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On the Debate of the Ontological Nature of Temporal Reality: Setting Up Three Perspectives for Looking at “Time”

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English and Philosophy

Taking several fascinating philosophy classes inspired Jean Meraz-Debraine to pursue his research into the metaphysics of time. His project gave him the opportunity to explore the subject in great depth and to work closely with a highly accomplished professor. The significant work, deadlines and requirements made Jean’s project feel pressing and important. He completed the project confident that he had made a serious academic contribution as an undergraduate. Jean is now a law student at Cornell Law School, and he credits his philosophy education and research opportunities with helping him get there.

Abstract

The aim of this paper is to properly frame the metaphysical debate on time and temporal reality as one that must engage three accounts of “time”: (1) time as experienced, the subject of phenomenological analysis; (2) time as mathematized, as described by physics and mathematics; and (3) actual outer time, the substance that renders change in the world possible. Brief introductions to the contemporary debate on the metaphysics of time and Husserl’s phenomenological account of time-consciousness are included as distinct sections prior to the primary argument. If one accepts accounts (1) and (2) as mere (compatible) representations of (3), I argue one is able to free the debate from tendentious arguments about mathematics, semantics, and human experience that have historically stalled and misled its progress.

Faculty Mentor



Jean Meraz-Debraine’s paper takes a new approach to the classic question of the nature of time. Rather than treating each of the different accounts of time as mutually exclusive, he carefully and meticulously constructs an argument that they are all compatible within a single reality. His impressive work demonstrates the remarkable insights that undergraduate researchers can bring to their areas of study.

Key Terms

- ◆ Husserl
- ◆ Metaphysics
- ◆ Ontology of Time
- ◆ Phenomenology
- ◆ Philosophy of Time
- ◆ Space-Time
- ◆ Time-Consciousness

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The Metaphysics of Time

The exact ontological nature of time has been a contentious issue in metaphysics since at least 1908, when J.M.E. McTaggart published his landmark paper “The Unreality of Time” (McTaggart, 1908). It is in this paper that McTaggart first characterizes the A and B-series of time, which are the two models of time that continue, more or less, to frame the debate on the metaphysics of time today. I say more or less because the current debate is better understood as being between the camps that believe time is ontologically heterogeneous and those that believe it ontologically homogeneous. Sometimes these notions are simply conflated with the A and B theories, which obscures the fact that the A-theory is actually a specific form of the heterogeneous view.¹ To hold that the world in time is ontologically homogeneous is, most simply, to maintain the view that each moment which exists is as real as any other. To hold that the world in time is ontologically heterogeneous commits one to the view that distinct moments are not all equally real.² For example, proponents of the former view would maintain that the moment of, say, your high school graduation exists just as much (or is just as real) as the present moment of your reading this sentence, whereas proponents of the latter would deny that past moment is existing in the same way as the present.

In his paper, McTaggart distinguishes the A, B, and C series as the most plausible accounts of the nature of the world in time (the C series, however, does not constitute any significant amount of the contemporary discussion of time). The primary difference between the A and B series of time is that in the A-series moments in time are ontologically heterogeneous (are not equally real), whereas in the B-series they are all ontologically homogeneous (are all equally real). The contemporary proponents of these metaphysical views, called tensed and tenseless theorists, respectively, give arguments from certain instances of human temporal experiences, as well as semantic arguments about language, which are supposed to demonstrate that the nature of time is one way or the other.

M. Fiocco makes a useful distinction regarding the notions of time and “temporal reality” that I adopt in this paper. It is that *time* is the thing in the world which renders change possible, and *temporal reality* “is, collectively, those marks upon the world that arise specifically as a consequence”

(Fiocco 2007: 1). In a sense, temporal reality is what we experience time *in*. So the issue of the ontological nature of the different moments we experience is an issue in temporal reality, not time. And, further, tensed and tenseless theorists are proponents of temporal reality, not time, being ontologically homogeneous or heterogeneous. Time’s existence as that which enables change must be accepted to maintain either metaphysical view.³

Believing that temporal reality is ontologically heterogeneous is only a general view, because many specific, incompatible sub-views fall under this heading. These include the A-theory itself (the view that pastness, presentness, and futurity all exist as temporary temporal properties, or A-properties), many types of presentist theory (generally, the view that only the present exists), as well as any other view that holds that time is not ontologically homogeneous due to the existence of at least one A-property.

On the other hand, those who believe temporal reality is homogeneous hold a metaphysical view that does not get more specific; the nature of their view is that all moments exist equally, so distinct sub-views are not possible. B-theorists must deny the existence of A-properties (otherwise, the existence of such properties would imply time being heterogeneous), and instead believe that all events exist merely in permanent temporal relation to one another. That is, all events are earlier than, simultaneous with, or later than other events.

The existence of the property of *presentness* is accepted by virtually all who believe temporal reality is heterogeneous.⁴ If one believes in the heterogeneity of time, it very naturally follows that the present is special: we seem only to perceive events as being present and never past or future. Indeed, every experience we have is given as present. Even Hugh Mellor and L. Nathan Oaklander, two of the most prominent contemporary tenseless theorists, accept this aspect of experience (though they will, of course, argue it need not posit *presentness*’ actually existing).⁵

The Phenomenology of Time-Consciousness

It seems certain that temporal reality must exist in either an ontologically homogeneous or heterogeneous state. It also

1. The B-theory does not get more specific, however, and does not maintain more than that the world in time is homogeneous.

2. Discussion of the implications of these two views appears later in the paper when appropriate.

3. The ontological nature of time itself is another unsettled matter, and is not the focus of this paper.

4. Some presentists will contest a generic notion of “presentness” in lieu of their own specific one; see Fiocco (2007).

5. See Mellor (1981) and Oaklander (1992).

seems undeniable that, regardless of the actual ontological nature of the world in time, we always *experience* events as present and never past or future (though, again, this need not be regarded as having implications for the ontological nature of time). Here, I attempt to set forth a brief introduction to the phenomenology of time-consciousness based on Husserl's account of the same⁶ in order to (1) account for the "presence of experience," and (2), show why this phenomenology of time-consciousness alone cannot have implications for the ontological nature of outer, "objective" time.

Husserl gives an account of the structure of time as experienced. Asserting that time-as-experienced has a structure does not imply that Husserl is a Cartesian dualist of time; in his account there is only one "time" for both immanent and transcendent objects (those in our experience and those independent of our experience, respectively), with the distinction that only immanent objects are structured in his account of time as experienced.

Due to the subjective, first-person nature of Husserl's phenomenological account of time-consciousness, the account is most clearly explained when largely in reference to a commonplace example of a temporal experience. Let us here imagine hearing a melody; the most basic iteration of Husserl's account of time-consciousness is embodied in his "running off diagram," which is a schematization of progressing "now points" and their retentive modification—each in turn becoming just-past as new now points enter the scene. Put most simply and perhaps a little reductively, it schematizes our hyletic datum—or sensory experience datum—into a temporal, successive flow. Each now point denotes a conscious moment of experiencing new or continuous immanent, temporal object(s), such as the notes of our exemplary melody. With each successive moment, a new now moment adumbrates the one before it, and time continues in this manner as a "continuity of constant change" (Husserl 1980: 29). As each moment is replaced, it slides further back on the running-off diagram, and undergoes "retentive modification," which is the process of turning from now to "just-now." In this structure of temporal consciousness, there exist two continuities: one in the constant series of now points, and the second in the individual cumulative continuities of running-off series from each now point.

In the first moment we hear the melody a "primal impression" occurs, the first now point of our perceiving the

6. See Husserl (1980) for his 1893-1917 lecture series "On the Phenomenology of the Consciousness of Internal Time."

melody, and that is when the immanent object (the melody) constituted in our consciousness begins to exist. So, an immanent object comes to exist, and exists in a successive series of now points, but this is not yet the complete picture. Our experience, importantly, includes also protentions and retentions. Our retentions are of the things just-passed, and protentions are of things we expect to-be; these, like now-impressions, are constantly being adumbrated in the same fashion. Protentions and retentions give us a context in temporal reality.

The presence of experience is well accounted for in Husserl's picture of the phenomenology of the consciousness of internal time; each moment, quite literally, is present in experience. Husserl accounts for the "nowness" of experience in a way that is compatible with both opposing accounts of the ontology of the world in time;⁷ he posits it not as a property of the world at all, but rather a feature of experience, a property that exists in the structure of time-as-experienced and, most importantly, a property of *immanent objects*. Because the presence of experience is a phenomenological property in this account it does not seem to be the kind of thing from which one can draw ontological conclusions. As we will see, however, both sides of the debate in fact do attempt to make this move.

Three Accounts of Time and their Structures

Aside from some unsuccessful attempts to draw ontological conclusions from the presence of experience,⁸ contemporary debate on the nature of time for most part omits a serious phenomenological perspective. I argue that including a phenomenological account of time (time-as-experienced), particularly the type of account described by Edmund Husserl, is necessary to frame the issue adequately. To this end I argue that the account of mathematized time, or the world as described by modern physics, is also needed.

Arguments from semantics, so-called phenomenal properties, human attitudes regarding past and future events, physics, and mathematics have all been used in attempts to determine the ontological nature of time. The essay collec-

7. This claim is explored in the following section.

8. Lacking an independent phenomenological account, Mellor in "Thank Goodness That's Over" (1981) is forced to give a somewhat strange (tenseless) token-reflexive account of the presence of experience—such that judgments of presence are tautologies—because it is not possible to make a future or past judgment; yet he maintains, of course, that the present does not exist. He would be able to simply admit that experiences *are* present, *and* that that need not posit that time is tensed, if he distinguished a phenomenological account as I propound in this paper. See Hestevold (1990) for an attempt to prove the tensedness of time from the presence of experience and Oaklander (1993) for a tenseless refutation of such an attempt.

tion, “The New Theory of Time” (Oaklander, 1994), which I reference heavily, documents only some of these. These attempts are often problematic because they aim to make conclusion about one time with one structure. For example, an account of time from modern physics might leave out the presence of experience, a tenseless account accepts that experiences may be known to be present but denies that the property of presentness can exist, and a strict phenomenological view is denied to be able to make any conclusions about time outside of experience, or “outer time.” These views all appear to be internally consistent, but indeed are very problematic when framed as incompatible with one another.

In this paper, I do not attempt to solve the debate on the metaphysical nature of time. That issue is enormous in scope and will likely remain inconclusive for some time. What I aim to do is frame the issue in a coherent way that accounts for the legitimacy of all the views just listed and that allows the debate to progress. I propose this may be done by distinguishing three accounts of time while maintaining the existence of only one outer, objective time. The three accounts I propose are:

- (1) Time as experienced, the subject of phenomenological analysis
- (2) Time as mathematized, as described by physics and mathematics
- (3) Actual outer time, the substance that renders change in the world possible

The results of distinguishing these three views are not trivial if we accept their existence in accordance with there being (only) one outer, objective time, which is account (3). It is possible to account fully for our attitudes and experience of time by accepting the legitimate and actually-existing structure of experience described by (1) while avoiding a sort of dualism of time by understanding (1) as an inner characterization of (3). It is also possible to account for the lack of subjective experience (and temporal becoming) described by the mathematical modeling of time in (2) by understanding it as a mere characterization of—and a product of—actual time as described in account (3).

In my introduction I explain that the contemporary debate on the metaphysics of time is between those who think temporal reality is homogeneous and those who think it heterogeneous. Recently in this debate arguments regarding our presence of experience and our attitudes towards past and future events have come to the fore. These types of arguments were—after much debate in “The New Theory

of Time”—unsuccessful at proving anything conclusively about the world in time; more than anything else, they seemed to show that features of experience were not appropriate support for ontological theories of time. However, according to my distinctions, these types of arguments were non-starters in the first place. Consider the fact that Husserl’s phenomenological account is prefaced with: “One cannot discover the least thing about objective time through phenomenological analysis” (Husserl 1980: 6). If arguments from aspects of experience are only (and can only be) consequential for account (1), time as experienced, and not (3) outer time⁹ there is no implication for the disagreement between tensed and tenseless theorists on this issue. Their main disagreement over the nature of the world in time, account (3), will persist.

It is explicit in their discourse that tensed and tenseless theorists accept both that certain attitudes towards past and future events are appropriate (such as relief from a headache that has ended) and that experiences may be known to be present. But these aspects of experience are problematic only for those who hold temporal reality to be homogeneous; in the heterogeneous view, the notion of experiences’ being present is intuitive, and indeed necessary for the view to be coherent, and relief after a headache is appropriate because the headache is past. Only tenseless theorists need deny that the present and past exist (as temporal properties, they do not deny that the events described as present or past exist), and so they are required, in maintaining that time is not tensed, to give a tenseless account of these experiences.

Tenseless theorists are forced into a defensive position on this issue; they must explain how their view accommodates features of experience that fundamentally seem to contradict the tenseless view. Tensed theorists, on the other hand, argue that time’s having a certain structure (including temporary temporal properties) accounts for these aspects of experience. Both, however, look past the fact that our experience itself has a structure that fully explains these experiences in a way compatible with both tensed and tenseless views.

The tensed theorist’s assertion that the properties of pastness, presentness, and futurity justify features of our experience is intuitive, and need not be challenged by tenseless theorists after making one important consideration. If we consider seriously a phenomenological account of our experience in time and the very temporal structure of our

9. See Williams (1992) for a tenseless theorist’s skepticism regarding experience as appropriate support for any conclusions about the ontology of the world in time.

experience, these temporary temporal properties are understood to apply to immanent, not transcendent, objects. This accounts for the features of experience that are most troublesome to tenseless theorists without yet requiring the world in time to be heterogeneous. It also accounts for experience in the least controversial and most intuitive way, with the uses of the tensed theorist's temporary temporal properties applied to immanent objects rather than transcendent ones, and in the structure of time as experienced rather than outer time. A possible opposition to this view is that accepting it would also require one to deny that experience can prove the world in time to be one way or the other.

Let us briefly examine the two most common aspects of experience that are used as proof for time's being one way or another when account (1) is distinguished from (3): the presence of experience and the appropriateness of attitudes towards past and future events. On the tensed view, these two features of experience are justified by no more than the existence of temporary temporal properties ascribed to events themselves (transcendent objects), *i.e.* the presence of experience is explained by one's experience's always being in a present moment (a continually new present, to be sure), and one might feel nostalgic about something simply for it being past. Our two features of experience are at least as justified by ascribing these temporal properties instead to immanent objects. If we consider Husserl's running-off diagram and look, for example, at our experience of a headache that ended five minutes earlier, it is not unreasonable that we are relieved by that experienced headache's no longer being a now point, but an experience five minutes past.

If we consider experience such that it only has (and only can have) consequences for (1), and not (3), we are that much closer to framing experience as a part of the debate on the ontological nature of time. This is achieved by essentially deeming the structure of consciousness to be an A-series of events, or at least as a heterogeneous view that accepts the existence of presentness and pastness. It is not clear that a phenomenological account could support the existence of futurity as an immanent property, for every experience on this account necessarily occurs as present and then becomes past. But this does not mean that a phenomenological A-series cannot account, for example, for the dread of an imminent root canal. We can have, in the present, expectations about things to come. Account (1), time as experienced, functions as a part of the debate on the ontological nature of time by successfully accounting for the presence of our experience and our attitudes towards past and future events by positing the existence of immanent temporary

temporal properties. It also seems to preclude aspects of experience from being evidence for arguing the world in time to be one way or another.

By distinguishing a phenomenological account of time as experienced, I have hopefully shown that the tensed theorist's A-properties can account for certain temporal experiences while avoiding ontological implications for the world in time by considering A-properties as properties of immanent, not transcendent objects. B-theorists, however, those that consider the world in time to be ontologically homogeneous, are well justified in their thinking that the world in time lacks A-properties. The B-theorist need only look to modern physics for support that time is ontologically homogeneous.¹⁰ Still, both sides of the debate must acknowledge that a purely mathematical account of time cannot account for our experience of temporal becoming,¹¹ and for this reason I distinguish account (2), time as mathematized, to be an ideal product of mathematical analysis, and as something not equivalent to (3), outer time, time in the world.

Let us look to Edmund Husserl's "The Crisis of European Sciences and Transcendental Phenomenology" (Husserl, 1970) for a relevant introduction to the notion of separating the actual, experienced world from mathematical representations of it. The goal of Husserl's book is to elucidate the crisis he saw occurring in the sciences: that an idealized, mathematized world was being surreptitiously conflated with the life-world (the actual world) as experienced. The result that Husserl feared was a loss of original connection between the life-world and the sciences; for the purposes of this paper, this loss of meaning is analogous to a mathematical account of time's disconnect from our human temporal experience. I maintain that a distinction essentially similar to that of Husserl's is crucial to the debate of the metaphysical nature of temporal reality; as formulated in this paper, it is the distinction of account (2) from (3).

Modern physics seems to support the B-theorist's claim that temporal reality is homogeneous. The B-theorist, then, appears justified in arguing for the ontological homogeneity of all moments. But time as characterized by physics is incompatible with certain aspects of our understanding of time that seem very intuitively to be true; in general, genuine

10. If B-theory is not a direct product of time as mathematized already.

Einstein's theory of relativity and, in general, the concept of space-time support the dimension of time being ontologically (though perhaps not qualitatively) homogeneous.

11. See Fiocco (2007) for an explication of temporal becoming as opposed to the traditional sense of "the passage of time."

change in the world and, particular to human experience, the phenomenon of temporal becoming.

Philosophers who hold the view that the world in time is homogeneous are faced with the problem that a B-series of events alone cannot account for change.¹² The problem may be traced out this way: it is accepted on both sides of the debate that time does exist. It is also agreed that without time change would not be possible. Yet, the implication of all events' being equally real is that change is not possible. If there are successive moments X, Y, and Z, the fact that there are differences in the state of affairs between X and Z does not constitute change; each state of affairs, whether earlier or later than the other, always tenselessly exists, so change cannot be said to have occurred. In this view, each state of affairs in moments X, Y, and Z always tenselessly exists. Therefore, barring a conflation of B-theory with sempiternalism, timelessness, or any other common misconstruals of B-theory,¹³ a proper B-series is still unable to account for genuine, dynamic change in the world.

Even worse, mathematized time fails to square with the human experience of temporal becoming, of constantly experiencing new, unique nows. Seen another way, despite every moments' existing equally we experience them in a specific succession, have a palpable sense of presence, and have some attitudes towards past and future events that are appropriate, and some that are not, based on our current temporal relation to them. In a purely mathematical account of temporal reality, temporal becoming is inexplicable.¹⁴

My goal in this section is to show that mathematized time, as we might model it in modern physics, is only an ideal characterization of actual, outer time. It is problematic in that it cannot give an account of time that is compatible with our experience of the world. But, this inability to account for the human temporal experience does not, after all, pose a problem when the three accounts of time I suggest are considered; mathematized time, account (2) need not explain experiential phenomena if we consider it a mere ideal characterization of actual time, account (3). In this case, it is certainly not the sort of thing that could explain aspects of our temporal experience, so this should not reasonably be expected. This, of course, need not detract in any way from the legitimacy and usefulness of the math-

ematical account of time;¹⁵ certain principles of modern physics indeed rely on the truth of time's being ontologically homogeneous. Just as A-properties were borrowed in my phenomenological account of time as experienced to explain certain human temporal experiences (the presence of experience and attitudes towards past and future events), B-relations can here be attributed to the ideal account of mathematized time, giving permanent relations to ontologically homogeneous events.

The final account of time to consider is actual, outer time, account (3). This actual, outer time itself is still so mysterious, and its attempted explications so contentious, that scarcely anything non-controversial may be said about it. For the purposes of this paper, however, and it seems that almost all participants in the debate on the metaphysics of time should agree on this, time may be defined as the feature of the world that enables change.

We can say, with certainty, something else of time: it is the one source of our accounts of time as experienced and as mathematized; accounts (1) and (2) presuppose, and are products or reflections of, account (3). This is the primary reason they must be distinguished, with particular attention given to the fact that actual time grounds time as experienced and time as mathematized. This generative relationship, that actual time is the source of the other two accounts, seems to be commonly overlooked; this mistake is the impetus for thinking that presence of experience proves that temporal reality itself is present, and also for thinking that a mathematical modeling of idealized time is equal to time as experienced in the world.

An important conclusion can be drawn from the distinction of these three accounts: as accounts (1) and (2) are products of (3), there is no reason they should be incompatible. Traditional accounts decide on their ontology of time first and then explain features of their experience, attitudes, language, and so on, in a way compatible with their ontological view. But, here we are able to do the opposite; we can accept the most reasonable account of experience as well as accept the findings of modern science¹⁶ without being limited by having already accepted a particular ontological view. Of course, we are still subject to there being only one outer time that has whatever structure it may but, by their nature, accounts (1) and (2) are characterizations of how we experience the world that do not depend on a definite ontology of time. The inclusion of A-properties in

12. This problem is brought up as early as McTaggart (1908) and is still an issue in recent work; see Carr (1987).

13. See Oaklander (1993) for some common misinterpretations of tenseless theory.

14. This sort of account would have to, then, rely on a psychological, or phenomenological, account of our experience, such as the one given for account (1).

15. After all, the idealization of time was a product of an initial simple pragmatic goal: measurement.

16. That time as construed as a fourth dimension is ontologically homogeneous.

an ontological account of temporal reality for, say, offering a reasonable explanation of our temporal experience is always going to be at odds with what modern physics seems to indicate about the world, namely, that it does not have A-properties. I maintain that having to choose only A-properties or B-relations for the world in time is a false dichotomy; immanent objects may bear A-properties while idealized moments in mathematical time may bear permanent B-relations. This does not pose a contradiction and, in fact, seems a better way of framing the issue than having an absolutist picture of only A-properties or B-relations. In the end, however, one that accepts both accounts (1) and (2), accounts that posit immanent temporary temporal properties and a homogeneous model of time, still does not have an answer as regards the ontological nature of actual time in the world.

I have indicated that it appears to be inappropriate to draw ontological conclusions about account (3) from (1) and (2), and this is not only because they are only characterizations or representations of actual time. As referenced earlier, there exists in the philosophical discourse a generally accepted notion that experience is illicit grounds for drawing direct ontological conclusions. Further, mathematized time can never be more than a model of time, something that necessarily omits the subjective nature of human temporal experience, which is something a satisfactory account of time must give.

I indicate in this paper that it seems we cannot draw ontological conclusions directly from our experience of the world. The wariness in such a statement is purposeful; it is said that experience is not valid for arguing ontological conclusions, but there is no good reason for believing that our experience cannot reflect something about the world in time. Let us briefly entertain, by analogy only, the charge of Immanuel Kant's famous "neglected alternative";¹⁷ that space and time might not only be human forms of sensibility, but also the aspects or properties of things in themselves. In a similar manner, we cannot know that our temporal experience¹⁸ is merely a human form of experience and not actually a feature of temporal reality itself. For this reason, I am optimistic that experience indeed reflects some features of temporal reality and, construed as such, may later provide more conclusive evidence for the ontological nature of temporal reality being one way or the other.

It has been my goal in this paper to argue that we can learn about the nature of time itself, and I hope also to have exposit and cleared up certain difficulties in this task. At the same time, I have attempted to integrate into this new understanding a phenomenological account of experienced time as well as a mathematical modeling of time.

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17. See Falkenstein, (2006) as a clear exposition of this well-known charge.

18. In particular, the phenomenon of temporal becoming.

