The same goes for the defence of successful observations put forward through the reliability of our commonsense evolutionarily-afforded inductive methods.[165] But this Putnamian resolution, just like Hume's, simply defers the problem of the inductive reliability of successful empirical observations to a lower level, sweeping it under the carpet of evolution. To trust evolution in order to trust our ordinary inductive capacities so as to then trust the legitimacy of our epistemic inquiries is only an act of faith in the blind god of evolution, whose gift of inductive reliability should not be mistaken for a supposed epistemic birthright. Evolution may be reliable in its own terms, but its reliable efficacy does not so obviously translate into the reliability of *our* inductive predictions and retrodictions. Nor, every time we are confronted with a daunting problem, can we invoke the *principle of evolutionary credulity*, claiming that, just because we believe we cannot solve a question of an epistemic right on which we so firmly rely, we must presume that evolution should be declared as the source of that legitimacy.

Distilling the superacid of epistemological scepticism is essential for rescuing the legitimacy of our knowledge and the coherency of critical realism. Epistemology without scepticism—*skeptikós* as the toil of investigation—about the conditions of epistemic possibility is predisposed to dogmatism, and scepticism without the rational ambitions of epistemic inquiry is doubt as debilitation. Yet sceptical investigation should be understood as a series of tasks to be performed one at a time, not an uncritical greedy scepticism assaulting the totality of knowledge and the logico-semantic conditions of judgements en masse. This is not scepticism but a pathological distrust—an all-encompassing paranoia—that is incapable of sustaining even itself. As Plato demonstrates in *Meno*, there is no knowledge without doubt, and no doubt without knowledge. The greedy sceptic assumes that what he endorses is only *not q*, not knowing that what he truly endorses is the implicit belief that *it is the case that p therefore not q*, i.e., a piece of knowledge. On the other hand, the genuine

165 H. Putnam, 'Degree of Confirmation and Inductive Logic', in *The Philosophy of Rudolf Carnap* (La Salle, IL: Open Court, 1963), 761–83.

systematic sceptic asks *why is it that p therefore q or not q*. The former is the unconscious consumer of knowledge, while the latter is the self-consciousness producer of knowledge.

WHAT NOW?

Let us now reformulate Boltzmann's challenge with regard to the question of time in a traditional philosophical frame: It would be that the genuine problem is not really about the enigmas of the Heraclitean flux—the quandaries of becoming, recurrence, or the puzzles of absolute contingency (every law is susceptible to change within time). It is rather the question of why there is often an element of time-asymmetry—whether disguised in the form of punctual sequential series or duration—in our philosophical reflections about events and processes that make up the pictures of the world and of ourselves. As Smart and Reichenbach have observed, only *things* become, not *events* of time. Events happen, and what happens or occurs can be always made tenseless.[166] Events change, but change is not a becoming. 'Event *e* happened' means that *e* is earlier than this utterance, '*e* is happening now' means *e* is simultaneous to this utterance, and '*e* will happen' means that *e* is later than this utterance qua token. This is what Reichenbach calls token-reflexivity,[167] and at the level of token-reflexivity there is no implied or essential time-asymmetry.

Arguments via the specious present or Husserlian retention-protention cannot faithfully answer this question either, nor can they corroborate the component of time-asymmetry even within subjective time. For even though, in our consciousness, *now* as a matter of fact shifts since there is a diversity of now-contents, and now-contents enjoy a temporal order, it would be dubious to draw the conclusion that, just because the now-contents stand in 'earlier-than' and 'later-than' relations to one another, this means that the now moves from earlier to later. Moreover, the mere diversity of now-contents does not in itself supply synthetic content to the

166 J.J.C. Smart, *Problems of Space and Time* (New York: Macmillan, 1964).

167 H. Reichenbach, *Elements of Symbolic Logic* (New York: Macmillan, 1947).

claim that time flows or shifts from the earlier to the later. In this regard, even phenomenological time-consciousness or subjective time appears to be time-asymmetric only *psychologically*. In Grünbaum's words, the time-asymmetry of phenomenological time can be said to be 'psychologically *ad hoc*'.[168]

Moreover, the idea of melody or durational awareness cannot even be deduced from a possible isomorphy between the succession of cerebral traces (or memory traces, as for example in analogy with time-tagged marks on a tape recorder) and the succession of states of awareness. All that is implied by such physicalist isomorphy between brain traces and states of awareness is the succession of awarenesses, not our instantaneous awareness of the succession as a distinct element. As we saw in the previous chapter, per Kant, the sequence of representations of items or the representation of representations is not the same as the representation of the sequence. We can employ this argument here as well: no amount of successive states of awareness can yield something like the instantaneous awareness of the succession which is the meaning of the transient now as the unit of time-consciousness qua temporal flux.

Thus if the diversity of now-contents does not by itself corroborate the unidirectional flow of time, and if what demarcates the distinction between past and future—in contrast to merely successive earlier-thans and later-thans—is really the transience of the specious present (where the sequence appears to be running in one particular direction), then exposing the consciousness of now as a psychologistic conception amounts to revealing that temporal becoming is, in its entirety, a psychological impression at worst, and a necessary pragmatic representation at best. Therefore, far from being an index of reality independent of conceptual mind or even empirical consciousness, the flux of becoming is a register of a purely perspectival awareness: the coming to be or ceasing to be of an event is nothing other than the entrance or departure of an effect to or from the immediate awareness of the organism or the human observer who experiences the course of events.

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168 Grünbaum, *Philosophical Problems of Space and Time*.

It may be argued that 'the awareness of changes in present-tense consciousness engenders the experience of temporal becoming'[169]—adding that 'as events or moments become successively present, then past, a direction of time inevitability arises in experience'.[170] The first part of this argument can be countered with a question: How or whence exactly does the succession of awarenesses (the mere sequences of earlier-thans and later-thans) acquire its synthetic content with respect to the flow of becoming? As argued, by itself the succession cannot supply the synthetic content that time flows from the earlier-than to the later-than. In response to the second part of this argument, it should be pointed out that the idea that the frequency of successive awarenesses of events in the world can either corroborate temporal becoming or give rise to the perception of temporal flux is an unwarranted inductive thesis, if not a fallacy.[171]

Furthermore, the claim that the frequency of successive awarenesses inevitably generates the instantaneous awareness or the perception of the flux of becoming, precipitates a far more serious problem. If the frequency of successive awarenesses are by themselves sufficient to give rise to the consciousness of temporal flux in experience, then it means that the subject of experience is no more than a Humean bundle of sense impressions. This is self as a mere aggregate of states or perceptions in the specific Humean sense where perceptions are either prior in the order of knowing to the apperceptive self, or lack any apperceptive unity and hence are nothing but the relations between things-in-themselves.

If self is *only* a bundle of impressions or awarenesses$_1$, then the whole array of references to the subject and the concept of experience becomes redundant. Even an inorganic tape recorder can mark and preserve the recording of events in a successive manner—but it would be rather contentious to claim that the tape recorder has subjectivity, experience, or consciousness of the temporal flux. But as Kant argued, against Hume,

169 W.L. Craig, *The Tenseless Theory of Time: A Critical Examination* (Dordrecht: Springer, 2000), 172.

170 Ibid.

171 See Appendix.

the apperceptive self is not merely a bundle of successive impressions. Impressions are organized and integrated by rules which are not *derived* from experience (with the emphasis on *derived* rather than *experience*).

Moreover (adopting and modifying McTaggart's argument on the Humean bundle),[172] in the absence of apperceptive unity as the principle of experiential unification, every bundle qua self can be arranged into infinitely many bundles qua selves. Thus, a Humean self as a bundle is in fact a collection or a multitude of selves qua bundles. Therefore, the accurate term would be Humean *selves* rather than self—a collection of bundles which may be different or same selves. At the level of a potentially infinite collection of pure bundles, there are no such relations between impressions as spatial and temporal relations (even apparent ones), causal connections, familiarity-unfamiliarity, similarity-dissimilarity, qualitative intensity relations, relations between knowledge of states, or even relations between so-called Humean perceptions. At this level, any two states—for example, ψ_1-*more familiar* and ψ_2-*less familiar*—can form a group.[173] There can be infinitely many groups each of which can take ψ_1 and ψ_2 as a member, but by no means does every group form a bundle since not only can group ψ_n belong to different bundles qua selves, but ψ_1-*more familiar* of bundle$_1$ and ψ_2-*more familiar* of the bundle$_2$ can also form a group. Consequently, in the pure bundle-view of the self, any two states can form a group, but there is no nonarbitrary way to distinguish those groups that are bundles and thus exhibit some uniformity of awarenesses, from those which do not.

At this point in the argument, we could adopt a Kantian position and claim that the transition from a sequence of awarenesses of events to the instantaneous awareness of the sequence is the result of the application of a pure concept to the sequences of impressions. That is to say, the instantaneous awareness$_2$ of now, or the element of temporal flux in experience, is not something that has been derived from a mere sequence of successive awarenesses$_1$, but something that has been generated through the application

172 McTaggart, *The Nature of Existence*, vol. 2, §389.

173 For an elaboration on the concept of group vs. class as characterized by common qualities, see McTaggart, *The Nature of Existence*, vol. 1, §120–24.

of a rule. This, however, raises a different question: Where does this a priori rule come from, what is its source?

If the rule is taken to be purely logical, then one is faced with the challenge of resolving the incompatibility of the analytic rule with the synthetic content that the instantaneous awareness of the transient now harbours. As argued above, the temporal flux is essentially endowed with a synthetic content, or in other words, requires an ampliative judgement whose premises are diverse now-contents. But if the rule is taken to be synthetic, then its ultimate source would lie in the apperceptive unity of the experiencing subject—that is to say, the principle of experiential unification. In this case, the transition from successive awarenesses to the awareness of succession does not commit us to a metaphysical claim regarding the objective reality of the temporal flux, but only to the transcendental ideality of becoming as something that plays a necessary pragmatic role in the agent's objective description of events and items in the world.

This is not say that we ought to forego all metaphysical claims—in this case, the metaphysical account of time. The point is not to be quietist when it comes to metaphysics. For it is precisely once we presume that we have purged ourselves of metaphysical assumptions, that we become susceptible to the most dogmatic and veiled forms of metaphysics. The fanatic Kantian critical crusade against metaphysics only leads to an illusory disillusionment as one ends up with a stock of unexamined and unacknowledged metaphysical assumptions. In contrast to this approach, in the vein of Plato and Hegel, the aim is to be concretely self-conscious with respect to metaphysics and indeed strive to develop a robust metaphysics—in this case, a robust metaphysics of time. For a metaphysical system to be identified as robust, it should: (1) be open to systematic *theoretical* assessment in the sense of the qualifier defined in chapter 1; (2) proceed via the dimension of *conceptualization* of structure rather than via the positing of an account of reality deemed to be *already structured* independently of mind; (3) suspend the prima facie correspondence between the dimensions of reality and the characteristics which our experiences of the world prima facie appear to have; (4) develop a notion of mind, Idea, or geist whose finitude is suspended since it is sufficiently differentiated from life (*bios*) or

the natural (which is finite in so far as it is subject to temporal time). The true object of such a metaphysics is the infinite and thus the atemporal. In the sense of (4), metaphysics is developed through a conception of reason that accepts the identity of opposites—i.e., thought and being, subject and object, finite and infinite—while suspending understanding, which is applied to immediate experience and which can only perspectivally grasp time as a temporal succession. In this regard, metaphysics coincides with the systematic apprehension of infinity. But this is a concept of the infinite that is not conditioned on the humiliation or abstract negation of the finite such as, for example, the finitude of the human, in so far as it has sufficiently wrested the concept of the human, geist, or mind from the temporal order of things. Nor is it a concept of the infinite that leads to cosmological antinomies whose resolution would require a Kantian distinction between appearances and things-in-themselves, with the latter being itself a dogmatic—or more precisely, non-robust—metaphysical posit.

METAPHYSICS OF TIME AS LOGIC OF SPIRIT

Metaphysics properly understood is the apprehension of the infinite without any of the static or fixed contradictions that arise from the limitations of the features of our experience or understanding which, in contrast to reason, can neither accept the identity of opposites nor forgo the representation of the Absolute or unconditioned. However, the apprehension of the infinite without contradictions does not mean it is free from *all* contradictions. There are different kinds of contradictions, and the apprehension of the infinite is only free from fixed antinomic contradictions in the sense that lower-level contradictions are suspended in higher ones so that, at each subsequent level, the lower-level contradictions are avoided. Said differently, as opposed to fixed contradiction, the dynamic movement of contradictions—their suspension—is intrinsic to the apprehension of the infinite as the true object of metaphysics. What are cancelled are not contradictions per se but fixed antinomic contradictions at certain levels of discourse. Accordingly, metaphysics is indissociable from the dialectical movement of concepts, or, more succinctly, metaphysics and speculative logic coincide.

Not logic in the sense of the ordinary logic abstracted from content or a *general grammar* qua method pertaining to the forms of thought, but logic as the Idea, which is to say thought's own 'self-developing totality of its distinctive determinations and laws, which it gives itself and does not already have and find within itself'.[174]

In this respect, Hegel's conception of time qualifies not only as a robust metaphysics of time but also as a fundamental element of metaphysics as such, since it rescues the thought of the infinite from fixed contradictions, and from pernicious attempts at resolving these contradictions, such as Kant's positing of the thing-in-itself—a veiled metaphysical postulate that is dubiously outside of the dimension of conceptualization, and as such constitutes a precritical moment upon which Kant's so-called critical resolution to the antinomies blindly thrives. Hegel develops his conception of time out of his criticism of Kant's formulation and subsequent resolution of cosmological antinomies, particularly the first antinomy pertaining to the physical dimensions of the universe, viz. whether the physical universe is temporally and spatially finite or not. Reed Winegar has provided a lucid and brief exposition of Kant's first antinomy, and specifically its temporal implication:

> If we consider the current state of the world, then the principle of reason requires that we infer the existence of all of the prior temporal states of the world that condition its current state. In other words, the principle of reason requires the existence of the world as a whole. Kant notes that this world-whole might take either of two different forms. First, the series of past temporal states might terminate in an initial temporal state, i.e., a beginning of the world in time. Second, the series might constitute an actual infinite series of past temporal states of the world. Kant believes that indirect arguments can be given in favour of both

174 G.W.F. Hegel, *Encyclopedia of the Philosophical Sciences in Basic Outline Part I: Science of Logic*, tr. K. Brinkmann, D.O. Dahlstrom (Cambridge: Cambridge University Press, 2010), §19.

> options, which yields the contradictory result that the world both has a beginning in time but also lacks a beginning in time.[175]

In the context of his theory of time, Hegel argues that Kant's first antinomy arises and is subsequently resolved by the categories of the understanding—a mode of thought that, in contrast to reason, does not accept the identity of opposites and is bound to the transcendental subject of experience. In attempting to apprehend the infinite and to know the Absolute, the understanding rejects the identity of opposites, but at the same time implicitly acknowledges the Absolute as the identity of opposites (subject and object, finite and infinite). This tension between the explicit rejection of the identity of opposites and its tacit acceptance forces the understanding to see the Absolute not as the eternal (i.e., outside of temporal time) but as an antinomic series of successive series of past temporal states which only perpetuates an indefinite regress. Every beginning for the world requires a regress to an older beginning. Since understanding operates within the bounds of finitude, in attempting to know the Absolute it mischaracterizes the Absolute as a successive series of past temporal events, precipitating the antinomic result that the world can both have and not have a beginning in time.

Whenever understanding attempts to know the Absolute, it chooses to conserve its limitations, which distort the thought of the Absolute, rather than acknowledging its own limitations and terminating itself. It fuses or collapses the distinction between the identity of subject and object ($A = A$) and the difference between subject and object ($A \neq A$). Only when the destruction of understanding is recognized as an enabling condition for thinking the Absolute as the identity of subject and object can the simple or static contradiction (the Kantian antinomy) be recognised as a pseudo-problem. But the destruction of the understanding demands its replacement by reason as a mode of thinking that accepts the identity of

175 R. Winegar, 'To Suspend Finitude Itself: Hegel's Reaction to Kant's First Antinomy', *Hegel Bulletin* 37:1 (2016), 81–103.

opposites and is thus capable of thinking the Absolute without generating static contradictions or antinomies.

The conception of time as the eternal is but the identity of subject and object, finite and infinite qua the Absolute. This conception is the very essence of reason as that which is able to suspend finitude and thereby avoid static contradictions in favour of dynamic contradictions which are intrinsic to the apprehension of the infinite. Whereas the understanding is bound to the forms of finitude (cause and effect, succession, etc.), reason suspends finitude in order to arrive at knowledge of Absolute Idea. This suspension is nothing other than the adoption of a resolutely atemporal viewpoint. We can therefore conclude that only such an atemporal thought can arrive at the truth of geistig intelligence, for, in adopting a resolutely atemporal viewpoint, reason relinquishes the power of time over its Idea. The truth of what mind is cannot be found within time, since it is the very truth of time as such. The mind is not in time, it is itself time:

> The Notion however, in its freely existing identity with itself, as ego=ego, is in and for itself absolute negativity and freedom, and is consequently, not only free from the power of time, but is neither within time, nor something temporal. It can be said on the contrary that it is the Notion which constitutes the power of time, for time is nothing but this negation as externality. Only that which is natural, in that it is finite, is subject to time; that which is true however, the Idea, spirit, is eternal.[176]

It would be a mistake to consider the history of geist as a sequence of self-conceptions and self-transformations that happens *in* time. It is history as time, but not history as a temporal development. Thus, construing the so-called progress of geist in terms of intuitive notions of temporal development, as is the case with Whig historiographical interpretations of Spirit (for which Hegel himself is partly responsible) is a retrogressive move. It is retrogressive because it once again demotes the Idea of mind to forms of finitude such as succession. History as the self-actualization

176 Ibid., 231.

of the Concept is the Idea's own time—a time that is neither opposed to another time, nor is an abstraction of time, nor a time outside of time, but is the eternal or time as such.

The totality of the Idea of mind cannot be represented temporally, for such a totality will be mistakenly apprehended as the totality of the state of affairs in the past, present, or future. But a totality that is understood temporally is simply a form of finitude that feigns totality and, as such, it is an illusion begotten by a self-limiting thought. Similarly, the idea of the human as a concluded totality given to us here and now as a biological species, and the idea of capitalism as the completed historical totality of all social relations, are posited forms of finitude dissimulating themselves as completed histories. They both distinguish themselves within time as the present/future state of affairs, and present themselves as the totality of all there is and can be. But an extant state of affairs can never *be* a totality, even if it *represents itself* as the totality of the present/future.

In view of the arguments made above, images of time as an endless flow that underlines the insignificance of the human and its paltry concerns turn out to be antihumanist veneers upon a subjectivist account of time which, far from breaking from the dogmas of humanism, reinforces a deeply conservative form of humanism. This is a humanism afflicted by a deep-seated transcendental blind spot that not only uncritically posits the local and contingent characteristics of egocentric human experience as the characteristics of reality, but also deems this very anthropomorphic reality—whether under the rubric of preindividual singularities or ceaseless becoming—to be the horizon for overcoming human exceptionalism. Such metaphysical accounts of time champion an infinite which is more pure alterity than the suspension of the finite. As such, they must both leave the finite intact in order to maintain their alterity and debase the finite as that which does not matter in so far as it is perishable. The so-called finite of such images of time is thought, mind, or the human. But any metaphysical conception of the infinite that belittles and discounts the human as finite will be haunted by human pettiness and its associated limitations. It will be doomed to bear the marks of exactly that which it seeks to steer clear of.

Following Parmenides, Plato, and Hegel among others, not only philosophical maturity but also the maturity of the human coincides with a liberation from the servitude to time, the realization that the temporal—whether as a tyrant that devours all or as a dimension of reality *in* which we appear to exist—is not important. As Russell remarks:

> [A] certain emancipation from slavery to time is essential to philosophical thought. The importance of time is practical rather than theoretical, rather in relation to our desires than in relation to truth. [...] Both in thought and in feeling, to realize the unimportance of time is the gate of wisdom. But unimportance is not unreality.[177]

This remark can be complemented by McTaggart's rejoinder to Russell's view:

> This seems to me profoundly true. But the importance of time will be still less, if, as I have maintained, nothing is really *in* time, and the temporal is merely an appearance. And, as the importance of time diminishes, so also diminishes the importance of the cessation of our lives in time.[178]

At this stage in the argument, a more persistent and observant proponent of the flow-image of time who is significantly less invested in antihumanist tendencies might present another clichéd objection by putting forward a variation of the following argument: In a world without the flow of time, there is no becoming. Absent becoming, the existential status of the future as the coming-into-being of events in the world is compromised, since, without becoming, there will be no novel event and no indeterminate future. Without the future as the site of indeterminacy and novelty, there will be no human freedom, no prospects for emancipation. For without becoming, we are living in a wholly deterministic world of *mere* being.

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177 B. Russell, *Our Knowledge of the External World* (London: Open Court, 1914), 166–7.

178 McTaggart, *The Nature of Existence*, vol. 2, 182 (emphasis mine).

In other words, the metaphysics of becoming reveals a paradoxical dilemma for human action: If there is no coming-into-being, the future is already determined, and therefore the idea that agents can change their world seems to be absurd for there is no real freedom, no chance for novelty and difference. Whereas if there is indeed a coming-into-being of events, then the future is indeterminate since it is the locus of radical novelty, absolute contingency, or the Event—but then our rational planning and anticipatory actions prove to be futile for they fail in the face of its indeterminacy:[179] they cannot in any meaningful sense gain traction on an ontologically indeterminable future or the absolute contingency of time. To this extent, the issue of the temporal flux which is taken to be the essence of time invariably results in a paradox of inaction. Without it, we live in a fully deterministic world which renders our rational plans and actions irrelevant. With it, we live in an indeterministic world in which our rational plans fall flat in meeting their goals since the future as the target site of such plans is radically indeterminable and adverse to our anticipatory actions.

But in fact, whether or not becoming is an aspect of time independent of human consciousness has no bearing upon the issue of determinacy. The question of indeterminism vs. determinism can be formulated as the question of the difference between past and future. In an indeterministic world such a difference exists, whereas in the deterministic world it does not. But, as we saw, the difference between the common-sense past and future—as opposed to the *metric* description of physical events as past and future states—is the *now* of the experiencing ego. Accordingly, the problem of indeterminism or determinism as the difference between past and future or lack thereof is of no relevance to physical events, since such a difference is nothing but an expression of the egocentric consciousness of the human.

As Grünbaum has argued, in both a deterministic world and an indeterministic world, the coming-into-being of a future event or the ceasing-to-be of a past event signifies nothing more than the entrance or departure of

179 For an example of an all too predictable exercise in fusing the philosophy of event and that of asymmetrical time-becoming, see J.-J. Lecercle, *Deleuze and Language* (Basingstoke: Palgrave Macmillan, 2002).

its effect into and from the immediate awareness of the apperceptive ego. The difference between these two worlds with regard to future events only concerns 'the type of functional connection linking the attributes of the future events to those of present or past events'.

> But this difference does not make for a precipitation of future events into existence in a way in which determinism does not. Nor does indeterminacy make for any difference whatever at any time in regard to the attribute-specificity of the future events themselves. For in either kind of universe, it is a fact of logic that what will be, will be![180]

Furthermore, the objection that resulted in the paradox of inaction is based on the confusion of two entirely separate issues. One is the epistemological issue of sifting the actual properties of events in the future from a larger set of possible properties. Per Grünbaum, we call this the issue of the 'epistemological precipitation' of events and their properties into our awareness.[181] This is to be distinguished from existential precipitation, i.e., their coming-into-being or realization. Epistemological precipitation is certainly influenced by the passage of time 'through the transformation of a statistical expectation into a definite piece of information'.[182] However, this does not mean that there is only existential precipitation with the passage of time in an indeterministic world, or that there is no epistemological precipitation with the passage of time in a deterministic world.

Finally, the objection that in a deterministic world there is no real freedom rests upon a muddled account of causation. If a system is caused to be in one state rather than another, this does not mean that the system's trajectory is *compelled* by this cause. Similarly, if future states are caused by past states, this does not mean that the future state is *compelled* by the past state. It only means that the past states have causally contributed to such

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180 Grünbaum, *Philosophical Problems of Space and Time*, 324.

181 Ibid.

182 Ibid.

future states. In other words, determination in this sense is about being caused, but being caused does not mean being compelled by the cause, i.e., determinism as some sort of causal compulsion. Let me elaborate on this point a bit further. It is true that, in order for a system to be in the state it is in, it must have—by physical necessity—followed on from an antecedent state. The system could not come to be in its subsequent state were it not for an antecedent state. But this is not the same as saying that the current state of the system is caused by a foreign cause. Certainly, the present state of the system is the physical consequence of things done to it, i.e., the history of its past interactions; but this, as Sellars points out, does not mean 'that the explanation of the present state of such a system lies entirely in "other things"'.[183] The idea that causal determinism—as distinguished from logical determinism, which is a different issue—implies lack of freedom, is the result of a misunderstanding of what causal determination means—that is, it is a result of interpreting causation as *being under the compulsion of a cause*.

For example, I hate the colour red because in the past I have witnessed a murder scene full of blood. Firstly, as argued earlier via Stegmüller, the belief-laden emotion that the state Hate (*red item*) is caused by such-and-such factors in the past is a psychological account of cause and effect, since there may be many factors not available to my awareness which could have brought up the state Hate (*red item*). This is not to say that there is no connection between my emotion or belief and the past trauma, but that such a connection cannot be defined in terms of singular cause and effect since this schema of causation is psychological rather than scientific. Even if we lend some credence to this prescientific schema of causation, having the emotion Hate (*red item*) does not suggest that an antecedent traumatic scene has compelled me to have such emotion qua belief as opposed to other emotions qua beliefs. All it implies is that there is a certain causal contribution in my having such emotion qua belief.

In other words, Hate (*red item*) may indeed be a reliable belief in so far as it has been constrained by a certain causal factor in the past, and that may be why I have Hate (*red item*) and not Love (*blue items*) or Hate

183 Sellars, *In the Space of Reasons*, 426.

(*liquid items*). Put differently, all causal determinism implies is that our beliefs about the state of affairs *may* be reliable to the extent that there is a component of causal efficacy that has determined them or, in other words, they are constrained by some definitive causal factors. However, it does not imply that we are under the compulsion of such causes. When I come to assert 'this is an emerald', it is because my belief is constrained by the presence of hard green stuff (the causal factor). I may indeed be wrong, for the item in question might not be an emerald, nor green, nor a stone. But any counter-assertion to my claim equally relies at a basic level on a belief that is causally constrained. Without such a causal constraint, every belief about this hard green stuff could be true, which is another way of saying that no such claims are true. Causal determination is what undergirds the reliability of our claims or beliefs and, correspondingly, our freedom to retrospectively correct them—for example, from 'this is an emerald' to 'this is well-watered grass' or 'this is a yellowish goo'. Without causal determinism, there is no way to determine whether our beliefs about the world are true or not. That is to say, without causal determinism, we can never tell whether our beliefs are arbitrary or not. The assertion that causal determinism denies freedom of thought or action is based not only on a prescientific account of causation but also on a conflation of causal contribution with causal compulsion.

TIME, REALITY, AND THE VIEW FROM NOWHEN

Coming back to Boltzmann's challenge to the temporal perspective, the still pressing question is that of the extent to which these alleged time-asymmetric elements in our time-consciousness have stretched over and biased the matter-of-factual characteristics of reality. When characteristics of reality happen to share or match the contingent characteristics of local experience, one ought to question them rather than taking them for granted. In line with the total assault of scientific investigation and critical rationality on our most well-cherished and established intuitions, why should we expect the characteristics of reality to be a trivial extension of characteristics specific to the temporal-causal perspective of the subject?

Why not instead investigate alternative models, which may have been rejected on the basis of not looking natural *from the perspective of our time-asymmetric assumptions and experience*—models which, while compatible with local temporal and causal perspectives, do not privilege one perspective over another? These are models that should allow for an enlargement of the field of experience and observation without denying the temporal experiences accessible to us or some other contingently posited local observer/subject. The local-global nontriviality of reality means that localities of this reality stand in nontrivial projective relations to one another, not that the nontrivial total space of reality trivializes the localities of experience or that it is constructed by something other than what is local in this total space. This is much more in tune with a pragmatist account of the time-conscious agent for which anthropocentricism in the use of temporal *concepts* is justified and even pragmatically necessary, so long as there is no metaphysical reification of these concepts as global characteristics of objective reality.

To summarize, the pragmatist view of time-conscious agency should be consistent with a model of time which, while refusing to characterize it as temporally unique, admits the local consistency of any possible model of experienced temporality and causal perspective such as ours, and hence in an *oblique* way justifies the use of temporal concepts. In other words, a robust model of time should be an expression of a reality that constitutes local temporal perspectives without being reducible to them. Thus, reencountered within this model, our temporal perspective should be seen as a local self-expression of an absolute (atemporal) reality, rather than being dismissed as a complete illusion.

Liberation from a model of time restricted to a particular contingent constitution does not rob the subject of its cognitive and practical abilities, but releases it from the shackles of its most entrenched dogmas about the necessity of the contingent features of its experience. In doing so, it sheds light on the prospects of what the subject of experience and the exercise of change in the world is and can be as it cognitively matures. The transition to a state where one is no longer afraid of being lost in time, having come to the realization that time accommodates no one,

should be celebrated as the sign of rational maturity, rather than decried as a manifestation of the subject's impotency. It is in continuity with the critical attitude of rational agency to adopt a model of experience that can interrogate the most natural and established 'facts of experience' rather than corroborating them via the so-called fact that these are simply the ways in which we experience the world. As the extension of this interrogation, such a model should also enlarge the field of our experience, and in doing so, should theoretically and practically challenge popular yet puerile ideologies built around either a temporal account of progress or the second law of thermodynamics.

Regardless of whether Boltzmann's challenge as presented here requires extensive refinement or not, it can be seen as a Hegelian radicalization of Kant's thesis on the transcendental ideality of experienced temporality. It is a radicalization in the sense that it is both an *exacerbation* and an *extension* of the implications of Kant's thesis. It is in line with this philosophical viewpoint, and in tandem with his strategy to eliminate or at least mitigate the fundamental biases of the directional-dynamic picture of time within modern physical sciences, that Boltzmann begins to explore the ramifications of adopting an atemporal perspective. But the fallout of Boltzmann's 'time bomb'[184] is not limited to the modern sciences; its implications reach as far as philosophical, scientific, and sociopolitical ideologies built around the concept of entropy, or more precisely, positive entropy production.

Having cursorily glanced over the far-reaching implications of Boltzmann's radicalization of Kant's thesis on the transcendental ideality of time qua experienced temporality, we are now faced with three challenges, the responses to which will shape the project of maintaining and expanding the intelligibility of agency:

184 H. Price, 'Boltzmann's Time Bomb', *British Journal for the Philosophy of Science* 53:1 (2002), 83–119. Only recently has the philosophical significance of Boltzmann's scientific and philosophical challenge, and the revisionary insinuations of a coherent commitment to an atemporal perspective for our most treasured temporal models of description, prediction, action, and change been deservedly examined and elaborated, most notably in the works of Huw Price, Adam Berg, Jos Uffink, Meir Hemmo, and Orly Shenker.

(1) How can we envision models of agency that might have fundamentally different senses of time by virtue of enjoying different local conditions of observation, possessing different structural-behavioural organizations (i.e., different modes of responsiveness to the impingement of items in the world on their senses and different constructive-anticipatory models of memory) or, on the conceptual level of time-consciousness, having different logical connections between temporal connectives of language or different structures of tensed verbs? A different experienced time-order here should not be construed as an index of difference for the sake of difference. It is different only in that it should enlarge the field of experience, and thereby enable the vector of cognitive discovery both at the level of theory and that of practice. This is as much a challenge to think agency beyond a particular set of contingencies as it is a research question for envisioning an artificial model of agency not essentially bound by our local limits.

(2) Could there be models of time that are compatible with the subject-observer's temporal-causal perspective while not privileging or overstretching this local perspective into a canonical global model? How can we lay out *a physics of our temporal-causal perspective* that *explains* its characteristics without reinscribing the same perspectival characteristics as features of objective reality, and thus positing them as explanans of what is already an explanandum? To this extent, the second challenge is concerned with a systematic inquiry into models of time and time-consciousness that can (a) account for the characteristics of our temporally oriented perspective, and (b) resolve the problems within the directional-dynamic picture of time—namely, the quandaries and paradoxes (from enigmas of change and temporal asymmetry to paradoxes of causality such as retrocausality) that originate from the inadequate descriptive-explanatory resources of the directional-dynamic model of time to which we are so unconsciously accustomed.

(3) In line with the first and the second challenges, the third challenge centres on the problem of reconciling the pragmatic import of our