
Direct Experience

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Following is an excerpt from the opening chapter of Being on Earth: Practice In Tending the Appearances, by Georg Maier, Ronald Brady, and Stephen Edelglass. This chapter was written by Brady. For more information about the book and the authors, see the note in “News from the Institute.”

The term “experience” seems to be necessary for any modern English speaker — we continually find that there can be no substitute for the notion. After all, “experience” contains our only evidence of the world, or rather, our only evidence that anything really is, which makes it fundamental to our sense of reality. The term itself derives from a Latin original meaning “test” or “proof.” From the Latin past participle we get the term “expert,” and every entry under “experience” in the Oxford English Dictionary implies the same positive handle on knowing. And in English, an idea, no matter how abstract, must be “sensible” if it is to be considered at all; the underlying reference to experience is linguistically applied to distinguish between “sense” and “nonsense.”

This is why it seems so odd, and so disturbing, that today “experience” often bears exactly the opposite connotation. “Of course, I can only speak from my own experience, but ...” or “Our experience of the matter differs,” which reduces the meaning of the term to something as relativized as “point of view.” Even if the dictionary has not yet caught up with this usage, the average speaker finds it totally familiar. But the odd dissonance this reversal of meaning can create is another matter. Empirical science, for example, should be based upon experience, if we follow the etymology of “empirical” (from the Greek for “experienced”). I suppose most scientists would still claim that it is. But when the uninitiated attempt to come to grips with the actual practice of a “hard” science, they find that the authoritative language has moved from the positive knowing of the first meaning to the subjectivity of the second. And I speak from experience.

Memories of a Wrong-minded Student

When I began college as a chemistry major, my enthusiasm for science was somewhat dampened by meeting a professor of chemistry who pointed out the difference between my own goals and those he, as an

experienced professional, would call mature. My passion, he noted, was entirely focused on direct experience. My sense of chemical change was invested in sensible qualities: in smells, colors, the effervescence of liquids, the appearance of precipitates, the light and violence of flame, and so on. But, he countered, this was probably closer to medieval alchemy than to chemistry. Chemistry is really a matter of molecular and atomic events of which we can have only a theoretical grasp. By contrast, the sensible experience on which my excitement centered was secondary — it was not the external reality but merely the effect of that reality on the human senses.

I was reminded of this professor when I later spoke to a morphologist at Berkeley about my interest in Goethe’s attempt to approach science by keeping to direct experience. The morphologist responded: “You are interested in this approach because you are a nature appreciator, while I am a productive scientist.” I left his office feeling very deflated. Again a representative of science had put his finger on my immaturity.

I hope the reader can feel some sympathy for my situation. One of the difficulties with scientific accounts of the world is their apparent insistence on an “objective” reality that cannot be directly experienced, with the resulting demotion of experience — what our senses make out of the world — to a mere show that differs substantially from “what is really there.” This is something we all know and do not think about very much. When I entered college as a chemistry major this line of reasoning did not distress me greatly, despite the professor’s warning. I had no serious difficulties in basic chemistry and positively loved “qualitative chemistry” — a course given completely to the analysis of unknown compounds, in which sensible qualities like the colors of precipitates were important for the detection of elements.

Arriving at “quantitative chemistry,” however, I entered a realm where everything was done mathematically and the mathematics themselves were grounded in an imperceptible molecular world that we could access only by theoretical models. (Years later I discovered that one could teach the course by deriving the mathematics directly from the experienced phenomena, but this is almost never done, and no one showed me the connection at the time.) I now found that the chemistry professor with whom I had my college interview understood my problem better than I did. My first

reaction was to feel the world of chemistry, which had previously contained some of the most beautiful and mysterious experiences of the natural world, now becoming gray, dry, and lifeless. My second reaction was to leave chemistry.

By the time I arrived at Berkeley I was a graduate student in literature. The morphologist had it right — I was an appreciator, and even, as the chemist had feared, a romantic. After all, I now read Wordsworth, Coleridge, Keats, Shelley, Schiller, and Goethe and took them seriously. I suppose I knew that these writers often appealed to a criterion of significance that was both rooted in direct experience and “merely aesthetic,” by which most scientists would understand “merely pleasing.” But unlike my original mentors I still didn’t understand how this sort of corruption disqualified me for science. When I came across Goethe’s scientific works, I became fascinated with his insistence that one need not depart from direct, sensible experience in order to do science. But when the morphologist pointed out that this interest made me a “nature appreciator,” the words seemed to invoke an equivalent of original sin. For a moment my “appreciation” appeared as an entirely subjective act — an assignment of value based on my own pleasure that had no meaning for scientific truth.

It was not long after the conversation with the morphologist — I was still crossing the campus — when I realized that something was wrong somewhere. What had happened to the first meaning of “experience”? I was standing at the edge of the eucalyptus grove. The massive trees towered far above me; their leaf and nut litter covered the floor of the grove. The morning sun was growing warm and the air was pungent with eucalyptus. I could hear birds and a buzzing sound from some unseen insect tribe. At that moment sensible reality seemed very impressive. Was this just my indulgence in appreciation? If I called these things “tangible” and “concrete,” was my criterion merely aesthetic?

How common, I wonder, is this dilemma? In retrospect I wonder how many people come to some form of this question, perhaps more than once, but eventually drop the whole business. Surely that was the advice implied by my counselors. From the judgment that an interest in the sensible qualities of chemistry showed immaturity to the conclusion that a science based on immediate perception was merely “nature appreciation,” my tutors presented a unified front. A modern education seems to produce a tolerance for the dissonance between the two meanings of “experience,” and, most importantly, a willingness to switch to the subjective meaning whenever our experience, if taken



too seriously, might bring us into conflict with accepted theory.

I have become more acutely aware of these things in the years since that Berkeley morning, for although I did not fully realize it at the time, at that very moment I switched from defense to offense. I could not escape the sense that the botany professor’s remarks implied a serious error. Of course, we cannot claim importance for a viewpoint merely because we happen to like it — that is, “appreciate” it — but this sort of criticism simply cannot apply to the importance of direct perception. The immediate evidence of the senses is not a “point of view,” and the first meaning of “experience” — the test of reality — is still valid. Even the scientist cannot afford to lose the ground of experience. I seemed to see it clearly. A mistake had been made.

I resisted the temptation to return to the Botany Department looking for a fight. I saw that the relation between the two meanings of “experience” had not been sorted out correctly, but I was not yet ready to defend my insight. For one thing, I did not understand how or where science, ostensibly based on experience, had demoted experience to a subjective status. Besides, how could a graduate student in literature presume to detect a flaw in so authoritative an institution as science? Big game is hunted with big artillery. My training, it seemed, had left me unarmed.

Over the intervening years, however, I could not let the matter drop, although I began to suspect that current

training left everyone unarmed. I proposed a dissertation on the crossover between scientific observation and aesthetic experience in Goethe's science. Naturally, the Literature Department wouldn't hear of it. Aesthetic experience, they repeated knowingly, is important to literature but not to science. With a certain sense of déjà vu, I left Literature. The people in History of Ideas were more reassuring. They were confident that Goethe's connection between aesthetics and science would make a good dissertation, *provided*, and they stressed the necessity of this, I would keep to the task of tracing influence. Whether Goethe was right or wrong in this matter could not be part of a historical discussion. When I balked, they sent me to Philosophy. The Philosophy Department said they were glad to get me. For how long? I wondered.

Being Serious

This book came to be written when two physicists and a philosopher compared notes. We all shared a distrust of the way direct experience was demoted in the sciences, but more importantly, we thought there was room to do otherwise and do better. Of course, this position was not easy to sell. After all, the development of mathematical physics was made possible by discovering a world that could be the object of *numerical measurement* — in Galileo's abstraction, a world inhabited only by *bodies* divested of all but "primary qualities" (shape, velocity, size, mass, and number). Galileo performed the feat of abstraction, but physics has pursued it since, and, like Galileo, has generally assumed that the resulting picture is not merely a way of looking at the world (a way that allows mathematical treatment), but *the* way of looking — the only true approach to the reality of the world that human cognition can make.

The enormous powers secured by this mode of investigation have produced such an overwhelming impression of success that its authority is beyond question. In one sense, the *truth* of the method is obvious. And yet the image of reality that the sciences have developed leaves out a good amount of the experientially known as uninformative — that is, *less than real*. This conflict has bothered artists and philosophers more than scientists, but it lies at the heart of our present culture. I doubt that anyone who has had any scientific education can escape moments when this dissonance is painfully felt. It is such a normal part of life, in fact, that it has become a background condition for all we do and is hardly noticed until we come to one of those disappointing moments when, perhaps, an aesthetic valuation falls prey to scientific representation.

For all our familiarity with this conflict and our recognition of the authority of science, the three of us did not see the divorce of the scientific and the experiential as a demand of truth. Truth was indeed secured in the sciences, in the verifiable measures of physics and other sciences, but this accomplishment did not, to our minds, mean that the scientific world picture was identical with reality. The truth of a measure is not able to specify its meaning. Only a larger context can do that. Let me explain.

The opposition often felt between the view of much of science and the claims of immediate experience began with the Galilean split between the primary qualities and "secondary qualities" (direct sensations such as colors, sounds, tastes, and smells). The primary qualities are those that, in the Galilean argument, *cannot be divorced from the concept of a body*. The secondary qualities can be divorced, however, and Galileo, reasoning that they were not necessary to bodies, saw no other source for them but the human senses, concluding that "they reside only in consciousness" (Galileo 1957, p. 274). Descartes and Locke were in substantial agreement with this judgment, although they argued that a particular sensation — let us say a certain color — can only appear on a surface if the surface possesses the power of producing that color in the human sense organ, thus linking the color to the observed body. Yet the color itself still resided only in consciousness, for it remained the *effect* of powers possessed by the observed body and/or the sensing mechanism, and the effect need not resemble its cause.

And now a problem comes into view. It is impossible for a world possessing only primary qualities to appear sensibly, since the senses speak in terms of secondary qualities. The primary qualities are discovered through the senses as *relations* between secondary qualities, and must be abstracted from appearances by a mental act. (Shape, for instance, is seen only through variations in color and/or brightness.) Thus we know the world of physics only mediately, as it is deduced from the world of appearances, but the world of appearances is known more immediately, as it appears to experience. Indeed, the primary qualities are part of this experiential picture, but when they have been abstracted from it a great deal of the apparent world has been left behind, existing, it would seem, only as a mental picture in an individual consciousness. This is the *demotion* of direct experience spoken of above.

The effort to distinguish elements of experience in this manner, picking out and relating only those that belong to Galileo's concept of bodies, must be recognized as a great feat of abstraction — one that represents, historically, an advance in human thinking. (*Continued on p. 17*)

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This is the very act that produced an object for mathematical physics. After all, the primary qualities are numerically measurable, while the others are not. But to venture further and treat the resulting division as a distinction between what exists “externally” — independently of the observer — and what does not is another matter entirely. Here something has been added to the original distinction between primary and secondary that is not derivable from the distinction itself. We have no a priori knowledge that only the measurable is real (“out there”) and the rest merely subjective (“in here”). During the Renaissance, however, for reasons that pertain to the times, Galileo’s distinction was given just this significance. (For discussion of this historical development, see *The Marriage of Sense & Thought* by Edelglass, Maier, et al. 1997.)

Of course, for the Renaissance mind as well as the modern, the lawful mathematical relations revealed through measures testify to an underlying reality. This conclusion derives from equating the independently *real* with the *lawful*, a fundamental premise of Western thought.

The equation of real with lawful, however, says nothing about what qualifies as lawful. Thus it does not follow that what is not numerically measurable is also not lawful. Yet this second judgment was added to the first, and the West after the Renaissance adopted a worldview that fosters a deep split between theoretical knowledge and experience. This view assigns external, lawful, and independent existence only to the world measured in terms of primary qualities. It demotes to a contingent existence, dependent upon the individual observer, everything left over after the

primary information has been abstracted. This demotion is what I meant by remarking that the truth of the measure does not provide a context adequate for specifying the meaning of the measure. The discovery of a lawful reality permitting mathematical treatment says nothing about the remainder of experience that does not permit such treatment.

The assumption that “lawful” is identical with “measurable” is often entertained today and it still, for many thinkers, serves to distinguish individual subjectivity from independent reality. In general, scientific methodology still depends upon measurement of primary qualities, and, since those qualities are assumed to be independent of the observer, it uses methods of measurement that either omit the observer entirely (by substituting mechanical devices) or attempt to escape subjective variation by generalizing on the reports of multiple observers. Immediate experience is *individual* — not a good candidate for what is normally termed “scientific observation” — and far richer than its measured relations. So “scientific observation” represents but a small part of the original content.

Left over when the scientific information has been abstracted is the part of experience that, like colors or sounds, cannot be known except through direct experience. The majority position holds that a direct connection to individual human consciousness disqualifies this portion of experience from scientific investigation. But there is a minority position, and we have found a historical thread of opposition to the majority position running from its inception in the renaissance to the present day. After all, an exhaustive equation of law with numerical measurement is a weak premise — hardly something that will stand up to direct experience.