

Introduction: Time and Time Experience

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Temporal aspects dwell both in the world around us and at the core of our experience of it. Reality, thought, and language all seem to be imbedded in temporality at some level or another. It is thus not surprising that philosophers who have to face the problems of understanding time have resorted to tools from different spheres of investigation, and often at the points of overlap of these areas. Metaphysics, philosophy of physics and science in general, philosophy of language, phenomenology, philosophy of mind, the study of perception and cognition, but also anthropology, sociology, and history of culture, art, and ideas (and the list is surely far from complete) all contain theories and reflections that are crucial to our understanding and experience of time. Many recent debates in analytic philosophy have tackled in different ways the question of whether the sensation of the passage of time that seems to characterise our ordinary experience should be understood as reflecting some objective feature of reality (as the so-called A-theories of time usually maintain), or is rather a mere feature of our psychology (as is often claimed by the so-called B-theories of time).

In this context, it is crucial to keep clear the distinction between the role of the metaphysical enterprise and the psychological enterprise (both broadly construed). On the one hand, a metaphysical claim that a certain temporal

feature of our experience is not a genuine feature of reality requires a psychological justification of why we ordinarily think of it as part of reality; and on the other hand explanations of our experience of temporal reality depend on what we take temporal reality to be like. It thus seems that the answer to the question of what time is and the answer to the question of how our temporal experience works obtain support from each other. More importantly, they do not do so in a trivial way. As many of the following contributions highlight, no “easy” argument in favour of an A-theory can be made from the allegedly obvious fact that it provides the only plausible explanations of why our experience “feels” dynamic. The aim of this special issue of *Topoi* is to shed some light on the interplay between the analysis of reality of time and the analysis of our experience of time. To do so, we have selected original contributions that approach this crucial element in our understanding of time from different standpoints. Roughly speaking, the contributions can be seen as falling under four labels: the Metaphysics of Passage, the Experience of Passage, the Perception of Passage, and Temporal Passage and Physics. In the next four sections we briefly outline the content of the papers.

1 The Metaphysics of Passage

In ‘Tense, the Dynamic Lexicon, and the Flow of Time’, Peter Ludlow investigates what is behind the metaphor of time flowing or passing: the idea of movement along an ordered series of events or moments, the perspectival element due to our position in the series, namely the ‘tensedness’ of our experience (which is crucial for explaining behaviour, and in particular timely action), and an irreducibly dynamic or *progressive* aspect. According to Ludlow, a proper understanding of the experience of the

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flow of time requires both the B-theoretic aspect of a succession of events and A-theoretic aspects of tenses and progression along such a succession. In the central part of the paper Ludlow shows how his theory of dynamic lexicon (Ludlow 2014) can be exploited to dismiss the charge that combining the B-series with A-theoretic elements would lead to an incoherent notion of *movement of time* that takes place in time.

In ‘What Experience Cannot Teach Us About Time’, Akiko Frischhut attacks the very idea that our experience presents us with the passage of time. Her aim is to dismiss the very simple, and apparently powerful, argument in favour of the A-theory to the effect that the best explanation of why we experience passage is given by the thesis that temporal passage is real. According to Frischhut, neither the “folk intuition” that we experience passage by experiencing change, nor the peculiar dynamic phenomenal character of our perceptions, nor the experience of (successive) presentness can amount to a perceptual experience of passage. It follows that there are no obvious reasons to think that our experience favours a metaphysics in which the temporal elements are irreducibly dynamic over one in which the primitive temporal elements are static in nature.

In ‘Do We Really Need a New B-Theory of Time’, Francesco Orilia and Nathan Oaklander argue in favour of a radical form of B-theory, according to which tenses should be dismissed not only from the basic tools of our metaphysics of time, but also as fundamental elements of our semantic toolbox. Well-known cases discussed in philosophy of language and mind over the last 50 years have led the vast majority of B-theorists (including Oaklander 2004 himself: see Dyke 2002 for an overview) to abandon the idea that our theory of language and mental content can do without tensed contents of some sort. Orilia and Oaklander argue that a token-reflexive interpretation of tenses—which is compatible with a purely tenseless semantics—can be effectively exploited to account for the meaning of ordinary language claims, and their explanatory connection with behaviour.

In ‘If It Ain’t Moving It Shall Not be Moved’, Emiliano Boccardi argues that the usual objection to B-theories, to the effect that it cannot provide a proper account of change, can actually be raised against A-theories as well, at least as traditionally understood. Boccardi’s point is that the no-change objection is effective as soon as one endorses a ‘comparative account’ of change. Combining such an account with a realist position about tenses does not serve the purpose of mitigating the problem of how a dynamic account of change can be provided. Therefore, in so far as A-theorists consider the no-change objection a serious challenge to the B-theory, they too need to find resources to face it.

In ‘Accounting for Experiences as of Passage: Why Topology Isn’t Enough’, Graeme A. Forbes argues that the ‘minimal’ account of passage—which is a part of A-theoretic

positions such as presentism, the growing-block view, and the shrinking-tree view—is explanatorily incomplete with respect to the dynamic nature of our experiences. According to the minimal account, passage is accounted for in terms of *ontological change*—i.e., change in what (unrestrictedly) exists—and the *topology of the present* (viz. its relation with the past and the future). Forbes argues that the minimal account does not contain the resources to explain why our experience is necessarily entrenched with the inevitability of time continuing to pass, and the impossibility of acquiring past-tensed properties without previously having acquired them in their present-tensed version.

In ‘What is it Like to Affect the Past?’, Rebecca Roache discusses the possibility for a rational agent to believe herself capable of affecting the past. Dummett (1964) famously maintained that although there are scenarios in which it would indeed be rational for an agent to believe so, such scenarios involve only agents very unlike us. Confronted with the option of doubting the reliability of our knowledge of some past event, and the confidence in our capacity to affect it, we would normally jettison the latter rather than the former. *Contra* Dummett, Roache argues that there are circumstances in which the intention of an agent to affect the past would be justified, even by our ordinary standards. One key idea is that in worlds where backward causation obtains reports about the past would usually be as reliable as predictions about the future.

2 The Experience of Passage

In ‘Temporal Experience: Models, Methodology and Empirical Evidence’ Maria Kon and Kristie Miller advance a unified categorisation of the extant models of temporal phenomenology which aims to evaluate the methodological advantages and drawbacks of each one. According to them, the models can be characterised through three distinct levels of analysis: the bottom level of the temporal length of the supervenience base (whether it is instantaneous or not), the middle level of the topological structure of the supervenience base (whether it has temporal parts or not), and the top level of the resulting phenomenology (whether the experience is atomic or not). Within this framework, they argue that an entirely top-down methodology risks being too cherry-picking with respect to empirical findings, and an entirely bottom-up methodology risks being insensitive to philosophical considerations that are crucial for our understanding of the phenomenon at issue. The conclusion is that an in-between methodological stance should be endorsed.

In ‘Tense and the Psychology of Relief’, Christoph Hoerl focuses on Prior’s “thank goodness” argument (Prior 1959), according to which only an objective notion of passage could explain our rational attitude towards our

experiences of relief. Hoerl argues that existing discussions on the topic (including Prior's) fail to distinguish *temporal* relief from *counterfactual* relief. Temporal relief is essentially linked to a certain experience having ceased; it is not explicable in terms of counterfactual thinking, and it is crucial in understanding the right conclusion from the "thank goodness" argument. Temporal relief is a *sui generis* phenomenon, which requires the ability to take an instrumental attitude towards unpleasant experiences, and which possesses a distinctive motivational profile, namely that of motivating our undergoing an unpleasant experience by anticipating the experience of relief.

In 'Mental Files and Times', Vasilis Tzoupanidis argues for an analysis of 'now thoughts' as singular thoughts about individual times under a NOW indexical *mental file*. The main reason provided by Tzoupanidis for endorsing such a view is its explanatory power with respect to three important facts about the psychology of our temporal experience: (1) how tensed thought can refer to extended temporal intervals of various length; (2) why reference to times is not destroyed by thought delays; (3) and how a 'now' thought results in timely actions and, sometimes, relief.

3 The Perception of Passage

In 'Stopped Clocks, Silent Telephones and Sense Data: Some Problems of Time Perception', Robin Le Poidevin investigates cases of perceptions that essentially involve a dynamic element, such as perceiving movement or perceiving the order and comparative duration of events. In particular, Le Poidevin focuses on the illusory experience of *chronostasis*, or the 'stopped clock illusion', the phenomenon of experiencing one of the regular intervals between events in a series (i.e., the movement of the hands of a clock, or the ring tone of a phone) as slightly longer than it is. His aim is to show that such cases make a distinctive contribution to the direct realist/sense datum theory debate over perception, and they undermine a popular argument in favour of the objective passage of time, namely that passage is an ineliminable feature of our temporal experience.

In 'Perceiving Multiple Locations in Time: A Phenomenological Defence of Tenseless Theory', Sean Enda Power argues that, contrary to common belief, A-theories of time are not in a better position than B-theories to account for our phenomenology. In fact, certain cases of visual phenomenology support a B-theoretic metaphysics better than an A-theoretic one. The cases at issue are those concerning events experienced together, which actually occur at different times.

In 'Time and Time Perception', Berit Brogaard and Dimitria Electra Gatzia argue that it is possible to reconcile some form of B-theory, according to which dynamic traits do not occupy the fundamental level of reality, with the idea of the dynamic trait of our experience being veridical. Their idea is that dynamic properties of reality may be emergent properties from fundamentally non-dynamic elements. In this picture, the property of dynamism is understood in analogy with properties of ordinary middle-size objects such as *being solid*—which can be seen as emerging from a fundamental level in which none of the basic entities exemplify them.

4 Temporal Passage and Physics

In 'Presentism and the Experience of Time', Mauro Dorato presents five models of phenomenology of time and argues that none of them favour presentism over an eternalist metaphysics, such as one suggested by the theory of relativity. Within each of these models, the presentist is caught in the dilemma of opting either for an instantaneous present—to the detriment of her account of the phenomenology of our experience—or for an extended present—which would render presentism incoherent, unless one posits a discrete present that nonetheless suffers from the same difficulties that the instantaneous present is prone to.

In 'Causal Order, Temporal Order, and Becoming in Special Relativity', Hanoch Ben-Yami reconstructs a well-known argument against the applicability of the concept of becoming in Special Relativity (due to Rietdijk 1966 and Putnam 1967). Although the argument is not affected by some of the objections found in the literature, Ben-Yami argues against it by exploiting considerations to be found in the discussion of the possible conventionality of simultaneity in Special Relativity, beginning with Reichenbach. The paper ends with a comparison between the author's position and Stein 1968's..

In 'A New Taxonomy of Persisting (Relativistic) Objects', Claudio Calosi and Vincenzo Fano present a thorough exploration of the problem of persistence in a relativistic context. Using formal methods such as mereology, formal theories of location and the so-called intrinsic formulation of special relativity the authors provide a new, more rigorous and more comprehensive taxonomy of persisting entities, which differs significantly from the ones presented in the recent literature.

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