

***Heidegger and Science—and Postmodernism***  
**By Richard Capobianco**

Stonehill College  
Public Address

On the Cambridge side of the venerable Charles River in Boston stands a temple, a temple dedicated not to the gods, but to the heroes of scientific learning. That classically designed temple with its powerful fluted columns and elegant ionic capitals is the home of the Massachusetts Institute of Technology, MIT. On any given day, dozens of people, from all over the world, pose for pictures in front of the main building with its grand Pantheon-like dome or in front of one of the four corner sections of the building, where at the top, along the frieze, are etched into the smooth masonry the names of the great geniuses of Western medicine and science: Galen, Copernicus, Pasteur, Newton, Darwin, among many others. This high praise and immense admiration for these great figures of science—or, more precisely, for this great tradition of scientific learning itself—is altogether appropriate. Scientific learning has brought inestimable benefits to humankind—who could deny this? It should be easy to freely admit—and celebrate—that the scientific interpretation of reality has been an extraordinarily powerful and productive interpretation and that it has yielded extraordinary good for humankind. And we have every reason to expect that its interpretive framework will continue

to bring forth ever more understandings and ever greater benefits in the years and decades and centuries to come.

Indeed, who could deny this? Who would deny this? But I am afraid to say that this is precisely one of the most significant shortcomings of the contemporary humanities disciplines that, in some cases, are dominated by the “postmodern” thinking of such figures of the late 20<sup>th</sup> century as Jacques Derrida, Jacques Lacan, Michel Foucault, Gilles Deleuze, and Jean-Francois Lyotard. What many of the devotees of these authors share in common is a refusal or unwillingness to recognize and soberly consider the immense explanatory and predictive power of the scientific interpretation of reality. They all too cavalierly dismiss science as merely an ideology or as one linguistic network of signifiers among other networks, all of which say *nothing* about what is real. Postmodern authors offer not a careful and nuanced consideration of the limitations of the scientific interpretation of reality, but rather a casual and chic nihilism that dismisses the scientific interpretation—and indeed all interpretations, all human efforts at knowing—as socially constructed ideologies or as linguistic games that keep us busy or amused until death. No wonder serious men and women of science want nothing to do with this postmodern discourse that is issuing forth today from many humanities departments, and especially literature departments. Researchers in the natural sciences are simply too engaged in the effort to find a cure for cancer, to

name but one matter of pressing importance, to make time for these cynical and idle musings. Even so, I do not mean to say that postmodern thinking, considered in its best light, is without some important insights; later, I will discuss what postmodern thinking can help us appreciate. But before doing so, I think that it is important to identify where postmodern thinking has gone so terribly awry—and much of it has to do with the misunderstanding or misappropriation of the thought of the most seminal philosopher of the 20<sup>th</sup> century, Martin Heidegger.

Many postmodern authors cite Heidegger as the source and authority for their views. They all invoke Heidegger in one way or another, but, unfortunately, few of them really understand him where it counts, or, if they do, they prefer Derrida's nihilistic reading of Heidegger. There are several issues to be discussed here, but for our purposes, the key matter to be clarified is this: What do we mean—and what did Heidegger mean—by saying science is an “interpretation” of reality, and, further, that human understanding itself is “interpretation”?

To understand this aright, we need to go back to Heidegger's most important early work and arguably the most important philosophical text of the 20<sup>th</sup> century, *Being and Time*, which was published in 1927. In the early going of *Being and Time*, Heidegger lays out his understanding of the meaning of the word “phenomenology,” which was the name given to the philosophical method that he

and others had learned from the philosopher Edmund Husserl. The people and ideas of the phenomenological movement in the early part of the 20<sup>th</sup> century is a fascinating story in itself, but let us focus on Heidegger's brilliant and original elucidation of the word "phenomenology" because this will bring us to the core of our concern.

He observes that the term "phenomenology" combines the word "phenomenon" with the word-fragment "logy" and that both of these components derive from the ancient Greek language. That may be apparent enough, but it is how Heidegger reads the ancient Greek that is so fresh and startling and powerful. Hans-Georg Gadamer, himself a student of Heidegger's and one of the most prominent philosophers of the 20<sup>th</sup> century in his own right (and one of my teachers), often remarked that Heidegger taught the philosophical world how to truly *read* the Greek language. Heidegger begins with the word "phenomenon." This is an important term with a long philosophical history, but, again, for our purposes, let us simply make note that the term phenomenon had become especially important in modern philosophy beginning with Descartes. Heidegger's philosophical audience at the time that *Being and Time* was published would have immediately understood the term "phenomenon" in a Kantian or neo-Kantian sense; that is, simply put, "phenomenon" would have referred to an intramental construction; an "object" within the human mind constructed or constituted by the

faculties of the mind. Heidegger thought that even Husserl, who endeavored to overcome this philosophical conception of the mind as an interior cabinet—a conception bequeathed to modern philosophers by Descartes—even the great Husserl himself had not sufficiently and decisively broken out of this Cartesian and Kantian immanentism. Thus, Heidegger’s observations on the Greek roots of the word “phenomenon” were intended as a powerful corrective to the dominant thinking in the modern tradition of the philosophy of consciousness.

To summarize Heidegger’s account: He observes that the word “phenomenon” comes from the Greek word *phainomenon*; but what did the Greeks mean by this word? The clue is that *phainomenon* is itself derived from other Greek words, words that have to do with light and shining. First, *phainomenon* is related to the Greek verb *phainesthai*, which means “to show itself.” In the first place, the *phainomenon* is what shows itself from itself. But the word *phainesthai*, a middle-voiced verb, is itself derived from the word *phaino*, which means to bring into the light, and *phaino* is ultimately derived from the Greek word for light itself, *phos*. So, what the Greeks called *phainomenon* refers to whatever at all that is, a being, an entity, that which shows itself from itself, that which lights up or shines forth, that which opens itself and makes itself manifest. For the Greeks, a phenomenon was not in the first place merely an intramental object as it had come to be construed in the modern philosophy of consciousness following Descartes,

but rather, as Husserl was trying to articulate in his famous expression “To the things themselves,” the phenomenon, as originally understood by the ancient Greeks, is that which is *as that which shines forth*.

That-which-is shines forth itself, but that also means that it shines forth to us, the human being. Heidegger was wary of using the word “human being” because he thought that it had become so loaded down with centuries of philosophical assumptions about the self as a timeless, spaceless, worldless, immaterial soul substance (ancient and medieval metaphysics) or subject (Descartes and modern philosophy). As a result, he opted for the word *Dasein* to designate our temporal-historical, worlded, embodied being so that our thinking does not easily relapse into these older philosophical ways of thinking about the “being” of the human being. There is more to be said here, of course, but let us not lose the thread of our discussion. The “*logos*” of phenomenology, the second component of the word, is constitutive of *Dasein* (the human being). As Heidegger observes, for too long it has seemed so obvious to philosophers that that by “*logos*” the ancient Greeks meant something like “reason” or “intellect”; some kind of logical faculty or power of the soul or subject. But, once again, Heidegger seeks to read the Greek word in a more original and fundamental way. “*Logos*,” he considers, comes from the Greek word *legein*, which means to put forward and lay out. Consequently, human *logos* is a laying-out and letting-be-seen in *language*;

Aristotle's word for this, usually translated as discourse or expression, is *apophainesthai*, literally, an *apo-phainesthai*, a "showing-from"; a letting-be-shown in discourse what shows itself. *Logos* as language in the original Greek sense of the word is the activity of the human being that *lets be seen* what shows itself.

Here, then, we have Heidegger's brilliant understanding of "phenomenology" by way of a return to the ancient Greek language. Phenomenology, understood properly and fundamentally, means that the human being (Dasein) lays out and lets-be-seen in language (*legein; apophainesthai*) what comes forth from itself, what shines forth, beings themselves (phenomena; *phainomena*). We could say, then, that *logos*, language, makes manifest what becomes manifest or that *logos* announces or heralds or makes known in language what shines forth. But this announcing or heralding in language was precisely the role of the Greek god Hermes, whose name is related to the Greek word *hermeneuein*, which may be translated as "to interpret." Thus, as originally understood by the Greeks, *logos* is *hermeneutical as interpretation*—but *only* in the sense that to interpret is to make manifest, to bring-forth, to announce in language what shows itself. For Heidegger, then, interpretation is never a merely mental and subjective activity, nor simply a linguistic activity; it is fundamentally to be understood in terms of a letting-be-seen in language of what is.

But it is precisely at this point where postmodern thinkers go astray in understanding or in appropriating Heidegger. Starting with Derrida in particular, many postmoderns insist that language refers only to language and never to the phenomenon itself; or to put this another way, they claim that language does not disclose what-is. If Descartes imprisoned us in consciousness, postmodern thinkers have led us into the prison of language. But what is worse, they tell us, and often without any qualification, that there really is nothing at all to our talk about meaning and truth. What we call “meaning” and “truth” are simply “lies,” as the contemporary thinker Slavoj Žižek states, mere “cover-ups” that give comfort to the faint-hearted among us who cannot face up to the utter meaninglessness of it all. Deleuze, another postmodern thinker, says that on the other side of language there is only “delirium and drift.”

Now, however this position may be nuanced by postmodern authors, it is completely alien to Heidegger’s perspective. Indeed, Heidegger does make more complex and difficult our understanding of meaning and truth, as I will attempt to make clear in a moment, but he never dismisses or mocks meaning and truth in the way that so many postmodern authors do. But, again, I do think that postmodern thinkers can teach us something, but their impoverished understanding or misguided appropriation of what Heidegger means by language and

“interpretation” cannot ever help us appreciate the purpose and power of human *logos*.

Now, how does this all come to bear on science? One more step is needed. What follows from the account that I have been sketching is that, for Heidegger, all human understanding is to be understood as interpretation but, again, only in the sense that we are cor-responding in language to what shows itself from itself, that is, phenomena, beings. Thinking and speaking and writing and art are the principal ways that we make manifest what is manifest. So, for example, we all know the experience of looking for and finding just the right words that will bring forth and make manifest the phenomenon that engages us. In language, from within a particular historical context, we let the phenomenon be *as* this or *as* that in order to show-forth what is showing-forth. Therefore, everything we say about beings is a *taking-as*, an interpretation, an utterance that we intend to be meaningful and “true,” with a small ‘t,’ of course. Nevertheless, as Heidegger always reminds us, every taking-as is also a *mis-taking-as* (and this has as much to do with the phenomenon as with *logos*); consequently, we need to be ever mindful that we are not making exhaustive and eternally meaningful and true statements about things, as many of the earlier metaphysicians thought; no, instead, we must learn to accept and respect the finitude and provisionality of our linguistic indications of what is. Heidegger humbles the understanding of meaning and truth that had been passed

down in the metaphysical tradition of thinking, but he does not humiliate it, as do so many of the postmodern thinkers.

So, let's see how this applies to science. My colleague Robert Crease at Stony Brook University has highlighted an interesting example. In 1665, the English naturalist Robert Hooke introduced the word "cell" into biology. Hooke had invented a more powerful compound microscope, and he used it to examine a number of living things, including a slice of cork. Under the microscope, the cork appeared to Hooke to be composed of honeycomb-like structures. These empty structures reminded Hooke of the rooms or "cells" that monks lived in, and, hence, he named these structures "cells"! Hooke uttered a word, an everyday word at that, to bring forth, to call forth the phenomenon that was showing itself under the microscope. "Cell" did not name an essence, not a fixed and eternal nature of the phenomenon; the word simply brought forth at that place and at that time the phenomenon.

This is what Heidegger means by saying that scientific terms are "interpretations" of phenomena. Hooke's "interpretation" was meaningful and useful to subsequent biologists, but certainly not static because his notion of "cell" has undergone considerable revision and refinement over the centuries. Bringing the phenomenon into language for the first time—"cell"—was Hooke's great

achievement; he bequeathed to biologists the language they needed to continue their investigations. But as Crease points out, even Hooke knew that his own understanding of “cell” would be modified and surpassed as more and more of the phenomenon that he had called forth in language came into better view in future years—and quite literally in fact as the result of the invention of ever more sophisticated instruments of magnification. Hooke himself understood, as no doubt all truly original scientists do in some way, that he was not extracting an essence or some eternal and unchanging component from the phenomenon, but simply *naming* what appeared in order to bring it into our world of discourse. When scientists overlook this aspect of what they do or are not alert to it, then they, too, tend to speak as the metaphysicians of old.

From this hermeneutical phenomenological perspective, then, the great tradition of scientific learning is a *particular* interpretation of phenomena, an interpretation that has proven to be exceptionally powerful and useful and beneficial to us human beings. The postmodern dismissal of science as an ideology or as just another linguistic game that we cannot characterize as meaningful or true—except in the most trivial sense—is a most unfortunate departure from Heidegger’s and Gadamer’s perspective.

But, as we also well know, Heidegger did have his quarrels with science and especially with technology. One of his principal complaints with the scientific culture in the contemporary world was that it was often not self-reflective or modest enough to recognize that its work moved within a *particular* interpretation of phenomena, which, while meaningful and powerfully effective, was, nonetheless, finite and provisional and not exhaustive of the phenomena under investigation. The danger Heidegger warned about lay not with the scientific interpretation per se, although he did have certain reservations, but rather with the growing domination of the scientific interpretation over all other discourses, even to the *exclusion* of all other interpretations. He called this encroachment of science and technology on our thinking and dwelling the “enframing” (*das Gestell*). In other words, what Heidegger and Gadamer actively resisted in their thinking was the increasing hegemony of the scientific/technological interpretation over our world culture, an hegemony that makes us subject to the *idée fixe* that *only* science and technology speak what is meaningful and true.

Again, let us put this thinking to work with an example. Within the scientific interpretative framework, we speak about a tree in terms of “cells” and other such linguistic indicators. Taken together, these biological terms make manifest a tree in a particular way. But the phenomenon of the tree is surely not exhausted by the biological interpretation; it is only a particular meaningful

“taking-as” of the phenomenon. Yet there are other meaningful “taking-as’s” of the very same phenomenon that we must keep in view. In poetry, for example, we also take the tree *as* sheltering, *as* strong and enduring, *as* life-giving sustenance, *as* uplifting, *as* playful—and such interpretations are *also* meaningful and true. The whole phenomenon that is the tree is not captured by any one of these interpretations, but rather by all of these interpretations together; and even then, never completely, never exhaustively, never once-and-for-all. Meaning and truth is ongoing, the never ending inter-play between language and phenomenon —and it is a delightful inter-*play*, *ein Spiel*, a meaningful play with language that is so distinctive of Heidegger’s and Gadamer’s thinking. In this hermeneutical phenomenological perspective, there is not one static truth about things but a manifold of unfolding truths, and wisdom comes in being able to let be and gather and behold together the rich multiplicity of interpretations—and in remaining open to the advent of new interpretations and fresh reinterpretations.

But I must emphasize again that for Heidegger and for Gadamer it is the phenomenon itself—the tree, the stone, the human being; hope, friendship, forgiveness; the sun, the moon, the stars; what is whatever—that gives itself to us and, in effect, calls on us and even compels us to bring it forth in language, not once-and-for-all, of course, but again and again *and again*. So, yes, we must learn to live with a multiplicity of interpretations and gather wisdom from them all, but it

certainly does not follow that we must assent to all interpretations or that all interpretations are equally sound. Not for Heidegger and Gadamer. But postmodern authors who follow thinkers such as Derrida come to such a conclusion because they have dropped from view—or refuse to view—the phenomenon that calls forth language. Since, as they see it, language refers only to language (signifiers slipping into other signifiers in the chain of signifiers), and language itself is thought to be no more than an intricately woven quilt thrown over cosmic nothingness and desolation (which I think is the unfortunate legacy of Nietzsche’s thinking), then an interpretation need only be internally sufficiently complex or clever or amusing in order to find favor.

Postmodern thinking falters badly on the matter of meaning and truth, but it is not without its strengths. Its constant concern with unsettling settled readings and interpretations gives us the opportunity to see things afresh; it shakes us out of the old metaphysical and theological habit of looking for static essences and pronouncing eternal verities; it reminds us of the arduousness of the human endeavor of understanding; and it forces us to take into account the lacks, gaps, and holes in our discourses and in existence itself. It checks our human tendency to “secrete” an excess of meaning, as Jacques Lacan puts it, which covers over the broken places of existence. But the problem is that postmodernist thinking undermines its own worthy enterprise with its breezy nihilism that rightly turns off

and turns away thinking men and women in the natural sciences, social sciences, and the humanities who, some twenty centuries after the ancient Greeks, *still* wonder and *still* desire to know.

So, let us heed once again Husserl's call to return "to the things themselves." The scientists working at the cutting-edge of their fields do this exceedingly well. They attend to the phenomenon with painstaking care—they are humble before it and even obedient to it—and they have at least an *implicit* awareness that the language that they are employing is provisional as they attempt to make manifest what shows itself. Of course, this supple language of discovery has the tendency to "harden" over time into a pure formalism, just as the original proto-phenomenological terms of Plato and Aristotle (such as *eidos*, *morphe*, and *energeia*) devolved into a static essentialism in the later metaphysical tradition. As a result, not surprisingly, what we often find in scientific education is that the language of a temporally and historically unfolding investigation of phenomena comes to be presented as mere "facts" about fixed components of things that are understood to be just out-there-present, altogether independent of our inquiring and naming activity. Textbook scientists, no less than textbook metaphysicians, need to return to the things themselves!

But even if we do accomplish this and attend very carefully to the phenomena themselves, we must still learn to live with a multiplicity of meaningful interpretations. As Heidegger put this, we must release ourselves to the “mystery” (*das Geheimnis*) of things in the sense that phenomena show themselves in an inexhaustibly rich way that can never be entirely “taken” by any one “take.” (And his point is also reflected in his critique of the notion of the “concept” of a thing. In the German, the word for “concept” is *Begriff*, which is derived from the verb *greifen*, to *seize*; similarly, in English the word concept comes from the Latin word *capere*, again meaning to seize and capture. Hence his criticism of the underlying idea that in “conceptualizing” something, we are seizing it once and for all in a word.) When Heidegger says that we should learn to “let things be,” he does not mean that we should have nothing to do with things or that we should withdraw into a passive compartment before things, but rather, that we need to learn to step-back from insisting on any one interpretation of things. We need to allow phenomena to show themselves in multiple ways and thereby allow a multiplicity of interpretations to flourish.

What troubles those in the humanities about the scientific interpretation of phenomena is that its “take” on things “takes” things out of the fabric of the life-world, the whole rich matrix of relations in which we find ourselves, and in which live out our lives. The extreme distantiation, objectification, and de-

contextualization of an entity, which is characteristic of the scientific interpretation, disturbs us because it so removes us from the familiarity of the life-world in which we normally encounter ourselves, others, and things. (Science de-worlds us and things; art can, too, but Heidegger tended to see art primarily as re-worlding.) At the pre-reflective level, we can discern this discomfort in the average, everyday uneasiness that human beings have in going to the doctor or entering a hospital. People want to get out of the ‘examining’ room as soon as possible so that they can return to the intricately and richly woven fabric of their life-world. At the level of reflection, we find evidence of this discomfort in the plethora of contemporary manifestoes in the social sciences and the humanities that decry science’s objectification of nature, human beings, animals, and things. Heidegger himself was sometimes given to this kind of lamentation about science and technology, which, in my view, only underscores how profoundly right he was about the importance of the life-world for us human beings. The scientific interpretation of reality is at a far remove from the life-world, and this can make us uneasy. Yet we must be able to release ourselves to it as well and allow it to flourish along with all the more humanistic interpretations of what-is. Dismissing, denouncing, or even just trivializing the scientific interpretation is not a viable option, but, unfortunately, precisely all of this is happening today on the fundamentalist right—but also on the postmodern left.

I will bring my reflections to a close for now. The kind of ‘examined life’ that is proper to ‘philosophy’ enables us to clarify the most fundamental matters, so I encourage all of you who are inclined to this kind of thinking to allow yourselves to pursue this path, a road *far* less taken these days. And what have we clarified this evening? That we human beings dwell in and through our interpretations. We have no choice because we are what we are, radically finite beings who have the word (*logos*). But as I have endeavored to show, to say that human understanding is interpretive is not at all to say that we must abandon our quest for meaning and truth, as has become so fashionable to maintain in postmodern circles at American universities. But, on the other hand, this hermeneutical turn does indeed entail that we let recede into the past the old metaphysical and theological notion that we can have a complete and untrammelled conformity of word and thing or that we can arrive at a single univocal, totalizing, unshakably certain “take” on all that is. To live with a multiplicity of meaningful interpretations, a multiplicity of truths, is our lot as human beings. Wisdom comes in accepting this—and living well requires not the certainty of Abraham, nor the willfulness of Zarathustra, but the discernment of an Odysseus.