

Aristotelians and the A/B Theory Debate: A Response to Feser's *Aristotle's Revenge*

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I'm grateful for the opportunity to take part in this symposium. Ed has done a tremendous job in bridging the gap between Thomistic Aristotelianism and contemporary analytic philosophy, including now philosophy of science. I'm strongly sympathetic to the general direction of the book, and Ed has carried out the project with his usual clarity and good judgment. I plan to focus here on one aspect of the project on which I remain unpersuaded: the linking of Aristotelianism with the A Theory of time, specifically with Presentism.

I am genuinely agnostic on this issue, and indeed I will confess to being (like St. Augustine) mostly confused about the nature of time. So, I'm quite persuadable in principle—if it turns out that my Aristotelian commitments settle the central questions of time, that would be quite welcome news. And, I should say that Ed has done an exceptionally fine job of articulating Presentism and answering the standard objections to it. Nonetheless, I remain unconvinced. I hope my remarks will give Ed the opportunity to bring me around to the truth (one way or the other).

Ed is, somewhat uncharacteristically, tentative about making strong claims here. He tells us that the A Theory and Presentism in particular are the “most natural” position for the Aristotelian (p.

238), but he doesn't accuse the Aristotelian B Theorist of inconsistency or incoherency. Even so, I don't really follow how Aristotelianism is supposed to incline me toward Presentism.

Let me start out defining the positions in question.

The A Theory. There is a unique time that is absolutely present (present relative to all really extant or valid perspectives).

Presentism. Everything that actually exists exists in the present, and nothing exists (in actuality) at any other time.

The B Theory. No time is absolutely present: the A-properties of *past*, *present*, and *future* characterize times and events only from multiple temporal perspectives (each of which is equally valid and real).

Presentism clearly entails the A Theory: the present moment is absolutely unique by virtue of encompassing all that exists in actuality.

The A Theory is sometimes called 'the tensed theory of time', because the three tenses (past, present, and future) correspond to absolute differences between events and times (i.e., different intrinsic properties) and not merely perspectival differences in our way of expressing or representing those times and events.

Ed mentions six relevant commitments of the Aristotelian:

1. Time is the measure of change. Consequently, change is metaphysically prior to time.
The passage of time is grounded in real changes in things.
2. Both time and change are successive. I take this to mean that there is a real, objective direction to time and change.
3. The whole of time does not exist “at once,” but only “successively.”
4. Time and change are not mind-dependent.
5. Time and change are continuous. Continuous processes and activities are at least as fundamental as instantaneous events. These processes and activities are not mere aggregations of instants or instantaneous events.
6. Change consists in the mutual actualizing of potentialities (both active and passive powers).

I share all of these commitments. Do they entail, either individually or collectively, the A Theory or even Presentism? It’s hard for me to see how. Let’s consider them from a B Theoretic point of view.

1. Time as the Measure of Change

I don’t see a problem here. There’s nothing in the B Theoretic representation of time that entails the possibility of the changeless passage of time. We can of course represent such a state linguistically or mathematically using time as a fourth dimension, but there’s nothing in B

Theory's rejection of a unique present that forces us to take such representations as corresponding to real possibilities. B Theorists can embrace the idea that there can be no passage of time without change, and that time is merely supervenient on processes of change, as their common measure.

2. The Successive Nature of Time and Change

A sensible B Theorist should agree that there is a real, objective, and privileged direction to time, from earlier to later. Causal influences are carried forward in time, and never backward. We remember the past and not the future. We plan and deliberate about future actions and not past ones. I will explain below just how an Aristotelian B Theorist can account for this privileged direction.

3. The Whole of Time does not Exist at Once but Successively

In a straightforward sense, moments in time (according to the B Theory) do succeed one another. Each moment of time is actual when it is actual, and no other moment is actual at that same time. Even in a relativistic setting, this will be true of the successive moments of any substance's proper time. Nothing in the B Theory requires that we spatialize time, treating it as a dimension of coexistence in the way that space is. It's a mistake to think that relativity theory "spatializes" time. It's true that certain spatiotemporal intervals gain in importance in relativity theory, since they are frame-independent in a way that purely temporal intervals or spatial distances are not,

but the theory does not treat time and space as interchangeable. In certain key equations, the sign for the time parameter is exactly opposite the sign for the three spatial parameters.

4. Time and Change are not Mind-Dependent

Again, no sensible B Theorist denies this. Here I think Ed does fall into a mistake in characterizing modern B Theory (following Bill Craig). He writes (on page 238) that, according to the B Theory, “An event is now or present only in relation to our consciousness of it.” That is decidedly not the position of the modern, indexical theory of Now. I was actually present while much of this theory was worked out (by David Kaplan and Richard Montague at UCLA, and by Hans Kamp at the University of Texas), so I can speak with some authority. What modern B Theorists say is that an event is *now* or *present* only in relation to some temporal index or parameter. It makes no difference to the theory whether any consciousness is present at that index. We can say, for example, that relative to a time index set 4 billion years ago, the sentence ‘The earth is now being bombarded by asteroids’ is true, regardless of whether there were any English speakers or conscious entities of any kind extant at that time.

5. The Continuity of Time and Change

This seems to be a problem, not for the B Theorist, but for the Presentist. If reality consists fundamentally, at least in part, in temporally extended things (processes, motions, activities), then it cannot be the case that everything that exists exists now *and at no other time*. If an ongoing process does not consist in a mere aggregation of instants, then it cannot exist simply by

virtue of the existence of the part of the process that corresponds to the present moment. The whole, temporally extended process must exist in actuality, and that means that it must actually exist at other times as well. If the process existed only in the instantaneous present, then it wouldn't be temporally extended, at least not fundamentally. The only kind of temporal extension that is possible under Presentism is a kind of modalized extension. So, I could say that Homer's present activity of walking across the stadium is temporally extended in the sense that there were times in the past at which it existed, and there will be times in the future at which it will exist. However, this kind of temporal extension depends on the process being entirely composed, over time, of instantaneous parts, each of which exists for just a moment (when it is present). The Aristotelian conception of continuity requires, I think, that we include processes (motions) in our basic ontology.

- a. Some things (i.e., processes) are fundamentally extended in time (including some processes that exist now).
- b. If something that exists is fundamentally extended in time, then it does not exist at a time simply by virtue of having an instantaneous part that exists then.
- c. If Presentism is true, then any process can exist at a time only by virtue of having an instantaneous part that exists then.
- d. So, Presentism is false.

This is an especially thorny problem for Ed, because he argues that our conscious experience of time consists fundamentally in temporally extended processes of temporal experience. Ed takes

seriously, as do I, the phenomenon of the specious present, the fact that we seem to be directly aware of temporally extended processes that are now unfolding.

- a. In normal temporal experience, we are directly and veridically aware of temporally extended processes.
- b. We can be directly aware of a temporally extended process only if we are aware of it *as a whole*.
- c. To be aware of a temporally extended process as a whole is to be aware of all of its parts, including some parts that occurred in the recent past.
- d. To be veridically aware of something, it must exist.
- e. So, some parts of processes that occurred in the recent past exist.
- f. If Presentism is true, nothing that occurred in the past exists.
- g. Therefore, Presentism is false.

It will be instructive to me to learn where these arguments go wrong. (I have a notion of how the Aristotelian A Theorist should respond to these challenges—see the Appendix below.)

6. Change consists in the Actualizing of Potentialities

I think Ed thinks of this as the most fundamental point of tension between Aristotelianism and the B Theory. He argues that the B Theorist can only make sense of the whole of reality (past, present, and future) having been actualized all at once: “the universe as a whole would have to be actualized.” (p. 238) We are to suppose that the B Theory is incompatible with the successive

actualization of states within history, but I do not follow why. Why can't the B Theorist say that the banana's potentiality to be yellow existed for some time up until moment t , at which that potentiality was actualized by some agent (like the sun)?

This question turns on whether we can think of potentiality and actuality as relative to a time. E.g., the banana is (tenselessly) potentially green on Monday and actually green on Tuesday, where this is to be understood as involving two relational properties: F 's being actual at t , and F 's being potential at t . This is I think the fundamental difference between an Aristotelian A Theorist and an Aristotelian B Theorist. The Aristotelian B Theorist has to suppose that there are two fundamental pairs of opposites: absolute actuality/potentiality, and relative actuality/potentiality. The whole of actual history, past, present, and future, has absolute actuality (tenselessly). However, the substances and accidents of the world have actuality and potentiality relative to different points in time—or, more accurately, relative to different events.

Let's suppose that our Aristotelian A Theorist believes in Total Temporal Omniscience (along with Augustine, Boethius, and Aquinas), despite the fact that Aristotle himself would have had to deny this, since he denied (in *De Interpretatione*) that future contingent propositions can be true. If they can't be true, then not even God can know whether they are true, and God would have to lack *total* omniscience with respect to the future (by "total omniscience" I mean, not just knowing all the truths about the future there are, but knowing about each future contingent whether it will or will not occur).

On that assumption, the A Theorist must also embrace the distinction between absolute actuality and absolute potentiality. God knows the future by knowing which future things are absolutely actual. Here is how the A Theorist could define them:

(DA1) F is *absolutely actual* iff (F was actual, or F is actual, or F will be actual, or F is eternally actual)

(DA2) F is *absolutely potential* iff (F is not absolutely actual & F was potential)

The A Theorist can also define *actual relative to an event*:

(DA3) F is *actual relative to event E* iff $(\forall w \forall t)$ (if E would occur in world w at time t, then F would be actual at w and t)

So, F is absolutely actual iff F is actual relative to some event E that has occurred, is occurring, or will occur (in the actual world).

(DA4) F is *potential relative to event E* iff $(\forall w \forall t)$ (if E would occur in world w at time t, then F would be potential at w and t)

So, F is absolutely potential iff F is potential relative to some event that has occurred or is occurring (in actuality).

Therefore, the A Theorists can make sense of these two pairs of opposites by defining them in terms of actual and potential *simpliciter*, along with a primitive subjunctive conditional (of the sort occurring in DA3 and DA4). Augustinian A Theorists will need such a subjunctive conditional in order to make sense of total divine omniscience about the future. Suppose F is a contingent future fact that will in fact become actual. God cannot know that F is actual *simpliciter*, since that is false. He can, however, know that it will be actual:

(AW1) It will actually be the case at t that F become actual.

I take this to be equivalent to the following subjunctive conditional:

(SC1) If future time t were present, F would become actual.

This has to be consistent with statements of F's contingency:

(AW2) It might not be the case that F become actual in the future. That is, it could be going to be the case that F not occur.

(SC2) If future time t were present, F might not be actual.

So, the A Theorist needs a subjunctive conditional with a semantics very different from that of Stalnaker or Lewis (for whom the two conditionals SC1 and SC2 are compatible only if it is metaphysically impossible for time t to be present). Presentists will have to reject the necessity

for a truth maker for conditionals like SC1. In fact, conditionals like SC1 will violate David Lewis's principle that Truth Supervenes on Being. For the Presentist, there can be two worlds in which exactly the same things (presently) exist but in one of which SC1 is true, while it's false in the other. God knows the difference directly, without knowing any ground for the truths in question (since there are none).

The Aristotelian B Theorists don't need actuality and potentiality *simpliciter*. They need only absolute actuality/potentiality and relative actuality/potentiality. Both pairs have to be taken as metaphysical primitives: neither can be reduced to or defined in terms of the other. Here are the metaphysical "laws" that relate the two pairs:

(BA) F is absolutely actual iff there is some event E such that (i) E's occurrence is absolutely actual, and (ii) F is actual relative to E.

(BP) F is absolutely potential iff there is some event E such that (i) E's occurrence is absolutely actual, and (ii) F is potential relative to E.

Unlike the A Theorist, the Aristotelian B Theorist cannot define absolute actuality/potentiality in terms of relative actuality/potentiality, since actuality/potentiality relative to some event E is sufficient only if E's occurrence itself is absolutely actual.

However, the B Theorist doesn't need subjunctive conditionals that deviate from Lewis-Stalnaker semantics or that violate the principle that Truth Supervenes on Being. Aristotelians

ought to be sympathetic to the TSB principle, since it is what motivates the reifying of accidents. When some substance alters qualitatively or quantitatively, why suppose that some new accident comes into being? Because truth must supervene on being.

Moreover, the Aristotelian conception of truth as correspondence provides support for the TSB principle. For a predication to be true is for it to say of what is, that it is, or of what is not, that it is not. Hence, it seems that variation in truth-value depends on what exists and how it is, which is precisely what TSB demands.

Can the Aristotelian A Theorist simply include future or subjunctive facts as part of “Being”, thereby satisfying TSB? It all depends on how we think of “facts”. In my view, a fact is an arrangement of things and properties (accidents). So, if a fact exists, then any entity involved in that fact must also exist. Hence, a fact about a future substance or accident can exist in actuality only if that substance or accident exists in actuality, in contradiction to the mere potentiality of the future eventuality.

The Privileged Direction of Time

As time passes, some things that had the potentiality to lose that potentiality, either by becoming actual or by becoming impossible. I now have the potentiality to be in Paris on midnight of Christmas, 2019, but as that date and time approaches, I either will be in Paris or it will become impossible for me to get there on time. So, the B Theorist can define the passage of time in terms of the loss of potentialities (as in Storrs McCall’s Falling Branches model of the A Theory).

Event E_1 is *earlier than* event E_2 iff the set of events $\{E: E \text{ is potential relative to } E_2\}$ is a proper subset of the set $\{E: E \text{ is potential relative to } E_1\}$.

This definition has the added bonus of making time travel impossible, since a time travel loop would give us a pair of events E_1 and E_2 , each of which is earlier than the other, contrary to the definition.

The Problem of Intrinsic Change

The Aristotelian B Theorist still has to deal with the problem of intrinsic change (posed by Mark Johnston in his Princeton dissertation). Let's consider the banana again. The banana's greenness is actual relative to time t_1 , and its yellowness is actual relative to time t_2 . Thus, the banana is actually both green and yellow, an impossibility.

There are three possible solutions. First, the B Theorist could relativize the being-in relation between accidents and substances to times or events. Accidents don't undergo alteration: the banana's greenness is always green, and its yellowness is always yellow. The greenness stands in the in-at- t_1 relation to the banana substance, and the yellowness stands in the in-at- t_2 relation to that same substance.

Second, we could introduce temporal parts. The banana has two temporal parts, one at t_1 and the other at t_2 . The first is tenselessly green (with in an inherent green accident) and the other is

tenselessly yellow. The substantial form of the banana has no such temporal parts: it endures as a whole throughout the lifespan of the banana, uniting the various temporal parts into a single substance, with per se unity.

Third, we could assign temporal locations to a substance's accidents. So, the banana has (tenselessly) an accident of greenness located at t_1 and an accident of yellowness located at t_2 . (Thanks to Alex Pruss for this suggestion.)

What about existence? Suppose the banana exists at t_2 but fails to exist at t_3 . How can it have both actual existence and actual non-existence? The B Theorist will have to deny that it has absolutely actual non-existence. Its existence is absolutely actual. It is however, absent from certain times, by virtue of having relative potentiality at those times.

Exegesis or Revision?

Is what I am calling Aristotelian B Theory really compatible with the actual views of Aristotle himself, or paradigmatic Aristotelians like St. Thomas? It is true that (so far as I know) neither Aristotle nor Aquinas ever make explicit use of what I am calling relative actuality and potentiality. Nor do they refer to relative inherence of accidents in substances, or to temporal parts of substances. Nonetheless, I don't take this argument from silence to be compelling. It is anachronistic to attribute either the A Theory or the B Theory to Aristotle or Aquinas: the question simply hadn't yet been posed. It is natural for us to make use of tensed statements, relying implicitly on their temporal relativity. Hence, it is difficult to decide whether Aristotle is

making use of actuality and potentiality *simpliciter* (as required by the A Theory) or of actuality and potentiality relative to the present moment (as required by the B Theory).

But suppose that I'm wrong about this interpretive point. Let's suppose that B Theoretic Aristotelianism involves some substantial revision in the tradition. What are the costs (and gains) of such a revision? Is there anything essential to the Aristotelian programme that is lost? I don't see anything essential that's lost.

Summing Up

Here are the advantages of the B Theory for the Aristotelian:

1. Preserving the principle that Truth Supervenes on Being, with respect to true future contingents (which must exist, given God's total temporal omniscience).
2. Providing for the actual existence of processes that are fundamentally extended in time, and not mere aggregates of instantaneous events. (A modified version of Presentism, one that acknowledges that the present moment could be temporally extended, perhaps extended as far into the past as needed for all currently unfolding processes, might be able to match this desideratum, but at some cost.)
3. Maintaining consistency with the simplest interpretation of special relativity, by allowing us to make actuality and potentiality relative to events. Since the Aristotelian should think of events as ontologically prior to instants of times, the B Theoretic Aristotelian does not have to make any ontological adjustment to accommodate special relativity. They just

have to give up the assumption that relative actuality is an equivalence relation (symmetric and transitive). Each event on the surface the forward time cone of an event is actual relative to that event: the events inside the forward cone are relatively potential. It is true that we can always resist this interpretation and insist that absolute simultaneity is real but undetectable. However, this leaves us with an odd and unexplained ‘conspiracy of silence’ in nature that doesn’t afflict the B Theory.

Advantages for the A Theory

1. It is somewhat simpler, in that it requires only actuality and potentiality simpliciter, rather than both absolute and relative actuality/potentiality, and because it need not relative inherence to a time or embrace temporal parts.
2. It takes our temporal experience at face value and provides an explanation for the ineluctability and inexorability of our experience of temporal passage.

Thus, I find myself once more in a state of Pyrrhonian equilibrium.

Appendix: Extended Processes and the Aristotelian A Theory

Thomas Aquinas theorizes four levels or degrees of being: substances, accidents, motions (processes), and negations (*In Meta IV*, lesson 1, 540-3).

We could precisify the definition of Presentism to make clear that we should limit it to the existence of substances (existence₁) and accidents (existence₂), excluding motions (existence₃) and privations (existence₄):

Presentism. Everything that actually exists₁ or exists₂ exists in the present, and nothing exists₁ or exists₂ (in actuality) at any other time.

Second, we can introduce a new, primitive (indefinable) temporal modality: had been true between m and n units in the past (where n can be zero). When we speak of the existence of processes as a whole, we should refer to it as existing₃ throughout some period of time (specified A-Theoretically).

The Aristotelian A Theorist can now challenge premise (c) of my first argument:

(c) If Presentism is true, then any process can exist at a time only by virtue of having an instantaneous part that exists then.

Our modified version of Presentism allows processes to exist₃ over a period of time, without fundamentally existing (1 or 2) at the intervening instants of time. Modified Presentism simply doesn't apply to processes at all: they are free to exist in part in the past or future, as well as the present, since they never exist in either of the two most fundamental ways (existence₁ or existence₂).

What about the second argument, the one based on our awareness of the specious present? The crucial premise is premise (d):

(d) To be veridically aware of something, it must exist.

The Aristotelian A Theorist can reasonably respond that existence₁ or existence₂ may not be required to be the object of veridical perception. Why shouldn't it suffice that the object exist₃? However, a process does not exist₃ at an instant. So, it isn't accurate to say that the extended processes of the specious present exist₃ in the present moment. Rather, they exist₃ over an extended interval that ends at the present. So, is it possible at time t to perceive an entity that doesn't in any sense (1, 2, 3, or 4) exist at t ?

Two possible responses. We might propose that there is a process of perception by which the extended specious present is perceived. Both the specious present and the process of perceiving that specious present have only existence₃ over the same interval of time. However, shouldn't the operation of such a process of perception leave some mark on the individual soul in the form of an existing₂ mental accident? If so, can this accident (which exists₂ at the present moment) involve veridical perception of something that doesn't exist in any way in that same moment?

But perhaps this could be denied. Why can't one perceive at time t an entity that only exists₃ in some interval containing t (either in its interior or at one of its boundaries)? After all, we can certainly think or imagine things that don't exist at all. And, if Roy Sorenson is right, we can perceive things that only exist₄ (negations and privations). We can see darkness and hear silence.

