

## 4. From Possible to Actual

Alfred North Whitehead famously said that all of Western philosophy can be viewed as a series of footnotes to Plato.<sup>1</sup> Among other things, he meant that Socrates and Plato were the first philosophers in our tradition to clearly articulate the distinction between abstractions and the concrete, between ideas and reality. They were, in fact, the first to focus attention on ideas *per se*. The relationship of ideas to actuality has preoccupied philosophy ever since. Classical science tended to ignore this question (I explain why below), but quantum mechanics, which must contend with the existence of objectively existing possibilities, has been forced to deal with it once again. In this chapter, I want to demonstrate why this distinction—between *ideas* (possibilities) and *actualities* (entities existing in the actual world)—is crucial in forming an understanding of the five fundamental propositions at the core of the new metaphysical model I am proposing.

### Forms and Events

If we want to know *anything*, we have no option but to pay attention to our experience—which is the foundation of all philosophical and scientific knowledge (indeed, of *any* knowledge). This is what we mean by “empiricism”: knowledge grounded in experience.

Philosophy and science always begin with descriptions of experience. Of course, we cannot *describe* experience without resorting to the use of abstractions and the words in which they are expressed. Metaphysics helps us identify and clarify the concepts that describe the most general aspects of experience, to see if the set of concepts we are using are coherent<sup>2</sup>, to see what other assumptions may be implied by those basic concepts, and to examine what consequences logically follow from holding those ideas. In short, metaphysics rigorously questions and investigates the *assumptions* behind our words, thoughts, and beliefs, and in doing so empowers us with greater clarity and insight into what we take to be “knowledge” or “truth.” In Whitehead’s hands, metaphysics goes one step further and helps us realign our conceptual abstractions with our actual experience.

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<sup>1</sup> Whitehead, *Process and Reality*, p. 39.

<sup>2</sup> A set of concepts is “coherent” when what is unique about each cannot be articulated apart from reference to the others. See Whitehead, *op. cit.*, p. 3.

In this book, therefore, I am inviting you to examine your experience, and to begin a metaphysical description of your experience using “form” and “event” as your most general ideas.

### **Events are in Time**

For example, I am looking at, *experiencing*, a cup on the desk beside me. In this moment, it is an event, a happening, an actual part of the world. If we stop to think about it, we know that objects such as cups are always changing. At one moment (some time in the past), this cup hadn't yet been created; at another moment it will be gone (either into the dishwasher or, if it breaks, into the trash). And, even though we can't perceive this directly, we know that because of the molecular and atomic structure of the cup, it is undergoing subtle changes at every moment.

Not only is it changing in response to changing temperature, illumination, and pressure; not only is it gradually decomposing as molecules fly off; but also, even if the molecules stay relatively constant, the event that makes up this cup is, ultimately, an expression of the whole universe. The cup is a causal outcome of the entire evolutionary process, from the Primordial Flaring Forth (the “Big Bang”)<sup>3</sup> to the present. The whole fourteen-billion-year evolution of the universe is, in some important sense, expressed in this cup. Again, whether we are aware of it or not, this cup is responsive even to the movements of distant galaxies in their ever-changing dance. The event that is this cup at this moment will, therefore, never be repeated. The event that is this cup at *this* moment and the event that is this cup at the very *next* moment are not the same. If it is to endure in time, the cup must do so as a sequence of subtly different events.

Of course, not only is the cup constantly changing; everything in the universe is also in constant process. However, if *everything* is changing all the time, then how can I *recognize* that the cup I am holding now is the same cup I was holding before? Throughout all the changes, *something* remains the same. What is it, then, that remains the same about this cup if there is a new “cup-event” every moment?

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<sup>3</sup> Which the currently mainstream scientific cosmology takes as the beginning of the physical world.

## Forms Are Unchanging

Well, the *form* of the cup hasn't changed even though there is another cup-event being characterized by that form every moment. In his native language of ancient Greek, Plato referred to form as *eidos*, which is also the root of our modern word "idea." Form and idea, then, are essentially the same. At every moment, we have form and event, or idea and event. The cup-idea is the form, and is an ingredient in a series of events. Think of a waterspout or a tornado: The spiraling twister is the form, and it is an ingredient of a system of events consisting of air currents, water droplets, and dust particles.

*Now let's look more closely at the distinction between forms and events, and how scientific thought lost sight of it.*

In daily life, we don't typically make this distinction between form and event with any clarity, but, if we take time out to do so, it opens the way to a philosophical understanding of the ever-changing world of experience. Modern philosophy and science have lost track of this distinction, and the story of this loss is instructive. Very briefly, it happened like this:

- First, early scientists, like Copernicus and Kepler, following a suggestion by Plato, searched for, and found, mathematical regularity—unchanging mathematical *forms*—in the movements of the planets.
- Then, Galileo and his followers found mathematical regularity in the movements of terrestrial objects. The movement of pendulums, of falling bodies, and the trajectories of cannonballs can all be described and predicted by mathematical equations analogous to those that predict the movements of the heavenly bodies.
- Newton synthesized the ideas and the researches of his predecessors into his magnum opus *Principia Mathematica*—and effectively established invariant mathematical forms (expressing universal "laws" of nature) as the ultimate expression of scientific knowledge.

- From that time forward, the only forms considered relevant to the unfolding of actual events were mathematical. Mathematical equations, therefore, were believed to describe actuality better than the fuller, more concrete appearances from which they had been abstracted. These abstractions were assumed to not only describe the natural world, but in a very real sense, were assumed to *be* the essence of nature itself. The task of science, then, was to progressively experiment with nature in order to reveal her mathematical essence, expressed as invariant, universal, mathematical *laws*.

### **The Fallacy of Misplaced Concreteness**

In this way, scientific thought fell into what I described earlier as “the fallacy of misplaced concreteness”—that is, mistaking a model, or representation, of reality as reality itself. Newton had discovered that a mathematical abstraction called “point-mass” enabled him to use calculus to analyze all the motions in nature observed by the science of his day. However, he and his followers then confused the useful mathematical abstraction “point-mass” for an actual thing—an “atom.” But the Newtonian atom is not an *actual* entity; it is, rather, an *idea* (a form), a mathematical abstraction that describes certain regularities in the field of experience that we, as high-grade actual occasions, can abstract from experience and use in scientific descriptions and predictions.

This is not to say, however, that nothing actually corresponds to what we call atoms. Clearly, some atom-like processes do exist, contextualized by time and space, and have measurable effects on other such processes. Indeed, I have seen pictures of atoms, and I find them quite convincing. But none of the evidence can convince me that those atoms are *nothing but* an insentient patterns of energy described mathematically as point-masses. To be sure, I cannot explain my experience of the world without positing something *like* atoms, but if I assume that those atoms are just what Newton described, then I will fall into the fallacy of misplaced concreteness, and my explanations will not get me very far if I’m interested in understanding phenomena such as life and consciousness.

The form “atom” is an abstraction from *something*, but the actuality is more than the form, and the form itself can be more or less adequate to what it describes.

In order to move beyond the muddle of modern thought that prevents us from understanding the nature of consciousness and matter, and how mind and body are relate—the infamous “hard problem” in contemporary philosophy of mind—we must break out of the fallacy of misplaced concreteness. Failing to do so, we will not be able to understand or explain the anomalous parapsychological phenomena detailed in *Irreducible Mind*, or know what to make of the documented evidence for reincarnation in the works of Ian Stevenson, or what these phenomena imply about the nature of reality, or of the human personality and how it could survive bodily death. If we want to address these issues and make progress in our scientific understanding of them, we need to radically revise our assumptions about the nature of mind and matter, or consciousness and energy. In short, we need a radical revision of the metaphysics underlying modern science

Let’s summarize:

From the standpoint of process metaphysics, what we usually call an object<sup>4</sup> consists of a form, or idea, and a series of events that are characterized by that form. In Whitehead’s useful terminology, we say that ideas or forms are “ingredients” of events or that ideas or forms are “ingressed” into events. Events occur in time and space, and each is completely unique. Events happen only once, but forms happen again and again. For example, this particular cup that I am holding happens again and again and again, as I watch the cup endure, even though the events keep changing. What is the same in each occurrence is just the form itself. The events never repeat.

### **Forms and Events in Time and Space**

It is important to realize that ideas or forms are not related to time and space in the same way events are. If you could see my cup at this moment, you would perceive a particular

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<sup>4</sup> Whitehead refers to forms, or ideas, as “eternal objects,” and I have sometimes used that phrase in this book. Here, when I use the word “object” I do not have in mind “eternal objects,” but rather everyday “things” that we find around us in the world.

shade of bluish-green. You might see it from a different angle, and maybe your blue-green experience is different from my blue-green experience. Nevertheless,, each of us sees *that* particular color, the one we do, in fact, see.<sup>5</sup> At this moment, something else in your field of experience might disclose itself with the same color; you might also have seen that color thirty years ago, and you might see it again tomorrow. Every time you see it, it is the *same* color; the color itself doesn't change in time. A particular shade of blue-green is always just that particular shade of blue-green, and so on. The point is that when you perceive a specific color, wherever or whenever you perceive it, it is *always* just that same color. That particular color doesn't change from moment to moment or from place to place. You can see the same shade of blue-green tomorrow, next year, fifty years from now, and you can see it just as easily in California as in New York, or in Sydney, or Timbuktu. A color (or any form) can have more than one location in space at a time (multiple objects may be bluish-green), and it may occur at any time, whereas events (actualities) are just where they are and just when they are, never to be repeated.<sup>6</sup>

### **Feeling the Difference**

Once it is pointed out, this distinction between forms and events may seem obvious, even trivial. But it is neither obvious nor trivial. So, before we proceed, let me ask: Do you *feel* that distinction? I'm aware it is not easy because it is not something we think about very much. If you pick up a cup, what are you holding in your hand? Is it the dynamic causal activity (an *event*) or the form of the cup? Or, more likely, is the cup a particular relationship between the event and the form? Can you imagine the cup as a society of actual occasions, each one of which *decides* to incorporate the form of the cup into its momentary flash of being? If, *in our experience*, we actually begin to differentiate events from objects, ideas, or form, we can bring about a change in the way we see reality.

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<sup>5</sup> The particular color that I see is, of course, a product of many factors including the lighting, the context in which the object bearing the color occurs, the physiology of my perceptual apparatus, and so forth. In the current context, however, none of that is relevant. I'm just pointing to the the color itself *as it is experienced*.

<sup>6</sup> This does not mean that the event could exist, just where it is, without the participation of the rest of the universe. Whitehead points out that space does not just separate things, it also connects them. Each position in space-time is intrinsically related to all other positions in the same space-time. Each position is unique, and part of its uniqueness is its particular relationship to all other positions. For a deeper discussion of this point, see Alfred North Whitehead, *Science and the Modern World*. New York: The Free Press, 1967, *Science and the Modern World*. New York: The Free Press, 1967, Chapter III.

Notice that I am emphasizing the importance of beginning our new approach to philosophy by paying attention to *experience*. *The only way we can access and know reality is through our own experience*. And our first task, then, is to focus attention on our experience to reveal the fundamental distinction between *forms* and *events*, and the different ways they show up in time and space. This will lead us to an understanding of the difference between the abstract and the concrete, or between the possible and the actual.

You might already be aware that modern science is a discipline in search of its own justification. Quite simply: Science doesn't know why it works. The philosophy of science, practiced for the last half century or so, has ended up with the rather ridiculous idea that scientific truth is essentially a function of laboratory politics.<sup>7</sup> Given its starting premise—that reality is essentially a pattern of mathematical abstractions—there is no way to make sense of science. To put it plainly: neither modern nor post-modern science can account for its own knowledge or ideas in terms of the forms (atoms, electrons, quarks, probability fields) that it studies. All scientific knowledge begins in the subjective experience of individual scientists. But neither science nor modern philosophy of science has developed a satisfactory account for the relationship between subjective experience and the presupposed objective reality of atoms, geometrical spacetime, and energy fields “out there” beyond experience.

If we start with events and objects, however, we can make sense of science in terms of our own experience. Whitehead has shown that we can start with our own experience and then abstract from it all the forms and data of science—as long as we do so in terms of events and forms.<sup>8</sup>

### **Forms are Possibilities, Actualities are Events**

It will be helpful at this point, to note key characteristics that distinguish forms from events.

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<sup>7</sup> Peter Godfrey-Smith, *Theory and Reality: An Introduction to the Philosophy of Science*, University Of Chicago Press; New Ed edition (2003)

<sup>8</sup> For a summary of this derivation, see Eric Weiss, *The Doctrine of the Subtle Worlds*, UMI Proquest, 2003. See especially Chapters 3 and 4.

*Ideas (or forms) are possibilities.*

All ideas or forms (Whitehead calls them “eternal objects”) are, in themselves, *possibilities*. In other words, an idea, thought, or form, is a characteristic that events might have. For example, redness is an idea; it is a characteristic that certain events have, or may come to have. Similarly, roundness, curiosity, anger, sorrow, squareness, and hardness are characteristics that might become ingredients of events.

Ideas, then, are possibilities.—specific potentials for the determination of fact. If I look at someone’s shirt and I see it is blue, the idea “blue” has characterized my perception of that shirt. The form or possibility has been actualized. Then, if I think I will make a painting of that shirt, the blueness now characterizes a future possibility instead of a past fact.

Just to be clear: I am suggesting that the distinction between the concrete and the abstract can be mapped on to the distinction between the actual and the possible. An abstraction is a possibility; it is a possible form of definiteness. For example, when we think, we are working with abstractions, we are entertaining possibilities. The objects of thought are possibilities—previously actualized or potentially actualizable.

*Events are actual occasions*

Up this point, I have been speaking about events and forms as we find them in the field of our experience. The notion of actual occasions, discussed in the last chapter, develops from this analysis. It then adds a crucial observation: *We* are present in the actual world *as* events. Thus, the event that is my experience in this moment includes, in an important sense, all the events in my past, and it will, in turn, be an event in the experiences of all occasions that follow it.

Because macrocosmic entities in our environments can, in most cases, be resolved into interrelated multiplicities of actual occasions, we have to re-define the word “event” (as used in this chapter) so that it now refers *either* to a single actual occasion, or to some interrelated group, or network, of actual occasions.

*Actual occasions actualize by making decisions*

Actual occasions, as we have seen, move towards actualization by making decisions among mutually incompatible possibilities. Actual occasions *choose*, within limits, the objects that will come to be ingredient in them.

*There is no actualization without thinking and deciding*

Moments in the personalities of human beings, like all actual occasions, entertain possibilities (that's what *thinking* is) and, by deciding among them, "collapse" the field of probabilities into actuality (I will elaborate on this shortly). It follows, then, that thinking conditions reality. *Thinking is causally implicated in the ongoing flow of actual events.* This is a crucial point to grasp because the implications are far-reaching, not only for philosophy and science, but for how we live our day-to-day lives. Yet this relationship between thinking and reality is largely overlooked in modern science. In fact, given the basic metaphysical premises of most scientists, any such causal role for thought is automatically ruled out.

I am making a very different claim here, based on a radically different metaphysical assumption (which, in turn, is rooted in my experience): *Thinking is not separate from reality; rather, it is a crucial factor in the process of actualization.* Quantum mechanics has taught us that we do not live in a pre-determined world. Every new event in the actual world emerges out of a probability-weighted set of possibilities. Something decides among those possibilities every time a definite event occurs. That factor is the mental pole of actual occasions, or thinking—which, among other things, is the ability to consider possibilities and to decide among them.

Lets go over this again—it's so important.

### **Summary of Main Points**

I am presenting a way of making sense of experience that begins by distinguishing between the *concrete* and the *abstract*. I have pointed out that abstractions are elements or characteristics of events. For example, I look at a cup and I can ask: What color is it? I

can then abstract whiteness and blue-greenness. Next, I look at the cup from the top and I say: What shape is this? I abstract roundness . . . and so on.

Abstractions are specific characters of events that we can bring to our attention by selective focus responsive to our interests. We abstract “possibilities for definiteness” that have been realized previously and/or possibilities that may be realized in the future. We have abstractions, characteristics, forms, or ideas (e.g., red, electrical, good—any quality you can name) and then we have actual events, or actual occasions, that are characterized by some selection of those possibilities, forms, or ideas. In short, reality consists of *possibilities* (eternal objects) and *actualities* (actual occasions or events).

Possibilities *per se* are not in time or space the way events are. As noted above, possibilities can recur and can be in more than one place at a time. Events, by contrast, are specifically located in time and space, and are unique.

Let’s now identify some more important properties of abstractions and events.

*Events can have a character that is more or less complex.*

Events vary in complexity depending on the number and of ideas, and the complexity of relations among them included in their character. To give an obvious example: The event that is my cup in any given moment is not as complex as the event that is me in any given moment.

*Abstractions are always beheld by actualities.*

You are an actuality, I am an actuality. We behold, or “prehend,” other actualities, and from those actualities, we abstract ideas or forms. The forms we abstract open up possibilities for us, and we then decide among them and contribute to the determination of future actualities. Understanding this is fundamental to the new approach to science and philosophy I am unfolding here. We are continually actualizing possibilities, and consequently each one of us is a prime example of an *actual entity*—as actual as anything ever could be. Note, then, that in our own case, *actuality includes consciousness*. In the model I develop here, I make the case that the nature of human actuality is essentially no

different from the actuality of all other events—from apes to atoms, bees to beryllium, cats to carbon.

Abstracting is an activity performed by countless beings like us. Only actual occasions abstract characteristics or possibilities from actuality and decide among them, and thus partially determine the future.

*Abstractions can be more or less adequate to the objects they represent.*

For example, when I behold or look at someone I know intimately, my impression of that person—the way I represent him or her to myself or, as Whitehead would say, the way he or she “objectifies in me” (becomes an object for me)—is very full and rich. I abstract much more of their form or possibilities than I would those of a stranger. Their whole history with me is there before me, along with their familiar interests and presence.

Although I never fully abstract the complete set of possibilities embodied or actualized in that person, if I am appropriately attentive and present, what I do abstract is “more or less adequate” to who they are. We could say that although I still necessarily “objectify” them, I do so in a way that is much closer to their own subjective sense of who they are.

When I look at my close friend, my objectification of him is very complete. On the other hand, I could regard someone else as just a “waiter,” in which case my sense of that person would be very abstract by comparison. If all I abstracted was the single character “waiter,” it would not be a very adequate representation of that person as a human being. Or, take another example: If I were an economist I might treat all people as “rational consumers.” That would be a really abstract and inadequate “beholding” of them, ignoring the full richness and complexity of who they really are.

The point to get here is that the abstractions we pull from the events in our life can be more or less adequate. Likewise, as philosophers, scientists, or lay people, our descriptions of the real world can be more or less adequate.

*No set of abstractions can ever encompass the whole actuality it describes.*

Once we recognize that at any moment, in any circumstance, our *experiences always involve abstractions*, and that these are conditioned by our interests and goals, we can be

aware that they are not absolute. No philosophical system or truth will be an absolute truth. Nevertheless, to repeat, we should also keep in mind that the abstractions we use can be more or less adequate to what we want them to do.

### **Inadequacy of Reductionism**

The central claim of this book is that the reductionist scientific abstractions that have, for the past few centuries, been used by modern Western civilization to explain reality, are not adequate to the full spectrum of human experience. The set of abstractions I will present here is more adequate, though I am not, of course, claiming that these new abstractions are in any way ultimate.

The basic metaphysical ideas of science are too abstract and too simple—they really aren't full or concrete enough to represent much of what is important in human experience.

Take for example Newtonian mechanics: Building on the shoulders of the giants who preceded him, Newton, as I noted earlier, crystallized a set of metaphysical ideas that justified the mathematical analysis of the motions of macroscopic bodies. This works fine as long as what we're interested in are macroscopic objects moving through time and space. But why would anyone think that the set of abstractions adequate to describing the movements of bodies with mass would also be good for the analysis of chemical interactions, or living systems, or psychology, or ethics, or aesthetics? To assume you can represent all of reality in terms of abstractions suited to moving masses is simply not good philosophy or good science. Nor is it good sociology, good economics, good psychology, or good medicine. It flies in the face of good old common sense.

The abstractions of physics are great for describing what happens to low-grade inorganic systems, but they are vastly inadequate for describing the reality of human, other animal, or even plant experience and behavior.

Making the mistake of assuming that a set of simple abstractions can fully describe a complex reality is the fatal flaw of scientific, or any other kind of, reductionism. We short-circuit thought when we try to explain the richness of our psychological, social, or

spiritual actuality in terms of a set of abstractions appropriate to moving bodies—because those abstractions respond to, and represent, far too narrow a range of interests.

In other words, if we ignore all vitality, all emotion, all thought, all volition, and all of the important characteristics of life that cannot be measured, we can describe the macroscopic properties of what's left in terms of changes of position in a four-dimensional Cartesian grid dotted with tiny blips of matter interacting according to the laws of gravity, and a few other physical forces.

This is valid and, for technological purposes at least, quite useful. But many high school science teachers, and, indeed, many reductionist scientists take another step. They assume that Newton's set of abstractions (or indeed the abstractions of relativity and quantum physics that came later) describe the *real* world objectively “out there,” while our actual subjective experiences “in here” are dismissed as merely interpretations or abstractions. Such a view commits the fallacy of misplaced concreteness.

It's important to see this: Modern science, in its reductionistic mode, has got it backwards. It treats mathematical abstractions as if *they* are actual, while treating *our* actual experience as “merely” subjective. It's topsy-turvy metaphysics. If we were to take modern science at its word, then we should believe that what we actually behold or experience is just some sort of confused subjective appearance “in here”; but “out there,” on the other side of the appearance, the real world consists of four-dimensional space-time sprinkled with tiny, insentient blips.

Whitehead decried this separation of the domain of experience from the domain of actuality as the “bifurcation of nature.”<sup>9</sup> Once we say that reality is “out there,” outside experience, and once we imagine that our abstractions from experience tell us what the outer world is like, then all our knowledge becomes deeply problematical. By adopting this split between concrete subject and abstract object, between experience and “external” reality, we make our actual experience into an unreal and unreliable witness. How could what is unreal ever know anything about what is supposed to be real? In fact, if reality

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<sup>9</sup> Alfred North Whitehead, *Concept of Nature*. Cambridge University Press, 1964, pp 26 ff.

were truly “out there” beyond experience, knowledge of reality itself would be *impossible*.

To put it bluntly, modern science finds itself like Wiley Coyote, running off a metaphysical cliff into metaphysical thin air, saved from falling only so long as it forgets to look down into its own metaphysical depths.

The Buddha talked about ignorance being one of the fundamental causes of suffering. Many Buddhist schools interpret ignorance in line with Whitehead’s fallacy of misplaced concreteness. We have an idea, an abstraction, that we call our “ego,” the “I” or “me.” We confuse this idea-ego with our actual, true identity and then act as if the idea is more real and more important than our own infinite depths.

That is yet one more way we bifurcate reality—with profound consequences for our personal and collective lives. We should recognize abstractions for what they are. Abstractions are not actualities. They are mere possibilities, becoming actual only as they are realized in actual events.

My starting point, then, following Whitehead, is to declare the common-sense position that what is actual is concrete, complex, causal, communal and involved in process. The abstract is not, and cannot be, the actual. Sentient beings like you and me are actual; every moment of experience is an actual fact. We need to recognize that three-dimensional space, four-dimensional space-time, atoms, energy, probability waves and their collapse—all of these these are mere abstractions.

### **The Nature of Explanation**

When we begin to differentiate abstractions from concrete actuality, we can begin to understand what any explanation is—including, of course, all scientific explanations: They are ways to account for what is concrete in terms of what is abstract.

All philosophical and scientific explanations are logical stories told in terms of some particular set of abstractions. And we have seen that the fallacy of misplaced concreteness consists in confusing the elements of the explanation for the actuality being

explained. I have spoken about this in terms of imagining that the abstraction is a reality outside experience. But there is another way of speaking about this that is also psychologically valid.

Certain ideas—for example our preferences for which political party ought to be in power—are recognized as choices among *thinkable* alternatives. But other ideas, in the background of consciousness, are so taken-for-granted that *we never imagine even the possibility of other, alternative, ideas*. These ideas may be inherited from society, imbibed with language itself, or inculcated at such a primitive level that they might almost be felt as instinctual. They tend to be rooted in regions of our psyche that are highly charged with emotional resonances, and are often shielded behind various psychological defenses. Ideas we take for granted have, by definition, never been consciously scrutinized. They have not been seen against a background of other possibilities that might, instead, be actualized. They are felt as just “the way things are” and any attempt to suggest otherwise takes on an air of the ridiculous.

Most of us frame our explanations in terms of such abstractions first without realizing they are abstractions, and second without realizing that other abstractions might also serve to describe the actualities under investigation. We each take for granted a slightly different set of ideas, making for endless strife in personal, business, political, and international relations. When we learn to listen for the abstractions in terms of which others are framing their explanations, then others begin to seem much more sane, and new depths of communication can open up.

I want to be clear that I am not suggesting that we dispense with abstractions—scientific or otherwise. First of all, besides being impossible, it wouldn’t serve us in any case. We need our abstractions because the finite human mind cannot possibly embrace the infinite complexity of the actual world at any particular moment. We need to interact with actuality in manageable “chunks.” Remember, abstractions are possibilities, and one of the greatest gifts we have as sentient beings is the capacity to apprehend possibilities and select among them. So, abstractions are both necessary and very useful.

Problems arise only when we mistake our abstractions for actuality—the fallacy of misplaced concreteness. The possible and the actual: both are real, but different.

In fact, like many quantum physicists, I am suggesting that possibilities are *real* (though not *actual*). Possibilities are apprehended in thought, and we recognize them as ingredients in what is actual. Every actuality comes into being surrounded by a cloud or halo of possibilities. Some of these possibilities are selected or “collapsed” into definiteness and become part of an actual event. For example, my cup is round and white and green. The possibility of apprehending these abstractions inheres in the cup, and have been abstracted by me in the act of beholding it. But it has many other possibilities or characteristics that I could behold—it is solid, made of clay, has a smooth surface, and so on.

A moment ago, I mentioned that both possibilities and actualities are real and that they are different. One important difference is that while every actual event is always in process, possibilities or potentialities (the forms) are not in process. They exist timelessly—which is why Whitehead referred to them as “eternal objects.”

Now we can clarify key factors involved in the occurrence of each actual occasion

### **The Characteristics of Actuality**

*Actuality requires consciousness.*

Consciousness functions as an agency of actualization. Without the presence of consciousness—specifically the action of *choice* or *decision*—to select among the range of possibilities, nothing would ever “collapse” into actuality. In this, Whitehead’s metaphysics squares with the evidence of quantum physics.

*Actuality is temporal.*

Every moment of actualization is an activity. The present moment of experience is the cutting edge of the creative advance. Settled actualities of the past are the raw materials for the present and (with the addition of new possibilities) for the future. Actuality cannot be imagined apart from its temporal dimension.

*Actuality is communal.*

Another consequence of the constant coming-into-being of every actual entity (including you and me right now) is the fact that actuality is necessarily *communal*—involving the contributions of all “ancestral” actualities or events. To be actual is to emerge out of the past, where the past consists of a multiplicity of prior actualities. We always have to have a past to be actual. Each moment of actualization is a convergence or communion of all the actualities of the past.

*Actuality is causal.*

Because of the inevitable influence of the past flowing into the present, every event or actual occasion is always involved in networks of efficient causation. One actuality causes another in a universal interconnected matrix. Right now, as you read these words, I am effectively causing something to happen in you. And, while it might not be as obvious, right now you are causing something to happen that will affect every actual occasion in your future. When we expand this causal network to encompass all actualities, we realize that the whole universe causes us in each moment and we in turn affect the entire future of the universe. To be actual is to be in time and space, to be communal, and to be in process.

## The Process of Actualization

The above discussion of the relationship between what is possible and what is actual is important for a clear understanding of both our own experience and how it relates to reality. It is crucial for science if it is ever to understand the nature of consciousness and how it relates to the physical world.

We will now look more deeply at the process through which the potential is actualized. Specifically, how does it happen that you and I become actual beings from moment to moment, and, more generally, *how do all entities become actual at every moment of their existence?*

In some significant way, this entire metaphysics may be viewed as an exploration of that question, an analysis of the process of becoming actual. Understanding this will go a long way toward opening up a new perspective for understanding what a personality is, how it persists from moment to moment, and how it may actually survive the death of its physical body.

*We experience the past as it actually was.*

Actuality always begins in the universe and *as an experience of that universe*. In other words, the process of actualization is a “conformal experience” that involves the entire past history of the universe, streaming into every new moment. We always experience the past as it actually was.

Modern thought is quite confused about how we experience the past or objective events. Science says we experience the outer world through our senses, and this seems indisputable. The light from the window bounces off my desk. The atoms of my desk are excited by the impact and, in turn, they emit light that hits the cells at the back of my retina. Those cells respond to the light by generating nervous impulses that travel through my nervous system, coordinate with other nervous impulses from my eyes and other senses, before, eventually, forming a representation of the world. So far, so good. This entire process is *causal*, so that the sun, the desk and, indeed, the whole world is, in some way, involved in the production of the representation. This is important, because the fact

that my perception of the desk is *causally* related to the desk is what guarantees the relevance of my representation to the actual world outside my body. The desk (along with the rest of the world) *causes* my perception, and so my perception is really a perception of the desk.

*Mind is intrinsic to matter.*

But modern thought loses this direct causal connection by denying that the process through which the representation of the world is formed in the nervous system involves any sort of *experience*. According to science, the sun, the desk, and the nerves are just physical things that do not involve conscious experience. So the scientific explanation is left with a big puzzle. How is it that the pattern of (exclusively *physical*) activities in the nervous system that forms the representation becomes, for me, a conscious experience? What bridges the gap between a non-experiencing world and an experiencing subject?

We return to the hard problem. The events through which the sun and my desk are represented in my nervous system form a causal process, and this takes place in the one, coherent, outer world. But, if we were to accept the standard scientific story, the consciousness that actually experiences the representation is somehow outside that world, and there is no intrinsic connection between the representation and the *experience* of that representation. This explanation leaves us stuck in a kind of private theater where we are confronted with representations, but we never get access to the real things that, we imagine, are represented.

In contrast, the process metaphysics I am developing here eliminates the hard problem by putting experience back into the world. I am working on the premise that to be *causally affected* is to *feel*. So the sun feels energetic, and transmits that to the desk, which feels energized. The desk transmits its energetic feeling to the cells in the retina, which feel the light from the desk. Each entity in the perceptual process is, in itself, an experience. “I” am a key event in the perceptual process, and I feel the experiences of all of my coordinated cells. In this way, the entire perceptual process is a transmission of experience through the creative advance. There is no hard problem at all. My representation of the world *is* an experience of, *and from*, the world, as that experience is

transmitted through the occasions of my body.<sup>10</sup> True, I interpret the world. My experience is an abstraction from actuality, and that abstraction is conditioned by my motives and interests. It is both less and more than the actual past. But it *is* causally connected to that past, so that my consciousness is really a part of the world; and the actual world, as it is (and was), constitutes the raw material of my experience.

*Causality is transmission of experience.*

Indeed, this way of speaking is much more natural than the strange circumlocutions forced on us by materialistic reductionism. When we are not doing science, we have no choice but to assume that we are involved in reciprocal causal interactions with the actual world we perceive. Perceptual physiology makes this obvious. It is only the strange idea that the transmission of energy is something other than a transmission of experience that forces us to think of ourselves and our consciousness as somehow outside the process.

*Creativity is built into the fabric of existence.*

Even though the past is fixed and determines every current actuality, that is far from the whole story. At every moment, the actual world comes into being with a host of unrealized possibilities. Every present actuality is both determined by its past *and* has a set of open possibilities that orient it toward the future. In every moment of actuality, there are always possibilities we can realize. This is fundamental to the metaphysical nature of every actual entity. In common language: There is always something new to do.

*Between the past and the future comes a conscious decision*

The key to every actual process is a *decision*. Without beings capable of making choices, nothing would ever happen. We, and all other actual occasions, make decisions. The world presents itself to us as actual, and simultaneously discloses a halo of possibilities. We create a new actuality as we decide among those possibilities.

Take a moment to think about this. We behold reality and we experience definite, actual things. But, if we shift attention just a little and look at things differently, we can see that

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<sup>10</sup> As we will see later, the higher grade occasions of the body can communicate with the higher grade occasions in the rest of the universe directly, without that communication being mediated by the lower grade occasions in which those higher grade occasions are embodied.

every actuality also presents us with a variety of options. Every actual situation is both fixed by its past and rich with the flexibility of unrealized potentials some of which will become actual by virtue of our decisions. Every actual occasion comes into being with a range of unrealized potentials. Options are always available, the future remains open, and so there is always something new to do.

Again, take my cup as an example. I can drink from it, I can drop it, I can describe it to you, I could throw it through the window . . . my actual cup is surrounded by a halo of possibilities. What is true of my cup is true for every object—including human beings.

*Creative advance is guided by purpose.*

It is also important to note that, by its very nature, no decision is ever random. The selection of a new possibility is always the operation of choice. And choice is different from randomness. Choice, because it is free, is undetermined and unpredictable. To an outside observer, both a random event and an act of choice might appear random. The crucial difference, however, is that choice involves the presence of consciousness and purpose or “aim.” Aristotle called this purpose the “final cause.” I consider the elimination of purpose or final cause from the universe to be one of the greatest metaphysical blunders of reductionistic materialism. The model I am proposing here restores purpose to the very nature of reality itself.

Purpose is always an aim at value. When I make a choice, I do so in order to reach a goal, to fulfill some purpose, to realize some value. I value some outcomes more than others, and I choose and act accordingly.

My choice might be right or wrong, but unless I am influenced by the desire to achieve value I have no criterion by which to evaluate the various options or possibilities that are present to me in any moment. Without value to guide my choice, my actions would indeed be random. And what is true for me as an actual entity is true for all actual entities. The universe unfolds through creative advance ultimately because of the presence of beings who experience value and aim, and who make choices. *There is no actuality without an aim at value and an experience of value.*

Contrary to the metaphysical mythology of reductionistic science, which tells us that ultimate actuality is devoid of value, I am suggesting that *every actuality has value for itself* because it emerges out of a decision made in the presence of an aim or a final cause.

### **A Radical Revision of Science**

We can now generalize what we know about actual occasions. In every moment of actualization (every actual occasion), there is the apprehension of the actualities of the past and of a field of possibility implied by the specific configurations of those actualities, and then there is a conscious, value-informed decision among those possibilities that makes one of them definite and actual. The process of actuality involves experiencing the world, discerning possibilities and deciding among them. That is what it means to be actual. Nothing is actual that does not go through that process. This is not just a philosophical statement. It is exactly what quantum mechanics tells us, too.

It is important to note that this does *not* mean—as the New Age cliché goes—that we can “create our own reality.” Yes, there are always unrealized possibilities among which we will choose, but everything that happens has to be logically consistent with what has already happened in the past. Also many possibilities are mutually incompatible, and cannot be jointly actualized. For example, the reality that gives rise to me lets me speak a large number of words and lets me move in different directions, but I cannot speak two different words at the same time, and I can move in only one direction at any given moment. The possibility of going left at the crossroads, and the possibility of going right at the same crossroads at the same time cannot be jointly actualized.

What am I saying here? Well, I want to be very clear that I am proposing a radical metaphysical revision of science. You could say that I am pulling the rug out from underneath the scientism that sometimes passes for real science. In fact, I am showing the way to replace the faulty metaphysical assumptions of reductionistic, materialist science with a new set of metaphysical premises that will give science a much more solid and expansive foundation and allow it to explore the full spectrum of the universe as it is revealed in our actual experience.

I am taking as my starting point the difference between possibility and actuality, and reversing the topsy-turvy assumptions that underlie the way reductionistic materialism views them. Remember, the essence of modern scientific reductionism—or *scientism*—is the assertion that reality, what is *actual*, is composed of objective, purposeless “dead” stuff, those infinitesimal BB-atoms (updated as quarks or quanta) hurrying meaninglessly through time and space. I am saying that such a view is entirely inadequate to account for the facts of our experience.

On the contrary, actuality is not “dead” and automatic, abstractions are. And since, as we have seen, possibilities are abstract, non-temporal, and non-spatial, if anything qualifies as “dead,” purposeless, and automatic it is *possibility*.

By contrast, finite *actuality* is conscious, causal, communal, inextricably involved in time and space, purposeful and valuable. As I sit here at my desk contemplating metaphysics, exploring a universe of possibilities in thought, I am vitally aware of the difference between what is merely abstract possibility and what is actual, alive with consciousness, purpose, value, and a capacity to choose. *This* is actual. When I say “this” I am indicating myself, and my experiences of the world around me.

By “actual” I mean you and me, and everything we experience. Every object, every atom, making up our world is essentially just like you and me, possessing a capacity to make decisions, guided by its own appropriate aims and values. Strange as it may sound to ears and minds schooled in scientific materialism, every *actual* atom and molecule (not the mathematical abstractions we read about in textbooks) emerges into actuality, moment to moment, as an activity of choice, motivated by its own inherent value. Every actuality, from quarks to human beings, has value in and for itself, and it interacts with its world directed by those values.

The whole universe is permeated by purpose and choice. Consciousness is active everywhere, all the time. I am fully aware how radical this statement is compared to the “givens” of modern reductionistic materialism. But I am equally aware that this approach

is not inconsistent with genuine science, at all. In fact, it can be very helpful in interpreting quantum mechanics, as physicists who read Whitehead are discovering<sup>11</sup>.

### **Is Reality Atomic?**

I'll conclude this chapter by looking at one more important question about the nature of actuality: Whenever we analyze something, we usually view it in terms of fundamental units. My question is: Can we analyze and understand reality in terms of ultimate constituents? And, if so, *what are the fundamental ontological units?*

I've already pointed out why the mathematical abstractions physicists call "atoms" cannot yield the world we actually experience. Nevertheless, the idea of atoms or quanta—some discrete constituent of reality—seems unavoidable.

Whitehead tended to think there are ultimate units. In his later philosophy, he concluded that "actuality is incurably atomic."<sup>12</sup> And in a certain sense that is true—though not in the reductionistic sense assumed in materialistic science. Once again, we start with our own experience as a paradigm example of actuality. If we pay attention, we recognize that each moment comes as a drop of experience: We take in the world, we interpret it, we make decisions, and in doing so we become actual at that moment. The next moment, we start all over again. Each moment is actualized by a new and unique decision—never to be repeated. *Each moment happens only once.* This is what Whitehead had in mind when he said that "actuality is incurably atomic."

Actuality is composed of momentary "atoms" of experience, where each moment is distinctive, discrete, and unique because of the creative acts of decision that select possibilities and make them actual. Whitehead, as we have seen, referred to these "atoms" or units of reality as "actual occasions"—fully realized moments or occasions when *something happens*. Actuality, then, is composed of *events* when viewed from the outside, and of "drops of experience" when viewed from inside the occasion.

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<sup>11</sup> See, for example, Stapp, Henry. *Mindful Universe: Quantum Mechanics and the Participating Observer*, Springer, 2007, and Epperson, Michael. *Quantum Mechanics and the Philosophy of Alfred North Whitehead*, New York:Fordham University Press, 2004.

<sup>12</sup> Alfred North Whitehead, *Process and Reality*, corrected ed. New York: The Free Press, 1985, p. 61.

I want to repeat that this understanding of atomicity is not reductionistic. Clearly, we do not experience ourselves as choppy, discrete atoms of awareness. Rather, we experience ourselves as continuous from moment to moment. While it is true that each moment gets its atomic character due to each unique act of decision, it is also true that each completed moment *causally influences* or informs the next moment, and partially *constitutes* it. The flow of causality from past to present accounts for our experience of continuity. As we will see later on, this process is a key to understanding the nature of personality and how it can survive the death of the physical body.

The bottom line, then, is that reality consists of both atomicity and continuity. They are complementary—each is needed to make sense of, and to allow for, the others.

### **Continuity and Personality**

In the coming chapters, I will be describing continuity in Whiteheadian terms as “personal order.” For Whitehead, a society with personal order is a sequence of actual occasions in which there is one in each moment, like beads on a string: me, and then me, and then me, and then me. That is my “personal order”—my *personality*. I can now generalize and say that *societies in personal order are personalities*.

Here’s how it works: I come into existence in this moment, and again in this next moment, and then again in this new moment, and so on. It’s a continuous sequence. And in each one of those moments the whole universe participates in my coming to be. If the universe changes too much, I cannot have personal order, and I would cease to be. There has to be something that holds the universe sufficiently the same from moment to moment in order for me to emerge sufficiently the same moment to moment. In other words, my continuity as a personality is intimately tied in with the continuity, consistency, and *coherence* of the universe as a whole.

Clearly, for anything to endure—whether it’s a pellet, a pebble, or my personality—the universe must maintain some minimal degree of continuity and coherence. To achieve this, the universe (the totality of all that is) must itself be some kind of self-organizing system—a self-organizing system of actual occasions that maintain some degree of

continuity from moment to moment. The universe is a self-organizing society of actual occasions, and so are our daily selves.

In transpersonal process metaphysics, whenever there is a self-organizing system of actual occasions (whether it is the universe as a whole, a human being, a single cell, or a hydrogen atom) it has its own consciousness, with its own aims, values, and choices. If we take the presiding occasion of a human individual in waking life as an example, we can see that personality only emerges out of a complex relationship between individuality and continuity: the texture of decisions inherent in personality breaks it up into individual events, and yet those events are part of an ongoing continuity. Also, the ongoing self-organizing system of the cells depends on the personality, and the continuity of the personality depends on the ongoing self-organization of the universe as a whole.

Now we can see that these three terms—self-organization, atomicity, and continuity—are all complexly interrelated and interdependent. We cannot have any one without all three. This is a new idea and it helps to resolve the issue of personal identity. (I will elaborate on this in a later chapter.)

### **Summary**

We've seen that the overall metaphysical situation, according to science, is that reality is composed of "dead" matter controlled by mathematical laws and chance. I'm suggesting that is not it. On the contrary, at every moment, reality involves a field of structured possibilities, which through a process of conscious decision that excludes incompatible possibilities and includes a mutually compatible set of possibilities. It collapses what was merely abstract and potential into actuality. Reality, then, intrinsically and naturally involves some factor that continually renders it actual by deciding which possibilities to actualize. And that factor, I will argue, is consciousness. Consciousness is an agent of actualization.

Every instant of actualization is illuminated by consciousness, and embodies a quantum of freedom. It emerges from, and then creates, a field of possibilities for the future. It enjoys the value of the past, and enjoys its own value, while anticipating value in the future. Once we adopt this perspective, it becomes clear that *every* actuality, including the

actualities making up human personalities, exercise causal agency. Thus we have established a basis for the first of my four fundamental propositions.

Given this starting point for the new metaphysics, in the coming chapters we will see how it is possible to construct a comprehensive cosmology that includes the possibility of parapsychological effects, reincarnation, and life after death—thus providing a basis for the other four propositions: there are transphysical worlds; the personality can function independently of its body, even during the life of the body; the personality survives the death of its physical body, has its ongoing existence in transphysical worlds, and reincarnation happens.