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Reviving the Transient Present in a Relativistic Universe: a Novel Approach

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UNIVERSITY OF MIAMI

REVIVING THE TRANSIENT PRESENT IN A RELATIVISTIC UNIVERSE: A
NOVEL APPROACH

By

Nihel Hsien-Chieh Jhou

A DISSERTATION

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Doctor of Philosophy

Coral Gables, Florida

May 2017

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REVIVING THE TRANSIENT PRESENT IN A
RELATIVISTIC UNIVERSE: A NOVEL APPROACH

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When perceiving a bird's singing a melody, there seems to be a special moment – the present – at which the bird is singing the newest note, and it seems that this special moment is to be filled up with even newer contents, while the bird's singing the first note seems gone away into the more and more distant past. Such everyday dynamic conception of time faces three important challenges: (a) that we do not have immediate experience as of presentness; (b) that our immediate experience as of presentness or temporal passage does not have metaphysical import; (c) that special relativity does not have room for a non-solipsist, non-relative form of simultaneity or presentness. In response to (a), I argue, for example, part of what it is like to hear a second hand's ticking as present is essentially the phenomenology of hearing it as following the previous tick. In response to (b), I argue that there is a special kind of temporarily obtaining facts, such as “a token pain instantiates phenomenal presentness,” which do not supervene on eternally obtaining facts, such as “a token pain instantiates phenomenal presentness at a particular time.” In response to (c), I argue that co-presentness should be divorced from simultaneity, or, alternatively, a non-solipsist, non-relative, dynamic presentness does not requires at least two space-like separated things to be present together.

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Chapter 1

Introduction

1 Preliminaries

When exercising our senses and *perceiving* the most ordinary things, such as a bird's singing a melody or a car's traveling around a roundabout, it is extremely difficult to resist the *feeling* that there *seems* to be a *special* moment at which the bird is singing the newest note or the car is reaching its newest position, that this special moment is to be filled up with even newer contents, and that the bird's singing the first note or the car's entering the roundabout *seems* gone away into the more and more distant past. What it is like to perceive something 'as occurring at this special moment' – what it is like to *perceptually* feel 'presentness' – is apparently distinct from what it is like to feel what is gone or what is done: the former is the phenomenology that something *seems* newly born with the most vivid impression but going to be aged, whereas the latter is the phenomenology that something *seems* to have aged with a fading impression. This thing of what it is like to *perceptually* feel 'presentness' shall be called "*perceptual* phenomenal presentness" or just "**phenomenal presentness.**"

Our temporal experiences described above show that there *seems* to be a **transient present** and **temporal passage**, which can respectively be understood as the ontologically special moment at which new events *keep* happening, and events' being

gone into the more and more distant past.¹ Regarding what ‘causes’ or ‘makes veridical’ our experience *as of* a transient present and temporal passage, it is natural to think that such experience is *best explained* by their reality. This line of reasoning is traditionally called “**the argument from experience**” for **A-theories of time**, which hold that metaphysically special presentness or temporal passage is real.²

This dissertation focuses on *hardcore* A-theories. Hardcore A-theories share an essence: some states of affairs obtain, *simpliciter*, and these includes ones that will not obtain or once did not obtain.³ That is, certain facts, such as “you are *now* reading this sentence,” are non-relative (to a time or an event, etc.) and temporary. Such facts shall be called “A-facts.” An understanding of A-facts, which I think yields the best formulation of the present concerns, is to think that the essential constituents of A-facts are monadic, temporary *A-properties* (while the exemplification of A-properties itself remains neutral, i.e., tenseless).⁴ A-properties include presentness, pastness, futurity, derived properties such as being 10 days from now, and the underlying properties such as being lit by the

¹ Time’s flow is conceived as events acquiring and then losing the presentness. This understanding of time’s flow is basically Prior’s view. See: Arthur N. Prior (1968), *Papers on Time and Tense* (Oxford: Clarendon), 2.

² For the sake of simplicity, I will use “presentness” as shorthand for ontologically special presentness, which is to be distinguished from “presentness” construed as a kind of indexical.

³ This characterization of A-theories in terms of obtainment *simpliciter* is the counterpart of Zimmerman’s (2005: 433) and Skow’s (2012: 223) in terms of truth *simpliciter*. According to Zimmerman (2005: 433), no matter what ontology of propositions one adopts, an A-theorist may insist (and no self-respecting B-theorist should accept) that “some of these things are true, *simpliciter*, and that this class includes ones that will become or once were false.” This kind of truth, which is not relative to anything, is to be distinguished from various kinds of relative truth, such as true-at-a-time or true-simultaneously-with-such-and-such-event, etc.

⁴ On a par with many philosophers of time, this chapter takes *events* to be *particulars*, assumes “truth-maker theory,” and adopts Armstrong’s (1997) view of facts, that a *fact* is an (tenseless) instantiation of universals by particulars. However, this dissertation can be re-formulated under different frameworks without hurting its points. In particular, this dissertation is not committed to heavy-weight notions of facts, such as the idea that there are negative facts.

moving spotlight, etc.^{5,6} Among A-properties, presentness is deemed by most A-theories metaphysically special and privileged, and, thus, past, present, and future things don't have equal metaphysical status.⁷ A-properties are applicable to *things*, including *events* (regarded as either temporally non-extended or, more precisely, instantaneous parts of temporally extended events), or *objects* that are located at a particular space-time point, or even substantivalist times or *space-time points* (depending on one's ontology of space-time points). Hence, a general form of an A-fact about a thing, *e*, is this: *e* is present *simpliciter* (where "simpliciter" merely serves to indicate that the state of affairs that *e* is present obtains *simpliciter* and temporarily, and not to be understood as supervenient upon eternal facts).

A-properties do not globally supervene upon properties like "being at a certain time" or "being earlier than some other thing" (call these properties "B-properties").⁸ That is, two worlds can be indiscernible with respect to what things are located at what times but discernible with respect to what things are present *simpliciter*. Assume, for example, in both world 1 and world 2, Obama's first presidential campaign is in 2008 and Trump's first presidential campaign is in 2016. Since, according to hardcore A-theories, an event exemplifies presentness only temporarily, it is consistent to further assume that, in world 1, Trump's first presidential campaign is present *simpliciter* while, in world 2, it is not. In

⁵ A property like "being 10 days from now" is grounded in an A-property, presentness, without any relation to a particular time or event, so it is also an A-property.

⁶ According to the moving spotlight theory, the future, the present, and the past are equally real, but the present has special metaphysical status in that it moves along the timeline like a moving spotlight. For recent articulation of the moving spotlight theory, please see Skow (2009).

⁷ Advocates of the A-theory can further assert one of the following: presentism (holding that *only* present things exist), or growing block theory (holding that *both* present and past things exist), or eternalism (holding that *all* future, present, and past things exist). For the sake of convenience, this dissertation is composed as if eternalism is correct, but no serious commitment to eternalism has to be made in the end.

⁸ Global supervenience here is understood in Kim's (1984) terms.

this sense, it can be said that (non-relative, temporary) A-facts such as “you are *now* reading this sentence” do not globally supervene upon eternal facts such as “you read this sentence sometime after 2015.” Hence, a general form of hardcore A-theories this dissertation concerns is this:

The A-Theory: There are non-supervenient *A-facts*, which are non-relative and temporary.⁹

Presentness or the now’s moving is commonly thought to be inter-subjective (i.e., non-solipsist) and non-relative. What is presently happening to me does not exhaust what there presently is, and all that there presently is does not vary according to perspective. This common idea of global invariant presentness is naturally taken as assuming a classical notion of simultaneity – global invariant simultaneity. Global invariant presentness with this form of simultaneity shall be called “**global invariant co-presentness**” (or just “**co-presentness**”). However, A-theories, while in accordance with our everyday conception of time, have been challenged by special relativity due to the difficulty of preserving a classical notion of simultaneity.

According to the widely accepted Einstein-Minkowski interpretation of special relativity, which postulates the Minkowski metric as the space-time structure, the universe does not consist of three-dimensional space plus one-dimensional time but of four-dimensional space-time, in which both the coordinate distance and coordinate

⁹ For any instant, the states of affairs such as “you *have* read this footnote,” “you are *now* reading the footnote,” and “you *will* read the footnote,” cannot obtain all together, because A-facts obtain temporarily. Hence, McTaggart’s paradox doesn’t arise. For solutions to McTaggart’s paradox along this line, please see Smith (1993: 169-178).

duration between two points are relative to a frame of reference.^{10,11} In such a space-time, many hold the **objectivity of standard simultaneity** by agreeing that the only *objective* distant simultaneity (i.e., the only objective simultaneity of space-like separated things) is standard simultaneity, which can be formulated as being on the same hypersurface orthogonal to a frame of reference using just the Minkowski metric.¹² Obviously, and unfortunately, standard simultaneity thus formulated is relative to a frame of reference; so are the resulting temporal orders of space-like separated things.¹³ Yet more strikingly, many theorists since Reichenbach (1958) and Grünbaum (1973) advocate the thesis of conventionality of simultaneity: standard simultaneity is merely conventional because, since space-like separated things lack causal connectibility, there just is no fact of the matter about their simultaneity relative to a frame.¹⁴ Some may even maintain **strong conventionality of simultaneity** by holding that *any* distant simultaneity is merely conventional exactly because space-like separated things lack causal connectibility. In either case, in adopting objectivity of standard simultaneity or strong conventionality of

¹⁰ *The Minkowski metric* is this: $ds^2 = d(ct)^2 - dx_1^2 - dx_2^2 - dx_3^2$, where ds^2 is the space-time interval between two points, $d(ct)^2$ is the difference between the squares of the temporal coordinates of the two points multiplied by the speed of light, dx_1^2 is the difference between the squares of the first spatial coordinates of the two points, and so forth. A four-dimensional manifold of points “filled with” the Minkowski metric is a *Minkowski space-time*.

¹¹ One may hold a realist (substantialist) attitude, or, conversely, an instrumentalist (relationalist) attitude, toward the ontological status of this Minkowski manifold of “points.” However, no commitment to either attitude is needed for the points made below.

¹² Standard simultaneity is originally yielded by Einstein’s (1923) “standard synchrony.” Standard simultaneity is thought by many to be “objective” (but not absolute) because, among other reasons, it can be backed up by Ellis & Bowman’s (1967) “slow transport synchrony,” which yields a clear physical meaning and *non-circular* determination of distant simultaneity.

¹³ According to the objectivity of standard simultaneity, there are facts of the matter about how standard simultaneity is relative to a particular frame of reference. Those facts may be called “perspectival facts.” That is, relativity of standard simultaneity doesn’t diminish its objectivity. A parallel case is this. How a cube looks is relative to a perspective, but there are facts about how a cube looks from a particular perspective.

¹⁴ If Einstein is right that causal influence propagates and takes effect point by point and no causal influence can travel faster than the speed of light, then space-like separated things lack causal connectibility. The causal connectibility in question is the kind not mediated by co-past or co-future things.

simultaneity, no *global invariant simultaneity* (i.e., the distant simultaneity which remains the same for all frames picked out by Lorentz transformation) is available in Minkowski space-time.¹⁵

In Minkowski space-time, since no global invariant simultaneity is available, many think that presentness or the now's moving is unfounded or even impossible. Most of them are led by relativity theories to embrace the **B-theory of time**, the idea that metaphysically special presentness and temporal passage are *not* real, there are *no* non-supervenient A-facts, and the past, the present, and the future (things) exist with *equal metaphysical status*. For B-theorists, there are just **B-facts**, the facts without A-properties or any dynamic features derived from tense properties.

B-theories' strongest reasons are mostly founded on physics, especially the Special Theory of Relativity. However, in response to the argument from experience, B-theorists don't entirely lack resources to explain away the seeming existence of the transient present and temporal passage. They may provide an alternative causal explanation of those temporal experiences without appealing to the reality of the transient present and temporal passage. B-theorists may as well propose alternative accounts of the phenomenology, content, or veridicality-conditions of these temporal experiences.

Radical B-theorists, such as Callender (2008) and Le Poidevin (2007), argue, for instance, that my perceiving a page's flip "as present" is no *phenomenologically* different from my simply perceiving it, and thus no particular temporal aspect of perception requires explanation. Radical B-theorists may instead argue, for instance, that my

¹⁵ The distant simultaneity in question is the one that holds between *space-like* separated things. Hence, light-like relations, which constitute light cone structure, are excluded.

perceiving “as present” a page’s flip at 2 PM, 8/8/2014 is no *phenomenologically* different from my perceiving it “as being at 2 PM, 8/8/2014,” or “as simultaneous with this perception.” Either way, there is no phenomenology as of the transient present. In addition, since the phenomenology as of motion is taken by many as a kind of phenomenology as of temporal passage, certain B-theorists also claim that, for instance, seeing the second hand as *moving* around a clock is nothing but seeing it as located somewhere and *remembering* it as located elsewhere – there is no such thing as the what-it-is-like character of perceiving something as *moving*. So to speak, the **B-theory of temporal phenomenology** holds that *no* experience has phenomenology *as of* the transient present or temporal passage (call it “**A-phenomenology**”).

Moderate B-theorists may, by contrast, concede that certain temporal experiences do have the phenomenology as of the transient present. Or, they may at least be willing to take **motion perception** as involving the phenomenology as of motion or temporal passage (while rejecting the phenomenology as of the transient present). Whichever A-phenomenology moderate B-theorists embrace, they, on the one hand, explain how A-phenomenology can *causally* be possible in terms of (B-theoretic) tenseless facts.¹⁶ On the other hand, they hold that the contents of these temporal experiences are after all B-contents, which are not sensitive to A-phenomenology and require only tenseless facts for their veridicality. That is, the **B-theory of experiential content** holds that temporal experience (even if it has A-phenomenology) has *no* irreducible A-content. For example, my perceiving as “present” a page’s flip at 2 PM, 8/8/2014 may only have the B-content that *the page flips at 2 PM, 8/8/2014*.

¹⁶ Typical B-theoretic causal explanation of A-phenomenology is set aside at this point, because as we will see my argument will focus only on phenomenology and content.

The most moderate B-theorists concede that our temporal experience can have irreducible A-phenomenology and A-content, but insist that this content is either a kind of Fregean or indexical A-content that requires *no* irreducible A-facts for its veridicality (Mellor 1998; Grünbaum 1967), or Russellian A-content that is doomed to be non-veridical (Prosser 2007). For example, B-theorists may concede that

my perceiving as “present” a page’s flip at 2 PM, 8/8/2014 has the A-content that *the page is now flipping*.

But this irreducible A-content is **Fregean A-content** that is, though sensitive to A-phenomenology, veridical in virtue of the B-fact that

the page flips simultaneously with the token perception of this event.

Or, the irreducible A-content is **indexical content** that is, though essential (irreducible) and sensitive to its temporal context, veridical in virtue of the B-fact that

the page flips at 2 PM, 8/8/2014.

Or, the irreducible A-content is **Russellian A-content** but never veridical, because the following A-fact purported to make it veridical does not exist:

the page is *now* flipping.

Whichever way, the **B-theory of experiential veridicality** holds that temporal experience (whether having irreducible A-content) *doesn't* demand the existence of irreducible A-facts.

So far, B-theorists can seem to provide somewhat workable alternatives to account for our temporal experience *as of* the transient present and temporal passage, and in this regard, the argument from experience for A-theory of time seems to lose its strength. As the A-theory of time has nearly been beaten by the success of Special Theory of Relativity, the argument from experience has been regarded by many as the final sanctuary for it. Hence, it seems that B-theoretic accounts of temporal experience are, if successful, the final nail in the coffin of the A-theory of time.

2 My Approach

In general, my project, while keeping special relativity intact, seeks to revive our everyday, A-theoretic conception of the transient present and temporal passage. I will firstly argue from phenomenological considerations that the existing debates have overlooked *a fundamental kind of temporal experience*. This fundamental experience as of the transient present and temporal passage cannot be treated as illusory in the same way tenseless theorists explain away our usual temporal experience. This finding, I believe, pulls one foot of our everyday, A-theoretic conception of time out of the grave: it shows that the transient present is *real*, and hence that Special Relativity Theory does not provide a complete understanding of time. Secondly, I propose a novel way of accommodating a *real* transient present and temporal passage in a relativistic universe - this can be done by advocating a form of *non-solipsist non-relative* presentness without employing absolute simultaneity. My approach, while keeping special relativity intact, concedes the least among all alternative approaches and retains the most virtues of our everyday, A-theoretic conception of the transient present and temporal passage. This

proposal, I think, pulls the other foot of our everyday, A-theoretic conception of time out of the grave.

In the first half of the dissertation, I aim to establish a novel argument, “**the argument from phenomenology**.” The upshot of the argument is to show that there is a special kind of irreducible A-fact: phenomenal A-facts (e.g., the fact that *my token pain instantiates phenomenal presentness*). Though superficially similar to the argument from experience, my argument is different from it to the following extent: phenomenal A-facts are themselves A-facts that do not supervene on an eternally obtaining fact such as “*my token pain instantiates phenomenal presentness at a particular time*,” and they are not to be explained by conventional A-facts such as “*my token pain instantiates objective presentness*.” The argument from phenomenology consists of three premises (discussed in chapters 2 and 3):

(AEpA) We can (tenselessly) be aware that our certain experience tokens instantiate *phenomenal A-properties*. For instance, I can at some time be aware that my toothache has phenomenal presentness.

(DR) Awareness that one’s token experience instantiates a certain phenomenal property generally indicates that there are facts like “one’s token experience instantiates this phenomenal property.” For instance, my awareness that my visual experience of an apple has phenomenal greenness generally indicates that there are facts like “my visual experience of an apple has phenomenal greenness.”

(Gap) Phenomenal A-facts (e.g., the fact that one's token experience instantiates a certain phenomenal A-property) cannot be fixed by B-facts.

Clearly, (AEpA), (DR), and (GAP) together entail an A-theory of time, the view that there are non-supervenient A-facts (in the sense that they cannot be fixed by B-facts). My argument, if successful, shows that the Einstein-Minkowski interpretation of special relativity is *incomplete* concerning time, since the presentness spelled out by non-supervenient A-facts is widely held to be indefinable in terms of the Minkowski metric.

(AEpA) is in fact what the B-theory of temporal phenomenology rejects by holding that there is no phenomenal presentness. Hence, in chapter 2, I argue against B-theory of temporal phenomenology. I first point out that the literature has overlooked the significance of perception as of mere succession: e.g., seeing or hearing a second hand moving in *individual ticks*. While many scholars (e.g., Oaklander 2004; Le Poidevin 2007; Prosser 2007; Callender 2008; etc.) maintain that to perceive something “as present” is nothing *phenomenologically* different from simply perceiving it, I argue, in light of perception as of mere succession, that this is not the case. I argue, for example, that part of what it is like to hear a second hand's ticking *as present* is essentially the phenomenology of hearing it as following the previous tick. That is, in chapter 2, I argue that (1) we can have wholly phenomenally immediate experience as of mere succession in a brief interval, and (2) phenomenally immediate experience as of presentness can be grounded in wholly phenomenally immediate experience as of mere succession. While *part* of what it is like to have succession perception is the phenomenology of something being phenomenally succeeded by something else, *part* of what it is like to have

presentness perception is essentially the phenomenology of something being the latest end of a phenomenal succession.

Having argued for the existence of phenomenal presentness, in chapter 3, I proceed to spell out (AEpA) in detail and establish (DR) and (Gap). (DR) is grounded in uncontroversial principles concerning introspective beliefs about mental states: one's beliefs about one's mental states are not mediated and (usually) infallible. Finally, (Gap) is grounded in a kind of explanatory gap between phenomenal A-facts and *all* B-facts. This explanatory gap is in some way similar to the one between *the mental* and *the physical*. The argument from phenomenology, if successful, shows that there are non-supervenient A-facts – this urges that the transient present be incorporated within Minkowski space-time. In the following chapters, I show how this is possible.

In chapter 4, I individuate a novel A-theoretic localism, conjunctivism, which is capable of yielding non-solipsist, non-relative presentness without commitment to built-in distant simultaneity in Minkowski space-time. Conjunctivism maintains that presentness, or “point-presentness,” is *local* and *non-relative* in that it is not hypersurface-like but point-like, and many mutually space-like separated things are point-present *simpliciter conjunctively*. In short, conjunctivism takes the relation between two co-present events not as simultaneity but as reflecting a mere *conjunction* of two facts such as “you are reading this sentence *now*” and “Curiosity is collecting samples on Mars *now*.” By these postulates, not only is conjunctivism compatible with the Einstein-Minkowski interpretation of special relativity, but it also fully respects the objectivity of standard simultaneity and the strong conventionality of simultaneity.

Nevertheless, readers may still find worrisome the idea of divorcing distant co-presentness from distant simultaneity, since the link between the two has been deemed relatively uncontroversial. In response to that, I further propose, in chapter 5, a second approach. This approach does not challenge the widely accepted idea that co-presentness entails simultaneity. Rather, this approach explores the possibility that the non-solipsism of a non-relative, A-theoretic presentness does not require at least two space-like separated things to be present *simpliciter* together. This can be done by holding *exclusive disjunctivism* –that mutually space-like separated things are present *simpliciter* exclusively disjunctively, and each one of them gets to be present *simpliciter* in a *non-successive* way (just like mutually time-like related things are present *simpliciter* exclusively disjunctively, and each one of them gets to be present *simpliciter*, but in a *successive* way). For example, in the time-like case, the fact that I am starting my car *now* and later on the fact that I am driving at 40 mph *now* obtain exclusively disjunctively. In a similar (but non-successive) way, in the space-like case, the fact that you are reading this sentence *now* and the fact that Curiosity is collecting samples on Mars *now* obtain exclusively disjunctively – if one obtains, the other doesn't. Since there is no *co-presentness* because of the exclusively disjunctive obtainment of relevant facts, the problem of global non-relative presentness or simultaneity doesn't arise.

All in all, the above chapters complete my defense of A-theory of time. However, while the primary concerns in my dissertation are whether A-theories can make their stand and whether a relativistic spacetime really has no room for A-theories, a peek at the conception of time in Eastern philosophies would be enlightening. While most writers on the nature of time trace the debate to ancient Greek philosophy, citing, for example,

Heraclitus and Parmenides, it is worth exploring the thoughts of similar precursors in the Eastern tradition. In Daoist literature, there are certain hints about the nature of time, but not much has been written on it.¹⁷ In addition, there have been very few succeeding studies of the Daoist conception of time in either the West or the East. Hence, I intend to begin to remedy that.

Daoist metaphysics, according to the mainstream interpretation both in the East and West, maintains that Dao (the descriptive, natural 道 dào^{path}, as opposed to normative, social 道 dào^{path}) is either the ultimate ground or cosmogony of all things (depending on interpretation). As Laozi puts it, “The Dao produced One; One produced Two; Two produced Three; Three produced All things” (*Dao De Jing* Ch. 42, tr. James Legge). Dao metaphysically grounds or cosmologically produces all things in the following way: Dao manifests itself first as mere possibilities, as primal nothingness (無 wú^{non-being}); Dao then manifests itself as the One, or the primal chaos (混沌 hùndùn^{undifferentiated-wholeness}); further through self-differentiation, Dao manifests itself into opposites, such as being and non-being, yin (the negative) and yang (the positive), and so on; finally, from the dialectical interaction of these opposites are formed all things (Shen 2009: 251; Chai 2014: 362). What is characteristic of Daoism is Dao’s creating all things *ex nihilo*: “Non-being is the Originator of heaven and earth; Being is the Mother of all things” (*Dao De Jing* Ch. 1, my translation).

The only explicit study of the Daoist conception of time in the English literature is Chai’s (2014). Based on the above Daoist metaphysics, Chai maintains that “human

¹⁷ The other major Eastern tradition, Buddhism, is, because of its intrinsic anti-realism, much harder to investigate with regard to the metaphysics of time.

measured time” manifested in myriad things in the Daoist universe is merely a mental construction, whereas the authentic time is cosmological time, which consists of neither an A-series (which is ordered by non-reducible pastness, presentness, and futurity) nor a B-series (which is ordered by earlier-than relations) but something without order and directionality. On the face of it, Chai’s formulation of the Daoist conception of time provides new materials or ways to re-think the Western debates on the nature of time. Hence, in the last chapter, chapter 6, I discuss whether Chai’s formulation does justice to Daoist texts and explore better interpretations of the Daoist conception of time.

Chapter 2

Phenomenal Presentness and Phenomenal Succession

1 Preliminaries

According to Robin Le Poidevin (2007:78) and Craig Callender (2008: 341), perceiving an object “as present” is nothing *phenomenologically* different from simply perceiving it.¹⁸ For example, the phenomenology of hearing a bird’s singing a note “as present” is nothing but the phenomenology of hearing a bird singing a note; likewise, the phenomenology of seeing a car’s reaching a position “as present” is nothing but the phenomenology of seeing a car reaching a position. Their arguments can be formulated as below:

(P1) Phenomenal presentness is phenomenologically significant only if some *perceptual* experiences or some *parts* of them are distinguished from others by virtue of possessing phenomenal non-presentness.

(P2) No *perceptual* experiences and no *parts* of them are distinguished from others by virtue of possessing phenomenal non-presentness (e.g., phenomenal pastness).

¹⁸ Philosophers who adopt similar views also include Hestevold (1990: 542-543), Oaklander (2004: 238), Prosser (2007: 83), etc. Even Skow (2011: 363-368), an A-theorist, is very sympathetic to this line of thought.

(C) Hence, there is no phenomenal presentness that is phenomenologically significant.

I shall call the above view and argument the “**radical B-theory**” and the “**radical B-theorist argument**” respectively.

This chapter aims to defend phenomenological significance of phenomenal presentness – perceiving something “as present” is *phenomenologically* different from simply perceiving it. The strategy is to link phenomenal presentness with perception of succession. In the literature, this linkage view seen can be traced at least back to Edmund Husserl’s (1991) work.

According to Husserl’s (1991) view on succession perception, what it is like to perceive an object *as present* is closely tied to succession perception and “retention.” To illustrate Husserl’s view, take for instance hearing a succession of notes C-D-E-F-G in a rather short interval, say 2 seconds. First we hear C with the most vivid sensation, then we hear D with the most vivid sensation (while keeping the sensation of C in a fading phase), then we hear E with the most vivid sensation (while keeping the sensations of C and D in fading phases), and so forth. That is, *succession perception* is such that there is presented in consciousness a continuous change, in which a “point of actually present sensation” (i.e., a “*primal impression*,”) continuously changes into “fading phases that pertain to the sensations belonging to earlier *nows*” (i.e., “*retentions*”) and “an always new [primal impression] continuously relieves the one that has passed over into [retention]” (Husserl 1991: 30-31, 112, 290). Apparently, to perceive an object *as present* is to have the primal impression of the object as the *source-point* of a continuous change.

Specifically, there are two ways in which perceiving something *as present* (call it “presentness perception” for simplicity), succession perception, and retention are tied together. Firstly, on the *phenomenological* level:

This reflection makes it evident that the immanent thing [e.g., the succession of note C-D-E as presented in consciousness] could not be given in its unity at all if the perceptual consciousness did not also encompass, along with the point of actually present sensation [e.g., the primal impression of E], the continuity of fading phases [e.g., the retentions of C and D] that pertain to the sensations belonging to earlier nows. (Husserl 1991: 290, underlines added.)

Secondly, on the *representational-vehicle* level, “retention itself is a now in turn, something actually existing” (Husserl 1991: 31). That is, retention is synchronically unified with the primal impression and kept in an instant state of succession perception (according to the standard interpretations such as Barry Dainton’s (2008: 375-379)). The above view is a *retentional account* of succession perception (or of the specious present, or of diachronic unity of consciousness, as succession perception is the paradigm case of these issues).

Husserl’s view is closely related to William James’ (1890) doctrine of the specious present, which maintains: “we seem to feel the interval of time as a whole” (610), “the specious present, the intuited duration, stands permanent, like the rainbow on the waterfall, with its own quality unchanged by the events that stream through it” (630), and “[i]t is only as parts of this *duration-block* that the relation of *succession* of one end to the other is perceived” (609-610). According to this doctrine, we can have phenomenally immediate experience as of duration (call it “duration perception”), and in virtue of it we can have phenomenally immediate experience as of succession. Following Husserl and

James' line of thought, it is plausible that our phenomenally immediate experiences as of presentness, succession, and duration are bound together.

A recent defense of phenomenal presentness offered by Jan Almäng (2014) also appeals to its connection to succession perception (or “perception of processes” in his terms). Almäng took as the starting point the thesis that perceptual content always presents us with processes. However, Almäng did not provide any argument to dismiss possible objections to the thesis. Reid (1855), for example, denies that we do have succession perception in any way. Rather, “[w]e see the present place of the body; we remember the successive advance it made to that place: the first can, then, only give us a conception of motion, when joined to the last” (Reid 1855: 237). This amounts to saying that we have only non-perceptual awareness as of succession. Such view is a **radical cinematic** account of succession “perception,” which disagrees with Husserl’s retentional accounts on the phenomenological level.

In general, this chapter concerns not what presentness or passage perception tells us about the fundamental temporal structure of the world, nor whether they are veridical, nor their subconscious causal mechanisms, nor the nature of their representational vehicles, but whether we do have them, and what exactly they are. Specifically, the chapter concerns the following issues. (1) Is the radical cinematic account, as opposed to the retentional (or extensional) accounts, right about our succession awareness? (2) Whether they accept or deny the existence of succession perception, can the radical B-theorists successfully sustain the non-existence of presentness perception?

In §2, I'll start with certain methodological concerns. In §3, I analyze what it is like to have succession perception, stressing the distinction between phenomenally immediate awareness as of mere succession and phenomenally immediate awareness as of smooth succession. Given this distinction, the concerns of my chapter boil down to: (1) Can our awareness as of a (mere or smooth) succession in a brief interval be wholly phenomenally immediate? (2) Can the presentness perception be grounded in (wholly) phenomenally immediate awareness as of a (mere or smooth) succession? In §4, I argue against two kinds of cinematic accounts – the radical and the moderate – and vindicate the claim that we can have wholly phenomenally immediate awareness as of mere succession in a brief interval. In §5, I explain and analyze the radical B-theorists' argument against presentness perception. In §6, I partially defend phenomenal presentness by diagnosing the weakness of phenomenal presentness, analyzing the flaws in the radical B-theorist lines of thought, and suggesting possible responses to them.

In §7, I argue that phenomenal succession (i.e., the distinguishing phenomenal feature of phenomenally immediate awareness as of mere succession) is itself a structure, and that the phenomenal property of being the latest end of phenomenal succession is a component of the putative phenomenal presentness. It follows from these two premises, if successful, that there is phenomenal presentness. So to speak, it may be controversial to say we perceive events as past as opposed to present in the case of succession perception, but we can certainly say we have phenomenally immediate experiences *as of* something being succeeded by another, as opposed to the phenomenally immediate experiences *as of* something being the latest end of phenomenal succession. Hence, in light of what it is like to have succession perception, we can have a clear sense of what it is like to feel

presentness: a component of it is essentially the phenomenology of something being the latest end of phenomenal succession.

Finally, in §8, some further concerns will be addressed, and, in §9, the theoretical import of phenomenal presentness on the debates over the temporal structure of the world will be outlined.

In sum, my account of phenomenal presentness is, though similar to the Husserlian account, much less committal – it is purely and minimally phenomenological in the way that it is free of any commitment about A-theoretic pastness, the representational vehicle, and phenomenal smoothness (i.e., the distinguishing phenomenal feature of phenomenally immediate awareness as of smooth succession). What phenomenal presentness requires is only phenomenal succession, the existence of which even radical B-theorists such as Le Poidevin cannot reasonably deny. For this reason, my approach is distinct from Husserl's retentive or Dainton's extensional ones, and certainly not a defense of them. The debates in the literature, while focusing on the phenomenally immediate awareness as of smooth succession, overlook the significance of the phenomenally immediate awareness as of mere succession: this alone is enough to render the awareness as of presentness phenomenally immediate.

2 Methodological Concerns

In this section, I shall firstly clarify the kind of temporal experience this chapter focuses on. Then, I shall clarify how we can focus on the phenomenology of immediate temporal experience without committing ourselves to a particular view concerning other aspects of temporal experience. Lastly, I shall explain the motivation for talking about the

phenomenology or the phenomenal character of phenomenally immediate temporal experience and why it does not commit one to the truth or falsity of representationalism about phenomenal characters.

As Jenann Ismael (2011) suggested, our temporal experience in the broadest sense includes current perceptual retention about the immediate past, immediate experience about the present, current perceptual protention about the immediate future, short term or long term memory, propositional expectation, differentiated emotional attitudes towards the past and the future, etc. However, this chapter focuses only on the most robust and phenomenally immediate temporal experiences (excluding protention for reasons explained in §3): the phenomenally immediate experience as of presentness (i.e., presentness perception), and the phenomenally immediate experience as of succession (i.e., succession perception), which are thought by many (e.g., Le Poidevin 2007: 87, Ismael 2011: 464, Dainton 2011: 385, and Prosser 2012: 95) to contribute to the phenomenally immediate experiences as of temporal passage (call it “passage perception”).

Many think that presentness or passage perception is best explained by the A-theory of time, the view that there is an objective presentness or temporal passage in terms of temporary non-relative A-facts or temporary monadic A-properties. However, this thought does not have to be the case. B-theories, being the views against the A-theory, can also provide good B-theoretic explanations for presentness or passage perception on the following levels: phenomenology, content, veridicality, representational vehicles, or subconscious causal mechanisms.

It is crucial to distinguish the above different levels on which an account operates. As Ismael (2011: 463) puts it, the confusion between representational content and representational vehicle often occurs when it comes to temporal experience. Usually, A-theorists and B-theorists can agree on some levels but disagree on others – in other words, one can usually focus on some level independently, without commitment regarding another level. For example, most B-theorists (e.g., Grünbaum 1973: 325; Mellor 1998: 17; Le Poidevin 2007: 87; Paul 2010: 353; Ismael 2011: 464; Dainton 2011: 385; Prosser 2012: 95; Deng 2013a: 373; Oaklander 2014: 12) agree that, phenomenologically speaking, we do have succession perception, although their lines of accounts diverge from Husserl's in one way or another. For example, Dainton (2008) holds an *extensional account* of temporal consciousness, which can be extended to explain succession perception. According to Dainton (2008: 366), “our awareness seemingly manages to extend through time ... [because] *consciousness itself* spans a brief temporal interval.” That is, an extensional account and Husserl's retentional account can largely agree on the phenomenology of succession perception but disagree on the representational-vehicle level. Laurie A. Paul (2010) maintains a B-theoretic account of the subconscious causal mechanisms of passage perception, which can also be extended to explain succession perception. Paul (2010: 352) holds that “experience as of passage ... 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.” Apparently, Paul's line of accounts can agree with Husserl's retentional account on both the phenomenology and the representational-vehicle of succession perception.

Finally, I shall turn to explain the motivation for talking about the phenomenology or the phenomenal character of phenomenally immediate temporal experience.

Once again, our phenomenally immediate experience as of presentness or temporal passage as described by Husserl has led some to think they are best explained by the reality of presentness or temporal passage in the A-theoretic sense, regarding what causes them or makes them veridical. This line of reasoning is traditionally called “the argument from experience” for A-theories of time. Philosophers more or less along this line include Smith (1994: 357-358), Craig (2000a: 133, 2000b: 176), Dolev (2014: 41), Brogaard & Gatzia (2015: 261), etc. The strongest case for arguing from experience for A-theories is the combination of the following thoughts: perception is generally veridical, phenomenal characters are exhausted by representational contents (Strong Representationalism), and perceptual content consists of objects and their properties without the mode of presentation (Content Russellianism).

To counter the above line of reasoning for A-theories, B-theorists tend to talk about phenomenology: we do have the phenomenally immediate experience *as if* there is presentness or temporal passage, but there is in fact no presentness or temporal passage in the A-theoretic sense. To make their case, B-theorists provide alternative accounts of the contents, veridicality-conditions, and causal mechanisms of these temporal experiences. (Some of these accounts still render these temporal experiences veridical.)

For those B-theorists who deny the existence of presentness or passage perception, talking about phenomenal characters is even more inevitable. The non-existence of an object is not a sufficient reason for the non-existence of the experience as of the object;

for, otherwise, no hallucination is possible. Since B-theorists hold that mind-independent presentness or temporal passage in the A-theoretic sense doesn't exist, they cannot explain the non-existence of presentness or passage perception without paying attention to the phenomenal character of experience.

Since this chapter concerns whether there is presentness or passage perception, the best way to frame the issues is to, on a par with the B-theorists, talk about phenomenology. However, this phenomenology talk does not commit one to the truth or falsity of representationalism about phenomenal characters because no claims shall be made about whether phenomenal presentness or any other phenomenal characters can be exhausted by representational contents, be it A-theoretic or B-theoretic.

3 Phenomenologies of the Phenomenally Immediate Awareness as of Succession

Phenomenally immediate awareness such as seeing a second hand sweeping around a clock, or hearing someone singing a song, or feeling ants running down our arms, or feeling ourselves stretching our limbs, can all be called "succession awareness." Below, I characterize phenomenologies (or phenomenal characters) that distinguish the phenomenally immediate awareness as of succession perception from other kinds of experiences. However, my characterization will not employ "protention" in Husserl's terms but only focus on the primal impression and retention because, as it will become clear in the following sections, my views do not rely on there being protention. Moreover, protention is, though a *perceptual* component of both Husserl's succession perception and James' specious present, different from primal impression and retention in one

crucial respect – protention, being perceptual expectation, is corrigible by primal impression when a perceptual expectation turns out different from what actually happens.

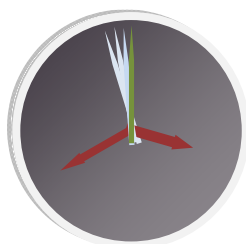


Figure 1. The experience of “seeing” the movement of a second hand in 3 seconds. Seeing a second hand as moving is distinct from “seeing” that an hour hand “has moved.” (The darkest second hand represents how the second hand appears in consciousness at an instant; the lighter second hands represent the awareness, at this instant, of the second hand’s changing its position successively.)

Many have agreed that succession awareness such as seeing a second hand *as moving* is distinct from experiences such as “seeing” that an hour hand has moved (e.g., Broad 1923: 351; Kelly 2005a: 223; Le Poidevin 2007: 87). Also, this kind of succession awareness is alleged to be like color perception in the way C. D. Broad characterizes:

I am aware of [sensible motion] as directly as I am aware of the redness of a red patch. (Broad 1923: 287)

It follows from the above two phenomenological data that, in certain respects, seeing a second hand *as moving* is unlike “seeing” that an hour hand has moved but more like seeing an apple *as red*. There may be a sense in which we arguably “see” an hour hand *as moving*, but this “seeing” certainly involves conscious recollection of the earlier position of the hour hand and conscious exercise of cognitive abilities such as comparison and inference. By contrast, seeing an apple *as red* is *simply given* and *not consciously mediated by recollection or inference*. As Le Poidevin explicitly states,

There is nothing inferential, it seems, about the perception of change and motion: it is simply given in experience. (Le Poidevin 2007: 87)

In this regard, seeing a second hand *as moving* is like seeing an apple *as red*. Hence, the phenomenology of this kind of succession awareness is genuinely *perceptual* just as the phenomenology of color awareness is, for both kinds of awareness are *phenomenally immediate* (i.e., not consciously mediated by recollection or inference) and *simply given*. This phenomenal character, which distinguishes the kind of succession awareness such as seeing a second hand *as moving* from the experiences such as “seeing” that an hour hand has moved, shall be called “**phenomenal immediacy**.” Because of phenomenal immediacy, the kind of succession awareness such as seeing a second hand *as moving* can genuinely be called “succession *perception*.” (One may object that the kind of succession awareness in question is not *wholly* phenomenally immediate. This will be dealt with in the next section.)

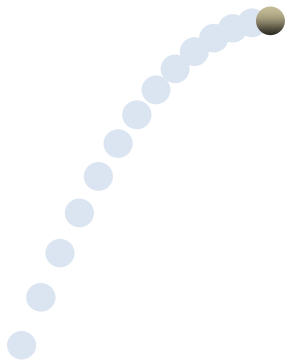


Figure 2. The experience of “seeing” the movement of a shot basketball in 0.5 - 1 seconds. Part of what it is to see the ball as moving is to see its movement as occupying successive positions as opposed to occurring all at once. (The darkest sphere represents how the basketball appears in consciousness at an instant; the lighter spheres represent the awareness, at this instant, of the basketball’s changing its position successively.)

Motion awareness involves succession awareness, which possesses another phenomenal character that separates it from experiences such as seeing the movement of a cannonball as “occurring all at once” in Kelly’s (2005a: 223) terms. Or, as Le Poidevin characterizes,

[I]n motion perception ... we see an object occupying successive positions.

We must see these as non-simultaneous, for otherwise we would just see a blur. (Le Poidevin 2007: 87)

We may arguably say, in some sense, that we represent a cannonball “as moving,” but what it is like to see a cannonball “as moving” is nothing but seeing a blur. In contrast, what it is like to see a second hand as moving is to see it as occupying various positions *successively* as opposed to *all at once*. Likewise, what it is like to hear a melody as changing is to hear it as having various notes *successively* as opposed to all at once. This phenomenal feature of perceiving something as undergoing several successive phases shall be called “**phenomenal succession.**”

Although it is widely accepted that the awareness of a succession in a brief interval, say 0.5 to 3 seconds, can be wholly phenomenally immediate, radical cinematic theorists like Reid (1855: 236-237) and Dennett (1991: 355-356) object that we falsely believe that we see the whole succession while, actually, we only see the latest, instantaneous part of the succession – it is our memories of the experiences of the earlier parts that give rise to our phenomenally *mediated* awareness of the earlier parts as we see the latest, instantaneous part. (More on this in the next section.)

Since succession takes time, or at least *seems* to take time, succession perception involves duration perception, which is characterized by many as having **phenomenal duration** (or **phenomenal time spans**, in particular instances). If we can have wholly phenomenally immediate awareness as of succession, then this phenomenal duration is very *limited*, and constrained by phenomenal immediacy; for it is certainly not the case

that my, say, auditory experience of a melody's prelude 5 minutes ago is still part of my current perception of the melody's ending, which is phenomenally immediate and simply given. The time span of a *physical* process that can be grasped by a token perception of succession is generally agreed to vary from 0.5 to 3 seconds among contemporary researchers and philosophers (Gallagher 2011; Kelly 2005b). Phenomenal duration and phenomenal succession are closely tied: the length of the latter is limited by the former, and the former can be divided into successive stages in accordance with the latter. Take for instance hearing a succession of notes, B-C-D-E-F, in an interval of 5 seconds. On the one hand, the only phenomenally immediate experiences halfway through the interval would be that of hearing C, D, and E.¹⁹ On the other, this phenomenal time span is divided into three successive stages, each including the experience of C, D, and E respectively.

As many have agreed (e.g., James 1890: 628; Husserl 1991: 29, 40; Broad 1923: 287; Smith 1994; Craig 2000a: 143; Grünbaum 1973: 325; Kelly 2005a; Le Poidevin 2007: 87; Prosser 2012: 95; Paul 2010: 348; Ismael 2011: 464; Deng 2013a: 378; Oaklander 2014: 12; Dainton 2011: 385), succession perception has the following distinctive feature:

Phenomenal Unity of Succession Perception: "*A succession of feelings, in and of itself, is not a feeling of succession.*" (James 1890: 628).

That is, there is something that it is like to have a unified perceptual experience as of a succession, which is not a *mere* succession of one experience of a momentary stage of the succession after another experience of such kind.

¹⁹ Suppose that this motion perception is veridical.

The phenomenal unity of succession perception is usually argued in the following way. What it is like to have *mere* succession of experiences of momentary motion stages is like watching a *very slow slideshow* of the successive still images originally played for a motion picture. By contrast, watching the *motion picture* has an additional phenomenology that is missing in watching the *very slow slideshow*: the phenomenology of *continuous, steady, smooth motion*. This illusion of motion, which Paul (2010: 348) refers to as “apparent motion,” is phenomenally indistinguishable from the perception of a concrete moving object with regard to the features of motion. Hence, the thing that it is like to have a *unified* perceptual experience as of succession and is missing in a *mere* succession of experiences of momentary motion stages is (at least in part) this phenomenology of *continuous, steady, smooth motion*. I shall call this additional phenomenology “**phenomenal smoothness**.”²⁰ Phenomenal smoothness also receives support from neuropathology: as Dainton (2008: 364) mentions, damage to the visual cortex, V5, causes the subject, L. M., to suffer *cerebral akinetopsia* so that the subject is unable to perceive motion in a smooth, continuous manner.

To better understand phenomenal smoothness, I think it can be characterized as the phenomenology that there is no noticeable gap in between any two stages of a token awareness as of motion, and that any *noticeable* change in transition from one thin stage to its adjacent thin stage is *continuously gradual* (or, in a sense, *differentiable*, if we treat the change over time as a function). For example, while in the phenomenology of watching the *motion picture* there is no blackout in between any two stages (aside from artistic montage), this is usually not the case with the phenomenology of watching a *very*

²⁰ It is so called instead of “phenomenal continuity” in order to distinguish itself from the continuity of the stream of consciousness.

slow slideshow. In addition, any noticeable change over two adjacent thin stages in the former is nothing like that in the latter – with a very slow slideshow, there is either no *noticeable* change at all, or the change is a “leap,” depending on the original “FPS” (frames per second).

Phenomenal smoothness is strong evidence for the phenomenal unity of succession perception, characteristic of motion perception, and thought to be what mimics the dynamicity of temporal passage. Possibly because of this, debates in the literature focus on phenomenal smoothness. Philosophers who deny there being such phenomenology include Hoerl (2014: 196-197) and radical cinematic theorists like Reid (1855: 236-237) and Dennett (1991: 355-356).

It is crucial to distinguish among three kinds of experiences: *mere succession of phenomenally immediate experiences*, *phenomenally immediate experience as of mere succession* (i.e., as of *change*), and *phenomenally immediate experience as of smooth succession* (i.e., as of *motion*). Writers in the literature often overlook the significance of the second kind, which shall become clearer as we proceed. (For those like the radical cinematic theorists who deny we can have wholly phenomenally immediate awareness as of succession, there is no difference between mere succession of phenomenally immediate experiences and phenomenally immediate experience as of mere succession.)

Phenomenally immediate experience as of mere succession has phenomenal immediacy and phenomenal succession but not phenomenal smoothness. For example, a mere succession of phenomenally immediate experiences is like “seeing” that an hour hand has moved (or watching a very slow slide show with 0.5 FPS); a phenomenally

immediate experience as of mere succession is like watching a second hand moving in individual ticks (or watching a montage in a motion picture); a phenomenally immediate experience as of smooth succession is like watching a second hand in a smoothly sweeping motion (or watching a motion picture without montage). In other words, unlike in a mere succession of phenomenally immediate experiences, a phenomenally immediate experience as of mere succession is wholly phenomenally immediate; unlike a phenomenally immediate experience as of smooth succession, the phenomenology of a phenomenally immediate experience as of mere succession is gappy.

Given the above distinction, the concerns of my chapter narrow down to: (1) Can our awareness as of a (mere or smooth) succession in a brief interval be wholly phenomenally immediate? (2) Can the presentness perception be grounded in (wholly) phenomenally immediate awareness as of a (mere or smooth) succession?

In what follows, I shall use “*the succession phenomenologies*” to include phenomenal immediacy, succession, limited duration, unity, and smoothness. Ideally, regardless of the objections to the existence of a particular succession phenomenology, the succession phenomenologies are interconnected in the following ways. Phenomenal succession comes with limited phenomenal duration. It is the successive contents in a phenomenal time span on which the phenomenal unity operates. Allegedly, it is also these successive contents in the phenomenal time span that are phenomenally immediate and smooth. Because of the phenomenal *unity* of succession perception, we can truly talk about a *token* perception of succession (or “a” perceptual experience as of succession). Because of the phenomenal *immediacy* of succession perception, we can truly talk about a token *perception* of succession.

4 We Have Indeed Wholly Phenomenally Immediate Awareness as of Mere Succession

In contrast with the writers in the literature who focus on phenomenal smoothness, my attention in this section is on phenomenal succession. Hoerl (2014: 196-197) maintains that we do have phenomenally immediate experience as of duration or mere succession while there is no phenomenal smoothness. Like Hoerl, I argue below that our awareness as of a succession in a brief interval can be wholly phenomenally immediate, with or without phenomenal smoothness, but I am not committed to the non-existence of phenomenal smoothness.

According to the radical cinematic theorists, Reid (1855: 236-237) and Dennett (1991: 355-356), we have only phenomenally mediated awareness as of succession, whether mere or smooth:

We falsely believe that we perceive a whole succession in a brief interval, but actually we perceive only the latest, instantaneous stage of the succession – it is our memories of the experiences of the earlier stages that give rise to our *phenomenally mediated* awareness of the earlier stages as we perceive the latest, instantaneous stage.

This story is tantamount to saying that there is a sharp boundary dividing the awareness as of the succession into two parts with regard to their phenomenology: a very thick phenomenally mediated part and a very thin phenomenally immediate part. If only the latest, instantaneous part of a succession can be experienced with phenomenal immediacy,

then the awareness as of the (whole) succession, whether mere or smooth, cannot legitimately be regarded as wholly phenomenally immediate. (See Figure 3.)

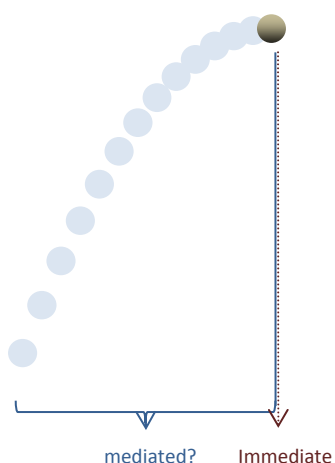


Figure 3. Is the earlier part of the awareness of a succession in a brief interval phenomenally mediated in the same way the awareness that an hour hand has moved is? Or is the whole awareness phenomenally immediate? (This figure illustrates a token experience of “seeing” the movement of a shot basketball in 0.5 - 1 seconds. The darkest sphere represents how the basketball appears in consciousness at an instant; the lighter spheres represent the awareness, at this instant, of the basketball’s changing its position successively; according to phenomenal smoothness, supposedly, there are infinitely many spheres in between any two spheres in a continuous manner, but cannot all be drawn here.)

However, firstly, could it be that we did perform recollection and inference but falsely believed that we didn’t and thereby falsely believed that our awareness as of, say, a second hand’s movement was phenomenally immediate? No, because it is a widely accepted principle that our beliefs about the content of our current mental states are generally right. It is a much better explanation that, in succession perception, we simply undergo *subconscious* information processing involving memory rather than falsely believing that we didn’t perform *conscious* recollection and inference. Many have agreed that *subconscious* information processing gives rise to various kinds of perception. Nonetheless, it doesn’t follow that the legitimacy should be diminished of these kinds of phenomenally immediate awareness being *phenomenally immediate*. For an example, see Figure 4 below.

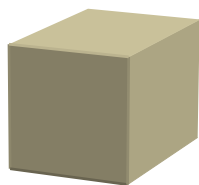


Figure 4. Subconscious information processing arguably plays a role in “seeing” an object as a 3-D cube as opposed to three 2-D quadrilaterals. Nevertheless, “seeing” an object as a 3-D cube is still phenomenally immediate and thereby perceptual.

Secondly, for those who are committed to phenomenal smoothness, I can offer a sophisticated way of grounding the phenomenal immediacy of the awareness as of a succession. Recall that phenomenal smoothness is the phenomenology that there is no noticeable gap in between any two stages of a token awareness as of a succession, and that any *noticeable* change in transition from one thin stage to its adjacent thin stage is *continuously gradual* (or, in a sense, *differentiable*, if we treat the change over time as a function). Hence, while the phenomenology of continuity and smoothness is in operation, successive stages of succession awareness cannot be divided by a sharp boundary into two discrete, sharply contrasting parts *with regard to its phenomenology*, for otherwise there would be a phenomenological leap in transition from one part to the other.²¹ Now, it is generally acknowledged that the contrast is sharp between what’s phenomenally immediate and what’s not. For instance, seeing an apple is phenomenally distinct from consciously recalling the visual experience of the apple with regard to phenomenal immediacy. Therefore, it cannot be the case that the awareness of the succession of, say, a second hand’s being in different positions in a brief interval has a *phenomenally immediate*, thin part while the remaining, thick part is *not* phenomenally immediate, for

²¹ Once again, there may be a sharp distinction between parts of a token awareness of motion with respect to its *causal* aspects. For instance, cinematic theorists may argue that the earlier stages of the token awareness, to which short-term memory gives rise, have a very different causal ground from that of the latest, momentary stage of the token awareness, which is grounded in direct perception. However, what are at issue here are the *phenomenological* aspects of motion awareness.

otherwise there would be a phenomenological “leap” in transition from the thick part to the thin part. Thus, when phenomenal immediacy and smoothness are effective, our awareness as of a succession in a brief interval must be wholly phenomenally immediate.

Thirdly, for those who are not committed to there being phenomenal smoothness, I can also offer you a smoothness-independent argument for the phenomenal immediacy of the awareness as of mere succession. As described in the previous section, our phenomenally immediate awareness as of mere succession is like seeing a second hand moving in *individual ticks* (or watching a montage in a motion picture) – it is unlike seeing a second hand in a smoothly sweeping motion (or watching a motion picture without montage) because it lacks phenomenal smoothness, and it is unlike “seeing” that an hour hand has moved (or watching a very slow slide show with 0.5 FPS) because it is wholly phenomenally immediate. There certainly is a phenomenological difference between seeing a second hand moving in *individual ticks* and “seeing” that an hour hand has moved – phenomenal immediacy is the only candidate explanation for the difference. (This line of argument is similar to Hoerl’s (2014: 196-197).)

In contrast with the radical cinematic account, Robin Le Poidevin’s (2007) moderate cinematic account maintains:

Our (short-term) memory of the earlier stages of a succession works only *subconsciously* to give rise to our *phenomenally immediate* awareness as of succession.

This was confirmed by Le Poidevin in a private correspondence and in accordance with his (2007: 91) claim, “the experience of succession is not consciously inferential.” The

way Le Poidevin (2007: 89) retains a *cinematic* account is to assert an impression of *snapshot-like* pure motion that does not require an awareness as of a succession. This impression of *snapshot-like* pure motion is like the impression of speed in terms of instantaneous velocity rather than average speed. The impression of pure motion allegedly explains phenomenal smoothness and the phenomenological difference between the awareness of a second hand's movement and that of an hour hand's: the second hand, but not the hour hand, triggers the impression of pure motion.

However, what's at issue here is whether our awareness as of *mere* succession is wholly phenomenally immediate, and whether Le Poidevin's cinematic account can adequately explain the phenomenological difference between watching a second hand moving in *individual ticks* and "seeing" that an hour hand has moved. Per Le Poidevin's account, our awareness as of *mere* succession is wholly phenomenally immediate, but if the content of it is temporally extended then Le Poidevin's account becomes *non-cinematic*; if, on the other hand, the content of it is not temporally extended then Le Poidevin's account is conceptually incoherent and phenomenologically inadequate. Conceptually speaking, temporally non-extended succession does not make sense: mere succession or change involves at least two relata – an earlier stage and a later stage – and having two relata is what it takes for a succession to be temporally extended. Pure motion in terms of instantaneous velocity need not involve duration, but succession does. Phenomenologically speaking, the difference between seeing that a second hand moving in individual ticks has moved and "seeing" that an hour hand has moved is just that we see the temporally extended succession of the second hand's positions but not of the hour hand's.

In sum, I think, our experience as of mere succession that has phenomenal immediacy and duration can be vindicated.

5 The Radical B-Theory of Presentness Perception

While many more B-theorists agree that we do have succession or passage perception than disagree, many more B-theorists explicitly deny that we have presentness perception than explicitly accept it. Those who deny the existence of presentness perception include Hestevold (1990: 542-543), Mellor (1998: 16), Oaklander (2004: 238), Le Poidevin (2007:78), Prosser (2007: 83), Callender (2008: 341).²² According to them, perceiving an event “as present” is nothing *phenomenologically* different from simply perceiving it. For example, the phenomenology of hearing a bird’s singing a note “as present” is just the phenomenology of hearing a bird singing a note; likewise, the phenomenology of seeing a car’s reaching a position “as present” is just the phenomenology of seeing a car reaching a position. So to speak, there is no phenomenal presentness in our phenomenally immediate awareness. Their arguments can generally be formulated as below:

(P1) Phenomenal presentness is phenomenologically significant only if some *phenomenally immediate* experiences or some *parts* of them are distinguished from others by virtue of possessing phenomenal non-presentness.

(P2) No *phenomenally immediate* experiences and no *parts* of them are distinguished from others by virtue of possessing phenomenal non-presentness.

²² “But the A-times of experiences we do perceive” (Mellor 1998: 41).

(C) Hence, there is no phenomenal presentness that is phenomenologically significant.

I shall call this argument the “**radical B-theorist argument.**”

(P1) seems fair. A phenomenal property is phenomenologically significant only when, by virtue of possessing or lacking it, some perceptual experiences are distinguished from others, or some aspects of perceptual experiences are distinguished from other aspects. Likewise, phenomenal presentness, if it exists, should serve the distinguishing role that phenomenal loudness does in distinguishing louder experiences from quieter experiences, or that phenomenal redness does in distinguishing parts of my visual field from other non-red parts (Hestevold 1990: 542-543; Callender 2008: 342; Le Poidevin 2013: 248).

(P2) is also obvious for those radical B-theorists. For instance, Le Poidevin claims that we cannot make sense of perceiving something even “as past,” not to mention “as future,” for whatever “feeling of pastness” we might have “seems to be nothing more than a belief that the event in question is past” (2007: 78). To illustrate this point, Le Poidevin utilizes the example of hearing a thunderclap: “we might hear some distant event (a thunderclap, for instance), and, realizing that sound only travels at finite speed, believe that the event itself happened a while ago (especially if we saw the associated lighting flash a few seconds ago), but this is not to hear it as past” (2007: 78). That is, according to Le Poidevin, we can never *perceive* things “as past” but only *believe* things to be “past.”

Following (P2), the consequent of (P1) is negated. We can therefore conclude (C): perceiving something “as present” is phenomenologically redundant. Whether they

accept or deny the existence of succession perception, can radical B-theorists successfully sustain the non-existence of phenomenal presentness? In what follows, I shall firstly criticize (P1) and then refute (P2).

6 Mitigating the Challenge – a Diagnosis

I think the above radical B-theory of temporal phenomenology is, after all, wrong. But in this section, I only partially defend phenomenal presentness by diagnosing the weakness of phenomenal presentness, analyzing the flaws in the radical B-theorist lines of thought, and suggesting possible responses to them.

First of all, the motivation behind the skepticism about phenomenal presentness may be the contention that the difficulty of characterizing phenomenal presentness in a theoretical way can discredit phenomenal presentness. When contemplating what phenomenal presentness is or how it can be theoretically spelled out, our pre-theoretical characterizations of it (such as those introduced in §1) do not help; for, if we focus on phenomenal properties of our perceptual experiences, then we would find that “[we] don't perceive a stamp of presentness on any experience” (Callender 2008: 341). For instance, when *seeing* a car's traveling around a roundabout, we may think there is no phenomenal presentness but *visual* phenomenologies, because we see size, color, shape, texture, location, etc. and yet we don't 'see' presentness. Since we don't perceive presentness, its existence is doubtful.

It is quite fair that the realists about phenomenal presentness have a burden of characterizing what phenomenal presentness is in a theoretical way. But on the other hand, it is just the way phenomenal presentness should be that we don't 'see' presentness

like we see size and shape, for, if we do, we probably couldn't hear anything as present just as we can't hear anything as round. So to speak, phenomenal presentness, if it exists, is not modality-specific but *ubiquitous*. If it is the ubiquity of phenomenal presentness that makes it difficult to characterize, then the difficulty of characterization shouldn't be a reason to claim that phenomenal presentness doesn't exist.

Furthermore, not only does the difficulty of characterizing phenomenal presentness not entail its non-existence, neither should its ubiquity entail its non-existence. In other words, even if it is true that every experience possesses only phenomenal presentness, it doesn't follow that phenomenal presentness should be eliminated, just as the property of being identical with oneself shouldn't be eliminated for that fact that everything is identical with itself.²³ That is, (P1) is not as plausible as it appears to be.

There is another reason why (P1) is not entirely convincing. Were it true that no *perceptual* experiences and no *parts* of them are distinguished from others by virtue of possessing phenomenal non-presentness, it still wouldn't be *necessarily* true. Even if phenomenal presentness played no phenomenological role in distinguishing experiences, it could still have *possible* phenomenological functions. It is at least not conceptually ruled out that we couldn't perceive things as past or future. That is, phenomenal presentness has at least *possible* functions to distinguish these possible experiences. These possible functions are surely not a reason for the actual existence of phenomenal presentness, but neither is lack of actual functions a reason for the non-existence of phenomenal presentness.

²³ As will soon become clear, it is not even true that every experience possesses phenomenal presentness.

Even though the difficulty of characterizing phenomenal presentness doesn't entail its non-existence, the difficulty itself remains a problem. Moreover, this difficulty is linked to the issues concerning the phenomenal contrastability or distinguishability of phenomenal presentness, if it exists. If we can spell out what phenomenal presentness is, then we would be able to find phenomenal non-presentness in our experiences. Or, if we can identify phenomenal non-presentness in our experiences, then by virtue of it we can characterize what phenomenal presentness is. In what follows, therefore, I will focus on seeking phenomenal non-presentness, which can serve as a counterexample to (P2). A possible counterexample to (P2) would be a token *perception* that has (at least) two parts possessing phenomenal presentness and non-presentness respectively, just like a token visual experience possessing a phenomenally red part and phenomenally non-red, say blue, parts. This brings us to perception of motion (and change), which has phenomenal temporal width and hence allows room for both phenomenal presentness and non-presentness to be accommodated. But what is motion perception?

7 Phenomenal Succession and Phenomenal Presentness

In general, my purely and minimally phenomenological approach, grounded on merely the succession phenomenologies, is to link the putative phenomenal presentness with phenomenal succession in succession perception. Specifically, realism about phenomenal presentness can be sustained through the following argument, which is established entirely on the grounds of the succession phenomenologies:

(PP1) There is phenomenal succession, which is itself a kind of structure.

(PP2) The phenomenal property of being the latest end of phenomenal succession is a component of the phenomenal presentness.

Therefore, (C) there is phenomenal presentness.

Below, I illustrate the grounds of this argument.

Firstly, as I have argued in §4, we do have wholly phenomenally immediate awareness as of mere succession. The phenomenal immediacy exhibited in such awareness is crucial to sustaining that there is a phenomenally significant character of *perceiving* something *as present*. Specifically, what is to be vindicated is not only there being awareness as of presentness, but also this awareness' being phenomenally immediate. It follows that, in order to dismiss (P2)'s threat to phenomenal presentness, the awareness as of non-presentness, which is to be contrasted with the awareness as of phenomenal presentness, has to be phenomenally immediate as well. Hence, it is crucial that our awareness as of mere succession, which has phenomenal duration and, hence, room to house both phenomenal presentness and the putative phenomenal non-presentness, is wholly phenomenally immediate.

Secondly, I shall explain why phenomenal succession is itself a kind of structure. Recall that phenomenal succession is the phenomenal feature of, say, seeing a second hand's movement *as occupying successive positions*, as opposed to occurring all at once. It is not inconspicuous that this phenomenal succession exhibits a structure. When seeing an apple, the experience's phenomenal properties, such as phenomenal redness, greenness, circularity, smallness, etc., can exhibit phenomenally spatial structures. Likewise, phenomenologies of succession perception can exhibit phenomenally temporal

structures.²⁴ In particular, phenomenal succession is itself one kind of structure. For instance, when hearing a succession of notes, C-D-E, in a rather brief interval, a **phenomenal succession structure** is exemplified by the experiences of C, D, and E standing in **phenomenal succession relations** – i.e., the experience of C being phenomenally succeeded by the experience of D, and the experience of D being phenomenally succeeded by the experience of E.^{25,26} This particular, ordered sequence of the experiences of C, D, and E shall be called a “**phenomenal succession instance**,” which exemplifies phenomenal succession. (To be clear, I shall just use “phenomenal succession” instead of “a phenomenal succession structure” when no emphasis is needed, and, likewise, “a phenomenal succession” instead of “a phenomenal succession instance.”)

Before moving on, it’s worth pointing out certain phenomenological facts about phenomenal succession structures and instances in the light of the nature of succession perception. (1) Phenomenal succession structures are one-dimensional, since parts of an instance are ordered by phenomenal succession relations. (2) Because a token perception of succession can grasp a physical process of only a limited duration, phenomenal succession structures (as well as their instances) have limited length.²⁷ (3) A phenomenal succession structure has asymmetric ends: the earlier, vague end and the latest, determinate end. The vagueness of the earlier boundary is exhibited in the indeterminate phenomenal duration of a phenomenal succession instance in practice. (4) A phenomenal succession structure is dynamic in the following sense: it is usually sequentially

²⁴ It is widely acknowledged that space and time are equally fundamental of our perceiving or understanding the world. Thus, discriminative attitudes toward there being phenomenal temporal structures would need a very strong justification.

²⁵ Suppose that this succession perception is veridical.

²⁶ Note that phenomenal succession structure does not presuppose phenomenal smoothness.

²⁷ I avoided saying a phenomenal succession instance has limited ‘parts,’ because there may be infinitely many parts, depending on how we individuate experiences, in a phenomenal succession instance.

exemplified by a series of ordered, overlapping instances. For example, when hearing a succession of notes, A-B-C-D-E-F-G, in an interval of 5 seconds, a phenomenal succession structure of this auditory experience is sequentially exemplified by the instances, {a, b, c, d}, {b, c, d, e}, {c, d, e, f}, and {d, e, f, g} (where “a” stands for the experience of A, “b” stands for the experience of B, and so on). Metaphorically, a phenomenal succession structure can keep “refreshing” its instances as if it “has experience members,” as if earlier members keep dropping out while new ones keep popping up. (5) Phenomenal succession structures can have different length. Consider the above example again. At first, a phenomenal succession structure is exemplified by a one-part instance, {a}, and then another structure is exemplified by an overlapping two-part instance, {a, b}, and so forth. In a sense, a phenomenal succession structure can “grow” longer and longer as its length limit allows. Finally, (6) the same particular phenomenal succession structure might be found in different series of ordered, overlapping instances. For example, when hearing a succession of notes, A-B-C-D-E-F-G, in one occasion and hearing a different succession, B-A-D-C-F-E-G, in another, our auditory experiences may share the same phenomenal succession structure, {x, y, z, u}, where “x” designates an experience of a note, “y” designates another, and so on. Now, it should be clear that phenomenal succession is itself a kind of structure.

Now, what is phenomenal succession’s import on phenomenal presentness, which leads to (PP2)? According to Husserl’s line of thought, introduced in §1, our phenomenally immediate experiences as of presentness, motion, (mere) succession, and duration are bound together. Take for instance hearing a succession of notes C-D-E in a brief interval, the succession as presented in consciousness could not be given in its unity

if the perceptual consciousness did not also encompass, along with the primal impression of E, the continuity of the retentions of C and D (Husserl 1991: 290). Apparently, to perceive E *as present* is to have the primal impression of E as opposed to the retentions of C and D. On the face value, this suffices to produce a clear sense of what it is like to perceive something as present. However, this Husserlian account of phenomenal presentness may raise certain worries.

On Husserl's account, retention is "consciousness of what has just been" – i.e., the content of retention is what is past (Husserl 1991: 34). But how are we to spell out this "pastness" content? Does it represent a monadic, fundamental, A-theoretic property? Is this A-theoretic property really represented in succession perception? This Husserlian account of phenomenal presentness/pastness seems to say too much. Moreover, this account comes at a cost on the *representational-vehicle* level: retention is synchronically unified with the primal impression and kept in a momentary state of motion perception (according to the standard interpretations such as Dainton's (2008: 375-379)). In addition, the Husserlian account of phenomenal presentness/pastness may require the existence of phenomenal smoothness since, according to Husserl, what's presented in consciousness besides the primal impression of E when hearing a succession of note C-D-E is the "continuous" change from the retention of C to the primal impression of E (Husserl 1991: 290). Again, these seem to assume too much.

My account of phenomenal presentness is, though similar to the above Husserlian account, much less committal – it is purely and minimally phenomenological in that it is free of any commitment about A-theoretic pastness, the representational vehicle, and phenomenal smoothness. What phenomenal presentness requires is only phenomenal

succession, the existence of which even radical B-theorists such as Le Poidevin cannot reasonably deny (as argued in §4). More specifically, a *component* of what it is like to feel presentness is just the phenomenal property of **being the latest end of phenomenal succession**. (Protention is excluded from this picture for the reasons below.) Consider again the example of hearing a succession of notes, C-D-E, the parts of this token perception stand in phenomenal succession relations and thereby exhibit a phenomenal succession structure. A component of what it is to hear E *as present* is to have the experience-of-E being the latest end of this phenomenal succession structure. For the sake of simplicity, the phenomenal property of being the latest end of phenomenal succession shall be called “**phenomenal latestness**.” Although one phenomenal property suffices to discriminate by its presence or absence (parts of) one experience from another, we do have a pair of phenomenal properties – phenomenal latestness and phenomenal non-latestness – which are carried by different (parts of) experiences. In contrast to phenomenal latestness, **phenomenal non-latestness** can be defined as the phenomenal property of being succeeded by another part of a phenomenal succession instance. When, for instance, hearing a succession of notes, C-D-E, in a rather brief interval, the experiences of C and D lack phenomenal latestness but instead possess phenomenal non-latestness.

My account of phenomenal presentness includes the counterparts of primal impression and retention but excludes the counterpart of “protention” in Husserl’s terms. This is because protention is, though a *perceptual* component of both Husserl’s motion perception and James’ specious present, different from primal impression and retention in one crucial respect. Protention, being perceptual expectation, is corrigible by primal

impression when a perceptual expectation turns out different from what actually happens. Moreover, there is in principle no difficulty in taking a component of phenomenal presentness to be the *center* of phenomenal succession if we are to take protention to be a part of phenomenal succession.

Thus far, I have demonstrated what (PP1) and (PP2) amount to and what their grounds are. If the readers are convinced by (PP1) and (PP2), then a clear sense of phenomenal presentness can be rendered, its existence vindicated. Recall one premise of the radical B-theorist argument against the existence of phenomenal presentness:

(P2) No *perceptual* experiences and no *parts* of them are distinguished from others by virtue of possessing phenomenal non-presentness (say, phenomenal pastness).

Recall again that a possible counterexample to (P2) would be a token *perception* that has (at least) two parts possessing phenomenal presentness and non-presentness respectively, just like a token visual experience possessing a phenomenally red part and a phenomenally non-red, say blue, part. Now it is clear why succession perception provides a counterexample to (P2): a token perception of succession typically has (at least) two parts possessing phenomenal latestness (i.e., phenomenal presentness) and phenomenal non-latestness (i.e., phenomenal non-presentness) respectively. Hence, the radical B-theorists' denial of phenomenal presentness does not follow.

8 Further Concerns about Phenomenal Presentness

Firstly, since phenomenal latestness is a component of phenomenal presentness, whenever we perceive something as present, we perceive it as the latest end of a

succession structure. However, the reverse is not true; it is not the case that whenever we perceive something as the latest end of a succession structure, we perceive it as present. Consider the following case: if I hear a succession of notes, C-D-E, and then *nothing more* for a while, say, one second, then the experience of E may possess phenomenal latestness without phenomenal presentness. Since, in this case, I don't perceive anything else as present when the note E was one second ago, the case renders no oddity such as perceiving the note E as present while it was already one second ago. Even if the experience of E possessed phenomenal presentness as well as phenomenal latestness, the possible experience as if the note E, which was in fact one second ago, is present shows merely the inaccuracy of my experience rather than the falsity of my account of phenomenal presentness. If, however, I do perceive as present *something* else that is not part of the succession of notes while the note E was one second ago, then the experience of this thing belongs to or leads its own phenomenal succession instance in a way that it is also the latest end of the succession instance. That is, no counterexample such as there being phenomenal presentness without phenomenal latestness would be yielded.²⁸

A related concern is this. There can sometimes be temporal illusions that distort our temporal experience. We sometimes don't have succession perception – e.g., when watching a still image. There may be other kinds of mental episodes occurring simultaneously with succession perception. For example, while listening to a song, we can simultaneously look at a painting and feel and think about the beauty of the painting. There may be diachronic as well as synchronic unity of consciousness so that succession

²⁸ I owe a great debt of gratitude to Prof. A for bringing this up.

perception cannot be singled out. But as long as there exists any time in which we can have succession perception that can be clearly identified, there is phenomenal presentness.

One may wonder if phenomenal latestness is only a *component* of phenomenal presentness, then what else is there in phenomenal presentness. I speculate that one possible answer may be “phenomenal indexicality,” which is the phenomenological counterpart of temporal indexicals such as “now” or “the present.” Another possible answer may be apparent endurance (rather than perdurance) of things (Prosser 2012). There may be more. However, further investigation will go beyond the scope of this chapter. In any case, phenomenal presentness may not be exhausted by phenomenal latestness.

Lastly, some may argue that this understanding of phenomenal presentness distorts what has been agreed about *the specious present*, in which the whole time span of a succession is perceived as present. This is not true. It is exactly because we perceive a whole time span “as present” that the specious present yields the so-called phenomenological *paradox*. It is usually agreed that this “whole-present” phenomenology must be compromised in order to dissolve the paradox. As the leading solutions (namely, retentive, extensional, and cinematic accounts, discussed in the appendix) show, this “whole-present” phenomenology is usually interpreted as something peculiar while keeping intact the classical conception of phenomenal presentness – phenomenal presentness, if there is such, is the phenomenology of perceiving as present the latest, instantaneous part of a succession. Hence, my approach delivers the correct sense of phenomenal presentness.

9 Concluding Remarks

All in all, this chapter has shown the link between phenomenal presentness (or presentness perception) and phenomenal succession (or succession perception). The link is just this: while part of what it is like to have succession perception is something being phenomenally succeeded by something else, part of what it is like to have presentness perception is essentially something being the latest end of phenomenal succession. If we deem succession perception pervasive in everyday experience, then we should be familiar with what it is like to feel presentness – so familiar that some of us may neglect its presence.

The existence of phenomenal presentness is a stepping-stone to establishing a twin version of the argument from experience: **the argument from phenomenology** (which I propose and discuss in the next chapter). If my argument is successful, then there is a special kind of non-supervenient A-fact: phenomenal A-facts, such as the fact that *one's token experience instantiates phenomenal presentness*. Here is the insight that the argument attempts to reveal: phenomenal A-facts (or the dynamic feature of experience) are themselves non-supervenient A-facts (or dynamic facts), not *merely* something to be speculatively explained by positing conventional A-facts (or a dynamic universe). This, I think, captures the feeling that just wouldn't go away even if B-theories of time were successful: the feeling that the world is dynamic. So, this chapter is the first and the single most important step toward defending our everyday conception of time, i.e., A-theories of time.

Chapter 3

Fundamental, Phenomenal A-Facts

1 Preliminaries

It is often argued by B-theorists that our temporal experience as of presentness or temporal passage is illusory and does not imply that there really is objective presentness or temporal passage in the mind-independent world. Hence, in this chapter, I propose a novel argument, “the argument from phenomenology,” to show that there is a special kind of temporarily obtaining facts, *phenomenal A-facts*, which do not globally supervene on eternally obtaining facts. For example, a phenomenal A-fact such as “*my token pain instantiates phenomenal presentness*,” does not globally supervene on an eternally obtaining fact such as “my token pain instantiates phenomenal presentness at a particular time.” (Phenomenal A-facts are to be distinguished from A-facts as traditionally considered such as “my token pain instantiates objective presentness”). Since phenomenal A-facts obtain temporarily, there is a special moment – the present – at which some facts obtain but others don’t.

Having argued for the existence of phenomenal presentness in the previous chapter, I provide, in §2, another reason for it: it is in line with new tenseless theories of time, though they would not agree that this implication should be drawn from it. Further, in §3, I spell out the first premise of the argument from phenomenology, (AEpA):

(AEpA) We can (tenselessly) be aware that our certain experience tokens instantiate *phenomenal* A-properties. For instance, I can at some time be aware that my toothache has phenomenal presentness.

In §4 and §5, I then respectively establish the other two premises, (DR) and (Gap):

(DR) Awareness that one's token experience instantiates a certain phenomenal property generally indicates that there are facts like "one's token experience instantiates this phenomenal property." For instance, my awareness that my visual experience of an apple has phenomenal greenness generally indicates that there are facts like "my visual experience of an apple has phenomenal greenness."

(Gap) Phenomenal A-facts (e.g., the fact that one's token experience instantiates a certain phenomenal A-property) do not globally supervene on B-facts.

Clearly, (AEpA), (DR), and (GAP) together entail an A-theory of time:

There are non-supervenient A-facts.

My argument, if successful, shows that the Einstein-Minkowski interpretation of special relativity is *incomplete* concerning time, since the presentness spelled out by non-supervenient A-facts is widely held to be indefinable in terms of the Minkowski metric.

2 The New Tenseless Theory of Time

It has been widely accepted that indexicals such as “I,” “here,” and “now” are essential to our language. Taking tense terms (such as “now,” “past,” “future,” etc.) as indexicals, most B-theorists are therefore willing to concede that tense terms are untranslatable to tenseless terms, while insisting that tensed sentences are true in virtue of tenseless facts. This kind of B-theory is called by Quentin Smith (1993) “**the new tenseless theory of time.**”²⁹ It is not surprising that these new tenseless theorists of time tend to agree that temporal indexicals have experiential counterparts – A-phenomenology and A-content – which are essential (i.e., *irreducible*) in our experience. For instance, my experience of hearing a bird’s singing as *present* has as a part the *phenomenal presentness* – the what-it-is-like character of perceiving something as *present* (this can be called “A-phenomenology” or a “phenomenal A-property”).³⁰ While conceding that there are irreducible A-experiences, the experiences with essential A-phenomenology and A-content, these new tenseless theorists insist, of course, that veridicality-conditions of A-experiences are to be spelled out in terms of B-facts. They claim, unsurprisingly, the phenomenal presentness plays an essential indexical role in fixing the evaluation circumstances for the experience’s veridicality:

a token experience that <the bird *is now* singing> is *veridical at t* iff the
bird sings *at t*,³¹

²⁹ Quentin Smith (1993), *Language and Time* (Oxford: Oxford University Press), 11.

³⁰ By calling the phenomenal presentness a “phenomenal A-property,” I am not *presupposing* that phenomenal A-properties are genuine A-properties, which are essential constituents of facts being irreducible A-facts. It is only when the argument from phenomenology succeeds that phenomenal A-properties are *proved* to be genuine A-properties.

³¹ See D. H. Mellor (1998), *Real Time II* (New York: Routledge), 41, for a similar treatment for A-proposition.

where t is fixed by the context of the token experience. It is clear that the veridicality-condition is cashed out completely in terms of B-facts.

Interestingly, certain B-theorists, Mellor for instance, go way further by saying something similar to the following:

Not only are all our pains and other experiences present, they tell us that they are present. ... But the A-times of experiences we do perceive: we perceive them to be present...³²

As a B-theorist, Mellor cannot mean that we perceive *A-times* of experiences, or that experiences *are present*, for otherwise A-times or the present are real. What he really means has to be that a token experience can be “perceived” as present, or that we can be aware that a token experience *seems present*.³³ *It is because we are aware of the A-phenomenology of token experiences that the experiences can “tell us that they are present.”* To make it more explicit, Mellor asserts, as we are having a token experience, we are also aware that the token experience instantiates *phenomenal* presentness. (In what follows, “one’s token experience seems present (or now)” is used as a simpler synonym of “one’s token experience instantiates phenomenal presentness.”) Although it is more usual to talk about physical events *appearing* in consciousness as forming a temporal sequence, Mellor’s assertion here is a clue to talking, as certain philosophers prefer, about token mental events (or states) *appearing* to form a sequence by their phenomenal A-properties.

³² Mellor, 1998, op. cit., p. 41.

³³ Although Mellor’s words here can be taken as admitting the existence of phenomenal A-properties ascribable to experiences such as a pain, but he clearly rejects that first order experiences (of physical events) have as a part phenomenal A-properties. See Mellor (1998, 16): “we do not really observe the A-times of events.”

However, though unsurprisingly, Mellor takes it as a problem that our consciousness presents every token experience as being *present*, because then the existence of conscious experience may suggest the reality of the present. (For simplicity, I will use “experience” shorthand for conscious experience.) This problem is so called “**the problem of the presence of experience**.”³⁴ The problem, being itself a challenge to B-theory of time, gives rise to what John Perry (2001) calls “**the Temporal Knowledge Argument**,” since our consciousness presents token experiences as being *present*, we are entitled to think there is something more to know than the fact that *e* is at *t*, and therefore there are irreducible A-facts such as “*e* is *now*.”³⁵ Both the problem of the presence of experience and the Temporal Knowledge Argument are variants of the argument from experience: they all draw metaphysical conclusions from experience, but those variants concern a token experience’s being presented as present rather than a physical event’s being perceived as present.

Mellor’s solution to the problem (and hence to the Temporal Knowledge Argument) is simply to treat the awareness of A-phenomenology as a kind of belief with (irreducible) A-content and spell out its truth-condition in terms of B-facts (in the same way the new tenseless theorists usually handle first order A-experiences with token-reflexive facts).³⁶ For example, suppose

I am at *t* aware that my pain seems present.

This awareness is just (or accompanied by)

³⁴ Mellor, 1998, op. cit., p. 41.

³⁵ John Perry (2001), “Time, Consciousness and the Knowledge Argument,” in L. Oaklander (eds.), *The Importance of Time: Proceedings of the Philosophy of Time Society* (Dordrecht: Kluwer Academic Pub), pp. 81-93.

³⁶ Mellor, 1998, op. cit., p. 44.

my token belief that <my pain seems present>.

And my token belief that <my pain seems present> is true only if

the occurrence of my pain is simultaneous with the occurrence of my belief.

Hence, no irreducible A-facts or real presentness are needed to account for “the presence of experience,” a special kind of temporal experience.

3 (AEpA): Awareness of A-Phenomenology

Apart from Mellor’s solution to the problem of the presence of experience, I agree with Mellor concerning the phenomenal presentness of experiences and take him as advocating the following thesis:

(AEpA) We can (tenselessly) be aware that our certain experience tokens instantiate *phenomenal* A-properties. For instance, I can at some time be aware that my toothache has phenomenal presentness. .

Note, firstly, that (AEpA) doesn’t implicitly or explicitly presuppose any A-facts. Secondly, the content of the awareness specified in (AEpA) ascribes a *phenomenal* A-property to the token experience, and hence this is to be distinguished from the following kinds of contents: <my headache *is present*>, which ascribes an *objective* A-property to the token experience, and <my perception as of a bird’s singing now has phenomenal presentness as a part >, in which the *phenomenal* A-property is a constituent part of the perceptual experience as one perceives a bird’s singing as present.

To better understand the above distinctions, let's consider the following kinds of temporal awareness and parallel color awareness.³⁷

(A) Being aware that a bird *is* now singing.

(A*) Being aware that an apple is green.

(A) and (A*) are first order perceptual awareness. The content of this type awareness is *not* phenomenological, in the sense that the objects and the properties ascribed are objective, physical ones (or at least not entirely subjective, mental ones in the color case).

(B) Being aware that one's headache *is present*.

(B*) Being aware that one's experience *as* of an apple *is green*.

(B) is second order awareness, the awareness of a token experience (as a whole) instantiating certain properties. The content of this type awareness is *not entirely* phenomenological, in the sense that the property ascribed to the token experience is an *objective* A-property (or something reducible to *objective* B-properties as one may argue). Importantly, (B*) is not legitimate, for we don't (or can't) ascribe an *objective* color property to an experience.³⁸ Hence, (B*) is not a correct color analogy to (B). Now compare:

(C) Being aware that the bird's singing *seems present*, as one perceives a bird's singing as present.

³⁷ Thanks to Prof. Peter Lewis for suggesting this parallel comparison.

³⁸ See below for more discussion.

(C*) Being aware that the apple *seems green*, as one perceives an apple as green.

(C) and (C*) can be regarded as second order awareness, in which case one is aware that external, physical things are perceived with certain phenomenology or *phenomenal* properties. The content of this type awareness *may not be entirely* phenomenological, depending on what one takes the content of “a bird” or “an apple” to be. While *objective* temporal properties or relations can, as shown in (A) and (B), be represented as ascribable to both physical and mental objects, it would be odd to *directly* ascribe *phenomenal* properties to external, physical objects.³⁹ See below for further discussion of (C) and (C*), for they are closely related to (D') and (D*).

(D) Being aware that my pain *seems present*, or being aware that my perception *as* of a bird's singing being past *seems present*.

(D') Being aware that my perception *as* of a bird's singing now has *as a part* phenomenal presentness.

(D*) Being aware that my experience *as* of an apple *seems green*.

(D), (D'), and (D*) are second order awareness, the awareness of one's token experience instantiating a certain property. The content of this type awareness is *entirely* phenomenological, in the sense that the property ascribed to the token experience is a *phenomenal* property. Importantly, there is a significant difference between (D) and (D') such that (D*) is not a correct color analogy to (D) but (D'). In the content of (D') and

³⁹ My use of "one's token experience seems present" is synonymous to "one's token experience instantiates phenomenal presentness," but my use of "an event seems present" is not synonymous to "an event instantiates phenomenal presentness".

(D*), the phenomenal presentness is a *constituent part* of one's experience as of a bird's singing now, just as the phenomenal greenness is a *constituent part* of one's experience as of an apple's being green. In the content of (D) type awareness, however, one's token experience *as a whole* instantiates a phenomenal property, or stand in a phenomenal relation with one's other token experience, as in the following case:

My pain *seems simultaneous with* my experience as of a green apple.

The distinction between (D) and (D') is clear if we consider the (possible) case, as retentionalists about motion experience or the specious present usually claim, that we can be *presently* conscious of what *has just been*.⁴⁰ That is, we can be so aware that a token experience, which has as a part phenomenal pastness, instantiates phenomenal presentness.

The upshot of the above distinctions is this: (1) phenomenal A-properties are to be distinguished from A-properties (if they exist); (2) awareness of *phenomenology* has two types, of the relation between wholes or the unary relation of a whole, and of the relation between a whole and its parts.⁴¹ (AEpA) concerns the awareness that a token experience as a whole instantiates phenomenal presentness.

Apparently, the awareness of A-phenomenology assumes that A-properties can be *represented* as properties of experience. One immediate worry is, as strong representationalists may argue, that experience is not an object of our awareness, and

⁴⁰ See Edmund Husserl (1966), in J. Churchill (*trans.*), *The Phenomenology of Internal Time Consciousness* (Bloomington: Indiana University Press), 53-54: "Truly ... it pertains to the essence of the intuition of time that in every point of its duration ... it is consciousness of *what has just been* and not mere consciousness of the now-point of the objective thing appearing as having duration."

⁴¹ (D) type of awareness can include the cases, as in motion perception, where different matching parts of a whole experience stand in phenomenal temporal relations with each other.

therefore that we can't *perceive* experience as being present (or as anything else). A related worry is that A-properties, just as shapes of concrete things, cannot be instantiated by experiential states. Hence, there is no such thing as the awareness of A-phenomenology, or it is a mere hallucination.

I think, firstly, experiential states, though cannot have shapes, can clearly stand in temporal relations with each other and with external, non-mental objects. My seeing the hour hand being at 2 can be later than my seeing it's being at 1; my pain can occur when I see the apple as green. In other words, *objective* temporal properties can be ascribed to experiences, even though objective color or shape properties can't. Temporal relations or properties, like other "universal" properties such as identity, part-whole relation, and so on, are not restricted to concrete things – they can be instantiated by mental states as well. If experiential states can instantiate B-properties, there is in principle no obstacle for them to instantiate A-properties (if exist at all).

Secondly, it is hard to deny that we have feelings such as being presently in pain, or just having had pain but presently having dizziness, or just having heard the utterance of "good" but now hearing the utterance of "morning." Such awareness of an experience's instantiating a temporal property (whether A-theoretical or B-theoretical) is so robust that strong representationalists cannot just deny its existence but have to provide explanations in representationalist frameworks. Although the phenomenalist framework allows an easy statement of the temporal awareness of experiences and an easy formulation of my argument for the A-theory of time, the point of my argument does not have to depend on the phenomenalist framework. I believe, a representationalist formulation of my argument can be given.

Again, (AEpA) alone is no threat to the new tenseless theory of time, since the kind of awareness in question could, as Mellor points out, be veridical in virtue of B-facts such as

the occurrence of one's pain is simultaneous with the occurrence of one's token awareness of it.

That is, B-theorists may argue that the content of the awareness described in (AEpA) – i.e., the awareness that one's experience token instantiates a certain phenomenal A-property – is not Russellian in so far as its veridicality-condition is not spelled out in terms of phenomenal A-properties or objective A-properties. In other words, B-theorists can deny the following two veridicality-conditions:

The awareness that one's headache *seems present* is veridical iff one's headache *seems present*.

The awareness that one's headache *seems present* is veridical iff one's headache *is present*.

4 (DR): Phenomenal A-Facts

However, I argue, Mellor's B-theoretic cure overlooks a fundamental character of experience: there is no appearance of phenomenological facts. As a consequence, there is a direct link between the awareness of A-phenomenology and **phenomenal A-facts** (such as *my pain seems present*).⁴² Phenomenal A-facts are, in the light of a new knowledge

⁴² A-theorists Quentin Smith (1994) and William Craig (2000) had certain forms of argument from the presence of experience. However, I think the new tenseless theorists can easily respond to them, for Smith and Craig also failed to see the link. See: Quentin Smith (1994), "The Phenomenology of A-time," in

argument proposed in the next section, a special kind of non-supervenient A-fact.⁴³ Hence, awareness of A-phenomenology (i.e., temporal awareness of one's own experience), contrary to what Mellor's B-theoretic cure shows, really demands A-facts for its veridicality. Below I will show how this can be done step by step.

The bridge that Mellor and the like overlook between awareness of A-phenomenology and phenomenal A-facts can be expressed by the following thesis:

(DR) Awareness that one's token experience instantiates a certain phenomenal property generally indicates that there are facts like "one's token experience instantiates this phenomenal property."

For instance,

my awareness that my visual experience of an apple seems greenish (i.e., has phenomenal greenness) generally indicates that there are facts like "my visual experience of an apple seems greenish."

(DR) is entailed by the following two relatively uncontroversial principles: (1) **Directness** – one's awareness of one's phenomenology is generally not mediated, and hence its content is generally Russellian; (2) **Reliability** (weakened infallibility) – one's awareness that a token experience has a certain phenomenal property is generally

L. Oaklander & Q. Smith (eds.), *The New Theory of Time* (New Haven and London: Yale University Press) pp. 351-359; William Craig (2000), *The Tensed Theory of Time: A Critical Examination* (Dordrecht: Kluwer Academic Pub).

⁴³ Berit Brogaard & Dimitria Gatzia (2014) holds the view that there are *emergent* A-properties: these properties, such as solidity, exist, though not instantiated at the fundamental level of reality. So to speak, they take A-content as Russellian, picking out certain A-facts in reality, but A-facts are to be reduced to fundamental B-facts. I think, this view, as a defense of A-theory of time, still concedes too much. See: Berit Brogaard & Dimitria Gatzia (2014), "Time and Time Perception," *Topoi*.

veridical.⁴⁴ That is, when I am aware that my visual experience of an apple instantiates phenomenal greenness, then, according to Directness, this awareness has the following content:

< my visual experience of an apple instantiates phenomenal greenness >.

Since again, according to Directness, the content of the awareness of my own phenomenology is generally Russellian, the veridicality-maker for the awareness that my visual experience of an apple has phenomenal greenness is supposedly the following state of affairs:

my visual experience of an apple instantiates phenomenal greenness.

And since, according to Reliability, the awareness of my own phenomenology is generally veridical, the above state of affairs generally obtains. That is, there are facts such as

my visual experience of an apple instantiates phenomenal greenness.

Directness and Reliability are derived from the parallel ones concerning introspective beliefs about mental states: one's beliefs about one's mental states are not mediated and infallible to a very large extent. For instance, when I am aware that I am in pain, I don't need to make any conscious inference to reach the conclusion that I am in pain, and I am not epistemologically obligated to justify myself in believing that I am in pain. On the other hand, I can hardly be wrong about whether or not I am being in pain – i.e., if I

⁴⁴ Some may argue one's awareness of phenomenology can be non-veridical in certain cases. However, since these cases are rare, it's still quite reasonable to assume that the principle of Reliability holds with regard to most kinds of experience, including temporal experience.

believe that I am in pain, than I am in pain. Since those parallel principles, which concern mental states, are widely accepted, the derived Directness and Reliability, which concern phenomenology, should be equally uncontroversial. Just as one's belief that one is in a mental state is not mediated by any other beliefs and indicates the fact that one is in the mental state, one's awareness that one's token experience instantiates a certain phenomenal property is not mediated by any kind of representation and generally indicates that there are facts like "one's token experience instantiates a certain phenomenal property."

One may hesitate about the existence of phenomenal facts. However, unless one is ready to swallow such unpleasant assertion that there is no such thing as phenomenology, the question is really not whether there are such facts about phenomenology, but what the relationship is between those facts and the awareness of them. The idea underlying (DR) is straightforward: what my phenomenology seems to me is normally just what my phenomenology in fact is. As a result, there can hardly be modes of presentation of phenomenology and non-veridical awareness of phenomenology.

It can easily be seen that the new tenseless theory of time is already in tension with (DR): since the content of awareness of one's A-phenomenology is Russellian, the veridicality-condition of it is very different from B-theoretic ones. So to speak, Directness requires the veridicality-maker of one's awareness of A-phenomenology to consist of phenomenal A-properties, with which B-theorists would not be happy.

Obviously, (AEpA) and (DR) together entail that there are such phenomenal A-facts:

one's token experience instantiates a certain phenomenal A-property.⁴⁵

Suppose, for example, according to (AEpA), I am at some time aware that my headache instantiates phenomenal presentness. Then, according to (DR), there are facts like “my headache instantiates phenomenal presentness.” It is worth noting, firstly, that, according to the discussion about the irreducibility of A-phenomenology and A-content in §2, the awareness that my headache instantiates phenomenal presentness is both phenomenologically and representationally different from the awareness that my headache instantiates phenomenal presentness *at 2 PM, 8/8/2014*. Secondly, a subject (or a stage of phenomenal self) may not be eliminated from the constituents of a phenomenal A-fact, depending on one's account of essential experiential content.

Apparently, phenomenal A-facts are *temporary*. As it seems to you that you are reading this paragraph, you undeniably have a clear sense of what experiences seem present; but soon those phenomenal A-facts are gone, just as your experiences of reading the previous page no longer seem present. Moreover, as explained in chapter 2, when hearing a succession of notes C-D-E within the specious present, your experiences as of the previous notes, C and D, not only do not seem present but seem *past* (in the sense that they seem to precede the present experience as of E). That is, your experiences as of C and D turn from instantiating phenomenal presentness to instantiating phenomenal pastness – they don't instantiate phenomenal presentness at all times. Hence, facts like

⁴⁵ Balashov (2005) may have a similar line of thought behind his “occur simpliciter” argument. However, I think the notion of “occur simpliciter” isn't good enough to capture phenomenal A-facts as is my notion of “seems present.” And that's why Balashov's “occur simpliciter” is prone to the kind of criticisms made by Skow (2011) and Callender (2008).

“your experience as of C seems present” do not obtain at all times – i.e., they are temporary. This characteristic makes phenomenal A-facts like ordinary A-facts.

An immediate B-theorist response is to argue that phenomenal A-facts obtain *at a time* rather than *non-relatively*. (Recall that the A-theory this dissertation defends maintains that there are non-supervenient A-facts, which obtain temporarily and *non-relatively*.) Since this dissertation adopts the view that a fact is just an instantiation of properties by particulars, claiming that phenomenal A-facts obtain *at a time* is tantamount to claiming that, say, one’s experience instantiates phenomenal presentness *at a time*. In other words, B-theorists can insist that the veridicality-maker of my awareness that my headache seems present is not the state of affairs that my headache seems present *simpliciter* but the following:

at 2 PM, 8/8/2014, my headache seems present,

in which case, no A-fact is suggested, because the **B-tag** (i.e., the B-property of being at 2 PM, 8/8/2014) makes the whole state of affairs *eternally* obtain if obtains at all.

However, I argue, this B-tagged veridicality-maker violates either the phenomenology that my headache seems present or the principle of directness: given this B-tagged veridicality-maker and the principle, the phenomenology of my awareness at 2 PM, 8/8/2014 is that *at 2 PM, 8/8/2014, my headache seems present*, which violates the phenomenology we are aware of; given, on the other hand, the B-tagged veridicality-maker and the phenomenology that my headache seems present, the content of the awareness cannot be Russellian and hence the principle is wrong. Therefore, the veridicality-maker of the awareness that my headache seems present is the state of affairs

that my headache seems present *simpliciter*. That is, phenomenal A-facts obtain *non-relatively* (and *temporarily*).

B-theorists may defend the violation of the principle of directness by claiming that there is no such veridicality-maker or fact as “my headache seems present *simpliciter*,” because such “facts,” phenomenal A-facts, are *incomplete*. Phenomenal A-facts are *incomplete* in the way the state of affairs that Socrates is in jail *simpliciter* is *incomplete*. According to B-theory, fundamental facts are B-facts, which obtain eternally. Hence, for the state of affairs that Socrates is in jail to obtain, either Socrates has to be in jail at all times, or it must be B-tagged like the following: Socrates is in jail *in 339 BC*.⁴⁶ Since Socrates is not in jail at all times, the state of affairs that Socrates is in jail is incomplete unless B-tagged. So to speak, the occurrence of a particular event must be B-tagged in order to make a complete fact or state of affairs. Hence, the state of affairs that my headache seems present *simpliciter* is incomplete unless B-tagged.

However, it is not unobvious that the above way of excluding phenomenal A-facts appeals to mere B-theorist assumptions. This purely B-theoretic defense would be legitimate if the existence of phenomenal A-facts were a consequence of the principles explicitly or implicitly assuming an A-theory of time and hence begs the question against B-theory. But, the existence of phenomenal A-facts is a product of neutral, A-fact-free principles (i.e., Directness, Reliability, and a principle advocated by B-theorists like

⁴⁶ Some may take the utterance “Socrates is in jail” as containing a *hidden* parameter and meaning a *complete* state of affairs that Socrates is in jail in 339 BC. But the completeness of an utterance’s meaning shouldn’t be confused with the completeness of a state of affairs. So to speak, while one may arguably take “Socrates is in jail” and “Socrates is in jail in 339 BC” as having the same meaning, one shouldn’t take the state of affairs that *Socrates is in jail* as identical with the state of affairs that *Socrates is in jail in 339 BC*.

Mellor – AEpA). Hence, the above B-theorist assumption about completeness to rule out phenomenal A-facts is inadequate.

In any case, B-theorists may still argue, whatever these “phenomenal A-facts” are, they are merely something about phenomenology, or experience, or awareness, or minds, or mental states, or mental events, but nothing about *physical* reality. So to speak, phenomenal A-properties or phenomenal A-facts are not yet shown to be *genuine, non-supervenient* A-properties or A-facts, and thus the new tenseless theory of time still holds at this point. I think this response is fair at this point. However, the upshot is still that there are *genuine* facts, phenomenal A-facts, which are different from phenomenal B-facts: it is a genuine fact that *my pain seems present*, and it is to be distinguished from the (phenomenal) fact that *my pain seems simultaneous with my token awareness of it*, or the fact that *my pain seems to occur at 2 PM, 8/8/2014*. So to speak, these phenomenal A-facts are genuine facts that B-theorists need to account for.

5 A Novel Knowledge Argument: Non-Supervenience of Phenomenal A-Facts on B-Facts

In this section, I argue that phenomenal A-facts cannot be determined by, or explained by, or reduced to B-facts, for there is a kind of explanatory gap between phenomenal A-facts and *all* B-facts. This explanatory gap is in some way similar to the one between *the mental* and *the physical*. As Frank Jackson (1986) puts it, Mary, being raised in a black and white room and knowing everything there is to know about the *physical* world (including other minds), would learn what it is like to see something red on her release, and so Mary didn’t know everything there is to know about others’

experience. This argument, the knowledge argument, shows that there is something, consciousness, that cannot be explained by the physical, and therefore that there is something non-physical, namely, mental properties. This explanatory gap between the mental and the physical, which is the source of what David Chalmers (1995) calls “the hard problem of consciousness,” brought Chalmers to embrace the view that consciousness, as explanandum rather than explanan, is *fundamental* (in the sense that it cannot be reduced to or explained by the physical).

Now, I claim that there is a similar but much stronger explanatory gap between *the A-theoretic* and *the B-theoretic*. (Although I don’t think my argument here depends on the validity of the knowledge argument, the knowledge argument can however shed some light in understanding the idea behind my argument. Also, my argument is significantly different from Perry’s (2001) Temporal Knowledge Argument.) Following the line of the knowledge argument, suppose firstly that God exists and He knows *all B-facts* about every event’s temporal location and *all other B-facts* in the universe (including for example what it is like for me to experience a page’s flip, a bird’s singing, a pain, etc.). For example, God knows the following B-facts about my mental life:

my (token) toothache *seems present* at 1 PM, 8/8/2014;

my (token) headache *seems present* at 2 PM, 8/8/2014;

my toothache *seems present* simultaneously with my awareness of it;

my headache *seems present* simultaneously with my awareness of it.

(Once again, “one’s experience *seems present*” is shorthand for “one’s experience occurs and instantiates *phenomenal presentness*.”) Suppose also the following phenomenal A-fact about me obtains:

my (token) headache *seems present*;

Now, we can then ask, could God, knowing all B-facts, also know

whether my headache seems present, or which other experience seems present?

Apparently, God couldn’t. God knows the history of my mental life: a list of the times when I experience various things or when my experiences have certain phenomenal properties. On God’s list, no time or experience is privileged. However, it is a phenomenal A-fact that the headache is singled out. (As mentioned in the previous section, phenomenal A-facts are fragile. As it seems to you that you are reading this paragraph, you undeniably have a clear sense of what experiences seem present; but soon those phenomenal A-facts are gone, just as your experiences of reading the previous page no longer seem present. It is this fragility that issues privilege to certain token experiences but not others.) Since a list that has nothing privileged obviously cannot by itself determine which one on the list is to be singled out, God’s list, along with all other B-facts, cannot determine *which* token experience *seems present*. Were God released to the concrete space-time to enjoy certain A-facts like “it is now 2:00 PM, 8/8/2014,” God would learn something new: “yes, it is the headache that *seems present*.”

While consciousness can have, though cannot be explained by, neural correlates, phenomenal A-facts don’t have “B-correlates” at all (since phenomenal A-facts cannot be

determined by B-facts). So to speak, there is not just an explanatory *gap* but an explanatory *wall* between phenomenal A-facts and B-facts; for not only can't it be crossed over, it also can't be seen through without a window. Since phenomenal A-facts are genuine facts, which are the explanandum to be accounted for rather than an explanatory postulate, and since they cannot be explained or fixed by B-facts, we should take these phenomenal A-facts as *fundamental*, just like Jackson and Chalmers took consciousness as fundamental. This completes **the new temporal knowledge argument** for the following thesis:

(Gap) Phenomenal A-facts cannot be determined by B-facts.⁴⁷

Note, firstly, that the new knowledge argument does *not* beg the question against B-theories by *explicitly* presupposing the existence of conventional A-facts – for, what God doesn't *initially* know is *not* the fact that my headache *is present* but that fact that my headache *seems present*. Secondly, *neither* does the argument beg the question by *implicitly* presupposing that phenomenal A-facts such as “my headache *seems present*” are non-supervenient A-facts. Generally speaking, B-tags can turn *certain* A-facts (if any) into B-facts. For instance, it is a conventional A-fact that I am writing, but it is a B-fact that I am writing *at 2 AM, 8/8/2014*. So it may seem that phenomenal A-facts, which contain no B-tags, are already implicitly presupposed to be non-supervenient A-facts. Indeed, phenomenal A-facts are already *A-like* due to the dynamic nature of A-phenomenology. But still, the existence of such phenomenal A-facts is entailed by *A-fact-*

⁴⁷ The fact that *at t the experience as of a non-mental event has as a part phenomenal presentness* is a phenomenal fact even if one is not aware of it. However, following (DR), the awareness of it can show to oneself this fact. But of course, this is not an A-fact. Generally speaking, phenomenal facts do not *need* to rely their existence on higher-order awareness of them, but the latter reveals the existence of the former.

free (AEpA) and (DR) – nothing genuinely A-theoretic is implicitly presupposed. It is the new knowledge argument that *explicitly* makes it the case that phenomenal A-facts are really non-supervenient A-facts.⁴⁸

6 Concluding Remarks

As shown by (Gap), phenomenal A-facts are, though phenomenal facts, *non-supervenient A-facts*, since they are taken as fundamental. Now, grouping (Gap) with (AEpA) and (DR), we can finally conclude that

there are non-supervenient A-facts.

This completes the argument from phenomenology. In sum, the argument successfully captures the feelings of the transient present (and time's flow) – the feelings that just wouldn't go away, even if B-theoretic explanations were successful. In other words, what traditional arguments from experience and B-theorist counter-arguments fail to capture is this: phenomenal A-facts are themselves non-supervenient A-facts, not *merely* something to be speculatively explained by postulating conventional A-facts. At this point, it suffices to say that the Einstein-Minkowski interpretation of special relativity is

⁴⁸ Prof. Peter Lewis bought up in his correspondence an interesting resemblance of my knowledge argument to David Lewis's case of the two gods in "Attitudes De Dicto and De Se" (1983, 139). David Lewis argues, knowing all the true propositions describing the world the two gods inhabit, neither one knows which of the two he is unless one *self-ascribes* the property of having a certain perspective or any other properties the other doesn't have. This true self-ascription of properties is called by David Lewis "knowledge *de se*," which cannot be captured by knowledge *de dicto*. My knowledge argument resembles the case of the two gods in so far as the god's ignorance of phenomenal A-facts is due to his lack of a perspective. However, the god's ignorance in my argument is deeper than that. The god can know from *my* first personal point of view all B-facts about *my* mental life, as if the whole series of *my* snapshot-like experiences is presented all at once in the god's mind. Hence, the god's *de se* knowledge about every B-fact still misses something out. (It is not clear whether a block universe and David Lewis's account of a person as a 4D worm can allow a *dynamic* or *tensed* perspective *in time*, for that would already presuppose A-theory of time.)

incomplete concerning time, since the presentness spelled out by non-supervenient A-facts is widely held to be indefinable in terms of the Minkowski metric.

Nonetheless, the nightmare for B-theorists could be worse. Although phenomenal A-properties such as phenomenal pastness, phenomenal presentness, “seems present,” and so on cannot be determined by B-properties in the manner phenomenal A-facts cannot be determined by B-facts, they may be thought as restricted to the mental and thus having little impact on the physical. But insofar as a sort of weak global supervenience of the mental upon the physical is true, it is quite reasonable to speculate that the *physical* bases of phenomenal A-properties cannot be determined by B-properties either. So to speak, there may be non-supervenient *physical* A-properties. Although the mental-physical supervenience only shows that the physical substance bearing mental properties may instantiate physical A-properties, it is not entirely implausible to assume that *all* physical things, or events, or states, and so on, may instantiate these physical A-properties. Hence, the transient present is not only *real*, when in the form of phenomenal A-properties, but also probably *pervasive* in the universe, when in the form of more basic A-properties. This, I believe, urges that the transient present be incorporated within Minkowski space-time. In the following chapters, I show how this is possible.

Chapter 4

Conjunctivism – Global Non-Relative Presentness without Simultaneity in Special Relativity

1 Preliminaries

In Minkowski space-time, since no global invariant simultaneity is available, many think that presentness or the now's moving is unfounded or even impossible. Not surprisingly, there have been attempts to recover presentness or the now's moving under modern physics. **Incompatibilists**, while holding that global non-relative co-presentness is indeed incompatible with the Einstein-Minkowski interpretation of special relativity, take one of the following stances. (a) Both special and general relativity are not the ultimate truth (Maxwell 2006). (b) Retreat to general relativity and ground presentness or the now's moving in cosmic time (Swinburne 1983; Dorato 2002; Rugh & Zinkernagel 2011). (c) Embrace different interpretations of special relativity such as the Winnie's interpretation (Tooley 1997) or the Lorentzian interpretation (Craig 2008). (d) Concede, like **relativist globalists**, that global co-presentness is a relative matter (e.g., McCall's (1994) branching space-time theory, Dolev's (2006) non-transitive co-presentness theory, and, arguably, Fine's (2006) fragmentalism). Finally, (e) concede, like **localists**, that non-relative co-presentness is a local matter (discussed in §2).

Generally speaking, I think, (a) and (c) do not respect (the standard interpretation of) special relativity enough while it is still regarded as a doctrine in physics. (b), (d), and (e), on the other hand, concede too easily! (b) deems the battle with special relativity entirely

hopeless for presentness or the now's moving. The relativist globalist attempts, (d), sacrifice our pre-theoretical conception that what's present (and thus what's real) is not relative to observers (or reference frames). The localist attempts, (e), usually fail to explain the relations between the *local* presents of space-like separated things and end up with a B-theoretical account of presentness (discussed in §2).

In contrast with incompatibilists, **compatibilists** (or **absolutist globalists**) maintain that global non-relative co-presentness is nothing incompatible with the Einstein-Minkowski interpretation of special relativity – the tension is only apparent. Presentness or the now's moving can be recovered by privileging a frame of reference as the absolute rest frame (Brogaard & Marlow 2013), or adding a global non-relative co-presentness hyperplane (Bourne 2006; Zimmerman 2011), or adding a global invariant foliation based on causal principles (Rakić 1997), equality of action (Peacock 2006), or Uniform Growth (Forrest 2008).⁴⁹

Although absolutist globalism is compatible with the Einstein-Minkowski interpretation of special relativity, it does violate associated doctrines –objectivity of standard simultaneity and strong conventionality of simultaneity – by advocating some kind of global invariant simultaneity.

While there might be other reasons against or motives behind A-theories, this chapter concerns only how the A-theory can be neatly accommodated in the Einstein-Minkowski interpretation of special relativity alongside the popular adjuncts, either objectivity of standard simultaneity or strong conventionality of simultaneity. Given that the above A-

⁴⁹ These additional foliations or hyperplanes in space-time is not considered as intrinsic space-time structures and are to be accounted for by certain laws rather than the Minkowski metric.

theorist attempts in the literature are not satisfactory in one way or another, in this chapter, I shall formulate a new localism (or a localism-globalism hybrid), conjunctivism, that on the one hand respects the most doctrines of relativistic physics – including the Einstein-Minkowski interpretation of special relativity, the objectivity of standard simultaneity, and the strong conventionality of simultaneity – and on the other preserves the most virtues of presentness – globalness, non-relativity, and A-theoreticity. This can be done by simply divorcing presentness from distant simultaneity. In §2, I explain the basic ideas of localisms, their difficulties, and distinguish two kinds of localisms: B-theoretic and A-theoretic. In §3, I provide several justifications for the basic postulate of conjunctivist A-theoretic localism. In §4, I show how conjunctivism can be used to formulate a global non-relative presentness without (commitment to) simultaneity. In §5, I argue that conjunctivism doesn't collapse to and is better than absolutist globalism. In §6, I further individuate a different variation of conjunctivism and compare the two variations. In §7, I show how pastness and futurity should be determined under conjunctivism. Finally in §8, some concluding remarks are made.

2 Localist Solutions and the Problem of Localist A-facts

Localisms, as I understand them, fully respect the tension between global non-relative co-presentness and the objectivity of standard simultaneity or the strong conventionality of simultaneity.⁵⁰ Thereby, localisms maintain a *local*, non-relative notion of presentness by confining presentness to a point. This line of thought starts from Howard Stein's (1968) *point*-simultaneity – the invariant simultaneity that holds only for co-located

⁵⁰ Localists include Stein (1968, 1991), Dieks (1988, 2006), Clifton and Hogarth's (1995), Arthur (2006), Savitt (2009), Skow (2009), Pooley (2013), etc..

things. Since no distant (global) invariant simultaneity can be formulated in terms of only the Minkowski metric, we are left with the trivial point-simultaneity, which satisfies “ $dt = 0$ ” in every frame of reference (where “ dt ” is the difference of two things’ coordinate times). More importantly, according to Stein (1968), point-simultaneity does not depend on or suggest distant simultaneity in any form among mutually space-like separated things.

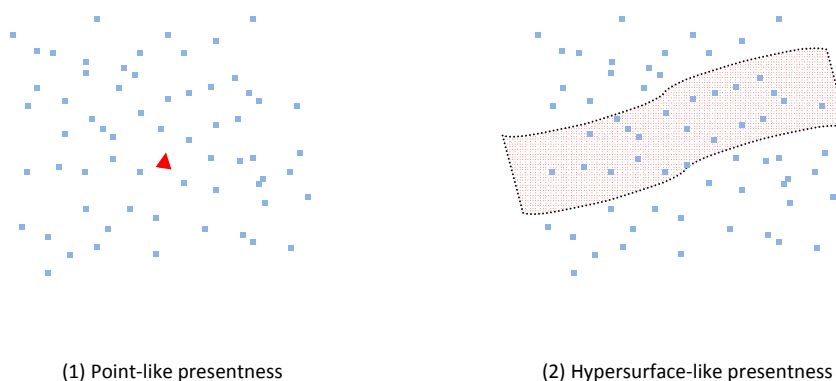


Figure 1. Point-like vs. hypersurface-like presentness. This figure has three dimensions (one vertical, temporal dimension and two horizontal, spatial dimensions), illustrating objects in 4D space-time, wherein (a) the arrow-heads represent what is point-present, (b) scattered dots represent space-time points (non-exhaustively), and (c) the wavy surface represents a presentness hyperplane.

In line with Stein, hence, localisms assert the following:

- (L1) Point-presentness: presentness is local and non-relative in that it is not hypersurface-like but point-like, applicable to one thing (and its co-located things) “at a time.”⁵¹

⁵¹ Again, the things mentioned here presumably include events and objects that are located at a particular space-time point, and possibly including space-time points themselves, depending on one’s ontology of space-time points.

The metaphorical use of “at a time” in the statement is to highlight the feature that the point-presentness of a thing is not dependent on or determined by states or properties of or relations to distant things – i.e., the feature that point-presentness is entirely *local*. In other words, (L1) has the following inherent feature:

(L1-1) Point-presentness doesn't depend on or suggest co-presentness or distant simultaneity in any form among mutually space-like separated things.

Like many other local quantities, proper time for example, the point-presentness of a thing is *invariant* under various kinds of transformations. Since the point-presentness of a thing is not dependent on or determined by states or properties of or relations to distant things, it remains the same for all frames of reference and can thus survive frame transformations.

The feature (L1-1) is what *point*-presentness is all about. Granted that, there is very little to that is shared among different instances of point-presentness – certainly not distant simultaneity, and plausibly not even the same presentness. Hence, localists may argue that a statement such as “many things possess point-presentness” doesn't mean they share the same presentness, just as the statement “many things have a name” doesn't mean they share the same name. That is, localisms may assert, in addition to (L1) and its inherent feature (L1-1), the following:

(L1-2) The point-presentness of each spatiotemporally separated thing is different.

Suppose, for instance, the mutually space-like separated things a , b , and c are point-present. Then, specifically, a is point-present₁, b is point-present₂, and c is point-present₃ – i.e., a , b , and c don't share the same point-presentness.⁵² This further strengthens non-entailment of co-presentness between these point-present things.

In fact, not only is *point-presentness* inspired by *point-simultaneity*, *point-simultaneity* just is the B-theoretic interpretation of point-presentness. This interpretation is B-theoretic because, according to it, everything is present *as of* itself just as everything is simultaneous with itself. Hence, presumably, A-theorists would wish to refuse this B-interpretation and maintain that point-presentness is A-theoretic in the same way classical presentness is.

However, a problem for hardcore A-theories immediately arises: are there still A-facts about which things in space-time are point-present? What things out there in space-time are point-present in a non-relative, temporary way? I shall call this the “**problem of localist A-facts.**” Recall that hardcore A-theories hold that there are non-supervenient A-facts, so the problem is crucial. Consider the following possible solutions: (1) everything is point-present *simpliciter*; (2) only things at a unique space-time point are point-present *simpliciter*; (3) a certain class of space-like separated things are point-present *simpliciter*. Obviously, there is “no future” for solution (1), for it is untenable that all my future, present, and past selves are point-present *simpliciter*. In addition, solution (1) simply reduces point-presentness to point-simultaneity, with which hardcore A-theorists cannot be satisfied. Solution (2) is a non-starter either – what's so ontologically special about

⁵² For the sake of easier understanding, one may take those different nows to be tropes. But, no serious commitment needs to be made at this point. One may still regard those nows as different universals, or even hold a nominalist attitude towards them.

things at this space-time point among the myriad things in the universe? This would just create a kind of metaphysical inequality akin to solipsism. Hence, we are left with solution (3), which is not obviously implausible at the first glance. Here I suggest a sensible proposal along the line of solution (3) as the following:

(L2) Many mutually space-like separated things are point-present *simpliciter*.

I shall dub (L2) together with (L1) “**A-theoretic localism.**” However, (L2) immediately raises two kinds of serious worry.

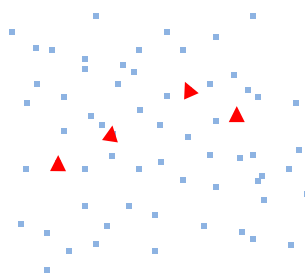


Figure 2. A-theoretic localism. This figure has three dimensions (one vertical, temporal dimension and two horizontal, spatial dimensions), illustrating objects in 4D space-time, wherein (a) arrow-heads represent what is point-present *simpliciter*, and (b) scattered dots represent space-time points (non-exhaustively).

The first kind of worry is this. What is the justification for (L2) other than mere stipulation? How do we determine whether or which distant things in space-time are point-present *simpliciter*? Assuming that I am sitting in my favorite armchair point-presently *simpliciter*, why should I think that many other distant things are also point-present *simpliciter*? How do I know that? And how can I be sure which distant things are point-present *simpliciter*? The second kind of worry is this. Given (L2), what is the

justification for (L1-1) other than mere stipulation? If, according to (L2), there are many mutually space-like separated things being picked out by being point-present *simpliciter*, it is entirely legitimate to ask how these things are related to each other, and it would be surprising if these things are not related with each other by distant simultaneity. By contrast, for B-theories, there is much less pressure to relate things by distant simultaneity, since, according to B-theories, nothing is picked out by being point-present *simpliciter* and thereby there is no relevant class of things to be related to each other. Hence, given (L2), how does (L1-1) retain its plausibility in claiming that point-presentness doesn't depend on or suggest distant simultaneity? Wouldn't global invariant simultaneity be introduced by (L2) and then, once again, violate the objectivity of standard simultaneity or the strong conventionality of simultaneity? Hence, we seem to end up with a trilemma: all three possible solutions to the problem of localist A-facts are problematic.

This apparent trilemma for localisms, among other worries, explains why the majority of localisms in the literature turn out to be **B-theoretic localisms**: they go for the B-theoretic interpretation of point-presentness to avoid the problem of localist A-facts.⁵³ According to the B-theoretic interpretation, everything is present *as of* or *with respect to only* its co-located things, and everything is future *as of* or *with respect to* things in its past light cone.⁵⁴ That is, everything is *simultaneous with only* its co-located things and *later than* things in its past light cone. For example, my writing this sentence is present as

⁵³ B-theoretic localisms include Stein's (1968, 1991) B-theoretic here-now-ism of presentness, Clifton and Hogarth's (1995) B-theoretic world-line dependent becoming, Dieks's (2006) deflationary account of becoming, "Alexandrov present" advanced by Arthur (2006) and Savitt (2009) (although it's a temporally extended present rather than point-present), and, sadly, Pooley's (2013) non-standard "A-theoretic" interpretation of branching space-time model.

⁵⁴ See Stein (1968: 14, 1991: 159), Arthur (2006: 149), Dieks (2006: 170-171), and Pooley (2013: 334).

of my writing it, and my writing this sentence is future as of my starting this project. Facts of such a kind are the only facts available about presentness, futurity, and pastness, and “as of a certain thing” or “with respect to a certain thing” is an irremovable part of such facts. That is, there are no facts about which thing is present *simpliciter*, or future *simpliciter*, or past *simpliciter*. Facts such as “my writing this sentence is present as of my writing it” and “my writing this sentence is future as of my starting this project” are relative to an event and eternal. Hence, there is no non-supervenient A-fact here. That is, all things are on a par – nothing is ontologically privileged by possessing presentness *simpliciter*.

As characterized in §1, a genuinely *moving* now – i.e., a genuinely *dynamic* time – requires there being a progress of things sequentially acquiring presentness *simpliciter* (and then losing it). Since nothing is ontologically privileged by possessing presentness *simpliciter*, it follows that there is no genuinely *moving* now. Instead, as B-theoretic localisms often claim, time’s flow is *just* a relativized succession of events or past light cones, ultimately supervening on a partial earlier-than ordering on events. See the figure below.

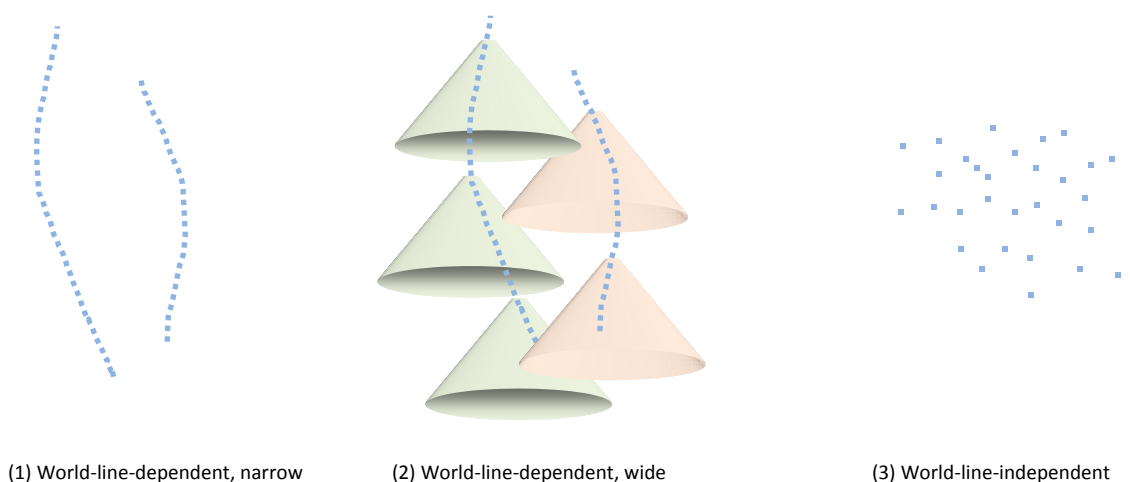


Figure 3. Three B-theoretic localist accounts of time flow: (1) World-line-dependent, narrow: a flow of time is a succession of events along a world-line (Arthur 2006: 142; Savitt 2009: 358). (2) World-line-dependent, wide: a flow of time is a succession of past light cones along a world-line. (3) World-line-independent: time flow in terms of successive becoming is just the occurrence of events in their partial, temporal order (Dieks 2006: 171; Stein 1968). In each account, there is only partial ordering on these events or light cones. Note that this figure has three dimensions (one vertical, temporal dimension and two horizontal, spatial dimensions), illustrating objects in 4D space-time, wherein (a) a sequence of dots represents a succession of events along a world-line, (b) a cone represents a past light cone, and (c) scattered dots represent just events, downplaying the role of a world-line.

Some (e.g., Pooley 2013: 335-336) use “perspectival facts” to refer to the above kind of “as-of” or “with-respect-to” facts about presentness, pastness, or time flow, insisting that these facts are real and *irreducible* to B-facts. However, perspectival facts *do* globally supervene on certain B-facts: since perspectival facts are relative and eternal, two worlds indiscernible with respect to earlier-than ordering entails that they are indiscernible with respect to what things are present as of what. Although supervenience does not imply reduction, hardcore A-theories require something stronger: A-facts that do not globally supervene on B-facts. As hardcore A-theorists may argue, only non-supervenient A-facts can *fully* capture the genuine dynamicity of time, the moving now.

Certain localist theories or models, though they might not be considered hardcore A-theoretic, have more dynamic feature than the above B-theoretic localisms because they explicitly postulate or provide a framework for postulating *a moving now per world-line*. These include Dieks's (1988: 458-459) minimalist moving-now theory,⁵⁵ Skow's (2009: 675-677) relativistic moving spotlight theory, Earman's (2008: 151) relativistic growing block model,⁵⁶ and Pooley's (2013: 355-356) relativistic branching space-time model. These theories or models are on the right track leading to (L2) because, since there are many world-lines, there are many moving nows. However, when it comes to the crucial question of what the associated A-facts are about those moving nows, Dieks is silent (and his later position (2006) shifted to B-theoretic), Earman is also silent, and Pooley's non-standard interpretation of his model turned out to be B-theoretic. Skow (2009) comes close with very limited hints, but eventually leaves the question to the readers by saying:

So what is the literal truth behind the superspacetime metaphor? I am not sure I really need to answer this question. (Skow 2009: 673)

Nevertheless, I think it is "truly about time" to answer the question of what the associated A-facts are about these moving nows, or more specifically, the question of what out there in space-time is point-present in a non-relative, temporary way. Apparently, the answer is (L2). If anyone, especially a hardcore A-theorist, wishes to preserve a real flow of time, a real moving now, then one should defend (L2) in order to resolve the problem of localist A-facts. There can be two variations of (L2) and accordingly two ways of defending it. The first, I propose, is **exclusive disjunctivism** (or

⁵⁵ In contrast to from his earlier (1988) account, Dieks (2006) holds a fundamentally *B-theoretic* account of becoming.

⁵⁶ Earman (2008), being a self-confessed eternalist, constructed a relativistic growing block model in order to assess its feasibility.

now-hereism), which is the idea that many mutually space-like separated things are point-present *simpliciter exclusively disjunctively*, and hence there is no common ground for the existence of global invariant simultaneity or A-facts about precisely which space-like distant things are point-present *simpliciter*. I explain and discuss exclusive disjunctivist variation in the next chapter and focus on the second variation in this chapter. The second variation, I propose, is **conjunctivism**, which is the following idea:

(CL2) Many mutually space-like separated things are point-present *simpliciter conjunctively* rather than simultaneously.

In the next section, I address the ontological and epistemic worries about positing distant point-present things. Then, in §4, I elaborate the sense in which conjunctivist A-theoretic localism yields global non-relative presentness without distant simultaneity. The other worry, which is about the pressure for distant simultaneity, shall be dealt with in §5.

3 Justification for (CL2)

To be more specific, the worries about justification for (CL2) are these: (1) Is it *ontologically assertable* by us that a distant thing is point-present *simpliciter*? (2) Is it *empirically accessible* to us that a distant thing is point-present *simpliciter*? These worries concern the existence of and epistemic access to A-facts about distant things.

Recall that localisms respect the conventionality of simultaneity and its underlying reason – that space-like separated things lack causal connectibility, and such is the case because causal influence propagates and takes effect point by point and no causal

influence can travel faster than the speed of light.⁵⁷ Hence, if one accepts that space-like separated things lack causal connectibility, then one should believe that whether a space-like distant thing is point-present *simpliciter* is *not empirically accessible* in terms of confirmability via a causal trace. Localisms respect this view about causal connectibility but are not committed to the truth or falsity of this view. What really matters for localisms is this: even without such empirical accessibility, still it is *ontologically assertable* by us that a space-like distant thing is point-present *simpliciter*. So to speak, conjunctivism holds that there just *conjunctively* are A-facts about whether a space-like distant thing is point-present *simpliciter*. This view is supported by the arguments below, which shall be dubbed “**global presentness arguments.**”

The first type of global presentness argument is based on this idea: if anything is present *simpliciter* at all, then there should be (conjunctively rather than simultaneously) many mutually space-like separated things that are present *simpliciter* (but not necessarily standing in a co-presentness relation). Similar lines of thought, though for different purposes, can be seen elsewhere (e.g., Zimmerman 2011: 190-191).⁵⁸ An argument of this type can be formulated as having the following three premises:

Single A-Fact: A certain event happening to me is point-present *simpliciter*.

Non-Solipsism: Other things, both space-like and time-like separated from my current self, exist.

⁵⁷ The causal connectibility in question is the kind not mediated by co-past or co-future things.

⁵⁸ Zimmerman (2011) provides a similar argument for global non-relative co-presentness (see §4). It is also unclear whether Zimmerman holds a local notion of presentness.

Metaphysical Equality: If something is point-present *simpliciter*, then, conjunctively (rather than simultaneously), some other spatiotemporally separated things are point-present *simpliciter*.

Clearly, these premises entail the core part of (L2) – that many things are point-present *simpliciter*. For one thing, non-Solipsism is uncontroversial and also accepted by B-theorists; for another, Single A-Fact is the cornerstone of the A-theory, albeit denied by B-theorists. In any case, motives for Single A-Fact are not the concern of this chapter. Hence, for present purposes, the crucial premise is *Metaphysical Equality*.

Metaphysical Equality is fairly reasonable because (1) otherwise there is only one thing that is point-present *simpliciter*, and why would this one thing, say the event happening to me, be so special among the myriad of things in the universe? Why do the things happening to me but not the things happening to you get to be point-present *simpliciter*? Why are you not as metaphysically eligible as I am? What's odder, (2) if *Metaphysical Equality* fails, as some (Sklar 1981: 140; cf. Craig 2008: 28; Dolev 2006: 187-188) have pointed out, things space-like separated from my current self turn from being future to past without being present (i.e., without being point-present *simpliciter*).⁵⁹ Of course, *Metaphysical Equality* concerns only point-presentness or A-facts, but, (3) given that similar principles concerning other minds or other things' existence are widely accepted, it is not particularly implausible. Both B-theorists and A-theorists should accept *Metaphysical Equality* if either is to be consistent. Lastly, (4) two co-located point-

⁵⁹ This argument is originally targeted on B-theoretic localisms, the thesis that everything is present as of *only* itself, and future as of something else (except for the big bang). Since, according to B-theoretic localisms, everything is present as of only its co-located things, they cannot explain our ordinary sense that what is present as of my current self is not just what is happening to me, but also what is happening to a bunch of other distant things.

present things may fall apart at some later stage, and there is no reason to think one gets to be point-present *simpliciter* after departure whereas the other doesn't.⁶⁰ That is, if one thing gets to be point-present *simpliciter*, so does the other.

The second type of global presentness argument deals with causal connectibility. The idea is this: why should causal connectibility constrain what there is? Even if there is no causal connectibility between a space-like distant thing and us, we nevertheless accept that there are B-facts about that thing. For example, in between our sending out a signal to the Curiosity rover on Mars and receiving its echo, we don't deny that there is a B-fact of the matter about whether Curiosity receives the signal at a certain space-time point. Likewise, even if there is no causal connectibility between a space-like distant thing and us, we should still accept that there are A-facts about that thing. For example, alongside the A-fact that we are waiting for Curiosity's echo point-presently *simpliciter*, we shouldn't deny that there is conjunctively (rather than simultaneously) also an A-fact of the matter about whether Curiosity is receiving the signal point-presently *simpliciter*. Moreover, assuming A-facts about things space-like separated from our current selves is certainly no worse than assuming facts about other possible worlds or future facts about us, supposing that no proper causal connectibility is available in all these cases.

However, causal connectibility does constrain which spatiotemporally separated things can be point-present *simpliciter*:

⁶⁰ I owe a great debt of gratitude to Steven Savitt for this idea.

(CL2-1) Spatiotemporally separated things are point-present *simpliciter* conjunctively only if they are mutually space-like separated.

Things in a time-like relation are causally connectible and, thus, cannot both be point-present *simpliciter*. This is because causal connectibility is conceptually connected to temporal ordering, and two things in an earlier-than relation conceptually cannot both be present *simpliciter*. For instance, it is incoherent that my starting my car and, shortly, my driving at 40 mph are both point-present *simpliciter*.

In addition, we shouldn't be entirely pessimistic about determining exactly which things are point-present *simpliciter*. In fact, the first type of global presentness arguments can be turned into epistemological arguments to yield the following:

(CL2-2) Exactly which things are point-present *simpliciter* may not be wholly empirically accessible to individuals as individuals, but A-facts about individuals are wholly empirically accessible to these individuals as a whole.

For instance, even if it is not causally connectible or empirically accessible (in terms of confirmability via a causal trace) to my current self which events are happening to *you* point-presently *simpliciter*, it is causally connectible or empirically accessible to my current self which events are happening to *me* point-presently *simpliciter* (granting the starting point of A-theory). The same applies to you, given a principle similar to Metaphysical Equality. So to speak, A-facts about me are empirically accessible to me, and A-facts about you are empirically accessible to you, even if we are ignorant of the A-

facts about each other (regardless of other epistemic imperfections). Now, taking you and me as a whole, the A-facts about this whole are empirically accessible to this whole. Following this line of thought, A-facts about individuals in the universe are wholly empirically accessible to these individuals as a whole.

It is a defect of conjunctivism that no single one of us can epistemically determine exactly which space-like distant things are in fact point-present *simpliciter*, but this defect is not fatal.⁶¹ This is because our epistemic status concerning A-facts about space-like distant things is by and large no worse than that concerning B-facts about these things – they are mostly on a par. If lack of causal connectibility restricts the empirical accessibility of facts about a space-like distant object, then B-facts, as well as A-facts, about the object are not empirically accessible to us because confirmation via the causal trace of them is unavailable. For example, in between our sending out a signal to Curiosity and receiving its echo, i.e., when the Curiosity’s signal-receiving event is outside our past and future light cones, the B-fact about the space-time position where Curiosity receives the signal is not accessible to us via the causal trace of the Curiosity’s signal-receiving event. Only when the Curiosity’s signal-receiving event already lies in our past light cones, can we empirically know the B-fact concerning the event’s space-time position by its echo, but by this means we can also empirically know the A-fact about the event: Curiosity *has received* the signal *simpliciter* (regardless of other epistemic imperfections irrelevant to causal connectibility). So to speak, lack of causal connectibility affects not only our epistemic status concerning A-facts but also our epistemic status concerning B-facts.

⁶¹ I owe David Braddon-Mitchell a lot for this concern.

In sum, (CL2) can be justified in both ontological and epistemic regards. Not only is it *ontologically assertable* by us that certain space-like distant things are in fact point-present *simpliciter*, but so also are many such A-facts *empirically accessible* to us as a whole, although no single one of us can epistemically determine exactly which space-like distant things are in fact point-present *simpliciter*.

4 Global Non-Relative Presentness without Simultaneity

With the justification for (CL2) in hand, I shall proceed to explain a distinctive feature following from (L1) and (CL2):

(CL3) A point-presentness collection, formed on the ground of the *conjunction* of the relevant A-facts, yields global non-relative presentness.

First of all, given (CL2), a **point-presentness collection** can be formed by collecting mutually space-like separated things that are point-present *simpliciter*, on the ground of the *conjunction* of the associated A-facts such as “*p* is point-present *simpliciter*,” “*q* is point-present *simpliciter*,” “*r* is point-present *simpliciter*,” etc. The point-presentness bearers are primarily spatiotemporal objects, including (the instantaneous parts of) events, or temporal parts of temporal worms, or “wholly present” things. (The point-presentness bearers could also be space-time points, but these points bear point-presentness in virtue of the point-presentness of spatiotemporal objects.) A collection of such point-present things, which may or may not determine a unique continuous hyperplane, exhibits an additional, A-theoretic geometrical structure in Minkowski space-time, but this structure is extrinsic to the intrinsic space-time structure, which is exhausted by the Minkowski

metric. That is, this A-theoretic geometrical structure does not contradict and is not grounded in the Minkowski metric. Rather, this A-theoretic geometrical structure is governed and accounted for by the brute A-facts about the local A-properties of the contents (i.e., the spatiotemporal objects) in space-time.⁶²

Secondly, a point-presentness collection yields global presentness in the sense that a point-presentness collection includes everything that is point-present *simpliciter*. However, a point-presentness collection may not determine a unique continuous hyperplane when space-time points are not fundamental A-property bearers and some space-time points are not occupied by spatiotemporal objects. Given the existence of finitely extended temporal worms such as an isolated particle-antiparticle pair popping out of the vacuum and shortly disappearing by annihilating each other, it is not the case that every temporal worm has a point-present part (because it may be wholly past or future). However, it is the case that every temporal worm is wholly future, or wholly past, or has a point-present part.

Thirdly, the conjunctivist global presentness is non-relative in the following sense: it is non-relative which things get to be in a point-presentness collection, since individual point-presentness of a thing is non-relative according to (L1). Although the geometrical features of an A-theoretic structure determined by brute A-facts change under frame transformations, it is still the same spatiotemporal objects that are point-present *simpliciter* for all frames of reference because the brute A-facts fix which things are point-present *simpliciter*. It is in this sense that the conjunctivist global presentness is

⁶² I owe Nina Emery a great deal for this clarification.

non-relative, and such non-relativity is accounted for by the brute A-facts rather than the Minkowski metric.⁶³

Thus, a kind of *global non-relative presentness*, which I shall dub “**global presentness**,” can be constructed on the grounds of point-presentness. A classical notion of presentness being global and non-relative is then captured by many space-like separated things being conjunctively (rather than simultaneously) point-present *simpliciter*, or alternatively by the conjunctive (rather than simultaneous) obtaining of facts that a certain event’s happening to me is point-present *simpliciter*, and that a certain event’s happening to you is point-present *simpliciter*, and that a certain event’s happening to someone else is point-present *simpliciter*, etc.

As already mentioned in (L1-1), point-presentness does not depend on or suggest sameness-in-time among spatiotemporally separated things in space-time. Hence, (CL2) together with (L1-1) leads to the following:

(CL4) There is no built-in distant simultaneity in a point-presentness collection.

According to the Localism’s central thesis, (L1), *point-simultaneity* or *point-presentness* is all about its departure from distant simultaneity, since no global invariant simultaneity is available according to the objectivity of standard simultaneity or the strong conventionality of simultaneity. In other words, a point-presentness collection has no *conceptual connection* to distant simultaneity that is not merely a substitute for the

⁶³ This clarification is due to Christian Wüthrich, to whom I owe a lot.

feature of “being in a point-presentness collection.”⁶⁴ With point-presentness construed as a local property, a collection of point-present things does not, without an additional assumption, introduce a relation of distant simultaneity over and above point-presentness.⁶⁵ This is to be understood in the way that a collection of philosophers in space-time, including Plato, Kant, Russell, etc., doesn’t introduce a relation of distant simultaneity or a relation of “being in the philosopher category with” over and above the local property of being a philosopher.⁶⁶ Put in a different way, the conjunction of the fact that a particular stage of Plato is a philosopher and the fact that a particular stage of Kant is a philosopher does not entail a simultaneity relation between the stage of Plato and the stage of Kant; neither does it introduce a relation of “being in the philosopher category with” over and above the local property of being a philosopher. Understood this way, given that a thing, p , is point-present *simpliciter*, and conjunctively another thing, q , is point-present *simpliciter*, it doesn’t follow that there is a simultaneity relation between p and q that is over and above the local property of being point-present *simpliciter*.⁶⁷ So to speak, what links point-present things together is not a relation of distant simultaneity between these things but the conjunction of the associated A-facts. Hence, there is no built-in distant simultaneity in a point-presentness collection.

Why are point-present things not related to each other by distant simultaneity? Part of the reason is, as stated above, that there is no *conceptual* connection between a collection

⁶⁴ Distant simultaneity is usually taken to have explanatory roles in physics such as explaining or being explained by quantum spooky action at a distance or other physical phenomena such as slow transport synchrony.

⁶⁵ In Minkowski space-time, neither do the spatiotemporal locations of things, which are local properties, suggest or depend on a relation of global invariant simultaneity. Such simultaneity can only be introduced by an additional foliation that is not innate of the Minkowski metric.

⁶⁶ For the sake of argument, let’s assume “being a philosopher” is a local property.

⁶⁷ One may take this conjunctive co-presentness to define simultaneity; however, I argue below, this kind of simultaneity is vacuous.

of things according to their local properties and distant simultaneity. To make it more explicit, consider the following argument:

(PS1) Co-presentness means (or should mean) nothing more than presentness: two things are co-present if and only if two things are present together.

(PS2) Presentness doesn't mean simultaneity.

(PS3) Therefore, co-presentness doesn't mean (or shouldn't mean) simultaneity.

(PS2) is relatively uncontroversial, because it is a contingent truth that a particular event is present *simpliciter*, but it is a necessary truth that every event is simultaneous with itself. (PS1) is more controversial. But we can argue that the minimal and the most exact sense of co-presentness should be just "being present together." We do usually take co-presentness to imply simultaneity, but that's not the minimal and most exact sense of co-presentness.

However, given (CL2), how do (L1) and (L1-1) retain their plausibility in the first place for claiming that point-presentness is a local property in the sense that it doesn't depend on or suggest distant simultaneity? Why is there at best a *de facto* connection between a collection of point-present things and distant simultaneity? These issues shall be dealt with in the next section.

Global presentness shall be distinguished from **global co-presentness**. There can be two interpretations of "co-presentness:" nominal or substantial. (For the sake of simplicity, "co-presentness" without qualification refers to substantial co-presentness.) Co-presentness understood nominally is just the feature of being in a point-presentness

collection, without built-in distant simultaneity, for mutually space-like separated things. Nominal co-presentness of two space-like separated things, p and q , takes the form of “ p is point-present *simpliciter*, and q is point-present *simpliciter*,” and doesn’t by itself entail that p is simultaneous with q . By contrast, co-presentness understood substantially does entail distant simultaneity. Substantial co-presentness of two space-like separated things, p and q , takes the form of “ p is point-present *simpliciter*, when q is point-present *simpliciter*,” and entails that p is simultaneous with q . Since the global presentness does not have built-in distant simultaneity, it does not yield and should be distinguished from global co-presentness (in the substantial sense).

In short, conjunctivism holds (or should hold) that there is global presentness without (commitment to) distant simultaneity. Since conjunctivism is free of the commitment to distant simultaneity, conjunctivism does not violate either the objectivity of standard simultaneity or the strong conventionality of simultaneity.⁶⁸ Finally, since point-presentness is local and there is no built-in distant simultaneity, global presentness, which is spelled out in term of point-presentness, is fundamentally local.

⁶⁸ Again, some maintain the objectivity of standard simultaneity by holding that the only *objective* distant simultaneity is *standard simultaneity*, which can be formulated in terms of only the Minkowski metric as being on the same hypersurface orthogonal to a frame of reference. Contrary to this view, others maintain the strong conventionality of simultaneity by holding that any simultaneity is merely *conventional* because there is no fact of the matter about the simultaneity of space-like separated things for their lacking causal connectibility. Yet others hold weak conventionality of simultaneity, the thesis that standard simultaneity is not objective but conventional. The existence of objective distant simultaneity (grounded in quantum spooky action at a distance or some other physical phenomena) refutes strong, but not weak, conventionality.

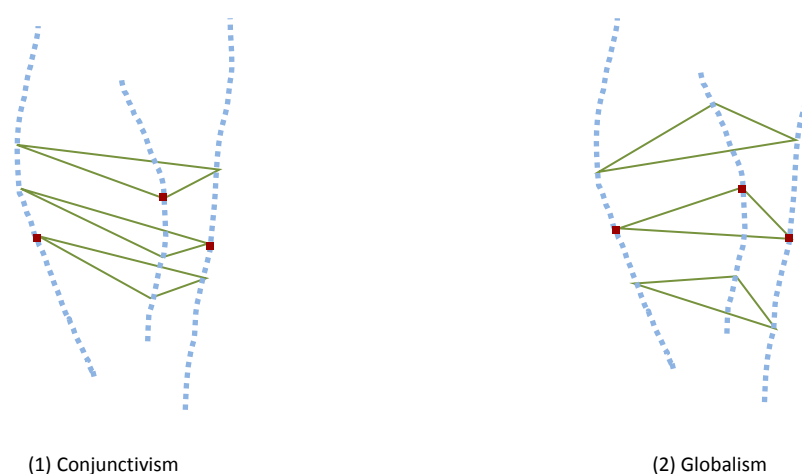


Figure 4. Conjunctivism vs. globalism: (1) Conjunctivism is not committed to distant simultaneity: it is (epistemically) possible that point-present things do not all fall upon the same hypersurface of (objective) global invariant simultaneity, if it exists. (2) Globalism is committed to distant simultaneity: it is (epistemically) necessary that point-present things all fall upon the same hypersurface of global invariant simultaneity. Note that this figure has three dimensions (one vertical, temporal dimension and two horizontal, spatial dimensions), illustrating objects in 4D space-time, a sequence of dots represents a succession of events along a world-line, a larger, darker dot represents an event that is point-present *simpliciter*, and a triangle represents a hypersurface of global invariant simultaneity, if it exists.

5 Resisting Globalism and Distant Simultaneity

Globalism is the thesis that there is global co-presentness with guaranteed distant simultaneity. Since globalism is committed to distant simultaneity, it violates the strong conventionality of simultaneity. Moreover, since space-like separated, co-present things share simultaneity, there is no ground for presentness being point-like and different for these co-present things. That is, presentness for globalism is hypersurface-like and thereby globalism deserves its name. There are two types of globalism: absolutist and relativist. The absolutist, but not the relativist, holds that global co-presentness, and thus global simultaneity, is invariant, thereby violating the objectivity of standard simultaneity in addition to violating the strong conventionality of simultaneity. Absolutist global co-

presentness is just classical presentness – the feature that there is a distinguished hyperplane in four-dimensional space-time that may be called “the present.” Since relativist globalism is a very minor view, I shall reserve the name “globalism” for absolutist globalism hereafter.

Ironically, the arguments for globalism are similar to the global presentness arguments for the localist thesis, (CL2). Zimmerman (2011: 190-191), for example, begins with A-theoretic presentness applicable to himself and then ends up with global presentness. However, this global presentness comes with a kind of simultaneity and thus yields global co-presentness: “the series of co-present slices constitutes a complete foliation ... [and] the foliation could just as well consist of “nonstandard simultaneity slices” [as opposed to *privileged* standard simultaneity slices]” (2011: 228).⁶⁹ Also along this line of thought, Bourne (2006: 173) defines absolute (distant) simultaneity in terms of the conjunction of all A-facts about which thing is present *simpliciter*. In short, it’s tempting to think that the global presentness arguments lead to global invariant simultaneity – that things that are present *simpliciter* collectively mark out a hypersurface, flat or curved, in space-time, and thereby yield global invariant simultaneity.⁷⁰ For, if there are many mutually space-like separated things being picked out by being present *simpliciter*, it is entirely legitimate to ask how these things are related to each other, and it would be surprising if these things are not related with each other by distant simultaneity.

⁶⁹ This quote may be taken as holding a kind of A-theoretic localism – co-presentness happens to agree with a certain kind of simultaneity but its essence does not include simultaneity. Nonetheless, it is more natural to take this quote as holding globalism, because Zimmerman doesn’t individuate a local notion of presentness at all.

⁷⁰ If fundamental things that can be present *simpliciter* don’t include space-time points, then these present things may not be capable of determining a *unique* hypersurface. But, still, one of the hypersurfaces determined by these present things is the absolute simultaneity hypersurface.

Naturally, globalists further argue that the apparent tension of global non-relative co-presentness or simultaneity with the Einstein-Minkowski interpretation of special relativity can ultimately be resolved. This is because, as Zimmerman (2011: 209) and Maudlin (2008: 160) have argued, an additional foliation consisting of a stack of hyperplanes in space-time is completely compatible with the Einstein-Minkowski interpretation of special relativity as long as the Minkowski metric is all the *intrinsic* space-time structure there is and the non-relativity of the foliation, if any, is accounted for by certain laws rather than the Minkowski metric. But still, globalism violates both the widely accepted objectivity of standard simultaneity and strong conventionality of simultaneity.

Now, let me return to the worries about justification for (L1-1) given (CL2). As mentioned above, it's tempting to think that the global presentness arguments lead to global invariant simultaneity. Hence, given (CL2), how does (L1-1) retain its plausibility for claiming that point-presentness doesn't depend on or suggest distant simultaneity? Put in a different way, since, apparently, a collection of point-present things for conjunctivism is just a collection of present things for globalism, is the difference between conjunctivism and globalism in their commitment to distant simultaneity merely verbal?

To begin with, the moral is this. The distant simultaneity at issue is a concept of physics, to be understood through our best physical theories, whereas presentness has its roots in our experience – hence we shouldn't take it for granted that the two go hand in hand. The debates over the objectivity of standard simultaneity as opposed to the strong conventionality of simultaneity concern distant simultaneity that is physically significant.

A distant simultaneity is physically significant if and only if it is not merely a substitute for the feature of “being in a point-presentness collection” but can pick out a stack of hyperplanes that can ground or be grounded in the Minkowski metric, or slow transport synchrony, or any other physical phenomena such as quantum spooky action at a distance. If the existence (or objectivity) of a physically significant, global, and invariant simultaneity is confirmed, then, apparently, there is non-conventional simultaneity, and standard simultaneity is not the *only* objective simultaneity there is – i.e., both the strong conventionality of simultaneity and the objectivity of standard simultaneity are rejected. So to speak, the distant simultaneity at issue bears explanatory roles in physics and should be understood through our best physical theories. On the other hand, presentness or temporal passage is usually postulated to explain our linguistic phenomena and, especially, direct experiential phenomena: the feeling that there seems to be a present moment and temporal passage is robust. Since distant simultaneity and presentness have different explanatory roles, the two shouldn’t be *conceptually* connected – they can be at most *de facto* connected.

To be specific, the means to resist the globalist idea that distant simultaneity and presentness go hand in hand is this: (1) why should we assert the existence of a physically significant simultaneity on the grounds of the existence of presentness rather than physical theories? More importantly, (2) even if the existence of the physically significant simultaneity is confirmed on the grounds of our best physical theories, why should we think it can be tracked for free by global co-presentness? Among all sorts of hyperplane structure serving various physical purposes, why think it is the physically significant simultaneity that is being tracked? As Callender (2008: 62-63) contends,

“there is simply no reason to think [the tensor-preferred foliation and the physically preferred one by Bohmian mechanics] are the same.” But if global co-presentness does not track a physically significant simultaneity, then its guaranteed simultaneity lacks physical significance, and is thereby empty – nothing but a name. Moreover, the global co-presentness that guarantees empty simultaneity is also empty. To avoid this, there are a lot of stories to be told by globalists about what global co-presentness or global invariant simultaneity amounts to. Otherwise, globalism would collapse to conjunctivism, but this is the collapse that the conjunctivist welcomes.

Furthermore, if globalists can, as Zimmerman (2011: 234-237) does, justify the physical significance of the global invariant simultaneity that is built-in to global co-presentness, then it should result in *testable* predictions different from conjunctivism’s. For example, since conjunctivism does not build distant simultaneity into a point-presentness collection, it predicts that the following case of non-simultaneity of point-present things is at least epistemically possible: my *point-present* eating *simpliciter* is *earlier than* a space-like distant astronaut’s *point-present* sleeping *simpliciter*, or, alternatively, *when* my eating is *point-present simpliciter*, the astronaut’s working is *point-past simpliciter* (supposing that the astronaut sleeps after she works). However, such a case is predicted to be not even epistemically possible according to globalism, because what’s central to globalism is the view that presentness and simultaneity go hand in hand.⁷¹ If we make progress in modern physics in the future by learning that a point-presentness collection turns out to agree with the hypersurface of physically significant

⁷¹ e.g., Zimmerman (2011) thinks co-present slices consists of (non-standard) simultaneity slices and Bourne (2006) defines absolute simultaneity in terms of the conjunction of all A-facts about which thing is present simpliciter

simultaneity of a certain kind, then globalists, but not conjunctivists, know that *a priori*. If it turns out to be the opposite – a point-presentness collection turns out not to agree with the hypersurface of physically significant simultaneity of a certain kind, or there is in fact no physically significant simultaneity at all – then globalism, but not conjunctivism, is falsified.

All in all, conjunctivism's lack of commitment to distant simultaneity doesn't mean that conjunctivism denies or doesn't care about distant simultaneity. Conjunctivism concerns relations between point-present things that are space-like separated just as much as globalism does, especially when it comes to simultaneity. But why take it for granted that the (point-)present things lie on a simultaneity hypersurface rather than treat it as subject to our best physical theories? After all, it is also wise to diminish a theory's dependence on the falsity (or truth) of another theory – i.e., it's unwise for globalism to depend on the falsity of both the widely accepted objectivity of standard simultaneity and strong conventionality of simultaneity. Put another way, it is better for the objectivity of standard simultaneity and the strong conventionality of simultaneity to fall for physical reasons rather than for philosophical reasons. This is why, I think, conjunctivism is superior to globalism. However, this strength of conjunctivism is also a weakness because the lack of built-in distant simultaneity grants conjunctivist global presentness a much smaller physical role – it cannot ground or be grounded in, say, quantum spooky action at a distance.

6 Skowian Localism

Below, I individuate a special version of A-theoretic localism, **Skowian localism**, which is the thesis that space-time points are the basic entities that are point-present *simpliciter*. Then, I shall compare Skowian localism with **general A-theoretic localism**, which regards (temporal parts of) events or spatiotemporally located objects as basic point-presentness bearers.

Skowian localism is directly constructed from Skow's limited hints about what A-theoretic localism looks like, as follows. Firstly, in classical space-time, 'only one time is absolutely present... [and] which instant is absolutely present keeps changing' (Skow 2009: 666). In other words, there are non-relative, temporary facts, i.e., A-facts, about what hypersurface is present in classical space-time. In special relativity, however, 'just a single point of spacetime is lit up' 'at a time' with a special metaphysical status, i.e., presentness (Skow 2009: 672).⁷² Such point-presentness is dubbed by Skow 'PRESENTNESS' to mean the here-now; it is so intended to be contrasted with 'NOWNESS,' which is applicable to a hypersurface in classical space-time (Skow 2009: 673). Down this path, one may reasonably suspect that there are A-facts about what space-time point is PRESENT *simpliciter*. Further, given Skow's (2009: 675, 677) claim that the PRESENT moves from earlier points to later points along my world-line, one may plausibly take it that there is one moving PRESENT per world-line. Hence, it's natural to conclude the following based on Skow's hints:

⁷² The original text is this: 'from the perspective of any given point of superspacetime, just a single point of spacetime is lit up' (Skow 2009: 672). The text can be interpreted metaphorically as 'just a single point is lit up at a time' as opposed to 'a whole hypersurface is lit up at a time.' It is so interpreted to avoid technical complication about superspacetime or supertime.

(L2^s) Many mutually space-like separated points in space-time are
PRESENT *simpliciter*.

This A-theoretic localist thesis, alongside (L1), shall be called ‘Skowian localism.’ Skowian localism recovers presentness in space-time – it is not nowhere but now-here. Although Skow suggests that we take the PRESENT as the here-now, ‘**now-here**’ would be a better alternative so as to be distinguished from Stein’s (1968) ‘here-now,’ which merely means self-simultaneity.⁷³

Once again, according to (L1), a particular now-here-ness is local and invariant, applicable to only a space-time point as opposed to a hypersurface. Thus, just as *now*-here-ness is localized, so is *now-here*-ness. In other words, now-here-ness does not depend on or suggest (non-relative or frame-dependent) sameness-in-time or sameness-in-space among (space-like or time-like) distant points in space-time.

It’s very important that (L2^s) is different from (L2) in the basic entities that are point-present *simpliciter*: in (L2^s), they are just space-time points; but in (L2), they are things, presumably including (temporary parts of) events or spatiotemporally located objects like a particle or a person, and possibly including space-time points themselves, depending on one’s ontology of space-time points. (L2^s) can be regarded as a special case of (L2), if one takes things to include space-time points.

Different accounts of point-presentness bearers may result in very different accounts of the presentness hypersurface. If the basic bearers of point-presentness are events or

⁷³ Since a particular now-here-ness is applicable to only a space-time point as opposed to a hypersurface, and as ‘now-here’ suggests by itself, presentness *is qualified by* and *privileges* a spatial feature on the fundamental level. This may render presentness not purely non-relative, but this just reflects the fact that in special relativity spatial and temporal features of a thing are not independent of each other.

spatiotemporally located objects, and if there are space-time regions not occupied by them, then these bearers may not determine a unique, continuous hypersurface. In this case, there is little motive for thinking that there is a presentness hypersurface other than a collection of point-presentness bearers. By contrast, If the basic bearers of point-presentness (i.e., now-hereeness in this case) are space-time points, then presumably there is a unique, continuous now-hereeness hypersurface, whether flat or curved, whether differentiable or not. While both general A-theoretic localism and Skowian localism are equally uncommitted to a particular geometrical structure of a point-presentness collection or now-hereeness hypersurface, Skowian localism takes a methodological advantage of a now-hereeness hypersurface, which is unavailable to general A-theoretic localism, to neatly determine which space-time points are past-there *simpliciter* and which are future-there *simpliciter*: those “below” the now-hereeness hypersurface are past-there, those “above” future-there. In addition, since which space-time points are now-here *simpliciter* keep changing, the now-hereeness hypersurface keeps changing its position (and possibly its shape), which results in a thorough foliation of space-time.

The problem with Skowian localism, however, is how to determine which space-time points are now-here *simpliciter* in the first place. For general A-theoretic localism, similar problems are relatively sorted out as argued in §3. Events that are happening to me point-presently *simpliciter* are epistemically accessible to my current self, or in other word, I know what it is for an event that happens to me to be point-present *simpliciter*. This minimal, epistemic starting point is usually granted by (hardcore) A-theories. Given fairly reasonable equality of epistemic status, events that are happening to many other subjects point-presently *simpliciter* are epistemically accessible to their current selves.

Even if we are ignorant of the A-facts about each other (regardless of other epistemic imperfection), there is in principle no difficulty for us *as a whole* to grasp the whole A-facts us. This is the point of (L2-2). But what is it for a space-time point to be now-here *simpliciter*? How do we know whether a space-time point is now-here *simpliciter*?

We could appeal to the events that we know to be now-here *simpliciter*: space-time points occupied by these events are now-here *simpliciter*. But what about the space-time points that are not occupied by anything? How do we know which of these points are now-here *simpliciter*? Moreover, appealing to now-here things (i.e., events or spatiotemporal objects) in order to epistemically determine now-here points makes a good reason for thinking (but of course does not entail) that a thing's being now-here *simpliciter* is more fundamental than a space-time point's being now-here *simpliciter*. Unless the Skowians can provide a non-question-begging reason why the fundamentality between the A-facts about things and the A-facts about points should be the other way around, Skowian localism is both ontologically and epistemically inferior to general A-theoretic localism.

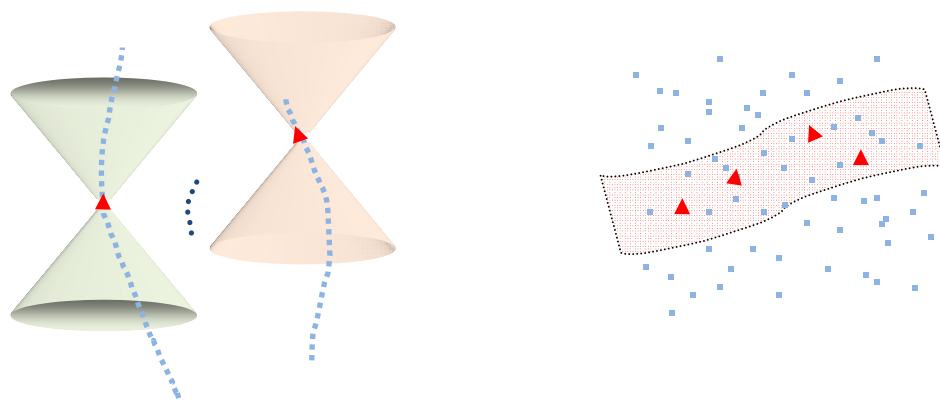
7 Pastness *Simpliciter* and Futurity *Simpliciter*

Although general A-theoretic localism is ontologically and epistemically superior to Skowian localism, determining point-past or point-future things for general A-theoretic localism requires a certain caution. Skowian localism can neatly determine which space-time points are past-there *simpliciter* and which are future-there *simpliciter*: those “below” the now-here hypersurface are past-there, those “above” future-there (except in Dead Universe explained below). But this neat way is unavailable to general A-theoretic

localism, since a point-presentness collection may not determine a unique, continuous hypersurface. For the present purpose, it can be regarded as a primitive notion that things are future then turn present then stay past. Hence, things that are not point-present *simpliciter* are either point-past or point-future *simpliciter*. But which things in space-time are point-past or point-future *simpliciter*?

It is widely accepted among philosophers of time that things in the past light cone of a thing, o , are invariantly past with respect to o .⁷⁴ It is therefore natural to think things in the past light cone of a thing that is point-present *simpliciter* are point-past *simpliciter*. However, *being in the past light cone of a point-present thing* is at best a sufficient but not necessary condition of being point-past *simpliciter*. Suppose, for example, an isolated particle-antiparticle pair pop out of the vacuum and shortly disappear by annihilating each other. When every stage of this particle-antiparticle pair has gone through point-futurity, point-presentness, and point-pastness, each stage stays point-past *simpliciter*, even if all of the stages are not in a past or future light cone of any point-present thing (call this example “Dead Isolation”). A more dramatic example (call it “Dead Universe”) is when the universe has come to doomsday: the last moments become point-past *simpliciter* and remain in such a state just like everything else since the big bang (since there doesn’t seem to be a ground for the last moments to be different from all other things in the universe such that only they can stay point-present *simpliciter* eternally). In this case, nothing in the universe is point-present *simpliciter*.

⁷⁴ Anything in the past light cone of a thing, o , stands in a time-like relation to o . Any time-like relation is invariant under Lorentz transformation. That is, a thing in the past light cone of o is past with respect to (or earlier than) o for all inertial frames of reference. This is why ‘past light cone’ is so called.



(1) Dead Isolation under general A-theoretic localism

(2) Now-here-ness hypersurface under Skowian localism

Figure 5. Point-pastness and point-futurity. (1) Each stage of Dead Isolation stays point-past *simpliciter*, even if all of the stages are not in a past or future light cone of any point-present thing. (2) Space-time points “below” the now-here-ness hypersurface are past-there *simpliciter*, those “above” future-there *simpliciter*. Note that this figure has three dimensions (one vertical, temporal dimension and two horizontal, spatial dimensions), illustrating objects in 4D space-time, wherein (a) a sequence of dots represents a succession of events along a world-line, (b) darker dots represent Dead Isolation, (c) red arrow-heads represent what is point-present or now-here *simpliciter*, (d) a cone represents a past or future light cone, (e) scattered dots represent space-time points (non-exhaustively), and (f) the wavy surface represents a now-here-ness hypersurface.

In Dead Universe, it doesn’t help to maintain that a thing is point-past *simpliciter* if it *was* once in a past light cone of a point-present thing, or simply if it *was* once point-present *simpliciter*. For this simply introduces an additional but indispensable A-theoretic relation – the tensed copula “*was*.” Hence, it would be more ontologically parsimonious to simply take point-pastness and point-futurity to be as fundamental as point-presentness. Moreover, it is simply a brute fact that things go through point-futurity, point-presentness, and point-pastness in order (in spite of the possibility of a backward flow of time). It is also a brute fact that a non-point-present thing that is not in the past or future light cone of any point-present thing is point-past (or point-future) *simpliciter*. Skowian localism is in the same boat as general A-theoretic localism in Dead Universe, since no space-time

point is now-here *simpliciter* – i.e., there is no now-here-ness hypersurface with which past-there or future-there points are contrasted.

8 Concluding Remarks

Not surprisingly, there have been many attempts in the literature to recover presentness or the now's moving under modern physics. However, these attempts are very unsatisfactory in one way or another. Some do not pay enough respect to the Einstein-Minkowski interpretation of special relativity in downplaying the importance of special relativity (Maxwell 2006) or embracing different interpretations (Tooley 1997; Craig 2008). Others, like globalism, violate associated doctrines – objectivity of standard simultaneity or strong conventionality of simultaneity. Still others, like B-theoretic localism or relativism, concede too much in maintaining a B-theoretic, local notion of non-relative presentness or a relative notion of global presentness. These attempts either do not properly respect the doctrines of modern physics or sacrifice our pre-theoretical conception that presentness or the now's moving is A-theoretic, global, and non-relative – i.e. the conception that what is presently happening to me does not exhaust what there presently is, and what there presently is does not vary according to perspective. Since conjunctivism can restore A-theoretic, global, and non-relative presentness in Minkowski space-time while respecting objectivity of standard simultaneity and strong conventionality of simultaneity, it is distinct from and better than these attempts in the literature.

Nevertheless, readers may still find worrisome the idea of divorcing distant co-presentness from distant simultaneity, since the link between the two has been deemed

relatively uncontroversial. In response to that, I further explore, in the next chapter, an alternative possibility, *exclusive disjunctivism*, the view that mutually space-like separated things are present *simpliciter* exclusively disjunctively, and each one of them gets to be present *simpliciter* in a *non-successive* way (just like mutually time-like related things are present *simpliciter* exclusively disjunctively, and each one of them gets to be present *simpliciter*, but in a *successive* way).

Chapter 5

Exclusive Disjunctivism – Presentness without Simultaneity in Special Relativity

1 Preliminaries

Presentness or the now's moving is commonly thought to be non-solipsist and non-relative (i.e., not dependent on a frame of reference). Events happening to me or on my world-line are not the only things that get to be present *simpliciter*, and all that there presently is does not vary according to perspective. This common idea of non-solipsist, non-relative presentness is naturally taken as assuming a classical notion of simultaneity – global, non-relative, non-conventional simultaneity. However, A-theories, while in accordance with our everyday conception of time, have been challenged by the widely accepted idea that there is no global, non-relative, non-conventional simultaneity in Minkowski space-time.⁷⁵ This challenge can be formulized as follows:

(Objectivity) A-theoretic presentness is non-solipsist and non-relative.

(Co-Presentness) Non-solipsist, non-relative, A-theoretic presentness requires at least two space-like separated things to be present *simpliciter* together.

⁷⁵ The distant simultaneity in question is the one that holds between *space-like* separated things. Hence, light-like relations, which constitute light cone structure, are excluded.

- (Link)** Non-relative, A-theoretic co-presentness of two space-like separated things implies their global, non-relative, non-conventional simultaneity.
- (Lack)** There is no global, non-relative, non-conventional simultaneity in Minkowski space-time.

Following from **(Objectivity)** and **(Co-Presentness)**, there must be at least two distinct obtaining A-facts such as “ e_1 is present *simpliciter*” and “ e_2 is present *simpliciter*,” where e_1 and e_2 are space-like separated things. According to **(Link)**, if e_1 is present *simpliciter* and e_2 is present *simpliciter*, then e_1 and e_2 are non-relatively, non-conventionally simultaneous. Further with **(Lack)**, it follows from the three principles that there is no A-theoretic presentness in Minkowski space-time. This argument has led many to advocate B-theories of time, which can be generalized as follows:

The B-Theory: There are *no* non-supervenient A-facts.

For B-theorists, all fundamental facts are *B-facts*, which are eternal or atemporal. (I shall henceforth simply use “A-facts” as shorthand for non-supervenient A-facts.)

There have been attempts in the literature to defend presentness or temporal passage against lines of thoughts similar to the one formulated above. Some refute **(Objectivity)** by holding a *local* notion of presentness – these include, for example, Stein (1968, 1991), Dieks (1988, 2006), Clifton and Hogarth’s (1995), Arthur (2006), Savitt (2009), and, arguably, Skow (2009) and Pooley (2013). Some refute **(Objectivity)** by holding a *relativist* notion of presentness – these include, for example, McCall (1994), Dolev (2006), and, arguably, Fine (2006). Others refute **(Lack)** by adding or privileging a

foliation – these include, for example, Bourne (2006); Zimmerman (2011), Rakić (1997), Peacock (2006), Forrest (2008), and Brogaard & Marlow (2013).⁷⁶ This list does not exhaust all attempts there are. However, there hasn't been one that challenges **(Co-Presentness)**.

While refuting **(Co-Presentness)** may seem bold, this paper merely serves as an initial attempt to see whether or how it is possible. Hence, whether this approach is better than others on the table will not be covered in this paper. If **(Co-Presentness)** is blocked, then there can be non-solipsist, non-relative, A-theoretic presentness without there being global, non-relative, non-conventional simultaneity – i.e., **(Link)** has no effect here. Hence, the potential clash of non-solipsist, non-relative, A-theoretic presentness with **(Lack)** doesn't arise. In the next section, I show how it is possible that a non-relative, A-theoretic presentness can be both non-solipsist and not requiring that at least two space-like separated things are present *simpliciter* together.

2 Exclusive Disjunctivism

Simply put, **exclusive disjunctivism** (or **now-hereism**) maintains that although, according to non-solipsism, many mutually space-like separated things are present *simpliciter*, they are so *exclusively disjunctively*. That is, exclusive disjunctivism maintains that non-solipsism requires only (ED):

(ED) Mutually space-like separated things are present *simpliciter*
exclusively disjunctively.

⁷⁶ The additional foliations or hyperplanes in space-time is not considered as intrinsic space-time structures and are to be accounted for by certain laws rather than the Minkowski metric.

For example, supposing that e_1 and e_2 are two space-like separated things, (ED) says that e_1 is present *simpliciter* or e_2 is present *simpliciter* exclusively, without any unconditional commitment to which disjunct is the case. If (ED) holds, then no two or more space-like separated things are present *simpliciter together*. Hence there is no common ground for a global, non-relative, non-conventional simultaneity. (Moreover, there is also no common ground for *presentness-A-facts* – which are shorthand for the A-facts about which things are present *simpliciter* – about spatially non-local things. This way the epistemic problem – that *exactly* which space-like distant things are present *simpliciter* given that there is no causal connectibility between them and us – doesn't arise at all.)

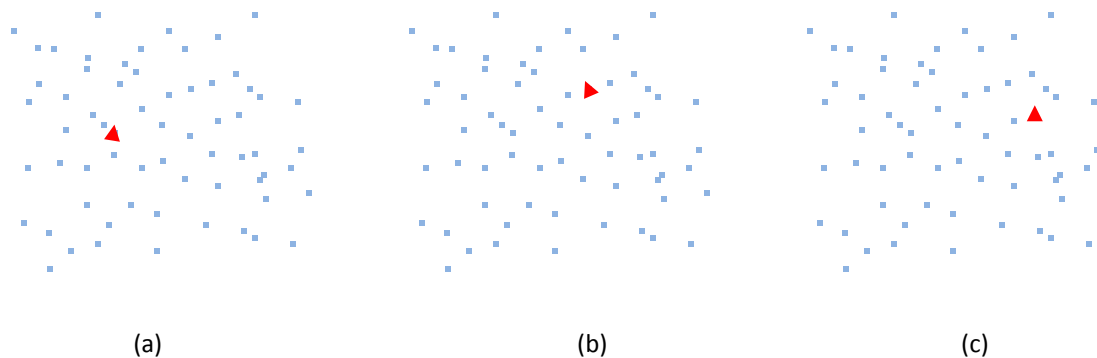


Figure 1. Exclusive disjunctivism: (a), (b), and (c) together represent that many mutually space-like separated things are present *simpliciter exclusively disjunctively*. This figure has three dimensions (one vertical, temporal dimension and two horizontal, spatial dimensions), illustrating objects in 4D space-time, wherein (1) red arrow-heads represent what is present *simpliciter*, and (2) scattered dots represent space-time points (non-exhaustively).

It may seem puzzling what the exclusive disjunction in (ED) amounts to. Below is how (ED) can be spelled out:

(ED1) Presentness-A-facts obtain *temporarily* as well as *spatially locally*.

In other words, the obtainment of presentness-A-facts is restricted not only to a time but also to a place. For example, I read Stein's 'On Einstein-Minkowski Space-Time' some time in 2015, but if/when me-2016's writing this paper happens to be present *simpliciter*, there obtains no such A-fact as "me-2015's reading Stein's 'On Einstein-Minkowski Space-Time' is present *simpliciter*" – this is what it is for presentness-A-facts to obtain temporarily. Likewise, Curiosity-2016's processing something on Mars is space-like related to me-2016's writing this paper, but if/where Curiosity-2016's processing something on Mars happens to be present *simpliciter*, there obtains no such A-fact as "me-2016's writing this paper is present *simpliciter*" – this is what it is for presentness-A-facts to obtain spatially-locally. In sum, it follows from the two restrictions of the obtainment of presentness-A-facts that if a thing is present *simpliciter*, everything that is not co-located, whether inside its past or future light cones or outside both, cannot be present *simpliciter*. Hence, it cannot be the case that two particular, space-like separated things are both present *simpliciter*.

However, can exclusive disjunctivism preserve a sense of non-solipsism for presentness? There are two ways in which presentness is alleged to be non-solipsist: the time-like and the space-like.

In the time-like case, *each* member of a collection of mutually time-like related things (e.g., each thing on a world-line) gets to be present *simpliciter* temporarily in a *successive* way (i.e., in a one-dimensional order and arguably in one particular direction), and thereby establishes a temporal flow. For example, suppose that there are three mutually time-like related events, *p*, *q*, and *r*, where *p* is my starting the car, *q* is my driving at 40 mph shortly, and *r* is my arriving home. If/when *p* is present *simpliciter*, there obtains no

such A-fact as “*q* is present *simpliciter*” or “*r* is present *simpliciter*.” The same holds for *q* and *r*. In addition, each one of *p*, *q*, and *r* gets to be present *simpliciter* temporarily: firstly *p* gets to be present *simpliciter* temporarily, secondly *q*, and lastly *r*. That is, in the time-like case, (1) reduces to (2) or (3) or (4) successively; or alternatively, (2), (3), or (4) is the case successively:

- (1) P (i.e., *p* is present *simpliciter*), or Q (i.e., *q* is present *simpliciter*), or R (i.e., *r* is present *simpliciter*) obtains exclusively.
- (2) P obtains, but Q and R don’t.
- (3) Q obtains, but P and R don’t.
- (4) R obtains, but P and Q don’t.

Given the above understanding of non-solipsism, we can understand non-solipsism in the space-like case as follows:

- (ED2) Each member of a collection of mutually space-like related things gets to be present *simpliciter* spatially-locally in a *non-successive* way, and thereby the collection lacks temporality. (Note that there is no unique assignment of mutually space-like related things for such collection.)

Consider, for example, three mutually space-like related events, *x*, *y*, and *z*, where *x* is my taking a nap in my armchair, *y* is a cruise’s docking at the Port of Miami, and *z* is Curiosity’s exploring on Mars. If/where *x* is present *simpliciter*, there obtains no such A-fact as “*y* is present *simpliciter*” or “*z* is present *simpliciter*.” The same holds for *y* and *z*.

Just as each one of p , q , and r gets to be present *simpliciter* temporarily, each one of x , y , and z gets to be present *simpliciter* spatial-locally. However, the successive obtainment of presentness-A-facts is lacking in the space-like case – the obtainment here is merely exclusively disjunctive. That is, (5) reduces to (6) or (7) or (8) non-successively; or alternatively, (6), (7), or (8) is the case non-successively:

- (5) X (i.e., x is present *simpliciter*), or Y (i.e., y is present *simpliciter*), or Z (i.e., z is present *simpliciter*) obtains exclusively.
- (6) X obtains, but Y and Z don't.
- (7) Y obtains, but X and Z don't.
- (8) Z obtains, but X and Y don't.

Spatiality, according to exclusive disjunctivism, is distinguished from temporality in the following respect. Since, in the time-like case, *each* member of a collection of mutually time-like related things gets to be present *simpliciter* temporarily in a *successive* way (i.e., in a one-dimensional order and arguably in one particular direction), we can determine a minimal sense of when a member, say q , of a collection of p , q , and r is present *simpliciter*: before r and after p (where p , q , and r are time-like ordered). In the space-like case, however, such successive acquisition of presentness *simpliciter* is lacking – i.e., the presentness-A-facts obtain without any specific order or direction. Hence, a minimal sense of temporality – a before-after series – cannot be established in the space-like case. The question of “when (in the minimal sense)” a member, say y , of a collection of x , y , and z is present *simpliciter* is inadequate (where x , y , and z are space-like related), because there is no before-after relationship among them. In other words,

the obtainment shift in the space-like case does not occur in time. Rather, the correct question is “where” a member, say y , of a collection of x , y , and z is present *simpliciter*. And the answer is where it is relatively located (at a spatiotemporal location in relation to other things). This answer is akin to that in the time-like case (e.g., q is present *simpliciter* before r and after p) – it is when q is relatively located. The difference between the two types of cases is only that in the space-like case, relative locations cannot be expressed in terms of before-after relations.

On the account of exclusive disjunctivism, spatiality is distinguished from temporality also in the following regard. Considering the above example, if q happens to be present *simpliciter*, then p is, though not present, past *simpliciter* and r is, though not present, future *simpliciter*, because p and r are in the past or future light cones of q . That is, although no presentness-A-facts obtain about p and r when there obtains a presentness-A-fact about q , a pastness-A-fact and a futurity-A-fact do obtain about p and r respectively. By contrast, the same does not hold for space-like non-local things: if y happens to be present *simpliciter*, then both x and z not only aren't present *simpliciter* but also aren't past *simpliciter* or future *simpliciter*, because neither x nor z is in the past or future light cones of y or, supposedly, of any other thing that is present *simpliciter*. That is, when there obtains a presentness-A-fact about y , no A-facts at all obtain about x and z . In sum,

(ED3) if a thing happens to be present *simpliciter*, then there are A-facts of the matter about the A-properties of its time-like related things, but there just are *no* A-facts of the matter about the A-properties of its space-like related things.

Unlike what is shown in (ED2), world-lines are metaphysically special: they are where presentness-A-facts obtain successively. And then (ED3) makes a world-line like an independent A-theoretic world on top of the whole B-theoretic universe: a present thing comes with A-facts about the A-properties of everything on its world-line, but there just are *no* A-facts of the matter about the A-properties of its space-like related things.

3 Exclusive Disjunctivism in Comparison with Various Forms of Solipsism

“Solipsism” usually refers to the view that only one single space-time point (or things at this point) is present and real *simpliciter*. Solipsism so construed is an extreme presentism. I shall call such a view “strong solipsism” in order to distinguish it from other forms of solipsism. In comparison with strong solipsism, I shall dub the following view “weak solipsism:” the view that only one single space-time point (or things at this point) is present *simpliciter* without commitment to either presentism or eternalism. (A theory, like the moving spotlight theory, can hold both a notion of presentness *simpliciter* and eternalism.)

Given the above characterization, solipsisms and exclusive disjunctivism share the following feature: “the present” never consists of more than a single space-time point. Readers may then wonder how exclusive disjunctivism is not a restatement of or has any real advantage over solipsisms.⁷⁷

As some may argue, the existence of spatially extended objects poses real difficulties for strong solipsism. Take a brain for example. The existence of experience would require the existence of a brain, which is a spatially extended object. Since strong

⁷⁷ I owe the anonymous referee for bringing up this concern.

solipsism maintains that only one single space-time point (or things at this point) is real, it does not allow the existence of spatially extended objects and, therefore, cannot explain the existence of experience.⁷⁸

Since exclusive disjunctivism is not committed to presentism (but to the notion of presentness *simpliciter*), exclusive disjunctivism is distinct from strong solipsism. For this reason, exclusive disjunctivism has the following advantage over strong solipsism: exclusive disjunctivism can account for spatially extended objects like a brain in terms of a four-dimensional worm, within which different spatiotemporal parts causally interact with each other and together give rise to a stream of experience (if a certain form of physicalism about mind is assumed here). It would be unfair to impose on exclusive disjunctivism the requirement that different parts of the brain have to work *co-presently* in order to give rise to experience, because this is tantamount to imposing on a B-theory the requirement that different parts of the brain have to work *simultaneously* in order to give rise to experience. Since, as assumed for the present purpose, distant simultaneity is not available in Minkowski space-time, B-theories cannot satisfy the requirement either.

The remaining question is whether exclusive disjunctivism is distinct from and better than weak solipsism, given that both are not committed to presentism. In this regard, I shall raise concerns about metaphysical equality. If among many mutually space-like separated things there is only one point that gets to be present *simpliciter*, then we may question why this one point is so special among the myriad of points in space-like relations. Any hardcore A-theory, whether solipsist or not, that takes metaphysical equality seriously should explain how mutually space-like related points (rather than just

⁷⁸ Again, I owe the anonymous referee for this example.

one point) get to be present *simpliciter*. If, according to weak solipsism, it is the full story that only one space-time point (or things at this point) is present *simpliciter*, then weak solipsism does not respect metaphysical equality. For this reason, exclusive disjunctivism is distinct from and better than weak solipsism, because exclusive disjunctivism, but not weak solipsism, takes metaphysical equality seriously and offers the following explanation: mutually space-like related things are present *simpliciter* exclusively disjunctively.

4 Concluding Remarks

All in all, exclusive disjunctivism allows a non-solipsist, non-relative, A-theoretic presentness without simultaneity. Firstly, there is a non-solipsist, A-theoretic presentness because, according to (ED), *two or more* mutually space-like separated things are present *simpliciter* exclusively disjunctively. In other words, this non-solipsist presentness is metaphysically equal, because it is not just me but also many space-like distant things that get to be present *simpliciter* (according to (ED)). Secondly, (ED) does not challenge **(Objectivity)** in holding that A-theoretic presentness is non-relative. Lastly, there is no global, non-relative, non-conventional simultaneity that can be grounded in such non-solipsist, non-relative, A-theoretic presentness, because, according to (ED), there is no co-presentness of mutually space-like separated things, or alternatively according to (ED3), there just are *no* A-facts of the matter about space-like non-local things. Hence, the potential clash of non-solipsist, non-relative, A-theoretic presentness with Minkowski space-time doesn't arise.

Not surprisingly, there have been many attempts in the literature to recover presentness or the now's moving under modern physics. However, these attempts are very unsatisfactory in one way or another. Some do not pay enough respect to the Einstein-Minkowski interpretation of special relativity in downplaying the importance of special relativity (Maxwell 2006) or embracing different interpretations (Tooley 1997; Craig 2008). Others, like globalisms, violate the doctrines associated with special relativity – objectivity of standard simultaneity or strong conventionality of simultaneity. Still others, like B-theoretic localism or relativism, concede too much in maintaining a B-theoretic, local notion of non-relative presentness or a relative notion of global presentness. These attempts either do not well respect the doctrines in modern physics or sacrifice our pre-theoretical conception that presentness or the now's moving is A-theoretic, non-solipsist, and non-relative – i.e. the conception that some things are present *simpliciter*, things presently happening to me do not exhaust what there presently are, and all what there presently are do not vary from one perspective to another. In brief, these attempts reject either **(Lack)** or **(Objectivity)**.

By contrast, both conjunctivism and exclusive disjunctivism do not challenge **(Lack)** or **(Objectivity)** – conjunctivism rejects the link between distant co-presentness and distant simultaneity **(Link)** while exclusive disjunctivism rejects the requirement of distant co-presentness for a non-solipsist, non-relative, A-theoretic presentness **(Co-Presentness)**. I assume that both **(Lack)** and **(Objectivity)** weigh more than **(Link)** or **(Co-Presentness)**. Hence, either conjunctivism or exclusive disjunctivism compromises the least of what have been agreed by the most scholars. The accomplishment of chapter 4 and 5 is then the discovery of the new ways of accommodating presentness or temporal

passage in Minkowski space-time that are distinct from and better than the existing ones in the literature – conjunctivism and exclusive disjunctivism, both of which can restore A-theoretic, non-solipsist, and non-relative presentness in Minkowski space-time while respecting objectivity of standard simultaneity and strong conventionality of simultaneity. All in all, the above chapters complete my defense of A-theory of time.

Chapter 6

Daoist Conception of Time: Is Time Merely a Mental Construction?

1 Preliminaries

While most writers on the nature of time trace the debate to ancient Greek philosophy, citing, for example, Heraclitus and Parmenides, it is worth exploring the thoughts of similar precursors in the Eastern tradition. In the Daoist literature, there are certain hints about the nature of time, but not much has been written on it. In addition, there have been very few succeeding studies on the Daoist conception of time in both the West and East (the only explicit one in English literature is Chai's (2014)). Given that Daoist philosophical framework deviates significantly from the contemporary Western ones, it is an interesting yet challenging task to explore what Daoist views on the nature of time make look like.

Daoist metaphysics, according to the mainstream interpretations both in the East and the West, maintains that Dao (the descriptive, natural 道 dào^{path}, as opposed to normative, social 道 dào^{path}) is either the ultimate ground or cosmogony of all things (depending on interpretation). Dao is infinite in every way, indeterminate, non-material, self-grounding, universal, and eternal (Chen 2006: 2-4). Dao manifested itself first as mere possibilities, as primal nothingness (無 wú^{non-being}); through self-differentiation, Dao creates the One, or the primal chaos (混沌 hùndùn^{undifferentiated-wholeness}), and manifested itself as the One;

further through self-differentiation were formed myriad things (Shen 2009: 251; Chai 2014: 362; Chen 2006: 4-6). Myriad things constantly change, but a sage can do away with past and present and enter where there is no life and death.

Grounded in the above interpretation of Daoist metaphysics, David Chai (2014) formulates a Daoist conception of time: “human measured time” manifested in myriad things in the Daoist universe is merely a mental construction, whereas the authentic time is cosmological time, which consists of neither an A-series (which is ordered by non-reducible pastness, presentness, and futurity) nor a B-series (which is ordered by earlier-than relations) but something without order and directionality.⁷⁹

Chai’s formulation of the Daoist conception of time is worth further study for the following reasons. Firstly, there have been very few studies on the Daoist conception of time in both the West and East, and, indeed, the only explicit study on this topic in English literature is Chai’s. Secondly, Chai’s formulation seems to provide new materials or ways to re-think the Western debates on the nature of time. Hence, in this chapter, I start with Daoist texts (i.e., *Dao De Jing* and *Zhuangzi*) about fundamental reality and time. I then explain and analyze Chai’s interpretations of these texts. Lastly, after a careful analysis and examination of both Chinese and English literature on Daoism, I argue that Chai’s interpretations violate an important Daoist principle. In addition, the idea that human measured time is merely a mental construction lacks *conclusive* support from the Daoist texts. That is, Chai’s formulation is not the best possible one that fits the textual characterizations of Daoist reality.

⁷⁹ By “cosmological time” Chai doesn’t mean the cosmic time of modern cosmology.

2 Daoist Texts about Reality and Time

In this section, I firstly look at Daoist texts about fundamental reality and then introduce those about time.

What is most fundamental in Daoist metaphysics is Dao (the descriptive, natural 道 dào^{way}, as opposed to the normative, social 道 dào^{way}). On some interpretations, Dao is the ultimate metaphysical ground of all things; on others, cosmogony (Liu 2009: 220). These interpretations are rooted in texts such as the following:

There was something undefined and complete, [existing] before Heaven and Earth. How still it was and formless, standing alone, and undergoing no change, reaching everywhere and in no danger (of being exhausted)! It may be regarded as the Mother of all things. I do not know its name, and I give it the designation of the Dao (the Way or Course). (*Dao De Jing*, Ch. 25, tr. James Legge)

In other words, Dao is infinite in every way, indeterminate, non-material, self-grounding, universal, and eternal (Chen 2006: 2-4). More importantly, Dao metaphysically grounds or cosmologically produces all things as follows: Dao manifestes itself first as mere possibilities, as primal nothingness (無 wú^{non-being}); Dao then manifestes itself as the One, or the primal chaos (混沌 hùndùn^{undifferentiated-wholeness}); further through self-differentiation, Dao manifestes itself into pairs of the opposites, such as being and non-being, yin (the negative) and yang (the positive), and so on; finally, from the dialectical interaction of these opposites are formed myriad things (Shen 2009: 251; Chai 2014: 362; Chen 2006: 4-6). As Laozi puts it,

The Dao produced One; One produced Two; Two produced Three; Three produced All things. (*Dao De Jing*, Ch. 42, tr. James Legge)

In sum, the principles involved in the above text that are relevant to the purpose of this chapter shall be formulated as follows:

(Dao 1) Dao is universal and eternal.

(Dao 2) Dao is the metaphysical ground or cosmogony of everything.

As mentioned above, Dao manifested itself first as primal nothingness, then as the primal chaos, and then myriad things were formed in virtue of Dao. Primal nothingness, the primal chaos, and myriad things can be regarded as different levels of reality or states of the universe depending on whether Dao is interpreted ontologically or cosmologically.

In the following text, primal nothingness is “something” that is prior to all existing things:

The myriad creatures in the world are born from Something, and Something from Nothing. (*Tao Te Ching*, Ch. 40, tr. D. C. Lau)

Thus Something and Nothing produce each other. (*Tao Te Ching*, Ch. 2, tr. D. C. Lau)

Simply put, primal nothingness is deprived of all (concrete or abstract) determinate things – what’s left is Dao, since it is indeterminate, non-material, eternal, universal, and responsible for all things (*Dao De Jing* Ch. 25). On some interpretations, primal nothingness is just the most primitive form of Dao (Shen 2009: 251; Chai 2014: 362).

The One (i.e., the primal chaos, Hundun), being the first actualization of Dao *qua* nothingness, is an undifferentiated whole according to Chai’s (2014: 362-363) interpretation. This interpretation is based on the following text:

The emperor of the South Sea was called Shu [Brief], the emperor of the North Sea was called Hu [Sudden], and the emperor of the central region was called Hundun [Chaos]. ... “All men,” they said, “have seven openings so they can see, hear, eat, and breathe. But Hundun alone doesn’t have any. Let’s try boring him some!” Every day they bored another hole, and on the seventh day Hundun died. (*Zhuangzi : Basic Writings*, “Fit for Emperors and Kings,” tr. Watson)

Hundun’s having no openings at all is a metaphor for Hundun’s being undifferentiated. As it will be clear in the following sections, the following principle is crucial to understanding why Chai’s interpretation of the Daoist conception of time is wrong:

(Dao 3) The One is an undifferentiated whole.

The transition from primal nothingness to the One is due to Dao’s dialectical nature as stated in the following text:

The movement of the Dao by contraries proceeds; and weakness marks the course of Dao’s mighty deeds. (*Dao De Jing*, Ch. 40, tr. James Legge)

Dao’s dialectical interaction makes the move from nothing to something, from something to its negative, from the undifferentiated to the differentiated, etc. (Shen 2009: 251; Chai 2014: 364; Chen 2006: 7-9). Hence, from the differentiation of the One were formed myriad things. In sum, following from what is said in Ch. 25, 40, and 2 of *Dao De Jing*, Dao creates all things *ex nihilo* and all things return to nothingness eventually.

As introduced above, Daoist metaphysics is pretty well characterized in *Dao De Jing*. Explicit reference to time or temporal phenomena in Daoist texts, however, appears in a later Daoist classic, *Zhuangzi*. In the following text, *Zhuangzi* points out that time does not stop, myriad things live and die, and things constantly change:

The Way is without beginning or end, but things have their life and death—you cannot rely upon their fulfillment. One moment empty, the

next moment full—you cannot depend upon their form. The years cannot be held off; time cannot be stopped. Decay, growth, fullness, and emptiness end and then begin again. It is thus that we must describe the plan of the Great Meaning and discuss the principles of the ten thousand things. The life of things is a gallop, a headlong dash—with every movement they alter, with every moment they shift. What should you do and what should you not do? Everything will change of itself, that is certain! (*Zhuangzi : Basic Writings*, “Autumn Flood,” tr. Watson)

Intuitively, the above text can be taken to suggest that time flows in the A-theoretic sense, myriad things come into and then go out of existence in the presentist sense, and thereby there is “real” change. However, a B-theoretic reading is also possible: time does not stop in the sense that there is change every moment; myriad things change in terms of temporal parts’ having different properties at different moments; and things live and die in the sense that the length of a 4-D temporal worm is limited. In any case, the above text suggests the following theory-neutral principle:

(Dao 4) On the level or in the state of myriad things, there is constant change.

Although there is constant change on the level or in the state of myriad things, among which we apparently are, a sage can do away with past and present and enter where there is no life and death by the means indicated in the following text:

After he had put life outside himself, he was able to achieve the brightness of dawn, and when he had achieved the brightness of dawn, he could see his own aloneness. After he had managed to see his own aloneness, he could do away with past and present, and after he had done away with past and present, he was able to enter where there is no life and no death. That which kills life does not die; that which gives life to life does not live. This is the kind of thing it is: there’s nothing it doesn’t send off, nothing it doesn’t welcome, nothing it doesn’t destroy, nothing it doesn’t complete. Its name is Peace-in-Strife. After the strife, it attains completion. (*Zhuangzi : Basic Writings*, “The Great and Venerable Teacher,” tr. Watson)

The above passage could have the following three interpretations with regard to time.

On the first interpretation, a sage can understand the fundamental truth – what is prior to myriad things is primal nothingness, which is eternal and universal. The time manifested in myriad things, whether A-theoretically or B-theoretically understood, is therefore not an aspect of fundamental reality. Understanding this, a sage can thereby care less about the change in myriad things. However, this doesn't commit Daoism to the thesis that the time manifested in myriad things is merely a mental construction. This interpretation can be summed up as follows:

(Interpretation A) A sage can understand that primal nothingness, which is eternal and universal, is prior to myriad things. The time manifested in myriad things, whether A-theoretically or B-theoretically understood, is not fundamental, but it is not merely a mental construction either.

On the second interpretation, myriad things exist in the B-theoretic way – they never cease to exist at a certain spatiotemporal locations. That is, myriad things don't come into and then go out of existence. For example, Laozi never ceases to exist, he is still there at some time thousands of years earlier than now. Hence, the difference between the past and the present (or life and death) is only perspectival. The pastness of a thing from my current perspective is determined by the fact that its temporal location is earlier than mine, and the location of my current self is determined by when the token notion of 'current' is used. The facts about what is earlier than what and when a token notion is used never

change. Presentness and pastness therefore supervene on earlier-than relations and located-at relations, which do not change over time. That is, the fundamental difference between the past and the present (or life and death) is only apparent. This interpretation can be summed up as follows, with stress on B-theoreticity:

(Interpretation B) A sage can understand that the time manifested in myriad things is B-theoretic: myriad things don't come into and then go out of existence.

On the third interpretation, a sage can “conjoin with Dao,” and “[u]nited with Dao and in harmony with the myriad things of the world, time for the Daoist sage becomes a misnomer — a contrivance of the human mind” (Chai 2014: 365). That is, the fact that a sage can do away with past and present and enter where there is no life and death suggests the following:

(Interpretation C) The time manifested in myriad things, whether A-theoretic or B-theoretic, is merely a mental construction.

The idea that a sage can do away with the dichotomy of past and present, life and death, or even beginning and ending appears in another passage in *Zhuangzi*:

(The sovereign) Ran-xiang was possessed of that central principle round which all things revolve, and by it he could follow them to their completion. His accompanying them had neither ending nor beginning, and was independent of impulse or time. Daily he witnessed their changes, and himself underwent no change ... The sage never thinks of Heaven nor of men. He does not think of taking the initiative, nor of anything external to himself. He moves along with his age, and does not vary or fail. (*Zhuangzi*, “Ze-Yang 3,” tr. Legge)

These passages about doing away with past and present share a common idea:

(Dao 5) A sage can do away with past and present and enter where there is no real distinction between past and present, or life and death, or beginning and ending.

That is, a sage can see through the constant change in myriad things and grasp the truth that something more fundamental is unchanging, eternal, and complete so that there is no real distinction between past and present, or life and death, or beginning and ending. However, the following questions remain and need further scrutiny: Is the time manifested in myriad things merely a mental construction? If not, is it A-theoretic or B-theoretic?

Based on different combinations of the above interpretations, we can formulate various models of time out of the Daoist classics. In the next section, I shall discuss Chai's (2014) model.

3 Analysis of Chai's Interpretation

David Chai (2014) takes Zhuangzi to maintain that the time manifested in myriad things is merely a mental construction (as mentioned in Interpretation C). As David Chai interprets it:

“[T]he three successive states of ekstasis (past, present, and future) are but imaginary happenstances of one whose unity with the nonworldly non-mindedness of Dao has been disrupted.” (2014: 367)

Meanwhile, “[a]uthentic time lies with cosmogony and not reality as envisioned by humanity... [and] the authentic time of Dao reveals itself through the principle of

creation *qua* rest [i.e., the motion of nothingness or the negative creativity of Dao]” (2014: 361). Below, I shall explain Chai’s formulation of the Daoist conception of time and analyze his reasons.

First of all, since a Daoist universe has three stages or levels (primal nothingness, the One, the myriad things), Chai (2014: 362) distinguishes three notions of time: **Dao time**, **cosmological time**, and **human measured time**. Dao time is the nontime of primal nothingness and is wholly immeasurable since primal nothingness lacks all determinates (2014: 361, 363). Cosmological time is the authentic time, which “pertains to the state of primal chaos also known as the One” (2014: 362). Since the One “mark[s] the becoming and retraction of Dao,” the boundary of cosmological time is marked by the birth of the One and the One’s returning to primal nothingness (2014: 363).⁸⁰ Human measured time, being “the causal or durational time of everyday human experience,” seems to be manifest in myriad things (2014: 362). Human measured time is, whether A-theoretic or B-theoretic, time as western literature usually understands it: it typically involves change, becoming, order, and directionality. However, according to Chai’s interpretation of the Daoist conception of time, “[p]ast, present, and future are merely placeholders for the false human ordering of the natural world.” (2014: 366). Since, according to Chai (2014: 361), “[a]uthentic time lies with cosmogony and not reality as envisioned by humanity,” authentic time should refer to both Dao time and cosmological time. However, it is unclear whether Dao “time” amounts to time since it is wholly immeasurable. Hence, the only significant, authentic *time* is cosmological time. Because of this, I shall focus below on Chai’s notions of cosmological time and human measured time.

⁸⁰ Chen (2009: 2) also thinks that time in Daoist universe starts when there starts to be something in the universe. This is tantamount to saying that time starts when the One is born.

As becoming of a certain kind is usually thought to be essential to time, Dao's temporal becoming (i.e., **creation *qua* rest** as Chai dubs it) is essential to cosmological time. However, Dao's temporal becoming is fundamentally different from the usual becoming manifested in myriad things. Chai says,

[The act of Dao's temporal becoming] is hence an unfolding best described as antiprocessional and nonlinear." (2014: 366)

That is, Chai maintains the following interpretation of Dao's creation:

(Chai 1) Dao creates (or actualizes) things all at once or at least in an antiprocessional and nonlinear way.

This is why Dao's temporal becoming is called creation *qua* "rest" as opposed to creation *qua* "movement," which is the usual becoming of things in a linear order. Furthermore, Chai says,

[Dao's temporal becoming] is a durational moment whose temporality is not bound to the presentness of our being but to the thread of oneness that ties all things together. (2014: 367)

Since Dao's temporal becoming is essential to cosmological time and cosmological time commences with the One, the above passage suggests that Chai holds the following understanding of Daoist cosmological time:

(Chai 2) Cosmological time is a space whose content includes the One and the whole of things and events.

Because of (Chai 2), the temporality of Dao's becoming can be said to be bound to the thread of oneness that ties all things together.

(Chai 2) and (Chai 1) together inform the following full picture of what cosmological time is:

(Chai 3) Cosmological time is a non-one-dimensional space or span whose content includes the One and the whole of things and events without any earlier-than order.⁸¹

Although the phrase “the thread of oneness that ties all things together” seems to suggest that myriad things are linearly arranged, this is not the case – myriad things represent “the possibilities of Dao’s creativity” and thus cosmological time is “a measuring of the plenum of Dao’s marvelous possibilities” (Chai 2014: 365). Chai says,

[T]he myriad things should not be taken as evidence of a systematic sequence of past-present-future; on the contrary, they symbolize the immeasurable possibilities of Dao’s creativity. (2014: 365)

In short, what constitutes cosmological time is neither an A-series nor B-series. Not only is there no fundamental difference between the past, the present, and the future, there is no temporal order or directionality at all in cosmological time. This is why Chai holds that “the Zhuangzi’s notion of cosmological time dispels the illusion of a pre-existing future or a re-livable past ...” (2014: 367) and “[a]s the pivot of Dao, nothingness ... allows us to side-step the issue of temporal directionality” (2014: 361).

In contrast with cosmological time (authentic time), Human measured time that seems to be manifest in myriad things is merely a mental construction according to Chai’s interpretation. As mentioned at the beginning of this section, Chai maintains that “the

⁸¹ The non-one-dimensionality of cosmological time is due to Chai’s description of the act of Dao’s temporal becoming as antiprocessional and nonlinear (2014: 366). However, it is unclear, on Chai’s account, whether cosmological time has some dimensionality other than one or the concept of dimensionality doesn't apply to it.

three successive states of ekstasis (past, present, and future) are but imaginary happenstances of one whose unity with the nonworldly no-mindedness of Dao has been disrupted” (2014: 367) and “[a]uthentic time lies with cosmogony and not reality as envisioned by humanity” (2014: 361). In another passage, Chai says,

[T]he time of the for-itself can no longer be sustained as a duration contained in or moving from one temporal phase to another ... The stretching and bending of time can hence be regarded as a pushing and pulling of man’s empirical self in order to establish cohesion with the authentic non-self of Dao. (2014: 370)

This interpretation of time in the Daoist universe is due to Chai’s interpretation of the passages in *Zhuangzi* about a sage (“The Great and Venerable Teacher” and “Ze-Yang”) as mentioned in the previous section. These passages indicate that a sage can do away with past and present and enter where there is no real distinction between past and present, or life and death, or beginning and ending (Dao 5). Chai takes these passages to mean not only that human measured time, in which there appears to be a before-after or life-death distinction, is merely a mental construction, but also that authentic time – cosmological time and Dao time – lacks order and directionality so that there is no before-after or life-death distinction.

Although cosmological time is authentic time, a sage should not be satisfied and dwell in this realm. A sage should further make her way to primal nothingness – to the timelessness of Dao. Chai says:

Having grasped the notion that things do not originate in the realm of human measured time, the sage forgets it so as to attend to that pertaining to heaven. In knowing heaven, he sees the myriad transformations of things as but the self-so fulfillment of cosmological time. Having grasped the notion of cosmic temporality, the sage also learns to forget it so as to comprehend that which belongs to the timelessness of Dao. Only when he

sees things as Dao sees them can he be said to move with them together yet remain unaffected. (2014: 369)

That is, grasping cosmological time is just the mid-point along the way to the ultimate reality. The most fundamental “time” is Dao time, which is just the timelessness of Dao.

Chai’s reasoning in reaching this notion of human measured time, cosmological time, and Dao time can be found in his passages that serve to explain (Dao 5):

In the above passage, not only did Nuyu’s response to Zikui expound the process by which one conjoins with Dao, she also explicated Zhuangzi’s theory of cosmic temporality. United with Dao and in harmony with the myriad things of the world, time for the Daoist sage becomes a misnomer — a contrivance of the human mind. Forgetting the distinctions of past and present, the sage enters a realm where life and death blur together. The Gate of Heaven was for Zhuangzi what the wheel hub was for Laozi 老子 — an abode where the myriad things can coexist in quiescent equanimity. Though things are said to enter reality and take their leave through it, the gate itself remains unaffected; though the spokes are what give the wheel its motion, the hub is always unperturbed. The gate and wheel hub are thus metaphors for the virtue of Dao, and this virtue, like Dao itself, manifests itself timelessly. In light of this, the traditional Western argument that things move from a coming-to-be to a coming-to-pass is problematic: according to Daoism what is temporally unchanging is the ontological nothingness informing Dao while that which changes is not the duration of one’s existence but said existence itself. (2014: 365)

In this passage, Chai assumes that (Dao 5) explains Zhuangzi’s theory of cosmological time. Chai thinks that primal nothingness is what is referred to by “where there is no life and no death.” In addition, Chai thinks that being united with Dao indicates that human measured time becomes “a contrivance of the human mind.” Following the above passage, Chai further says:

Cosmological time is thus a measuring of the plenum of Dao’s marvelous possibilities, whose principle is ultimately unknowable. The course of transformation experienced by the myriad things is not due to the action of time but their inborn nature reflecting the virtue of Dao. As they transmogrify from the authentically dark collectivity of Dao to the illusionary brightness of individualization, and back again, the myriad

things should not be taken as evidence of a systematic sequence of past-present-future; on the contrary, they symbolize the immeasurable possibilities of Dao's creativity. (2014: 365)

Here, Chai points out that cosmological time exists as "a measuring of the plenum of Dao's marvelous possibilities." This seems to follow from the following principles implicitly assumed in the passage:

(Chai 4) The myriad things represent immeasurable possibilities of Dao's creativity.

(Chai 5) There is associated with the myriad things a certain kind of time (that is neither Dao time nor human measured time).

(Chai 5) leads to the existence of cosmological time whereas (Chai 4) characterizes certain features of cosmological time. While (Chai 4) is a natural derivation from the metaphysics of Dao *qua* nothingness being understood as mere possibilities, (Chai 5) is less obvious. Since (Chai 5) lacks direct textual evidence, the ground for (Chai 5) would be that it, alongside other principles, can best explain (Dao 5). In the next section, I shall discuss the plausibility of (Chai 5), as it is crucial to Chai's interpretation of the Daoist conception of time.

Another passage that also serves to explain (Dao 5) can further illustrate Chai's line of thought concerning his notions of human measured time, cosmological time, and Dao time:

Given that Dao does not have a measurable beginning or end and lacks attainment of being or time, it can only be characterized as that whose spontaneity lies in the realm of unknowability. The same cannot be said of the myriad things of the world however. Therefore, we can only refer to the source of all things as that whose root infiltrates temporal ekstases

without being entrapped by it. This is why the Zhuangzi declared that only the sage can harmoniously join with things in Dao and that such conjoining occurs beyond the realm of time known to the common people. Since the sage changes along with things without being changed by them, he darkens himself with Dao's mystery. His form is thus a forgotten one, whose essence is occupied by the nothingness of the universe. He is mysterious in that he does not make distinctions between substance and nonsubstance, choosing instead to live according to the self-so-ness of Dao. Keeping his inner-virtue pure and dark, his harmony with the oneness of things is unspoiled. By maintaining his place in the hub of still quietude, the sage dwells where there is no temporality whatsoever; all is existent and nonexistent, finite and infinite. It is here, at the Gate of Heaven — the pivot of nothingness — where creation abounds and the true nature of things is freed of the seductive language of time, whose artificial durations are but rationalizations of the human mind. (2014: 368)

Chai's line of reasoning can be expressed as follows. Firstly, (Dao 5) can be separated into the following propositions, (P1) and (P2):

- (P1) A sage can do away with past and present.
- (P2) A sage can enter where there is no real distinction between past and present, or life and death, or beginning and ending. (Hereafter I shall call these distinctions "the Distinctions.")

Based on (P2), we can grant (P3) for the sake of argument.

- (P3) There is somewhere more fundamental in which the Distinctions cannot be made.

Chai then argues that the following is the case:

- (P4) The Distinctions can be made in human measured time manifested in myriad things as we understand them.

Chai continues, “[t]herefore, we can only refer to the source of all things [i.e., *Dao qua* nothingness] as that whose root infiltrates temporal ekstases without being entrapped by it” (2014: 368). That is, from (P4), Chai makes an inference to the best explanation:

(P5) There is authentic time, *Dao* time, in which the Distinctions cannot be made.

After explaining how a sage can conjoin with *Dao qua* nothingness, Chai concludes, “It is ... the pivot of nothingness ... where creation abounds and the true nature of things is freed of the seductive language of time, whose artificial durations are but rationalizations of the human mind” (2014: 368). While this statement can be regarded as a mere re-description of Chai’s interpretation of (Dao 5), it can also be regarded as making an inference to the best explanation from (Dao 5) and (P5). Since a sage can do away with past and present and enter primal nothingness where the Distinctions cannot be made, the best explanation is the following:

(P6) the Distinctions are just a mental constructions – that is, human measured time manifested in myriad things as we understand them is merely a mental construction. (Interpretation C)

In brief, there is a transition from (Dao 5) to Chai’s notions of human measured time, cosmological time, and *Dao* time, and this is based on an inference to the best explanation. In the next section, I shall discuss whether (P6), alongside Chai’s notion of cosmological time, is the best available explanation of (Dao 5).

4 Critique of Chai's Interpretation

First of all, both (Chai 3) and (Interpretation C) violate (Dao 4). As explained in §2, a passage in *Zhuangzi*, "Autumn Flood," says, "[T]ime cannot be stopped. Decay, growth, fullness, and emptiness end and then begin again. ... The life of things is a gallop, a headlong dash—with every movement they alter, with every moment they shift. ... Everything will change of itself, that is certain!" This passage illustrates the principle (Dao 4):

(Dao 4) On the level or in the state of myriad things, there is constant change.

(Dao 4) is apparently about myriad things themselves rather than about how our minds project the world. Since there is in the passage no direct reference to how we perceive the world as being in a certain way, to understand (Dao 4) as a principle about mind requires further evidence.⁸² Hence, the most direct reading of (Dao 4) is that myriad things do change, and they change in either an A-theoretic or B-theoretic sense. Change of myriad things wouldn't make sense without there being a series, whether it's A-series or B-series. Hence, human measured time, which is constituted by an A-series or B-series, cannot be merely a mental construction. That is, Chai's (Interpretation C) below is wrong.

⁸² Although (Dao 5), the principle that a sage can do away with past and present and enter where there is no life and no death, may be regarded as a reason to treat (Dao 4) as a principle about human mind, this would have to assume (Interpretation C), the principle that human measured time is merely a mental construction. However, I shall argue below that (Interpretation C) is not the best available explanation or interpretation of (Dao 5).

(Interpretation C) The time manifested in myriad things, whether A-theoretic or B-theoretic, is merely a mental construction.

Likewise, cosmological time, being the only authentic time associated with myriad things, cannot explain the change of myriad things since it has no order or directionality. This is because of the following:

(Chai 3) Cosmological time is a non-one-dimensional space or span whose content includes the One and the whole of things and events without any earlier-than order.

It follows that cosmological time as characterized by (Chai 3) cannot be the only authentic time associated with myriad things. Thus, either the characterization of cosmological time in (Chai 3) is wrong, or claim that cosmological time is the *only* authentic time associated with myriad things is wrong.

Secondly, the existence of cosmological time lacks textual evidence and the postulation of it is explanatorily redundant. In Chai's picture of Daoist time, there is illusory human measured time, cosmological time, and Dao time. While human measured time and the timelessness of Dao have direct textual reference (as in (Dao 4) and (Dao 5)), Chai's notion of cosmological time lacks direct reference in the text. The underlying principle (Chai 5), which leads to the existence of cosmological time, also lacks textual evidence. One can then question the plausibility of (Chai 5), the principle that there is associated with the myriad things a certain kind of time that is neither Dao time nor human measured time. A possible answer is that (Chai 5) and its consequence, the

existence of cosmological time, is necessary for explaining (Dao 5). However, this is not the case. As indicated in (Dao 5), a sage can do away with past and present and enter where there is no life and no death. Hence, although cosmological time is authentic time, a sage should not be satisfied and dwell in this realm; a sage should further make her way to primal nothingness since it is the source of everything (Chai 2014: 369). This raises a question: is it necessary to postulate intermediate cosmological time in order to explain (Dao 5)? Treating human measured time as a mental construction and postulating Dao time (i.e., the timelessness of Dao) seem enough to explain the sense in which a sage can do away with past and present and enter where there is no life and no death. That is, the postulation of intermediate cosmological time seems explanatorily redundant.

Thirdly, (Interpretation C) is not the best explanation of (Dao 5). Both (Interpretation A) and (Interpretation B) can do a better job. According to (Interpretation A), a sage can understand that primal nothingness, which is eternal and universal, is prior to myriad things. In primal nothingness, there is no distinction between life and death or past and present. The time manifested in myriad things, whether A-theoretically or B-theoretically understood, is not fundamental, but it is not merely a mental construction either. That is, appealing to the primal nothingness is sufficient to explain the state where there is no life and death. According to (Interpretation B), a sage can understand that the time manifested in myriad things is B-theoretic: myriad things don't come into and then go out of existence, and hence the difference between past and present or life and death is only apparent. That is, appealing to a B-series is sufficient to explain the state where there is no life and death. (Interpretation C), on the other hand, invites unnecessary complications. This is because (Interpretation C) is associated with the assumption about cosmological

time, which is either explanatorily redundant in the way described earlier, or relatively counter-intuitive as explained below.

While all the three interpretations are committed to the fundamentality of primal nothingness, the additional assumption associated with (Interpretation C) is much more counter-intuitive than that of the other interpretations. (Interpretation A) additionally assumes just a minimal sense of time (as usually understood), which requires only order and direction, whether A-theoretically or B-theoretically understood. Although (Interpretation B) is more committal in that it additionally assumes B-theoretic time in a block universe (in which past and present things equally exist), such time still bears order and direction. In contrast with the other interpretations, (Interpretation C) leads to the assumption of cosmological time: it exists as “a measuring of the plenum of Dao’s marvelous possibilities” and has no order or direction (Chai 2014: 365, 366). This understanding of cosmological time is much more counter-intuitive than both the minimal sense of usual time and B-theoretic time. Thus, (Interpretation C) is not the best available interpretation of (Dao 5).

Weighing (Interpretation C) against (Interpretation B), we may clearly see where a fallacy lies in (Interpretation C). (Interpretation C) is rooted in a dichotomy: time, whichever kind it is, is either a part of fundamental reality or it is a mental construction. Since human measured time is not part of fundamental Daoist reality, primal nothingness, it is just a mental construction. However, this dichotomy is a false one. As shown in (Interpretation B), A-theoretic temporal notions like presentness and pastness are not part of fundamental B-theoretic reality, but they are not entirely mental either – they can be perspectival and supervene on fundamental B-theoretic relations like earlier-than or

located-at. For example, Laozi is not present from our perspective but is present from his own perspective. Hence, there is no presentness *simpliciter*, which is not part of fundamental B-theoretic reality. However, it is still a fact about the mind-independent world that Laozi is not present from our perspective or that he is present from his own perspective. That is, presentness or pastness as a perspectival notion is not merely a mental construction.

In sum, a satisfactory Daoist model of time should explain or at least fit in with both (Dao 4) and (Dao 5). As shown above, both (Interpretation A) and (Interpretation B) can better explain (Dao 5). In addition, since the time assumed by (Interpretation A) or (Interpretation B) is linear and directional, both interpretations can easily explain (Dao 4). As explained in §2, there can be A-theoretic or B-theoretic readings of (Dao 4). (Interpretation A) is compatible with both, and (Interpretation B) is compatible with the latter. By contrast, Chai's model of time, which consists of his notion of cosmological time and (Interpretation C), violates (Dao 4) and doesn't offer the best explanation of (Dao 5). Therefore, Chai's Daoist model of time is not satisfactory or at least is not the best one available.

5 Concluding Remarks

As argued above, both (Interpretation A) and (Interpretation B) can better fit in with both (Dao 4) and (Dao 5) than Chai's Daoist model does. But which one is the better one?

The answer to this question is related to the reading of another passage in *Zhuangzi*:

He comes forth, but from no root; he reenters, but by no aperture. He has a real existence, but it has nothing to do with place; he has continuance, but it has nothing to do with beginning or end. He has a real existence, but it

has nothing to do with place, such is his relation to space; he has continuance, but it has nothing to do with beginning or end, such is his relation to time; he has life; he has death; he comes forth; he enters; but we do not see his form - all this is what is called the door of Heaven. The door of Heaven is Non-Existence. All things come from non-existence. The (first) existences could not bring themselves into existence; they must have come from non-existence. And non-existence is just the same as non-existing. Herein is the secret of the sages. (*Zhuangzi*, "Geng-sang Chu 11," tr. Legge)

An interesting reading of this passage is that Daoism upholds the independent existence of an empty space-time while holding a seemingly incompatible view that only those myriad things that are present exist. If so, (Interpretation A) is the better one in so far as it is not committed to non-presentism. In addition, this passage may provide new materials or ways to re-think the Western debates on the nature of time: maybe an interesting combination of substantivalism and presentism is possible. For these reasons, the Daoist conception of time is worth further investigation.

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