THE NATURE OF TIME AS A PUZZLE FOR NATURALISM

by Peter Saulson

Abstract. Time can only be understood within physics as a special dimension of a four-dimensional reality given "all at once" in its totality. There seems to be no way that a special moment ("now") can be distinguished. Within human experience, however, the feel of time is vivid: now is intensely present, and time flows from one now to another. This dramatic difference, between the realm of personal experience and the realm of material existence, raises doubt about the unity of the concept of nature and thus about the attraction of naturalism. Following the thought of Abraham Joshua Heschel, I explore whether a solely physical universe can serve as an appropriate whole of an existence that also includes persons. Heschel argues that the whole of existence needs to have a personal character as well, in other words God.

Keywords: God; naturalism; personhood; physics; relativity; time

Introduction: How Do Persons Fit into Nature?

To Jane Austen,the antonym of "natural" was"artificial" (Austen [1813] 1993, 156). Today, in an age of science, the opposite of "natural" might more likely be considered "supernatural." But are these senses of the concept of nature as different as they sound? Perhaps not.

This claim may sound surprising; after all, artifice is the product of human activity, very far removed from our understanding of the (putative) supernatural. Are not human beings to be understood as parts of nature? If you are a naturalist, your answer to the last question is almost surely Yes. But I will argue in this article that a better answer would be Yes and No. Yes, of course, since homo sapiens is a biological species that appeared on earth after billions of years of evolution. And yet an answer of No might also be given, since the material character of human beings doesnot exhaust their powers. Our capacity for goal-driven behavior, incompletely accounted for by the material character of our bodies, gives us a horizon of transcendence (Jonas 1966, 84–86) beyond any purely physical property.

Peter R. Saulson is Professor Emeritus of Physics at Syracuse University, Syracuse, New York, USA and a Research Affiliate at the MIT Kavli Institute, Cambridge, Massachusetts, USA; e-mail: prsaulson54@gmail.com.

 ISSN 0591-2385

The extent to which human beings are fully a part of nature, without remainder, is of course a question with a long history. (For recent discussions, see Flanagan 2007 and Goodenough 1998.) This article's contribution to the discussion will focus, first, on an incompletely acknowledged problem with the "fully natural" view of persons, arising from the role of time in our picture of the world. In the section of this article called "Nature and the Problem of Time", I will argue that our understanding(s) of time show it to have two completely different characters, one that fits well with current scientific understanding and another completely different character that is essential to understanding human experience. This suggests that human beings are not fully a part of any purely material view of nature; instead, human existence demonstrates that nature's unity is open to question.

In the section of this article called "An Account of Existence with the "Seam" Visible", I will extend the discussion to the theological anthropology of the twentieth-century religious thinker Abraham Joshua Heschel. In his account of the human condition, Heschel foregrounds the extent to which persons lead lives beyond the reach of complete scientific explanation. His "elevation" of the character of human existence leads to a surprising view of God, no more outside the natural than are human beings. Thus, the question "Are human beings part of nature?" has as its complement the question "Is God supernatural?" The conclusion of my discussion is that existence is wider and richer than is supposed in the most popular current conceptions, and thus that a fuller understanding of nature leaves room for some kinds of theism.

(In this article, I use the word "existence" to refer to the totality of things that have being. A synonym might be "reality," but the latter word is too often taken to refer only to things that have physical existence. As the reader will see, I want to not invite the latter association.)

Nature and the Problem of Time

The Dual Character of Time

You might think that physics includes a complete understanding of time, but if so you would be mistaken. In establishing physics, Newton declared that time "flows equably" (Newton [1689] 1934, Bk. 1, 6). When Einstein discovered relativity, however, physics turned to a picture best described in the words of Hermann Weyl, "The objective world simply is, it does not happen" (Weyl 1949). The reason for this change was the core discovery of relativity, that there is no way for all observers to agree on which set of events in the universe happen at the same time.

In physics, the term "event" means the situation at a particular place at a particular time. The Relativity of Simultaneity means that the set of all events across the universe that I would take to be happening at the time

I call "now" is not necessarily the same as the set of all events across the universe that you would have reason to take to be happening "now." You and I would indeed agree if you and I are at rest with respect to each other. But if you are moving rapidly with respect to me, then the two of us will have substantial disagreements about which events are happening now. And the "relative" essence of the Theory of Relativity is that neither you nor I nor anyone else has any right to consider our own determination of now to be the absolutely correct one. Instead, what physicists have learned is that there is no universally recognizable definition of now.

Compare this to a commonsense picture of the universe, that it consists of everything that exists at a given time, "flowing" from one time to another. But if there is no unambiguous way to define a universal now, then this commonsense picture cannot be true. The only way there could be a universal now would be to privilege one observer's view over another's, and that is what relativity forbids.

The only way physicists have been able to make sense of this inability to define a now is to abandon the picture of the universe as consisting of all things existing at a particular moment, changing as time flows toward the future. Instead, existence must consist of all events across the universe *at all times*, given "all at once," so to speak. It was this picture that Weyl had in mind when he said that the universe "is, it does not happen." This has come to be called the "frozen spacetime" picture of existence (or sometimes the "block universe" picture). The sense that time flows has been declared an illusion. Statements to this effect are a fixture of popular presentations of relativity (Davies 2002; Greene 2011).

But if the flow of time is an illusion, it is a stubborn one. In philosopher Owen Flanagan's book *The Really Hard Problem*, the very first paragraph of the Introduction states "Consciousness is. It happens, it is there. It flows like a stream while I live, and how it flows, how it connects to itself, is what makes me who I am" (Flanagan 2007, xi).

Flanagan is in good company: the early twentieth-century philosopher Henri Bergson insisted that the essential reality was "our own personality in its flowing through time" (Bergson [1903] 1955, 24). And even Hermann Weyl's famous statement that "the objective world is, it does not happen" was followed by the sentence, "Only to the gaze of my consciousness, crawling along the lifeline of my body, does a section of this world come to life as a fleeting image in space which continuously changes in time." (In this vision, the term "lifeline" refers to the set of all events at which the individual is present throughout all of history, usually called a "worldline" in today's physics terminology.)

Thus, even Weyl's description, the *locus classicus* for the frozen spacetime picture, contains an admission that the whole story of existence is a lot more complicated. Although the "objective world" is frozen, "the gaze of my consciousness" brings to existence a flow of apparent present

moments that does not appear in the description of the universe at the level of fundamental physics. This is deeply puzzling.

What did Einstein, relativity's inventor, think about this aspect of the nature of existence? On this topic he was rather reticent, expressing his opinions only in private, late in his life. Perhaps surprisingly, the two private expressions that have come down to us sound contradictory.

After the death of his close friend and confidante Michele Besso in 1955 (shortly before Einstein's own death), Einstein wrote a letter of consolation to Besso's family, which included these words: "Now he has departed from this strange world a little ahead of me. That means nothing. People like us, who believe in physics, know that the distinction between past, present, and future is only a stubbornly persistent illusion" (Einstein 1955). Here, Einstein takes comfort in holding to the "frozen" picture of existence, avoiding the pain of his friend's passing by declaring time's passage to be an "illusion," albeit a "stubbornly persistent" one.

And yet, we have a report from just a few years earlier that Einstein was struggling on just this point. Our evidence comes from the account given by the philosopher Rudolf Carnap of discussions that he had with Einstein in the early 1950s (1963, 36).

> Once Einstein said that the problem of the Now worried him seriously. He explained that the experience of the Now means something special for man, something essentially different from the past and the future, but that this important difference does not and cannot occur within physics. That this experience cannot be described in science seemed to him a matter of painful but inevitable resignation. … Einstein thought that these scientific descriptions cannot possibly satisfy our human needs; that there is something essential about the Now which is just outside the realm of science.

Carnap's account reveals an ambiguity in Einstein's own thinking that parallels that of Weyl. Thus, at the heart of our understanding, we seem to have two irreconcilable views of how existence is structured. It seems that existence is, at one and the same time (so to speak) both a) the whole history of the whole universe throughout time, existing all at once, and b) the whole of three-dimensional space and its contents at a given time as it evolves through time (as it were). (I need to insert the phrases "so to speak" and "as it were" because language comes close to failing us on these points.)

Physicists tend to prefer the frozen picture, at least when they are doing physics. That the flowing picture cannot be avoided when trying to connect physics to human experience is a painful admission, and leads to the language of "illusion" when describing it. But I think that this really means that today's fundamental physics does not suffice to give a full account of existence. An illusion that is "essential" (to use Carnap's term in recounting Einstein's thoughts) cannot be truly an illusion, but may instead be

an anomaly that points to an essential incompleteness in the paradigm of relativity.

Might Einstein Simply Have Been Wrong about the Relativity of Simultaneity?

Bergson's insight about time and human experience was the reason he was implacably opposed to relativity, as epitomized in his 1922 debate with Einstein (Canales 2015). Bergson's criticism of relativity was also spelled out in his book from the same year, *Duration and Simultaneity* (Bergson [1922] 1965). He was so convinced that Einstein must be wrong about the relativity of simultaneity that the book purports to find simple mathematical mistakes in Einstein's derivation of the theory. Unfortunately, it was Bergson's own mathematical argument that was fallacious. It appears that, later in his life, Bergson realized the formal weakness of his argument (although not its conclusion!) (Lawlor and Leonard 2020). Republication of *Duration and Simultaneity* has been inconsistent; currently it is out of print and is difficult to find.

More recently, a number of philosophers and Christian theologians have struggled with the relativity of simultaneity. Among the theologians is William Lane Craig, who has sought an escape route among the various early interpretations of relativity. Craig espouses so-called neo-Lorentzian relativity, in which there is in fact a single preferred viewpoint on the universe, a state of motion that can be taken to be at rest and thus to unambiguously define a present moment (Craig 2001). This preferred state of motion plays no role in ordinary physics, removing the seeming inconsistency with the many measurements that fully support Einsteinian relativity. As long as Craig is discussing local situations (not cosmic expansion), the preferred state of motion is knowable only by God. But when he turns to the universe at large, Craig identifies the preferred time with the cosmic time associated with the set of observers who see the expansion of the universe as perfectly symmetrical around them (in technical terms, perfectly isotropic.) These observers do indeed play a unique role in relativistic discussion of the expanding universe.

However, their observations define a unique and preferred set of clocks *only* in the case of a perfectly homogeneous (i.e., smooth) universe. Thank God, we do not live in such a universe; for our own existence we require matter to have become concentrated, for example in stars like our Sun. In a lumpy universe, the gravitational redshift (an effect from the General Theory of Relativity that is not mentioned by Craig) means that clocks at different locations will run at different rates, even if their motion is matched with the cosmic expansion. No longer is there any way to uniquely and consistently define a single agreed-upon time scale that could yield a cosmic now (Callender and McCoy 2022). Unfortunately for Craig's project,

what General Relativity appeared to give in the form of cosmic time it took away by the gravitational redshift. Thus, his belief that there is a version of time that can define a universally agreed now can only be maintained by denying the physics that we have been taught by Einstein's relativity.

Secular philosopher Michael Tooley similarly seeks to challenge relativity. His motivation is to "defend a tensed account of the nature of time, and, specifically, one according to which, while the past and present are real, the future is not" (Tooley 1997, 13). Relativity's insistence that there is an unavoidable ambiguity in any definition of the present stands in the way of Tooley's project. He postulates an absolute space, and thus the restoration of an absolute meaning for simultaneity. Physicists might reply that it would seem strange for there to be an absolute standard of rest that played no role whatsoever in accounting for motion.

Theologian Robert John Russell insists that he does not challenge relativity. But for theological reasons (based on his reading of Lutheran theologian Wolfhart Pannenberg), he is in search of an interpretation of the theory that allows for belief in the reality of the passage of time. His strategy is to develop what he calls a "relational and inhomogeneous *spacetime* ontology" (emphasis in original) (Russell 2012, 303). Unfortunately, it appears that Russell's spacetime ontology ignores the fact that relativity not only allows for an event A to be either in the past or the future of another event B, but for a third possibility as well—that two events are "elsewhere" with respect to one another, with no determinate temporal relation. (According to some observers A would happen earlier than B, while according to other observers A would happen later than B.) This "elsewhere" relation is precisely the one that gives the difficulty in establishing absolute simultaneity and temporal order, so it does not appear that Russell has rescued the flow of time from within the Theory of Relativity.

I am far from unsympathetic to these attempts to reconcile the human experience of flowing time with the insistence that physics only makes sense in terms of frozen time. We certainly are in need of new insight. But to me it appears that all of the proposed solutions described here have failed, by the standards of physics.

Is Nature Unified?

Why might all of this matter? My argument in this article is that it suggests that at its core, nature has two natures. When an adherent of philosophical naturalism says that nature is all there is, she cannot simply be pointing to a single unitary entity called "nature." Nature as described by fundamental physics is frozen, while nature as perceived by conscious subjects flows from one moment to another. At first, this might not seem too upsetting to a naturalist; after all, naturalism need not be simply physicalism. But I will

argue that the duality of time ought to be taken as a serious complication to the appeal of naturalism.

The two forms of time divide the world in an interesting way. On the one hand, physics and the frozen spacetime view associated with it rule the very small (microscopic processes), the very large (astronomical processes), and everything in between that is not too complex—by any accounting, a vast domain of phenomena. On the other hand, the Bergsonian view of flowing time applies to human experience (and likely to that of other living things complex enough to be endowed with experience).

Simply put, my argument is that the duality of time shows that nature is not "just nature." There is the nature that can be explained by physics or by one of the other natural sciences that are strongly rooted in physics. Then there is the nature that includes human beings who perceive nature's character in a wholly other way. What is at stake is how to understand our bedrock belief that persons are fully a part of nature. If we need a different kind of nature to "hold" persons than the version of nature given us by the natural sciences, does not the idea of nature lose some of its appeal as a unifying concept?

Persons are complex enough that it is a matter of some dispute whether the application of laws of nature can completely account for their behavior. Many philosophers (and many others with the modern temper) hold that *in principle* the laws of nature *ought to be able* to account for persons as do those laws for everything else in the world. But this is a matter of faith in the future progress of science, not of settled science itself. Other thinkers question this faith. One example is John McDowell, who proposes to divide nature into a "realm of law" and a "realm of freedom" (McDowell 1996). McDowell introduces these terms while discussing a paper by Wilfrid Sellars (1956), further remarking that this division is "Kantian in spirit."

The idea of two realms is also central to the thought of twentieth-century theologian Abraham Joshua Heschel. In the first chapter of his *Man Is Not Alone* he writes, "Citizens of two realms, we all must sustain a dual allegiance: we sense the ineffable in one realm, we name and exploit reality in another. Between the two we set up a system of references, but we can never fill the gap" (Heschel 1951a, 8).

It is probably clear what Heschel means by the realm in which we "name and exploit reality," but his term "the ineffable" requires more comment. This important term appears frequently in Heschel's writing. One good description of the term comes early in the same book: the ineffable is "a state of fellowship that embraces [a person] and all things; not a particular fact but the startling situation that there are facts at all; being; the presence of a universe; the unfolding of time" (Heschel 1951a, 38). Elsewhere, we find another explanation: "The content of words such as God, time, beauty, eternity cannot be faithfully imagined or reproduced

in our minds. Still they convey a wealth of meaning to our sense of the ineffable" (Heschel 1955, 181–82).

Because I will be referring to Heschel's thought throughout the rest of this article, a few more words might help the reader to become more familiar with his work. A Jewish theologian, whose most influential writing dates from the 1950s and 1960s, Heschel is widely known for calling attention to the ineffable aspects of existence, as described in the previous paragraph. He also describes a nearly universal human response to the ineffable, describing that response with terms like wonder, radical amazement, and awe. These proto-religious emotions bring to awareness that, "Something is asked of us. But what? The ultimate question that stirs our soul is anonymous, mysterious, powerful, yet ineffable. Who will put into words, who will teach us the way of God? How shall we know that the way we choose is the way He wants us to pursue?" (Heschel 1955, 163).

Heschel believed that wonder in response to the ineffable would suffice only to raise this essential question, but not to answer it. Instead, he argued that one needed to be open to the voice of God as expressed in the prophetic words of the Hebrew Bible, responding to God's guidance as given to us by Moses, Isaiah, and others on through Malachi, and as interpreted by the rabbinic sages since that time. Clearly, Heschel's complete project was written first and foremost for Jews; nevertheless, many Christian thinkers have derived profound inspiration from his concepts of wonder and the ineffable.

As noted above, Heschel's cosmology sees the world as consisting of two realms, the material and the personal. The ineffable is an aspect of both realms, but perhaps more vivid in the realm of persons. The "unfolding of time" is a theme to which Heschel returns often. His first extended discussion of the religious significance of time can be found in *The Sabbath*, especially in its Epilogue. On its last page, we find:

> To witness the perpetual marvel of the world's coming into being is to sense the presence of the Giver in the given, to realize that the source of time is eternity, that the secret of being is the eternal within time. …
>
> Creation is the language of God, Time is His song … . (Heschel 1951b, 101)

To witness the "unfolding" of time is to witness God's presence through the "perpetual marvel of the world's coming into being." But this vivid sense of the flow of time is also experienced as a link to eternity. Thus, Heschel sees the two faces of time as pointers to the two realms of existence and to the presence of God in both.

Heschel's goal was to offer a reconciliation between the power of modern science and belief in the reality of God. He spoke for the Jewish tradition as he had learned it in the Hasidic world of his birth in Poland,

using language and concepts (which he learned as a doctoral student at the University of Berlin) that he hoped would reach people whose frame of reference was modernity. His understanding of time in Judaism came from meditating on the power of observing the Sabbath; his way of expressing that understanding perhaps owes more to Bergson than it does ancient Jewish texts. (For an argument that ancient Judaism did not conceive of time as an independent entity at all, outside of the events that fill it, see Stern 2003).

Although Heschel's terminology differs from McDowell's, I believe that they are pointing to the same idea. McDowell's realm of law is precisely where we can name and exploit reality, in Heschel's terms. Heschel's description of the realm of the ineffable can be seen as a list of the most striking aspects of being personally present to the experience of existence; and it is precisely persons who are the occupants of McDowell's realm of freedom.

Heschel himself never stuck to a consistent terminology for the two realms. For purposes of clarity, in the remainder of this article I will find it helpful to use the terms "realm of things" for McDowell's realm of law, and "realm of persons" for McDowell's realm of freedom and Heschel's realm of the ineffable.

The realm of persons is that aspect of nature in which things happen because of goal-oriented action, not as events that are fully explainable because they are governed by the deterministic causality inherent in laws of nature. Goal-oriented action makes sense in terms of personal experience rooted in Bergsonian flowing time; it is hard to see how it could be equally well-understood in the context of frozen spacetime where the concept of "now" has no meaning.

To see why this is so, consider the second sentence of Weyl's description of frozen spacetime. He says that the flow of time is associated "only [with] the gaze of *my* consciousness, crawling along the lifeline of *my* body" (emphasis added). While admitting the essential truth of Bergson's description of the flow of time for human beings, Weyl makes it a matter of individual consciousness to "watch the movie," as it were. But human life is not the same as watching a pre-recorded video. First, we do not just watch; we act, and we act for reasons. Second, so much of what happens in life is the fruit of *interactions between* human beings who share the world. This means sharing the moment in which they interact. It cannot be the case that I "watch the movie of my life" at home at my own pace, while the person whose discussion with me inspired me to make that crucial choice, say, watches independently, or perhaps does not even care to watch at all. Only simultaneous sharing of existence makes sense of human relationship. Hence, Bergson's insistence that the reality of a shared now seems to be the only way to make sense of the actual texture of human experience.

Time's Subtlety versus Naturalism

How does this lead to a critique of naturalism? Both the problem of time and the question of persons point to a seam running right through the world, between the part of nature where things happen due to causes, and the part that involves actions taken for reasons. But the appeal of naturalism lies, to a large extent, in the hope that our understanding of existence can eventually be total and unified.

An extreme version of the latter idea is Lewontin's (1997, 31) famous claim that that "our commitment to materialism" must be "absolute" in the "struggle between science and the supernatural." Of course, there are many naturalists who aren't materialists. As Stroud (1996) pointed out, naturalism comes in many flavors, unified only by rejection of the reality of the supernatural. Nonmaterialist naturalists may not need to be absolutists, but they still need to ensure that they have not admitted into nature features that smack of the supernatural.

For this reason, it is a delicate matter to consider that nature might have a seam running down the middle, separating things that obey laws of nature from entities like persons that sometimes go beyond their embodied law-bound nature and take goal-oriented actions. Hence, the appeal of the compatibilist form of determinism; it would allow us to believe that the actions of persons are governed entirely by laws of nature in spite of the feeling that we have free will. Hope abounds that some version of natural science, to be completed in the future, will make this look sensible.

But to the extent that this belief depends on the future progress of science, naturalists' enthusiasm might well be tempered by a thought of Hans Jonas (1966). He pointed out that Descartes' original proposal to divide the world into domains of extended things and of thinking things was what enabled the progress of natural science up until now. It was only by focusing on those aspects of the world from which mind is absent that natural science was able to construct the fields of physics, chemistry, geology, and biology. Naturalists now hope that something very much like these fields of natural science will allow understanding of the domain of conscious thought.

The *res cogitans* posited by Descartes is riddled with puzzles; it is hard to see how reviving his postulated thinking substance could succeed. By the same token, however, as Jonas remarks, there is as yet no evidence that Descartes was wrong to surmise that the methods of natural science would only work for the *res extensa*. Naturalists' belief that neuroscience is poised for a giant breakthrough should not be seen as a simple extrapolation of science's march of progress. Rather, Jonas believes, such optimism willfully ignores the most important insight Descartes offered us.

Of course, Descartes and Jonas could be wrong, and the optimists among naturalists could be correct. But that would require that the

anticipated breakthrough in neuroscience would additionally offer a solution to the conundrum of frozen time arising from relativity—a tall order, indeed. The problem of time thus adds weight to the pessimistic view that existence cannot be understood by a single set of concepts. Nature does not appear to be "simply nature."

An Account of Existence with the "Seam" Visible

For purposes of discussion, in the remainder of this article I will take it as established that human beings have genuine freedom. Here in this section, I will ask the following question: What would the existence of the two realms have to say about our understanding of the whole of existence? I will demonstrate that there is a theological stance with a rather robust vision of God that nevertheless locates God on the "natural" side of the putative divide between the natural and the supernatural.

I will start by showing that the whole of the realm of things has a strikingly rich structure. Then, I will follow Heschel and explore a possible analogy between the whole of the realm of things and the whole of the realm of persons having a similarly rich structure, justifying belief in a genuine but nonsupernatural God.

The Realm of Things

We might take the "whole of existence" to be equivalent to "the set of all things that exist." For the moment, let us take "things" to be equivalent to "physical things." Is the physical universe simply the set of all physical things? No it is not, not according to our best current science (Harrison 1981). Here is a very brief summary of what we know now.

The physical universe is a physical thing itself. The General Theory of Relativity, Einstein's most complete understanding of space, time, and gravitation, allowed us for the first time to find scientific answers to questions about the physical universe as a whole. What he and his successors taught us was that the physical universe, which contains all physical things, is not just the set of all of those things, nor is it simply an inert container for them; rather, it is also its own kind of physical thing: the physical universe has physical properties like size and density, behaviors such as expansion, a history describing the universe's expansion since its origin at the Big Bang, and a future that can be predicted on the basis of our understanding of the laws that govern its behavior.

The physical universe can be described by simple laws of nature. Daunting mathematics is necessary for a detailed understanding of General Relativity, but the properties of the physical universe as a whole turn out to obey

rather simple laws. Despite the awesomeness of the subject matter, the mathematical description of this physics problem is hardly more complicated than, say, the motion of a ball thrown upward. Whether the universe will expand forever or whether it will collapse in a Big Crunch is determined by just a few initial conditions that we can hope to determine by measurement.

The physical universe is the basis of spatiotemporal relationship. Of course, as soon as one steps back a bit from learning the mathematical description of the universe's expansion, the uncanniness of the situation can be appreciated. What is it that is expanding when we say that the universe expands? It is spacetime. And what is spacetime? It is the basis of the relationships between individual objects characterized by near versus far and before versus after. So, it is the basis of spatiotemporal relationship that is expanding. If you think that sounds weird, you are not alone.

The physical universe encodes all of the laws of nature. Space and time are not inert backdrops for the drama of existence, but instead are themselves things with real physical properties. But there is something even more. Beyond being the basis of spatial and temporal relationships, the physical universe carries with it the specification of all the laws of nature. As far as we know, those laws need not have the form that we find instantiated in our universe; somehow, the physical universe is encoded with the laws that we do see obeyed. This goes beyond gravity as explained by General Relativity, and includes the laws that give us the list of elementary particles (electrons, protons, and neutrons for starters) as well as the laws that govern how those particles interact (including the laws for the forces that hold atoms together and that govern light, as well as the other laws that govern what protons and neutrons are made of as well as why atomic nuclei stick together.)

The Realm of Persons

The whole of existence thus has a tremendous amount of structure, and so far we have only considered the physical aspects of existence. Can it get even richer when we expand our view beyond the purely physical? I claim that the answer is Yes.

We need to ask ourselves whether the physical universe, as I described it, has the properties that would allow us to understand not just every physical thing, but also every person. Before simply answering "Of course," let us remember the subtleties of time. Physical law operates most naturally in frozen spacetime. For all of the dynamism of the expanding universe, it is a concept born of the General Theory of Relativity that insists on

four-dimensional frozen spacetime rather than any view that would privilege space by itself, existing as a "snapshot" at a particular moment of time. As long as we are talking only about the physical aspects of existence, there is no problem with conceiving the universe in this way—in fact, it seems to be required.

But the whole of existence contains persons as well as things, and personal experience can only be understood in terms of flowing time. Thus, if our best physics understanding of the physical universe says that time cannot flow but must be frozen, we are confronted with a profound puzzle in our understanding of existence.

Following Heschel, I would like to propose that, just as the *contents* of existence need to be seen in two realms, the realm of things and the realm of persons, so too does the *whole* of existence need to have two characters. The physical universe as we understand it has the properties appropriate to serve as the whole of the realm of things. But the whole of existence needs to have a different character if it is to serve as the whole of which persons are the parts. Even Hermann Weyl, the founder of the frozen spacetime picture, realized that that picture could not include human conscious experience. Recall his second sentence, "Only to the gaze of my consciousness …"

But what a huge issue is referred to lightly by his use of the word "only"! It is bad enough to have to add to the universe, by hand and after the fact, the phenomenon of being viewed by a consciousness "crawling" along a person's worldline. Already this is totally outside the received interpretation of the frozen spacetime picture. But even this radical departure would be insufficient, if the solution only allowed for an *individual* consciousness to, as it were, "watch the movie" of existence.

As we saw above, human experience is much richer than can be captured by the metaphor of watching a movie. We *share* our experience with other persons, and their spontaneous actions in turn affect our own. If only we could be comfortable asserting that this proved the need for a shared now, and that it thus refutes the frozen spacetime picture. But, in spite of the challenges to relativistic thinking discussed above, no physicist sees an escape from the argument that proves that an unambiguous definition of "now" cannot be given.

We seem to be left with an unresolvable antinomy. Without pretending to resolve it, I would like to more modestly suggest that, in some way that we do not yet understand, existence needs to have both characters "at the same time." The whole of existence needs features beyond those that characterize the physical universe.

(We can surely hope that some future version of natural science will allow us to understand this from a unified perspective, but if so that perspective will need to unify aspects of existence that presently seem irreconcilable. That could only happen if the concepts underlying that

more profound understanding are different enough from our current scientific beliefs that personal experience will fit naturally into the putative future unified understanding. Thus, the rest of the argument presented here ought to go through in much the same way; it would just seem less *ad hoc*.)

Specifically, Heschel's claim is that alongside the physical universe that is the whole appropriate to the realm of things, the whole of existence needs an aspect that can accommodate the realm of persons. Two distinct features seem to be required. This aspect of the whole of existence would support shared experience of flowing time among the vast multitude of persons who make up the parts of this whole, in place of the frozen time of the realm of things. Additionally, in the realm of persons, the future is radically undetermined by the past, not determined by the past the way that laws of nature function in the realm of things. To the extent that the concept of "law" applies to persons at all, it would be moral law that teaches how a person *ought to choose to act*, not a law of nature that describes how a thing *does behave* without any choice in the matter.

There is one final step to this argument, that moves it beyond cosmology per se and into a form of theology. Recall the somewhat uncanny feature of the physical universe, that it is in itself a kind of a physical thing, not just the set of all physical things that are its parts. The physical universe has physical properties and obeys physical laws. Now, if this is true for the aspect of the whole of existence appropriate to the realm of things, what then applies to the aspect of the whole of existence appropriate to the realm of persons?

Heschel answers this question by proposing an analogy between the two realms:

> Just as in touching a tree we know that the tree is not the end of the world, that the tree stands in space, so we know that the ineffable … is not the end of spirit; … The soul is introduced to a reality which is not only *other* than itself, as it [sic] is the case in the ordinary acts of perception; it is introduced to a reality which is *higher* than the universe. Our soul compares with its glory as a breath with all the world's air. [emphases in original]

In somewhat less poetic language, we can translate Heschel's analogy between the realms of things and persons into the following formulation: *Just as the physical universe (the whole of the realm of things) has a physical character, so too must the whole of the realm of persons have some kind of* personal *character*.

It is tricky to reason by analogy to any very specific understanding of what this personal character might entail. But we can explore what would come of trying to establish parallels to each of the various things that we mean when we talk of the physical universe.

- The least interesting meaning of the physical universe it that it is the set of all physical objects that exist. A parallel not-very-interesting meaning of the personal aspect of the whole of existence would be that it includes all persons who exist. (Presumably, if there is life on other worlds, conscious beings there as well would be included.)
- We have learned that the physical universe is not just all physical things, but also all of spacetime, that is to say the basis of all relationships of proximity or distance as well as direction in both space and time. A parallel on the personal side of the whole of existence might be all of time experienced as the flow of being, shared in relationship with all conscious beings.
- Just as the physical universe comes "hard-wired" with a single specific version of all possible versions of the laws of nature, might it not also be the case that the personal side of existence has built-in moral laws?
- The physical universe is, in many respects, a physical thing writ large. To the extent that our analogical reasoning holds good, we would thus expect that the personal side of existence is, in some respects, a person writ large. This personal character would seem to include sharing the experience of the flow of being in relationship with other conscious beings. A personal character to the whole of the realm of persons would also present its built-in moral laws to us in the role of the giver of moral law.

The idea of the personal whole as the source or giver of moral law is perhaps the most surprising aspect of this proposed set of parallel properties. Strictly formally, parallel to the encoding of laws of nature in the physical side of existence ought to be a similar encoding of the distinction between right and wrong on the personal side (as expressed in the third bullet above). Choosing to personalize the description as the giver of moral law brings into relief the claim that the whole of the realm of persons should be personal in some meaningful way, just as the physical universe is in several meaningful ways a physical thing. Thinking along this line is what gave Heschel the confidence to state that the personal whole of existence ought to be addressed by the name God.

How Much is This Like Classical Theology's View of God?

God as the revealer of moral law. It is worth considering whether the God who is recognized via this analogy matches the God of traditional belief. Of course, there are many traditions to which it might be compared. At first sight, the personal character of the whole of existence might not appear to have much in common with, say, the God who is a character in the Hebrew Bible or with a God who can be incarnated in a single human being, as in the New Testament.

If we momentarily put aside the God of Bible stories and ask, "What is it that one would most want of God if one did indeed believe that God exists?", it might very well be that God would be the source of moral law, that is the source of genuine guidance in distinguishing right from wrong. Something like this would indeed be the most essential desideratum for Heschel's own Jewish tradition, in the form of the list of the 613 commandments that orthodox Jews take as having been given by God at Mount Sinai. So, we might reframe our question as, "From the analogy between the two realms, can we understand the existence of God as a commander of moral law?"

As a Jewish thinker, Heschel discusses this question at some length. The greater part of his most famous book, *God in Search of Man* (1955), is devoted to precisely this question. But we can focus on an almost haiku-like formulation from *Man Is Not Alone*. There, Heschel wrote, "The world consists, not of things, but of tasks" (Heschel 1951a, 69). Referring to the fundamental recognition of the two realms of existence, Heschel insists first that the realm of things is subsidiary to the realm of persons. In characterizing the realm of persons here by the word "tasks," Heschel offers a Jewish understanding that the tasks (commandments) assigned to persons are the most fundamental aspects of the realm of persons.

It might seem puzzling that a God who is first perceived through the ineffable (i.e., the wordless) is taken to be the source of moral laws expressed in the words of the Biblical commandments. And yet this is indeed Heschel's authoritative understanding of the Jewish tradition. As he writes, "We cannot express God, yet God expresses His will to us. It is through His word that we know that God is not beyond good and evil. … In the prophets the ineffable became a voice …" (Heschel 1955, 164).

Christian readers in particular may be unsure whether Heschel does indeed mean that we can take the divine commandments communicated to us in the Bible as tasks that we are to fulfill today, but here too he is a forthright spokesperson for Jewish tradition. He tells us, "[God] is in need of the work of man for the fulfillment of His ends in the world. … Mitsvot [commandments] are not ideals, spiritual entities for ever suspended in eternity. They are commandments addressing every one of us. … In the infinite world there is a task for me to accomplish. Not a general task, but a task for me, here and now. Mitsvot are spiritual ends, points of eternity in the flux of temporality" (Heschel 1955, 291).

It is certainly not obvious that we can come to know with confidence exactly which actions are right and which are wrong. And it is hard to deny that so much of what we take to be right or wrong depends on our history and our place in society—that it is a "social construction." But, for example, to the extent that people feel genuine remorse for any actions they might have taken or failed to take, that feeling amounts to buying into a belief in the reality of some kind of moral standard. That belief

is what I mean in saying that moral laws are genuine laws of existence, irrespective of how difficult it may be to know for certain what is right or wrong in any particular case.

If we accept this provisionally for purposes of discussion, how does it fit with the understanding of God suggested by the analogy? It might be something like this. A moral law often presents itself to us through the "voice" of our conscience, the feeling of being told "Do!" or "Don't!" One could try expressing that same thought not as a "feeling of being told," but instead as hearing the voice of the personal whole of existence, commanding us to do some things and not to do others.

You might not want to take the previous paragraph literally, but this point of view might work whether you take it literally or not. Consider the following (possibly apocryphal) story. A friend went to visit the great physicist Niels Bohr at his home, and noticed that over his front door Bohr had nailed a lucky horseshoe. The friend asked, "Do you really believe in a superstition like that?" Bohr replied, "Oh no, of course not. But I have been told that it works, whether you believe in it or not" (Pais 1986).

Taking a similar stance toward this argument, we might say that of course we do not actually hear God's voice telling us the difference between right and wrong. God is not a human being with a mouth and vocal cords. Instead, the imperative to do the right thing is even stronger for the fact that we just know that we need to do the right thing. God's voice consists of our feeling compelled to do what we think is right. In other words, what makes a genuine moral imperative truly divine is precisely the fact that its truth is part of the very structure of existence. The world could not be, without what is truly right actually being right.

God as creator of the universe. Does an understanding of God through the path of this analogy also point to a conventional religious understanding of God as the creator of the universe? Not nearly so much. But if so, what has been given up? And has anything been gained by diminishing the emphasis on this conventional religious idea?

Darwin's recognition that the creation of living things did not happen in a single week destroyed the possibility of literal belief in the creation story of the Book of Genesis. But Hubble's discovery that the whole physical universe came into being all at once seemed to revive the possibility to attribute creation to a discrete act of a creator (Jastrow 1978).

Historical considerations aside, why should the creation story be the battlefield in the war of ideas on which belief in God should win or lose? Is it truly necessary for understanding an essential role for God in the world? Turning once again to Heschel's Jewish tradition, the answer is, "Not as much as you might think." To see this, we need only consider the single most important source for Jewish understanding of the Bible, the commentary of eleventh-century scholar Rashi. What does Rashi have to

say about the first words of the Bible, "In the beginning God created …"? He says, "The text does not intend to point out the order of the acts of Creation." He continues, "This verse calls aloud, 'Explain me!'" and then explains the traditional belief that the creation story is important mainly to justify God's right to issue commandments (Herczeg 1995). In other words, this authoritative statement of Jewish thought treats God's role as creator as of minor importance compared to God's role as revealer of moral law. In addition, it warns sternly against any sort of literal interpretation of the Biblical account of creation.

Judaism has a long tradition of taking creation not to be (only) a discrete event in the past, but of instead interpreting creation as an ongoing continuous activity of God. Just as a human being has both a material body and a personal aspect, perhaps one might see the physical universe's ongoing existence as the material counterpart to God's role as the personal whole of existence (Heschel 1951a, 122). Heschel would warn us, however, not to mistake the material side of existence for the personal God. The mute realm of things simply cannot play the role of giver of moral law. For this reason, Heschel considered ground-of-being theologies to be incomplete in a fundamental way.

Heschel would not have wanted to deny that God is the creator of the universe; he just wanted to be sure we understood it as subsidiary to the role of God as giver of moral law. As he put the relationship, "There must be a value which was worth the world's coming into existence" (Heschel 1951a, 22). Claiming that this "ought" led to all that is, Heschel is saying that our understanding of God's act of creation should come primarily by trying to understand why God would want to bring the world into existence. This echoes the discussion we find in the commentary of Rashi.

This hierarchy of value over the material is embodied in the way we can see existence as having two realms. The realm of persons (by whom values are enacted) is higher than the realm of things, but these two realms are two aspects of one world. Similarly, God as the giver of moral law is a higher role than that of God as creator, but it is the same God who plays both roles.

Conclusion: Does This View of God Count as Supernatural or as Natural? Do Humans Truly Fit Within the Natural?

I have given this extended discussion of Heschel's theology to raise the question of the limits of naturalism. Does naturalism require atheism, even in its variety known as religious naturalism? Most of its adherents have thought that naturalism's denial of the supernatural entailed a denial of God's existence. But of course, denial of the existence of God depends on who we think God is (or is not.)

There are certainly examples of thinkers who are committed to naturalism but who also want to make sure that it includes room for (and a role for) God. Fiona Ellis, who is a proponent of what she calls expansive naturalism (Ellis 2014), and Sarah Lane Ritchie, who argues for consideration of several varieties of theistic naturalism (Ritchie 2019), have both recently made this case. Nancy Ellen Abrams describes a view of God that shares some features with Heschel's picture; God emerges, in her view, as a collective phenomenon of all humanity; but for her, God exists at the planetary scale, not as an aspect of the whole of existence (Abrams 2015). Among twentieth-century thinkers, Hans Jonas argued for a combination of expansive naturalism and theism (Guzi 2020); indeed, Jonas proposed a cosmology much like Heschel's cosmology as I have been describing in this article (Jonas [1988] 1996).

Abrams is just one example of the range of religious thinkers working in the framework of emergence. A very thoughtful account of emergence that is religious but not theistic was given by Goodenough and Deacon (2006). An equally thoughtful account of the possibilities (and difficulties) of theism within the framework of emergence can be found in the book by Clayton (2004). It is important to be clear, however, that Heschel's thinking does not fit into the emergence paradigm. Compare the wonderful phrase of Goodenough and Deacon, that emergence offers "something else from nothing but" (2006, 854) with Heschel's statement that "The world consists, not of things, but of tasks." The ladder of emergence, no matter how much novelty appears at higher rungs, still rises "from" its base. But for Heschel, the world depends on (in an almost literal sense of hanging from) God.

I have featured Heschel's theology in this article because it aligns in a remarkable way with the idea that I argued for in the section called "Nature and the Problem of Time", that there's a seam running through nature between the realm of things in which frozen spacetime is the preferred view, and the realm of persons in which flowing time seems to be required. In this, he is in the tradition of Kant's understanding that each human being exists simultaneously in the phenomenal world of nature and in the noumenal world of her own "intelligible character" (Kant [1781] 2007, 468).

Philip Clayton is a contemporary thinker who is also inspired by the same Kantian duality. Clayton's interest in emergence notwithstanding, he recognizes that emergence theory cannot yield an understanding of God akin to that of traditional theologies. Instead, he describes a picture of existence not unlike Heschel's. In his examination of the question of genuine human freedom, he proposes that "there is a mode or realm of being, an ontological level, that is significantly different from, or 'more than', the natural (physical-biological) world as a whole" (Clayton 2009, 138).

Perhaps the most interesting thing about Heschel's theology is that, while being robustly theistic, it is not built around the concept of a God whose connection to the world must cross a gulf between the supernatural and the natural. God is the whole associated most clearly with the realm of persons. But the realm of persons is not divorced from the reality in which we live! It is the part of existence that includes human experience, although not the manifestly physical, chemical, and biological aspects of human existence. Thus, to the same extent that human beings are a part of nature, then (according to Heschel's way of thinking) so too must God be understood as not divorced from nature.

The most visible claim of naturalism is its rejection of the supernatural, and (often) the corollary rejection of the existence of God. But perhaps the most interesting claim of naturalism is the "naturalization" of human beings. Of course, human beings are biological beings, and the evidence that human beings evolved from nonhuman ancestors is overwhelming. But do those facts clinch the case that human beings are *nothing but* material beings? Is it not the case that human beings straddle the realm of things and the realm of persons?

Once we entertain the notion that the powers of human beings are not exhausted by what can be explained by the methods of natural science, we have complicated the idea of nature in an interesting way. As Heschel's theology shows, we can no longer assert that God must be a stranger to our world, exiled to a shadowy realm called the supernatural that we are entitled to deny or ignore. Even if this makes the world seem less likely to yield to complete understanding, it offers us a much richer world of which we should be in awe.

Acknowledgments

I thank Dennis Gilbride, Bar Guzi, Alvan Kaunfer, Steven Kepnes, and Carl Rosenzweig for very helpful discussions.

References

Abrams, Nancy Ellen. 2015. *A God That Could Be Real*. Boston: Beacon Press.

Austen, Jane. [1813] 1993. *Pride and Prejudice* ed. Donald Gray. New York: W. W. Norton.

Bergson, Henri. [1903] 1955. *An Introduction to Metaphysics*. Translated by T. E. Hulme. Indianapolis, IN: Bobbs-Merrill.

———. [1922] 1965. *Duration and Simultaneity*. Indianapolis, IN: Bobbs-Merrill.

Callender, Craig, and C. D. McCoy. 2022. "Time in Cosmology." In *Routledge Companion to the Philosophy of Physics*, edited by Eleanor Knox and Alistair Wilson. London: Routledge.

Canales, Jimena. 2015. *The Physicist and the Philosopher: Einstein, Bergson, and the Debate that Changed our Understanding of Time*. Princeton, NJ: Princeton University Press.

Carnap, Rudolf. 1963. "Intellectual Autobiography." In *The Philosophy of Rudolf Carnap*, *volume 11 (Library of Living Philosophers)*, edited by Paul Arthur Schilpp, 1–42. Chicago: Open Court Publishing.

Clayton, Philip. 2004. *Mind and Emergence: From Quantum to Consciousness*. Oxford: Oxford University Press.

———. 2009. *In Quest of Freedom: The Emergence of Spirit in the Natural World*. Göttingen, Germany: Vandenhoeck & Ruprecht.
Craig, William Lane. 2001. *Time and Eternity: Exploring God's Relationship to Time*. Wheaton, IL: Crossway.
Davies, Paul. 2002. "That Mysterious Flow." *Scientific American* 287 (September): 40–47.
Einstein, Albert. 1955. "Time's Arrow: Albert Einstein's Letters to Michele Besso." https://www.christies.com/features/Einstein-letters-to-Michele-Besso-8422-1.aspx
Ellis, Fiona. 2014. *God, Value, and Nature*. Oxford: Oxford University Press
Flanagan, Owen. 2007. *The Really Hard Problem*. Cambridge, MA: MIT Press.
Goodenough, Ursula. 1998. *The Sacred Depths of Nature*. Oxford: Oxford University Press.
Goodenough, Ursula, and Terrence Deacon. 2006. "The Sacred Emergence of Nature." In *The Oxford Handbook of Religion and Science*, edited by Philip Clayton and Zachary Simpson, 853–87. Oxford: Oxford University Press.
Greene, Brian. 2011. "The Fabric of the Cosmos: The Illusion of Time." https://www.pbs.org/wgbh/nova/video/the-fabric-of-the-cosmos-the-illusion-of-time/
Guzi, Bar. 2020. "The Non-Reductive Naturalism of Hans Jonas." Talk presented at *Do Religious Naturalists Really Believe in God?*, Mordecai M. Kaplan Center for Jewish Peoplehood, September 13–14, 2020.
Harrison, Edward. 1981. *Cosmology: The Science of the Universe*. Cambridge: Cambridge University Press.
Herczeg, Yisrael. 1995. *The Torah: with Rashi's Commentary*, Brooklyn, NY: Mesorah Publications.
Heschel, Abraham Joshua. 1951a. *Man Is Not Alone: A Philosophy of Religion*. New York: Farrar, Straus & Young.
———. 1951b. *The Sabbath: Its Meaning for Modern Man*. New York: Farrar, Straus and Giroux.
———. 1955. *God in Search of Man: A Philosophy of Judaism*. Philadelphia: Jewish Publication Society of America.
Jastrow, Robert. 1978. *God and the Astronomers*. New York: Warner Books.
Jonas, Hans. 1966. "Is God a Mathematician? The Meaning of Metabolism." In *The Phenomenon of Life*, 64–98. Evanston, IL: Northwestern University Press.
———. [1988] 1996. "Matter, Mind, and Creation: Cosmological Evidence and Cosmogonic Speculation." In *Mortality and Morality: A Search for the Good after Auschwitz*, by Hans Jonas (edited by Lawrence Vogel), 165–97. Evanston, IL: Northwestern University Press.
Kant, Immanuel. [1781] 2007. *Critique of Pure Reason*. Translated by Marcus Weigelt. New York: Penguin Books.
Lawlor, Leonard, and Valentine Moulard-Leonard. 2020. "*Henri Bergson*." *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition). Edited by Edward N. Zalta. https://plato.stanford.edu/archives/fall2020/entries/bergson/.
Lewontin, Richard 1997. "Billions and Billions of Demons." *The New York Review of Books*, January 9, 1997, 28–32.
McDowell, John. [1996] 2004. "Naturalism in the Philosophy of Mind." Reprinted in *Naturalism in Question*, edited by Mario de Caro and David MacArthur, 91–105. Cambridge, MA: Harvard University Press.
Newton, Isaac. [1689] 1934. *Philosophiae Naturalis Principia Mathematica*, Bk. 1, trans. Andrew Motte. 1729. rev. Florian Cajori. Berkeley, CA: University of California Press.
Pais, Abraham. 1986. *Inward Bound*, Oxford: Oxford University Press.
Ritchie, Sarah Lane. 2019. *Divine Action and the Human Mind*. Cambridge: Cambridge University Press.
Russell, Robert John. 2012. *Time in Eternity: Pannenberg, Physics, and Eschatology in Creative Mutual Interaction*. Notre Dame, IN: University of Notre Dame Press.
Sellars, Wilfrid. 1956. "Empiricism and the Philosophy of Mind." In *Minnesota Studies in the Philosophy of Science, vol. 1*, edited by Herbert Feigl and Michael Scriven, 253–329. Minneapolis: University of Minnesota Press.
Stern, Sacha. 2003. *Time and Process in Ancient Judaism*. Oxford: The Littman Library of Jewish Civilization.
Stroud, Barry 1996. "The Charm of Naturalism." *Proceedings and Addresses of the American Philosophical Association* 70:43–55.
Tooley, Michael. 1997. *Time, Tense, and Causation*. Oxford: Clarendon Press.
Weyl, Hermann. 1949. *The Philosophy of Mathematics and Natural Sciences*. Princeton, NJ: Princeton University Press.