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Review of Anna Kuzmiruk's doctoral dissertation titled « Henri Bergson and the Theory of Relativity: Philosophical Critique of the Concept of Time in 20th-Century Physics »

Structure of the Dissertation

The doctoral dissertation by Anna Kuzmiruk, titled *Henri Bergson and the Theory of Relativity: Philosophical Critique of the Concept of Time in 20th-Century Physics*, which I was asked to review, was written under the academic supervision of Mark Sinclair, Reader in Philosophy at Queen's University Belfast and dr hab. inż. Gniewomir Sarbicki, prof. UMK at the Faculty of Philosophy and Social Sciences of Nicolaus Copernicus University in Toruń.

The dissertation explores Henri Bergson's philosophical critique of the theory of relativity, particularly Albert Einstein's reconceptualization of time. The study situates Bergson's critique within the broader evolution of 20th-century physics and philosophy, arguing that his engagement with relativity was not merely a reaction to scientific innovation but a continuation of his lifelong philosophical project. Bergson, among the most prominent western philosophers of time, sought to reconcile his concept of *duration* (*durée*)—a qualitative, lived experience of time—with the relativistic framework, which introduced multiple, observer-dependent times.

Kuzmiruk's work is structured into four parts, each addressing a distinct phase of Bergson's intellectual journey: his critique of pre-relativistic science, his direct engagement with Einstein, his analysis of relativity's physical implications, and his metaphysical proposal for a *universal time*.

1. Kuzmiruk begins by examining Bergson's early philosophy of time, particularly his rejection of Newtonian absolute time. In *Time and Free Will* (1889), Bergson introduced *duration* as a fluid, heterogeneous experience of time, contrasting it with the homogeneous, measurable time of classical physics. He argued that science spatializes time, reducing it to a series of quantifiable instants, which obscures the true nature of temporal experience. This critique extended to pre-relativistic physics, which Bergson saw as rooted in deterministic and mechanistic assumptions that failed to account for the dynamic, creative aspect of reality.

Kuszmiruk clearly shows how Bergson's engagement with science was not adversarial but *engaged*—he believed philosophy should actively dialogue with scientific developments to refine its understanding of reality. His philosophy of science, as Kuszmiruk argues, was not a detached analysis of scientific methodology but a direct confrontation with scientific content, particularly its metaphysical assumptions. Bergson's approach was influenced by French spiritualism, which emphasized the limitations of positivism and determinism, and by his contemporaries' attempts to reconcile philosophy with emerging scientific paradigms.

2. The dissertation traces the transition from Newtonian mechanics to Einstein's relativity, highlighting the abandonment of absolute time, space, and motion. Einstein's theory introduced a relativistic framework where time is observer-dependent, simultaneity is relative, and space-time is a unified continuum. Kuszmiruk notes that while Einstein's theory was revolutionary, its implications were not immediately accepted. Many physicists, including Henri Poincaré and Hendrik Lorentz, initially resisted relativity, clinging to Newtonian absolutes. Bergson, however, recognized the potential of relativity to align with his philosophy of time. Unlike Newtonian physics, which treated time as an external, homogeneous medium, relativity presented time as dynamic and interconnected with space. This shift resonated with Bergson's *duration*, which he saw as a lived, qualitative experience rather than a measurable quantity. Yet, Bergson also identified critical tensions between relativity and his philosophy, particularly regarding the nature of simultaneity and the possibility of a universal time.

3. The core of Anna Kuszmiruk's analysis focuses on Bergson's 1922 work, *Duration and Simultaneity* (*Durée et Simultanéité*), which directly engages with Einstein's theory. Bergson's critique was twofold, philosophical and scientific. On the one hand, Bergson argued that relativity's treatment of time as a fourth dimension of space risked reducing time to a spatialized, quantitative framework, thereby losing sight of its qualitative, lived dimension. On the other hand, Bergson questioned the physical interpretation of relativity, particularly the twin paradox, which he saw as a misapplication of the theory's principles. He contended that relativity's mathematical formalism obscured its metaphysical implications, leading to misunderstandings about the nature of time.

Kuszmiruk emphasizes that Bergson's critique was not a mere rejection of relativity but an attempt to *philosophically enrich* its conceptual basis. He sought to integrate relativity's insights into a broader metaphysical framework that could account for both physical and lived time. This project was ambitious and controversial, as Bergson lacked formal training in physics. His arguments were met with skepticism from scientists and philosophers alike, leading him to later disavow the book.

4. In the final section, Anna Kuszmiruk explores Bergson's proposal for a *universal time*—a synthesis of *duration* and relativistic time. Bergson argued that while relativity demonstrated the relativity of simultaneity, it did not preclude the possibility of a deeper, metaphysical time that encompasses all observer-dependent times. This universal time would reconcile the multiplicity of physical times with the unity of lived experience, offering a philosophical foundation for relativity's physical claims.

Kuszmiruk situates Bergson's hypothesis within his broader philosophy of time, which emphasizes *coexistence* and *becoming*. She argues that Bergson's universal time is not a return to absolute time but a dynamic, inclusive concept that accounts for both the relativity of physical time and the continuity of duration. This proposal, though speculative, reflects Bergson's enduring commitment to bridging philosophy and science.

The dissertation is methodologically rigorous, combining historical analysis, philosophical exegesis and interdisciplinary engagement. Kuszmiruk traces the intellectual context of Bergson's and Einstein's ideas, including the reception of relativity in France and the broader philosophical debates of the early 20th century, drawing on both primary sources (Bergson's works, Einstein's writings, and their

correspondence) and secondary literature, including recent scholarship on Bergson's philosophy of science. She provides a detailed reading of Bergson's works, particularly *Duration and Simultaneity*, and situates his arguments within his broader philosophy of time. The study bridges philosophy, physics, and the history of science, demonstrating how Bergson's critique of relativity was both a philosophical and scientific endeavor.

The dissertation's strength also lies in its up-to-date bibliography and engagement with recent scholarship. Kuzmiruk draws on contemporary Bergson scholars (e.g., Élie During, Mark Sinclair, Keith Ansell Pearson, Alessandra Campo) and historians of science (e.g., Jimena Canales, Peter Galison) to contextualize Bergson's critique within modern debates. She also addresses misconceptions about Bergson's philosophy, particularly the accusation of anti-scientific sentiment, arguing that his critique was constructive rather than dismissive.

Analytic Evaluation

Anna Kuzmiruk's doctoral thesis represents an outstanding contribution to Bergsonian studies, both internationally and, in particular, within the Polish context. Her work is not merely a philosophical analysis but serves as an interdisciplinary bridge between philosophy, the history of science, and physics. It offers an innovative reading of the relationship between Henri Bergson and Albert Einstein's theory of relativity. The thesis stands out for its originality, methodological rigor, and speculative depth, positioning itself as an essential reference for scholars in the philosophy of science, the history of ideas, and of course Bergson studies.

Kuzmiruk addresses a crucial question: Why Bergson has not traditionally been recognised as a philosopher of science ? Through her work, she challenges a long-standing academic tradition that has marginalized Bergson's scientific dimension, demonstrating how he embraced a holistic vision of knowledge that transcends disciplinary boundaries. By doing so, Kuzmiruk positions Bergson as a foundational reference for the philosophy of science, offering an alternative to the dominant analytical methods that currently define the field.

In Poland, despite a tradition of Bergson studies dating back to the early 20th century, Bergson's thought has often been undervalued or misunderstood, particularly regarding his relationship with science. Kuzmiruk fills this gap with research that redefines Bergson's role in the history of Polish and European science. While figures like Michał Heller have dismissed Bergson's critique of relativity as "outdated" or "unscientific," Kuzmiruk demonstrates how Bergson offered a philosophically grounded and still relevant critique, capable of engaging with the challenges of modern physics.

The thesis reconstructs the Polish reception of Bergson with unprecedented precision, highlighting how the French philosopher was unfairly relegated to the margins of scientific-philosophical debate. Through historical analysis, Kuzmiruk shows how Bergson influenced not only philosophers but also Polish scientists, albeit without ever being fully recognized. This work rehabilitates Bergson as a central thinker in the history of Polish science, offering an unprecedented interpretive key to understanding the dialogue between philosophy and science in the 20th century.

For international readers, this exploration of Bergson's thought offers a fascinating window into the Polish philosophical landscape of the last century. This perspective is particularly valuable for those seeking to understand the interplay between local traditions and global philosophical discourse. In doing so, Kuzmiruk's efforts align with the broader collective research on global Bergsonism supported by the CNRS (International Research Network « A Chapter in a Global History of Philosophy : New Perspectives on Bergsonism »), to which she has actively contributed. It is worth highlighting that she participated in the final conference of this project, held in Istanbul in October 2025, where she

outlined a precise and well-documented picture of the Polish reception of Bergson. Her presentation not only enriched the international dialogue on Bergson's legacy but also contributed significantly to a greater visibility of Bergson studies in Poland within the global academic community. This engagement underscores her commitment to fostering cross-cultural and interdisciplinary exchanges, further solidifying her role as a key figure in the revitalization of Bergsonian scholarship.

On an international level, the thesis engages with a rapidly evolving debate in the philosophy of science. While authors such as Élie During, Jimena Canales, and Mark Sinclair have explored the relationship between Bergson and Einstein, Kuzmiruk goes further, proposing a systematic reading of *Duration and Simultaneity* (*Durée et Simultanéité*) as a foundational work of an «engaged philosophy of science.» This concept, developed by Kuzmiruk, transcends the traditional separation between philosophy and science, showing how Bergson sought to integrate philosophical reflection with scientific practice without reducing it to mere methodological analysis.

The thesis challenges the narrative that long portrayed Bergson as an "anti-scientific" or "irrationalist" philosopher. On the contrary, Kuzmiruk demonstrates how Bergson anticipated many contemporary critiques of reductionist science, proposing a model of knowledge that combines empirical rigor with metaphysical depth. This approach is particularly relevant today, in an era where the philosophy of science is often trapped in analytic formalisms that overlook the experiential and qualitative dimensions of reality.

Kuzmiruk adopts an original and rigorous methodology that combines historical analysis and philological examination, thoroughly drawing a dialogue with contemporary science. She relates Bergson's insights to current debates in physics, biology, and psychology, demonstrating the enduring relevance of his thought. This interdisciplinary approach is one of the strengths of the thesis, which proposes and practices an integrated vision of the relationship between philosophy and science.

One of the greatest merits of Kuzmiruk's thesis is that it challenges a disciplinary prejudice tending to reduce the philosophy of science to the philosophy of physics. Bergson, as she demonstrates, engaged his reflection in dialogue with multiple disciplines, such as biology, psychology and the rising social sciences. *Duration and Simultaneity* is integrated in the complexity of Bergson's work, from *Creative Evolution* (*L'Évolution créatrice*)— where Bergson develops a theory of evolution that challenges mechanistic Darwinism, proposing a model based on the creativity of life (*élan vital*)—, *Matter and Memory* (*Matière et mémoire*)— where he explores the relationship between body and mind, anticipating themes central to modern psychology, such as the plasticity of memory and the perception of time—, and *The Two Sources of Morality and Religion* (*Les Deux Sources de la morale et de la religion*) — where he analyzes collective dynamics, offering insights for a philosophical sociology. Kuzmiruk invites us to rethink the boundaries of the philosophy of science, showing how Bergson proposed an integrated model of thought in which physics, biology, and psychology are not separate compartments but complementary dimensions of the same reality. This approach is more necessary than ever in an era where science is increasingly specialized and fragmented, while major challenges (from artificial intelligence to the ecological crisis) require a unified vision of knowledge.

Kuzmiruk combines historical sensitivity with philosophical depth and precision. She contextualizes texts in their original setting, avoiding anachronisms and misleading modern projections, and she grasps the conceptual nuances of Bergson's thought, avoiding simplifications or trivializations. This rare balance between speculation and history is one of the excellences of the thesis, which stands out for its precision and clarity of exposition.

Anna Kuzmiruk's thesis not only redefines Bergson's role in the philosophy of science but also opens new ways for interdisciplinary research, bridging philosophy, history, and the social dimensions of

scientific thought. One of its most compelling contributions lies in its reassessment of the relationship between different "physics"—from Newtonian mechanics to Einsteinian relativity—while emphasizing the historical contexts that shaped these scientific revolutions. The transition from the first to the second chapter is particularly illuminating in this regard. While the first chapter examines Bergson's critique of pre-relativistic physics and its deterministic worldview, the second chapter shifts to the Einsteinian revolution, highlighting how Bergson's engagement with relativity was not merely philosophical but also deeply embedded in the post-World War I intellectual and political landscape. A striking example of this contextual awareness is Kuzmiruk's analysis of the Bergson-Einstein debate within the framework of Franco-German relations. Both intellectuals played a crucial symbolic role in the cultural diplomacy of the interwar period, particularly through their involvement in the International Committee on Intellectual Cooperation (CICI), a precursor to UNESCO under the League of Nations. Bergson, as a prominent French philosopher, and Einstein, as a German physicist naturalized in Switzerland and later the U.S., embodied the tensions and possibilities of reconciliation between two nations devastated by war. Their public debate in 1922 was not just a clash of ideas but a microcosm of the broader intellectual and political efforts to rebuild trust and collaboration in Europe. Kuzmiruk's attention to this dimension adds a layer of historical depth often overlooked in purely philosophical analyses, demonstrating how scientific and philosophical discourses are inextricably linked to their socio-political contexts.

Finally, I would like to emphasize that Anna Kuzmiruk's contributions extend far beyond the mere production of knowledge. She is deeply committed to disseminating and sharing her research within the academic community, embodying the qualities of an open and collaborative scholar. Her active participation in conferences, seminars, and academic societies reflects a vocational openness to dialogue, which is essential for advancing research. Kuzmiruk's engagement with the Société des amis de Bergson over the past four years exemplifies her dedication to fostering the dissemination of Bergsonian thought. She played a pivotal role in organizing the Toruń conference, "Time: The Bergson-Einstein Debate 100 Years Later" (4–5 April 2022), a major international event that brought together philosophers and physicists to re-examine the implications of the historic confrontation between Bergson and Einstein. Additionally, she presented her research at the "Atelier Bergson" (mai 2024) during its exploratory phase, showcasing her openness to dialogue and exchange with fellow scholars. Most recently, she contributed to the already mentioned conference in Istanbul (October 2025), where she outlined a precise and documented picture of the Polish reception of Bergson. These activities not only highlight the depth and rigor of her research but also underscore her ability to work collaboratively and promote academic exchange—qualities that are indispensable for a researcher in today's interconnected academic landscape.

Conclusion

Anna Kuzmiruk's thesis is a mature, original, and necessary work that redefines Bergson's role in the history of science and invites us to rethink the boundaries of the philosophy of science. Her research is not only a contribution to Bergson studies but a methodological proposal for a philosophy of science that is more open, interdisciplinary, and engaged.

Kuzmiruk's work offers a nuanced reassessment of Bergson's critique of relativity, presenting it as a serious philosophical engagement with modern physics rather than an outdated or misguided intervention. She argues that Bergson's project remains relevant today, particularly in light of ongoing debates about the nature of time in physics and philosophy. His attempt to reconcile *duration* with relativistic time highlights the enduring tension between lived experience and scientific abstraction—a tension that continues to shape contemporary discussions in the philosophy of science.

The dissertation concludes that Bergson's critique, though flawed in some technical details, was a bold and necessary philosophical response to the scientific revolution of his time. By challenging the spatialization of time and advocating for a universal time, Bergson invited a deeper reflection on the metaphysical foundations of physics—one that philosophy and science could pursue together.

This thesis demonstrates exceptional philosophical and historical rigor, offering a compelling reassessment of Bergson's contributions to the philosophy of science. To further expand its already foundational impact, a deeper exploration of Bergson's role as a philosopher of biology or psychology could enrich the discussion even more. His concept of *élan vital*, for example, presents fertile ground for future research, particularly in dialogue with contemporary biological and psychological studies, such as those by Mathilde Tahar in modern biology. This is not a critique but rather a suggestion to build upon the thesis's significant achievements, opening new avenues for interdisciplinary dialogue.

A key strength of the thesis lies in its revaluation of Bergson within the Polish context, where his reception has often been overlooked or misunderstood. Kuzmiruk's meticulous research, supported by an updated and comprehensive bibliography, sheds new light on Bergson's influence in Poland and internationally, positioning him as a central figure in the history of science and philosophy. Her analysis of *Duration and Simultaneity* demonstrates how Bergson's critique of relativity was not a rejection of science but a call for a deeper metaphysical engagement with its foundations—a perspective that remains relevant to contemporary debates on the nature of time, experience, and scientific abstraction.

In conclusion, Anna Kuzmiruk's thesis is an excellent example of how academic research can be rigorous, innovative, and socially relevant. It is hoped that this work will open new paths not only for Bergson studies but for the philosophy of science as a whole.

In its current form, Kuzmiruk's work is not only a significant advancement for Bergson studies but also a model for how philosophy of science can engage with broader intellectual and social questions. Its publication would be highly recommended, as it has the potential to inspire further research and foster interdisciplinary dialogue. It is hoped that this thesis will open new paths for both Bergson scholarship and the philosophy of science as a whole, reinforcing the idea that scientific and philosophical inquiry are most fruitful when pursued in tandem.

Given the clarity of its arguments, the richness of its sources, and the relevance of its conclusions, we can confidently anticipate that the upcoming defense discussion will be as insightful and stimulating as the thesis itself. This work undoubtedly merits recognition not only for its academic excellence but also for its potential to foster further dialogue at the intersection of philosophy, history, and science. We look forward to a defense that reflects the high caliber of this research.

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