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REPLY TO MAURO DORATO

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(1) I believe that Yuval Dolev, Mauro Dorato, and Steven Savitt are absolutely right, and that the question whether the past and the future are "real" is a pseudo-question. In my view, what still survives of my 1967 "Time and Physical Geometry", after their criticisms, is that the philosophical position that statements about the present and the past have determinate truth values, whereas statements about the future do not, is incoherent. But, like these three authors, I am *not* convinced by a well known criticism due to Howard Stein. Stein's objection to my argument was that I overlooked the possibility of *relativizing the notion of reality* (or "having become", in his terminology). On his proposal, what "has become" relative to an observer at a time is what is in the "here-now" of that observer or else lies in the past light cone of that observer, and this is a relativistically invariant notion. In my view, Stein simply misses the issue I was addressing, which is whether future events are real *in the standard metaphysical understanding of "real"*, on which what is "real" is precisely supposed to be *mind-and-observer-independent*. At best, Stein's view, like Dorato's, rejects my question, but if one is going to reject the question, I prefer to be up front about that rejection, in the way Dorato is.

Let me mention that, as an immediate consequence of the Lorentz formulas, the time displacement of events at a distance depends not only on their relative speeds, but also on their relative distance, and the effect is significant even when the relative velocities of the observers is small relative to the speed of light. In fact, if we choose a star system that is only ten light years from here, then if I am in Singapore (roughly on the Equator), and my friend Jack Smart is at the antipodal point from me (also near the Equator), so that our relative velocities due to the Earth's rotation are of the order of 3200 km per hour, and each of us chooses a rest system in which he himself is at rest, we will differ about when an event in that distant system took place by *several minutes*!

(2) As to what Mauro Dorato says about the relationship between the manifest image and the scientific image, I want to say that the manifest image can certainly be corrected by science—but not only by science: philosophical reflection has long been a major source of correction.

Let us begin with the original form of the idea of two incompatible "images"—Eddington's celebrated "two tables". According to Eddington, there is a table that physics has shown to not really be solid because it is mainly empty space, and therefore the table of

the manifest image is not identical with the table of the scientific image. That argument depends on assuming that the ordinary language term "solid" has a semantics which makes almost all of its descriptive occurrences false. But what kind of linguistic methodology is that? Doesn't it make more sense to claim that there is a sense of "solid" in which to say that something is solid *isn't* to say anything about its microstructure? In fact there is a field of physics called "solid state physics"—but if physics has really shown there are no solids, how can there be a solid state physics? Physics may have shown there are no ghosts, but it doesn't go on to create a field of physics called "ghost state physics", or "ectoplasm physics"!

Similarly, there are exaggerated claims sometimes made by psychologists about the alleged falsity of "folk psychology" (another part of the "manifest image"). It is very easy to construct clever experiments to show that people sometimes rationalize and invent a reason why they did something, which wasn't actually the cause of their behavior. But to conclude that we don't really *eat because we are hungry*, we don't really *turn on the water in the bathtub because we want to take a bath*, we don't really *take an unpleasant job because we need money*, we don't really *try to impress that person because we are in love with them*, etc., is nonsense.

Nevertheless, I do expect that science will *sometimes* correct folk psychology. In fact, it already has. Here is an example: I know that there are a lot of mistakes in Freud. He had the typical Viennese *Gelehrter's* arrogant sureness about his own opinions, *plus* the great psychologists' over-ambitiousness (recall that in the *Treatise of Human Nature,* Hume claimed to have done for psychology what Newton did for physics!). Freud vastly overgeneralized from a small number of cases, he was overly reductionist, and so on. *But the unconscious is still importa*nt. And I think folk psychology did undergo a correction as a result of psychoanalysis. Theophrastus, the head of the Lyceum after Aristotle, is the author of a book called *The Characters*. Reading it, I was struck by his sketch of what we would call a "neurotic behavior", a sketch of someone who has a compulsion to spread rumors, and even misses the trial of a civil suit he himself has brought, being so busy with his irrational behavior. Theophrastus's *description* of this behavior was marvelous, but when it comes to *explanation* he just threw up his hands, saying, as it were, "utterly inexplicable, utterly irrational behavior". But even the man on the street now appeals to unconscious motivation in such a case. In fact, any branch of psychology may lead to some *corrections* in so-called "folk psychology". But notions from folk psychology, including the central notions of *belief* and *desire*, remain indispensable.

The specialized perspectives of the sciences can be overly "reductionist" at times, to be sure, but they are also the perspectives from which we demolish, for instance, the pseudo-science of racism. In fact, the most powerful destructive criticisms of so-called "racial science" came from the modern synthesis of genetics and evolutionary theory. So, I am opposed to any view which sets science and ordinary language in opposition to each other. There are times in which ordinary language *does* need corrections—

from science, and, as I said before, also sometimes from philosophy. Forgive now what may look like a digression.

When Ernst Gombrich was 26 years old, he had a friend, a publisher, who said to him "I had someone lined up to write a short history of the world for children, and he quit on me—it has to be written in six weeks". Gombrich replied "I'll do it". (He needed the money, was in love with a girl he wanted to marry, had a PhD in art history and no job.) And he wrote his amazing *A Little History of the World*. His short account of what was good about Enlightenment is particularly important. Gombrich begins by listing things that everyone thought they "knew" in the years before the Enlightenment—things like "of course" you have to beat children, "of course" it is all right to beat your wife, "of course" you have to burn witches, and so on. The point Gombrich wished to make is that the central virtue of Enlightenment was *tolerance*.

So, here is a case of ordinary language being corrected—the use of the term "witch" got "corrected", for example. But the Enlightenment's attack on superstition required also support from science. In this case the philosophy and the science worked together. One needed both philosophical arguments and a new view of the facts. So, it is not that the whole job can be done by science, because science can be used by anybody. Late capitalism has developed a technology of manipulating public opinion—which is a *scientific* technology. So, there's nothing intrinsically good or bad about science. But there is a moral duty to fight pernicious errors. Michele Moody-Adams wrote a book in 1997 called *Fieldwork in Familiar Places: Morality, Culture and Philosophy* in which she does a beautiful job describing what she calls "affected ignorance"—the deliberate "not knowing" the things that you have a moral obligation to know. I think that this is a tremendously important notion: the prevalence of *affected ignorance*. And of course the evil person would then try to make other people *affectedly ignorant*.

So, science can be enlisted in bad causes, and exposing that it is *bad* science is very important. We should show that those negative stereotypes are wrong, and wickedly wrong, and combat affected ignorance of the facts that refute those stereotypes. I would say that destroying those stereotypes is itself a moral obligation, since the presence of a stereotype which is factually nonsense in the majority of the population, or even in a significant minority, is itself a significant form of oppression. I think that (and in this I agree with Habermas) it is a feature of discriminatory oppressive positions—those of the racists, the oppressors of women, the defenders of cruelty to children and so on—that they always invent facts that are not facts. They encourage affected ignorance of the truth, and here truth is on the side of justice.

In sum, I think that when the so-called "manifest image" is wrong, it can and must be corrected, but there is no principled incompatibility between the scientific image and the manifest image. Sellars and Eddington were just wrong about that.