



# COMPARATIVE STUDIES OF THE IDEAS OF RATIONALITY IN THE PHILOSOPHICAL THOUGHT OF EARLY MODERN EUROPE

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<p><b>Received:</b> December 6<sup>th</sup> 2023 <b>Accepted:</b> January 4<sup>th</sup> 2024 <b>Published:</b> February 7<sup>th</sup> 2024</p>	<p>Scholars in the realm of social knowledge are increasingly focusing on examining the philosophical legacies and valuable spiritual contributions crafted by both Western and Eastern intellectuals. Consequently, it is imperative for us to familiarize ourselves with the seminal works of contemporary philosophical thought. This approach is essential for a precise and unbiased evaluation of the evolution of philosophical concepts, the intellectual progress within our own society, and the primary concerns of modern philosophy. Hence, the exploration of philosophical issues and heritage consistently remains a pressing matter on the scholarly agenda.</p>

**Keywords:** Cartesianism, rationalism, subtle matter, emptiness, space, time, composition method.

## INTRODUCTION

Pascal's introduction to philosophy stemmed from Descartes, marking his initial influence. Subsequently, he absorbed and creatively expanded upon the principle of reasoning. Pascal valued Descartes' axiomatic-deductive method, refining it into his own "geometric method." Despite divergent approaches, they shared common ground in scientific methodology and the pursuit of truth. Critiques contrasting them are misguided; Pascal's inductive tendencies and Cartesian deductive methods complement each other. Both Descartes and Pascal confronted skepticism and endorsed a balanced perspective, with Pascal admiring Descartes' optimism in the pursuit of knowledge while challenging extreme skepticism. Pascal's recognition of the nuanced interplay between absolute and relative truth, incorporating external sensations and intuitive understanding, underscores the objectivity of probable knowledge, a cornerstone of his contributions to probability theory.

## REVIEW OF THE LITERATURE PERTAINING TO RESEARCH

The teachings of René Descartes and Blaise Pascal occupy a special place in the development of philosophical thought. Their teachings constitute two diametrically opposed systems in France. Supporters of this opinion include V. Cousen (Cousen, 1857: 325), E. Droz (Droz, 1886: 236), L. Shestov (Shestov, 1923: 325), L. Brenshvig (Brenshvig, 1944: 294) and others. Of course, these are the thoughts of the past centuries. But even today, their influence can be felt in Pascal studies. In addition, a comparative study of the philosophical views of Descartes and Pascal indicates the direction and intensity of the ideological struggle in the 17th century.

## METHODOLOGIES

The study employs textual and conceptual analysis of primary sources to guide the research. The investigation systematically progresses from basic to intricate aspects of the topic. Additionally, the philosophical concepts of René Descartes and Blaise Pascal are elucidated through comparative analysis with the perspectives of other philosophers.

## ANALYSIS AND CONCLUSIONS

Descartes' philosophy embodies rationalism, deductive methodology, and epistemological elevation, characterized by a distinct "anti-existential" stance, contrasting with Pascal's vibrant expression of an "existential" worldview, mystical inclinations, inductive methodology, and skepticism. L. Brenschwig underscores the conflict between Descartes and Pascal, extending beyond philosophy and religion to encompass their scientific perspectives. Brenschwig suggests that Pascal sought to dismantle Descartes' established scientific paradigm. (Brenschwig, 1944: 158). This theoretical divergence is emblematic of their personalities: Descartes is depicted as a composed, deliberate truth-seeker, fully cognizant of his role in science and philosophy, while Pascal is portrayed as a conflicted, introspective seeker of truth, deeply affected by the imperfections of science, human existence, and culture, engaged in ideological confrontations with figures like the Jesuits. Modern scholar M. Legern characterizes Descartes as "heroic" and Pascal as "tragic." (Le Guern, 1971: 176).

Lev Shestov goes into the matter very deeply and calls Pascal an ancient philosopher, and Descartes a modern philosopher: "Like Julian, Pascal wants to completely turn the era upside down, because he demands to abandon everything that mankind has achieved during the Renaissance. Everything was updated, and that's when its historical destiny was revealed. But Pascal was afraid of the news ... History does not favor such things. Descartes, not Pascal, is considered the father of the philosophy of the New Age... This is the decision of history: they are proud of Pascal, they follow Descartes. This verdict leaves no room for reflection" (Shestov, 1923: 2-4). Of course, such an unusual judgment undermines Pascal's place in European philosophy, whose philosophy was ambiguous and contradictory. L. Shestov's thought refers to the religious teaching of Pascal, and his religious views were in harmony with the teaching of Augustine in early Christianity. In the field of science and philosophy, the thinker not only did not keep pace with his time, but went 200-300 years past his time and came close to the present era (Strelsova, 1979: 16).

Rushing to oppose Descartes and Pascal, the above researchers distort their positions. They absolutize Pascal's skepticism, inductivism or mysticism. In fact, Pascal's outlook was wide-ranging.

In particular, Pascal's critical and negative attitude towards Descartes' philosophy is exaggerated. But their general attitude against scholastic philosophy remains in the shadows. Similarly, Descartes' ideological influence on Pascal is ignored. We have to pay serious attention to one thing, Pascal not only adopts some ideas of Descartes, but also corrects the one-sided teachings of the great rationalist.

In 1647 Pascal meets Descartes. Until then, Pascal had familiarized himself with Descartes' works entitled "Remarks on Method", "Metaphysical Reflections" and "Principles of Philosophy". Similarly, he reads "Correspondences". This work of Descartes was published by Clercelle in 1657. Pascal, first of all, objects to Descartes' hypothesis of "subtle matter" (*matiere subtile*). According to him, the soft matter fills the space, just like the space up to the mercury in the tube, the "Torricelli space" that Descartes approved in his conversation with Pascal. The young scientist says nothing against the great authority, but the philosopher-scientist objects to the Jesuit priest Noel (Noel was Descartes' teacher at the College of La Fleche). Noël uses Descartes' hypothesis that there is no vacuum in nature to refute Pascal. In particular, Noel relied on the scholastic doctrine called "horror vacui". Descartes did not deny this belief because it was outdated. The philosopher understands the scale as an attribute of material substance and interprets it only as a geometric space. Space is the "inside" of all bodies, including matter in general, existing inseparable from matter. Similarly, in his physics, the concept of absolute empty space, opposed to matter, completely disappeared: "As for the word empty space understood by philosophers (that is, space without any substance), it is clear that in the world space is either 'q, because space as an internal place does not differ from the extent of the body" (Descartes, 1950: 473). Relative emptiness is a space that "doesn't have what we think it should be", for example, a container without water, a lake without fish, a load without luggage. ship etc. This he recognized (Descartes, 1950: 473).

From this concept of matter and space of Descartes comes the hypothesis of "relative matter". "Subtle matter" fills the entire being, including the spaces between things. That is why scholastic metaphysics always tried to use "no place for any mysterious forces" and for emptiness. Descartes tried to explain natural phenomena (magnetism, gravity, heat, etc.) in this way. Descartes' physics was opposed to scholasticism, based on the principles of matter and mechanical motion, but the lack of experimental evidence made it intellectual at every stage. It is this aspect that leads to Pascal's objection. Pascal's ideas are concrete. In his letter to Noël, Pascal rejects the hypothesis of "invisible matter, inaudible matter, imperceptible by any senses" and not confirmed by any scientific experiment: "If we rely on such reasoning, then even the greatest complications can be solved. Then the flooding of the seas and the attraction of the magnet can easily be explained, that matter is thus constituted" (Pascal, 1963: 202). When studying natural phenomena, Pascal favored evidence, experiments, and experiments. That is why his ideas about nature are clear. Different from Descartes' abstract mental structures. According to Manjo, "Pascal called Cartesian philosophy a novel about nature, like a Don Quixote novel" (Pascal, 1963: fr. 1008).

Pascal, who achieved successful results from vacuum experiments, was strict and consistent in his conclusions, and very careful in the general philosophical sense. Of course, he does not consider the "Torricelli gap" absolute, he considers it conditional, that is, this gap appears under air pressure. Pascal calls it the "visible void" (*vida apparent*) and defines it as "the 'empty space' in nature which is previously unknown or not filled with sensible matter" (Pascal, 1963: 202). . When, continues Pascal: "as long as this 'apparent space' is not filled with some matter, it remains a real or existing space" (Pascal, 1963: fr. 1008). Descartes' sarcastic reaction to these conclusions of Pascal cannot be justified: "The teenager who wrote this book has a lot of emptiness in his head and is very sad. Here we are talking about Pascal's work entitled "New Experiments on Emptiness". I think that even in a larger book its foundations would not be sufficiently reliable" (Descartes, 1960: 376). But both thinkers were right in their own way: Descartes as a philosopher who denied the absolute void in space, and Pascal as a scientist who recognized the natural-scientific basis of the void that appears under air pressure. Descartes did not want to recognize the talent of the young scientist. A 16-year-old teenager is suspected of being the author of the "Experiment on Canonical Intersections". He thinks that this idea belongs to Pascal's father. The founder of analytic geometry did not recognize the prospects for the development of projective geometry in a rational way, just as Pascal thought that analytic geometry had no future. The fact that Pascal did not appreciate the analytical direction of mathematics developed by Descartes, did not accept the widely used algebraic methods in research, and abandoned letter symbols caused damage to his further in-depth research. It was this generalization that Pascal lacked in being the true creator of differential and integral calculus in the field of infinite particle calculus. But in the history of mathematical analysis, Pascal precedes Newton and Leibniz.

On the Puy-de-Dôme mountain, a "fluid balance experiment" will be held based on Pascal's idea. According to this experiment, a vacuum creates a space under air pressure. Descartes claims that he gave this idea to Pascal. Since there is no record of this dispute, it is impossible to tell who is right. And Pascal leaves this debate unanswered. But Descartes did not implement the idea of emptiness either experimentally or theoretically, he did not care about it. This is exactly what Pascal realized with creative originality and resourcefulness in experimental techniques. That is why history justly left the authorship of this idea to Pascal. According to Pascal's proof, the "soft matter" hypothesis was redundant.

All of the above was a debate between two great scholars of the New Age belonging to the same movement. Both of them opposed blindly following the authorities and fought for free scientific development, they placed great emphasis on the "healthy light thinking" of man, experience, and experimentation. After all, even if Descartes and Pascal went in different directions in the concrete-scientific field, even if they were against each other in solving private issues, they cannot be called enemies of each other in science. In the field of scientific methodology, in understanding the principles of scientific knowledge, they were not opponents, but agreed. In our opinion, the authors who contrasted them are wrong. Pascalian inductance and Cartesian deductiveness are two sides of the same phenomenon. It is a clear proof that Pascal was influenced by Descartes' teachings.

In his discussion with Noël, Pascal formulates the "one rule" of the scientific investigation of truth. First, "receiving something or an event that creates a clear and vivid image at the level of knowledge of imagination or thinking" and establishing reliable evidence, that is, establishing situations that do not arouse any doubt, "axioms or principles, for example, two equal things, equal and half "therefore, something equal is produced..." (Pascal, 1963: 201). Second, to derive an absolutely necessary consequence from an axiom, whose truth follows from the truth of the axiom. This double rule, according to Pascal, guards against any "phantasm, appearance, caprice", such phenomena have no place in science. Pascal creatively developed these Cartesian principles later in his methodological treatise "Geometrical Thinking and the Art of Persuasion". This work serves as a preparation for the work "Logic or the Art of Reasoning" in Por-Royal.

In this work, Pascal, like Descartes, marvels at the rigidity and apodicticity of mathematical knowledge, which is expressed in his following aphorism: "What is higher than geometry is higher than us" (Pascal, 1963: 349). Proposing the idea of "perfect scientific method", Pascal connects its implementation with the axiomatic-deductive method of the structure of scientific knowledge, which is widely used in mathematics. If Descartes called his method heuristic, Pascal distinguishes heuristics from the logic of proving truth. Emphasis is not on revealing the truth, but on proving it and distinguishing it from lies. From this point of view, the content of "perfect method" is expressed as follows: "defining all terms, proving all cases" and "arranging all cases in a certain order" (Pascal, 1963: 348-349). But this requirement cannot be fulfilled due to infinite regress. The need for constant interpretation of unknown "primary terms" and axioms that do not require proof will arise. Pascal puts forward six rules of his method, which he calls "geometric".

For definitions: 1) Not defining common terms. 2) Do not include terms that have two different meanings and are unknown without definition. 3) Use terms that are always known or understood in definitions.

For axioms: 1) Not to apply any necessary principles without investigation, no matter how obvious they may be. 2) Determining situations that are sufficiently clear in axioms.

For proof: 1) Failure to prove self-evident cases. 2) To prove all the cases by self-known or previously proven considerations. 3) In the process of proof, not to use terms with two different meanings, not to change the place of the definer while being defined (Pascal, 1963: 356-357). These rules were included in the development of the mental method, in the "composition method" of Por-Royal's "Logic..." scientific knowledge. This style differs from the Cartesian analytical style or the "problem-solving, discovery style." Por-Royal logicians attach great importance to the heuristic intuitions of scientists.

### CONCLUSION

Consequently, Pascal elaborates on Descartes' methodology, building upon its foundation. While acknowledging the significance of intuition and deduction in constructing theoretical knowledge, Pascal diverges from Descartes in his interpretation of intuition. Unlike Descartes, who believed that truth resides solely in the intellect, Pascal sees intuition differently. For the renowned rationalist, truth is detached from sensory perception and resides exclusively in the intellect, thereby rendering both intuition and deduction purely intellectual endeavors.

In contrast to Descartes, Pascal broadens the concept of "natural light." He incorporates external sensory intuition and inner soul feelings, depending on the level of understanding. While the mind's role includes precise definitions and rigorous logical proof, it's constrained to this function. Pascal emphasizes the importance of acknowledging emotions or "heart" in addition to the mind. Unlike Descartes, Pascal acknowledges the clarity and integrity of knowledge derived from external sensations. He views emotional acceptance as inherently truthful. In Pascal's view, the knowledge of mathematical concepts begins with intuition, while understanding natural phenomena starts with sensory perception, leading to a visual reality. Pascal sees intuition of primary principles like space, time, motion, and number as originating from the human soul, representing our deepest instinctual drive for knowledge.

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