IV REALISMS AND ANTI-REALISMS

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The last of four lectures given in Taiwan, November 2007. The first two were in the “Experience and Truth” conference, National Taiwan University. The third was at the Science, Technology and Society workshop at National Tsing Hua University.

I. “On the historical roots of scientific reason.”
II. “Where do mathematical objects come from?”
III. “The laboratory style of thinking and doing.”

1. Length. The texts of lectures I-III, which are on-line, were quite long! This on-line version of lecture IV will be much shorter, because I want to leave time in the spoken presentation to deal with questions about, and criticisms of, my first three lectures. I always regard talks like these as an opportunity to learn from my audience. I try to listen when I talk. It often takes me months fully to digest what I have heard, but I shall try to make some immediate responses, and have them posted on-line as a post-script to this lecture.

2. Plurals. This lecture was advertised as “Realism and anti-realism,” but I want to emphasize that many very different philosophical doctrines bear these names. I shall be discussing only some of them, but I shall be discussing more than one. That is why I have changed the title. I shall be talking about some and only some “realisms”.

3. Not realism versus nominalism. I need to begin by saying what I am not very interested in, at least for the purposes of today’s lecture.

There is a series of debates in the history of Western philosophy which begins with Plato and Aristotle, and continues to the present. These were most intense, I think, among the great Arab philosophers in Mesopotamia and North Africa, and then among the scholastic Christian philosophers of the European high middle ages. What is at issue is described in many ways, and doubtless many things are at issue. They have two faces, ontological and grammatical. Traditionally, the emphasis has been on the ontological aspect, on questions about what there is. But scholastic philosophers often turned the discussion in the direction of grammar, just as twentieth century analytic philosophers turned to semantics. In ontology, it is always tempting to engage in what Quince called semantic ascent, to turn from a discussion of things to a discussion of names for things.

One way to pose an ontological question is to take the example of justice. Plato, as you know wrote his classic work on political philosophy, around the concept of justice. Socrates keeps on asking, what justice is. His respondents give various examples of justice, but he keeps on protesting that they are just examples, not justice itself. People propose definitions of justice,
and he interjects examples that satisfy the definition, but are examples of unjust acts or arrangements. He also cites just acts or arrangements, that do not satisfy the definitions.

Sometimes one wants to say that it all boils down to the question, “Is there anything in common among just acts and arrangements, other than that we recognize them as just, other than that they are called just? The extreme nominalist replies, “No!” There is nothing in common between just acts except that the name “just” is applied to each of them. There is no property of being just over and above the name and its use. Such extreme nominalism could well be called “name-ism”. Not very many philosophers have been willing to state and defend extreme name-ism, but some come close.

At the opposite end of a spectrum is extreme realism, which holds that justice itself is a real entity, over and above arrangements and acts that are just. It is not merely the class of all just entities, but something that exists, independently of any acts, arrangements, decisions or whatever individual items you may think of. This is one kind of realism. Sometimes the abstract, real, entities are called universals, and sometimes what is at issue in some realist-nominalist debates is called “the problem of universals.”

Times have changed. I spoke to one well-known British philosopher who writes about realism, and asked if anyone still spoke of realism in connection with the problems of universals. He tartly replied “no” in the rather abrupt manner of a scholar accustomed to dismissing the tedious questions of inept undergraduates.

I would be less brusque. But so far as is possible, I shall avoid this kind of realism and anti-realism, that can be expressed in terms of universals. That is why I head this section, “Not realism versus nominalism.”

4. Words. Bertrand Russell has a lovely seemingly simple discussion in “The World of Universals”, chapter IX of his 1912 primer, The Problems of Philosophy. “When we examine common words,” he writes, “we find that, broadly speaking, proper names stand for particulars, while other substantives, adjectives, prepositions, and verbs, stands for universals.” A little later on the page, “Seeing that nearly all the words to be found in the dictionary stand for universals, it is strange that hardly anybody except students of philosophy ever realizes that there are such entities as universals.”

Someone listening to Bertrand Russell might ask, well, what if our language did not break up into this way in substantives, (that is, common nouns), verbs, and so on? Would we be so inclined to say that nearly all the words in the dictionary “stand for” universals? Is it at all natural to even pose this problem, if one speaks Chinese rather than a European language? Bertrand Russell in other contexts himself argued that a great deal of Western philosophy was simply wrong-headed because it was so locked into the subject-predicate grammar and the corresponding substance-attribute metaphysics. There is not a substantial literature on this subject in English-language philosophy journals. (References to be inserted here.) Might the root be deeper still? Might the issues of realism versus nominalism arise from structures of European languages? Nietzsche probably thought so.

“Ontology recapitulates philology”. Quine used that sentence as an epigraph for his 1960 book, Word and Object. He attributes it to James Grier Miller, one of the founders of Systems Theory, but I have never found it in the writings of that man himself, so I do not know what he
meant by it. I think Quine meant that by a suitable choice of grammar and language, you can commit yourself to only most sparse ontology. Get your semantics right, and philosophy will mutely follow order.

One could, however, use the aphorism to say that *ontological problems are by-products of the grammar of the language spoken by the philosopher*. I have, you will find, some sympathy with this suggestion. That is not to say that I subscribe to Quine’s “ontological relativity.” Something more like, “the linguistic relativity of philosophical problems.”

5. A last word on names and linguistic relativity. **Nietzsche and Chuang Tzu.** The idea of linguistic relativity is an all too tempting notion to play with. People on their second or third exposure to philosophy love to dabble in relativism of this and other sorts. Although I am sympathetic, I do not want to overdo it. Some philosophical concerns or instincts seem rather universal. One of them is a fascination with names. It seems to transcend difference in grammar, and to be recognizable in cultures whose linguistic expression of names is very different from anything I well understand. Without going to far afield, we find, in many civilizations, philosophers puzzled by names, and tending to make quite remarkable comments about names. I shall just mention two statements, one from 19th century German, and one from Chinese written more than 2100 years earlier. I look forward to hearing your views on the English translation of the latter that I shall have to use. Both appear to be concerned with names and reality – and hence in some way with realism and anti-realism. First, Nietzsche in *The Gay Science*:

§ 58. *Only as creators!* — There is something that causes me the greatest difficulty, and continues to do so without relief: unspeakably more depends on *what things are called* than on what they are. The reputation, name, and appearance, the usual measure and weight of a thing, what it counts for—originally almost always wrong and arbitrary, thrown over things like a dress and altogether foreign to their nature and even to their skin—all this grows from generation unto generation, merely because people believe in it, until it gradually grows to be part of the thing and turns into its very body: what at first was appearance becomes in the end, almost invariably, the essence and is effective as such! Only a fool would think it was enough to point to this misty mantle of illusion in order to destroy the world that counts as essential, so-called “reality”! We can destroy only as creators!— But let us not forget this either: it is enough to create new names and estimations and probabilities in order to create in the long run new “things”.

One main point of this aphorism is, as its heading states: *Only as creators*. A sub-theme then must be that we can undo a named idea only by creating some positive concept in its place. Deconstruction for its own sake is self-indulgent play. It is, however, for the other thought that I single this out: Unspeakably more depends on *what things are called* than on what they are. And: It is enough to create new names and estimations and probabilities in order to create in the long run new “things”.

I happen cautiously to agree with Nietzsche when it comes to names of kinds of people. I have used this quotation in a paper stating my current position on an entirely different interest of mine, namely the classification of people and the interaction of classifications with the people

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themselves. But, subject to qualifications again, I am not inclined to this way of thinking when it comes to names of things. I am, if you want a label for me, very much a materialist, as will become more clear towards the end of this talk.

I wish to put beside Nietzsche a small passage, equally out of context, from Chuang Tzu, in what are called The Inner Chapters. As I understand it, it is presumed that the Taoist philosopher wrote these chapters himself, and they are not the work of later commentators.

I shall take two remarkable translated sentences out of context:

(1) A name is only the guest of reality.

Pause to reflect on this. It is a beautiful saying, quite regardless of what Chuang Tzu meant, or of whether it is a correct translation of a Chinese sentence written 2300 years ago. Pierre Hadot has said that ‘To write the history of thought is sometimes to write the history of series of misinterpretations’. He was telling the history of an even older adage attributed to Heraclitus, “Nature likes to hide.”

We usually think that misinterpretation is a terrible thing. We ought to find out what the sage really meant! So we should, but we should also welcome innovative misinterpretations that endure. Nature herself is said to evolve by fruitful mistranscriptions of genetic code. Misinterpretation can, on occasion, be more creative than merely sound interpretation.

You will have to tell me whether (1) is a good translation of the preserved Chinese text, let alone the reliability of that text. Whatever I say about it will be a misinterpretation of what is possibly a mistranslation of what is possibly an incorrectly transcribed ancient sentence. That does not bother me. As it stands, (1) is exquisite; it also makes you think. I hear it, first, as a strong commitment to a reality, wholly independent of, and prior to, naming, classification, and any human intellectual activity. Reality is just there, and occasionally it welcomes this or that name as a good fit – but only as a guest.

That idea is not exactly “realism” in any of the philosophical senses at which I gestured earlier. We might say that it is truly realist, or even mystically realist, expressing a deep respect for what is. A few pages on, however, we read another sentence that seems to be a radical expression of nominalism:

(2) Naming things makes them real.

That sounds just like Nietzsche! What follows next, immediately changes the tone.

Why real? Real because real. Why nonreal? Nonreal because nonreal. So the real is originally there in things, and the sufficient is originally there in things. There’s nothing that is not real, and nothing that is not sufficient.

I shall take all this to express what I might call “really-real realism,” or, better, “really-real realism.” Unlike scholastic realism, which expresses a commitment to the “reality” of universals, concepts, and classes, these aphorisms appear to express a profound respect for a reality that stands complete, no matter what humans do or think.

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5 The Inner Chapters, p. 23.
Perhaps an English-speaking 21st analytic century philosopher can see (1) and (2) as compatible in this way: A complete reality is prior to any conceptualization. When a name is a welcome guest of that reality, it picks out a thing, or a kind of thing, which is thereby real because it is a guest of that complete reality. The same philosopher may suggest that the ancient sage thinks of the complete reality as the ground of what we say and know about things, but at the same time rejects the European Enlightenment bid to provide foundations for knowledge.

This little aside may indicate that I do not take too seriously the idea that philosophical problems are relative to a language group.

6. General ontology and the special sciences. To return to my main theme, I said I do not want to talk much today about realism versus nominalism in general. This is because I am concerned with questions about existence that arise in the sciences. For example, around 1970 people began to talk about “scientific realism.” They meant the question whether the unobservable theoretical entities, such as those postulated in physics, exist. Scientific realists said yes, an entity exists if a theory about is true, even if the entity is in principle incapable of being observed. Scientific anti-realists – such as positivists and instrumentalists – said the entities do not exist. They are only instruments of thought; the terms that we use to express them do not denote entities that exist. Bertrand Russell cast this in a precise form by claiming that whenever possible we should substitute logical constructions for inferred entities.

I interject here that positivism can be deadly. Historical positivism, introduced in France by Auguste Comte in the 1830s, was once a live philosophy, complete with churches which would replace those of organized religion. I have been at one such church, in the capital of the most southern province of Brazil, Porto Allegre. The city square of that capital is like many, with an imposing government building, with a cathedral, etc., but in the centre is the magnificent gilded monument to positivism and progress, many metres high. In the 1890s, after the restoration of elected government, the first two governors were from the Positivist Party. The second one died of small-pox because he did not believe in germs, and was not inoculated. He did not believe that theoretical entities really exist.

A more modest and reflective positivism escapes that danger. Bas van Fraassen’s constructive empiricism maintains only that we cannot assert that they exist. We should not believe they exist, and we have no grounds for believing or asserting that they do. Worse, in most cases we could not have any such grounds, no matter how empirically adequate our theories are. But theories about small-pox are empirically adequate, so we should get inoculated against the small pox.

I would like to maintain that realism debates in the special sciences have nothing much to do with more general ontological debates, or with any problem about universals. Certainly van Fraassen does not sound much like a classic mediaeval nominalist such as William of Ockham. But I have a difficulty in pushing this thought very far. This is because I take the traditional view that mathematics is a science. “Platonism” in mathematics is a version of the realist doctrine about mathematical objects, and anti-Platonism is an anti-realist doctrine. Both, I claimed in lecture II, are by-products of the introduction of the mathematical style of reasoning. We are right back to ontology, for the abstract objects of mathematics were one of the pillars of Plato’s entire realistic philosophy.
For a nice confirmation of this, let us go back to Russell’s handy *Problems of Philosophy*. In my second lecture, “Where do mathematical objects come from?” I wanted to show how European philosophy had been obsessed with mathematics from the word go. I started the discussion by quoting from Russell’s *Problems*: “The question which Kant put at the beginning of his philosophy, namely ‘How is pure mathematics possible?’ is an interesting and difficult one, to which every philosophy which is not purely sceptical must find an answer.”6 That is from chapter VIII, on *A Priori* knowledge, the chapter just before the chapter on universals with which I began this talk. *That* chapter ends with a lead on to “the following chapter, where we shall find that it solves the problem of *a priori* knowledge, from which we were first led to consider universals.”7

Thus Russell saw realism versus anti-realism, insofar as that concerns the ontological reality of universals, as intimately connected with realism and anti-realism about mathematical objects. Historically speaking he was beyond question correct. So I cannot keep the general metaphysical issues so far away from the sciences as I would have liked.

7. Dummett’s type of anti-realism. I am not yet finished with types of realism that I shall not talk about. (But which I spend too much time talking about!) Michael Dummett began his career as a logician and philosopher of mathematics. He was deeply attracted by intuitionism and constructivism about mathematics, yet at the same time resisted Wittgenstein’s *Remarks on the Foundations of Mathematics*, at least in the way that he read them. He sharply distinguished the denial of the law of the excluded middle, from the denial of bivalence, the doctrine that propositions must have one of two truth values. He turned realism into a thesis about bivalence. He applied this across the board. A man who has never in his life had the opportunity to display or even to intimate whether he is courageous or not is such that the proposition, ―He was a courageous man‖ is not true, but also, ―He was not a courageous man‖ is not true. He flirted with various anti-realist doctrines about history, and in general encouraged an anti-realist discourse on anti-bivalence that flourished particularly among British philosophers. Once again, that is an anti-realism that shall pass by.

8. An allusion to Richard Rorty. The late Richard Rorty, who made a lecture tour in Taiwan some years ago, thought that the entire family of realist-anti-realist debates was misguided. In particular he thought that of the ones that were going on in America during the 1980s. I recall him saying, in conversation, in what was for him a pretty bitter tone of voice, “realism is mickey-mouse.” In the slang of those days in meant that the entire discussion was not worthy of a children’s comic.

Perhaps I should interject here a word about my attitude to Rorty’s philosophy. This is because the book based on his lectures here in Taiwan has, I am told, been widely received and acclaimed. I am sure it deserves to be. From the very beginning I have always been ambivalent about his way of doing philosophy. I do not agree with his running many kinds of discourse together, as part of an undifferentiated conversation of mankind. Yes, it is an important value to

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keep the conversation going, in as untrammelled a way as possible. But I betray a very different instinct from Rorty’s. I am a splitter, a divider, an analyst; I believe that the making of distinctions is not an end in itself, but it is one without which no ends can be served. I always put *plurals* into titles! I am not talking about “realism” but about “realisms”!

I was asked to write a puff for Rorty’s last book, the fourth volume of his collected essays published by Cambridge University Press, which came out just before he died this year. I spent a long time writing 50 words in order to express my admiration but not to conceal my ambivalence. In the end, the Press decided to put only one puff on the back of the book, mine. I shall quote myself, for these words really demanded a lot of work:

> Wise and immensely readable, these essays hammer home John Dewey’s theme: Philosophy matters when it changes what we want to talk about, and how we do it. In detail, they usually seem to me to be blissfully right or infuriatingly wrong: the fact that they can itch so makes me deeply suspicious of a lot of the philosophy that I hold dear.  

That is how I feel, and it is even how I feel about the proposal that realism/anti-realism debates are “mickey-mouse”. Rorty said that to me 20 or 30 years ago. It annoyed me then, but even so I was inclined to agree with it, and hid from myself the fact that I agreed with him. I am even more thus inclined today. I am also inclined to make more use of Nelson Goodman’s epithet, and to speak of irrealism, using it to express a certain indifference to traditional realist and anti-realist debates.

9. *Arthur Fine’s Natural Ontological Attitude.* Rorty referred to Arthur Fine as his “favourite philosopher of science.” Fine’s paper, “The natural ontological attitude,” begins with the sentence, “Realism is dead.” Rorty correctly summarizes: Fine asserts “that we should be neither realists not antirealists, that the entire realism-antirealism issue should be set aside.” Well, I agree, it should be set aside. But it won’t let itself be shunted into retirement. Fine doubtless intended “Realism is dead” to recall Nietzsche. Well, whatever else is the case about God, existence-of-God debates have not gone away in Western thought, since Nietzsche wrote his famous aphorism. I have found it worth while to come to some understanding of the appeal of both realisms and anti-realisms. That has been one theme of my first three lectures. Call it the by-product thesis. In the ontological debates that beset the sciences, the various types of objects rejected by anti-realists, and pound-on-the-table asserted by realists, are all by-product of the styles of scientific thinking by which they are introduced.


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9 Ibid., p. 133.
Disputes about both reason and reality have long polarized philosophers of science. […] 

**Is either kind of question important? I doubt it.** [Yes, I still doubt it, 25 years after these words were published!] We do want to know what is really real and what is truly rational. Yet you will find that I dismiss most questions about rationality, and am a realist on only the most pragmatic of grounds.¹¹

Incidentally, I did not say I was a pragmatist, that is, a card-carrying member of the Peirce-James-Dewey philosophy, although Peirce remains a hero of mine, just as Dewey was always Dick Rorty’s role-model. I have explained this in a recent paper explaining why I am not a pragmatist.¹²

My book was a plea for experiment. The key sentence was, *Experiment has a life of its own,* independent of theory. The first part of the book dutifully explained in a slightly light-hearted but academically sound way, what one needed to know about recent debates in philosophizing about theoretical science. When the book was published, philosophers were simply not interested in experiment. I wanted to open a door. Scientific realism was all the vogue in 1980. I used the raging controversy about scientific realism as a peg on which to hang my plea for experiments.

I was lucky. Unknown to me, lots of young people were beginning to open the door in their own ways. By the end of the decade, experiment was positively fashionable among philosophers, historians and above all sociologists of science.

Thus there was no incompatibility in my own mind, between my experimental argument for scientific realism, and what I said on page 2, that I doubted that realism (or rationality) debates were important. Sometimes I wish I had asked Rorty for permission to quote his remark, “realism is mickey mouse.”

11. **What was the experimental argument?** *(a) If, [not “only if”].* Many people remember the sentence, “If you can spray them, then they are real.” This was made in connection with an electron gun that sprayed polarized electrons in order to attain certain well understood effects on a super-cooled super-conducting super-fluid ball of niobium.

An astounding number of readers first took this to mean not only what it says, but also, “they are real only if you can spray them.” I simply never thought that. The late Ernan McMullen was one honest philosopher of science who confessed to me, with apologies, that he had really made that elementary error of reading.

More generally, my thought was that the standard debates about scientific realism were always indecisive because they were conducted at the level of theory and often of semantics. They always were conducted as if the debaters fully subscribed to what John Dewey called “the spectator theory of knowledge”. As if we just look and talk, and never do anything in the sciences. My general theme was, only if you get away from the spectator theory and start realizing that

¹¹ *R&I*, p. 2.
science is doing as well as reasoning, will you lose interest in the debates that so flourished in the 1980s.

12. **What was the experimental argument?** *(b) The strongest, not the conclusive, argument.* My experimental argument was given in chapter 12. The first sentence is, **Experimental work provides the strongest evidence for scientific realism.**

This is not because we test hypotheses about entities. It is because entities that in principle cannot be ‘observed’ are regularly manipulated to produce a new phenomenon and to investigate other aspects of nature. They are tools, instruments not for thinking but for doing. (p. 262.)

And so on. I went on to make the consideration, to my mind, rather compelling. I have never thought of it as much more than that. I also thought that if an entity has not yet got to the stage, where we can manipulate it, use it to do something, use to find out about something else, then we do not yet have a compelling argument for its existence. *I did not say that in those circumstances that we have no argument, or that we cannot reasonably think that the entity exists.* I certainly did not say or imagine, “failing manipulability, the entity does not exist.”

13. **When we can not interfere.** I went on to write a paper about gravitational lenses, just at the time that these were big news, that is, 1986, after the first four had been detected.₁₃ I took these as a perfect example of something with which we could not interfere, something we just could not manipulate. Einstein had thought, on the basis of a calculation made on the back of an envelope, that we would never detect a gravitational lens. That was, in his opinion, wonderful. We would know that this phenomenon is going on, all over the universe, but never see it! He was wrong. In the 1980s they began to be detected; now they are commonplace. We still cannot interfere with them.

I ended the paper perhaps a little too flippantly. I suggested that one can still be a sort of phenomenalist about gravitational lenses, regarding them as theoretical entities that admirably fit and explain the phenomena. I even make such a suggestion about black holes – that we are always going to be in a Duhemian position with respect to those, that all we can do is “save (solve) the phenomena.” I should have ended a little earlier in the paper, saying simply the gravitational lensing was, at the time, breaking news in observational astronomy, of immense potential, but that the experimental argument for realism would never apply. Thus, the strongest argument for realism could not be invoked. That did not mean that one should conclude, “we cannot believe that they are real.” If anyone thought that was what I implied or intended, namely that we ought not to believe they are real, I apologize.

14. **The self-vindications of the laboratory sciences.**₁₄ A paper of this title was written after I have begun to develop my philosophical uses of Crombie’s idea, of styles of scientific thinking.

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I understand that it has recently been translated into Chinese, and that some people here have read it in that version.

The paper was not about realism or anti-realism. Indeed it was written with the firm conviction that debates about realism are by-products of the laboratory sciences. If anyone wishes to apply Nelson Goodman’s epithet, “irrealist,” to that paper, I will gladly accept. But of course irrealism does have a tincture of anti-realism.

The argument was that experiment, theory and apparatus constitute plastic resources, a term that I took from Andrew Pickering. Each can be moulded and adapted to fit the other. Duhem had already showed how theory can be moulded to take account of recalcitrant experimental results, but also, how one mould an account of experiment to preserve theory. I added that there are many layers of theory and of experiment, including theories of the apparatus, and also the material stuff is a layer, the physical apparatus. All of these are changed and modified in the course of “getting” an experimental result. The result is a kind of self-vindication which is not viciously circular, indeed it is incredibly painful and often cannot be done. When it cannot be done, it is research that never gets published and is erased from history. Most research is erased.

15. The stability of the sciences. One aim of the paper was to address the stability of the sciences. Philosophers had lived through an era of literal revolution – of space, time, and causality. But – let us say after 1950 – revolutions stopped occurring in physics. It was as if we had got it right. I have even argued that from now on there will be no more revolutions, only surprises. I argue this as one small point in a long discussion of ultracold experiments. I can only point at these thoughts now. I happen to believe that physics itself is changing to make my thesis about self-vindication more and more apparent. Here is a recent sentence that I noticed in my current hobby, cold atoms.

“[…] our results point to the fact that the [Bose-Hubbard model] is sufficient to explain all the features discovered in the experiment and that the experiment was a clean realization of the model as expected.”

The model is right because it explains how the experiment went, and the experiment was a good one because it fit the model. How is that for self-vindication?

16. A critique that I take very seriously. There is one author who has seen that my self-vindication paper reveals terrible tendencies to anti-realism. This is Rom Harré’s “Recovering the experiment.” Harré rightly draws to a parallel between my doctrine and some of Bruno Latour’s ideas. He parodies both of us: “The laboratory is a closed system and outside of it is the wild, forever terra incognita.” (p.360.) The difference is that Latour often implies, exactly so, whereas I do not think like that at all. I strongly encourage anyone who is looking at my “self-vindication” paper to read Harré’s critique, and ponder what I should say in reply.

17. Recapitulation. For the purposes of this “preprint” of a lecture, I shall end my simply repeating the by-product thesis from the first lecture. I hope to have had enough criticism in the

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course of the first three lectures, to see in what ways it would be most useful to develop the thesis for the present audience, and to include those thoughts on-line as a sort of post-script to this talk.

**Ontological debates:** Each new style in the sciences introduces a new class of objects to study. But matters do not rest there. Each new class of objects invites an ontological debate, often described as realism versus some kind of anti-realism. These debates are mere by-products of the styles of thinking.

Take the controversies about mathematics between so-called Platonists and constructivists. Or take the confrontation between those who say that unobservable theoretical entities are real, and those, from Auguste Comte to Bas van Fraassen, who deny it. In systematics, some contend that the species are real, but not the higher taxa. Others insist that genera, classes, orders are real, are part of the natural order. And so on. Each ontological debate takes place within its own scientific style. That is because every style of finding out creates its own objects. We are on the verge of a genealogical theory about the nature of the classic ontological debates in the sciences.

Ontological debates within the sciences result, then, from the introduction of objects by styles of thinking. But there is more to it that, something more Eurocentric. In European language we talk about these objects using sentences in which names for the objects serve as grammatical subjects. This leads on to a third point, emphasized by Nietzsche long ago: European languages demand an existential presupposition for terms in the subject position.