

## The Existential Transformation of Reason: From the Centrality of Natural Intelligence to the Primacy of Artificial Intelligence

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### Abstract

If we survey the history of earlier civilisations, we find it replete with great achievements through which humanity, by exercising reason and reflection, sought to realise its aim of living well. This was pursued through diverse methods, appropriate tools, shifts in intellectual paradigms, and the invention of machines. However, this historical development of achievements related to human reason has led to an alarming advancement in the sciences, from inquiry into ethical values to nonethics, from being to nonbeing, and from the struggle for self-realisation to the pursuit of pleasure. We have thus witnessed a transformation in the very nature of reason, from the centrality of natural intelligence to the primacy of artificial intelligence, driven by a daunting technological development in which the machine has replaced the human being. Once a means of protecting humanity from the hardship of daily labor, the machine has now become an instrument of a new existential struggle. In this way, we are now close to enacting the maxim “survival of the fittest”, having moved from invention and discovery in the service of humanity to the possibility of its destruction and from protecting humankind against natural disasters that threaten its existence to creating a nuclear order that may seek to negate that very existence. What, then, is the destiny of reason, suspended between being a formidable power striving to unravel mysteries and its transformation into a chain of events that may set earth and sky ablaze?

**Keywords:** reason, natural intelligence, artificial intelligence, centrality, existence, transformation

### 1. Introduction

Since the earliest beginnings of philosophical thought, the human mind has diligently sought to investigate the essence of things and their first causes through the contemplative method to obtain the truth of the world around it. Moreover, its attempts have never ceased to answer

certain questions that perplexed it, as it sought to explore the world beyond nature, which greatly aroused its curiosity. Philosophy used to study all forms of knowledge and all sciences under a single epistemic umbrella; therefore, it was called the mother of the sciences because it embraced all the sciences under its banner and care or because it was that tree whose branches and offshoots are the various fields of knowledge, including the scientific ones. Moreover, its deep, ramifying roots in the soil are metaphysical, nourishing all the different forms of knowledge. These historical indications show that philosophy left no domain untouched, expressing its views, philosophising about it, attending to its issues, and offering possible solutions that might help address the most important problems confronting the sciences. It has not abandoned these tasks to this day because it always remains committed to its communicative history; however, much the sciences have separated from it and called for separatist thought.

In light of this historical reminder, reason was regarded as an essential faculty that charted for itself a path in philosophy through philosophical contemplation so that it might create and move freely according to laws, principles, and methods, at times receptive and at other times active and efficacious. Such has been the course of reason throughout history: at times, it has played a positive role, offering its creations to the external world and contributing to the development of knowledge, and at other times, it has failed to advance, retreating from its decisions because they were negative. Reason has thus contributed fundamentally to philosophical intellectual communication and even to the regression involved in the search and investigation for knowledge through archaeology and contemporary tools, as well as to discourse on the intelligence of the human mind in its natural state and its capacity to develop its competence from seeking the essence of things to embodying its ideas in artificial machines that serve it and facilitate its daily affairs. This shift transformed human life; the old ideas celebrated by metaphysics, namely, transcendental matters, no longer concerned it. Rather, it sought to realise its dreams through new ideas grounded in the virtual world of mathematics and to apply them in reality; that is, it wanted them to be realised in nature and to contribute to helping the human being overcome the obstacles that impede life.

Across multiple historical stages, humanity has employed human reason to direct it toward distinction and creativity through both philosophical and scientific imagination. This can only occur through the pursuit of the various forms of knowledge by using the imagination that has extracted mental images from the natural sensory world, which dazzles us with its beauty and magnificence, and from the secret of this cosmic order and harmony. It is this wonder before nature that has driven reason to seek its desired aim within reason itself, that is, within its essence, which it seeks to know through its rational principles and the use of logic, or even through certain mental operations such as analysis, synthesis, criticism, evaluation, the linking of mental images, separation, omission, and alteration, and, finally, how it finds itself amidst all those mental operations in order to understand itself. Through rational reflection and understanding, human reason seeks to comprehend itself and its external world to move forward, to invent, and to establish itself so that others may marvel at it and praise its great achievements by virtue of its capacities and extraordinary intelligence.

If we follow the history of science and philosophy, we find that, by means of natural intelligence, the human being was able to overcome most of the difficulties that stood in the way of progress, surpassing them by discovering a special world that substitutes natural intelligence with an intelligence that it has fashioned for the sake of scientific and technological development, namely, artificial intelligence. Human reason employed its natural intelligence to invent machines that help it reduce time and effort in life so that it might continue its ascent from the natural and real world to the virtual world, voyaging with its imagination and intelligence into the world of artificial intelligence, which has come to compete with its own intelligence. In the contemporary stage, reason is regarded as a productive energy without limits, creative and not looking backwards, to move forward toward technological development that will help ensure its survival and affirm its scientific distinctiveness. Through this existential transformation of reason, and through rapid and slow ones at others, how has human reason been able to chart its course and alter its aims and the direction of its thought from the centrality of natural intelligence to the primacy of its artificial production? What is the essence of artificial intelligence? From the centrality of reason to the primacy of its artificial production, where to?

## **2. Natural Intelligence**

Before discussing natural intelligence and artificial intelligence, we must first define the term intelligence and understand it. This can only begin with a linguistic perspective so that we can understand and simplify it terminologically.

### **2.1. The Concept of Intelligence from the Linguistic Perspective**

In consulting *Lisān al-‘Arab* by Ibn Manẓūr, we find that it defines intelligence as the sharpness of the mind. Intelligence is the quickness of comprehension. Al-Layth states that the expressions “an intelligent heart” and “an intelligent child” refer to one who is quick to understand (Manẓūr, 1994). Intelligence thus means quickness of comprehension, that is, wisdom, skill, insight, and foresight.

### **2.2. The Concept of Intelligence from the Terminological Perspective**

Many ideas address intelligence in general, and many scholars and philosophers have endeavoured to define it. Naturally, we present some of the conceptions that have been referred to it. The philosopher Jean Piaget (1896–1980) linked intelligence to environmental adaptation and intellectual equilibrium, stating the following: “In the end, intelligence appears as a construction that shapes certain forms of exchange between the individual or individuals and the objects surrounding him, them, whether near or distant, and its characteristics derive essentially from the nature of the forms that it constructs” (Piaget, 2002). According to Jean Piaget, the nature of intelligence is dual, both biological and logical, and he attempts to establish a balance between them. Intelligence is a kind of equilibrium towards which all structures strive, including sensory perception, habit, and the fundamental sensory–motor schema. In fact, if intelligence is not energy, this negation leads to radical functional integration between the higher forms of thought and the set of lower models of perceptual or motor adaptation. Intelligence, therefore, can only be a kind of equilibrium towards which the latter strive (Piaget, 2002).

Intelligence plays an important role for Jean Piaget, as it establishes a balance between cognitive structures, and it also plays a role in the life of both thought and the human body. It is a highly developed mental adaptation in that it exists in a continuous and evolving dynamism between the external world, that is, the environment, and the world of thought, that is, the mental world. The concept of natural intelligence refers to the mechanism by which individuals use their mental capacities, enabling them to learn, remember information, and use it appropriately, to arrive at serious solutions to various problems, to acquire and use language, to make judgments, to discover similarities and differences between the objects of sensory or intellectual experience, and to employ types of abstraction or attain general concepts and inference (Hussein, 2014). The concept of natural intelligence has been associated with reason and with mental capacities for understanding and overcoming various problems, including cognitive problems in general and daily problems in particular, so that the human being may be able to coexist with the surrounding world, of which he is an inseparable part, that is, nature. This matter is governed by reason, which is distinguished by this divine intelligence and uses all the necessary tools for that purpose, without forgetting the importance of the sensory aspect, which intervenes in cognitive formation and makes the imagination the center of creativity and distinction, arising from both scientific and philosophical imagination. To speak of natural intelligence, we must consider the role played by reason across certain historical stages, at the end of which the beginning of a new stage in which artificial intelligence, to whose production this human reason contributed, played an effective role, emerged.

### **3. The Concept of Reason Linguistically and Terminologically**

#### **3.1. The Concept of Reason Linguistically**

When we search for reason in its linguistic course, we turn to *Lisān al-‘Arab* by its author Jamāl al-Dīn Muḥammad Ibn Manzūr al-Ifrīqī, in which he presents several linguistic significations of reason, stating, “‘Aqala ya‘qilu ‘aqlan wa ma‘qūlan, and it is a verbal noun. Sibawayh said: it is an adjective, and he used to say that the verbal noun never comes in the form maf‘ūl at all” (Manzūr, 1994). He also added that whoever reasons is ‘āqil and ‘aqūl among people who are ‘uqalā’. Ibn al-Anbārī said, “A rational man is one who gathers together his affair and his judgement, derived from my saying ‘I hobbled the camel’ when I gathered together its legs. It is also said that the rational person is the one who restrains himself and holds it back from its desires, taken from their saying ‘his tongue was restrained’ when it was withheld and prevented from speech.” What is meant here is the reason that can place matters under control, dominate them, and regulate them. He also indicated that “reason is steadiness in matters. Reason is the heart, and the heart is reason. Reason was called reason because it restrains its possessor from becoming entangled in danger; that is, it holds him back. It is also said that reason is the faculty of discrimination by which the human being is distinguished from all other animals” (Manzūr, 1994). Reason is that which distinguishes the human being from all other animals, in that it directs its possessor toward the correct and sound path without becoming involved in matters of

which he has no need; that is, it is the consideration of things without recourse to changing and unstable instincts but rather through the wisdom and deliberation that we derive from reason. Among the linguistic significations indicated by reason is the statement of al-Khalīl: “Reason is the opposite of ignorance. It is said ‘aqala ya ‘qilu ‘aqlan when he comes to know what he had previously been ignorant of or when he refrained from what he had been doing. Its plural is ‘uqūl. One says a rational man and a people rational and reasoning. A man is ‘aqūl when he is sound in understanding and abundant in reason” (Zakariya, 1979). From a linguistic perspective, reason also signifies understanding and knowledge rather than ignorance. Knowledge is light, and ignorance is darkness. That is, reason illuminates human life toward knowledge, which contributes to the development of the various fields required for a dignified life in particular and to the development of scientific and intellectual ideas in general.

### **3.2. The Concept of Reason Terminology**

The human being is distinguished from other living beings in that he is a rational being who thinks about the entities that surround him, about nature, which perplexes him and which he regards as a set of complex enigmas that he has been unable either to solve or to control and about the world that he cannot see with the naked eye. He strives diligently, through reason, to provide convincing explanations, whether by means of myths and legends, by presenting metaphysical ideas that satisfy his curiosity and bring him closer to the beliefs in which he has faith or by means of scientific justifications that he has discovered to strip nature and the unseen powers that govern it of its sacredness. Reason has played an important role across different historical stages in finding appropriate solutions to difficult problems in various fields of knowledge. Therefore, in this research, we seek to present several serious attempts to address the role of reason.

Reason has been the focus of study and debate among philosophers and scientists, and each has approached it from different perspectives, shaped by specialisation. Even within the same specialisation, we find many concepts associated with both the philosopher and the scientist because of differences in intellectual and scientific orientation. For this reason, we cannot provide a precise and explicit definition or concept of the term reason; rather, we present the viewpoints of certain intellectual, philosophical, and even scientific figures.

#### **First: In Greek Thought**

We cannot speak of all the philosophers, thinkers, and scholars of Greek thought who discussed reason and its true status throughout history. However, we have selected some important models that began to regard reason as a significant source of knowledge and wisdom, namely, philosophy. Heraclitus (535–470 BC) is considered among the earliest philosophers to philosophise about reason through rational contemplation. He held that wisdom is achieved through reason, which provides us with true knowledge. In contrast, he disparaged knowledge derived from the senses because it is a source of ignorance, darkness, and inferiority, since rational wisdom governs all things. Moreover, because this reason and this law are the essence of every being in existence and are therefore universal in all things, it is necessary to employ, in discovering them, ideas that correspond to their universality rather than personal ideas

represented in life (Ghallab, 1938). Thus, the first step toward philosophical thought took place through the Greek philosopher Heraclitus.

When we look closely at Greek philosophy, especially at its earliest beginnings in the philosophical rather than the chronological sense, we find that Anaxagoras (500–428 BC) expressed reason, or *nous*, as the most rarefied and purest of all things. It possesses all knowledge and the greatest power. Everything that has life, both greater and smaller, is governed by reason. Whether Anaxagoras believed in a material reason or not, he certainly drew a sharp distinction between reason and all material substances. For Anaxagoras, reason is the principle of motion and order and therefore the principle of life (Popper, 2024). According to Aristotle's account of Anaxagoras, he said that all things are mixed except reason and that it alone is pure and unmixed (Thales, 2008). Reason is thus the fundamental source and the essential mover of cosmic order, and it is separate from matter, that is, pure and absolute. Its knowledge is also unlimited, which suggests a dual division of the world into the sensible world and the rational world. This constitutes a true beginning of Greek philosophy, namely, the metaphysical dimension of the concept, which makes reason for the fundamental mover of the world and of stable knowledge, that is, the point of departure for everything. This is what we are experiencing now, as reason has come to think about a world that it sets in motion in every respect. We may state, with some certainty, that the primary value of reason began with the Greek philosopher Anaxagoras.

Without forgetting the Greek philosopher Socrates (469–399 BC), who pointed to the role of reason in knowledge independently of sense perception or the material world, he chose knowledge of essences to be true knowledge and regarded reason as the only essential criterion through which we apprehend universals or immutable truths by using a dialogical inferential method based on irony and the eliciting of ideas. Socrates realised that, through definition, we can arrive at the stable essences of things by mentioning the totality of the essential properties of the defined thing. Beginning with Socrates, reason came to produce essences, that is, the form of the thing, and this important conclusion led both Plato and Aristotle to formulate new doctrines of great significance in the history of philosophy.

In Greek philosophical thought in general, reason assumed a universal character with Plato (427–348 BC), who excelled in producing essences and ideal forms governing the world of Forms, which differs from the world of sensibles; that is, unstable sensible nature. Plato also exalted the world of Forms because it stands under the authority of reason according to the dialectical method, which elevates the human being to the higher world, namely, the Forms, and transcends the changing sensible world, which does not attain immutable truths but only false ones that bear no relation whatsoever to reason. It is the world of matter and sensibles, wholly separate from the world of intelligibles. Through mathematics, reason passes from the changing world to the immutable world, that is, the world of Forms, by means of an ascending dialectic. Reason seeks a clear and precise vision of a world in which knowledge is absolute, stable, and unchanging, expressing truth in itself. Mathematics, distinguished by rational abstraction, seeks to arrive at precise and stable truth, yet it is not truth in itself; therefore, it is a path of passage

to the world of Forms, which illuminates the human path through reason, having undergone mathematical training and the discipline of the self by abandoning a world in which it is alien and within which it cannot distinguish between right and wrong. It seeks to realise itself through reflection on the conditions and judgments of reason that direct it upwards. However, it must look towards the world of intelligibles, wherein reason is granted free rein and is the sole guide to attaining absolute truths in themselves. These truths do not change under any circumstances. Reason began to develop itself, no longer requiring merely mental images but also the exemplar of the image, namely, the thing in itself, which is not composed of parts but is stable and remains in the same condition. The philosopher is the only person able to penetrate the essence of things in themselves to reach eternal truth, which does not change in accordance with the law of order and reason. Thus, Plato gave Greek philosophy a new direction, from a natural philosophy that sought the origin of the cosmos to a philosophy founded on Forms or essences in themselves, that is, the world of ideas in themselves, voyaging from the world of sensibles to the Form of the Good, which confers truth upon the objects of knowledge. In this process, reason ascends from the world of change to the world of stability in itself by means of an ascending dialectic. In Plato, reason was associated with the metaphysical dimension, for it transcends sense and nature by resorting to the supreme form to apprehend things in themselves. This led him to draw a sharp separation between existence and essence. This, in turn, led to the development of a mathematical dimension that addresses purely rational forms. However, it remained under the shadow of a world entirely unrelated to reality and situated within the world of Forms in itself. We continue our historical journey of reason and come to Aristotle (384–322 BC), called the First Teacher, because he excelled in logic, founded it, and established essential rules and principles that help reason avoid error. In his book *Posterior Analytics*, Aristotle defined reason as the power of the soul by which the human being attains certainty concerning true, necessary, and universal premises, not through syllogism at all, nor through thought, but through nature and innate disposition, or from childhood, or from a source of which one is unaware, both as to how and whence it was acquired. For this power is a certain part of the soul through which primary knowledge is attained, not by thought or contemplation at all, and certainty concerning premises possessing the qualities we have mentioned, and those premises are the principles of the theoretical sciences (al-Farabi, 1938). In *Posterior Analytics*, Aristotle defines reason as a very important part of the human soul from which primary forms of knowledge proceed, not through inference or exertion but through innate disposition, to attain certainty. As for the reason that he mentions in *On the Soul*, he made it of four kinds, passing through four stages: potential intellect, actual intellect, acquired intellect, and active intellect. This is connected to Aristotle's theory of knowledge, beginning from the sensible world, namely, nature, and abstracting things from their sensible form to their essential form through stages in which sense and reason participate together.

Aristotle spoke of the sensible world and its importance in attaining sensible knowledge, which he did not criticise; rather, it is fundamental for attaining rational knowledge. In this way, he differed from his teacher, Plato, about the attainment of knowledge: "There is nothing that exists

separately from sensible magnitudes. Intelligibles exist within sensible forms, whether abstractions are so called or the rest of sensible attributes and their states. For this reason, on the one hand, in the absence of all sensation we cannot learn or understand anything; and, on the other hand, when using the intellect, it must be accompanied by images, because images resemble sensations, although they are without matter" (Aristotle, 1949). If the world of Forms tells us nothing about the essence of things within things, then the world of sensible particulars tells us that. It is a changing world subject to becoming and motion. However, we can obtain stable rational forms through sensible abstraction, which is an essential process carried out by reason by potentially extracting sensible forms from nature, while the soul assists it through these faculties: the common sense, imagination, retention, and memory, culminating in the rational faculty, which apprehends universal meanings. Imagination plays an essential role in creativity because it can combine the images we have extracted from our senses to compose something new that does not exist in reality, such as the flying horse we see in animated films. However, with Aristotle, it remained confined to the sensible domain and therefore could not make a significant contribution to human scientific achievements and innovations.

Aristotle based his philosophy on the duality established through the connection between the essence of the thing and its existence, for there is no separation between them. However, this constrains the dynamism of reason if it remains constantly bound to the sensible aspect. This is what we have observed in Euclidean geometry, which made space that sensible plane, and this hindered the development of mathematics until the emergence of non-Euclidean geometries, which changed the method, made space virtual rather than sensible, and gave free rein to the imagination to create discoveries, since it was no longer bound to the sensible aspect, but only at times. That is, there is separation and connection between essence and existence, although not at the same time.

Without forgetting certain scientific trends in Greece that addressed the problem of reason and its importance for human beings, or rather its essence, the medical treatise *On the Sacred Disease* by Hippocrates is regarded as the most striking. It not only states that the brain informs the organs how they function but also that the brain is the messenger to consciousness, informing it of what happens. We may also translate the word "sunesis" into consciousness, intelligence, wisdom, or understanding. The meaning, however, is clear: the author of the treatise discussed at length the interaction of mind and body, and he explains the effect of the brain by stating that "it is air that gives it intelligence". The explanation is that when a human being draws breath, the air first reaches the brain (Popper, 2024, p. 219). It is thus clear that the concept of reason did not follow the same previous course; rather, there were multiple and different ideas, the substance of which is that the physician Hippocrates made the brain the primary center and director of the human body and regarded it as the embodiment of human consciousness and natural intelligence and as that which inspires wisdom. For Hippocrates, the reason is the brain, that is, the material aspect. This view closely resembles that of certain modern and contemporary studies that have reached similar conclusions. However, in a contemporary manner, the material mass is concentrated in the brain, which is the vital center of the human body. By virtue of this,

instructions are given to all the organs of the body, whether in directing thought or in sustaining bodily movement. This is what the medical perspective expresses.

### **Second: In Medieval Thought**

When we speak of the medieval period, we refer to the relationship between philosophy and religion in general, whether that of philosophy to Islam, Christianity, or even Judaism. Consequently, we find ourselves before reason and transmission, passive intellect and active intellect, before the problem of creation, the existence and essence of God, and other religious and philosophical problems.

#### **A. In Arab-Islamic Thought**

Turning to Arab-Islamic thought, the Moroccan thinker Mohammed Abed al-Jabri (1935–2010), in his discussion of the formation of Arab reason, draws on the concept of reason in the work of the French author of the philosophical encyclopaedia, Lalande (1867–1963), who divided the term reason into two categories: constituent or active reason and constituted or dominant reason. By the first, he means the mental activity carried out by thought in inquiry and study, which formulates concepts and determines principles. In other words, it is the faculty by which every human being can derive, from the perception of relations between things, universal and necessary principles, and it is the same for all people (al-Jabri, 2002). For constituted or dominant reasons, it is the sum of the principles and rules upon which we rely in our inferences. Although it tends toward unity, it differs from one age to another just as it differs from one individual to another. What we mean by Arab reason is constituted reason, that is, the set of principles and rules that Arab culture offers to those who belong to it as a basis for the acquisition of knowledge, or rather imposes upon them as an epistemic system (al-Jabri, 2002, p. 15). When we speak of this dual division of reason, we must not forget that there is a close relationship between the two, which is based on mutual influence; that is, there is no complete separation between the constituent active reason and the constituted dominant reason, except from the perspective of logical division. This is what Lalande confirms, in that dominant reason, namely, the set of mental principles and rules prevailing in a given period, is a product of active reason, that is, that mental activity by which the human being is distinguished from the animal. Its source lies in reason itself, not outside it.

On the other hand, constituent active reason presupposes a constituted reason, as Lévi-Strauss says. This is what tempts us to say that Arab reason, even in its active manifestation, is a product of Arab culture (al-Jabri, 2002, p. 16). This means that there is no universal and absolute reason; rather, every culture has its own active constituent reason and a dominant constituted reason to which it belongs. Absolutism in thought abolishes all relative belonging. Cultures differ from one another, and older and younger generations differ in their formation of reason.

In the previous paragraph, we spoke about Arab reason in general and how Mohammed Abed al-Jabri presented it as a constituent and active reason and as a constituted and dominant reason, arising from the Arab-Islamic culture to which it belongs. Even if certain other cultures contributed to the formation of Arab reasons, such as Greek culture and ancient Eastern civilisations, Arab-Islamic culture nevertheless possesses its own religious, intellectual, and

even scientific particularity, that is, its identity. We have devoted this section to identifying reasons in the medieval period among Arab and Muslim scholars and philosophers and to examining what reasons were accomplished in that period and the most important achievements it produced. Therefore, we do not discuss numerous philosophical figures and attempt to survey and study all their works, which cannot be accommodated within a single research article; we wished only to point to them because they deserve credit for their genuine contribution to the construction of an Arab-Islamic philosophy that transformed the concept of reason. It is neither confined within the framework of pure reason nor is it a practical reason in which the right of the former to effective participation in human knowledge is abolished. Rather, it is an integrative enterprise. This is what we observe through the classification of the sciences discussed by the philosopher al-Farabi (874–950) in his book *Enumeration of the Sciences* and how he divided the sciences into theoretical and practical.

Arab reason was distinguished by its orientation toward both sensible and rational creativity, and this led Muslim and Arab scholars in the Renaissance period to develop scientific tools and methods, especially experimental methods. Jabir ibn Hayyan (721–815) is regarded as the first to use the laboratory to conduct his chemical experiments, that is, to transfer them from the world of natural phenomena, the external world, to the place of his experimental work, and thus to reproduce the phenomenon within the laboratory under the same conditions to arrive at laws that would help him lay new foundations for chemistry. This work was also present in modern Western philosophical thought, as there are testimonies indicating that some of the Western scholars who emerged during that period, such as Roger Bacon, assimilated the legacy of the scholars of Islamic civilisation and were influenced by their experimental orientation, which constituted the nucleus for the development of science and technology in the modern age. This influence was noted by the historian Briffault in his book *The Making of Humanity*, where he states that Roger Bacon studied Arabic and Arabic science at the University of Oxford under the successors of his Arab teachers in al-Andalus (Basha, 1983). We turn to Ibn al-Haytham (965–1040) and consider his various contributions, including those in physics and mathematics: "In all these studies, Ibn al-Haytham continued to apply, effectively, the scientific method that combines mathematical demonstration with experimental techniques. Although this did not enable him to answer all the questions he wished to investigate, his inquiries paved the way for the explanation of certain physical phenomena, such as the rainbow, and for the discovery of new principles, such as the principle of the photographic image" (Jabbar, 2011), as well as other innumerable discoveries and scientific writings. In the medical field, we find Abu Bakr al-Razi (864–923), who was devoted to medicine and composed a work of the utmost importance, *al-Hawi fi al-Tibb*, which served as the principal reference in Europe for 400 years. This development witnessed during the Arab Renaissance was due to the transformation in the outlook of human reason, from the intermingling of myth with Greek thought and the search for universality and being of reason amidst attempts to dominate and investigate the elements in nature in order to explain their origin and who created them, to a reason that searches for itself and its own creations to distinguish itself through a particular culture, namely, Arab culture,

under the umbrella of the Islamic religion, which does not speak merely of form but urges reason to find itself while remaining, on another level, connected to existence, and this is called the problem of distinguishing between essence and existence.

The journey of reason in Arab-Islamic culture is a journey of creativity and discovery of the very self of reason, from passivity to activity and then to dominance. In this phase, human intelligence invented many machines that applied scientific ideas in practice to facilitate human labor. Reason no longer thought solely about the religious aspect; rather, this helped it move beyond hollow metaphysics intermixed with Greek reason, which uses demonstration as an argument to overcome the most important fallacies of Greek thought. Thus, Arab-Islamic thought replaced the development of logarithms by the use of the experimental method, which does not diminish the role of reason in science but rather helps it to achieve multiple accomplishments, such as the invention of the musical instrument the oud, the development of logarithms by the mathematician al-Khwarizmi (781–847), and the foundation of algebra through his book *Al-Jabr wa al-Muqabala*, which in turn paved the way for analytic geometry; geometry and the science of ingenious devices or mechanics by the Banu Musa brothers; and other diverse creative achievements; the combination of mathematics and logic, which paved the way for the emergence of mathematical logic, as inspired by the books on logic and mathematics by Ibn Sina (980–1037), through the inclusion of the logic of relations; the architectural dimension and Islamic ornamentation; the discovery by the scholar Taqi al-Din of pumping machines that raise water without the use of animals; and the strong presence of technology in that age, along with many other great achievements. All of this was made possible by the natural intelligence of the human being to save both human effort and time and to affirm the necessity of the dynamism of both theoretical and practical reasons without giving precedence to one side over the other. There is a centrality of reason between its natural intelligence and its artificial intelligence in the early stages of its development, as well as the essentiality of the machine and its necessity for the advancement of the sciences and for helping the human being to arrive at the truths of matters for the sake of epistemic expansion without constraining reason. Rather, all the tools of knowledge are available, each serving the other. Thus, reason came to ascend to higher degrees in pursuit of the human aspiration to know the world that revolves around it and to unravel the enigmas of nature by means of science, technology, and philosophy, in which it excelled.

### **B. Christian and Jewish Thought**

Our historical journey reveals the presence of reason in the medieval West, where it was under the authority of religion, whether Jewish or Christian, and under the sanctification of religious texts. Thus, for example, the Christian was under pressure from the Church, which offered indulgences and monitored intellectual or scientific achievements that aligned with its decisions. Otherwise, the thinking human being, the philosopher, and the scholar were put on trial, executed, or expelled from their country because they did not conform to their religion, which, according to their way of thinking, prohibited those satanic ideas. In other words, the religious aspect fettered reason and prevented it from producing what accorded with its intelligence and

from bringing humanity out of darkness into light. Rather, they used Aristotelian logic to deceive people, seize their possessions, crush their knowledge and achievements, and suppress their intellectual freedom.

The principal goal of philosophy in the Middle Ages was to link faith to reason, to interpret the truths of doctrine and to defend them through rational analysis. Philosophy was the handmaiden and servant of theology, and reason was the interpreter of faith. In the medieval period, Western reason no longer signified logic alone but also observation and experimental testing, that is, knowledge of the natural world. This is evident in the ideas of both the philosopher Albertus Magnus and his disciple, Thomas Aquinas (Tarnas, 2010). Matters did not remain solely on this religious course; rather, a secular intellectual wave emerged, affirming the necessity of separating the scientific and intellectual sphere from the theological sphere so that reason might be liberated from the absolutism and sanctity of religion and faith. However, this did not receive its due share of actual implementation; instead, this movement was opposed by a group of religious men who misled Western reason by refusing to separate religion from any scientific or philosophical ideas.

During the long medieval period, a state of maturity was achieved in the Christian structure on all fronts: philosophical, psychological, religious, scientific, political, and artistic. By the height of the later Middle Ages, this development had begun to challenge the limits of that structure. A new spiritual independence was apparent everywhere. Slowly, painfully, yet with great magnificence, the Western mind was engaged in the process of opening itself to a new universe (Tarnas, 2010, pp. 264–265). This opening also had implications in the scientific sphere, including the emergence of printing in Germany in 1450 by Johann Gutenberg. The Gospels were the first book printed in Latin by the printing press in 1456. This invention facilitated the printing of manuscripts, old books, and scientific works (Basha, 1983). Thus, European culture in the later Middle Ages became determined to abandon the old cultural structure, even if only partially, to enter a serious, new, and advanced stage that would transform the Western world through modern reason, which changed its course toward seeking the essential means for constructing appropriate methods that would open for it the doors of true knowledge. Natural intelligence was thus remembered that it must proceed towards the necessary conclusions that accord with the new premises, namely, the liberation of reason from all the religious constraints that had curbed its force.

### **Third: In Modern and Contemporary Western Thought**

In its modern and contemporary phase, reason sought to transcend old ways of thinking and to eliminate religious authority that obstructed the development of both philosophical and scientific thought, making reason that positive power, which determines the methods appropriate to this new age in accordance with the subject under consideration, and which undertakes construction, interpretation, deconstruction, constructive criticism, and other multiple operations entrusted to it. Experience also assumed its share in this achievement, which does not oppose; rather, it is an important part of it, since it formulates hypotheses, analyses and synthesises ideas, and arrives at the general laws of the phenomenon under study. Beginning

with Francis Bacon (1561–1626), who established organised rules for the experimental method and criticised old thought founded upon illusions, especially metaphysics, which obstructed the course of scientific development, the brilliance of the Italian scientist Galileo Galilei (1564–1664) emerged during the same period, who demonstrated, through the experimental and mathematical method, the error of Aristotle's theory of motion by using the telescope. He also affirmed that the Earth and the other planets rotate around the Sun, not the other way around, in what is called the heliocentric theory advanced by Copernicus. This scientific discovery was met with rejection by the Catholic Church, which claimed that this theory was mere heresy and contradicted what had been stated in Holy Scripture. Galileo's final trial, which passed through several stages, ended in house arrest until his death. This is clear evidence that Western reason in the modern period remained under the weight of the Church, which would gradually fade thereafter. The religious justifications that governed European society constituted an obstacle to both scientific and philosophical development. The experimental method developed and found its share of genuine application on the scientific scene: hypotheses were not to be put forward without verification by experiment; otherwise, they remained mere conjecture. These ideas were adopted by the English physicist Isaac Newton (1642–1727), who composed an important book, *Mathematical Principles of Natural Philosophy*, that brought together *mathematics and natural philosophy*. He was the author of the theory of classical mechanics, which is still taught in our schools and universities, as well as of contributions in optics, the law of universal gravitation, differential and integral calculus, and other discoveries.

In contrast, we find the emergence of the special and general theories of relativity of physicist Albert Einstein (1879–1955), as well as the photoelectric effect, which led to the rise of quantum theory, together with other discoveries that came to dominate modern and contemporary physical science. Even Einstein's scientific predictions later found confirmation. An example of this is the 1993 Nobel Prize, which was awarded to two physicists who, by analysing the motion of double neutron stars in the sky, indirectly proved the existence of gravitational waves that Einstein had predicted in 1916. Similarly, the 2001 Nobel Prize was awarded to three physicists to confirm the existence of Bose–Einstein condensates, a new physical state predicted by Einstein in 1924 (Kaku, 2011). These great achievements, along with others in physics, astronomy, and other sciences, profoundly affected scientific and technological development, producing new machines and electronic devices that serve humanity across every field. The subject of science changed from the macrocosm to the microcosm. Metaphysics and religious powers no longer obstructed the movement of scientific development, and this was due to the positivist, experimental, and logical school led by a group of scientists and philosophers, including the British philosopher Alfred Jules Ayer (1910–1989), who advocated the “principle of verification” from nature. Only synthetic and analytic propositions have meaning, whereas propositions that have no counterpart in reality have no meaning and are empty of all significance, and those propositions are metaphysical propositions. This school launched a fierce campaign against metaphysics because it is not subject to the experimental method and has no counterpart in nature; consequently, it was rejected absolutely. These factors paved the

way for the emergence of a new world, namely, the world of industry, and thus for the realisation of scientific ideas on the ground through the machine, which has now begun to compete with the human being in terms of its negative uses.

Human reason has entered into a revolution with itself and with its new environment, one that allows it to affirm itself amid intellectual, scientific, and ethical conflict. Thus, science took its share of study through this new reason, which keeps pace with the actual development of new technology, to which it has contributed through its natural intelligence across complex and difficult historical stages, through which it seeks to affirm its actual existence rather than to dissolve into the crucible of intellectual conflict between scientific and philosophical currents. Rather, it seeks to arrive at virtual studies that have entered its own world, charged with the machines it has invented to spare it the effort of past years: globalisation, the virtual world, the robot, and technology in all its forms. This has contributed to the emergence of reason in an artificial guise, in which artificial intelligence competes with natural intelligence. This intellectual and industrial revolution is a revolution of reason that has moved from thought to achievement and thus to the replacement of its own place through artificial intelligence, which enables it to do as it wishes, to create and to destroy others and to kill with the lethal weapons it has manufactured to wage wars against its fellow human being without mercy or compassion. The rejection of metaphysics has both positive and negative aspects.

In this article, we discuss the existential transformation of reason and the most important fundamental stages that changed the centrality of natural intelligence, which views reality and the world, or the external universe, through the perspective of the rational and thinking human being who is distinguished from the rest of the animals by thought, deliberation, distinction, and creativity, in his pursuit of mastery over nature, which has preoccupied him since antiquity so that he may solve the most important enigmas for which he has found no solutions. The human being regards nature as one of the universe's secrets, full of surprises. He lives in the present and looks to the past to transcend it in the future. This transformation, or these historical leaps between the past, present, and future, has led him, through his intelligence, to contemplate a world in which he dreams of being the maker, the organiser, and the controller, and this can be achieved only through the search for the most precise and essential details that make him the center of the universe. This transformation will not be accomplished unless the course of human thought changes, from the sensible and real world, of which he is an inseparable part, to a world of which he is the maker and mover, namely, the virtual world that he seeks to create in his vast imagination and to realise in reality. It is the world of artificial intelligence.

#### **4. The Essence of Artificial Intelligence**

Artificial intelligence has become one of the most widely used terms addressed by scientific research in terms of the seriousness of the concept and the extent of its impact on the course of human thought, as well as the fears arising from its use in the negative domain and the departure from the ethical domain in that regard. Should we then replace natural intelligence with artificial

intelligence? Before discussing artificial intelligence, we attempt to define its concept and essence.

#### **4.1. The Historical Development of Artificial Intelligence**

The purpose of discussing the journey of reason from natural intelligence to artificial intelligence has been to trace a journey through which we explore the creations of the human mind, which did not begin in this contemporary phase, particularly in relation to the machine, but had an actual and prior presence in ancient civilisations, including ancient Eastern civilisations, which we did not mention at the outset, the Greek civilisation, and the other civilisations. This is attested to by works on the history of science that analyse science and its relation to technology because every scientific idea has a history that bears witness to its formulation, recording, and implementation. This introduction is intended to ensure that we do not forget the historical stages that contributed to the emergence of this achievement, namely, artificial intelligence, a product of the succession of civilisations.

The subject began in the 1940s, when discussion of the development of computer programming increasingly occupied the scientific scene, persistently and pressingly. This prompted scientists, especially specialists in mathematics, to demonstrate their scientific abilities in creativity and discovery to realise them in practice. The British mathematician and logician Alan Turing (1912–1954) succeeded in deciphering the code of the complex and formidable German machine Enigma, which was used by Germany in the Second World War through the invention of the Bombe machine, which helped shorten the war and reduce its duration by at least two years. This precise machine enabled Alan Turing to establish a new and fundamental foundation that led him to venture into the world of computers and, consequently, the world of advanced machines. In 1950, Alan Turing presented a study entitled "*Computer Machinery and Intelligence*," in which he compared the intelligence of the human being with that of the computer by conducting a test of intelligence through the simultaneous answering of a large number of questions posed to both parties. Thus, the contemporary world arrived at establishing, through its scientists, a difficult comparison between natural intelligence and what came to be called artificial intelligence.

In 1956, a conference was held at Dartmouth College in the United States, at which the term artificial intelligence was first used by the American researcher John McCarthy (1927–2011). In 1960, scientists in the field of computing attempted to develop a device capable of solving any problem in human life. Here were the first steps toward predicting an intelligence that might match or surpass natural intelligence. In 1966, scientists and specialists invented *Shakey*, the first mobile robot capable of performing certain light tasks for which it had been programmed through logical processing, and that same year, the conversational robot *Eliza* was created. From 1974 to 1980, researchers were unable to advance scientific innovation in the field of artificial intelligence because companies and institutions did not fund such research. From 1987 until 1994, however, the German Research Centre for Artificial Intelligence was established, through which some important applications were introduced by German scientists, who found in this

institute the means to develop their work in the field of artificial intelligence applications, including the creation of more advanced robots, image processing, and other achievements.

#### **4.2. The Concept of Artificial Intelligence**

A definition of artificial intelligence may be offered as the science concerned with creating machines that perform behaviours regarded by human beings as intelligent in their kind. That is, it is the replacement of natural intelligence by a machine made by a human being that performs human tasks and behaves according to a particular program placed at human disposal. It is also defined by Russel Bell, a researcher in the field of artificial intelligence, as an attempt to make “ordinary machines behave like the machines we see in science-fiction films”. Artificial intelligence, then, is a science whose primary aim is to enable the computer and other machines to acquire the quality of intelligence and to possess the ability to carry out tasks that, until recently, were confined to the human being, such as thinking, learning, communicating, and creating (al-Nour, 2005).

The American scholar John McCarthy is regarded as the first to use the term artificial intelligence in 1956. He defined it as the science and engineering of making intelligent machines, especially intelligent computer programs, or as a branch of computer science that aims to create intelligent machines. Marvin Minsky, a pioneer in the field of artificial intelligence and one of its founding fathers, also indicated that artificial intelligence is “the science through which machines employed in the service of the human being can be made to carry out tasks that require intelligence for their execution” (Nassim, 2021). This means that it is a science concerned with intelligent software that uses computers to create its own world through intelligent engineering, primarily based on mathematical work. In other words, natural intelligence exerts a very great effort to develop artificial intelligence, which it ultimately places at its own disposal.

The writer Kevin Warwick, in his book *Basic Artificial Intelligence*, also defines it by stating that if we regard human intelligence as the highest and only intelligence, then artificial intelligence, at the limit of its capacities, will simulate human intelligence and can replicate and transfer it (Nassim, 2021, p. 21).

We have presented several definitions of artificial intelligence, all of which are consistently linked to machines. It is a science that studies machines according to purely mathematical principles, enabling them to serve human beings and alleviate both physical and intellectual strain. It has also led some to view it, with great challenges, as something that will simulate natural intelligence, and this dilemma will result in the machine taking the place of the human being.

#### **5. Characteristics of artificial intelligence**

**A. Symbolic Representation:** The first characteristic by which artificial intelligence is distinguished is that it is symbolic rather than numerical. At the fundamental level, a computer consists of binary units that can assume only two states, conventionally represented by "1" and

"0". This means that the computer can understand only "yes" or "no" and cannot distinguish shades of meaning between them. However, if we consider the human being at the same level, that is, at the level of neural cells, we find that human understanding also depends on a binary state. However, it is capable of expressing and analysing various ideas and situations and of making appropriate decisions in relation to them. There is no doubt that the possibility of expressing higher and more complex conceptions using binary symbols understood by the computer makes the simulation of the decision-making process possible (Bonnet, 1993).

**B. Heuristic Reasoning:** Artificial intelligence programs are distinguished by the types of problems they address because these usually do not have a specific algorithmic solution. Therefore, they resort to heuristic reasoning, using nonsystematic methods and attempting to use the first method, which appears more suitable while retaining the option to switch to another method if the first does not achieve the desired goal (Bonnet, 1993, pp. 14–15). The more capable these programs are of heuristic reasoning, the better they are.

**C. Knowledge Representation:** Artificial intelligence programs differ from statistical programs in that they contain a representation of knowledge. They express a correspondence between the external world and the computer's symbolic inferential operations. The process of knowledge representation is easy to understand because it usually does not use numerical symbols (Bonnet, 1993, p. 15).

**D. The Capacity to Process Massive Data:** Recently, the downloading of artificial intelligence programs needed by human beings to facilitate their services, whether personal or professional, as well as at the level of public and private institutions and companies, has increased every day. The role of artificial intelligence lies not only in storing information but also in analysing it through reinforcement learning using self-supporting algorithms.

**E. Incomplete Data:** Artificial intelligence programs possess a high capacity to connect various incomplete data, although this can hinder the operation of artificial intelligence programs in arriving at possible solutions. Over time, however, these programs have acquired sufficient ability to solve problems when complete information is unavailable, enabling them to make appropriate decisions (Nassim, 2021, p. 71). This work, performed by artificial intelligence, namely, making appropriate decisions even when they are incomplete, in the sense that they involve a margin of error, may be compared to emergency or urgent cases in hospital settings. If there is not enough time to gather complete data on a critically ill patient, the physician must make a treatment decision on the basis of incomplete data.

## **6. From the Centrality of Reason to the Primacy of Its Artificial Production: Where To?**

Reason has always been, and continues to be, at the center of intellectual studies, both scientific and philosophical. However, the dimensions to which it now belongs have become far removed from the real world. Contemporary studies have become highly centred on artificial reason, in which natural reason is contested in terms of existential value. We are not speaking of the ethics of this reason and its preservation, so that it may remain alive and interact with others according to the principles safeguarding the human element; rather, whoever possesses the power of

artificial intelligence can dominate the entire world. The existential supremacy of reason at the present stage has become a grave danger to itself and to the human being, threatening survival, freedom, thought, and existence. Is it conceivable that the reason should wage war against itself through tools invented by natural intelligence and embodied in artificial intelligence, while it searches for the necessary solutions to remove danger from its world, even though the solutions are embodied in its own thinking? However, it does not wish to disclose them because it seeks the power to remove all obstacles and assert its dominance.

The power of human thought has moved from literary imagination to philosophical imagination and then to scientific imagination. Thereafter, human imagination moved away from nature, from which it had directly drawn all its various achievements, toward an artificial imagination. Its purpose was to help humans overcome the difficulties of life, reduce effort, and free time for other tasks. However, the scope of imagination expanded from construction to destruction. We have come to realise the saying of Thomas Hobbes: 'survival of the fittest'. Power lies in the power of artificial intelligence, which destroys one silently before a world that possesses nothing but submission and defeat. It is the very world that created this kind of intelligence and transformed it into a force of deterrence, provocation, and mockery against the other with whom we had sought a means of coexistence. We have come to think about the other in an unethical way, namely, how to remove him from existence to display power.

Today, we speak of wars that are unavoidable, of a third-world war in which we fear the other because he possesses all the advanced contemporary artificial means created by the powerful human being to wage war against the weak human being, fabricating every possible justification to remove him from the cosmic order. The conflict has now become one over achieving digital sovereignty in the sky rather than on the earth. It is a difficult confrontation in which the virtual world becomes a weapon and the sky becomes a new battlefield. The battle has shifted from the earth to whoever holds the keys to the sky. Is this the dream of the human being who once enjoyed security and sought ideas that would realise happiness with the other, only to turn to ideas that destroy the other with complete satisfaction and bring about destruction? Whither are you going, O human reason, you who were once preoccupied with yourself and your world, moving here and there in pursuit of cosmic harmony, only now to employ artificial intelligence with all cunning to destroy that balance for the sake of excessive selfishness?

Liberation from bodily existence, which has wearied you, O reason wandering through time, into an essence that does not acknowledge reason but rather the artificial substitute that has replaced you, instead of continuing along the existential course realised by my two propositions, essence and existence. You have no existence, O reason, in this arena that acknowledges not humanity but the rule of machines and instruments that have effaced you under the pretext of objectivity and the logic of nonlogic. Where are the ethical standards that have sang throughout past centuries? Where are human rights, invoked by organisations unable to defend you because you are dissolved and dying? You are now invisible. An explicit existential proposition now proclaims itself: artificial intelligence is the essence and existence of the age. It is artificial intelligence in which everyone who possesses the reins of its invention and control, and thus

leadership on earth and in the sky, takes pride. This is the virtual world in which you have been positioned, from reality to unreality, not to imagination but to nonimagination. You have declared war upon reason, O reason, and have altered your centrality from the earth so that, with artificial intelligence, you now encompass the sky, which is illuminated by the ruin of minds through the launching of lethal missiles that violate the sovereignty of reason, that is, of human beings and people; through the use of satellites that determine your geographical location and monitor the human element, not to protect it but to exploit and control it like robots. If you do not obey orders, then you are counted among the dead. Where are you going, O reason? Will you return backwards and recover the memories that have passed, written by philosophers, scientists, and thinkers, and search for your happiness? Or is it too late, with no possibility of return, and therefore only continuity in industrial existence remains, an existence that has purposeful and positive ends? However, in its new guise, it has taken the opposite direction: domination of nature, alteration of its features, and the glorification of racism in all its multiple forms, employing violence justified by religious belief in which no validity is to be found. One reason we have come to watch different spectacles directed by artificial intelligence and applauded by all people out of fear of the irresistible power it has created. We have become like lifeless dolls, mere bodies moved by the great powers. Where are you going, O reason? Between being and not being, between the positive and the negative, you rebel against yourself, from the centrality of thinking within reason itself to thinking outside reason, between an essence that you realised and an essence that you fabricated to help you solve the cosmic enigma and live in peace. However, you did not consider the terrible consequences whose outcomes you failed to calculate, and now matters have gone out of control. The only solution is for reason first to coexist with itself and then with the other so that it may reconsider its calculations and examine computational algorithms: is there coherence in the world order, or overwhelming chaos with no way of resolving it except by turning towards new endeavours in which my happiness and your happiness may be realised within a framework of tolerance and nonviolence? Come, O reason, let us draw a new direction toward a global balance that serves all sides without religious or political complexes and without the motive of power and domination. The problems arising from this artificial intelligence are those for which the appropriate solutions must be found. It is you who have used artificial intelligence negatively and hostilely toward others. Come, let us together correct the direction of sound we must adopt before it is too late for the sake of the essence of the human being and the activation of human existence. No to the death of reason, no to the death of natural intelligence; yes to artificial intelligence that serves all these propositions, and no to that intelligence which participates in the death of the human being.

## **7. Conclusion**

We have discussed the actual transformation of reason through an intelligent journey originating within itself to uncover the hidden aspects of the various activities it has undertaken across civilisations, whether manifested in success and progress or in the totality of failures. It proceeds with steps that are sometimes deliberate and at other times random, governed not by order but

by overwhelming chaos. It learns from its errors and seeks to achieve its aims, namely, the domination of nature, whose phenomena it has been unable to interpret in any absolute manner. Consequently, it resorted to scientific ideas in which it excelled, following a scientific method, far removed from metaphysical visions that obstructed its course. This reason has become exhausted, struggling for its survival and for adaptation to every new condition that seeks to contain it. It is natural intelligence, which never tires of pursuing the discovery of the enigmas that arouse its curiosity. It found for itself a path through which it seeks to realise its desired aim, namely, attaining the truth of things and living in security and stability. However, the subjects are multiple, and the methods are diverse. How will it find a solution in the midst of a world full of difficulties? It is the path of science that will open the doors for it to exercise its right to live, create, and invent.

Through this journey, the human being has been able to recall his past while living in a present in which he does not know his future. Therein, he has reaped the sum of his deeds and achievements and found the solution in the exchange of roles between natural intelligence and artificial intelligence. However, he found himself imprisoned by the machine, which constrained his actual presence in the belief that he would thereby escape the hardship that beset him. It is technology, of which he sang the praises throughout successive stages, that provided him with relief from effort and hardship through the use of various tools that accelerated the fulfilment of his needs and facilitated his understanding of the universe that contained him. The terrifying matter is the technological revolution that competes with the human being in terms of survival and continuity or in bringing about his destruction at the hands of his fellow human being through the use of machines, especially robots, that rival the human being in his actions and thoughts and thereby find for themselves a new world in which to compete with him. This is what physicist Stephen Hawking warned against, namely, that the continuous development of artificial intelligence may lead to the negative outcome that machines will be able to redesign themselves autonomously. He also held that, in evolutionary science, there is a process called natural selection: the beings most fit for survival reproduce and endure, distinguished by their capacity for adaptation and for developing certain traits, whereas those unable to adapt become extinct. The same concept, he argues, may be applied to software that uses subprogrammes to develop itself without human intervention so that the more advanced it is, the more enduring it is. We cannot know in the future whether we will be able to control artificial intelligence (Nafisa, 2021). Thus, the human being has come to seek the achievement of his aims through the risk of creating an artificial intelligence that simulates or replaces human behavior. He will not stop, because stopping means the end and a return to the past. Therefore, we must seek possible solutions that keep the machine in service of the human being, uphold the ethics we apply, preserve the human species, and make artificial intelligence merely a means and not an end.

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