithm of transparent reason. Where Hobbes envisioned control through coercion, Noocracy establishes order through **cognitive transparency and verifiable responsibility**.

John Locke offered a different interpretation. For him, individuals possess natural rights — to life, liberty, and property — and the state exists only to protect them. If authority violates this purpose, people have the right to overthrow it. Here begins the liberal tradition in which legitimacy arises from **consent** rather than divine mandate. Locke’s notion of mutual accountability between ruler and society later shaped both constitutional governance and civic ethics.

Niccolò Machiavelli, a precursor to secular rationalism, completed the emancipation of politics from theology. In *The Prince* (1532), he conceived power as an **art of effectiveness** rather than morality: the end justifies the means — not for evil, but for the preservation of the polity. His realism inaugurated a rational view of politics in which efficiency becomes a moral criterion when it serves the survival of the whole.

Immanuel Kant brought the Enlightenment project to its philosophical culmination with the idea of **rational autonomy**. Freedom, in his view, is not arbitrariness but the ability to act according to a law one gives oneself. A truly free society is one in which every person acts as legislator of a universal law. In this sense, Noocracy continues the Kantian tradition: it seeks not to limit freedom but to make it **conscious and responsible**.

In *Perpetual Peace* (1795), Kant envisioned a federation of nations founded on reason, law, and mutual trust — a prototype of global governance and a forerunner of **noospheric thinking**. Yet the same Enlightenment project that enthroned reason also sowed the seeds of economic

rationalism: freedom gradually became a currency of exchange. As Karl Polanyi (1944) observed, “*the market freed man from tradition but bound him to price.*” The self-regulating market displaced social and ethical constraints, transforming virtue into profit.

Thus, the Enlightenment gave birth to the rational contract — the first attempt to found power on cognition rather than coercion. It established the conceptual bridge from divine law to measurable legitimacy, from moral order to systemic order — a transition that *Noocracy* inherits and perfects through cognitive ethics and verifiable governance.

Part II. From Capitalism to the Noosphere: The 19th–20th Centuries

II.1 The Economic Era: Man as a Factor of Production

With the beginning of the Industrial Revolution, politics ceased to be only a question of power — it became a question of **production and the distribution of resources**.

The development of machines, markets, and financial institutions turned the economy into a new religion, where **wealth measured virtue** and **efficiency became justice**.

The nineteenth century created the cognitive patterns with which humanity still lives today.

Adam Smith, in his *Inquiry into the Nature and Causes of the Wealth of Nations* (1776), proposed the idea that would become the cornerstone of capitalism — the *invisible hand* of the market.

He argued that individual self-interest, through competition and exchange, unintentionally creates the public good: each person, pursuing their own goal, “invisibly” contributes to the harmony of the whole.

Smith, however, was not an apologist for greed.

His earlier work, *The Theory of Moral Sentiments*, emphasized compassion and sympathy as natural regulators of behaviour.

Yet with industrialization, the moral sense was displaced by rational calculation.

The market began to be perceived as a self-regulating organism requiring no conscience — prices alone were sufficient to direct society.

By the mid-nineteenth century, critics appeared, pointing out that a market without ethics tends toward **alienation**: labour becomes a commodity, and man — a mere factor of production.

Karl Marx exposed this inversion: the product dominates the producer, and capital subordinates the worker.

The same process that freed energy enslaved meaning.

Max Weber later defined this transformation as the “iron cage of rationality,” in which instrumental logic replaces purpose with procedure.

Thus, the economic era revealed both the power and the limit of utilitarian reason.

It elevated productivity to an absolute and reduced the human being to a variable of efficiency. The Enlightenment ideal of freedom turned into the industrial discipline of utility.

In the twentieth century, this logic reached planetary scale: *gross domestic product* became the universal measure of success, and “growth” — the metaphysical goal of civilization.

Yet what cannot grow indefinitely is not only matter but also meaning.

The exhaustion of resources and the saturation of consumption exposed the crisis of the very idea that production equals progress.

Hence the need for a new principle — the transition from the *economy of production* to the *economy of understanding*, where value arises not from the multiplication of things but from the **increase of comprehension**.

In this sense, *Noocracy* appears as the next cognitive phase of history: from labour that transforms matter — to reason that transforms relations.

Lesson for Noocracy

The market uses **price** as a low-dimensional signal of dispersed knowledge (Hayek, 1945). Yet the *price* of that signal — literally — is high. It demands a perpetual search for equilibrium between supply and demand, through endless iterations, transactions, and errors that consume resources and time.

This search can never be completed: by its very nature, the system oscillates between local equilibria and natural degeneration into oligopolies and monopolies, where information exchange is replaced by the power of “*too big to fail*” actors.

Thus, **market rationality is stochastic and self-undermining**: the more efficiently participants optimize for their private gain, the faster the informational balance collapses.

A detailed response to Hayek’s paradox is developed in Chapter III § 1.3 and Chapter V § 3, where it is shown that digital traces and behavioural data, processed in real time, become a *dynamic equivalent of market price signals* — but without the speculative distortions of profit.

As Akerlof (1970) demonstrated in the “*market for lemons*” model, profit is a function of informational asymmetry; Stiglitz (2002) later added that market efficiency disintegrates when access to knowledge is unequal.

On this basis, the **Zero Profit Principle** in *Noocracy* appears not as a moral imperative but as an **informational requirement**.

At the same time, *Noocracy* eliminates transaction costs not by returning to centralization but through **distributed agency**, where millions of cognitive agents — human and artificial — are linked in a system of *Big Data coordination*.

Behavioural data, sensor networks, and digital traces form a continuous *map of the economy’s state*, enabling AI algorithms to perceive tacit knowledge in real time.

Prices lose their role as the primary signal: information circulates directly as open state parameters of systems.

The task of finding equilibrium thus shifts from a chaotic market experiment to a **governed, verifiable process of cognitive coordination**.

Price formation becomes transparent, based on marginal costs (see also Chapter III § 7 and Chapter IV § 3).

It is worth recalling that the projects of **Oskar Lange** (algorithmic pricing) and **Viktor Glushkov** (OGAS) failed due to technological immaturity and narrow communication channels. Today’s computational power, network infrastructure, and open-protocol standards allow their methodological insight to be realized **without the former constraints**.

Finally, anticipating Marxist criticism that *Noocracy* merely replaces material with *cognitive capital*, it should be emphasized that the model guarantees **broad access to cognitive capital** through open AI platforms and *Civic Juries on Algorithms* (see Chapter IV § 5; Chapter VI §§ 2.1–2.3 on pilots and Data Ombudsmen).

Thus, the risks of cognitive alienation and the suppression of human agency are removed.

II.2 Rationalization and the “Iron Cage”

At the beginning of the twentieth century, **Max Weber** described a new phenomenon – the *rationalization of all spheres of life*.

Bureaucracy, industry, and science all came to obey the same logic of **efficiency and control**. Human beings were transformed into functions of the system; freedom into a set of procedures. Weber called this world the “*iron cage*” of modernity – a civilization where reason had lost its connection with values.

The paradox is that the very rationality once dreamed of by philosophers became the source of new inequality.

Reason, deprived of ethics, serves power – whether of the market, the party, or the corporation. As **Hannah Arendt** later noted in *The Banality of Evil* (1963), the loss of reflection leads to moral blindness under conditions of perfect procedural order.

Noocracy recognizes the danger of this *iron cage of rationality* as an institutional defect of systems in which the **ethical contour** is missing.

When logic functions without conscience, information becomes domination and efficiency turns into coercion.

The task, therefore, is not to reject rationalization but to **re-embed it in a cognitive-ethical framework**.

In *Noocracy*, algorithms are not designed merely to optimize outcomes but to explain them; bureaucracy is replaced by transparent, verifiable processes of reasoning; and control is balanced by reflection.

Where Weber saw the endpoint of modernity, *Noocracy* sees the possibility of its correction – a system where **reason learns to evaluate itself**.

II.3 The Eastern Alternative: Sustainability through Harmony

Parallel to the Western trajectory of industrial and economic rationalization, the twentieth century also witnessed the rise of an **Eastern line of thought**, proposing a different foundation for social order – not through competition, but through inner balance.

Mahatma Gandhi formulated the principle of *swaraj* – self-governance rooted in personal discipline and the ethic of non-violence. His idea of *sarvodaya* (“the welfare of all”) envisioned a society without masters, where reason manifests through conscience and the economy serves the collective good rather than private gain. Governance here begins with self-control: a polity built from within.

In **China**, after the 1949 revolution, *Mao Zedong* attempted to realize a comparable synthesis of ethics and collective purpose through planned economy and ideological unity. Although the result often turned authoritarian, the underlying intention – to subordinate material growth to moral and social cohesion – reflected a distinct *civilizational rationality*. The later evolution of Chinese governance, especially under *Deng Xiaoping* and in the current digital era, shows how that moralized collectivism transformed into **technological Confucianism**: stability through data and social credit, order through quantification of trust.

Both trajectories reveal the same insight: **harmony as an alternative to expansion**.

Where Western rationality seeks progress by accelerating complexity, Eastern systems seek resilience by moderating it. Sustainability here is not a managerial technique but a *moral*

equilibrium between inner and outer order. The emphasis is on restraint, not maximization; on coherence, not growth.

For *Noocracy*, this tradition offers a valuable counterpoint. It demonstrates that governance can emerge from ethics before it becomes an institution, and that equilibrium is not the opposite of development but its **reflexive phase** — the moment when systems learn to live within their own limits.

Thus, the Eastern path contributes to the architecture of *Noocracy* not through imitation but through complementarity: it shows how cognitive civilization can remain humane, and how sustainability begins not with control of nature, but with self-limitation of reason.

II.4 Science, Ecology, and the Noosphere

In parallel with economic theories, the twentieth century brought forth a new understanding of humanity's role in nature: **civilization is not autonomous, but embedded within the biosphere.**

The Russian thinker **Vladimir Vernadsky** introduced the concept of the **noosphere** — the sphere of reason — where human activity becomes a geological phenomenon. Reason, in this view, ceases to be a private attribute of the individual and becomes a **planetary process**. For Vernadsky, this transformation was not a threat but a *chance*: if reason learns to govern itself, it can direct evolution toward harmony with nature.

This marks the philosophical foundation of *Noocracy*: a shift **from power over nature to power with nature**, from exploitation to co-creation.

Twentieth-century science likewise dismantled the illusion of total control. Quantum mechanics, relativity, and systems theory revealed that the observer is part of the observed; that prediction and influence are inseparable. The ecological paradigm continued this revolution, showing that feedback, not force, is the true architecture of stability.

In this synthesis of ecology and epistemology, *Noocracy* finds its ontological ground. Knowledge becomes a form of metabolism — the transformation of information into sustainable order. Science, once a tool of domination, evolves into an ethics of co-existence. The governance of the future is therefore not technocratic but *noospheric*: an equilibrium between the cognitive and the natural, where reason extends not its control but its care.

II.5 The Crises of the Twentieth Century: The Limits of Rational Optimism

The twentieth century, which began under the banner of progress and reason, ended in a chain of crises revealing the **limits of rational optimism**. Scientific and industrial triumphs coexisted with wars, totalitarian regimes, ecological collapse, and moral fatigue of civilization.

The First and Second World Wars exposed how reason, detached from ethics, could serve destruction more efficiently than enlightenment. The very logic of progress — accumulation, acceleration, expansion — turned against its creators. The Holocaust, Hiroshima, and the Cold War became proof that technological mastery without moral self-control transforms the human into a function of catastrophe.

After 1945, the dream of controlled prosperity evolved into the ideology of **growth at any cost**. The post-war economic boom, consumer culture, and financial globalization spread the illusion

that crises could be managed by more data, more production, and more control. Yet the environmental and social backlash — from nuclear accidents to climate destabilization and inequality — showed that the problem lies not in ignorance but in **excessive confidence in calculation**.

The oil shocks of the 1970s, the collapse of Bretton Woods, and the subsequent neoliberal turn revealed a structural contradiction: rationality applied to parts of the system undermines the rationality of the whole. Models of endless growth encountered physical and cognitive limits. As Meadows et al. warned in *The Limits to Growth* (1972), optimization without self-restraint inevitably ends in collapse.

The late twentieth century thus became an age of paradoxical maturity: humanity possessed unprecedented knowledge but lost faith in meaning. Rationality, stripped of reflection, reached its saturation point — the *entropy of progress*.

For *Noocracy*, this epoch provides a crucial lesson: **reason must become reflexive**. Progress ceases to be measured by expansion and begins to be judged by sustainability of understanding. Only when cognition includes awareness of its own boundaries can civilization avoid repeating the twentieth century's circular drama — the triumph of intellect without wisdom.

II.6 From Modernity to Postmodernity: The Dissolution of Grand Narratives

In the second half of the twentieth century, **faith in universal truths collapsed**. Michel Foucault, Jean Baudrillard, Jean-François Lyotard, and other postmodern thinkers demonstrated that *power permeates everything* — knowledge, language, and even the body. There is no neutral truth: everything is discourse.

Yet within this fragmentation lay the potential for a new synthesis. If modernity believed in universal reason, postmodernity taught us to doubt it. **Noocracy** unites these positions: it does not deny subjectivity but seeks to *objectify it through data*.

Reason ceases to be a metaphysical principle and becomes a **practical infrastructure** — distributed, measurable, and self-correcting.

The culmination of this evolution of rational self-governance appeared in **Elinor Ostrom's** *Governing the Commons* (1990). Refuting the concept of the “tragedy of the commons,” Ostrom showed that sustainable governance can arise *from within* — through trust, social norms, and collective rule-making. This logic of self-organization and “embedded trust” anticipates the institutional principles of *Noocracy*, where rationality manifests not as external coercion but as **mutual cognitive coordination** among participants.

Lawrence Harrison and Samuel Huntington, in *Culture Matters* (2000), argued that economic and political development cannot be understood apart from cultural frameworks. Institutions are not mere systems of rules but embodiments of values — diligence, trust, responsibility, and orientation toward the future. For *Noocracy*, this conclusion is decisive: **rationality is not imposed but grows from within a culture of understanding**.

Thus, postmodernism, while dismantling the metaphysics of reason, paradoxically prepared the ground for its renewal — not as dogma, but as *verified process*. *Noocracy* emerges as the reconciliation of two centuries: from the universalism of the Enlightenment to the pluralism of networks, from the logic of power to the **ethics of cognition**.

II.7. Technological Revolution: Data as a New Form of Power

Since the late twentieth century, information technologies have produced a new type of society – the networked one. Manuel Castells called it *informational*: power now belongs not to those who own land or capital, but to those who control the flows of information.

Credit ratings (FICO), ESG indices, and algorithmic risk management systems are all examples of digital instruments that evaluate behaviour. They are functional, yet carry a hidden danger – the reduction of a human being to a numerical score.

Nevertheless, these systems technically bring humanity closer to *Noocracy*. They demonstrate that social governance can become measurable and dynamic; the only difference lies in its purpose.

Whereas capitalism employs data for profit, *Noocracy* employs it for **sustainability** and **justice**.

II.8 Neohumanism as the Ethical Core of Noocracy

In the philosophical genealogy of *Noocracy*, **Neohumanism** holds a special place – a movement that affirms the dignity of the human being as a subject of meaning-creation and a bearer of inner responsibility. If classical humanism was confined to **anthropocentrism**, Neohumanism expands into **ecological, cognitive, and planetary dimensions** (Morin, 2008; Nussbaum & Sen, 1993; Sen, 1999; Fromm, 1968; Popper, 1959).

Noocracy does not reject Neohumanism; it **institutionalizes** it:

- It transforms ethical principles – *freedom, dignity, responsibility* – into structural mechanisms of governance through the **Cognitive-Ethical Contour (CEC)**.
- It transfers humanistic ideals from *moral philosophy* into *decision architecture*, where rationality and empathy verify one another.
- It thus achieves what classical Neohumanism could not: **the scalability of virtue** – the ability to reproduce ethical practices in large systems without losing their essence.

Accordingly, *Noocracy* is not a post-humanist alternative but an **institutionally reinforced Neohumanism**, where the power of knowledge is governed not by technology but by conscience, supported by cognitive mechanisms of verification.

It combines the epistemology of **Michael Polanyi** (*Tacit Knowledge*, 1958) and the ethics of **Peter Singer** (*Practical Ethics*, 1979): *rationality without humanism breeds cynicism, while humanism without rationality breeds helplessness*.

Hence, its guiding principle is **rational humanism** – morality validated by verifiable action, and reason defined by its **capacity to serve life**

Part III. Reason as an Object of Science: From Introspection to Cognitive Engineering

III.1 A Brief History

Ancient and medieval ideas of reason were largely **introspective** – from Plato's rational soul and Aristotle's *nous* to Descartes' *cogito*. In the nineteenth century, science began to “ground” the

study of mind empirically: **psychophysics** (Fechner) linked subjective experience to measurable stimuli, and **neuroscience** (Cajal) revealed the anatomy of thought.

In the twentieth century, a decisive turn occurred toward the *observable*: **behaviourism** (Watson, Skinner) sought to explain the psyche purely through stimulus–response models, discarding consciousness as unmeasurable. This reductionism soon reached its limits – and gave way to the **cognitive revolution**. Researchers such as George Miller and Donald Broadbent introduced the *information-processing* paradigm, treating thought as computation – the transformation of inputs into structured outputs within bounded memory and attention.

Later, **artificial intelligence** (Turing, Minsky, Newell & Simon) extended this model into technology, while **cybernetics** (Wiener) reframed both human and machine cognition as feedback-driven systems. The late twentieth and early twenty-first centuries expanded the field into **cognitive neuroscience**, **embodied cognition**, and **neuroinformatics**, dissolving the boundary between biology and computation.

Thus, the history of reason as a scientific object traces a gradual migration – from soul to system, from introspection to modelling, from philosophy to **cognitive engineering**. Each stage added precision but risked losing depth; *Noocracy* reclaims both, seeking to unite measurable cognition with reflective understanding – the quantitative and the qualitative dimensions of the same evolving reason.

III.2 The Limits of the Human Mind

Here are some of the objective boundaries of human cognition.

- **Working memory and attention.**

The classical benchmark of “ 7 ± 2 ” items (Miller) has been revised by modern studies: without *chunking*, stable capacity rarely exceeds four elements. The human brain compensates for this through grouping, analogy, and abstraction – strategies that trade precision for meaning. In *Noocracy*, this principle of bounded rationality (Simon, 1957) becomes an architectural rule: every decision loop must be short enough to remain cognitively transparent.

- **Processing speed and fatigue.**

Neural computation is slow compared with digital systems: milliseconds against nanoseconds. Mental productivity declines after hours of continuous load; cognitive fatigue distorts judgment far more than emotional bias. Therefore, in any rational governance model, the rhythm of decision-making must respect biological limits – cognition must breathe.

- **Biases and heuristics.**

Kahneman and Tversky (1974–2011) revealed more than a hundred systematic deviations from logic – from *confirmation bias* to *availability heuristic*. The mind economizes effort, preferring coherence to truth. *Noocracy* integrates this insight through the **Cognitive-Ethical Contour (CEC)**: the tri-loop of logical, ethical, and collective verification counterbalances individual distortions.

- **Time horizon and empathy gradient.**

Human foresight sharply declines beyond one or two generations, and empathy weakens with distance – both spatial and temporal. This “short horizon” explains why climate change, inequality, or AI risks are underweighted in political action. *Noocracy* extends the horizon artificially through modeling, simulation, and feedback – the technological restoration of long-term empathy.

In sum, the limits of reason are not defects but *parameters of design*. A civilization aware of them can build institutions that amplify cognition instead of overstraining it. The task of *Noocracy* is precisely this: to transform the weaknesses of the human mind into the architecture of collective intelligence.

III.3 Speed and the “Single-Threaded” Nature of Consciousness

Human consciousness operates **sequentially**: it processes one coherent stream of thought at a time. This “single-threadedness” is both its strength and its limit — ensuring internal consistency but constraining parallel reasoning.

The growth of data volume and interaction speed in the twenty-first century has exceeded the analytic capacity of individual cognition. Decisions once handled by the human mind now outpace it by orders of magnitude. The result is a *cognitive asymmetry*: systems evolve faster than the awareness meant to control them.

Attention — the scarce currency of the information age — becomes fragmented. Neuroscience shows that multitasking is largely an illusion: switching tasks rapidly incurs significant energy and accuracy losses. The human brain is optimized for *depth*, not breadth. Every interruption resets the context; coherence is rebuilt at a metabolic cost.

In social systems, this translates into the exhaustion of governance: when events multiply faster than deliberation, institutions respond with noise, not understanding. The “acceleration trap” (Rosa, 2013) describes this state — a civilization where adaptation lags permanently behind complexity.

Noocracy addresses this gap not by accelerating the human, but by redistributing cognitive load. Artificial and collective intelligences act as **parallel processors** that externalize computation while preserving human interpretability. The human mind remains the integrator — the semantic core that gives direction and value to automated reasoning.

Thus, the single-threaded nature of consciousness becomes not a flaw but a **design constraint** around which the architecture of cognitive governance must be built: machines may parallelize, but meaning must remain serial — because coherence is the form of freedom.

III.4 Human and AI in Chess: The Boundaries of Reason and Computation

Chess has long served as a **laboratory for understanding intelligence** — simple in rules, yet combinatorically infinite.

The combinatorial space of the game is estimated at about 10^{43} possible positions, and the number of potential games approaches 10^{120} — the *Shannon number* — exceeding the number of atoms in the observable universe ($\sim 10^{80}$).

The human mind, by contrast, operates not through exhaustive enumeration but through *meaning*. It searches selectively, guided by pattern recognition, intuition, and contextual evaluation. Even world champions examine only dozens of moves in depth; their strength lies not in speed but in the architecture of understanding — in the ability to compress experience into heuristics.

Artificial intelligence, beginning with *Deep Blue* (1997) and culminating in *AlphaZero* (2017), revealed the opposite principle: brute-force computation combined with probabilistic learning. While Deep Blue relied on pre-programmed evaluation functions and searched millions of

positions per second, AlphaZero discovered strategies through **self-play**, transforming experience into mathematical priors. Within hours, it surpassed all human and algorithmic predecessors.

The contrast between man and machine in chess thus exposes the **boundary between reasoning and computation**:

- The machine achieves victory by quantity \neg exploring almost all branches of the game tree.
- The human achieves meaning by quality \neg focusing on patterns, not permutations.

For *Noocracy*, this distinction is foundational. Pure computation, however vast, remains *epistemically blind*: it does not know *what* it knows. Human reason, though slower, carries the dimension of **semantic compression** \neg the ability to translate complexity into understanding. The synthesis of both creates the architecture of *cognitive complementarity*: humans define goals and interpret outcomes; AI performs the exploration of state space.

In this sense, chess becomes not a contest but a **parable of governance**: wisdom arises when speed meets reflection, and power remains accountable to meaning.

III.5 Reason and the Combinatorial Reality

“The world is not too complex \neg our models are too linear.”

Human beings think **semantically**, not by enumerating every possibility. Yet the entire space of modern problems confronting civilization has become **combinatorial** in nature \neg and this is not a metaphor but a formal reality.

Practically every field of governance \neg from business to public administration \neg can be reduced to the search for an **optimal allocation of limited resources** in time and space under multiple, often conflicting objectives.

Examples include:

- inventory control (optimization of reorder points and lead times),
- supply chain management,
- logistics and routing (travelling salesman, network flow, vehicle routing problems),
- project scheduling (NP-hard problems of critical paths and constrained resources),
- financial and investment planning (portfolio optimization, stochastic programming),
- human resource distribution,
- and even diplomacy or macroeconomics \neg multidimensional games with incomplete information.

Thus, modern activity as a whole represents **combinatorial optimization under uncertainty**, or, in game-theoretic terms, the search for equilibrium among billions of interacting agents.

Here the human mind collides with the **combinatorial explosion**: the number of possible states and scenarios grows exponentially, while human capacity to hold and evaluate them grows only linearly.

This defines one of the fundamental limits of individual cognition \neg and the rationale for *Noocracy*'s architecture of distributed intelligence. It acknowledges that no single mind can

compute systemic balance; only a **network of minds and machines**, verifying one another, can approximate sustainable reason.

III.6 The Cost and Potential of Optimization

Most people – even professional managers – do not truly optimize; they **satisfice**, settling for the first acceptable scenario (the *satisficing* effect, H. Simon).

A typical managerial procedure consists of three scenarios – pessimistic, moderate, and optimistic.

This is not a search for the optimum but a search for justification.

Yet even elementary adoption of optimization models yields effects comparable to **technological revolutions**.

A small example from the author's consulting practice in logistics:

- reduction of raw-material inventory by a factor of two with service level maintained;
- shortening of supply cycles from 120 to 30 days;
- reduction of production cycles from 30 to 3.5 days;
- increase in capital turnover by 1.8–2.3 times.

These private effects illustrate a general scale. According to *McKinsey Global Energy Perspective 2025* and the *World Economic Forum (2020, AI and Sustainability Report)*, the introduction of AI-based optimization in logistics and production can:

- reduce global inventories by 35–45%;
- lower logistics costs by up to 30%;
- raise labour productivity in industries by 20–25%;
- and simultaneously cut CO₂ emissions by 10–15% through reduced redundancy and idle time.

In energy systems, similar network optimization yields 5–10% capacity savings (BloombergNEF, 2023);

in agriculture – up to 20% resource savings with the same yield.

Even a **1% systemic improvement** in global resource efficiency equals roughly **\$800 billion** in annual savings and emission reductions (OECD, 2024).

In total, the shift from *intuitive choice* to **formalized optimization** has an effect comparable to the **Industrial Revolution of the eighteenth century**

Lesson for Noocracy

The physiological and cognitive limits of the human mind do not discredit humanity – they simply define the boundaries of **individual and hierarchical rationality**.

From this follows the necessity of **distributed agency** (*humans + AI agents*) and **Big-Data coordination**, where:

- **AI** relieves part of the constraints of memory and attention – handling search, aggregation, simulation, and monitoring;
- **Humans and the Ethical Assembly** provide value calibration and legitimacy;
- The **Cognitive-Ethical Contour (CEC)** guarantees transparency and explainability of decisions.

In this triad, **epistemic legitimacy** arises \neg not the power of a single mind, but the power of **justified knowledge**, verified within a distributed cognitive system.

What happened in chess over three decades is now repeating in governance: systems grow in complexity faster than any individual can comprehend them.

- Humans perceive meaning but cannot process all the data.
- AI processes data but cannot perceive meaning.

Only their synthesis \neg a **cognitive duet** \neg produces stability.

Just as no human can now defeat *AlphaZero*, but a *human with AlphaZero* can defeat any machine alone, so in political and economic governance the winner is neither the human nor the algorithm, but their **union within the CEC and the Ethical Assembly**.

Noocracy does not rest on the deification of algorithms, but on a simple inference:

“If the world has become combinatorial, the power of reason is impossible without machine combinatory.”

AI does not replace the human; it **extends the operational radius of reason**, enabling us to see not only the next move but the **structure of the entire solution space**.

Just as a chess player loses to a machine when seeing six half-moves ahead against thirty, so too a policymaker loses to chaos when the world demands analysis not of six, but of **billions of interactions**.

But in tandem \neg the human defines goals and meaning, the machine calculates consequences \neg there emerges what can be called **cognitive governance**: *reason supported by computation*.

Even partial optimization \neg in merely 10–20% of sectors \neg yields a global effect comparable to a technological revolution, without the need for radical inventions.

In essence, **optimization is latent energy of reason**, still underused by humanity.

It demonstrates that *intelligent governance* is not a utopia but the **greenest resource of the planet**.

Part IV. The Twenty-First Century: The Limits of Old Paradigms and the Synthesis of Noocracy

IV.1 Key Paradigms and Their Internal Limits

The twenty-first century opens with the collapse of ideological absolutes.

Democracy, capitalism, socialism \neg each, in its pure form, reveals structural contradictions that prevent it from sustaining complexity in a finite world.

Democracy: Power of the People Without Measure

Democracy, in its ideal sense, is power grounded in equality and freedom.

Yet in practice it faces a deep paradox: **equality of votes is not equality of competence**.

In an era when decisions require systemic knowledge \neg from biotechnology to climate policy \neg the voice of emotion and the voice of expertise weigh the same.

This produces a *crisis of rationality*: democracies become hostages of populism, where victory goes not to the one who understands more deeply, but to the one who speaks more persuasively.

Elections degenerate into *marketing of emotions*.

As Alexis de Tocqueville warned, “*the people may be the best judges of their needs, but the worst judges of their means.*”

Democracy without an enlightened element tends toward self-destruction — from excess freedom to authoritarian reaction.

Noocracy proposes another principle — **cognitive legitimacy**.

Participation in decision-making remains open to all, but the **weight of the vote** depends on demonstrated knowledge, reputation, and verified social contribution.

This restores balance between equality and competence, turning democracy from a numerical process into a cognitive one.

Capitalism: Efficiency Without Purpose

Capitalism perfected the logic of efficiency but detached it from meaning.

The pursuit of profit became self-referential, generating crises of overproduction, inequality, and ecological collapse.

As Karl Polanyi and later Thomas Piketty observed, unregulated markets amplify asymmetries rather than balance them.

Noocracy addresses this by replacing monetary capital with **cognitive capital** — value measured through verified understanding and contribution to sustainable goals (see Appendix A: IEKV Protocol).

Socialism: Solidarity Without Feedback

Socialist systems corrected inequality but at the cost of adaptability.

Abolishing markets also abolished natural feedback loops, replacing knowledge with command. Central planning failed not because it lacked morality, but because it lacked information diversity.

Noocracy restores solidarity on informational grounds — through distributed intelligence that preserves feedback while aligning it with ethical coherence.

The Combined Defects

Across all three paradigms we see recurring failures:

1. **Cognitive deficit of institutions** — decisions made on simplified, politically distorted models instead of real data.
2. **Lack of self-limitation** — no built-in mechanism restrains growth except crisis.
3. **Irrational allocation of resources** — systems governed by power or capital, not by optimum.

The world approaches a singular point of inequality: technological elites wield quantum computing and AI while billions remain outside education and infrastructure.

Rising polarization and loss of trust produce a *crisis of legitimacy*.

If the twentieth century was the age of growth, the twenty-first becomes the age of **correction**, where old recipes no longer work.

The task of *Noocracy* is to synthesize what endures from each model —

from democracy, *feedback*;

from socialism, *solidarity*;

from capitalism, *efficiency* ⊲
and unite them through **reason verified by ethics**.

IV.2 Historical Crises as Lessons of Degradation

Every civilization has faced a moment when its **internal contradictions** rendered it incapable of adaptation.

These crises are not accidents but **structural phenomena**.

The **Roman Empire** did not fall to the barbarians but to its own inertia.

An economy based on slavery exhausted its resources; bureaucracy stifled initiative; elites ceased to think in terms of the common good.

When the energy of expansion was spent, the system collapsed under the weight of its own structure.

The same pattern appeared in the **Han Empire** and later Chinese dynasties: corruption, a widening gap between centre and provinces, demographic pressure, and ecological depletion led to disintegration.

The **twentieth century** reproduced this logic in a new form.

The First World War arose from *industrial militarism* ⊲ an attempt to solve political contradictions through technology.

The Second World War was the culmination of *ideological rationality* pushed to fanaticism.

The Cold War became a *crisis of trust*, where the logic of power replaced the logic of meaning.

All these crises share a single property: each system mistook its own **dogmas for truth** and lost the capacity for **self-reflection**.

Noocracy emerges precisely as a **mechanism of civilizational self-reflection** ⊲ the ability to perceive one's limits before they turn catastrophic.

From Rome to the twentieth century, every historical collapse follows the same **cognitive trajectory**: the loss of feedback among knowledge, power, and ethics.

When power ceases to reflect upon itself, the system loses adaptability (Tainter, 1988; Diamond, 2005).

Noocracy institutionalizes self-reflection as a **systemic function**, preventing the accumulation of governance entropy.

IV.3 The Twenty-First Century: The Era of the Singular Society

“Humanity has entered the phase Vernadsky foresaw ⊲ the transition of the biosphere into the noosphere.”

Today, **reason no longer belongs solely to the individual** ⊲ it is distributed among people, machines, and networks.

Artificial intelligence, blockchain, and neuro-interfaces are not merely instruments but **new organs of collective cognition**.

They enable society to think in real time, to process trillions of interconnections, and to predict consequences.

Yet with this expansion comes a new danger ⊲ a **digital monarchy**, where algorithms govern without oversight.

The problem lies not in technology itself but in the **absence of ethical infrastructure**.

Here the meaning of *Noocracy* becomes clear: it is **not technocracy**, where machines decide, but *co-ordinated reason* – a symbiosis of humans and AI acting together.

Its core principles can be summarized as follows:

1. **Open cognition** – everyone has access to the information necessary for decision-making.
2. **Responsible autonomy** – the level of participation corresponds to the level of understanding.
3. **Ethics of data** – data belong to society, not to corporations.
4. **Real-time feedback** – governance operates not through the laws of the century, but through the signals of the second.
5. **Ecological thinking** – every decision is tested for its sustainability with respect to both the biosphere and the social sphere

IV.4 Epistemological Transformation: From Knowledge to Understanding

The volume of human knowledge grows **exponentially**, while the ability to integrate it declines. This is a **crisis of meaning**.

Noocracy responds to it through a shift **from knowledge to understanding** – from the accumulation of data to the construction of meaningful relations.

If in the industrial era the main instrument of power was **resources**, and in the information era – **algorithms**, then in the **noospheric era** it becomes **context**.

Contextual thinking is the true manifestation of reason at the scale of society.

It requires systems capable of perceiving interconnections – economic, ecological, and social.

In this sense, *Noocracy* is not merely a political form, but a **cognitive infrastructure of civilization**, enabling **collective thinking of humanity**

IV.5 Political Legitimacy in the Age of Data

Classical legitimacy, according to **Max Weber**, rested on three foundations – **tradition, charisma, and rationality**.

Today, these are no longer sufficient.

Charisma yields to algorithm, tradition to innovation, and rationality to **collective intelligence**.

A new form of legitimacy arises – **cognitive legitimacy**.

Power has the right to govern only if its decisions are **reproducible, transparent, and optimal** from the standpoint of both **data and ethics**.

Thus emerges the transition from the slogan “*power of the people*” to “*power of knowledge*. ” Yet this new power does **not exclude the people** – it transforms them into **competent participants** in governance

IV.6 Social Analogues and Institutional Parallels

Systems such as **FICO** scores in the United States or **China’s Social Credit System** show how algorithms are beginning to **define trust**.

They are imperfect, being constrained by financial or disciplinary objectives.

Yet they demonstrate the **technological feasibility** of measuring reputation, competence, and contribution.

Historically, this mechanism traces back to the **Qin imperial examination system** – the evaluation of knowledge and behaviour as a tool for selecting administrators.

Noocracy elevates this principle to the **level of society as a whole**:

every person is not an *object of surveillance*, but a *subject of development*.

Their social rating becomes not an instrument of punishment, but a **metric of contribution to the common good**.

IV.7 Decarbonisation of Governance and the New Ethics of Progress

Today, the term “**decarbonisation**” signifies not only the reduction of carbon emissions but also the **liberation from excessive energy, economic, and informational cycles**.

Noocracy seeks the **decarbonisation of governance** – the reduction of friction, bureaucracy, corruption, and cognitive loss.

In place of command verticals, it proposes a **horizontal ecosystem of decisions**, where each level receives only the necessary amount of energy and information.

This is the **principle of the biosphere** translated into politics.

In this sense, *Noocracy* is not a continuation of industrial logic but a **transition to ecological reason**,

where governance is measured not by the speed of growth but by the **sustainability of the whole**.

IV.8 The Human Being in the Noosphere: Freedom Through Awareness

The question of **freedom in the age of AI** becomes central.

If algorithms can predict and direct behaviour, is there still room for choice?

It is precisely here that the meaning of *Noocracy* unfolds: **freedom is the ability to act rationally despite predictability**.

The human being does not lose their role – they acquire a new one: **the architect of meaning**.

Machines can calculate, but they cannot *will*; they can perceive patterns, but not *purpose*.

Therefore, the **ethical core of Noocracy** is the human as the **guardian of will that guides reason**.

This revives an ancient idea of **Plato and the Stoics**: reason is not merely knowledge but *virtue*. Only now it is realized on the scale of civilization.

IV.9 Conclusion: Reason as a New Form of Power

The evolution of ideas – from ancient philosophers to Vernadsky and modern governance theories – shows that humanity has always sought a balance between **the chaos of freedom and the order of the system**.

- **Plato** dreamed of the rule of the wise.
- **Aristotle** sought the balance of classes.
- **Locke** and **Rousseau** envisioned freedom through the social contract.
- **Marx** pursued equality.
- **Smith** sought efficiency.
- **Vernadsky** foresaw reason as the next stage of evolution.

Noocracy unites their intuitions into an integral framework: **reason becomes not merely a quality of individuals but a systemic property of society.**

It marks a new stage in political evolution — the **power of knowledge governed by ethics, and ethics verified by knowledge.**

The world stands on the threshold of an era where **the legitimacy of power** is defined not by origin, votes, or capital, but by the **depth of understanding.**

If antiquity gave us logic, modernity — science, and industrialism — energy, then the **noospheric age** will bring *reason itself as infrastructure.*

And then, perhaps, the ancient ideal will be fulfilled:

a state where power belongs not to gods, not to the crowd, and not to machines, but to **Reason itself** — the very principle for which humanity once began to think.