

**THE THEOLOGICAL SIGNIFICANCE OF THE RELATIONS OF
FREEDOM AND TIME IN THE SCIENCES AND HUMANITIES:
AN EVALUATION OF THE CONTRIBUTIONS OF
DAVID BOHM AND PAULI PYLKKÖ**

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The concepts of freedom and time underlay all other philosophical and theological questions. This dissertation addresses the natures and relations of freedom and time and their impact upon theological reflection, primarily through the works of the philosopher of science, David Bohm, and the philosopher of the humanities, Pauli Pylkkö. These two representatives come from the two broadly competing cultures of the sciences and humanities, and illustrate the deep philosophical conflict that has emerged between these cultures concerning the natures of freedom and time. Specifically, the paradigmatic contributions of Albert Einstein's four-dimensional 'timeless space-time' (with timeless freedom) alongside Bohm, on the one hand, and Martin Heidegger's four-dimensional 'temporal time-space' (with temporal freedom) alongside Pylkkö, on the other hand, clearly demonstrate the contrasting ideas which contemporary reflection has generated concerning the natures and relations of freedom and time, as well as their functions within theology.

Within the study, chapter 1 introduces the background, problem, and methodology employed in the investigation, and describes the role that the most perplexing area of natural science, quantum physics, has played in recent reflection on the natures of freedom and time. Chapter 2 surveys the contemporary extent and context of the conflicting understandings of freedom and time, tracing both their interrelationship and influence upon broader discussions between science and religion, as well as various "third culture" disciplines, such as psychology and psychiatry, economics, and the socio-political sciences, and the role religion and theological reflection have within these third cultures. It was demonstrated that the basic philosophical impulses driving Einstein and Bohm, on the one hand, and Heidegger and Pylkkö, on the other hand, are in fact traceably related to many of the widespread polarizations occurring throughout the socio-political disciplines. Chapters 3 and 4, in turn, examine the concepts of freedom and time within the work of Bohm, who is building on Einstein's theories, and Pylkkö, who is building on Heidegger's ideas. Chapter 5 compares and evaluates Bohm and Pylkkö's concepts of freedom and time, both for the sciences and humanities, and demonstrates how their contributions fit within the contemporary dialogue concerning science and religion, as well as projects how they may

contribute to future developments within the sciences, humanities, and a variety of issues within theology. This was done with specific regard to the differing and incompatible trajectories encouraged by the two cultures of the sciences and humanities.

The findings of this study indicate that although the conflict over the concepts of freedom and time is now generally well recognized by close observers of the developments in philosophy and society, and its effects are virtually omnipresent, it is still widely neglected by many specialist practitioners within the two cultures, which, as 'cultures,' do indeed often operate within isolated 'bubbles.' This has only led philosophy and society unwittingly down a path into a widespread implicit contradiction, the consequences of which are just now beginning to reach an explicit or critical stage throughout societies at large. Thus, the need was discovered for a reconceptualization of the concepts of freedom and time to 'reconcile,' or redefine, the differing cultures and their conflict.

One of the more promising avenues for finding conceptual replacements for freedom and time, and the reconceptualization of the two cultures themselves, is found in the perplexing and mysterious realm of quantum physics. Unfortunately, the quantum phenomena can be interpreted in at least four contradictory ways. First, as simply a continuation of the classical world, pending just a bit more information (that may or may not be forthcoming—in harmony with the early Bohm). Second, as providing a possible support for the traditional dualism concerning the mental and physical world (the standard Copenhagen view). Third, as opening up the possibility of a new way of seeing physical reality, one oriented towards an infinite depth of interwoven yet differentiated layers, which retain, in many core respects, the classical image of science—David Bohm's later view, building on Einstein. Fourth, as indicative of the need to break down the reign of classical science altogether, not merely for the study of nature, but dissolving its very methodology as applied even in the social sciences—Pauli Pylkkö's view, building on Heidegger.

For the purposes of true conceptual replacement, and through a review of the potential of the first two options to actually aid in resolving the conflict, it was determined that Bohm's and Pylkkö's proposals do offer the most potential for progress beyond the impasse between the two cultures. First, Bohm's views of freedom and time are indeed distinct from previous concepts that have dominated throughout history. He believes that there are many different layers with differing orders within reality that are all interconnected, in contrast to the atomistic view which dominates classical science. What distinguishes his view from others is that the different layers may necessarily involve the appearance of disorder from the perspective of a higher or lower order. Because of the infinite complexity of reality, it is impossible to actually perceive any absolute determinism in nature, which grants one meaningful

freedom. Correspondingly, the meaning of time is transformed into one of relative degrees of temporal and timeless vertical orders in various relationships to each other throughout an overall 'timeless' holomovement. Critically, the social spheres are also included within the various posited layers.

Second, Pylkkö's views of freedom and time are also distinct from most concepts that have dominated history. Pylkkö also believes that all of reality is fundamentally interconnected. However, he also believes that the relationship between order and disorder is itself one of the key fundamental features exhibited in nature, and that randomness plays a critical role. He also dismisses the idea of any residual 'timeless' platonic realm. Freedom and time are fundamentally constituted by their relationship to the interconnected or nonlocal yet locally manifested random events of nature, creating an aconceptual experiential flow. Because this basic feature is common to all reality, including the social spheres, the concepts of freedom and time Pylkkö articulates are operative at every level, guiding the meaning of social and cultural movements, as well as those in physics. As such, rather than freedom being an exceptional case within a deterministic world, determinism is rather the 'illusion' within a more fundamentally free world, noting that freedom here is tied to random temporally and nonlocally extended events. Laws, including natural ones, can only exist within an underlying framework that possesses freedom of some sort—and this freedom should be considered foundational, rather than the laws, though this is not to dismiss the existence of laws nor their necessity, either in nature or at the social level.

Bohm's and Pylkkö's theories, while in some ways similar and parallel efforts to resolve a common problem, are nevertheless very different and incompatible in other ways. The most important feature of their incompatibility is found in the opposite terminology they use, which in some ways perpetuates one of the most fundamental conflicts between the two cultures. Bohm retains and endorses the language of timelessness, whereas Pylkkö retains and endorses the language of temporality. As such, in some ways, while indeed moving beyond the precise characteristics of the broader conflict between the two cultures, they too perpetuate it. If nothing else, this illustrates clearly that, indeed, freedom and time are the fundamental concepts both creating and dividing the two cultures. Furthermore, because of the close relationship freedom and time have in relation to the idea of God, divergent theologies are inevitable so long as this crisis persists.

Within the dialogue between science and religion and within the sphere of theology, Bohm's and Pylkkö's ideas contribute to problems created by the two cultures. Within the sciences, it appears unlikely that either the dogmatic classical view or the neoplatonic Copenhagen view will welcome the insights of Bohm and Pylkkö. In part, this is because of the powerful dominance of the scientific culture, which controls so many sectors of society and the academy. Bohm and Pylkkö will likely remain outsiders to this dominance

for some time, if not permanently. Theologies that embrace the sciences 'as they are' will only be open to limited aspects of the work of Bohm, and less so, Pylkkö. Ironically, tenets of each of their ideas are also present in the most advanced interpretations of physics. Specifically, overall determinism within the realm of 'science,' which is in harmony with the earlier Bohm, and the acceptance of genuine randomness 'in some manner' within nature, which is in harmony with Pylkkö. Both of these are accepted by many mainstream theologians supportive of the scientific community. However, the synthetic work that Bohm and Pylkkö have each attempted challenges the status quo in ways which the scientific community overall, as a culture, will likely find unpalatable. The same would be true for the many theologians who show great deference to science today.

Conversely, within the realm of the humanities, the work of both Bohm and Pylkkö is likely to find much greater resonance, or, at the same time, elicit even sharper disagreement. The concepts of freedom and time play a central role in several major issues intersecting the humanities with theology, including religious pluralism, politics and social justice, soteriology alongside the Sanctuary and atonement, the reality of biblical prophecy, the Sabbath and rest, and the biblical concept of the Remnant and the philosophical significance of a minority holding the truth. In all of these areas, Bohm's and Pylkkö's conceptions of freedom and time could profoundly transform these socio-religious, theological, and biblical issues by modifying our views of how freedom and time intersect with hermeneutics and thus theology itself. However, in most cases, the trajectories their ideas would encourage concerning these areas would be in opposite directions. Thus, the theoretical continuation of the two cultures' impasse may endure. Nevertheless, theologians are far more likely to find Bohm's and Pylkkö's ideas attractive, and the integration of their thinking, especially Bohm's, has already begun to take place.

Overall, the study offers the following specific conclusions. First, the contrasting descriptions of freedom and time given by Einstein and Heidegger do fundamentally conflict, and their differences have had a profound impact on philosophy, science, and theological reflection. Second, essentially all further sub-disciplines, particularly the third culture disciplines that most directly impact human societies and the earth, are also profoundly affected by the contradictory tension. Third, the more classic 'science and religion' debate, as well as a host of other related issues, such as the nature of hermeneutics, are also profoundly affected by this conflict. Fourth, potential avenues toward ameliorating the conflict are present in the contributions of Bohm and Pylkkö. However, fifth, the conceptions of freedom and time presented in Bohm and Pylkkö also conflict, leaving philosophy and theology with a primordial choice between timeless time and determinism or, perhaps, its accompanying timeless freedom or temporal time and temporal nondeter-

minate freedom. This choice is not one that need be left merely theoretical, however, as the impact and consequences of their ideas can be traceably worked out in both a variety of disciplines as well as within theology. This allows one to *a posteriori* explore the issue, rather than leaving it merely an abstract hypothetical question. This does not mean a resolution is simple to achieve, but that there is more research that can be undertaken to obtain more knowledge about the concepts.

Lastly, sixth, this study brings to clearer light several issues pertaining to freedom and time that some theologians and theistic scientists are simply unaware of or passively ignoring. Many do operate, consciously or unconsciously, within a 'bubble.' This state of things cannot continue, or their respective contributions will slide into irrelevancy on one side or contribute unknowingly or unnecessarily toward a deepening of the polarization. The reality is, many biblical interpreters simply ignore the debates between science and religion, but if the philosophical issues undergirding both disciplines and discussions are in fact rooted in common yet disputed concepts that impact upon language and the humanities, then greater interdisciplinary efforts should be pursued to fully appreciate and critique the impact philosophy has upon both theology and science. Indeed, biblical exegesis is directly impacted by the clash of the two philosophical cultures, implicating freedom and time as core biblical issues, yet many theologians remain unaware of the depth and significance of this reality. Our ability, as theologians, to navigate the issues and questions facing the 21st century requires we engage this conflict intelligently, and in this we can learn from both Bohm and Pylkkö. Such engagement may alter how we relate to many past paradigms, especially in science, the arena which Bohm and Pylkkö have exposed as far more vibrant and open for philosophical reflection than has generally been previously realized. Obviously, given the attention to the subject matter in the present study, it would seem that there is special value in more critically engaging the predominant culture, particularly in the academy, which is that of the sciences. For the theologian, the dominance of 'science' as such must always be critically examined and addressed. Yet, at the same time, the 'science' of today is immensely complex, as the work of physicists and philosophers like Bohm and Pylkkö make abundantly clear, and therefore they also serve as a caution toward theologians as they engage the mysteries of the natural world.