# SOME REPLIES TO QUESTIONS POSED BY STUDENTS

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**Abstract:** Answering to the questions posed by students, I clarify my position on four main topics: (i) the pragmatic maxim; (ii) the relation between my conception of truth on one hand, and epistemic conceptions of truth and the idea of the convergence of our cognitive efforts on the other; (iii) the skeptical challenge; (iv) the relationship between science and philosophy.

**Key Words:** Skepticism, Transcendental Proofs, Truth, Pragmatism, Science, Philosophy

## 1. *Answer to question 7*[1]

This question – addressed both to me and Professor Westphal – concerns the difference that the pragmatic maxim makes to philosophy.

The pragmatic maxim came into being in answer to the question of how it is possible to make our ideas clear; it differs from other answers to that question because it invites us to look at the practical-applicative components of our intellectual constructs. It was formulated by Charles Sanders Peirce and adopted and defended in different ways by William James and John Dewey. A vast literature has been published on the topic of both an interpretative and generally theoretical kind, regarding its correct formulation, the way of intending it, its area of application and its justification.

On the general level I have nothing to add to the answer that Professor Westphal (2015b: §5) gave to this very same question. I would only like to underline the great importance of the distinction he made between neo-pragmatists such as Quine and more authentic and ‹substantial› pragmatists who, like Wilfrid Sellars, moved along the lines of the ‹fathers›

[1] I present my answers in order facilitating unified treatment. References cited in these Replies are listed in the bibliography to my main contribution.

of the pragmatist movement. Such a distinction is important not only from the perspective of historical reconstruction but also from the theoretical point of view, because authentic pragmatists had the merit of bringing to the fore the necessity of making reference to the *pragma* and the externalism this involves in reaching clarification of philosophical questions. This holds true, in particular, for two aspects of the pragmatic maxim I would like to briefly consider now: its critical value and its usefulness in light of an explicative reconstruction of our concepts.

Concerning the first aspect, the pragmatic maxim reinforces the distrust of metaphysical and ontological speculations developed on a markedly aprioristic basis, neglecting the dimension of experience and cognitive practices. In this sense it proved to be a useful critical tool in the hands of philosophies of an empiricist, positivist and scientific inspiration, finding convergence with Kantian criticism of traditional metaphysical systems. In this regard I would like to pay homage to the philosophical tradition of my country by reminding the readers that the pragmatic maxim was adopted and analyzed by two Italian pragmatists, Giovanni Vailati and Mario Calderoni. These philosophers (both, unfortunately, prematurely deceased) had the merit of seeing and discussing – well ahead of Quine – the relationship between the conception of meaning based on the pragmatist criterion and Pierre Duhem's criticism of the possibility of crucial experiments (either verifying or falsifying), criticism that led to the development of the holistic conception of experimental control (see Vailati 1905/1972: 220–222; Calderoni 1924: 260*ff.*).

Calderoni also realised how the defense and the use of the pragmatic maxim in an anti-metaphysical function could draw some advantages from the attention to the so-called procedural aspects of philosophical discussion. From this perspective such a maxim

> says only that the onus of proving that a certain assertion has some meaning or how it acquires one befalls to the person enunciating it and not to the person who hears it being enunciated. This, which may seem of little importance, has instead a great importance, similar to the importance of some procedural rules that may appear to be only a negligible

> pedantry, but are the ones without which the possibility of knowing and punishing a crime would vanish. (Calderoni 1924: 263–264)

This attention to the procedures – Calderoni continues – is particularly relevant in the case of philosophy:

> as we can say that the refusal to declare the sense of the sentences used under the pretense that it is evident and intuitive is the constitutive, constant methodical device of a good half of past and present philosophical schools. (Calderoni 1924: 264*f.*)

As far as the second aspect is concerned, the pragmatic maxim has the merit of leading to the emergence of the importance of *pragma* in order to reach an explicative reconstruction of notions that play a crucial role in science and philosophy. For example, it is a wide-spread conviction that Einstein's adoption of an attitude very similar to the one expressed by the pragmatist criterion allowed him to sharpen the operational-verificational analysis of simultaneity, and so to formulate the special theory of relativity with the consequent setting aside the notions of absolute time and space. What is less known is the deep influence that Vailati and Calderoni's ideas exercised on the Italian mathematician Bruno de Finetti in elaborating his subjectivistic conception of probability (see Parrini, 2011a).

Coming, finally, to my philosophical position, it also rests, among other elements, on the conviction that, after the numerous objections addressed to the neo-positivist verification principle, a critical attitude towards metaphysics can be taken up only moving along the track marked by Kant, in other words taking as a starting point a general theory of knowledge. I think, though, that also to justify a general theory of knowledge it is fundamental to see how effectively we operate when we are engaged in the cognitive activity in any field of human knowledge, from the scientific to the historical and the legal one. In order to understand what knowledge is, we need to draw not only upon the analysis of the main epistemological concepts considered in abstract, but also upon the analysis of what we really do when we try to know something. On this point I found my position near not only to one famous Einstein statement

about physics and the physicists (1936), but also to Professor Westphal's position. In fact, Professor Westphal interprets and revalues the essential aspects of original pragmatism, placing at the center of attention the dimension of «what we *do*, *how* we do it, and what we do it *with*; in short: our practices and procedures» (see Westphal 2015e: §3.3). I also believe that a theory of knowledge so devised can welcome Kant and Hegel's cognitive semantics, rightly rehabilitated by Professor Westphal. This reinforces my critical attitude toward metaphysics and today's possible worlds semantics, regarding which I fully share what Professor Westphal says at the end of § 2.2 of his answer to my paper (Westphal 2015b).

## 2. *Answer to question 4*

I am asked to specify the relationship between my positive philosophy and Peirce's characterization of truth in terms of the indefinitely long run convergence of the scientific community's opinion towards a dynamic (evolutionary) reality that constrains inquiry.

In § 5.4 of *Answer to Question 7* Professor Westphal (2015b) rightly observes that Peirce's statement should not be intended as a «*definition* of truth», but as «an idealization of what may ultimately be found to be true». With this premise, I would like to specify that the central importance I ascribe to *pragma* is one of the main reasons for my strong distrust not only of Kant's notion of transcendental, intended in the strong and genuine sense in which it is defined in the *Critique of Pure Reason* (see Parrini 2015a: n. 1), but also of the use of the notion of convergence to characterize the aim and development of cognitive activity, especially as realized in scientific research.

Differently from what some have suggested, my conception of truth is not to be understood as an epistemic conception of truth. For example, we must not compare it, let alone confuse it, with the doctrine of truth as «an *idealization* of rational acceptability» theorized by Hilary Putnam in a particular phase of his thought (Putnam 1981: 55). For me truth is … truth, and has all that strength familiar also (and I would add especially)

to those who try to manipulate it. What do I mean by this? I mean that for my notion of truth, what Kant said about the notion of *Wirklichkeit* holds true (1781[1]–1787[2]/1985: 113–115, A79–83, B105–109, 239, A218= B265*f.*), in other words: reality is a category and therefore a primitive indefinable concept.

Obviously considering reality a primitive indefinable concept is not tantamount to denying that this concept has a content of its own that distinguishes it from other primitive concepts such as that of ‹possibility› or of ‹substance›; it only means that the concept of reality, on a par with the other primitive concepts, cannot be characterized on the basis of the complex of criteria that usually guide us in its application, in other words: it is empty ‹criterially› (see Parrini 2015a: n. 10). In fact for Kant the postulates of empirical thought in general are not definitions of the modal notions of reality, possibility and necessity, but principles that license, govern and limit their use within the boundaries of experience. In the case of the category of reality, this means that in Kant's conception the application of such a concept is constrained by the constitutive components of phenomenal objects, in other words by the formal and the material components of our knowledge. These two kinds of components, and not reality, are the constraints on inquiry. What we consider real is the result of the interaction between them. Similarly, for my conception (admittedly inspired by Kant's), the epistemic criteria that usually guide the use of the notion of truth (for example, the reference to the data of experience, recourse to presuppositions of a theoretical nature, and methodological rules such as those of simplicity, elegance, compactness, and so forth) must not be considered as defining marks of such a notion, but as a plastic and historically variable set of values and epistemic principles that discipline its use in an orienting and fallible way, conditioning our always revisable attributions of truth. For me reason and rationality have an open texture; and we must recognize the same open texture to the set of our guiding criteria of truth (see Parrini 1995/1998: VII/2; see also Parrini 2015a: n. 10).

That is why saying, as I do, that truth is only and simply truth entails that it cannot be dealt with epistemically, not even according to modali-

ties that allow (at least in the intentions of proponents) to maintain the distinction between ‹deeming true› and ‹being true›. For me truth possesses the same strength that it possesses for the metaphysical realist, although it does not indicate, as holds for classic metaphysical realism, some kind of ‹mysterious› form of correspondence between our cognitive claims and reality in itself. Similarly to goodness and beauty, truth is a value, a regulative ideal that sustains and inspires the synthesis of today and future experiences via concepts, theories and methodological rules submitted to a continual process of adjusting and improvement. In fact, our usual and intersubjectively testable applications of this category seem to be destined to always remain tentative, revisable, and irremediably closed within the circle (linguistically, theoretically, and methodologically structured) of some experiences ‹motivating› other experiences, without ever being able to attain a reality considered in itself.

In my conception of truth there is no place for the idea of a convergence (more or less gradual) of past, present, and future cognitive synthesis. In fact I not only reject the forms of metaphysical realism grouped under the name of ‹convergent realism› and the forms of absolute idealism similar to Hegel's, but also the forms of logical-formal idealism in line with Cassirer's conception of a progressive convergence of the cognitive process towards the individuation of the «ultimate *logical invariants*» of experience (Cassirer 1910/1953: 269; emphasis in the German edition: 357). I do not even favor Peirce's characterization of truth in terms of the indefinitely long run convergence of the scientific community's opinion towards a dynamic reality that constraints inquiry. What I deem real (in an empirical sense) is, as I was saying, the fruit of a synthesis of the material and formal components of knowledge, where to such a distinction between formal and material we need to ascribe not an absolute value, but a purely relative value as dependent on the structure of the context of epistemic justification within which we move (as happens in the case of the a priori/a posteriori and analytic/synthetic distinctions). Therefore what we consider as real, in the sense of *empirically* real, *is* not a constraint of inquiry; the (empirically) real is something constituted and the constraints of research are instead the formal and material

components, especially the component we commonly call experience, in other words that complex of empirical data that in the various contexts of inquiry, until one has proof to the contrary, one tends to consider unproblematic.

I would like to add that since 1976, when in *Linguaggio e teoria. Due saggi di analisi filosofica* I proposed the idea of a contextualised or relativized *a priori* – insisting already then on the necessity of a ‹double› relativized a priori: the analytic-linguistic one and the genuinely constitutive one of a synthetic-theoretical nature (see Parrini 2015a: n. 1) – I was very careful not to advance any pretense to thus resolve the problems of incommensurability raised by Thomas S. Kuhn and Paul K. Feyerabend. Differently from Michael Friedman – who many years later also advocated the idea of a relativized *a priori* (though without distinguishing between those two kinds of a priori and recognizing the necessity of both) – I do not think that saving the rationality of science requires adapting Peirce's idea and considering «our present scientific community … as an approximation to a final, ideal community of inquiry … that has achieved a universal, trans-historical communicative rationality on the basis of the fully general and adequate constitutive principles reached in the ideal limit of scientific progress» (Friedman 2001: 73).

Positions such as Friedman's (just quoted) remain entrapped in a conception (the so-called conception of a ‹unique grand narrative›) that neglects some valid acquisitions made by postmodernist experience. Moreover, such a conception is not easily put into practice, in view of the considerable problems met by the notions of continuity, convergence, and also (quoting the expression used by young Reichenbach) of *stetige Erweiterung*[2] when trying to apply them to the historical transformations of knowledge. I think it is possible to defend the rationality of our cognitive efforts (in particular, and mainly, those that find their accomplishment in scientific achievements) without relying upon the undoubtedly ‹heavy› idea of an intellectual process that proceeds *de claritate in claritatem* and neglects the actual, torturous development of knowledge.

[2] See the German edition of Reichenbach (1920/1965: 77).

To preserve the value of rationality for our claims of truth, or of approximations to truth, it is enough to individuate and maintain the purely value-laden and regulative dimension of the idea of truth as a tension towards the highest form of systematization and conceptual articulation of experience – without hiding from ourselves the possibility that, in some cases, also our best efforts towards comprehensive cognitive synthesis must stop at levels of integration that are not altogether satisfying (see Parrini 1995/1998: 143–159).

## 3. *Answer to question 6*

The question posed by Nicola Freschi asks me to specify the relationship between my positive philosophy and skepticism.

First of all I wish to say that also regarding the problem of skepticism my conception tried to avoid any compromise with the idea of the convergence of our cognitive efforts.

A particularly strong version of the skeptical objection, very close to the one found in this question, has been highlighted with particular clarity by Professor Westphal in a passage of his book on Hegel's epistemological realism where he specifies that

> Sextus has fingered a real difficulty for any theory undertaking the establishment of the resemblance or representational reliability of the senses, namely, proving that sensory states are reliable when there can be no independent access to the relation between those states and their putative objects. (1989: 13)

In order to deal with skepticism with adequate accuracy, I would need to revise the full complex of arguments and logical-conceptual analyses I developed in *Knowledge and Reality. An Essay in Positive Philosophy* (1995/1998) and later in the works connected to this book which provided the material for two other books: *Sapere e interpretare. Per una filosofia e un'oggettività senza fondamenti* (Parrini 2002) and *Il valore della verità* (Parrini 2011). This is evidently impossible. I can indicate, though, two key aspects of my ‹positive philosophy› that are linked with

the theme of skepticism. It seems to me that they can draw strength from some ideas that Professor Westphal had the merit of re-proposing, making relevant and re-developing.

The first such aspect is this. I am convinced that if we place ourselves in the absolutistic point of view typical of metaphysical realism, it is impossible to overcome the skeptical objection, including global perceptual skepticism. If we take as our starting point the idea that philosophy has to explain how it is possible for knowing subjects endowed with our perceptive and intellectual skills to attain a knowledge capable of giving us (albeit in hypothetical and conjectural terms) a representation of reality in itself (Kant's *Ding an sich*), then skepticism is inevitable and I do not think that there are arguments (including transcendental arguments) capable of facing and neutralizing it. Like my Professor Giulio Preti, I believe that metaphysical realism and skepticism are two faces of the same coin; actually, skepticism should be considered as a kind of immanent or inner criticism of absolutism – but this for me is *not* to be considered as a proof of its logical inconsistency; see Parrini (2004, esp.: 189–199).

If instead we take as our starting point the idea that knowledge is a fact and not a problem, in other words, that in spite of the skeptic's efforts, he fails to convince us that knowing is impossible because this clashes with our experience of being able to develop an activity of a cognitive kind, then the problem we face is one of elaborating a concept or conception of knowledge that can justify, or give account of, our conviction. To achieve such an aim it is not enough to take into consideration what emerges from analyses of the notion of knowledge considered *in abstracto*, such as those resting on truth considered as *adaequatio intellectus et rei* (the putting into practice of which is precluded by skepticism) or those based on characterizing knowledge as *true justified belief* (a characterization questioned by Gettier's well known paradox). It is necessary to integrate the analysis of the abstract concept of knowledge with the analysis of our actual cognitive practices.

The difficulty that emerges at this point is that the results of the analysis of the abstract concepts and the results of the analysis of our cogni-

tive *pragma* are not completely congruous with each other[3]. So, if we want to reach a philosophically coherent notion of knowledge as responsive as possible to both our abstract concepts and to our effective practices, we must move along the line of what Herbart called ‹reworking of concepts› (*Bearbeitung der Begriffen*), and Carnap called ‹explication› of concepts. Only in this way can we reach some epistemological notions of knowledge, truth, and reality that are both self-reflexively coherent and capable of avoiding skepticism. Hence my proposal to intend knowledge as an integrational activity or a rational synthesis of the empirical material, a proposal which finds its accomplishment in a conception of truth as regulative ideal and in a (correlated) conception of reality as empirical reality[4].

Coming to the second aspect, already in *Knowledge and Reality* (1995/1998) I tried to show that my perspective – which aims at keeping away from the metaphysical traits still present in Kant and in Hegel and is rightly called ‹positive› for this reason – allows us to make use of some arguments that hit both skepticism and that Cartesian approach criticized by Professor Westphal too. Modern science in fact does not try to overcome skeptical doubts of a global nature (for example, global perceptual skepticism or hyperbolic Cartesian doubts) and to certify its own legitimacy by searching for indubitable certainties such as those Descartes sought. Modern science overcomes global skepticism by setting it aside and implicitly showing its irrelevance by adequately delimiting the range of its own statements. The generalized skeptical stance depends upon the *generic possibility* of making mistakes or of being deceived, which can be invoked in any circumstance. This possibility «relies on a general, always-available doubt, independent of any specific mode of instantiation or mechanism of operation» (Fine & Forbes 1986: 238). The scientific method instead (in some respects a refining of procedures

[3] In this connection it would be opportune to quote and look in depth into what I called ‹Duhem's Pascalian dilemma›: «We have an impotence to prove, which cannot be conquered by any dogmatism; we have an idea of truth which cannot be conquered by any Pyrrhonian skepticism» (quoted from Duhem 1904–06[1]–1914[2]/1962: 27).

[4] See my answer to Question 4 and Parrini (2015a: n. 10).

we normally use in everyday life) consists in: (a) admitting the possibility of global skeptical doubts; (b) seeing whether in the different contexts «it can be articulated (*i.e.*, made specific, concrete, and testable)» (*ibid.*); (c) if that is not possible, it is legitimate to bracket it off «as a *mere* possibility and proceed» with our work, «returning periodically» to (b) (*ibid*.). Conforming itself to such a method, my positive philosophy states that «the possibility of doubt arising is not itself a reason to doubt of any particular proposition; more exactly, it is not a reason to abstain from using the best beliefs we have – those which have been found to be successful and free from specific doubt – to build on» (Shapere 1984: xxvi; see Parrini 1995/ 1998: 194*f.*).

Nevertheless, the possibility of using successfully the above specified method depends upon having provisionally accepted a rational proposal of explicative reconstruction – rational in the sense that it is based on analyses of concepts and discursive arguments – characterized by these two qualifications: (1) from the substantive point of view it requires us to qualify the reality which is the object of our cognitive claims as empirical reality (and not as metaphysical reality); (2) from the methodological point of view it requires evaluation for its global merits, in other words as an attempt to give an account of the complex of our beliefs, convictions, and experiences in a way we deem optimal with respect to other equally global conceptions (for example, the realism based on the best explanation or Bas van Fraassen' constructive empiricism) – without denying, of course, that this evaluation too cannot rely on demonstratively conclusive arguments and is therefore bound to remain, like the rest of our knowledge, hypothetical, conjectural, and revisable in the light of new possible data.

As I said in my Comment, «Empirical Realism without Transcendental Idealism» (Parrini 2015a), both these points (1) and (2) (empirical realism and misgivings about the possibility of coercive arguments of a transcendental kind) mark the difference between Professor Westphal's position and my own. In spite of this, I share the conclusion of the arguments he developed in his important work on Kant (the existence «of molar objects and events in space and time» [2004: 3]) and I drew from his

perceptive treatment precious elements to better define my own conception.

Two points in Professor Westphal's analysis I found particularly enlightening and congenial to me:

($W_1$) The high value he sets on Kant's epistemic-transcendental reflection, a reflection that I prefer to call epistemic-presuppositional due to my misgivings about the transcendental. This is the specific area of philosophical research and epistemological elaboration and for me it distinguishes itself from both the formal domains of logic and mathematics and those of empirical sciences.

($W_2$) His rich articulation of the fact that at the very level of epistemic reflection we must confront skepticism in general and global perceptual skepticism in particular. Professor Westphal, on the basis of his deep and innovative reading of Kant and Hegel, brought to light how we can neutralise global perceptual skepticism (and with it the Cartesian epistemological approach) by showing that it is linked to an idea of absolutely founded or justified knowledge that has a sense for the formal dominions of logics and mathematics, but is in principle inappropriate to the non-formal domains of empirical knowledge, and therefore for factual knowledge both scientific and commonsense. In other words: skepticism needs to be refuted not so much showing logically its falsity or contradictory nature, but sideling it by showing that the standards of knowledge on the basis of which it pretends to judge the validity of our empirical-factual cognitive claims are *in principle* inappropriate.

I think, though, that epistemic reflection is neither a formal domain such as those of logic and mathematics, nor a factual dominion such as those of the empirical sciences and commonsense. So, whereas I agree with Professor Westphal that it is out of place to invoke global perceptual skepticism to shed doubts on our empirical forms of knowledge, I do not see as illicit or inappropriate recurring to its mere logical possibility to show: (i) the cognitive impracticability of the notion of reality in itself or

metaphysical reality, and (ii) the advantages of a notion of empirical reality that conforms to an idea of knowledge as synthesis, or unification, of the sensible manifold and to an idea of truth as regulative ideal. In Kantian terms I would say that at the level of epistemic reflection we have to deal with both the components regarding the logical possibility of concepts (in our case, the concepts of reality and truth) and the components regarding their real possibility. Therefore epistemic reflection can move – and actually must move – on both these fronts. In the case of the notion of reality it seems to me that its metaphysical connotations clash directly with the Kantian words I quoted in my paper (2015a: § 2) on what is «to us» an object of knowledge if we do not want such an object to reduce to a mere «nothing» (Kant 1781[1]–1787[2]/1985: 134*f.*, A104*f.*). Hence the necessity of a conceptual reworking that leads us to intend reality as empirical reality, the only one we humans can attain knowledge of and with respect to which both the skeptical doubts of a global nature and the foundational requests of a Cartesian kind sound inappropriate.

## 4. *Answer to question 5*

I have been asked to clarify my opinion on the relationship between philosophy and science.

I think that what I said in the preceding answers has already shown the great importance that I attribute to this topic. It is a recurrent theme of my philosophical reflection, to which I also dedicated some specific works (see, for example, Parrini 2012b).

History itself shows that the development of scientific thought and the development of philosophical thought strongly influenced each other. Science in its historical course both influenced and modified some classic themes of philosophical research (for example, the problem of a priori knowledge) to the point that sometimes it appropriated to itself topics previously considered as exclusively pertaining to philosophy (for example, the nature of space and time, or the relations between body and mind); on the other side, the developments of philosophy sometimes

deeply influenced the birth of highly innovative scientific theories, if not ‹revolutionary› (think of the influence of Herbart's ideas on Riemann and the formation of non-Euclidean geometries, or the weight of Hume's analysis of causality on Einstein in conceiving of the Special Theory of Relativity). Also today many topics are dealt with by an intense and fruitful interchange between philosophy and science (for example, the body/-mind question, the relation between scientific theories, the problem of reductionism and others). Therefore I still ascribe a general validity to what Einstein once said regarding a particular branch of philosophy, epistemology:

> The reciprocal relationship of epistemology and science is of a noteworthy kind. They are dependent upon each other. Epistemology without contact with science becomes an empty scheme. Science without epistemology is – insofar as it is thinkable at all – primitive and muddled. (Einstein 1949[1]/1951[2]: 683*f.*)

Nevertheless, when we rightly recognize the existence of structural connections between sciences and philosophical researches, we can also understand the rise of even harsh tensions between them. These tensions are felt with particular intensity in a country like Italy that, starting from the effects of the ‹Galileo case›, has not yet developed a strong and widespread epistemological culture (think, for example, of the contrast between the mathematician Federigo Enriques on the one side and the philosophers Croce and Gentile on the other, which ended, unfortunately, with Enriques's defeat [see Parrini 2004]). Looking especially at the Italian case and simplifying a little, I think that one of the main reasons of ‹misunderstanding› between the followers of the two disciplines derives from the fact that many scientists judge philosophy without knowing it enough, and, on the other hand many philosophers love pronouncing on a science (mainly perceived as an enemy) of which they possess often a generic image not to say imprecise and sometimes even pathetic.

Moreover, we are not always fully aware that scientists and philosophers, although they can have something or a lot in common, always proceed with their own methodologies and interests which differ greatly. For

a philosopher, what matters the most is the analysis of concepts and the search for ‹globally comprehensive› perspectives. On the other hand, for a scientist what matters the most is the ‹growth› of his discipline. So a mathematician has at heart, first and foremost, the development of mathematics, independently of any potential ontological commitment to abstract entities or, perhaps, logical contradictions that may derive from excessive Platonism (at least to the extent that such contradictions do not hinder his work in the field). If we then take a follower of this or that empirical science, what matters most for him are the experiential data, logically and mathematically founded proofs, and the careful screening of circumscribed, or circumscribable, conjectures.

Also on this point Einstein's words are extremely enlightening. Although underlining the importance of epistemology for science and of science for epistemology, he has also observed that

> no sooner has the epistemologist, who is seeking a clear system, fought his way through to such a system, than he is inclined to interpret the thought-content of science in the sense of his system and to reject whatever does not fit into his system. The scientist, however, cannot afford to carry his striving for epistemological systematic that far. He accepts gratefully the epistemological conceptual analysis; but the external conditions, which are set for him by the facts of experience, do not permit him to let himself be too much restricted in the construction of his conceptual world by the adherence to an epistemological system. He therefore must appear to the systematic epistemologist as a type of unscrupulous opportunist: he appears as *realist* insofar as he seeks to describe a world independent of the acts of perception; as *idealist* insofar as he looks upon the concepts and theories as the free inventions of the human spirit (not logically derivable from what is empirically given); as *positivist* insofar as he considers his concepts and theories justified *only* to the extent to which they furnish a logical representation of relations among sensory experiences. He may even appear as *Platonist* or *Pythagorean* insofar as he considers the viewpoint of logical simplicity as an indispensable and effective tool of his research. (Einstein 1949[1]/1951[2]: 684)

I see a good deal of truth in these few sentences that in some ways anticipate Feyerabend's methodological anarchism. For this very reason when

we venture into problematic areas of interest to both science and philosophy, we should be very careful not to set off on the wrong foot. For a start, philosophers should beware not to give evaluations of scientific work on the basis of their needs for an exhaustive system. Expressing evaluations of this kind means doing a bad turn to both disciplines. Philosophy, in fact, will constantly be put at risk of resounding scientific refutations; science will find itself judged on the basis of normative requirements that – if taken seriously – cannot but lead to absurd limitations to the directions that science can follow. On the other hand, it is equally important that scientists do not recognize as legitimate only those reflections in epistemology and in philosophy of science that deal with specific problems and can contribute to their scientific solution. Scientists, in other words, should be able to accept the fact that philosophy aims at clarification and reconstruction that are its own purposes. Just think of the problems connected to skeptical instances that, as we saw, are one of the main reasons of being for the philosophy of knowledge, but are certainly of no primary interest for the development of particular sciences.

I would like to add something on the theme of scientific specialism and nowadays also of philosophical specialism. This, though, would make this answer far too lengthy. Therefore I prefer simply to refer the audience to the essay of mine mentioned at the beginning of this answer.