ON WHETHER THE ATEMPORAL CONCEPTION OF THE WORLD IS ALSO AMODAL

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The world as we encounter it is full of contingency, and rife with danger and opportunity. Surrounding everything that does happen is a halo of unrealized possibilities. There is not only what does happen, but what could, would, or might have happened if things had been otherwise. The serenity prayer popularized in Alcoholics Anonymous meetings tells us that practical wisdom is at least in part a matter of knowing how to recognize the difference between necessity and contingency.[1] And it is not just common sense that is steeped in modality. A good part of our scientific knowledge is explicitly modal knowledge. Our physical theories are not just interested in what actually happens. They mine the pattern of actual events for clues about their modal substructure, i.e., the laws and causes whose implications describe a wide array of purely hypothetical situations.

Questions about the status of these modal properties have been a staple of discussion analytic in metaphysics. Although they are discussed alongside questions about the status of temporal properties like passage and flow, and although the formal analogies between temporal and modal predicates have been noted and developed in some detail,[2] the connection between temporality and modality is not well understood.[3] One way of exploring that connection is to ask whether the atemporal conception of the world is also amodal. Suppose that we accept the Block Universe, so we hold that the universe consists of a static four-dimensional manifold of events. What place, if any, do modal properties have in this atemporal vision of the world? The thought often associated with fatalism is that if History is viewed sub specie aeternitatis, there is only what is actual, what does occur, a single history laid out in time, the thin, hard line of actual fact. And that all of the distinctions so preciously important to our lives—i.e., the distinction between what could and could not be, what might be and what could not possibly be, between what is possible and what is

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1. The speech (credited to Reinhold Niebuhr [1892–1971]) runs: "God, grant me the serenity to accept the things I cannot change, the courage to change the things I can, and wisdom to know the difference."
2. See, for example, the excellent articles in the Special Issue on Modality and Temporality, *J Semantics* 22(2) (May 2005), pp. 119–128, as well as Arthur Prior's seminal work, A. N. Prior, 1957, *Time and Modality*, Oxford: Clarendon Press.
3. Although quite different in their approach, these exceptions to the general neglect of the topic prompted my own reflections: Jaszcaolt, M. Kasia, Representing Time: An Essay on Temporality as Modality; Currie, Mark, The Unexpected: Narrative Temporality and the Philosophy of Surprise, OUP Press, 2013; and Olla Solomyak, "Actuality and the Amodal Perspective," *Philosophical Studies*, 164(1) (2013), pp. 15–40.

necessary—get resolved into what simply *is* the case.[4] My take is a little different, partly because my approach to time temporal properties like passage and flow is different. I am going to agree with the fatalist that in an atemporal view of the universe, the modal properties go the way of temporal properties. But I will argue that modal properties are properly reconstructed along with temporal properties as relativized to an embedded point of view.

Time and the Atemporal Conception of the World

The problem that dominates contemporary discussion in the metaphysics of time is that of reconciling time as it appears in physics (viz., as one dimension of an unchanging block of events) with the flowing time of everyday sense. The difficulty, to put it crudely, is that nothing in the physics of time corresponds to flow. And it presents itself as a metaphysical debate about the nature of time. We have the Parmenideans on one side, borrowing authority from science, insisting that flow and change are illusions, and the Heraclitians on the other, giving priority to experience, insisting that the physical conception of time is inadequate because it does not incorporate these features. One way of reconciling the Parmenidean ontology of physics with the Heraclitian phenomenology of time is to reconstruct temporal properties like flow and passage as features of the way the world would look through the eyes of the embedded, embodied participant in History. The idea is developed in more detail in other places[5] and is most easily introduced with a device that James Hartle invented in a now famous 2005 paper called "The Physics of Now."[6] In that paper, Hartle showed how to explicitly construct a system—which he called an Information Gathering and Utilizing System (an IGUS, for short)—which is fed information about a four-dimensional manifold of events and generates something that reproduces the flowing character of phenomenological time. Here is how the IGUS works. The device is a robot with a bunch of sensors that send information to a processing unit in its head. The processing unit uses the information from the senses to construct a coarse-grained image of the robot's external environment in respects that are of practical importance for the robot. The image is not a snapshot of the instantaneous state of the environment. Its content represents a small, but finite temporal interval, just

4. The fatalist, of course, goes one step farther, associating actuality with necessity, in a manner that is supposed to underwrite the thought 'what will be will be, no matter what I do'. That does not follow. Though it remains deeply seductive, the fallacy has been diagnosed many times. See Holton (http://web.mit.edu/holton/www/pubs/determinism&fatalism.pdf) for a particularly sensitive discussion. For my own take, see *How Physics Makes Us Free*, Oxford University Press, forthcoming.

5. J. Ismael, "Temporal Experience" in *Oxford Handbook on Time*, ed. Craig Callender, Oxford University Press, 2010; "Passage, Flow, and the Logic of Temporal Perspectives" in *The Nature of Time, The Time of Nature*, University of Chicago Press, edited by Christophe Bouton and Philippe Hunemann, forthcoming; H. Price, *Time's Arrow and Archimedes' Point: New Directions for the Physics of Time*, Oxford University Press, New York, 1996; L. A. Paul, "Temporal Experience", *The Journal of Philosophy*. Volume 107, Issue 7, July 2010.

6. *Am. J. Phys.* 73 (2005) 101–109.

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enough to capture movement and change. The most recently constructed image is displayed in a register P_0 and the IGUS keeps records of past images in a set of registers $\{P_1, \ldots P_n\}$. The IGUS employs two processes of computation: one that generates the image displayed in P_0 from information coming in through the sensory pathways, and one that uses that image, together with the information in past registers to guide behavior by implementing a decision theoretic computation. Hartle labeled these computations U and C because they correspond to computations in us that are, respectively, unconscious and conscious. The computation that delivers the updated image of the world into P_0 corresponds to unconscious processing between skin and skull that produces our immediate perceptual awareness of the world. The products of that processing, the information contained in memory, and the decision-theoretic procedure that operates on them correspond to conscious processes in us. So, if we were going to describe the workings of the IGUS over time, we would tell two stories. There would be one about how the unconscious processes U get trained up, so that perceptual experience that starts out as something like a trickle of discrete events becomes a richly interconnected stream, infused with a direction and a sense of motion, accompanied by a vivid awareness of its own body and how its body can be used to change the environment. And there would be one about what is happening consciously as information accumulates in memory and gets used to guide behavior.

Hartle's explicitly stated goal in introducing the device was to recover the division between past, present, and future. But the story can be developed to provide an interpretation for flow and passage. Here we want to look at content-level structure both at and over time. At a time, the fact that the content of experience at any instant spans a finite interval means that the world is perceived at any moment *as* moving, changing, constantly in flux. Over time, the fact that we can look back over our history and see the change in our perspective provides an interpretation of passage. What has happened here is that we have a proposed resolution of the age-old debate between two very different conceptions of the nature of time. This is one of the hardest and most divisive debates in philosophy and the proposed resolution provides a template for how to bridge the gap between physics and phenomenology. The strategy is to show how structure at the level of phenomenology can be generated by the cycle of representation and re-representation from different temporal points of view over the course of a life without being attributed to time itself. On this account, that the manifest momentary impression of flow and the perception of passage over time turn out to be products of the changing viewpoint of the perceiver rather than anything in the absolute fabric of time. Hartle's IGUS is an especially useful expository device for introducing the strategy because it does three things:

(1) It sidelines worries about consciousness and intentionality by taking consciousness out of the picture, and employing notions of content that apply to robots and computers as surely as to human being.
(2) It identifies the progression of representational states that correspond to the stream of consciousness of an observer.

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(3) It lets us compare the contents of those states with the absolute structure of the environment, providing a logical schema for the transformation that mediates them.

That logical schema takes the form of a computational procedure implemented by the processing unit in the IGUS's head that takes information about a universe that has the absolute structure of a four-dimensional manifold of events and generates the view of that manifold 'through the IGUS's eyes' (i.e., from its point of view).

Supercharging the IGUS

Hartle's IGUS is a stripped-down device that recovers very basic features of temporal experience. In "Passage, Flow, and the Logic of Temporal Perspectives",[7] I developed the strategy a little further, by introducing a supercharged IGUS. The supercharged IGUS—the IGUS$^+$—is just like Hartle's IGUS, but supplemented with an autobiographical memory and reflective processes. My suggestion was that if we take the supercharged IGUS and we let the cycle described above run a little, we can get something actually convincingly close to the full contours of our own experience. In that paper, I did a lot to try to make this convincing by showing how this cycle of representation and re-representation from different temporal viewpoints works to generate the increasingly complex structures that are part of our temporal experience. What I want to do here is a little analysis and say how our view of the world gets modalized at the same time that it gets 'temporalized' by the cycle of re-representation. The suggestion will be that those who reify modality in the absolute fabric of the universe are making the same mistake as those who believe in Absolute Becoming. What I mean by that will emerge with more clarity as I go.

Letting the process run for some time is crucial to generating something with more structure at the phenomenological level because it allows structure to build up. This happens in two ways. The first is that the brain gloms onto regularities and patterns that appear over time, and stabilizes distinctions that depend on those patterns. Those distinctions get built into the momentary content of experience and appear in consciousness as part of the uninferred contents of experience. I focused on the sense of flow and the perception of movement, but there is also a much richer kind of sensorimotor awareness that involves an immersed awareness of one's body, a distinction between what one does and what merely happens, and an emerging understanding of the causal structuring of one's environment. The sensorimotor awareness and the causal structuring of our worldview go together because the stabilization of causal pathways requires the ability to intervene and observe the results of

7. "Passage, Flow, and the Logic of Temporal Perspectives", in *The Nature of Time, The Time of Nature*, University of Chicago Press, edited by Christophe Bouton and Philippe Hunemann, forthcoming.

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our interventions. The brain is no more a detached observer than the scientist and without the feedback from actions that we initiate, it would be impossible to separate causes from correlations. There is a growing body of psychological research on causal learning that illuminates this process, but it happens largely without the conscious involvement of the agent.[8] Somehow in a relatively short period, what starts as a trickle of information becomes a richly connected stream in which the agent experiences herself as a locus of sensorimotor activity. We have all seen this process begin to take hold in an infant who gradually gets control of her limbs and begins to learn how to manipulate the things in her environment.

The second way in which letting the process run allows structure to build up is that explicit representations of past experiences accumulate in memory, reflective processes take those representations as *objects*, and a much more interesting hierarchy of beliefs begins to emerge. The accumulation of memories involves more than simply records of the changing image of the world contained in the back registers of Hartle's IGUS. It involves memories of the full felt quality and contents of consciousness at different periods in our lives, with the memories and aspirations and hopes and fears that we had at the time. It involves, that is to say, explicit representations of time as it appeared to us from differing perspectives over the course of our lives with all of the very complex temporal nestings that arise from this iterated cycle. So it is not just what happened to me in the past that I remember, it is images of the present as they appeared to me in prospect, when I was 7 and when I was 14 and when I was 21, . . . I suggested in that paper that a lot of the cognitive and emotional phenomenology of human life arises from the interaction among these perspectives. Of course, we do not retain everything. Memory is selective and famously reconstructive. But there is an intricate structure of linked perspectives co-present in every temporal cross-section of a normal human life. The events of our lives are encountered from multiple perspectives, first in anticipation, later *in praesentia*, and finally in retrospect. When I talk about encountering the events of one's life from different temporal perspectives, what I really mean is that one has different practical and epistemic relations to the events of one's life (and of course, the wider world) from different moments in it. To anticipate something is to expect it to happen, but not *remember* it having happened. To regret something is to represent it as something one did, but cannot undo. To *intend* to do something is (in part and perhaps implicitly) to represent it as something that can be brought about as the result of forming that intention.

As structure grows up overtop the ground level of belief, reflective processes restructure and reorganize information in ways that are heavily informed by language and learning. There is a more or less continuous cycle of reflective representation and re-representation in which we preconceive our histories, plan, act, and feed the observed results of our actions into the next cycle of planning. Once we add differences in emotional attitudes to past and future,

8. For a nice summary, see Steven Sloman, *Causal Models: How We Think about the World and Its Alternatives*. New York: Oxford University Press.

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and all of the narratively structured emotions like surprise and regret and hope and fear, we begin to get something that resembles the complexity of our inner lives.

Analysis

The IGUS$^+$ is, effectively, a machine that takes information about history as it appears sub specie aeternitatis into a representation of history as it appears from the point of view of a participant that processes and utilizes information in the way that we do. There is nothing essentially mysterious about an IGUS. We can understand the inner workings of a machine like this. It is simple enough to be easily analyzed, but complex enough to generate representational states with some of the realistic complexity of our own experience. The transformation effected by the IGUS can act here as a formal schema that stands in for the much more complex cognitive processing that goes on in us. That formal schema is what mediates our experience of the world and the absolute structure of Being. Hartle's concern in introducing the device was to recover the division between 'past', 'present', and 'future'. But it does a very good job of reproducing epistemic and practical asymmetries that open up the space for cognition and penetrate every aspect of our cognitive lives.[9]

The generator is an iterated procedure, rather than a static mapping; it takes in information *about* history in stages and generates a stream of representations *of* history as seen from an evolving viewpoint *in* it. It plays the same role as the formal transformation that takes a frame-independent representation of space into a frame-dependent one, providing a schema that transforms the view of time sub specie aeternitatis into the view of time through the eyes of the IGUS$^+$. Let us call it the generator of the IGUS$^+$'s point of view.

The generator is a little logical engine. Information about local matters of particular fact is fed in. Inside there is a complex body of accumulated structure and out the other end comes the contents of the first-person point of view on history. In the simplified setting of the IGUS, the accumulated structure included a trained-up schema and explicit memories. The brain is a much more complex and hard-to-unravel edifice. There are many different forms of memory, but all of them—from procedural to autobiographical memory—represent structure accumulated in the mind. If we just compare the inputs with the outputs of the generative procedure, we find that the output has a lot more structure than the input and that additional structure does not seem to *correspond* to anything in the absolute structure of time. What goes in is information about local matters of particular fact, and what comes out is—as I put it above—a richly connected stream in which the IGUS experiences itself as a locus of sensorimotor activity in a world whose history is unfolding as it is

9. A god that knows everything and can bring anything about does not have a cognitive life like our own. Without ignorance or limitations on what one can bring about by will, there is no need for epistemic and practical reasoning and there is no change in one's practical and epistemic state over time.

perceived. We saw how all of this happens, at least schematically, in psychological terms.

What I want to suggest now is that the right way to understand that structure is as structure that is organized around distinctions introduced by her perspective. Then I will say a little about how to understand that structure in metaphysical terms. There is no general characterization of what it means for structure to be 'organized around' distinctions that are introduced by the agent's point of view. Concepts like 'nearby' and 'brother' give familiar everyday examples of perspectival structure. In these cases, the agent has a location in a static system of relationships and these notions are recovered as relations to her situation. 'Nearby' is recovered as a relation to one's location in space. 'Brother' is recovered as a relation to one's place in a family tree.

The IGUS$^+$'s perspective is much more complex than a location in a static system of relationships, and there are much more complex ways in which structure can be organized around distinctions introduced by her perspective. The introduction of practical and epistemic relations gave us a somewhat deeper characterization of what it means to view time from a temporal perspective. To view time from a particular moment is to impose a very specific set of practical and epistemic relations to it; the past is remembered and the future anticipated. The past is beyond practical reach, and the future falls within the region of choice-dependence; it—literally—remains to be decided. The same can be said for a point of view on space. To say that I view space from a certain location is really to impose a quite specific set of practical and epistemic relations to the parts of space. And that is how it should be. If Being qua Being consists of a four-dimensional block of events, then a point of view on Being imposes a set of practical and epistemic relations to events in the block. And the explicit representation of the view from different temporal perspectives allowed us to say that what is really changing as an agent moves through space, and as her temporal viewpoint shifts from one moment to the next, is not history itself—which is always and eternally simply what is the case—but her practical and epistemic relations to the events in history.[10] The description I gave more fully in Ismael (forthcoming) was an account of how representational structure *builds up around* practical and epistemic relations to the events in history.

It is not just that we view the world from different spatial and temporal perspectives. We have structure that is built on *changes* in one's point of view. The reconstruction of the sense of passage made that point very clearly, because apprehension of one's changing viewpoint on time requires not just a view of time from a given perspective, but an explicit higher order representation that compares the view of time from different perspectives. The same goes for cognitive and emotional attitudes like surprise, anticipation, regret, and fear. These all require higher order representations of the view from different perspectives. And there are higher order representations as well. I can undertake a policy of toning down my expectations so that I do not get disappointed in the way that I have in the past. I can develop cognitive tools

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10. One has to be careful to describe these shifts in point of view in a manner that is well defined in Absolute terms; see again, Ismael (forthcoming).

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that will help me do a better job of managing my beliefs and practical affairs with an eye to improving my performance. All of that structure is built around our changing practical and epistemic point of view on history. It does not correspond to any first-order, non-relational feature of history itself. From the perspective of Being, there is just what happens. The *sturm und drang* of history is internal to the changing viewpoint of participants, and is generated by the cycle of representation and re-representation from one epistemic and practical standpoint and then another.

So there is the ground level of representations of local matters of non-relational fact, and then the complex emerging hierarchy built on top of that, organized around changes in our practical and epistemic relations to those matters of fact. The bad news is that because of the logical structure of this emerging hierarchy, there is no more compact way to transform a representation of history as it appears sub specie aeternitatis into a representation of history as it appears in the experience of an IGUS+ than to provide the generator of its point of view. We need the practical and epistemic asymmetries introduced by the IGUS+'s perspective, we need the products of the iterated cycle of representation and re-representation to accumulate in memory to allow the comparison of view from different perspectives, and we need the cycle to run long enough to allow the hierarchy to emerge. The good news is that if structure can be recovered from the generative procedure, it need not be reified in the absolute structure of the environment.

Now we are ready to turn to modal properties. I am going to suggest that the same story that provides us with an understanding of how our experience of the world becomes temporalized provides us with an understanding of how it becomes modalized.

Modality

Because the generative procedure provides us with a formal description of how a representation of history is structured by the changing epistemic and practical perspective of an IGUS+, reversing the procedure and comparing the inputs with the outputs will let us separate the products of the processing from the absolute structures on which that processing operates. The intuitive way to suggest that the modalization of nature is a product of the generative procedure is to appeal to the description of the IGUS+ that has already been given and invite you to see how the view of the world looks through the eyes of an IGUS+. An IGUS+ distinguishes what she knows from what is the case, and what she does from what merely happens. These distinctions give rise to twin notions of modality: a way the world might be so far as she knows and a way the world could be *made* to be, or *would* be if acted on thus and so. Her practical and epistemic relations to history are captured in an evolving profile of epistemic and practical possibilities. The world presents itself to her as a partially known landscape, full of opportunities to be accessed and dangers to be avoided. She does not just see what is in front of her but makes guesses about what lies ahead and considers different ways of acting. Her beliefs about the future are the

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product of a combination of epistemic and deliberative reasoning. She has both passive attitudes in the form of expectations for what will happen and active attitudes in the form of intentions.[11] As we trace the changes in her view of time as we move up her world-line, we see uncertainty getting resolved by observation and practical possibilities getting resolved by decision.

Her view of the world is *thickly* modal, meaning that she does not grasp the world in categorical terms and *infer* the modalities. She *sees* the world in terms of properties that relate it to her point of view.[12] She sees a landscape full of latent dispositions, capacities waiting to be exercised, and causal pathways presenting strategic routes to action. These modalized properties reveal the opportunities and affordances that are there for her and they precede any purely categorical understanding of the properties of things. There has been an increasingly pronounced movement in cognitive science in recent years away from a conception of perception as a passive relayer of information coming through the senses toward a view of it as a kind of 'inductive engine', actively anticipating what has not yet happened. As Andy Clark puts it

> perception may best be seen as what has sometimes been described as a process of "controlled hallucination" (Ramesh Jain) in which we (or rather, various parts of our brains) try to predict what is out there, using the incoming signal more as a means of tuning and nuancing the predictions rather than as a rich (and bandwidth-costly) encoding of the state of the world.[13]

The emerging picture is that the brain does not act as mirror of nature, but generates a user interface rich with inductive content. And this sort of information is built right into the terms in which it is represented. As Clark says

> to perceive the world in this way is to deploy knowledge not just about how the sensory signal should be right now, but about how it will probably change and evolve over time. For it is only by means of such longer-term and larger-scale knowledge that we can robustly match the incoming signal, moment to moment, with apt expectations (predictions). To know that (to know how the present sensory signal is likely to change and evolve over time) just *is* to understand a lot about how the world is, and the kinds of entity and event that populate it. Creatures deploying this strategy, when they see the grass twitch in just that certain way, are already expecting to see the tasty prey emerge, and already expecting to feel the sensations of their own muscles tensing to pounce.[14]

11. Two things structure the field of belief for an IGUS: the flow of information from perception and volition.
12. The force of saying that her view of the world is thickly modal is that the agent does not infer the modal properties from some ground level of categorical fact. The terms in which the world is represented in her experience have modal implications built into their content.
13. "Do Thrifty Brains Make Better Minds?" (http://opinionator.blogs.nytimes.com/2012/01/15/do-thrifty-brains-make-better-minds/).
14. A. Clark, Ibid. See also, Andy Clark "Whatever Next? Predictive Brains, Situated Agents, and the Future of Cognitive Science," *Behavioral and Brain Sciences*, 36 (3) (Jun 2013), pp. 181–204.

All that is needed to extend it to an account of alethic modality is to recognize that for creatures that do not just pounce when the brain tells them to expect prey, but deploy a more sophisticated strategy of pausing and considering a number of possibilities for action, the inductive content is much richer. The deliberative process that takes place in the moment between stimulus and response involves the explicit representation of different possibilities for action and the offline assessment of their consequences. The model that the agent deploys in this setting does not just tell the agent what *will* happen, but what *would* happen *if* he A'd or B's or C'd. If there is an in-principle difference between induction that deploys information about past regularities to generate predictions about the actual future and induction that deploys information about past regularities to generate beliefs about how the world would respond to purely hypothetical interventions, it is not one that shows up here. Inductive practice is the same whether the future is considered in the categorical or hypothetical mode. Animal brains and human brains both build hugely complex multilayer models of worldly regularities, and it is these models that do the hard work of induction. The frog's brain tells it only where its tongue needs to be to meet the fly. Hamlet's brain tells him what would happen if he did not try to kill the king, what would happen if he tried to kill the king and succeeded, what would happen if he tried to kill the king and failed, and what would happen if . . . and if . . . and if. . . . Hamlet's model is pressed into more difficult work and needs to have the modally rich content that allows it to act as a setting for decision.

The Logic of the Transition between the Modal and Amodal

The logic of the relationship between the modalized vision of the world and the amodal, categorical structure of Being is the same as the logic of the tensed or temporalized view of time and the view of time sub specie aeternitatis. The way one transforms the view of time sub specie aeternitatis into the flowing, tensed time of experience is by introducing an evolving frame of reference. And the way one transforms an account of the categorical structure of being into the fully modalized view of everyday life is by introducing the epistemic and practical asymmetries that give meaning to the twin notions of possibility. These are recovered by the generative procedure as features of the way history presents itself to the participants. These twin notions of possibility disappear when we move to an Absolute representation if we leave the agent out of the picture, because they are organized around distinctions introduced by her perspective. In the logic of the progression to an increasingly absolute conception of the world, more and more structure gets reconstructed as implicitly relativized to distinctions introduced by the agent's perspective.[15] There is no loss of structure. Structure, rather, gets recovered in relational terms, restoring symmetry to the absolute perspective, and preserving the truth and objectivity of modal claims without reifying them in the Absolute structure of the world.

15. See Footnote 1.

I believe this view accords with common sense.[16] Just as the logic of temporal belief implicitly recognizes the perspectival character of tensed discourse in the way that temporal information is integrated over time, the logic of everyday modal belief implicitly relativizes possibility (in both its epistemic and alethic forms) to the point of view of the agent at a time. We say that there is a good chance for her that p, but not for him, or that there was at one time a good chance, but now there is none. We say it is possible for him, but not for her, that it is possible from there but not from here, or that it was possible yesterday but not today. And we make the easy transition when reading a novel between the point of view of the reader and the point of view of the characters that populate it. From the point of view of the reader, there is only what happens in the book. The possibilities inherent in a story are there for those whose activities partly constitute it.

The question I raised was only whether the atemporal conception of the world is also amodal. I have spoken of the absolute structure of time, but the notion of Absoluteness I employ is relativized to a class of transformations and only as well defined as that class. This notion of absolute-ness is formally precise. 'Absolute' contrasts with 'frame-dependent' (or, perspectival), and the absolute structure of time is structure that is invariant under transformations among temporal perspectives. We can remain neutral on the question of whether there is a clear and distinct general notion of absoluteness, and we can remain neutral on whether the notion is always given content by reference to a class of transformations. Although the claim was made that this program provides a template for the general process of separating human experience of the world from (to use Aristotle's apt phrase) Being qua Being, we can allow that we do not have a clear *antecedent* understanding of what we mean by 'Being qua Being'. Our understanding of Being qua Being is rather the *product* of the process of separation rather than something that guides it. We arrive at a conception of Being qua Being by a form of analysis that separates the intrinsic structure of the object of representation from the implicitly relational elements introduced by perspective. The history of space–time theories can provide a model of that process, while also demonstrating its difficulty. This form of analysis would be easy if we had access to what we know to be a full repertoire of perspectives. For the absolute elements are the ones that are invariant under transformations among all possible perspectives. But the problem of forming a conception of the possible perspectives on Being is as hard as forming a conception of Being itself, and in any case, we have direct access to the world only as it appears through human eyes at slow speeds and in temperate climes. And when it comes to the general problem of separating artifacts of perspective from Being itself, there is no general method, but taking a side-on perspective of the generative procedure can help with one part of this: the business of separating products of the cognitive processing from the external structures on which that processing operates.

16. For discussion of whether this is compatible with science, see my "Naturalism and Modality: A Subjectivist's Guide to Objective Possibility" in *Metaphysics and the Philosophy of Science*, eds. M. Slater and Z. Yudell, Oxford University Press, forthcoming.

Against Reification

For a contrast with the view that I am recommending, consider practices in contemporary analytic metaphysics. Frank Jackson provided the most explicit and articulate defense of those practices in his 1998 book, *From Metaphysics to Ethics*. As Jackson uses the phrase, "serious metaphysics" is "the attempt to give a comprehensive account of Being in terms of a limited number of more or less basic notions." Materialistic metaphysics takes its list of ingredients from physics. The research program consists of the solution of location problems. For any familiar everyday property of anything (modal, mental, semantic, social), the "location problem" vis-à-vis that property is to say how and why the property does or does not "get . . . a place in the scientific account of our world" (p. 3). As he says: "[T]here are inevitably a host of putative features of our world which we must either eliminate or locate" (p. 5). And if there is a feature of the world that is ineliminable and that cannot be located among the already included ingredients, it must be added to the list as basic. So there are three options: reduce, reject, or reify. We see the tendency to *reject* at work with flow and passage. The complaint was made that there is nothing in physical picture of time that corresponds to flow or passage, and the dominant view among philosophers of science dismisses them as illusory. We see attempts to reduce and the tendency to *reify* more commonly at work with modal properties.

The Canberra Plan is standing in here as an articulated research program that underwrites practices that are more widespread than those who self-identify as Canberra Planners. The idea that for every truth, there must be a truthmaker—i.e., if some feature of the world is regarded as real, there must be something in one's account of Being to which it corresponds—is a tacit presumption of the way that people approach questions of the form "what is X" (e.g., "what is chance?", "what is causation?", "what is it for something to be right or good or conscious?") in contemporary discussion in analytic metaphysics. What is wrong with that idea emerges clearly when we look at the way that the outputs of the generative procedure relate to the inputs. The generative procedure, recall, is what transforms an account of Being qua Being into the ground-level view of the embedded participant. And the problem is that the generative procedure does not preserve correspondences. If we bracket the agent, we do not find anything in the absolute structure of the world for all of the structures that arise at the level of belief to represent. We saw this initially with flow and passage, and later with all of the modalized structures defined over the manifold of categorical fact that are there to guide belief and action, disclosing the uncertainties and the opportunities and affordances that the world presents for an IGUS. The reason that correspondence is not preserved is that the IGUS introduces extrinsic asymmetries into the domain distinguishing elements by their relations to her practical and epistemic viewpoint at any given moment in her history. And we saw how quickly complex structure builds up around those distinctions when the cycle of representation and re-representation is allowed to run.

If we take the IGUS out of the picture, the structure disappears. If we include the IGUS in the picture, we can recover the structure as structure that is organized around the IGUS's practical and epistemic relations to events. If we eliminate the point of view of the agent as a third term in the relation between belief and Being, we end up reifying structure that is properly recovered as organized around distinctions introduced by the agent's point of view. The right response to what are possibilities is not to extensionalize the modal content (i.e., add something to our ontology for modal beliefs to refer to), but to internalize it, by showing how to recover it as part of the evolving worldview of the participant in history. What the Canberra Planner reifies in the absolute fabric of the world, the generative procedure reconstructs as organized around distinctions introduced by the agent's practical and epistemic relations to the events she represents.

Now one could save the 'every truth has a truthmaker' thesis by pointing out that because we are ourselves parts of nature, a complete view of nature from an Absolute perspective would include us and our practical and epistemic relations to events in the wider landscape. So it would include all of the structures organized around those relations without reifying them in the absolute fabric of Nature. And that of course is correct. If we include ourselves, we can recover all of this structure in relational terms (so long as we construe 'relational' widely enough). But once the Canberra Planner makes this move, he has ceded the metaphysical thesis that what the world independent of the agent contributes are just the categorical facts, facts about what actually happens, one thing, and then another. The modalization turns out to be an artifact of perspective. The three options—reduce, reject, or reify—are supplemented with a fourth—relativize—in this new generalized sense of 'relativized', which captures all of the emergent structure organized around the changing practical and epistemic perspective of the IGUS. My view is that most of the interesting structure in our worldviews fall into this category and that most of the interesting work in bridging the gap between belief and Being will be recovering that structure in relational terms, i.e., showing how it arises for an IGUS.

The absolute conception of the world will be the austere, atemporal amodal vision of Lewis' Humean metaphysics. But what replaces the demand for truthmakers here? Non-reductive reconstruction of the point of view of the agent, showing how things look from the evolving perspective of an IGUS whose own history is part of the fabric of Being, and allowing that a lot of the structure that is at the forefront of his epistemic and practical interaction with the world is organized around distinctions that are essentially perspectival. If we include the agent, we include the generative process. In that case, we see how beliefs about local matters of particular fact are used to generate inductive content that is then embodied in beliefs dispositions, capacities, and the like, and the demand for truthmakers is discharged. The mistake made by those who reify modality in the absolute fabric of the world is closely akin to the one made by those who believe in Absolute Becoming, though what those views get right is the close connection between temporality and modality. In the logic of the progression to an increasingly absolute conception of the world, more and

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more structure gets reconstructed as implicitly relativized to distinctions introduced by the agent's perspective.

It needs to be emphasized that there is nothing 'unreal' or illusory about structure that is not Absolute in an atemporal representation of the world. As it is understood here, the atemporal conception of the world is nothing more than a representation of time from a temporally transcendent perspective. In such a representation, the 'tensed' features of time—i.e., the distinction between past and future, together with the more complex notions of flow, passage, and movement, and change—are all reconstructed as implicitly relational. Where it used to be thought that there was a conflict between two visions of time—the Parmenidean and the Heraclitian—the view defended here reconciles them by reconstructing the Heraclitian vision as a view of time through the eyes of the embedded participant in a history that is represented sub specie aeternitatis in the Heraclitian vision. The task for this reconciliation strategy is both formal and philosophical. I have only sketched it here. It demands full analysis of the content of the Heraclitian vision and explicit reconstruction as the product of a complex and ongoing exchange between an embedded agent and its environment that is explicitly represented in the Parmenidean vision.

We are ourselves always embedded in both space and time, and the events of History are ordered in our experience by their relationship to the here and now. The view of reality sub specie aeternitatis, by contrast, is an intellectually constructed viewpoint (a kind of imagined 'god's eye view') that transcends the point of view of the temporally embedded perceiver by explicitly representing it and relating the objects of representation to it. It is not a viewpoint we *occupy*, but we can represent the world in temporally transcendent terms, just as we can represent space in terms that transcend any spatially embedded point of view, even though we are ourselves inveterately embedded in space. We do this all of the time when we represent space with maps.

Deflecting Misunderstandings

I have argued that modal structures are organized around distinctions introduced by the perspective of the embedded agent whose practical and epistemic relations to events break the symmetry that there is at the level of Being. But it is very important to emphasize that to say that modal structures are organized around perspectival distinctions is not to say that they are *unreal*. It is a dialectical problem that the notion of perspective has become so muddied with the idea that perspectival structure is unreal. To say that the absolute conception of the world is amodal is not to say that modality is not *real*. It is rather to give an account of the deep logic of modal belief that reveals some hidden relativization. The uncertainty and the unsettledness of history, the epistemic and practical *possibilities*, are really there for the active participants in history, i.e., the knower's and choosers whose choices and choice-dependent behaviors are partly constitutive of what happens and who have the foresight to see the way that history hinges on their choices. But they are not there in history as monadic properties built into the absolute fabric of the world.

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The analogy with a book, which captures the logic of the relationship between the view of history from outside and the view from the perspective of the participants in it, can suggest an idea that has to be carefully guarded against, an idea that some people have when they compare history viewed sub specie aeternitatis with the ground-level view of the participant, viz., that the possibilities are somehow illusory or fictional. So, one might say, the book of the universe is already written. We think that there are possibilities only out of ignorance. We have no more real option to act otherwise than Anna Karenina does to resist the impulse to throw herself under the train. She may see herself on the edge of the track poised between jumping and turning away, she may think that her fate hangs in the balance while her soul wavers between the two options, but we know there was never any real possibility that she would do other than she does. Likewise, we may see our own fates hanging in the balances as we struggle to decide, laboring under the conviction that there are real possibilities that get resolved only at the moment of choice, but god can see that there was never any real possibility of anything happening but what does.[17] This thought—which is really the fatalist's complaint—is one that many people find compelling, and it deserves to be taken seriously. That cannot be done adequately here, but I want to dissociate the position I have defended from any commitment to fatalism.

Another misunderstanding invited by the claim that modal beliefs are organized around distinctions introduced by the agent's perspective is that this means that they are not *objective*. 'Objective' can mean any number of things, but if by 'objective' we mean that there is a distinction between what is the case and what I believe about what is the case, then modal beliefs are perfectly objective. At any given moment in my life, the events in history are ordered in quite complex ways by their practical and epistemic relations to me. There is what I *think* I know and what I think I can do, but it is an objective factual question whether I have properly or improperly gauged my epistemic and practical situation. The causal and probabilistic machinery of science is largely devoted to providing an objective assessment of the epistemic and practical possibilities open to embedded agents, and there is a very high premium on getting them right. Chances give us an objective quantification of the information available to an agent who has no direct sources of information about the future. Causes provide an objective assessment of how our interventions in history will affect its development. Facts about what we can really know and what we can do from a given perspective in space and time are as real and as objective as facts about the positions of our bodies in space.

Conclusion

We began with the problem of getting a schematic formal understanding of how the contents of temporal experience relate to the absolute structure

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17. A scientific perversion of this myth mixes the atemporal and embedded viewpoints, holding that there are real possibilities in the universe, but only once, at the very beginning of time when the initial conditions of the universe were chosen.

of time. Hartle's IGUS was introduced as a simplified device that stands in for the much more complex cognitive processing that generates perceptual states with the structured temporal content that our experience has. That formal schema was used to reconcile the Heraclitian character of experience with the Parmenidean character of Time itself. Once we have the schema in hand, we can reverse it to separate products of cognitive processing and the absolute structures on which that processing operates. I suggested that the modal properties—the causes and dispositions, the latent capacities and opportunities that the landscape holds for the embedded decision-maker—turn out to be products of the processing. I emphasized there is nothing unreal or illusory about 'products of the processing'. They are just structures organized around asymmetries introduced by our practical and epistemic relations to events.

The debate between Actualism, which holds that all that is the case is what actually happens, and realism about modality runs deep and presents us with a dilemma as apparently intractable as the debate between Parmenideans and Heraclitians about time. Actualism seems patently unbelievable and too closely tied to fatalism to be a comfortable position for the deliberating agent, but reifying modality in the form of possible worlds or primitive modal facts generates problems of its own. In this setting, seeing how beliefs about possibility emerge naturally for an embedded agent, in a manner that supports their role in practical reasoning, provides an attractive alternative.