Review of Anna KUSZMIRUK's doctoral dissertation

"Henri Bergson and the Theory of Relativity: Philosophical Critique of the Concept of Time in 20th-Century Physics" (Nicolaus Copernicus University in Toruń, under the supervision of Mark Sinclair, Reader in Philosophy at Queen's University Belfast and dr hab. inż. Gniewomir Sarbicki, prof. UMK)

Reviewer : Élie During, Université Paris Nanterre

I. Prefatory remarks

For the sake of full disclosure, the author of this review feels obliged to acknowledge a certain unease arising from the fact that Ms. Kuszmiruk explicitly refers to his published work—alongside that of M. Čapek and P. Gunter—as having "contributed significantly to this area" (namely, the philosophical issues surrounding Bergson's engagement with Einstein's theory of relativity), adding that "this thesis builds upon their work" (p. 3).

This is, of course, flattering. The unease, however, is compounded by the fact that I am mentioned and quoted extensively throughout the dissertation—by my count, more than one hundred times across sixty-four different pages—most notably in the concluding chapter devoted to the "fundamental problem of coexistence," which largely amounts to a faithful restitution of views I have developed in several books and articles since 2009.

On these issues, we are naturally in broad agreement, and I therefore do not anticipate any conflict of interest. On most points, indeed, I concur with Ms. Kuszmiruk's analyses and can only commend her ability to weave together diverse viewpoints with a keen sense of nuance. That said, this particular situation brings into focus a more general methodological concern: the overwhelming presence of secondary literature tends to reinforce the impression that the singularity of this extensive doctoral research is somewhat eclipsed by an approach that stages interpretative readings against one another in a form of free indirect discourse. This method privileges an extensive, near-exhaustive survey of the secondary literature over a sustained, text-based engagement with Bergson's original works, grounded in personal philosophical intuitions conducive to genuinely original contributions (see below, section IV).

II. Overview

Ms. Kuszmiruk's dissertation examines the development of Henri Bergson's concept of time across his philosophical work, with particular emphasis on its confrontation with Einstein's theory of relativity in the early twentieth century. This confrontation is situated within a broader historical moment marked by profound transformations in both science and philosophy: the abandonment of absolute time in physics, the emergence of multiple relative times, and the parallel shift in philosophy away from mechanistic and deterministic frameworks.

The central claim of the study is that Bergson's critique of relativistic time—articulated most explicitly in *Duration and Simultaneity* and during his 1922 debate with Einstein—retains

philosophical relevance, even when assessed from a contemporary perspective informed by the current understanding of relativity theory.

The argument unfolds along two closely connected lines. First, the thesis maintains that Bergson's engagement with relativity constitutes a form of *engaged philosophy of science*: a mode of philosophical reflection that confronts scientific theories directly by interrogating their conceptual foundations, without seeking to replace or refute them on technical grounds. Second, it argues that Bergson's encounter with relativity led to a genuine transformation of his philosophy of time, prompting both a refinement of the notion of duration and the introduction of a new concept, that of *real time*, along with the hypothesis of a universal time capable of integrating experiential and scientific dimensions.

While acknowledging the limitations and errors in Bergson's arguments, the author contends that Bergson was justified in challenging Einstein's worldview—particularly with respect to the ontological status and role of time—and in insisting that philosophy has a legitimate and necessary role to play in shaping our understanding of temporality. By combining historical contextualisation with conceptual analysis, the thesis aims to establish Bergson's confrontation with relativity as a central and indispensable component of his philosophy of time.

III. Outline of contents

In Part I, the author reconstructs Bergson as already operating within a philosophy of science, thereby displacing a common assumption in the literature—namely, that Bergson's engagement with physics begins only as a reaction to Einstein. Through a genealogical reconstruction, Ms. Kuszmiruk shows that Bergson's critique of spatialised time, abstraction, and mechanistic causality is already structured as a response to scientific representations of time. Bergson's philosophical posture thus emerges as neither anti-scientific nor external to science, but rather as an effort to diagnose the epistemic costs of scientific idealisation.

Part II undertakes a critical historical reconstruction of *Duration and Simultaneity*. Rather than asking whether Bergson was simply "right or wrong", the author examines what kind of philosophical act the book represents. By assuming an asymmetry of discursive norms between physics and philosophy, this part shows that the so-called "dialogue of the deaf" was not accidental but structural. Particular attention is paid to Bergson's pedagogical decision to introduce Einstein's ideas through a preliminary exposition of "half-relativity" in the tradition of Lorentz and Poincaré.

Part III is where the dissertation becomes most technically demanding. Here the author subjects Bergson's conceptual framework to an internal stress test against the structure of relativity itself. Bergson's insistence on the reciprocity of perspectives leads him to overlook the path-dependence of proper time and, consequently, the ontological significance of the physical asymmetry at the heart of the twin paradox. The resulting critique is non-polemical yet decisive: Bergson's position is shown to falter not because physics refutes philosophy, but because his own criteria for physical intelligibility cannot accommodate the specifically relativistic dispersion of spatio-temporal processes in nature.

Part IV provides the constructive counterpart to these analyses. Here the author no longer assesses Bergson's success or failure, but stages a problem that survives his errors: the problem of coexistence, articulated through the hypothesis of the unity or universality of time (distinct

from pre-relativistic absolute time). The author suggests that Bergson was himself moving toward this problem but lacked the conceptual resources to resolve it in detail, largely due to his resistance to space-time geometry and the idea of truly dispersed, disconnected multiplicity of unfolding durations.

IV. Methodological and formal issues

- The omnipresence of references to Bergson scholarship contrasts sharply with the scarcity of extended quotations and close readings of primary sources, beginning with Bergson himself.
- Even where the author offers a conceptual reconstruction of Bergson's main strategies and arguments in *Duration and Simultaneity*, the prevailing style is one of paraphrase of relevant sections rather than detailed textual commentary.
- More generally, there is insufficient engagement with the letter of Bergson's texts. This applies to *Duration and Simultaneity*, but even more so to *Matter and Memory*, where one finds the first systematic sketch of a new theory of matter, motion, and space. The relevant passages from Chapter IV of that book are merely alluded to and are largely mediated through secondary sources (notably S. Guerlac). The use of *Creative Evolution* is limited; here again, there is no sustained first-hand confrontation with Bergson's text.
- A closer engagement with these earlier works would likely have led to the recognition that it is somewhat overstated to claim that only in *Duration and Simultaneity* does Bergson broaden his philosophical perspective to encompass "a unified temporal field in which all individual durations participate" (p. 185). The cosmological question of the Whole is raised much earlier, in connection with the doctrine of matter as the most extreme form of "distended" duration.

- In the bibliography, primary and secondary sources are not distinguished, nor are historical sources (Einstein, Langevin, etc.) separated from contemporary interpretations by physicists and philosophers.
- The manuscript combines two incompatible systems of referencing: in-text citations by date throughout the manuscript, and references by title in the bibliography. This is impractical. One must search through the entire list of Bergson's writings to match a reference such as "(Bergson 2020)" with its corresponding bibliographic entry, namely "Bergson, H., 'Remarks on the Theory of Relativity (1922)', trans. H. Massey, *Journal of French and Francophone Philosophy—Revue de la philosophie française et de langue française*, Vol. XXVIII, No. 1, 2020, pp. 167–172."
- The original French titles are not provided, beginning with Bergson's own works. Thus *Matière et mémoire*, for instance, is cited only under its English translation: "Bergson, H., *Matter and Memory: Essay on the Relation between Body and Mind*, trans. N. M. Paul and W. S. Palmer (New York: Zone Books, 1991)." This is not acceptable in a philosophical monograph devoted to Bergson and may give rise to the suspicion—perhaps unfair, but unavoidable—that the author is not fully familiar with the primary sources in French and relies predominantly on translations.
- This problem is further aggravated by the fact that the English translation of the critical essay *Duration and Simultaneity* (L. Jacobson, 1965) is one of the few works that Bergson himself neither revised nor approved and therefore cannot be relied upon without reservation.

- Finally, I wish to note two missing references in what is otherwise a very comprehensive overview of the secondary literature: J.-M. Lévy-Leblond's long-awaited critical edition of *Durée et simultanéité* (GF-Flammarion, 2021), and—incidentally—É. During's (i.e. my own!) 2007 doctoral dissertation, *De la relativité à l'espace-temps: Bergson entre Einstein et Poincaré*, which analyses the theoretical background of the reception of relativity in considerable detail.

V. Detailed critical evaluation of specific contents

1) Scope of the inquiry

To begin with, the subtitle of the dissertation—*"Philosophical Critique of the Concept of Time in 20th-Century Physics"*—does not appear entirely adequate. In fact, the dissertation does not address quantum physics in any sustained way and only marginally touches upon entropy and thermodynamics. Its focus is clearly on relativity theory—and more specifically on special relativity—which itself constitutes only a local approximation of physical reality, insofar as it does not incorporate gravitation. As a result, the scope announced by the subtitle exceeds the actual range of physical theories examined in the manuscript.

2) Level and accuracy of physical information

Several key technical notions drawn from physical theory are not elucidated for their own sake and are, in some cases, not even properly defined. A particularly telling example is *proper time*, understood as a measure of local time—that is, the time elapsed "within" a system—which is Lorentz-invariant while remaining path-dependent. One must wait until page 212 to gain a concrete sense of what this notion entails, and even then only indirectly, through a commentator's remark that proper time is the time measured by clocks that remain at rest relative to the mechanical system they monitor. The formal status of this temporal parameter is never clarified, owing to the absence of a proper definition. One possible way of addressing this would have been to contrast it explicitly with coordinate time, which depends on the choice of a particular reference frame.

Some indication regarding the mathematical difference between *coordinates* and *parameters* (two varieties of variable) would have helped to clarify the meaning of the *Lorentz transformations* involved in familiar relativistic effects such as length contraction and time dilation. As it stands, there is not a single mathematical *equation* to support the analyses of "half-relativity" and "complete relativity" (sections 5.1 and 6.1 in particular), in sharp contrast with Bergson's own careful examination of the algebraic structure underlying relativistic transformations. Consequently, the "Lorentz transformation formulae" are repeatedly invoked throughout the dissertation without ever being spelled out or even minimally explained in terms of what is actually transformed in these equations (and into what…). The reader is thus left to infer the concrete meaning of these basic physical concepts by reading between the lines.

Similar remarks apply to the use of the notion of a *system of reference* (or reference frame). Its philosophical elucidation would have required a more in-depth examination of the physical

conditions under which mechanical systems can be treated as approximately isolated ("quasi-isolated") and therefore, for practical purposes, immune to the action of time. This issue is discussed at length in *Creative Evolution* and is directly connected to the problem of determinism (see below), yet it is not sufficiently integrated into the present analysis.

Finally, in the summary of Part I, the contrast drawn between Newtonian physics and relativity theory in terms of "macro-scale phenomena" versus "mid-scale systems" is open to question. Many macroscopic systems—think of planetary motion—remain perfectly well described by Newtonian mechanics. A more accurate characterisation of the domain of relevance of relativity theory would be to say that it applies primarily to phenomena involving very high velocities or strong gravitational fields. This is not a matter of scale as such. The formulation adopted here therefore raises the question of whether the physical scope of Einstein's theory has been adequately grasped.

3) Broader philosophical issues

Owing to this lack of precision with respect to the underlying physical concepts, there are several points at which—despite the wealth of material drawn from both primary and secondary sources—the overall argumentative line appears blurred or underdetermined. I will limit myself here to two or three issues that are sufficiently central to warrant closer scrutiny.

First, the philosophical implications of Bergson's pedagogical introduction of "half-relativity" in Chapter I of *Duration and Simultaneity* remain unclear. In certain passages, this notion appears to support a misleading characterisation of Bergson's general aim. On page 105, for instance, the author writes: "This examination laid the groundwork for his adoption of the 'half-relativity' perspective—one that, despite its differences, continues to offer valuable insights into the theory of relativity (cf. During 2009, p. 254). Bergson's broader objective was to develop a concept of time that could be described as 'half-relativist', designed to address the paradoxes posed by the new physics." Later, on page 110, we read: "It remains unclear whether Bergson understood 'single relativity' as the principle of relativity independent of the reciprocity of motion or as a form of 'half-relativity', grounded in pre-relativistic physics." The fact that such a basic question remains unresolved suggests that something is amiss in the way the general situation has been assessed. What follows in the dissertation only reinforces the impression that certain important aspects of Bergson's strategy have not been fully elucidated.

With regard to the general intent and orientation of Bergson's essay on relativity, Ms. Kuszmiruk is right to argue that the aim is to articulate a theory of "universal temporality" compatible with Einstein's theory. This point could, however, be given even greater emphasis. What is at stake is indeed the elaboration of a philosophical theory of universal time—or of the unity of time—that is compatible with relativity theory, and NOT the construction of an alternative theory of relativity (or even a physical interpretation of Einstein's theory) designed to accommodate a pre-existing doctrine of universal time—certainly not a revised version of Newtonian absolute time. As the author rightly observes: "His conception of universal time, therefore, does not signal a return to outdated scientific models; rather, it is part of a broader philosophical endeavour to reconceptualise temporality beyond the reductive frameworks of classical physics" (p. 184). Granted. Yet the philosophical status of this "universal time" or "universal temporality" remains insufficiently specified. In what sense does it correspond to the "time of the universe"? How does it differ from the "cosmological time" invoked in the various physical models derived from general relativity? Are we dealing with the universe as a whole, or more specifically with the

material universe (*l'univers matériel*, as Bergson writes in *Duration and Simultaneity*, p. 43 of the French edition)?

When the author writes (p. 187): "What Bergson termed the duration of the universe emerges from his broader hypothesis of universal time—an idea that posits all forms of consciousness, including that of matter, as participating in a single duration, albeit at different rhythms," it becomes clear that "universal time" is taken to extend beyond material time. But is this what Bergson has in mind? It is true that the intuition underlying "real duration" provides the metaphysical backdrop for universal temporality, yet the overall duration of the Whole is not exactly what is at stake in *Duration and Simultaneity*. In fact, Bergson explicitly states that what he aims at with *Temps réel* is "un temps matériel un et universel" (DS, chapter III)—that is, the unity of the material universe, the extended and impersonal time of matter as such.

At first glance, this would seem to exclude the full range of rhythmic nuance characteristic of duration as it unfolds throughout the concrete universe—a universe infused with life. In any case, further clarification is required. (This crucial issue is explicitly raised in two recent French critical editions of Bergson's work: note 29 in the GF-Flammarion edition and note 6 in Chapter III of the PUF edition.) Clarifying this requires coming to terms with the assumption of an essential homogeneity or rhythmic unity of material duration—one that lends itself to measurement while remaining minimally distinct from space. This assumption lies at the root of "*real Time*" (the capitalisation of which itself calls for careful consideration: Bergson is clearly identifying a *physical* use of measured time, a new interpretation of the time variable, not a metaphysical principle).

On page 181, Ms. Kuszmiruk writes: "Equally mistaken is the tendency to equate real time with either lived duration or the duration of matter." This raises a further question: *what, then, is the precise relation between the duration of matter and real Time?* In my view, this point remains somewhat obscure and cannot be fully clarified without reintroducing the role of perception in relation to the duration of matter. It is embodied minds that participate in the same bundle of physical time by perceiving the same material reality. The rhythmic consistency of human perception underlies the participation of distinct centres of consciousness within a single impersonal duration. In this context, the relation between matter and perception is more decisive than that between real Time and real duration in general, or than the contrast between relative (superficial) motion in space and absolute (internal) change in time discussed on pages 208–210. Ms. Kuszmiruk is therefore right to observe that the perception of simultaneity is at least as important as—if not more important than—the metaphysical underpinnings of real motion. But her take on the ultimate meaning of "real time" is not entirely clear, unless one identifies it with coexistence (as chapter 10 sometimes seems to suggest).

Closely connected to the philosophical meaning of material time is the question of *determinism*, a recurring theme throughout the dissertation. As the author notes, physical determinism is discussed at length in *Time and Free Will* in connection with the problems of freedom and contingency. Yet here again, there is no sustained engagement with Bergson's analysis of the foundations of determinism in that work, nor with the specific conception of causality it presupposes. Instead, causality is characterised in overly abstract terms: "According to this law, one event—the cause—precedes in time and accounts for another—the effect. In this view, every cause is followed by its effect and vice versa" (p. 20). This formulation is insufficient, and its relation to the representation of time as "a linear continuum in which events and processes have distinct beginnings and ends" is unclear.

For Bergson, the issue is more precise. Determinism rests on the assumption that *the same causes produce the same effects*. Yet a genuine critique of causality leads him to deny the very possibility of identical causes, since duration entails continuous variation and the irreversible production of novelty. No moment of time can be reinstated: indiscernable moments must be one and the same. This has nothing to do with linear versus non-linear time, but with the internal logic of duration itself. Unfortunately, these fundamental metaphysical assumptions—and their implications for determinism—are not clearly articulated in the dissertation and remain, at best, implicit. As a result, the claim that Einstein's special theory of relativity is inherently tied to a deterministic worldview remains insufficiently substantiated. Several authors, in fact, argue that there is nothing specifically deterministic about Einstein's relativistic framework beyond what already characterises classical mechanics.

VI. General evaluation and conclusion

The dissertation situates itself critically within the existing body of scholarship, which it surveys with considerable scrutiny along a consistent line of inquiry. The various interpretative perspectives are thoroughly documented and carefully sourced, and their presentation follows an analytic method that effectively clarifies points of convergence and divergence among commentators.

Ms. Kuszmiruk also does an admirable job of providing historical context where necessary. To this end, she alternates convincingly between historical reconstruction and internal conceptual analysis. She consistently seeks to articulate an interpretative framework in which lived time and space-time are neither collapsed into one another nor set in simple opposition, thereby avoiding a number of entrenched misunderstandings and false problems. At the same time, she does not hesitate to identify structural limits in Bergson's metaphysics and in his broader attempt to probe the metaphysical implications of contemporary physical theory. The strength of the analysis lies in its careful distinction between what is historically intelligible in Bergson's critique and what proves structurally untenable. In particular, the treatment of reciprocity, worldline asymmetry, and acceleration is both technically informed and philosophically precise, despite certain methodological issues detailed above in section V.2.

The dissertation is also commendable in its resistance to a common simplification in the secondary literature—namely, the opposition between "lived time" and "physical time." Instead, it shows how Bergson's own thinking already complicates this dichotomy through the notion of *real time*. This leads to a critique of the standard alternative: either to reduce time to relativistic proper times or to retreat to lived duration.

The originality of the dissertation does not reside in the discovery of new archival material or in a revisionist defence of Bergson's physical claims, but rather in the way it reconfigures the problem-space inherited from *Duration and Simultaneity*. Instead of treating Bergson's book as either a philosophical failure or a misunderstood masterpiece, the dissertation uses it as a diagnostic site from which deeper and still unresolved philosophical problems—most notably the problem of coexistence—can be extracted and reformulated.

The limits of this approach are largely those of its initial ambition, which is to map the hermeneutic terrain by providing a comprehensive synthesis of current debates along with critical assessments of the most influential contributions among historic and more recent commentaries.

Such an undertaking is certainly welcome and proves highly useful as a guide to an ongoing field of philosophical research that is prone to misapprehension and conceptual confusion. In this respect, one of the thesis's original contributions lies in its engagement with Polish scholarship (authors such as Zawirski, Orbik, Heller, Borzym, and Skarga), thereby serving as a bridge between Polish and international academic contexts.

The downside of this heavily bibliographic, not to say doxographic, orientation is that the more constructive proposal remains somewhat schematic. It is often difficult to discern the author's philosophical subjectivity beyond the concert of voices orchestrated through the careful restitution of Bergson's theses and the impressive—if sometimes overwhelming—navigation of an already extensive secondary literature. The emphasis on the problem of coexistence can hardly be considered a wholly personal contribution, insofar as it reflects a broader interpretative turn illustrated by the recent work of several commentators. Here as elsewhere, the argument would benefit from further development, particularly through engagement with contemporary analytic metaphysics of space-time—a domain virtually absent from the bibliography—and possibly with competing frameworks in the epistemology of physics, another notable blind spot.

While the restitution of the main lines of the historical Bergson–Einstein debate and the commentaries it has generated is exemplary, the dissertation could have made more explicit how its conclusions bear on contemporary debates in the philosophy of physics beyond this historical constellation. This might have been achieved through a more direct, first-hand confrontation with Bergson's texts themselves, which are at times eclipsed by the cumulative weight of secondary commentary.

That said, there are—especially in Part IV—several excellent passages that shed genuine new light on epistemological issues such as Bergson's relation to "common sense," what might be described as his "empirical stance," and his attachment to the practical conditions of embodied knowledge (chapter 9.1 and 9.2).

Overall, the dissertation displays a high level of conceptual clarity and rigour, as well as a consistent concern for intellectual probity and fairness in its evaluation of the relevant scholarship. I therefore judge it fully worthy of the doctoral degree and recommend its acceptance without reservation—subject, however, to one significant caveat regarding the system of bibliographical referencing (see above, section V).

Paris, January 5

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