

*Das Vorbei* as future-hypothesis;  
*Ereignis* as the mother of our ready condition

*Vorbei* love, *vorbei* happiness,  
Hello nothingness, I feel like I could die.<sup>1</sup>

The consensus, so far as I can find out, is that Richard Feynman was the first to articulate explicitly the past-hypothesis, here:

“Now if the world of nature is made of atoms, and we too are made of atoms and obey physical laws, the most obvious interpretation of this distinction between past and future, and this irreversibility of all phenomena, would be that some laws, some of the motion laws of atoms, are going one way – that the atom laws are not such that they can go either way. . . . and this one-way business of the interactions of things should be the thing that makes the whole phenomena of the world seem to go one way. **But we have not found this yet.** [my emphasis] That is, in all the laws of physics that we have found so far there does not seem to be any distinction between the past and the future. [Alan Guth, quoting this passage in 2025, stated flatly “And that is still the case.”<sup>2</sup>] . . . Therefore I think it necessary to add to the physical laws the hypothesis that in the past the universe was more ordered, in the technical sense [of lower entropy], than it is today – I think this is the additional statement that is needed to make sense, and to make an understanding of the irreversibility.”<sup>3</sup>

Subsequently re-stated in its prima facie epistemic implications by David Albert in these terms:

“what seems to be the case is that everything we can know of the past and present and future history of the world can be deduced, in its entirety . . . from the following four elements: what we know of the world’s present macrocondition—and of our own brains, perhaps; the standard microstatistical rule; the dynamical equations of motion; the past-hypothesis [“which is that the world first came into being in whatever particular low-entropy highly condensed big-bang sort of macrocondition it is that the normal inferential procedures of cosmology will eventually present to us”].”<sup>4</sup>

Filling in a bit of history now, “the beautiful, ingenious arguments of Boltzmann and Gibbs, and of their various collaborators and followers”<sup>5</sup> gave us the statistical-mechanical understanding

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<sup>1</sup> [https://www.youtube.com/watch?v=LRyrWN-fftE&list=RDLRyrWN-fftE&start\\_radio=1](https://www.youtube.com/watch?v=LRyrWN-fftE&list=RDLRyrWN-fftE&start_radio=1) .

<sup>2</sup> <https://www.youtube.com/watch?v=pkV5fJneBzE&t=531s> at 4:41.

<sup>3</sup> *The Character of Physical Law* (1965) 108-109, 116.

<sup>4</sup> David Z. Albert, *Time and Chance* (2000) 119, 96 (all italics in my quotations of this book are his). Albert expounds the argument of the book here: <https://www.youtube.com/watch?v=JR2sMeXLuLw&t=1640s> . Chapter by chapter exposition and commentary by Victor Gijssbers here: <https://www.youtube.com/watch?v=CJMUfAQwL-c> .

<sup>5</sup> David Albert, “The Passing of Time as a Mechanical Phenomenon of Nature”: <https://www.youtube.com/watch?v=SgeNCfQslr0&t=2086s> 5:11.

of thermodynamics and yet by the same gift posed a stark problem. The arguments of Boltzmann and Gibbs entail “that a half-melted block of ice alone in the middle of a sealed average terrestrial room is overwhelmingly likely to be still more melted toward the future and that a half-dispersed puff of smoke in a sealed average terrestrial room is overwhelmingly likely to be still more dispersed toward the future and that a tepid bowl of soup alone in such a room is likely to get still cooler toward the future and that a slightly yellowed newspaper alone in such a room is likely to get more yellow toward the future and uncountably infinite extensions and variations of these and incomprehensibly more besides;”<sup>6</sup> arguments operating thereby “to underwrite great swathes of our empirical experience of the world.”<sup>7</sup> So far so good.

Big Problem: “all of these arguments work just as well in reverse.”<sup>8</sup> The same arguments also make it plausible that the block of ice was more melted toward the past, the puff of smoke was more dispersed toward the past, the tepid bowl of soup cooler in the past, the yellowed newspaper yellower in the past. All of these latter plausibilities contradict human experience of one-way Business As Usual.

Solution, or rather, Patch: “supplement the dynamical equations of motion and the statistical postulate with a new and explicitly non-time-reversal-symmetric fundamental law of nature—a so-called past-hypothesis—to the effect that the universe had some particular simple compact cosmologically sensible very low entropy.”<sup>9</sup> With that supplement in place “the arguments of Boltzmann and Gibbs are going to make it plausible that the second law of thermodynamics [the entropy of an isolated system never decreases and as a practical matter always increases] remains in force all the way from the end of the world back to its beginning.”<sup>10</sup> That is, ice, smoke, soup, and newsprint in their respective sealed rooms follow the law of increasing entropy. All’s right with the world again.

Bonus: the past-hypothesis grounds the asymmetries of epistemic access and of intervention. Albert chunks human experience of time-directedness, of a distinction between past and future, into three categories: (1) the time-directedness of ordinary physical processes (ice melts, smoke disperses, soup cools, paper yellows); (2) the difference between our epistemic access to the past (we can know a lot about it from records, memories, etc.) and to the future (we can know comparatively little about it; no records or memories of the future); and (3) the asymmetry of

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<sup>6</sup> *Id.* 7:21.

<sup>7</sup> *Id.* 6:40.

<sup>8</sup> *Id.* 7:43.

<sup>9</sup> *Id.* 8:16.

<sup>10</sup> *Id.* 9:42.

intervention—“we make our way around in the world with a very deep conviction that by acting now we can affect the future but we can do nothing about the past.”<sup>11</sup>

The asymmetry of intervention is the αἰτία of Dasein’s ‘futuricity,’ *Zukünftigheit*. Briefly, Dasein is futural on analogy with the drunk who searches for lost keys only beneath the streetlamp—in Dasein’s case ‘because it’s where the *Möglichkeiten* are.’

The past-hypothesis underwrites the way things work in human life; specifically that we **can** affect the future—whereas the past, not so much. “[W]e live in the sort of world whose simplest and most informative description involves a *past*-hypothesis but no *future* one.” That fact, “that *asymmetry*,” says Albert, “can be parlayed into an argument [omitted here; suffice to say it manifests an inordinate fondness for billiards<sup>12</sup>] to the effect that the present determinants of the past are (as it were) enormously less *amenable to our control* than the present determinants of the *future* are.”<sup>13</sup> Ultimately the argument cashes out to “a far wider variety of potentially available *routes to influence* over the future of the ball in question here, there are a far wider variety of what we might call *causal handles* on the future of the ball in question here, under these circumstances, than there are on its past.”<sup>14</sup> We recognize causal handles and routes to influence as what Heidegger calls *Bewandtnisganzheit*, “a whole of affordances.”<sup>15</sup>

No dispute from me that the simplest and most informative physical description of the world involves no future-hypothesis. But there’s a case that a future-hypothesis does occasion sense-making ex-sistence, Dasein.

In the lecture *The Concept of Time* (1924) Heidegger says that “Dasein as human being is first of all being-possible [*ist primär Möglichsein*], the being of the possibility of its sure and yet unfixed [*gewissen und dabei unbestimmten*] *Vorbei* [‘over-with’].”<sup>16</sup> That is, its ‘dead-and-gone,’ its ‘de-possibility,’ ‘discontinuance.’ As Heidegger says, “*Vorbei* as the authentic future [*die eigentliche Zukunft*], cannot be made present [*gegenwärtig*] because if it were, it would be the Nothing [*das Nichts*].”<sup>17</sup> **My** *Vorbei* remains hypothetical for **me**, always still unexperienced, in that it is the inexperienceable ‘after’ of all my experience. It is not my past, *Vergangenheit*, that

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<sup>11</sup> <https://www.youtube.com/watch?v=JR2sMeXLuLw&t=4988s> 15:54.

<sup>12</sup> Albert presents it at 1:04:25 and following here: <https://www.youtube.com/watch?v=JR2sMeXLuLw&t=5095s>.

<sup>13</sup> *Time and Chance* 126.

<sup>14</sup> *Id.* 126, 128.

<sup>15</sup> *The Cambridge Heidegger Lexicon* (ed. Mark Wrathall 2021) s.v. Affordance (*Bewandtnis*).

<sup>16</sup> Translated by William McNeill: <https://www.beyng.com/pages/en/ConceptofTime/ConceptofTime.html> at *Gesamtausgabe Band* 64: 116. I have slightly altered the translation at some points. *Caveat tempoviator*: McNeill translates both *Vorbei* and *Vergangenheit* as ‘past.’

<sup>17</sup> *Id.* GA 64: 120.

which I have already experienced and may be able to remember and in that mode re-experience somewhat. But I can have no experience, memory, or re-experience of my *Vorbei*.

“This *Vorbei* is not a ‘what’, but a ‘how’, indeed the authentic ‘how’ of my Dasein. This *Vorbei*, to which I can run ahead [*vorlaufen kann*] as mine, is not some ‘what’, but the ‘how’ of my Dasein pure and simple.”<sup>18</sup> As the past-hypothesis underwrites the one-way ‘how’ of the physical world, so also *das Vorbei* is the ‘how’ of Dasein’s *Vorlaufen*, its future-hypothesis as ‘toward-which.’ “This running ahead is nothing other than the authentic and singular future of one’s own Dasein. In running ahead Dasein is its future [*ist das Dasein seine Zukunft*], in such a way that in this being futural [*Zukünftigsein*] it comes back to its past and present. Dasein, conceived in its most extreme possibility of Being, is time itself, not in time. Being futural as we have characterized it is, as the authentic ‘how’ of being temporal [*des Zeitlichseins*], that way of Being of Dasein in which and out of which it gives itself its time.”<sup>19</sup> “Dasein is its *Vorbei*, it is its possibility in running ahead to [*seine Möglichkeit im Vorlaufen zu*] this *Vorbei*. In this running ahead I am authentically time, I have time [*bin ich die Zeit eigentlich, habe ich Zeit*].”<sup>20</sup>

Yet the past-hypothesis is in a sense deeper-lying than the future-hypothesis *Vorbei*. For if entropic wear-and-tear did not inexorably increase in the living body over the course of its life, if a human being were a *perpetuum mobile* and not finite, it would lack constitutive *Vorbei*. The physical past-hypothesis underwrites *das Vorbei*,<sup>21</sup> the phenomenological future-hypothesis that gives Dasein its distinctive *Möglichkeit* through finitude.<sup>22</sup>

Double Bonus: Both *Ereignis* and the past-hypothesis halt a regress. The past-hypothesis halts a regress of ready conditions, *Ereignis* halts a regress of phenomenological dimensions.

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<sup>18</sup> *Id.* GA 64: 117.

<sup>19</sup> *Id.* GA 64: 118.

<sup>20</sup> *Id.* GA 64: 124.

<sup>21</sup> “there must be a cause of death as a phenomenon, as distinct from the individual cases, which are better thought of as ‘agencies.’ Agencies are alternative paths of mediation of some basic cause, a cause that always operates, although through different pathways. If the cause does not operate through one agency it must operate through another. In this light the cause of death is that living organisms are electro-mechanical devices, made up of articulated physical parts which, for purely thermodynamic reasons, wear out and fail to function.” Richard Lewontin, *The Triple Helix: Gene, Organism, and Environment* (2000) 103.

<sup>22</sup> “*Möglichkeit* is the *dunamis*-dimension of ex-sistence, the a priori ability for ‘more,’ which in this case is my ability to keep on doing what I cannot not do as long as I am alive, namely ex-sist as mortal becoming. . . . Whatever possibilities I may actualize, I am always already beyond them (never ‘too old for my victories’), always extended ahead into yet further possibilities, right up to the possibility of dying. In fact, the only way I can cease being ex-sistential ability is to die.” Thomas Sheehan, *Heidegger’s Being and Time Paraphrased and Annotated, Vol. 1* (2025) 364-365.

Albert contends that most of what we can know about the past consists of records, memories, and measurements, each of which affords us the same mode of inference to a past event:—"The sort of inference one makes from a *recording* is not from one time to a second in its future or past (as in prediction/retrodiction<sup>23</sup>), but rather from *two* times to a *third* which lies in between them."<sup>24</sup> How do we know that people were traipsing through southeastern New Mexico 20,000 years ago, during the Last Glacial Maximum? They left a record, their footprints in the land.<sup>25</sup> Land is a physical system which undergoes a transition when it interacts with a second physical system; when something presses into land of the right composition that something leaves an imprint there. The record which results depends on a relation between the conditions of the land at two opposite temporal ends of the interaction:—the record-bearing (imprinted) condition of the land at one temporal end of the interaction is a reliable indicator of the presence of the impressor at the time of its interaction with the land "only in the event that the measuring [or recording] device [the land] is in its *ready* condition . . . at the interaction's *other* temporal end."<sup>26</sup> The ready condition of a measuring device obtains when "the device is calibrated and plugged in and facing in the right direction and in every other respect all set to do its job."<sup>27</sup> The ready condition of the land at issue obtained as "fine-grained, gypsum-rich alluvium intercalated with clay and silt that was deposited in a mosaic of wet and dry environments along the eastern margin of Paleolake Otero in the Tularosa Basin."<sup>28</sup> But how do we know of **that** ready condition, that of the land? Because it's a record with its own prior ready condition. And how do we know of that prior ready condition? And so on.

Back-stopping the regress of ready conditions:—regarding Paleolake Otero and environs, the ready condition of the footprint record,

"the puzzle is about how it is that we ever manage to *come by* such information. . . . It must be because we have a *record* of that other condition [Paleolake Otero and environs]! But how is it that the ready condition of this *second* device (that is, the one whose *present* condition is the *record* of that *first* device's [P.O. & e.'s] ready condition) is

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<sup>23</sup> "Let's call inference procedures to other times which operate by plugging any available macro-information about the present + the standard microstatistical rule into the equations of motion *predictions* or *retrodictions*; and let's characterize all inference procedures which (for whatever reason) do *not* fit that description as relying on *records*. The claim, then, is that whatever we take ourselves to know of the future, or (more generally) whatever we take to be *knowable* of the future, is in principle ascertainable by means of *prediction*. Some of what we take ourselves to know about the *past* (the past positions of the planets, for example) is no doubt similarly ascertainable by means of *retrodiction* – but far from all of it; rather little of it, in fact. Most of it we know by means of *records*." *Time and Chance* 115-116.

<sup>24</sup> *Id.* 117.

<sup>25</sup> <https://www.science.org/doi/10.1126/science.adh5007> .

<sup>26</sup> *Time and Chance* 117.

<sup>27</sup> *Ibid.*

<sup>28</sup> <https://www.science.org/doi/10.1126/science.adh5007> .

established? And so on (obviously) ad infinitum. There must (in order to get all this off the ground) be something we can be in a position to *assume* about some other time – something of which we *have* no record; something which cannot be inferred from the present by means of prediction/retrodiction – the mother (as it were) of all ready conditions. And this mother must be *prior in time* to everything of which we can potentially ever *have* a record, which is to say that it can be nothing other than the initial macrocondition of the universe as a whole.”<sup>29</sup>

Thus immediately to the money-shot:

“And so it turns out that *precisely* the thing that makes it the case that the second law of thermodynamics is (statistically) true throughout the entire history of the world is *also* the thing that makes it the case that we can have epistemic access to the past which is not of a predictive/retrodictive sort; the reason there can be records of the past and not of the future is nothing other than that it seems to us that our experience is confirmatory of a past-hypothesis and not a future one.”<sup>30</sup>

In the lecture *Time and Being* (1962) Heidegger’s way, standard for him, is to excavate phenomenological dimensions. He begins by complaining that philosophy ‘totally excludes’ the question “whether Being *and* time name a matter at stake [*Sachverhalt*] from which both Being and time first result [*erst ergeben*].” For Heidegger the phrases “Being *and* time, time *and* Being, name the relation of both issues [*das Verhältnis beider Sachen*], the matter at stake which *holds* [*hält*] both issues toward each other and endures [*auszuharren*] their relation.”<sup>31</sup>

Time, he will claim, is four-dimensional. He describes once more the three dimensions of experiential time we learned about from *Sein und Zeit* (the ecstasies *Gewesenheit*, *Sein-bei*, and *Sich-vorweg-sein*), and then asks,

“But from what source is the unity of the three dimensions of true time determined [*bestimmt sich*], the unity, that is, of its three interplaying ways of giving, each in virtue of its own presencing? . . . the unity of time’s three dimensions consists in the interplay of each toward each. This interplay proves to be the true extending, playing in the very heart of time, the fourth dimension, so to speak—not only so to speak, but in the nature of the matter. True time [*eigentliche Zeit*] is four-dimensional. But the dimension we call the fourth in our count is, in the nature of the matter, the first, that is, the giving that determines all [(three) realms; *das alles bestimmende Reichen*].”<sup>32</sup>

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<sup>29</sup> *Id.* 118.

<sup>30</sup> *Ibid.*

<sup>31</sup> *Time and Being* in Martin Heidegger, *On Time and Being* (tr. Joan Stambaugh 1972) 4; GA 14: 8: <https://www.beyng.com/gaselis/?vol=14&pg=8> .

<sup>32</sup> *Id.* 15; GA 14: 19.

So the giving, *das Geben*, in 'It gives time,' »*Es gibt Zeit*«, has proved to be "an extending, opening up the four-dimensional realm." "Thus true time appears as the 'It' of which we speak when we say: It gives Being." Same 'It'? No way, *keineswegs*. "For time itself remains the gift of an 'It gives' whose giving preserves the realm [*Bereich*] in which presence [*Anwesenheit*] is extended. Thus the 'It' continues to be undetermined, and we ourselves continue to be puzzled."<sup>33</sup>

At last he comes out with it: "In the sending of the destiny of Being, in the extending of time, there becomes manifest [*zeigt sich*] a dedication, a delivering over into what is their own [*ein Zueignen, ein Übereignen*], namely of Being as presence [*Anwesenheit*] and of time as the realm of the open [*Bereich des Offenen*]. What determines both, time and Being, in their own, that is, in their belonging together [*in ihr Zusammengehören bestimmt*], we shall call *das Ereignis*."<sup>34</sup>

Stambaugh interpolates here—presumably with Heidegger's assent—two sentences not in the German text: "*Ereignis* will be translated as Appropriation or event of Appropriation. One should bear in mind, however, that 'event' is not simply an occurrence, but that which makes occurrence possible."<sup>35</sup> We venture to say that *Ereignis* is therefore not a 'what' but the phenomenological 'how' of Dasein *qua* sense-maker. *Ereignis* is how sense-making gets off the ground.

"Because Being and time are there only *im Ereignen*, *Ereignen* has the peculiar property of bringing man into his own [*in sein Eigenes bringt*] as the being who perceives [*vernimmt*] Being by standing within true time."<sup>36</sup> *Ereignis* mothers human being into its proper ready condition.

Ready for what? In Sheehan's words, to "make sense of whatever we meet." He writes:

"Ex-sistence as appropriated to sustaining the clearing is the basic occurrence of openedness: *das Grundgeschehnis der Wahrheit*. We are structurally dis-closed (*erschlossen*) and thus sustain the space within which the 'as' can function and the discursive understanding of things can take place. As such, we are pan-hermeneutical. Our lived environment is not just a natural encircling ring of instinctual drives that befits an animal, but an open-ended as-structured world of possible meanings that we can talk about, argue over, and vote on. Whatever we meet, we meet under the rubric of 'is manifest as'—that is, 'is accessible as' and therefore 'is meaningful as.' Our existential

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<sup>33</sup> *Id.* 17; GA 14: 22.

<sup>34</sup> *Id.* 19; GA 14: 24.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Id.* 23; GA 14: 28.

thrown-openness entails that we can and must make sense of whatever we meet. We are *ur-ἐρμηνεία*.”<sup>37</sup>

In the same essay Sheehan cites Heidegger as saying, “To ex-sist might be more adequately translated as ‘sus-taining a realm of openness’ [*aus-stehen eines Offenheitsbereich*].” And once again, this openness is where the ‘as’ can function and the discursive understanding of anything we encounter can take place.

This structure-and-function of sense-making loops us back to thermodynamics. “[A]n open, coherent spacetime structure maintained far from thermodynamic equilibrium by a flow of energy through it” is part the first of Eric Chaisson’s definition of life; a “thermodynamically oriented” definition, as he notes. By ‘open’ he means “able to exchange both energy and matter with [the] surrounding environment.”<sup>38</sup> Structures that survive only so long as the energy flowing through them is dispersing, writes Peter Atkins, “are the *dissipative structures*.” Dissipative structures “arise as a consequence of dispersal . . . as soon as the flow of energy or matter ceases, they are lost.”<sup>39</sup> Hurricanes, beetles, people, and the Atlantic Meridional Overturning Circulation are all dissipative structures.

By way of dissipative structure, while it lasts, “the rate of generation of entropy in the [structure’s spot of the] Universe is *increased*.”<sup>40</sup> Now the Second Law by itself says nothing about **how fast** entropy increases, only that it does. But all our experience shows that ‘Nature abhors a gradient,’<sup>41</sup> and that this loathing has engendered myriads of dissipative structures, entropy-generators, for the sake of accelerating the local rate of gradient destruction, the rate of entropy increase.

Which is where Dasein comes in. Discursive understanding, *σύνθεσις/διαίρεσις*, *Entwerfen etwas auf etwas*, all grappling with affordances in ongoing *Weltbildend* are, physically, ultimately, for the sake of accelerating the local rate of entropy’s increase. To ex-sist is to be an open, projecting-*unto-Vorbei*, dissipative structure; the entropy-accelerator with—because **pan**-hermeneutical—no known equal.

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<sup>37</sup> Thomas Sheehan, “What does Heidegger mean by ‘time?’”: <https://www.beyng.com/docs/TomSheehanTime.html> .

<sup>38</sup> Eric J. Chaisson, *Cosmic Evolution: The Rise of Complexity in Nature* (2001) 121, 235.

<sup>39</sup> P. W. Atkins, *The Second Law* (1984) 182-183.

<sup>40</sup> *Id.* 183.

<sup>41</sup> Eric D. Schneider and Dorion Sagan, *Into the Cool: Energy Flow, Thermodynamics, and Life* (2005) 6, 71.