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Real Deletion, Time, and Possibility

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Abstract

Does anything ever really “go away,” completely? This paper is a search for “real deletion,” and the metaphysics that must accompany real deletion. Why is that important? In artificial intelligence studies, researchers have offered a moving target for when artificial intelligence has been achieved. It began with the Turing test and has evolved through a thousand arguments (e.g., Dreyfuss’s *What Computers Can’t Do*, through Kurzweil’s “singularity” and into a hundred other criteria and thousands of discussions about what intelligence is and what it would mean to simulate or, as I favor, *emulate* it). This whole discussion is still just sorting through analogies to human intelligence, not approaching the thing itself, but good analogies must approach much more than analogous *function*: they must approach real indiscernibility. My arguments here will therefore be largely in the field of metaphysics and ontology, which is how I understand the word “real” in the phrase “real deletion.” I do not think that current researchers have rightly understood time and how it bears upon the criterion or criteria of artificial intelligence. Hence, I offer “real deletion,” in the sense to be described, as the criterion. The AI argument has implications for all of metaphysics as it relates to the fundamental character of time.

The flux of things is one ultimate generalization around which we must weave our philosophical system.

A. N. Whitehead, *Process and Reality*, p. 208

Metaphysics: A Crash Course in Process Temporality

Bergson argued that the full past is *active* in the present. The issue in the present is *access* to the past, he says. The past is all there, but our access to it is variable, mediated, and limited, for a host of reasons (Bergson, 1988, pp. 133–134, 139–142).¹ Metaphysical annihilation is not possible, Bergson thinks, even for a divine being (Bergson, 1983, p. 5; Bergson, 1988, pp. 148–150).² Whitehead took a softer and subtler line: yes, the past is all there, sort of, but the past is only “objectively immortal”; its “subjective immediacy” and its “relevance” to the present “perpetually perishes.” No real deletion here. Everything that was ever actual is positively “prehended” in subsequent actuality (Auxier, 2017, pp. 162–168). These are convictions about past *actuality*. The actual is usually identified with the past, but clearly there is something actual about the present, and something not quite actual, and that issue will come up in the following argument.

What about possibilities? Presumably past possibilities once had some active relation to some actual (or quasi-actual) present, but, if their “moment” passed without their being actualized, are these possibilities, these “might-have-beens,” now really deleted? In more ordinary language, are might-have-beens truly gone? And in what sense? I will argue that insofar as anything intelligible to us can be “really deleted,” it must belong to a “constellation” of possibilities (my term) that never “ingresses” (Whitehead’s

¹ The epitome of these limitations is summarized in Bergson’s view that to gain access to the past we must insert or “replace” ourselves into it, taking on all the limitations of “pure memory,” which *does* nothing and is of no interest to my body. See Bergson (1988), p. 154. For his argument (and it is a *good* argument) about how the past can exist without anyone being conscious of it or able to use it, see Bergson (1988). He links our “access” problem to the essentially active character of the body, which he uses to define the present. It is an embodied interpretation of finitude and far more empirical than Heidegger’s *Dasein* and its finitude.

² Bergson makes these arguments in numerous other places. See also Bergson (1988) for the argument supporting this assertion.

term), due to its “incompatibility” (Whitehead’s term) with a “collection” (my term) of possibilities that does ingress. Thus, the “eliminated” possibilities (Whitehead’s term) “egress” (again, my term). Not ingressing (i.e., egressing) cannot be real deletion until actuality has drained such a constellation of might-have-beens of all potency. When a constellation of possibilities egresses, *some* of those possibilities still “might be,” but not as part of the egressing constellation. This is to say, some of the egressing possibilities retain a proportion of “integrity,” insofar as they are included in constellations that have not egressed (still “might be”).

But some possibilities pass permanently into the no-longer-possible, and here we may say that they “dis-integrate,” or lose their integrity (Auxier, 2021, p. 257).³ Whether and how that happens is the question of the form or constitution of the durational epoch of “the present.” Leslie Murray says, “Such stability [as we experience in that epoch] is also constantly individuating itself and, thus, we do not suffer the feeling of the annihilation of possibility.” (Murray, 2021) There is a forgetting that doesn’t “hurt,” even when it damages our prospects and weighs down our history. Is this loss of possibilities, this elimination, “real deletion”? Are those possibilities altogether gone?

Real deletion seems to demand the full elimination of what *never was* and later, never could have been (incompatibility with the actual), when it is constellated (in a sense to be explained) *in* the present *by* some intelligence. It would be impossible to delete what was never even intelligible, since deletion involves the removal of something that was in some sense “there” or “there-ish,” i.e., intelligible from some standpoint. Now we are in a position to venture a hypothesis about real deletion: **Real deletion, by hypothesis here, is a combining of some actual present with a genuinely possible but non-actual past for the purpose of projecting a future that has never happened before.** The projection adds no warrant to the likelihood that the constellation of possibilities projected will ever be actual; that would require more energy than projecting the constellation. It requires movement to increase such warrant, and projection requires no movement.

The importance of this assertion is that, if confirmed, real deletion is a condition for the introduction of novelty into the present and

³ This suggested terminology arose in conversation with Leslie M. Murray, to whom I am grateful for the suggestion. The logic of this ingress and egress has been operationalized in my essay, Auxier (2021), chapter 19.

future. It accounts for why the future *is unlike* the past, which is much more difficult to understand than why the future *is like* the past. This projection and its concomitant real deletion can be done well, or it can be done poorly (it is not a value-neutral act), but every human intelligence does this. That other intelligence projects/deletes is not to be seriously doubted. Any intelligence that has a future that differs from its past would project/delete. It is a process that spans the full range of temporal reality, but novelty (and hence projection/real deletion) is negligible in much of the physical universe. Where there is biological life, real deletion becomes increasingly evident as the future is increasingly variable relative to the past. Real deletion is, therefore, enacted in the present, in proportion as actuality is related to possibility (past and future) in any given moment. Computers cannot yet carry out any significant real deletion, only that which occurs as a brute result of repetitive concomitant physical processes. There are many reasons. Some of these reasons point to limitations that are not likely to change any time soon.

Further, there is a kind of necessity associated with the proposed criterion of real deletion. There *must* come a moment when at least one constellation of un-enacted possibilities (the number of constellations may be infinite, and probably is) loses all potency. The act (sometimes quite dramatically) whereby a constellation loses its last measure of potency is all we can reasonably mean by “real deletion”: the genuine end of a process (it can be called “achieved satisfaction,” in Whiteheadian language). It may be called “the collapse of the time function.”⁴ Real deletion is something human beings do, with greater “de-cision” (sharper cuts, Whitehead’s term) than other beings we know about. The rupture in continuity, while not absolute, is out of proportion with the de-cisions of other entities. Animals surely de-cise as well, but that is not the current issue. The question, as it applies to the issue of artificial intelligence, is whether it can be done artificially, at the high-bar level of emulation of what humans do (of approaching analogical indiscernibility in principle, not just in observation). The answer is, “not yet, not even close, and perhaps not ever.” Continuity dominates digital processing almost as it dominates the tendency of inorganic collections of electromagnetic energy in terms of the proportion of repetition

⁴ I will explore the physical reality of “the collapse of the time function” in a forthcoming paper, already written, bearing that name.

to creativity. Human acts, qua human, are, like all acts, unrepeatable and each is unique. But human acts are less continuous with their predecessors to such an extent as to seem almost miraculously creative. Computer acts are nowhere close to this bar, except as the cosmos as a whole provides the uniqueness in them. In a word, we *act* in a very robust sense. Computers? Not so much, at least by the criterion of real deletion.

To “delete” in general, then, is to devalue in a radical way some constellations of possibilities in their relation to other constellations of possibilities. A “favored” constellation, which I call a “collection” of possibilities (Auxier & Herstein, 2017, pp. 131 ff.), is separated from those constellations possessing only *some* potency, and is exemplified in the actual. The other constellations fail to become “collections.” On analysis, the eliminated constellations had not enough intensity to surpass what might be called (by analogy) “ontological entropy,” understood here as a threshold of actuality, not merely the second law of thermodynamics. We may assume that possibilities, qua possible, are always evenly distributed throughout existence, but qua potentiality, there is significant ontological disequilibrium. The radical devaluing of constellations of possibilities, taken alone, is not enough for deletion. Indeed, the full elimination of constellations in favor of a collection is also not real deletion (that elimination is called “egress,” as I will explain, not deletion). The combining of a present actuality (in all of its “relativity”—Whitehead’s category) *with* a might-have-been is also not yet real deletion, but all of these reductions are conditions of real deletion. **Real deletion is the act of projecting that combination of reductions into the future as a configuration in sympathy with the genuine lure of feeling** (the active future, in Whitehead’s sense).⁵ That is an act computers cannot undertake in any measure sufficient to ground an emulation of human

⁵ In a forthcoming paper, I spend significant effort defining “projection” in naturalistic terms, deriving from the development of this idea by Susanne Langer (Auxier, 2022, June 21–24). A different part of this paper was presented at the International Conference on Robot Ethics and Standards in Seoul (Auxier, 2022, July 19–21). A piece of advanced work showing the physical basis of this idea in the behavior of light is in preparation with Mohammad Sayeh, in which we demonstrate that optical systems exhibit “proteresis,” in a way that cannot be explained without allowing that time, as dynamic form, precedes energetic changes in such a way as to provide form for what has not yet happened. Essentially, even light “projects” in the sense argued here. Proteresis is difficult to model mathematically, but both living systems and digital systems exhibit this foreshadowing of future action. The fact that optical systems show the same

intelligence. Yet, **this act of projecting is the only deletion consistent with the continuity of the actual and the possible.** Yes, it is a “cut,” a “de-cision,” but the continuity that comes to be is more basic. We expect to find real deletion in inverse proportion to the range of possibility that can be projected into the future, while the future itself largely (not wholly) answers to the range of projection (Taleb, 2010).⁶

The digital world is binary, not just in symbol, but in its dynamic form. The world, however, is *not* binary. The digital world lacks a principle of active exclusion, which is to say that 0 is not really 0. In the digital world, “0” is a set of instructions to disregard all noise (all other actualities and possibilities) that falls beyond primary boundaries of concern (whether it be the train of causes, the circuit, or just the path of reasoning). Exclusion of actualities and possibilities is a matter of regionalizing concern, not of eliminating anything real. Whatever is set aside is maximally informative as contrasted with what is included—it is “everything else.” We cannot do this kind of deletion in a digital medium except as intelligence permits the original substitution of some digital situation for some analogue situation. The criterion of “setting aside” approximates a justification for disregarding (Auxier, 2021, p. 166).⁷ What is disregarded is irrelevant to that intelligence and its purposes, but not in any sense “gone.” This process of digitization has nothing to do with real deletion. All elimination is virtual.

The act of exclusion which defines initial conditions of any “analogue” situation is the *work* of active intelligence (Auxier, 2013).⁸ That act of exclusion depends on real deletion, and this sort of act, the exclusion of actuality from the might-have-been, must be grasped if any truly general criterion

temporal structure suggests that futurity reaches all the way down into the simplest forms of physical reality.

⁶ The occurrences described as “black swans,” i.e., highly improbable events in both society and in nature, cannot be accurately anticipated from the study of real deletion. But the study of real deletion is helpful in understanding why human beings are so overly wedded to model-making that fails to predict the most important changes. See Taleb (2010).

⁷ I have a full discussion of “setting aside” in Auxier (2021), chapter 10.

⁸ I am taking this notion of “active intelligence” from the arguments among Josiah Royce, George Holmes Howison, and William Ernest Hocking that I have examined in Auxier (2021), chapter 3. I take a position there favoring Hocking’s account.

for artificial intelligence is to be set out. This argument therefore crosses the digital/analogue divide and shows one very important feature of their continuity. My case also sets aside pointless controversy among theories that have not accounted for the acts that are required for the reality of the initial conditions from which the analogue world *comes to be*, what Whitehead calls “the becoming of continuity” (Auxier & Herstein, 2017, pp. 42, 138, 152). The digital world, is many, many steps removed from this conversation and hopelessly abstract by comparison.⁹

Work

One may wonder what the problem of “real deletion” has to do with “work,” in the technical sense of that term, as related to energy (“energy” is “the capacity to do work” in the general definition in physics). What is the energetic cost of real deletion and what are the implications? In short, what “work” does it do? At the basis of the idea of work is the capacity to employ energy to bring about a transformation or transition of some sort. I will set aside “transition,” which is the generic form of transformation, since transition includes repetition. Our concern for the present belongs to the domain of living beings, beings who “act,” in the intense meaning of the word, are agents, and hence, the more complex kind of transition called “transformation” is all we are interested in theorizing at present. Such transformations as we seek to describe may not be teleological in character, but all of them somehow contribute to a change in the fundamental order of whatever is working and is worked on.

To tear down a building, for example, is “work” just as surely as constructing a building. Smashing particles in super-conducting super-colliders is also work. In physics we cannot define energy without recourse to the idea of work. But the sort of work that undoes or unmakes *earlier* work is often overlooked when we think about work. Yet, we know that it *is* work to erase, delete, demolish, disassemble. My investigation goes beyond ordinary undoing; it is about generalizing from what we know of “elimination,” and the effects of “elimination” on the even more

⁹ This idea, and its common misinterpretations, are discussed in Auxier and Herstein (2017), pp. 42 ff., 138 ff., 152 ff.).

general idea of “real deletion.” The term “elimination” is chosen in keeping with the usage of Alfred North Whitehead in *Process and Reality*.¹⁰ I have offered a few preliminary descriptions of the term “real deletion” above, but the term is to be made more determinate (not quite “defined”) in what follows. This inquiry belongs to metaphysics, or if that term bothers you, you might call it ontology or just speculative/descriptive cosmology. In any case, it is intended to be applicable to any and all processes of becoming insofar as they have a physical basis. But real deletion, insofar as we can get at it, will have a basis in our experience that should be generalizable to the larger cosmos. After all, we are part of that order, and whatever happens with and to us happens within the cosmos.

Taking the human case as an example poses an old problem: Whether these results about work, transformation, and real deletion would apply to, for example, the becoming of an idea *qua* idea, i.e., not insofar as the idea is rooted in the physical processes and order of the universe, but to the extent that one idea might spring from another in a purely mental or even noumenal way. I do not know. I don’t know how to get at questions of that kind in any honest and non-arbitrary way. The answer has to be, “maybe.” Those who hold Platonistic views of mathematics (and that includes every theorist who ever asserted that the binary world of 1s and 0s was identical to the actual cosmos) may insist that, for example, no physical basis is required for the procession of purely mathematical ideas. This kind of claim strikes me as needless, since the existence of *ideas* (such as “1” and “0”) implies the reality of a ground of the ideas, including possessors of the ideas, and if the possessors are in no way physical, then I don’t how the ideas can have direct applicability to our cosmos. One might as well argue about whether the Holy Spirit proceeds from the Father alone or both the Father and the Son. It is semantics unless one grants the premise of a reality wholly independent of physical processes, and I don’t see any evidence for granting that. For us, as humans, 1 and 0 must, at the very least, somehow

¹⁰ Whitehead uses the term “elimination” most consistently in speaking of the “negative prehension” of eternal objects (that is, possibilities). He holds that what is actual (whether physical or mental) can never be wholly eliminated from some minimal relevance to everything else that is actual. This “objective immortality” of the actual is a requirement of his Principle of Relativity. I have no argument with his view, but I think it allows for considerable nuance that he never really explores. See Auxier and Herstein (2017), chapter. 6.

become physical to apply to our cosmos, and at that point they will fall under my type of inquiry. Otherwise such ideas make no difference to us and have no efficacy.

As far as I can tell, this sort of Platonism about numbers is the “received view” among theoretical mathematicians and has infected physicists since the time of Newton, and more recently also the life sciences, such as theoretical biology (Auxier, 2016, pp. 381–400). It is a kind of theology. That dogma is unhelpful at best, and at worst harmful to science. But if one believes ideas have an independent reality, so be it. I will treat only the reality they possess as part of the cosmos which, as far as we know, does not include disembodied ideas.

Bad Habits

Yet, this unempirical habit of first formally modeling in physics, and then claiming that the physical universe must conform to the formal (mathematical) model, dominated twentieth century scientific thought, from Einstein’s monstrous claims about gravity, and his absurd elimination of genuine time, temporal passage, from cosmology, to Francis Crick’s reductionist interpretations of the relation between certain nucleic acids and the possibility of life. In expanding their efforts at mathematical modeling into claims about the order of existence and experience as such, such scientific writers leave the domain of science and become, as Kant phrased it, purveyors of a physico-theology (Kant, 1987, pp. 437–441).¹¹ We have enough bad theology without the help of amateur theologians like Crick and Einstein (not to mention their less educated progeny, such as Richard Dawkins and Stephen Hawking).

I will not pursue the purveyors of physico-theology here. If such ideas were offered *as philosophy*, their crippling weaknesses would be obvious to everyone, but under the guise of the authority of science (and in spite of its increasing mystification and reduction to ideology in our recent history), the patent absurdity of, for example, 4D spacetime, passes as an actual scientific truth, or at least hypothesis. Balderdash. If my experience of time is an illusion, somehow caused by the gravitational warping of some divine

¹¹ See Kant (1987), section 85, and Kant (1987), section XII.

entity called spacetime, I confess that I am content to have an illusory philosophy of time. And my view will be philosophically defensible, which is more than can be said of the standard model of gravitational cosmology or the ultra-Darwinist assertions about evolution.¹²

But the dogmatic physicists surely have this much right: Energy is well defined as the capacity to do work. And they believe energy can neither be created nor destroyed, only change forms. If this “law” holds universally (and I don’t see how we could ever know that it does—sounds like theology to me), then we might conclude that “real deletion” is impossible. The conservation of energy would be the conservation of existence itself. Yet, it is not the same, and therein lies the problem. Existence includes energy but is not reducible to it. Why does it not occur to people that energetic variation

¹² Many philosophers and some scientists have worked against this push to turn science into theology, and I would mention Henri Poincaré, Ernst Cassirer, Marjorie Greene, Michael Polanyi, Isabelle Stengers, Ilya Prigogine, Ludwig Bertalanffy, Jakob von Uexküll, Richard Feynman, and numerous others who did all they could to pull the world of science back from *scientism*. A well-documented study of this struggle was published by Canales (2015), which shows Einstein’s quite conscious and deliberate efforts to eliminate philosophical thinking from its traditional role in criticizing physics, and to have physics (really it was not physics but mathematical modeling) replace the traditional roles of both philosophy and theology in the minds of the public, and even among scientists themselves. Einstein was a fifth-rate philosopher at best (a very unscientific admiration for Spinoza dominating what little he knew), and no theologian at all. The metaphysicalization of his physical theories (in truth, just mathematical models) has been the greatest setback to scientific thinking since Ptolemy theologized the heavens. It took over a thousand years for the world to re-situate the Ptolemaic system properly, relative to human experience. Let us hope we can move past Einstein’s scientism, and his physico-theology, in fewer centuries. There have been many studies of Einstein pointing out these failings, beginning with excellent ones by Cassirer and Whitehead, but people persist in eulogizing his theology as physics. See Cassirer (1923) and Whitehead (1922). There is even a book-length study of his mathematical errors, but no one can breach the aura of scientific sainthood and celebrity. See Ohanian (2008). Even at the Advanced Institute, Nima Arkani-Hamed has finally broken the bubble: <https://www.youtube.com/watch?v=qTx98PUW6lE&t=4438s>. This is one of numerous public lectures in which he takes apart the basic problems that were always present in Einstein’s assumptions about the physical world. This is from Einstein’s own Institute at Princeton, mind you. He has not published a scientific paper on these criticisms at present. Also finally making some progress against Einstein’s theology is Chiara Marletto—see her talk at The Institute of Art and Ideas (2018). She works in David Deutsch’s program at Oxford, and Deutsch has been trying to get scientists away from their theology for decades. See also Peter Woit (2007).

is a sign of change but there may be more to change than energistic variation? (I call it “kinetic variation” in other places, but the point is to distinguish movement, transformation, from mere motion.) And further, even if change (observable and non-observable) is the sign of time (and its nature), it does not follow that there is no more to time than change. The reduction of change to energistic variation, and of time to change are two of the most persistent, most avoidable, and most unforgivable errors of reasoning in the history of Western philosophy. Why can we not simply understand that when we have a solid indicator of the nature of something real, we do not necessarily possess the whole nature of that something? In this case, the problem is that there is almost surely *more* to change than energistic variation, and there is almost surely *more* to time than change. It isn’t that difficult to understand. The idea of work is a reliable sign of energy, but probably not the whole of it. Energy, organized and directed, is a sign of transformation, but perhaps not the whole of it. Transformation is the most interesting aspect of change, but not the whole of change. Change is a sign of time, not the whole of time. Time is the intelligible aspect of flux, not the whole of flux. Possibility, whatever it is, includes the flux, but the flux may not be exhaustive of possibility. These basic relations are not difficult, but do require further description and argumentation.

Beyond Energy

Assuming there might be more to change than energy (and its observable and non-observable variations) tells us, the question is: What does energy *exclude*? That is a great puzzle, but perhaps not so great that we cannot connect some pieces. Real deletion is one such.

If energy is not identical with existence, perhaps change is? But is there something even beyond change that also exists? There is, I think. Possibility as such has no associated energy, especially when drained of its potency, so that we no longer confuse what Whitehead calls “General Potentiality” with eternal objects (possibility). Such possibility is excluded, therefore, by energy, by hypothesis at least. Perhaps possibility changes? Bergson says it does. Whitehead hypothesizes otherwise. This much, however, we can safely assert: Whatever energy we *use* to erase, delete, demolish, is an energy brought to bear *on* an energy, and all of the energy is (we tend to believe)

still hanging around when we are finished demolishing, etc., presumably at lower entropy. It sounds like nothing is *really deleted*, just simplified (or something like that). Yet, I think we may even grant the universal *applicability* of the conservation of energy, and *real* deletion may yet occur. Conservation of energy is a characteristic of energy, perhaps, but gives no warrant for universal assertions about existence.

Now the stakes in the question of real deletion become clear, I hope. It is about what time might “do” that leaves no trace in change, and about how non-observable change may interact with time. We suppose that we can observe any changes that involve energy, although our powers of observation do seem to reach a limit with quantum transfers of energy. Still, let us suppose that since we can be indirectly aware of a change in these cases, it is quasi-observable. But there is almost surely still change that is non-observable, as is made evident in our attempts to model 11-dimensional strings and such. The question of real deletion goes beyond these limitations. **If there is more to change than we observe, and there is more to time than change, then we may suppose that time is at least twice removed, as an existence, from energy (kinetic variation, mere motion).** The assumptions behind the First Law of thermodynamics ignore the fact that such conservation implies the permanence, wholeness, and self-sufficiency of the cosmos *as energy*; and this assumption requires the truth of the premise that “energy is all that is, all that genuinely exists.” That premise, if true, is not knowable. And I don’t think it is true. At a minimum, possibility exists—and is not energy.¹³

¹³ In a number of public debates with physicists and philosophers of physics, I have had difficulty getting them to understand that anything can exist that is not at least potency. For a summary of one such debate, see my essay (Auxier, 2016, esp. p. 392, note 18). The recent book by the plasma physicist Timothy Eastman is an example of far-thinking philosophy of physics, but not far enough to overcome the crippling limits of this energetic narrowness. A series of debates is available here, *Tim Eastman Unties the Gordian Knot*, July 10 (Session 2) and November 13 (Session 6), 2021, organized by the Cobb Institute, Claremont, CA, <https://cobb.institute/>. This is a series devoted to philosophy and contemporary physics based on Eastman (2020). See 2: <https://www.youtube.com/watch?v=dTfKCFKVzD4>; and 6: <https://www.youtube.com/watch?v=VA7zAavIBMA>.

Possibility

What does it mean to say possibility *exists* and *is not* energy? I speak not of potentiality, which is always defined in relation to the actual. Possibility must be considered apart from its capacity for work (see Auxier & Herstein, 2017).¹⁴ How would one ever *know* about something apart from its capacity to do work? That requires an argument.

The Quest for the Possible

I take it as given that everything actual is also possible. Whether anything exists that is possible and *is not* also actual has been a source of philosophical debate for millennia. Determinists of all varieties defend the negative, but so do some indeterminists, as we shall see. I will address that problem without theology (physico or otherwise), and from the assumption that our *experience* of temporal change is not wholly illusory. I do not intend to have an extended argument with determinists or those who deny the reality of time, such as Einstein. All determinists must have recourse to a theological claim: to know the whole of order as such. I take that to be unempirical and irrational, and I do not think I have to argue that no person knows the whole of the cosmos. I forego further argument. I do this for two reasons: first, if our experience of temporal passage is illusory, the illusion is perfect and thus undiscoverable *as* an illusion; second, if a means of discovering that time *is* illusory were to appear, it might as easily be part of the illusion as in contrast to it. I therefore regard it as self-defeating and silly to deny the reality of temporal experience. So I don't really see this "non-illusion assertion" as a hypothesis. I take it to be a starting point for any sensible thinking about our experience.

It does not follow, however, that our experience is exhaustive of what exists. If something else, beyond our experience, is real and unaffected by time, change, and energetic variation, it might "exist" without being

¹⁴ There is a long discussion of the interrelations of possibility, potentiality, and actuality in Auxier and Herstein (2017), chapters 7–9.

experienced by us (see Auxier, 2013, Auxier, 2014, pp. 89–131).¹⁵ Indeed, given the growing list of things that we take to be real but *not* part of our direct experience, we can safely say that there is always going to be more to nature, or to the cosmos, than our *experience* of it. The history of scientific discovery indicates the high likelihood that we do not currently experience everything that is real. What we may discover in the future that is *currently* beyond our experience is likely to amaze us just as much as the things we have learned about indirectly in the modern era and which we never suspected for most of our time as a species—from pulsars to ultraviolet light, to radio waves, to distant galaxies, to quantum entanglement, we simply have to admit that whatever we think is now part of the universe is sure to be less than there *is* in the universe. To think any other way is unempirical and such a position stubbornly (and unscientifically) refuses to apply the basic lessons of history. Scientific knowing is an unfolding process. Thus, there are surely existences we do not yet experience at all, or even suspect, but which we may learn about through indirect means. Existence includes experience, but experience does not exhaust existence. Time exists beyond our experience (definitely past time did/does, probably future time also), as does change, and there is no logical basis for assuming that time and change are identical.

Considered apart from actualities, the reality of possibilities—their root structures as existences, their meaning, their contribution to order, their accessibility, whether they do any “work,” and many other aspects of possibility—may be available to our understanding through the right kind of inquiry, even though it is their *existence* I am tracking currently. The experience of possibility, if there is any such thing (and I will try to convince you there is such an experience), must be the clue we follow. What has been lacking in the past, I contend, was a sufficiently developed way of thinking

¹⁵ Whether it is a required principle of metaphysics that everything real must be thought of as the experience of *some* experiencer is ably defended in the affirmative by Josiah Royce, and this is one of the least understood aspects of his philosophy. He never argued the “Absolute” was actual, only that it is a necessary hypothesis for doing metaphysics (and to that extent should be treated as “real”). His argument is a good one, but whether one may do good metaphysics without this hypothesis (which he doubted) is an open question. I have done extensive work on this argument and its consequences in Auxier (2013), especially chapters. 2, 5, and 6. The logic of the argument has been closely set out in my essay (2014, pp. 89–131).

about possibility to bring to us a clear part of what we *might* know about this topic.¹⁶

A clarified set of conceptual tools offers some hope for progress in answering our questions, and especially the question of whether possibility does any work. Further, if we should succeed in getting a better handle on possibility, we would have something much clearer with which to *contrast* our actuality and our experience of possibility. I am bold enough to assert that (along with Gary Herstein), I have developed some of those conceptual tools, and I will place a portion of that work before you for your criticism and consideration.¹⁷

Actuality

Let us begin with a new principle, a starting point for thinking: All that *has been* actual, whether particular, general, singular, or universal, always *will have been* actual. A quick conceptual reduction shows the formal point: even if someone seeks to delete or undo what actually *has been*, the act by which it is undone or deleted replaces (and takes on the metaphysical work of) whatever was deleted or undone. By “metaphysical work,” I mean that the replacement work *conserves*, in its form or purpose, the reality of whatever was undone. You can’t *undo* what isn’t real at all. I take that as clear. The actual is always real, even if there is more to the real than what is actual. The real can be “undone,” perhaps, but not removed from its place in the past and the duration of its coming to be that ends with its replacement, its undoing.

In short, if the past is real, whatever has been actual at any moment in the past (define “moment” however you like, but I use it as an abbreviation

¹⁶ Gary L. Herstein and I have provided a long discussion of the habits of logicians, philosophers of science, and metaphysicians to treat possibility as accessible only by the mediation of some concept of necessity. We take this assumption to be both misguided and profoundly unempirical. See our discussion in Auxier and Herstein (2017), chapters 3–10.

¹⁷ There are numerous other parts of this work, which we planned to bring together in a volume to be called *The Continuum of Possibility*, and much of this work has been presented at various other conferences. Whether that volume as planned ever gets finished is an open question, but something akin to it will surely be developed by one or both of us.

for “durational epoch”) always *will have been actual*. Even if the *undoing* (erasure, deletion, demolition) is unintentional, unconscious, accidental, or fulfills other roles and purposes in the fabric of becoming, part of the meaning of undoing, and therefore of its existence, is that it replaced whatever is now gone. This situation need not be known by any knower or discoverable to any experiencer in order to be the case, to “obtain,” as they say (a loose word, but it seems serviceable here). The actuality and replacement, as a complex, could be a part of what exists in the universe beyond our current experience (Buchler, 1989).¹⁸ Lost aspects of the past, no matter *how* lost, are still part of actuality, then, if this principle is followed. It does not matter whether these parts can be recovered. It worth remembering this: If we had to know or experience everything in order for it to be actual, not much would be actual. Nor does the actual deletion and replacement have to be *intelligible* to us in order to *act* as substitute for what was. Something less intelligible, or wholly unintelligible can, in principle, replace something we understand. And vice-versa. So the move from lower to higher forms of intelligibility is, I suspect, the exception that lends hope to our understanding of cosmic order, but the rule itself is probably entropic. We understand the complex (of an aspect of the past and its replacement) by reducing it to the simpler forms, and only rarely do we grasp the complex *in its complexity* in order to see the togetherness of the real. Yet, I think the latter does happen. It is like “insight” and often leads us to describe the experience in mystical terms. But we can do better.

Entropic change (complex to simple) is, at one level more intelligible because the new order is just simpler than the previous order, which is why we like to analyze everything. But at another level, entropic change undermines what we think of as the meaning and/or purpose of our work, our expenditures of energy *upon* energy. Where energy is complex, as in electromagnetic fluctuations (motion from disequilibrium to equilibrium, or various non-linear processes—see Prigogine and Stengers, 1984), we may take the whole (e.g., the field) and build with it, not necessarily understanding *why* our efforts succeed or fail. An easier example is that we may choose a dense wood to build a house rather than a porous wood, under the assumption that density implies strength. That assumption isn’t always

¹⁸ The “ordinal metaphysics” of Justus Buchler, built upon a Peircean framework, gets at this idea nicely.

true, of course, but as a generalization we might adopt it. To know what is strong and durable, and what isn't, one must experiment and generalize. Working with something *as a whole* is guesswork, but it's a start, especially when the full character of the parts is as yet unknown.

Intelligibility, for us, implies a type of complexity adapted to the level of complexity *we* bring to the experiential task. It is simply false to assume that all complexity relates to increasingly mental or even biological forms of order. And simple things can be harder to know (interpret, make sense of) than complex things, sometimes. We humans generally seek to bring about forms of order that are more intelligible *to us* than what came before. Sometimes that involves simplifying, sometimes complexifying. You will really know how (and to a limited extent why) an internal combustion engine "works" when you build one and it runs. Such is the cosmic character of "learning," and insofar as the cosmos (beyond us) "learns," lower entropy is "replaced" (in the sense described above) by less stable but more meaningful localizations of energy. The ideas of "depth" of "value satisfaction" and "intensity," in Whitehead's terminology, well describe the "achievements" (work) of these pockets and eddies of energy (Jones, 1999).¹⁹

Here we have, therefore, a generalization of the principle of the conservation of energy. It has been raised in generality to mean that, apart from the energy involved, it is the reality of change, and perhaps also time (in this case the past, without which the present could not be the exact present that it is, and the future cannot be the precise future it will be) that secures the conservation of *actuality*. These are the demands of Whitehead's Principle of Relativity, and also of Royce's Fourth Conception of Being (see Whitehead, 1922).²⁰ Yet, I use the term "conservation" and not "preservation," because it is not clear, at this point, whether the present somehow reconfigures the past. Extreme presentists deny the past is even real. How they come by such knowledge isn't clear. More balanced presentists (e.g., George Herbert Mead) hold to the full reconfiguration of the past in the present without denying the reality of the past. This problem touches upon the mysterious relation of change to time. I assume "preservation" of actuality implies a strong sense of retaining past structures and forms in the present *as*

¹⁹ This is an enormous topic which I cannot enter into here. See Jones (1999).

²⁰ See Whitehead (1922), and also the summary of the *Fourth Conception of Being* in Auxier (2013), chapters 5–6.

they were in the past. Conservation implies only the sustaining of whatever the “work” achieved, and such change may or may not be observable to us or intelligible to us, and we do not know how complex it may be.

This brings us to a point about the meaning of “the present moment.” Mead and others, such as Maurice Merleau-Ponty, have asserted that the present *does* significantly reconfigure the past, and hence, if they are right, actuality, its structure and meaning, is a moving target, not a static block (see Browning and Myers, 1998, pp. 349–370; Merleau-Ponty, 1962, pp. 410–433).²¹ I think Whitehead and Bergson can accommodate this insight, but I think that they have more comprehensive ideas about time than Mead and Merleau-Ponty.²² In its strongest form, we find the present moment generalized in Bergson’s assertion that the full past is both present and active, and is hence *preserved*. In his view, as I said at the beginning, we do not have *access* to all of the past, but everything actual (in the past) is present and active, and the full past is manifest as the exact structure, configuration, and meaning of the present. The present exhausts the real at every moment, but the present can be overrun by the past, which can configure the future before it becomes present. Thus, the past pushes against the present and the present in its material character resists. I think this view, which we might call “preservation of the actual,” asserts more than our experience warrants. But we could allow it *may* be true, for all we know. It still does not imply that *possibilities* are created by the vital energy available in the present, from the past, pressing against the material character (the tendency to repetition) of the present. I think Bergson oversteps in asserting that possibilities are created by the present moment. It isn’t knowable, even if it happens to be true. Obviously, if Bergson is right, there is no real deletion in the cosmos—a point he makes and defends in the final chapter of *Creative Evolution*.

This principle of the *conservation* of the actual (as distinct from preservation) also does seem to imply that “real deletion” is not a part of the cosmos. Now it will be clear that by “real deletion” I mean something

²¹ See Mead (1998) and Maurice Merleau-Ponty (1962).

²² A recent dissertation shows some very surprising influences flowing from Whitehead to Merleau-Ponty. See Kirkpatrick (2020). Kirkpatrick’s work shows that Merleau-Ponty was studying Whitehead’s work at the end and that it very much informed the final unfinished works that were later published, and deepening Merleau-Ponty’s understanding of time and nature.

stronger than the *elimination* of conserved actuality. Allowing that conservation of the actual is, as far as we know, an exceptionless fact of the cosmos, there may still be “real deletion,” I assert. It just isn’t what we expected. The conservation of the actual does not account for our experience of past possibilities that *never were* actual. We may call these possibilities “might-have-beens.” Are these non-actual possibilities nothing at all? Must we say that if they were never actual, they were also never really possible? That is an extreme position, and contrary to experience and common sense. We *do* experience might-have-beens. Some genuine possibilities just never actually happen. Yet, if might-have-beens can be drained of any potency they *once had*, these possibilities have been “really deleted.” They are “nothing” in the sense Bergson argued against. I say that this draining does occur, and we can experience it. If so, it follows that might-have-beens (which had potency at some point but lost it, whether by being drained of it by our actions, or in some unobserved way having nothing to do with us), may have a relation to possibilities that *never* had any potency at all.²³ And here, perhaps, we find a way of thinking about and describing the difference between “time” (whatever it is or is not) and unobserved change.

Might-have-Beens

Indeed, Bergson says the might-have-beens are “fictions,” and thus, not really *past* possibilities (Bergson, 1988, pp. 161–172).²⁴ They are things we can think about, intellectually, by creating virtual spaces in which what never existed as an actual present is combined in imagination and presented *as if* it had all been simultaneously actual. His ontology supposes that real possibilities are *created* by the freedom immanent in the present, and that those possibilities which do not become part of the next durational epoch

²³ At this point I am pressing hard against Robert Neville’s interesting ideas about “creation *ex-nihilo*.” His arguments must be seriously considered, since they have a direct bearing on the thesis of this essay. I have summarized and provided a critique of this view in an essay (Auxier, 2015).

²⁴ Bergson speaks of these issues in a number of places. The most relevant discussion to the point I am making is in Bergson (1988), especially pp. 168–169 (another place he makes the point about the full presence of the past). In the more common edition of this book (from Dover), these are pp. 210–225.

are understood only intellectually, solely on the basis of their contrast with what is and was (Auxier, 1999, pp. 267, 301–338, 339–345; Auxier, 2017, pp. 39–66; Auxier, 2014, pp. 64–81).²⁵ He emphatically rejects what I am calling real deletion, which he thinks of as “nothingness.” Bergson argues nothingness has no standing in the creative becoming of the universe, and that our thinking about it is simply a mistaking of one expected form of order for another (Bergson, 1983, pp. 231–236). But I think the past possibilities we imagine are not mere fictions and not nothing, but are constructive (even if they have to be *narrated* fictionally) alternatives to what is and what was; I allow that they may have no sense or meaning of their own (it is hard to know), apart from that relation to the actual, as a contrast, but it is not a mistake to think about them in a non-negative way.

The position of Bergson is impossible to refute, empirically, but there is a gap in it. It does not follow from this insight and argument that possibilities *are* in fact created. That can only be a hypothesis, although Bergson treats it as a fact. At most we can affirm the conditional that *if* possibilities are created, *then* we must see them and know them only by the grace of the actual. Bergson errs in asserting this proposition as being true of the cosmos. The same premises could hold if the possibilities are *not* created—i.e., if they are, as Whitehead supposes, uncreated “eternal objects.” Few ideas in process philosophy have come in for more abuse than this idea of “eternal objects.” People insist upon thinking about this idea as Platonic forms, and indeed Whitehead invited them to think that way in a few remarks. But since these commentators feel confident that they know what Platonic forms are, they usually don’t pay close attention to what Whitehead says *about* eternal objects. He says they are possibilities, and he has a quite unusual view of possibilities that is very far from anything Plato said (Auxier & Herstein, 2017, pp. 141–192).²⁶

But whether we follow Bergson or Whitehead, and whether possibilities are created or uncreated, *we* (humans) would still have to know possibilities from the standpoint of the actual. So, what decides between one hypothesis and the other? Are possibilities created? I take it as obvious that we do not *know* all genuine possibilities, and we will never *know* all

²⁵ I have done three fuller studies of Bergson’s ontology: Auxier (1999, 2014a, 2014c).

²⁶ Please see the long discussion of possibility in Whitehead in Auxier and Herstein (2017).

genuine possibilities so long as there is a difference between experience and existence. There is no reasonable way, short of a Peircean idea of truth (in the infinitely distant future), to close the gap between what we do know and what we *might* know (about what *was* possible but non-actual). Perhaps an ideally situated community of inquiry in the infinitely distant future would not only know everything that was actual, but also everything that was genuinely possible and never became actual. It is mind-boggling to consider that idea, but it matters very little to us as we are in the present, empirically, and limited by the *way* the present is “presented.”

And apart from knowledge, proper, the same sorts of limitations upon experience apply to what we find *intelligible* (e.g., imaginable, conceivable, etc.), such as Bergson’s “fictions.” The possibilities that we understand must include the actualities we understand, but such inclusion does not even imply logical consistency, let alone compatible physical co-existence. In fact, part of what *makes* possibilities available to thinking is their incompatibility with what is actual, often implying, with a simple reduction, a contradiction of what is actual. If x is actual, then everything possible but non-actual is *not* x , taken together, regardless of how it is formulated. Yet, x includes *not* x , somehow, as its boundary or limit. This kind of inclusion is modeled as extensive connection in Whitehead’s axiomatic version in Part IV of *Process and Reality*, but a logical version of these modes of inclusion was developed by Susanne Langer in her *Symbolic Logic* (Langer, 1967, pp. 136–156).²⁷ The theory of inclusion *as* extensive connection needs further development, but is advanced enough to see that the mistaken direction in 20th century logic, with regard to interpreting necessity, and our views of possibility have been greatly impoverished thereby.

It is a mistake to read this kind of inclusion (the way in which the possible includes the actual, while access to the possible by finite minds is conditioned by the actual) as necessity, which is how modal logicians have handled the problem of possibility since the time of C. I. Lewis. Nothing in experience forces upon us the reduction of all that is *not* the case to some necessary relation with what *is* the case. There is no warrant for metaphysicizing the so-called “law” of contradiction, and there is no important result

²⁷ See Susanne Langer (1967), chapters 5–6. I have combined Whitehead’s mathematical model of extensive connection with Langer’s logical expression in my own work, Auxier (2021), chapters 20–24.

from a successful *reductio ad absurdum* except to indicate that some prior error in our thinking has occurred (Whitehead's view). And it is false to our experience to claim that what is not actual is therefore *impossible*, even if we were to allow that actuality is, as with Aristotle, defined as that which cannot be otherwise than it is. It can still be the case that actuality includes as its limit that which it is *not*, without our inferring that the possibilities that are thus included are *impossible*. Indeed, that view, popular though it is, implies that what is possible is impossible. Possibilities are more complex than a simplistic reduction to necessity can show.

Actuality

Let us back away from the puzzle for a moment and recall some things about actuality that may help. There may be actualities we find unintelligible at any given moment in time, which means that there are certainly possibilities we find also unintelligible from the limits of any given moment (everything actual is also possible). That means that asserting a perfectly clear limit (to either actuality or the possibilities that include it) in some cases will be arbitrary. We can enter the popular assertion that whatever is actual is knowable in principle (Plato and Aristotle asserted it), but it does not follow that we can always reason with logical security from what we know *now*. Using multiple logics (modes of reasoning) probably helps with this insecurity. Yet, we *start* with what we do know (experience plus its many descriptions), and with what we do find intelligible (including fictional narration, error, and supposition), about both the actual and the possible. When we suppose that we *know* the boundary between actual and possible *is clear*, we go beyond what our principle of "the knowability of the actual" warrants. Clarity and distinctness are arbitrary, and indeed, even theological criteria. The reason is that the "knowability of the actual" is a modal hypothesis, not a fact of any actual cosmos we really know. One cannot treat such a possibility as having the force of actual fact without begging the question. Do we *know* that all actuality is knowable? We do not. In fact, it is far safer to recognize that much that is actual is unknown to us, and much might even be unintelligible to us, as we currently are. What does this limit imply for thinking responsibly about the way that the actual includes

the possible as a limit case? (We must bear in mind that there may be much more to possibility than its role as the limit of actuality.)

Let us recall that the order of generalization moves from particular to general, and so the more particular actualities are the basis of our access to more general actualities. We can subsume or deduce only after we have generalized, although we have allowed, earlier, that we might work with whole complexes unanalyzed, not knowing what they include or how. Thus, generalization from particular to general is the firmest basis for our understanding of what is possible but non-actual. One infers (by generalizing) that the possibilities are always more numerous and complex than the actualities, indeed infinitely so (and let us not forget the *actualities* we don't know, and *their* limit cases, *and* whatever may exist that plays no role in limiting some actuality).

We are now close to understanding "real deletion." We cannot say what it *is*, but I think we can say what it *would have to be*, if it exists at all. We render it determinate thereby, but without presuming to know what we do not know.

We have acknowledged that there are almost certainly actualities we will never understand, *except modally*, i.e., in as an ideally situated community of inquiry the infinitely distant future (for example). If that is right, then possibility both includes and is included by everything we now know, and everything we ever will know. For the sake of having a philosophical account, the question of whether possibilities are created must be judged on its knowability, in my view. Bergson failed to do that, even if his assertions should turn out to be correct. Whitehead succeeded in judging more in keeping with our limitations. Given that we do not, and indeed cannot know, with finality, whether possibilities are created or uncreated, what should we assume?

We get very different cosmologies and ontologies from these two assumptions. In Bergson's account, wherein possibilities are created and might-have-beens are not part of the past but mere creatures of the intellect, fictions, and wholly encompassed by (included in) the present, "real deletion" is not a needed idea or consideration. Everything that ever *was* still *is*, and there is nothing anyone can do about that on Bergson's view. Whether we know the actualities is a contingent matter, and whatever we cannot gain access to about the past is *only* a question of access, not of the existence of something we can never know in principle. Nothing is ever

really deleted, then, just contingently inaccessible. Might-have-beens are present fictions, not past possibilities. This may be true, but it *ontologizes* past possibility *as* present fiction, and even if that is true, it depends on denying the claim that “might-have-beens” qua past, are real. In short, Bergson substituted real might-have-beens, that may exist, for present fictions that definitely can be made, but whether they have any constructive relation to the past apart from our making them in the present, Bergson presumes that they do not (Bergson, 1988, pp. 137–138). Yet, how would we ever know might-have-beens are *not* real (i.e., do not exist apart from our making them—or not making them)? Such knowledge is quite beyond our ken, and so I think that such an ontology lacks philosophical warrant. Bergson is guessing, which has its place, as Peirce rightly insists. But guessing is only one form of musement, and Whitehead is better at the latter, more radically empirical.

On Whitehead’s assumption, that possibilities are uncreated, we might still have reason to speak of real deletion, because “might-have-beens” could *exist* (perhaps not even wholly beyond our experience), and I have to add: these might-have-beens *would* exist in exactly the same way (with whatever complexity and relationality they have) regardless of whether they ever became actual. This assumption opens up for our thinking a vast world of *plausible* narratives about what might have happened but did not, and these narratives actually do some work in helping us understand what is and was actual, along with what might be in the future (Auxier & Herstein, 2017, pp. 252–255).²⁸ The reason is that a plausible narrative about what might-have-been carries with it differing limit cases which can be contrasted with the limit case of what was actual (the collection of possibilities that ingressed and contrasted with the constellations that egressed). **There is an intelligible structure to such contrast. Our contrast becomes a comparison when we futurize it.** We use this kind of thinking all the time in reflecting on what was actual. It is real work; indeed, it just is *the future of work*, as such, given *any* actual present.

But more importantly, we take this contrast structure that comes from the contrasting of what was with what might-have-been, and, when we do the work of projecting it into the future to understand what *may be* (what has potential, experientially speaking, *now*) and its comparison with what *might*

²⁸ We have made this case with examples and detail in Auxier and Herstein (2017).

be (what does not seem to have potential in the present, but which could come to have it under some projected circumstances). This work must be a comparison; it cannot be a contrast because the future is not definite, even if various determinate orders that apply in the comparison are intelligible to it (Auxier, 2021, pp. 154 ff).²⁹ We do not in fact *know* the future. There is nothing to know. But we *experience* it anyway, in other cognitive and pre-cognitive ways. They have many, many names: prediction, expectation, anticipation, hope, forecast, conjecture, prophecy, pretension, visions, and the list goes on. Our most meaningful dreams for the future depend upon our capacity to *create this contrast* by thinking *about* the past and then borrowing the structure from that work and projecting it into the future *as comparison*. And finally, we come to our goal: **The relation between what is narrated as a plausible might-have-been and its projection into the future is accomplished by our *real deletion* of the limit between what *was* and what *might-have-been* as we *project* the structure into the future. We do more than eliminate (i.e., negativelyprehend) the limit, we delete it, really. In short, real deletion is a condition for imagining the future as not fully determined by the past.**

To assume the non-created status of possibilities (as Whitehead does, and I am advocating) has two immediate consequences: (1) possibilities are genuinely independent of actuality, which, if time is real, is a creative process, i.e., whatever is actual *becomes* actual, which is a transformation from being non-actual but possible—time includes change but is not limited to change; and (2) even God, or the Absolute, or any divinity or superhuman power, has to work within the limits of what is possible. One might as well equate God and possibility, except that it is unclear how anything would *become* actual—why there is something rather than nothing—if one makes this equation. I do not claim to have made any progress on that question here (see Auxier & Herstein, 2017, pp. 220–296).³⁰ In short, however, the divine cannot delete what *was* without knowing that what *was* has been deleted, and hence, the “replacement” of what *was* with some new order or arrangement still retains the trace of what was before it was replaced. The act of replacing was *also* possible, and so, even if we should

²⁹ The technicalities of comparison and contrast are worked out in my work, Auxier (2021), pp. 154–156, 171–174, and following.

³⁰ There is a very long discussion of this problem in Auxier and Herstein (2017).

really delete a past *actuality* (a divine act if ever there was one), somehow, the new work, the replacement, was possible all along, and only carried out on the ground and condition that the really deleted actuality provided exactly the right context for just that work (and no other work). The work itself is the evidence of the reality of what was deleted.

Deleting a Possibility?

But how could a *possibility* be deleted? Whitehead's theory of the elimination of eternal objects is not a theory of real deletion. Bringing an existence like a possibility (or more accurately, a constellation of possibilities, since they never exist alone, as individuals, and indeed, possibilities *are* relations) to real deletion is a different piece of work. The total elimination of a possibility structure, or a constellation of possibilities, would mean that somehow that constellation was never *really* possible. If we allow that, we undermine our own thinking. We say that what is possible is not possible. So there seems to be a certain stubbornness or obduracy of the possible, qua existence. It won't "go away." But such obduracy does not imply that we cannot achieve real deletion of the might-have-been in projecting the future. It means, rather, that we cannot expect such a deletion without forcing it on a constellation of possibilities that form a plausible might-have-been. With each act we pronounce: "begone thou obdurate constellation, be no more," and the constellation obeys. Sort of. It recedes or "egresses" so that we can project its constellational *structure* upon the future. This work is done imaginatively in transforming might-have-beens into new groups of futural may-be's and might-be's.

Sartre's analysis of the "nothingness" of the positional act in the mode of "neutralizing" ourselves over the not-here-ness, elsewhere-ness, and non-existence of what we imagine is, in my view, basically correct,³¹ but the real deletion occurs when we futurize the structural characters of possibilities and wish away, as it were, those constellations of possibilities that must egress in order to leave *as* a may-be what otherwise merely might be (and always was a "might-be"—existed *as* a possibility, uncreated). If we could not do this work imaginatively, it would be impossible for us to form

³¹ See Sartre (1948), Part 1, The Certain, Section 4, for more details.

ends of action imaginatively in the present. We would not be able to envision the ends of our work. **So, in short, real deletion is the work that makes our work a potency, as we imagine it. This insight comes only at the cost of preferring the hypothesis of the uncreated and independent character of possibilities.**

The Uncreated Possible

We must admit that nothing functional, apart from clearer thinking, finally can bring us to decide between these two hypotheses (created vs. uncreated possibilities). The hypothesis I defend holds the promise of better cosmology and/or ontology than the other assumption/assertion (Bergson's). Here I think we can find a reason to treat possibilities as uncreated by hypothesis. Whitehead's hypothesis, that possibilities are uncreated (i.e., eternal objects are eternal), also has the virtue of leaving open the question of whether and how we may create those possibilities as comparisons, unique to our perspectives and as lures to achieve a novel standpoint. My position on these uncreated possibilities, built from Whitehead's view, also undermines the standard models of gravitational cosmology and of reductionist life science. So be it.

An ontology that begins with the idea that possibilities are created will not be able to accommodate the ideas that treat possibilities as indifferent to actuality (they are the same whether actual or non-actual), and there are some very good reasons to see possibility as being indifferent to actuality. Common sense, for one. It doesn't appear to anyone I know that describing something as possible means it must become actual, and if it doesn't it was still possible, either way. If I throw a curve ball, I genuinely might have thrown a fastball, or indeed, I might have refused to throw anything at all. None of this changes when I throw the curve ball. (That is not to say that possibility can be interpreted in total isolation from actuality.)

Meanwhile, a cosmology/ontology that *begins* with the assumption that possibilities are uncreated can easily accommodate an inquiry into the consequences of imagining that the possibilities *are* created. I have done so in this essay. And such an inquiry could be quite exciting. What do *we* add to the universe when we *really delete* a might-have-been, in contrast to the *was*, and then project it *as* a future? In short, the "uncreated hypothesis" is broader than the "created hypothesis" and is more open. Since both could

be wrong (e.g., “possibility” might just be a word with no real meaning or idea behind it, a pathology of language or consciousness, etc.), we cannot decide with finality between the competing hypotheses on the weight of form alone, although considerations of form heavily recommend Whitehead’s approach. And since both Whitehead and Bergson are radical empiricists, we can’t really charge one of them with not *caring* about how experience brings with it the relations theorized, or about appealing to trans-empirical support for their concepts (which both try to refrain from doing). If either does this (and I think Bergson does on a couple of points), it would surely be a weakness, but then the task would be to fix the problem within their basic assumptions (and that can surely be done). If these two thinkers have not adequately worked out all the implications of their own assumptions, charity requires us to assume that the problem could be worked out by someone.

So we are left not only with a formal problem, but also with an empirical one: what evidence does *experience* provide that might be brought to bear on the question of whether possibilities are created? There is some, although it requires both phenomenological and practical considerations.³² Unless we are strong determinists, we take for granted that at least some of our acts could be (and could have been) otherwise. No one is a strong determinist in practice or phenomenologically, so we do have a head start on providing an account of the immediate experience of the possible.

³² For this reason, it is valuable to develop a “process phenomenology.” See Tengelyi (2004), who goes a good way toward developing such a view in his “diacritical method” for phenomenology, drawing from and building upon Merleau-Ponty. He says: “a diacritical difference becomes manifest only with a temporal shift, with a phase delay, and therefore it cannot be, at least in the initial state, exhibited intuitively (as early phenomenology would require), even if it can very well be subsequently exposed” (p. xxix). Several young thinkers are at work on this project of process phenomenology. Anderson (2019) explores this problem from the standpoint of experienced value. It involves a good deal of description which borders on phenomenology, but is closer to process philosophy. Two dissertations by Andrew Kirkpatrick at Deakin University (2020) and Jordan Kokot at Boston University (2022) have tackled this problem of a real process phenomenology with considerable success. The task is difficult because phenomenology has historically been wedded to a narrative about subjectivity that is far too Cartesian for process philosophers, but both Kirkpatrick and Kokot have seen that Merleau-Ponty’s later work opens a door to a new account of subjectivity that is closer to objective temporality.

We seek, then, an *immediate* experience of possibility because clearly we do have a mediated experience of such. Every time I use the word “possibility” in a meaningful way, the mediated version of the experience or possibility is available by courtesy of the word. Thus, I may imagine possibilities (including those I take to be might-have-beens), or I may reflect on possibilities (either in regret, or hope, or excitement, and so forth), and can think about possibilities (even the necessitarian modal logics facilitate this activity), and so on. Therefore, even if strong determinists are correct in asserting that everything genuinely possibly is also actual (e.g., Spinoza, Einstein), we cannot deny that the *word* “possibility” and its field of meaning is still available to us in a mediated way.

But if we can make a convincing empirical case that we do have an unmediated experience of the real existence of possibilities, then that will be the strongest evidence we can have of the concrete existence of possibilities, as included in actual experience. At that point it becomes important to *theorize* their relation to actuality in a way that is applicable, adequate, and logically rigorous—including deciding between the Bergsonian idea that possibilities are created by actual situations (call this “narrow possibilism”) or, as with Whitehead, are indifferent to and independent of actuality (call this “broad possibilism”). In addition, for the former view, I think “real deletion” is an unsolvable problem and calls forth an arbitrary assertion about time, from Bergson. The latter view can offer a satisfactory account of real deletion, so that we may see what insight we have had when we consider that something that once existed really ceased to exist, if only in an act of projection.

Immediate Experience of the Possible

I think that the immediate experience of the possible is a more or less continuous complement and constituent of our on-going, present experience. I believe it can be pointed out in a thousand easy examples. When we anticipate what someone else will say in a conversation, for example, and can be either right or wrong about it, we have experienced possibility. But the nub of the issue is whether we have an *immediate* experience of the *might-have-been*. The reason is that the Whiteheadian hypothesis (broad possibilism) would accommodate the idea of an immediate experience of what no longer has any real potential, where the Bergsonian hypothesis (narrow

possibilism) would, as we have said, see that process as an experience of a fiction. Let me offer, therefore, a pair of examples that I think strongly support the idea that we do have an immediate experience of what might-have-been but can-never-be-actual-now.

You are about to cross a busy street in London. You are from another country. You look to the left, the road is clear, and you begin to step down from the curb. Then, for no reason you can grasp, you hesitate and step back, and just at that second a taxi speeds by, coming from your right, which you did not see or actively anticipate. You would have been hit had you not stepped back. You just cannot keep it present to mind that cars come from the right in London (which is why the government has painted on the street “Look Right” at every crossing of this kind—they have lost a lot of tourists). Now, let us consider your near miss phenomenologically. You realize instantly and immediately that you have had a narrow and lucky escape from harm, and in the few seconds as the car disappears down the road, a certain settling into the difference between the possible and the actual occurs. It is a conjunction, not yet, at this point, a disjunction. The conjunction can (and should) be formalized as a “but.” I might-have-been-killed-*but-I-wasn’t*, *and* here I am. I think this is a maximally unreflective thought—I don’t believe any thought that has been completed is absolutely devoid of reflection (as Bergson does, and must), but that is another argument.

So, you perhaps dwell for a moment in your finitude and you re-experience being-toward-death, and so on. Note also that your body responds afterwards *as if* the possibility now past was still possible—your heart rate increases, you take in a sudden breath, your nerves may tingle, your muscles poise, and pretty much every aspect of your temporal existing prepares for something that cannot *now* happen. I think you have had this sort of experience. But what I want to call attention to is the simplicity of this otherwise complex thought: You can, for a brief moment, experience both possibilities (being hit and not being hit) in conjunction, connected by a “but” even though one conjunct has no potentiality at all. In short, it is a might-have-been, undeniably, and is still being experienced, immediately, as a possibility. It remains in this mode until our bodies settle down.

I suggest that in fact you experience the might-have-been, immediately, *every* time you act. It is just easier to credit the experience in some moments as opposed to others. If you are playing music on an instrument and hit a wrong note, or an unexpected one that even sounds ok, your hands

may attempt to “correct” (slide into the expected place), or you may pass on without attempting that, but either way, you experience the note you did not play alongside the one you did play. Again, it is a “but,” and still it is there. Less dramatic than your close call with the taxi in London, but no less real. The same holds for saying what you did not mean to say. In every moment, in every act, you experience both what you did and what you did not do. The “did not” egresses leaving what you did first as a comparison and then as a contrast. It happens even when you perform the act you anticipated.

Clusters of Possibilities

I want to conclude by saying something about the structure of these possibilities that egress and become might-have-beens. I have delayed explaining the meaning of a “constellation” of possibilities until now because only at this point (in our rather long story) are we in the right position to understand constellations. It is more than a metaphoric use of the word, but we may begin by describing an analogy. It is obvious to anyone who thinks for a moment that most constellations in the night sky appear to us as *Gestalt* patterns because of the topological viewpoint we have from earth. Orion would not appear as a constellation from the viewpoint of a planet circling one of the stars in Orion’s “belt.” Those stars are at wildly different distances from the earth and appear in a “line” as a result of our perspective. Who knows what constellations may include *our* sun, from the point of view of some distant planet?

Constellations of possibilities are like this. They appear associated by intelligible patterns from some point of view—and the association can be so strong as to convince us that the association is more than a function of our perspective. Future possibilities may appear constellated on the basis of the form of order we have extracted from the past, drained of its potency, and projected into the future. This is the fruit of real deletion. That structure, emptied of its contrast of was and might-have-been, reveals a possible future to us. It is a way of saying, with greater detail and reasons, what Hume meant in saying that we humans have a habit of thinking the future will be like the past. Obviously, it may be, and maybe not. But this issue of understanding possibility, apart from recognizing the role of “real deletion” in projecting it, is grasping that some possibilities are constellated, merely, while other

possibilities are *clustered*. As with star clusters, the stars in a cluster actually are close together, from any perspective in the universe. Their proximity is not generated by perspective alone, but something much deeper: proximate existence. There are possibility clusters. They exist. The challenge is recognizing which constellations of possibilities are clusters, and how tight a given cluster is.

Clustering possibilities are lures for what I called above and elsewhere “the collapse of the time function.”³³ All clusters are constellations, but not all constellations are clusters, and here we have our task, normatively speaking: To determine which constellations we see from the present are really clusters. It informs us in a larger way of *what* we are choosing when we choose given possibilities. If we choose to respond *violently* to a given situation, for example, we get the whole violence-cluster of possibilities, not just the violent act. One must deal with all that violence brings, and one has chosen the whole cluster, not just the act. And the same is true with many choices, such as abortion, casting doubt on electoral processes, and indeed, we can see that conspiracy theories try to depict mere constellations *as* clusters of possibilities. The implications of this idea are broad. To give an example, some people pursue education as constellated possibilities, while others pursue a cluster. The undergraduate knowing that medical school is the goal encounters educational clusters. The undecided major encounters only constellations until a path appears, which sometimes never happens.

Mere constellations do not have to happen together, and if you chase a constellation of possibilities, you may get some of what you want, with some wiggle room for avoiding what you don’t want. It is relatively safe, in that you are unlikely to get more than you bargained for. Clusters of possibilities, in contrast, really do exist (and thus happen together), and if you

³³ This idea is explained in some detail in the forthcoming paper I wrote with Mohammad Sayeh, cited above. In short, the idea is akin to the way that a batted ball, seen from the outfield is seen to be hit first, and the sound of being hit lags behind (sound waves are heavier and more difficult to propagate than light) but as the ball approaches the outfielder, the sound and light rejoin completely in the moment of its arrival at the glove. That is the collapse. Time is like this, including many varying aspects of the flux, moving at different rates, but in an “event,” they collapse. The mathematics of this collapse can be modeled with some accuracy. If this idea turns out to describe the actual universe, it resolves many paradoxes in physical science. Demonstrating the reality of proteresis in the behavior of light is a great step in showing the collapse of the time function as basic in physical reality.

chase one possibility in a cluster, you had best be sure you want everything in the cluster. There is reason to suppose that if you can succeed in obtaining part of a cluster, you can probably get the whole cluster, whether you want it or not, so a second task is to learn where the pressure points are in a cluster of possibilities. One might think of the choice of a life partner in saying, “I do.” That is a cluster. If I get one of these, the partner I choose now, the rest will follow. The implications are clear.

In guiding our relation to possibilities, cultivating real deletion is something like a moral imperative. One must choose the key possibility that brings the better rather than the worse. E. S. Brightman called it the “Law of Specification” and Martin Luther King Jr. used it to plan campaigns.³⁴ The bus boycott in Montgomery provided the template for this kind of planning. Integrating the bus system would lead to clustered integration. Integrating Montgomery would lead to integrating the South, and so forth. Similarly, the campaign for better treatment in Chicago failed because King’s group got the wrong pressure point. Specifying the sanitation system led to better sanitation in poor neighborhoods, but nothing else. Pressing the red-lining practices of the housing market proved to be a bridge too far (although with King’s assassination, it did bring the 1968 Fair Housing Act, but sacrificing King was not part of the plan). These are examples of managing clusters and constellations, and all of history could be re-written on the back of this idea.

There are numerous “generalized” ideas, in the sense Whitehead uses the term in the epigraph to this paper. Violence is a possibility-cluster, as I have said. Non-violence is a shining constellation, but probably not a cluster. One must choose non-violence over and over, situation by situation, and it is not clear that time ever bring a person to a point of rising above the repeated choice. Such is the nature of pursuing constellations. They leave one free, but oblige one to keep “working,” in the sense set out at the beginning. Yet, love is a cluster (one that that includes hate). It seems to be the cluster that supports non-violence. Possibilities projected by the work of real deletion help us imagine what we ought to do. Reflection on that process enables us to take control of our act of real deletion.

Whitehead set out a number of idea-clusters in *Adventures of Ideas*, including peace and beauty. He was arguing, in effect, that they were clusters (obviously he does not use this terminology, which is my own), as

³⁴ See Brightman (1933), pp. 171–182, for more details.

could be seen from their descent in Western history. Yet, the close logical analysis of the levels of generality and their points of extensive connection is a bit much for most people to understand. A formal analysis of clusters of possibilities is possible, and we can debate, to good effect, which clusters will contribute the greatest value attainment, and at what cost, in comparison with other clusters. We may develop techniques for finding and choosing clusters as we understand them better. We might discover that something we thought was merely a constellation of possibilities was in fact a cluster (e.g., I may be wrong about non-violence), and with such a discovery, more techniques for the enactment of the full cluster would gradually become clear to us. We would be able to choose our future with a greater degree of confidence that most of what will happen will be preferable to what does not happen.

The main source for our knowledge about clusters and constellations of possibilities is, of course, the past. But in order to study the logical aspects of these possibilities, we need to delete the past as a contrast of was and might-have-been, and project the structural characters of the connections into the virtual space we create for the future. Without this real deletion, we will always be lost in the actualities of the past and will not be able to discern a real proximity of values for a contingent proximity that happened to become actual in the past (perhaps repeatedly). Thus, real deletion is the work that opens for us the modes of extensive connection that enables us to get for ourselves an image of the future.

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