

## The Direction of Time: A Focused Critique of an Argument for the Presentist Metaphysic

DZINTRA ULLIS

In a series of recent works, William Lane Craig attempts to provide a comprehensive survey of a contemporary debate within the philosophy of time—whether time is dynamic and tensed (the A-theoretical view) or static and tenseless (the B-theoretical view).<sup>1</sup> Craig’s position, referred to as the “presentist metaphysic,” is composed of two foundational claims: (a) tense and (b) temporal becoming are real and objective, as opposed to mind-dependent or subjective. Craig defends this particular metaphysic of A-theory, arguing that it is more epistemically warranted than other competing theories of time since it explains the asymmetry of time. The objectivity of tense explains temporal anisotropy, while the objectivity of temporal becoming explains the direction of time. The second claim, (b) or the objectivity of temporal becoming, is the main focus of my paper. Craig argues specifically that (b) explains the direction of time, represented thus:

<sup>1</sup>Craig has written two books on the subject: *The Tenseless Theory of Time: A Critical Examination* (2010) [A], and Craig’s *The Tensed Theory of Time: A Critical Examination* (2000) [B]. I will focus on his article, where Craig fleshes out his metaphysic: “Temporal Becoming and the Direction of Time,” (1999).

*Dzintra Ullis is a senior majoring in philosophy at Portland State University. Her primary philosophical interests include Philosophy of Time, Philosophy of Mind, and Metaphysics. After graduation she intends to pursue a Ph.D. in Philosophy.*

- (1) A theory of time has an advantage over its competitors if, *ceteris paribus*, it can explain the directionality of time.<sup>2</sup>
- (2) The B-theory cannot explain the directionality of time (“Temporal Becoming” 350–56).
- (3) The A-theory can explain the directionality of time.
- (4) Thus, the A-theory has an advantage, *ceteris paribus*, over the B-theory.

This argument depends on demonstrating that B-theory cannot explain the directionality of time. That demonstration is not the focus of my paper and will be assumed for the sake of my argument. Instead, I will assess and critique Craig’s account of directionality and his argument that A-theory can explain directionality.

The direction of time exhibits time’s asymmetrical features. For instance, I cannot access past events in the same way I access present events, due to the forward direction of time, which is an asymmetrical attribute. There are two features of time’s asymmetry which Craig distinguishes and argues for by means of A-theory: direction and anisotropy. Craig contends that if a series of events is directional, it must also be anisotropic. I argue that the distinction Craig makes between these features remains inconclusive and the justification for premise three is unwarranted. Part I of my paper clarifies and addresses the shortcomings of the two features of temporal asymmetry and part II addresses the strength of Craig’s argument for premise three.

## Part I

Craig distinguishes between two features of temporal asymmetry: (1) direction and (2) anisotropy. He characterizes (1) as a series of events with an ordinal structure, that is oriented *from past to future*. He characterizes (2) as the ordering of a series, provided by the tenseless temporal relations of *earlier than/later than*. If a series has a direction, it entails that that series is also anisotropic. This entailment, however, is not guaranteed in the reverse.

<sup>2</sup>Some B-theorists agree that time is directional such as L. Nathan Oaklander and Quentin Smith in their book entitled *The New Theory of Time* (1994).

### I.I Direction

By claiming that the series of events is oriented from past to future, one claims that the events move in a single privileged direction towards the future. They move forwards rather than backwards or not at all. Craig claims that this direction is metaphysically necessary and an essential feature of time (“Temporal Becoming” 349, 357).

He illustrates direction through the example of rank within the armed forces. This series is oriented such that one proceeds from lower to higher rank. “One is not first a five-star general, then a major, then a captain, then a private. The sequence of ranks is thus oriented or has a direction” (“Temporal Becoming” 350). Craig succeeds at showing that this series has the privileged direction, towards high. It has a forwards direction rather than a backwards direction or no direction.

Recall that if a series has a direction, it necessarily follows that the series is also anisotropic—as in the armed forces example. The series of ranks is not only directed from low to high, but is also characterized using the anisotropic tenseless relations of *higher than/lower than*, for instance, a 5-star general’s rank is *higher than* a major’s rank; a private’s rank is *lower than* a general’s.

### I.II Anisotropy

Anisotropy has directionally dependent relations, but the enduring series does not have any guarantee of a privileged direction. Craig characterizes temporal anisotropy as the series of events ordered by the tenseless relations of *earlier than/later than*. It is possible that an anisotropic series can have a privileged direction or no privileged direction; for example, the temperatures within a temperature gradient, such as a thermometer, have no privileged direction.

The readings on a thermometer are ordered by tenseless relations of *colder than/hotter than* and fluctuate in both directions. The readings move up and down depending on the temperature of what the thermometer is placed in or around. The series of temperatures are presented with the ordering of anisotropic relations, but not with temporally anisotropic relations.

### I.III Concerns

It is crucial to note in I.I that Craig does not acknowledge a hidden assumption: the forwards direction of a soldier’s rank advancement

obtains *through time*; the series presupposes a temporal direction. The order of ranks within the armed forces is series of ranks and events. The series of ranks has the anisotropic relations of *lower than/higher than* and the series of events has the anisotropic relations of *earlier than/later than*; since the example consists of both series, it has both relations. The series of ranks and of events correspond directly to one another depending on the individual's status. The rank of private is temporally prior to the rank of captain. The rank of private can also be called an event, the event when someone becomes a private. Private is *lower than* captain in status and the event of becoming a private is *earlier than* the event of becoming a captain.<sup>3</sup>

The hidden assumption is disconcerting seeing that the question Craig is implicitly addressing regards the features of time, i.e., if time is directional. In order for Craig to argue for a temporal feature (direction or anisotropy), the question he must first ask if time is directional, then affirm that it is. Since it is an open question, directionality needs to be distinguished independently of temporality. Direction should remain neutral with regard to time, for persuasive force. There needs to be a sense of what the feature is independently of time, before the question about if there is direction can be answered. We need to understand what the term is. Once this distinction is clarified and has at least one adequate example to back it up, the notion of direction can be applied to a number of differing series. I have doubts if such an example can be provided, which may render the notion unclear.

The series of ranks relies on the distinction that Craig is trying to explain (the direction of time) which makes the example appear circular. In order to *clarify* what temporal direction is through the use of an example, there must be an example using a series that is non-temporal. Since the series of ranks does not make sense without reliance on a temporal direction,<sup>4</sup> the example is largely weakened. In order to have an example that does some work it must not rely on the distinction that it claims to illustrate.

<sup>3</sup>In theory, the order of ranks will proceed in the same direction as time, e.g., private is both lower and earlier than captain in rank, but not always in practice. People can skip ranks so for the subject in question, the intermediary rank(s) would not be earlier than the rank which they obtain, since it was non-existent for her. In theory the previous (lower) rank is earlier.

<sup>4</sup>If the series has no temporal direction, knowledge of what rank falls earlier or later than another rank is not accessible, since the series is ordered linearly in time and attached to the subject who undergoes the change.

A last concern with I.I is that there is nothing metaphysically necessary about this armed forces example. Craig claims that the forward direction of the series of events is metaphysically necessary. The series of ranks is not directed by metaphysical necessity but is conventionally selected. The series is a product of convention in the same way a series of grades are a product of grade school convention. Grade school consists of series of grades ordered numerically, for instance: first grade through fifth grade. Grade school is also fashioned within time, namely, with a temporal direction, and is attached to subjects in the same way that the series of ranks is, for example, I am in the first grade, or I am a private.<sup>5</sup>

Both the series of ranks and the series of grades have a temporal direction that is explanatorily prior to the conventional series. The next example focuses on explanatory priority to show the importance of a clear demarcation between the notion of direction and the notion of anisotropy. The concerns surrounding I.I become ever more pressing in light of the next example.

#### *I.IV Bike Example:*

Take the example of a series which consists of three events where the totality of the events is referred to as *turning the bike* and is composed of the following. Event (1) contains the right hand holding the right handlebar while the left hand is holding the left handlebar and the right hand moves forward while the left hand moves back. Event (2) contains the handlebar moving from facing horizontally to facing diagonally. Event (3) contains the wheel as it takes the action of turning left. All three of these events take place at the same time and constitute a series of events to turn the bike.

The key feature of this example is that it provides a necessary series with a non-temporal ordering. However, it is not clear whether the series pertains to both I.I direction and I.II anisotropy, only I.I and not I.II, or not I.I and only I.II. The bike example has an explanatory direction, but may not be anisotropic. This violates the entailment relation stated in Part I and pushes Craig to clarify the distinctions as well as change the logical relations they hold to one another. One way Craig could revise the

<sup>5</sup>In grade school a student can get held back or even sent back a grade. This may be a problem for Craig. The same notion can also be applied to the armed forces example. A soldier can be demoted to a lower rank. These examples may not have a privileged direction, since people can move in both directions.

logical relations is to include the claim that a series with a non-temporal direction, need not be anisotropic.

This example has an explanatory and not a temporal direction since the events are simultaneous. The events are ordered in the following way: event (1) is explanatorily prior to event (2) and event (2) is explanatorily prior to event (3). The events proceed explanatorily straight down the line.

One point must be expressed before addressing whether this series meets the given requirements for anisotropy. When considering the same example through a different explanatory ordering, that of *explained by*, the order reverses: event (3) is explained by event (2) and event (2) is explained by event (1). The events proceed in a linear fashion, but of the opposite direction in first instance. Instead of proceeding in one direction, this example can proceed in multiple directions depending on the way the language is used, i.e. *explained by* or *explanatorily prior*.

For this series to be anisotropic, it needs to pertain to tenseless ordering relations, i.e. *earlier than/later than*. For instance, it can be said that event (1) is *earlier than* (explanatorily prior to) event (2), event (2) is *earlier than* event (3). Contrarily, when dealing with the *explained by* ordering using the same format, the *earlier than/later than* relation is confused. To say that event (3) is *earlier than* (explained by) event (2), event (2) is *earlier than* event (1), does not work. Event (3) is not *earlier than* event (2) even though event (3) is *explained by* event (2).

The *earlier than/later than* relations seem to only work when applied to one direction, so the series may be directional, in the *explanatorily prior to* direction. If this is the claim, then the question of anisotropy crops, once again, up instead of being answered; can this series be anisotropic even though the *earlier than/later than* notions are not applicable in both cases? A comparison between the example for anisotropy and the bike example may be of assistance.

A series of temperatures vary because of its causal connection to what it is measuring, i.e. the external temperature. What is being measured can *explain* or *cause* the temperature readings. When the format of this thermometer example is rearranged to mirror the format of the bike example, the following happens: the outside temperature is *explanatorily prior* to the temperature reading. In a similar way that event (1) is *earlier than* (explanatorily prior to) event (2); the outside temperature is *earlier than* (explanatorily prior to) the reading.

Any temperature within the gradient (which is not the first or last number) can be said to be *hotter than/colder than* another temperature, e.g., 25 degrees Fahrenheit is *hotter than* 20 degrees Fahrenheit. These types of expressions are based on the numerical structure of the gradient alone.

This comparison made of *hotter than* cannot be applied to the bike example in any parallel way. Does this non-applicability make the bike example directional but not anisotropic?

If this is the case, it follows that the entailment relation is violated. This shortcoming threatens Craig's distinction between the features of temporal asymmetry. The clarity for the requirements of anisotropy needs serious attention.

If taking the *explanatorily prior* characterization of the bike example, the anisotropic relations of *earlier than/later than* correspond accurately. If considering the *explained by* characterization, the example cannot conform to the anisotropic relations of *earlier than/later than*. When analyzing the differences between the anisotropy of a thermometer and the anisotropy of the bike example, the bike example does not have a parallel to the *hotter than/colder than* relations apart from *earlier than/later than*. By the same token, the thermometer example can be characterized using *earlier than/later than* in the same way that the bike example is characterized.

Using the armed forces and temperature gradient as examples makes the asymmetrical distinctions look conventional. Recall that there is nothing metaphysically necessary about the armed forces example. There is a created standard within the armed forces that assigns a ranking system to soldiers and this ranking system depends on that particular soldier's place in time.<sup>6</sup> Additionally, the thermometer example can be examined in its application or by virtue of its structure. The thermometer has the anisotropic relations of *hotter than/colder than* in virtue of having a numerical structure, which differs by selected convention.

The issue of how an example like the bike example, which carries necessity but is also non-temporally ordered, can fit into the distinctions of direction and anisotropy needs further attention than the limited scope of this paper can provide. A better way for Craig to clarify the distinctions may be to revise the logical relation to include the claim that a series with a non-temporal direction does not need to be anisotropic. If a series has a temporal direction, it may also have a non-temporal direction. This type of

<sup>6</sup>It is not always the case that the anisotropic relations of *earlier than/ later than* correlate to the soldier's rank, e.g., when a soldier skips ranks or when a soldier is demoted. This also applies to the grade school example.

series would be anisotropic within both domains (temporal/non-temporal) (“Temporal Becoming” 350).<sup>7</sup>

## Part II

Part II reconstructs Craig’s argument in support of the third premise: the A-theory can explain the directionality of time. After reconstructing his argument I show that it is ultimately unsuccessful. The argument may be represented thus:

- (1) Backwards continuing is impossible
- (2) If backwards continuing is impossible, then backwards flow<sup>8</sup> is impossible
- (3) Thus, backwards flow is impossible

In order to understand the argument, the terminology given needs to be made sense of, namely, “backwards continuing,” which is borrowed from Sarah Waterlow. To have a clear understanding of the term, Waterlow’s overall thesis must first be taken into consideration. Waterlow argues that “the temporal direction of causation is determined by the temporal direction of the continuing of events” (372). Furthermore, she concludes that backwards causation is rooted in backwards continuing. Ultimately, she argues, backwards continuing cannot be made sense of. By the same token, backwards continuing cannot be deemed impossible on purely logical grounds, nor from an inductive inference based on experience, i.e., all temporal continuing in our experience is from earlier to later, thus, all temporal continuing must be forward directed. She holds that is not clear how to demonstrate “that there could not be backwards continuing”(382).

Based on Waterlow’s account, backwards continuing is not impossible; (1) is false. So far, I have not accepted the sub-conclusion at (3) but for the sake of the argument will move on.

<sup>7</sup>In the case where a series of events does have a *temporal* direction (towards the future), as is shown in the armed forces example, the series may also include an added *non-temporal* direction, *viz.*, the series of ranks. This type of series is anisotropic within both domains, shown by having both the relations of *lower than/higher than* and *earlier than/later than*

<sup>8</sup>“Flow” is a laden term within the modern philosophy of time. At various points in Craig’s article the notion of “flow” is loosely interchanged with “objective temporal becoming,” the “presentist metaphysic,” and “A-theoretic becoming” (“Temporal Becoming” 356, 357, 359).



Starting from (3) the argument continues as follows:

(4) If A-theory, then there is temporal flow

(5) Temporal flow is either backwards or forwards

(6) If A-theory, then there is forward temporal flow

This sub-conclusion ends at (6): if A-theory, then there is a forward temporal flow. This line of reasoning deals with the terminology “temporal flow.” (4) needs unpacking because it carries with it new terminology as well as a hidden sub-argument.

The sub-argument within (4) needs immediate attention since it carries the force of the argument. Temporal continuing is another term borrowed from Waterlow’s text. Backwards continuing and forwards continuing (used earlier) are the two types of temporal continuing stipulated by Waterlow. The way Craig interprets temporal continuing, which is vastly different from the way Waterlow uses the terminology, is that temporal continuing is either (a) temporal flow or (b) tenseless temporal extension.<sup>9</sup>

What is tenseless temporal extension? Craig asserts that the moments which comprise a “continuant’s duration” are not all tenselessly existing. The tenseless existence of a continuant is a claim usually affirmed by Craig’s objectors, *viz.*, B-theorists, because most defenders of B-theory hold some variant of the doctrine on which “all events are equally real.” This doctrine implies that events all “tenselessly exist,” which corresponds with (b).

Without this knowledge in the foreground, the way that Craig separates temporal continuing in two, either (a) or (b), is strange. For Craig moments do not exist *tenselessly* but instead, moments “come into being and pass away serially” (“Temporal Becoming” 356). This quote explicitly hints at (a) temporal flow, since moments are passing, aka flowing. The argument uses the structure of an exclusive *or*, either some notion of “all events are equally real,” which corresponds to (b), or the presentist notion defended by Craig “only the present is real,” which corresponds to (a), can be accepted as coinciding to reality. One problem is that Craig cuts the argument as if there are only two available options for the readers to accept. He affirms the option that is compatible with A-theory.

The presentist doctrine holds that the only temporal entities are presently existing entities. This aligns with the earlier claim that moments

<sup>9</sup>Temporal flow may be a parallel notion to forward continuing, but is not expounded.

“come into being and pass away serially.” In other words moments have a temporal “flow” or temporal “becoming,” hence *come into being*. This kind of metaphysic does not allow for any tenseless temporal existents, since the cut here is that tenseless moments all exist on equal footing—they don’t *come into being*. This doctrine is used as support for (4) of the reconstructed argument, with the implicit sub-conclusion that temporal continuing is (a) temporal flow, rather than (b), tenseless temporal extension. The presentist metaphysic is a part of Craig’s A-theory, and hence (4) follows: if A-theory, then temporal flow.

(7) If there is a forward temporal flow, then time is directional.

(8) If A-theory, then time is directional (“Temporal Becoming” 356).

### III Two Concerns

Various concerns may be raised about this argument, but the most pressing ones to consider are two which specifically regard (4). (4) is problematic for two main reasons: ambiguity and circularity.

The first is its ambiguity. Craig seems to mean different things when using the term temporal flow, which is a nebulous term. Craig glosses over temporal flow in a few of the following ways. He asserts on the basis of various statements that moments somehow flow in time, such as the earlier statement, moments “*come into being* and pass away serially,” or even, “there must *come to exist* another moment in addition to the present moment” (“Temporal Becoming” 356, emphasis added). These statements are highly problematic since they create a further difficulty surrounding the demarcation of direction. They suggest a number of possible alternatives:

(a) *Time itself* is gained and lost in every moment.

(b) *Time’s parts* are gained and lost in every moment.

(c) Some *essence* of time is gained and lost in every moment.<sup>10</sup>

<sup>10</sup>Flow could be an intrinsic characteristic of time, with parts; some which remain, some which are gained and lost.

(d) Given presentism, the only existent temporal entities exist presently, but what is present is evasive, hence, the coming into being of moments are imperceptible but constant.

This ambiguity questions the usefulness of the argument and also risks circularity. To understand how the ambiguity of the term “flow” threatens the utility of the argument, the argument’s initial purpose must be understood. The purpose of the argument was to distinguish the crucial advantage the A-theory has over its competitors, namely the ability to explain the direction of time. The reconstructed argument in Part II reveals that the A-theory cannot explain the directionality of time. The argument cannot explain temporal direction partially due to terminological ambiguity.

This ambiguity indicates the risk of circularity hidden in the term “flow.” “Flow” explains the A-theory and the A-theory explains “flow.” If “flow” is assumed *and* “flow” is explained by the A-theory, then nothing is doing any explanatory work. The argument is not useful if circular on account of the conclusion being assumed as a premise. In other words, it cannot be the case that “flow” is a requirement for A-theory and “flow” is a consequence explained by A-theory. Craig claims early on in his article that the A-theory provides justification for direction (aligns with premise three of the main argument, that A-theory can explain the directionality of time). Later on in the article, he concludes the reconstructed argument with the contention that the A-theory requires direction: “thus, the ontology of the A-theory requires that time have a direction” (“Temporal Becoming” 356).

One other plausible way of reading Craig’s use of “flow” which may not risk circularity is to consider that the definition of A-theory contains the concept of “flow” within it. If this is the case, the posit that “flow” is required by A-theory can remain as well as the conclusion: If A-theory, then time is directional (assuming the rest of the argument is correct). The downfall is that this reading does not connect to the first argument I represented. The A-theory would not be explaining the directionality of time, it would assume it.

Having both *if A-theory, then direction* and the contention *A-theory requires direction* risks circularity. The reconstructed argument does not meet the requirement of proving that A-theory requires direction. Furthermore, there is no evidence to support a distinction between the terminology in the conclusion and the terminology of (4), *viz.*, between “flow” and “direction.” The conclusion cannot be indistinct from the premises. At the end of the day, there is no way to differentiate between what objective temporal becoming (or the “presentist metaphysic”) and

direction (or “flow”) are, what is doing explanatory work, and what is being explained.

The intention of the argument as a whole was to show that objective temporal becoming, one of the foundational claims for the “presentist metaphysic,” can explain the temporal direction. This explanation remains undemonstrated since the difference between what is being implied and what is being assumed is unclear. It is initially concealed behind laden terminology and hidden sub-arguments within larger arguments. (4) is detrimental to the argument because A-theoretic becoming is the main assumption that started the discussion, and furthermore, an assumption cannot be inferred based on itself; there is no work being done.

Part II of this paper gave an argument reconstruction for the third claim of the main argument specified at the beginning of this paper. The argument reconstruction was broken down and two of the sub-conclusions were examined by explaining the terminology and logical inferences used. (4) was the main point of contention, since it anchors the rest of the reconstructed argument. Two main charges regarding (4) were presented, that of ambiguity and circularity. These charges are very harmful to the usefulness of the argument as a whole.

### Part III. Conclusion

William Lane Craig offers a wide-ranging analysis aimed at the debates within current philosophy of time. This paper focused in on one area of Craig’s literature, his presentist metaphysic. Craig’s metaphysics consists of (a) objective tense and (b) objective temporal becoming. Objective temporal becoming was addressed as the central contended claim of this paper.

The examination of Part I revealed insufficient support for the demarcation between the two features of temporal asymmetry: direction and anisotropy. These two features call for much more needed clarity. Part II highlighted a multi-layered argument to show the reasoning for an A-theoretic view concerning the direction of time. The argument is inconclusive and my two main concerns regard ambiguous terms and the risk of circular reasoning. Craig’s posit that the A-theory has the upper hand over other competing theories because it provides an explanation for the direction of time is unwarranted.

Craig provides a unique account of time. His attempt to explain the direction of time through A-theory and to distinguish between two, frequently mixed up features of temporal asymmetry, uniquely separates him from other A-theorists. At the end of the day, the given construal of A-theory does not offer enough support to explain the direction of time.

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