

Temporal Realism and the R-Theory

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Abstract.

It is common to distinguish two different theorists of time; those who maintain a dynamic view of time endorse the idea that time involves transition, flow or passage from one temporal object to the next, and those who maintain a static view of time that involves unchanging and fixed relations between temporal objects, and unchanging (tenseless) facts. Based on McTaggart's article on "The Unreality of Time" and chapter on "Time," from *The Nature of Existence*, and gaining popularity with Richard Gale's anthology on *The Philosophy of Time*, and book on *The Language of Time*, the various incarnations of these two views have come to be called the A-theory, after McTaggart's A-series of events ordered by the A-properties of *pastness*, *presentness* and *futurity*, and the B-theory after McTaggart's B-series of events ordered by the B-relations of earlier than and later than.¹ One of the purportedly strongest arguments in support of the A-theory and against the B-theory is based on the phenomenology of temporal experience which is dynamic and not static as seemingly required by the B-theory. B-theorists typically buy into this line of reasoning, if not its conclusion, and develop anti-realist (that is, mind-dependent) views of the dynamic aspects of temporal experience and reductive analyses of the tenses and becoming that are compatible with a static, or four-dimensional, Block universe.

Ironically, it seems to me, as I shall argue, that without the B-series, it is the A-theory that is static, and without the A-series it is the

¹ Cf. respectively McTaggart 1908, McTaggart 1927, Gale 1967, Gale 1968.

B-series, properly understood as the R-series, whose terms are ordered by Russellian temporal relations, of which I shall speak more shortly, that is dynamic. If these claims are correct then there are three important consequences. First, the standard objection to the B/R-theory that it leaves out the dynamic aspect of time is mistaken. Second, the claim that the A-theory is realist and the B/R-theory anti-realist since it renders transition mind-dependent, is also mistaken, and third, if we assume, as I believe we should, that an adequate ontology of time must ground both the transitory and the eternal aspects of time, then the R-theory is well suited to accomplish that task. In order to make good on these claims, I will develop a view that I shall call the Russellian theory of time (or “R-theory” for short) that differs from both the A-theory and the B-theory, although I will primarily highlight the differences with (some versions of) the B-theory.² In order to clarify the R-theory I shall distinguish two different notions of “realism,” and touch on a third and argue that the R-theory is realist in all three senses. For that reason, my limited defense of the Russellian view can justly be considered to be a defense of temporal realism.

The reader who is familiar with my writings on time may wonder if my talk of the R-theory as different from the B-theory implies that I am abandoning the B-theory. The answer is yes and no. “Yes” in that there are certain tenets typically associated with the B-theory that I wish to deny, for example, that temporal relations are static, and “no” in that like the B-theorist, I too reject all A-theoretic accounts of the dynamic aspect of time. What I intend to argue, however, is that there is a version of the R-theory that holds a combination of views that most B-theorists either don’t hold or don’t consider, and that this view can be called “temporal realism.”

To defend these claims let me begin with the claim that the A-theory *without temporal relations* cannot account for the dynamic aspect of time and is thus static. Actually, this assertion is not as controversial as it might appear since A-theorists beginning with McTaggart and as recently as Kit Fine explicitly acknowledge that *succession* is essential

² For a detailed consideration of the differences between A-, B- and R-theories see Oaklander 2012.

to passage whether construed as the donning and doffing of A-properties, the *successive* actualization of possible worlds, the *transition* from one time to the next, or the coming into and going out of existence of events. Therefore, without succession (which is nothing other than an earlier temporal object being followed by a later one), the A-theory in its various embodiments is static and leaves out something essential to time.

As Fine puts it:

The passage of time can be taken to consist in the *successive* possession of the absolute property of PRESENT or NOW. This property passes as it were from one moment to the next and it is in its passage [...] that the passage of time can be taken to consist.³

Fine understands passage in terms of the *successive* possession by moments of the property of presentness and for that reason the tensed fact that a particular time t_0 has the property of presentness is alone insufficient to provide an adequate ground for the passage of time. He explicitly makes this point in the following passage:

But although the realist possesses the right concept of the present in terms of which an explanation of the proposed sort might be given, he does not possess the right metaphysics by reference to which it might actually be sustained. For all he can properly say is that a particular time t_0 , which happens to be present, possesses the absolute property of being present. *But what we wanted was the successive possession of the property of being present, not merely its current possession.*⁴

He continues:

His [the tense realist] conception of temporal reality, for all that he has said, may be as static or block-like as the antirealist's, the only difference lying in the fact that his block has a privileged "center".⁵

³ Fine 2006, 404.

⁴ Fine 2006, 405, emphasis added.

⁵ Fine 2006, 405-06.

In the rest of the paper (see also his book, Fine 2005) Fine develops two non-standard accounts of realism to account for the successive possession of presentness, but the point I want to emphasize is that Fine clearly believes that *tense* realism alone is insufficient for *temporal* realism since tensed facts are insufficient to give us passage or distinguish space from time. In order to ground the dynamic aspect of time we must have an adequate account of *succession* or the transition from earlier to later temporal objects.⁶

What then are the proper metaphysical analyses of succession (or temporal relations) and the transitory or dynamic aspect of time? Consider this question first with regard to the realism/idealism issue: Are temporal relations and the transitory aspect of time mind-independent or mind-dependent? There is a superficial agreement between the B- and R-theory on this issue since they are both realist with regard to temporal relations. However R-relations are importantly different from B-relations as they are usually understood. For Russellians, temporal relations are given in experience as phenomenologically simple relations and thus are

⁶ As is well known McTaggart also argues that in order for there to be time and change events must pass through time by having A-characteristics *successively*. Since, however, events cannot have A-characteristics successively he concludes that time is unreal. For my interpretation of the argument see Oaklander 2004. The need for succession to account for the transitory aspect of time is also implied by William Lane Craig's account of temporal becoming. For Craig, temporal becoming is modeled on the different members of the A-series coming into existence successively, as successive times become present. He says, "the doctrine of objective becoming [...] could be graphically displayed as the *successive actualization of the history of the actual world*. It is this model of a *successively instantiated*, rather than tenselessly existing, actual world that precludes the existence of a "totality of facts" (Craig 2000, 207, emphasis added.) The appeal to succession implies the existence of temporal relations, and thus without temporal relations Craig's presentist world is static and not dynamic. Similarly, in a recent paper, Yuval Dolev claims that "On the anti-reductive account, transience has to do with events' becoming present *after* having been future and *before* becoming past" (Dolev 2012, 70, emphasis added.) Thus, without the before/after relation(s) transience would not exist.

taken as unanalyzable and irreducible, mind-independent entities in the ontology of time.⁷

In calling temporal relations unanalyzable a Russellian means that they cannot be reduced to the properties of their terms and, indeed, the terms of temporal relations have no intrinsically temporal properties such as pastness, presentness and or futurity, since there are none. R-relations are not analyzable, as in McTaggart, in the terms of a non-temporal C-series having temporal properties. On the R-theory, the only category of intrinsically temporal entities are relations; there are no temporal individuals, such as moments or time points; there are no monadic temporal A-properties; and there is no absolute becoming understood either as the coming into and going out of existence of objects or events, or as the donning and doffing of A-properties. In other words, on the R-theory, time is *relational*, that is, all ontological facts about time are understood as grounded in relations and that includes durations such as *lasts as long as*, or *lasts longer than*.

On the other hand, B-theorists typically analyze temporal relations in terms of causal relations or the physical relation of entropic increase.⁸ On the R-theory there are reasons to reject such grounding. First, the phenomenon of temporal succession is fundamental, whereas causation and entropy are rather derived and complicated relations. A Russellian ontological analysis complies with the principle that a fundamental phenomenon such as succession should be grounded on a simple entity such as the R-relation if at all possible. Second, Russellians will reject causal accounts of the direction of time since they adopt an empirical principle of acquaintance according to which we must be acquainted with the simple entities of one's ontology. What excludes causal theories of time is that we perceive many temporal successions while we don't perceive the relation "causes" or "has greater entropy than" in those cases. Furthermore, R-theorists will argue that causation and entropy are

⁷ For early R-theorists see Russell 1984, and Russell 1910, 374; Broad 1921; Braithwaite 1928; Blake 1925. For later ones see Bergmann 1964; Tegtmeier 2007, and Tegtmeier 2010; Oaklander 2012.

⁸ See Mellor 1998; LePoidevin 1991, and LePoidevin 2007; Armstrong 2009; Smart 1963; Grünbaum 1973.

circular as earlier-relations since they presuppose temporal succession and the direction of time.

B-theorists who do not countenance R-relations typically differ from R-theorists regarding the transitory or dynamic aspect of time as well. Thus, for example, Laurie Paul sets herself the task of explaining how the existence of a static, four-dimensional universe of a series of changeless events standing in unchanging temporal relations can explain the “flow of successively existing events [...] responsible for the animated character or flow of change.”⁹ Paul responds by arguing that even in the static universe of the four-dimensionalist the reductionist can provide “an account of how temporal experience could arise from the way the brains of conscious beings experience and interpret cognitive inputs from series of static events.”¹⁰ Her explanation goes something like this:

When we have an experience as of passage, we can interpret this as an experience that is the result of the brain producing a neural state that represents inputs from earlier and later temporal stages and simply “fills in” the representation of motion or of changes. Thus, according to the reductionist, there is no real flow or animation in changes that occur across time. Rather, a stage of one’s brain creates the *illusion* of such flow, as the causal effect of prior stages on (this stage of) one’s brain.¹¹

Paul is claiming that our experience as of passage is an illusion, and therefore while time *seems* to pass from one moment to the next it does not really do so, it is just a mind-dependent phenomenon with no objective reality. Of course, that is a possible position to take, but for the Russellian who is a phenomenological realist and maintains that a simple, irreducible temporal feature of experience is dynamic, and thus needs an ontological ground, there is an alternative.

The alternative is to construe the R-theory as not only realist with regard to the mind-independent temporal relations, but also realist with

⁹ Paul 2010, 334.

¹⁰ Paul 2010, 339.

¹¹ Paul 2010, 352.

regard to transition, passage or the dynamic aspect of time. In other words, for the Russellian the phenomenology of temporal passage is R-theoretic, that is, temporal passage or the dynamic aspect of time is grounded in a temporal succession or transition from earlier to later temporal items that on one of Russell's earlier views involves an intrinsic sense or direction from one relatum to the other.¹² Thus, an R-theorist should not fear that the words 'temporal succession' or 'transition' commit them to A-succession or A-transition. Succession is not an A-relation, but it is not a static relation either. Succession is not a transition from non-existence to existence or from *futurity* to *presentness* to *pastness*, but it does not follow that it is no transition at all. A transition is a temporal succession of opposite states and succession is based on the earlier-than relation.¹³ A temporal relational fact itself doesn't change (in a sense to be explained below) but may be a change and in that sense involves a transition from earlier to later events or particulars (or more neutrally, temporal items).

That the "is earlier than" relation is dynamic has been argued for by Erwin Tegtmeier, whose writings on time have been of great benefit and inspiration to me. In the following passage he says:

What we hear according to Russell, when we hear the c-tone preceding the d-tone is the relational universal of "occurring earlier than" together with its relata. We hear nothing else. Let us assume that we don't recognise the first tone [as] a c and the second as a d. Thus we hear only a temporal fact which as such is a dynamic fact [...] If the fact is dynamic, which one can take for granted, the relational universal in it must be dynamic, too. Now, Russell introduces the relational universal as the one which holds between the two tones in the fact of our example. One can conclude that the relation "occurring earlier than" is a dynamic relation.¹⁴

¹² See Russell 1903, 95-96.

¹³ Cf. Tegtmeier 1999, 62.

¹⁴ Tegtmeier 2010, 42.

On the R-theory as opposed to the typical B-theory, the passage of time is rooted in a simple, unanalyzable temporal relation.¹⁵ For that reason, not only are A-properties incapable of grounding passage without the relation of succession, the R-theory with R-relations is capable of grounding passage without A-properties. Indeed, given R-relations there cannot be A-properties, for they would make temporal relations dependent on the monadic temporal properties of their terms, and consequently not R-relations. Thus while some B-theorists, and their critics are willing to characterize their view as “static” or as a block universe, R-theorists would reject those appellations. Furthermore, since the dynamic “earlier than” relation is mind-independent the claim that the R-theory is anti-realist is also mistaken.

To clarify the difference between Paul’s version of the B-theory and the R-theory it is useful to quote a passage from Russell’s *The Philosophy of Logical Atomism* where he says:

The process of sound philosophizing [...] consists mainly in passing from those obvious, vague, ambiguous things, that we feel quite sure of, to something precise, clear, definite, which by reflection and analysis we find is involved in the vague thing that we start from, and is, so to speak, the real truth of which that vague thing is a sort of shadow.¹⁶

What then is the real truth that is the ground of the “flux and flow of time?” Do we need an A-theoretic account of passage in terms of say, the movement of presentness along a series of fixed events (spotlight theory), the accretion of facts with the passage of time (growing block), or the coming into and going out of existence (presentism) or will something more ontologically austere be able to account for our experience of the flow and flux of time?

Paul’s B-theoretic move is to make transition something that does not exist in the world. On the B-theory there are durationless events that

¹⁵ For a B-theorist who defends the view that succession is a dynamic relation that involves transition see Deng 2010, and Savitt 2002. Since Savitt denies that there is a difference between A- and B-theories of time I hesitate to call him a B-theorist.

¹⁶ Russell 1956, 179-80.

are temporally related, but no objective transition or becoming. Thus, the B-theory is called the static view of time because the experience of dynamism does not *represent* any flow from one time to another since there is none. The assumption of this line of reasoning is that the only kind of objective flow is A-theoretic. Paul's view is that transition is a double illusion. First, it is not a feature of the static events that cause it, and furthermore, we are not really aware of transition. Temporal phenomena seem to pass, but passage as we experience it is different from how it seems. The experience of flow between events "just gives the impression of being filled in. There is no 'figment' as Dennett would say."¹⁷ Thus, the second illusion consists in the fact that what appears to be the experience of transition is not really the experience of transition at all.¹⁸ A weaker form of our experience of passage, compatible with the B-theory, is that our experience of the dynamic aspects of time are fully real experientially, and they do possess dynamic qualities—the flux and flow we find in our experience is not illusion—but what is an illusion is the belief that these features of experience *represent* a mind-independent reality that contains metaphysical passage.¹⁹ The R-theory rejects both the strong (there is no passage phenomenologically or ontologically) and weak versions of the B-theory (there is experiential, but no mind-independent passage) since it affirms that we do experience passage and that in so doing we are directly aware of mind-independent—albeit *R-theoretic* and *not A-theoretic*—passage. Thus, the R-theory rejects the assumption that if passage is ontologically real then the A-theory in some form must be true.

¹⁷ Paul 2010, 353, footnote 33.

¹⁸ For a criticism of this aspect of Paul's view see Dainton 2011, 388-389 and Dainton 2012, 130-33.

¹⁹ Barry Dainton claims that "if our universe is of the Block variety then it is certainly the case that no form of M-*passage* exists—this holds by definition. But we can be certain that E-*passage* exists, as certain as we are of anything and we can conclude from this that our universe contains at least one significant form of passage—that certain regions of it have an inherently dynamic intrinsic nature. And this result holds even if our universe is entirely devoid of any form of M-*passage*." (Dainton 2012, 132.) Note, here too, the assumption is that if mind-independent (metaphysical) passage exists, then it must be A-theoretic.

For the Russellian, the vague truth that we start off from is that time has a dynamic character. There is a flow, flux or whoosh to time and that is something that is given to us in our immediate experience. This experience is open to many different ontological interpretations, but the real truth that underlies the experience and is its ontological ground, is the existence of unanalyzable temporal relations between temporal objects. The R-theorist who is a phenomenological realist will reject the view that our experience of passage is an illusion or an appearance that “misrepresent the non-dynamic external physical reality.”²⁰ Our experience of the dynamic aspect of time is not a mind-dependent object that misrepresents reality, but is a mind-independent reality that is grounded in a temporal (dynamic) simple R-relation that is different from all other relations. Thus, it is a mistake to claim that there is a distinction between the succession as we experience it and succession as it is in itself; the former being dynamic and illusory and the latter static and real. In our experience of the phenomenon of succession which grounds the dynamic aspect of time we are directly acquainted with an R-theoretic mind-independent feature of reality. To think otherwise is to assume that the dynamic aspect of time is A-theoretic and that is what a Russellian will deny.

I have argued that the R-theory is realist in that it countenances simple and unanalyzable mind-independent temporal relations and that these relations are the ontological ground of the dynamic aspect of the temporal phenomena. To see that the R-theory is realist in a further sense, I want to turn next to two questions concerning the ontological status of temporal relations: First, are they universal or particular, and second, how are the facts that temporal relations enter into related to time? With these questions we hit upon the realism/nominalism issue as it applies to temporal relations. In briefly exploring them we shall once again see how the R-theory differs from the B-theory in at least one of its typical formulations and more importantly how the R-theory’s realism can account for both the dynamic and, in a sense to be explained, the eternal aspects of time.

²⁰ Dainton 2012, 133.

D.M. Armstrong is a B-theorist who in one of his more recent writings wrote that:

If you are, like me, an omnitemporalist, holding that past, present and future are equally real, then the fact that there are *truths* about the past and about the future should not be reflected in the ontology of states of affairs. There are, of course, states of affairs involving temporal relations, but that is all.²¹

In claiming that past, present and future are equally real B-theorists are somewhat obfuscating because they also maintain that no event really is past, present or future. Leaving such matters aside, the question I want to explore, *vis á vis* the nominalism/realism issue is Armstrong's position regarding temporal relations and the states of affairs or facts they enter into.

Armstrong is a naturalist who believes that the spatio-temporal universe contains all that there is, and yet he believes in universals. Thus, he believes that the non-relational qualities of things exist at the spatiotemporal location of the particulars that exemplify them. What then of temporal relations? If they too are concrete then where, or better, *when* are they located? Armstrong offers two responses to this challenging question.

On the one hand, Armstrong suggests that causal theories of time would solve the problem of the location of temporal relations since "they identify temporal and spatial relations with causal relations, or at least analyze the holding of temporal and spatial relations in terms of the holding of causal relations."²² Whatever virtues the causal theory of time has, and for the R-theorist there is little to recommend it, the causal theory does nothing to resolve the problem of the localization of temporal relations. A world of causally related particulars, that is, instantiated universals, simply raises the question of the location of the causal relation, it does not answer it.

²¹ Armstrong 2009, 49.

²² Armstrong 2009, 112.

On the other hand, Armstrong claims that even if temporal relations are *not* located in space-time, it does not follow that they are “outside of space and time”. For it is part of the essence of space and time that they involve such spatiotemporal relations, whether these be conceived of as relations between *things*, or between particular places and times. So if they help to constitute space-time, then it is no objection to their spatiotemporality that they are not *located* in space-time.²³

I find this reply unavailing. If spatiotemporal relations help to *constitute* space-time then surely they are *constituents* of space-time and so are in need of categorization. If spatiotemporal relations are in time, then on the relational view, they would be *things* that stand in temporal relations, or on the absolute view they would be things that *occupy* moments of time, and so in either case they would not be the *relations* between things or moments they are intended to be. On the other hand, if temporal relations are not located in space-time then Armstrong’s naturalism fails.

A similar dilemma arises regarding his analysis of states of affairs involving temporal relations. If temporal relational states of affairs are concrete, that is, if they exist in time, then either the conjunction of all such states of affairs would exist at the same time or each relational temporal fact would exist at a different time. If all temporal relational states of affairs exist at the *same time* then the world would truly be a (simultaneous) Block universe; a *totum simul*, which is absurd. If each temporal relational fact exists at a different time, then whether time is absolute or relational, the need for a second time dimension would be required and an infinite regress would ensue. To be more specific, if $E(a,b)$ exists at t_1 and $E(c,d)$ exists at t_2 and so on, then in addition to temporal relational states of affairs, there are the absolute moments at which they exist. The series of moments would be a second time dimension at which the first temporal relational states of affairs exist. Since these moments, t_1, t_2, \dots, t_n would themselves stand in temporal relations, and so comprise temporal relational states of affairs, they too

²³ Cf. Armstrong 2009, 112.

would occupy moments of time in a third dimension that stand in temporal relations to each other and so on *ad infinitum*.

An analogous problem exists on the relational view of time. For if temporal relational facts themselves stood in temporal relations then these second order temporal relational facts would exist in time and so require a third time dimension of temporal relational facts again resulting in an infinite regress. On the other hand, if the facts that have temporal relations as constituents are abstract and so outside of time, then, once again, Armstrong's naturalism fails.

Contrast Armstrong with the R-theory. For the Russellian temporal relational states of affairs or R-facts while they are not themselves in time are indeed temporal since they contain temporal relations. R-facts are entities in their own right over and above their constituents, and as such they are not in time in that they do not exemplify non-relational temporal properties, occupy moments or stand in temporal relations. In that sense time, understood as a Russellian series composed of a conjunction of R-facts, is timeless. This view gives some meaning to an aphorism I favor, namely, *time is timeless*, or eternal in just this sense: though time contains temporal relations, time does not exemplify them. Time is timeless in the further sense that the ontological ground of temporal phenomena are relations and on the R-theory relational universals such as "occurring earlier than" are timeless.²⁴

Given a realist ontology of R-relations and R-facts, the Russellian theory is able to account for both the dynamic and the eternal aspects of time. That both aspects are part of the reality of time is stated by an early

²⁴ There are, of course, philosophers who hold a B-theoretic ontology and maintain that there are universals. There are also philosophers who hold that temporal relational facts do not exist in time and that temporal relations are mind-independent and the ground of the transitory aspect of time, at least in one sense of that phrase. What seems to me, however, and what makes the R-theory distinctive is that there is no B-theorist who explicitly adopts all of these tenets and for that reason it is, I submit legitimate to distinguish the R-theory and the B-theory. And there should be no question that the R-theory, which takes R-relations as fundamental, is not to be confused with any version of the A-theory. For while A-theorists attempt to ground the truth of propositions about temporal relations between objects, none of them do or could by appealing to R-relations.

R-theorist, R.M. Blake, in his critique of Broad's open future theory. In *Scientific Thought* (and elsewhere, of course) Broad maintains that the Russellian view leaves out something that is fundamental to the nature of time. Blake raises and responds to Broad's objection in the following passage that I shall quote at length.

His [Broad's] concept of an unanalyzable "becoming" is very similar to M. Bergson's equally ultimate "duration" and to Mr. Whitehead's "passage of nature," or "moving on" (*Concept of Nature*, p. 54). As Mr. Broad says (p. 59), "We are naturally tempted to regard the history of the world as existing eternally in a certain order of events." The trouble with this is that it seems to take the temporal character of succession out of time and to make it "static," or, as M. Bergson puts it, to "spatialize" time. Now there seems to me to be a strange mixture of truth and illusion in all this. There is certainly a unique character about time which cannot be reduced to anything else. Time is filled with "events, and events are *happenings*," things that "come to *pass*," that succeed one another in a fixed direction of earlier and later. *This feature of time is revealed to us in our immediate experience of duration and the passage of events.* But we may be equally certain that, however much of succession there may be in events, every event has in the order of succession just the place that it has and none other. The order as a whole, however much it may be an order of change and of succession, must in a sense be "static," *for it must be true that it is what it is.* Let fluidity be never so fluid, the fact that it is so remains unaltered. These are simply the necessities of logic.²⁵

Blake is attempting to reconcile the fundamental features of our experience of time and its true nature; that time has an unique and irreducible character that distinguishes it from space that is revealed to us through our experience of the *succession* of events, on the one hand, with the notion that time forms an ordered series of terms in which every item has just the place it has and no other, and that the whole conjunction of facts is unchanging, on the other. I am suggesting that to understand these two aspects of time one must recognize that time contains *timeless yet dynamic relations* and *temporal yet eternal facts*.

²⁵ Blake 1925, 434-35, emphasis added.

To countenance R-facts in addition to R-relations is crucial to providing a ground for the unchanging character of time as a whole and the dynamic nature of time within it.

J.S. Mackenzie has nicely stated the relation between the eternal and the dynamic in the following passage:

There is no time outside the process. Hence the process as a whole might be said to be eternal though every particular part in it has a place in time. The eternal thus conceived would not be timeless, but rather that which included the whole of time [...] The process as a whole, when we thus conceive of it, is not in time, rather time is in the process. Time is simply the aspect of successiveness which the eternal process contains.²⁶

Once we have made the relevant distinctions and provided an epistemologically, phenomenologically and ontologically realist analysis of the temporal relations and facts of which they are constituents, we arrive at a view that differs from the various versions of the B-theory and can justly be called “Temporal Realism.” Whether this view can be defended against further criticism is a question that lies beyond the scope of this paper.

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²⁶ Mackenzie 1913, 404.

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