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978-0-521-09048-3 - My View of the World  
Erwin Schrodinger  
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## SEEK FOR THE ROAD

Wo Rätsel mich zu neuen Rätseln führten  
Da wussten *sie* die Wahrheit ganz genau.

GRILLPARZER

Where riddles led me on to further riddles,  
To *them* the truth was quite precisely known.

AUTUMN, 1925

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## I METAPHYSICS IN GENERAL

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It is relatively easy to sweep away the whole of metaphysics, as Kant did. The slightest puff in its direction blows it away, and what was needed was not so much a powerful pair of lungs to provide the blast, as a powerful dose of courage to turn it against so 'timelessly venerable a house of cards.

But you must not think that what has then been achieved is the actual elimination of metaphysics from the empirical content of human knowledge. In fact, if we cut out all metaphysics it will be found to be vastly more difficult, indeed probably quite impossible, to give any intelligible account of even the most circumscribed area of specialisation within any specialised science you please. Metaphysics includes, amongst other things—to take just one quite crude example—the unquestioning acceptance of a more-than-physical—that is, transcendental—significance in a large number of thin sheets of wood-pulp covered with black marks such as are now before you.

Or, to take it at a deeper level: call to mind that sense of misgiving, that cold clutch of dreary emptiness which comes over everybody, I expect, when they first encounter the description given by Kirchhoff and Mach of the task of physics (or of science generally): 'a description of the facts, with the maximum of completeness and the maximum economy of thought'; a feeling

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of emptiness which one cannot master, despite the emphatic and even enthusiastic agreement with which one's theoretical reason can hardly fail to accept this prescription. In actual fact (let us examine ourselves honestly and faithfully), to have *only* this goal before one's eyes would not suffice to keep the work of research going forward in any field whatsoever. A real elimination of metaphysics means taking the soul out of *both* art *and* science, turning them into skeletons incapable of any further development.

But theoretical metaphysics *has* been eliminated. There is no appeal against Kant's sentence. Philosophy of the post-Kantian period—perhaps right down to our own day—has shown us the tormented writhings of the long-drawn-out death agony of metaphysics.

Speaking as a scientist, it seems to me that it is our uncommonly difficult task, as post-Kantians, on the one hand step by step to erect barriers which will restrain the influence of metaphysics on the presentation of facts seen as true within our individual fields—while on the other hand preserving it as the indispensable basis of our knowledge, both general and particular. It is the apparent contradiction in this which is our problem. We might say, to use an image, that as we go forward on the road of knowledge we have *got* to let ourselves be guided by the invisible hand of metaphysics reaching out to us from the mist, but that we must always be on our guard lest its soft seductive pull should draw us from the road into an abyss. Or, to look at it another way: among the advancing hosts of the forces of knowledge, metaphysics is the vanguard, establishing the forward outposts in an unknown hostile territory; we cannot do without

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such outposts, but we all know that they are exposed to the most extreme danger. Or again: metaphysics does not form part of the house of knowledge but is the scaffolding, without which further construction is impossible. Perhaps we may even be permitted to say: metaphysics turns into physics in the course of its development—but not of course in the sense in which it might have seemed to do so before Kant. *Never*, that is, by a gradual establishing of initially uncertain opinions, but always through a clarification of, and change in, the philosophical point of view.

How we are to come to terms with the announcement that metaphysics is defunct, confronts us as a still more serious and difficult question when we leave the sphere of pure knowledge and consider culture as a whole, including ethical problems. No one, of course, was more aware of this than Kant himself; hence his second critique of reason.

In the course of the last hundred years, the western world has achieved a quite enormous development in one particular direction: that is to say, a thorough knowledge of what underlies natural spatio-temporal events (physics and chemistry) and, based on this, a fantastic abundance of ‘mechanisms’, in the widest sense, have been constructed to extend the sphere of influence of the human will (technology). I feel impelled to state explicitly at this point that I am very far from holding that *this* (especially the second half of it, technology) is the most significant thing that has been happening in Europe during this period. I think it probable that this age, which delights in calling itself the age of technology, will in some later time be described, in terms of its

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brightest lights and deepest shadows, as the age of the evolutionary idea, and of the decay of the arts. But this is by the way; I am concerned now with what is the strongest force at work at this moment.

This partial 'elephantiasis' has meant that other lines of development in culture and knowledge, in the western mind or whatever we are to call it, have been neglected, and indeed allowed to decay to a greater degree than ever before. It almost seems as though the one mightily developing organ has exerted a directly damaging and crippling effect on the others. Rising to their feet after centuries of shameful servitude imposed by the Church, conscious of their sacred rights and their divine mission, the natural sciences turned against their ancient tormentress with blows of rage and hatred; heedless that, with all her inadequacies and derelictions of duty, she was still the one and only appointed guardian of our most sacred ancestral heritage. Slowly, almost unobserved, that spark of ancient Indian wisdom, which the marvellous Rabbi had kindled to new flame beside the Jordan, flickered out; the light faded from the re-born sun of Greece, whose rays had ripened the fruits we now enjoy. The people no longer know anything of these things. Most of them have nothing to hold on to and no one to follow. They believe neither in God nor gods; to them the Church is now only a political party, and morality nothing but a burdensome restriction which, without the support of those no longer credible bugbears on which it leant for so long, is now without any basis whatever. A sort of general atavism has set in; western man is in danger of relapsing to an earlier level of development which he has never properly over-

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come: crass, unfettered egoism is raising its grinning head, and its fist, drawing irresistible strength from primitive habits, is reaching for the abandoned helm of our ship.

II

A CHEERLESS BALANCE-SHEET

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A survey of the final product of western thought, theoretical and practical, over the last fifteen hundred years, is not exactly encouraging. The final conclusion of western wisdom—that all transcendence has got to go, once and for all—is not really applicable in the field of *knowledge* (for which it is actually intended), because we cannot do without metaphysical guidance here: when we think we can, all that is apt to happen is that we replace the grand old metaphysical errors with infinitely more *naïve* and petty ones. On the other hand, in the field of *life* the intellectual middle class has set in motion a practical metaphysical liberation which the noble apostles of that freedom—I mean principally Kant and the philosophers of the Enlightenment—would have shuddered to behold. Our condition, as has often been observed, bears a frightening resemblance to the final stage of the ancient world. And this resemblance does not consist merely in a lack of religion and morals, but precisely in *this* point: that both ages think of themselves as set upon a firm, safe course in the field of pragmatic knowledge, on lines which seem, to the conviction of the age, to be, at least in their general form

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and basic principles, immune from changes of opinion. Then it was Aristotelian philosophy, now it is modern science. If the likeness holds good here, it is a bad look-out for the present state of affairs! No wonder we lack the courage to accept an inheritance so riddled with liabilities and to pursue a line of thinking that is so obviously going to lead us to bankruptcy, just as it did 2000 years ago.

The deeper you try to go into the character of those universal relations which have always been the subject of philosophy, the less you feel inclined to make any pronouncement about them whatever; because you become ever more aware how unclear, inappropriate, inaccurate and one-sided every pronouncement must be. (This negative attitude has nowhere been so strongly asserted as in Buddhist wisdom, which seeks to give it symbolic expression in such contradictory statements as, for example, a thing is neither *A* nor not-*A*, but yet it is not a 'neither *A* nor not-*A*', nor can one say that it is 'both *A* and not-*A*').)

What puts one off when examining what are called objective, historical accounts of ancient or modern philosophy, is that one keeps finding such statements as: *A* or *B* was a 'representative' of this or that view; so-and-so was an *X*-ian or a *Y*-ian, holding allegiance to this system or that, or partly to one and partly to another. Different views are almost always opposed to each other as though they really were *different* views of the *same* object. But this kind of account practically forces us to regard one or other of these thinkers, or both of them, as crazy, or at the very least as totally lacking in judgement. One is then very apt to start

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*A cheerless balance-sheet*

wondering how posterity, including oneself, can possibly think the ill-considered babblings of such blockheads worth any closer attention. But in fact one is dealing, at least in very many cases, with well-founded convictions of highly competent minds, and hence one can be sure that differences in their judgement correspond to differences in the object of it, at least in so far as very different *aspects* of that object were given prominence in their reflective consciousness. A critical account of their thought should, instead of stressing the *contradictions* between them, as is usually done, aim at combining these different aspects into one total picture—needless to say, without compromise, which can only lead to confused and hence *a priori* untrue statements.

The real trouble is this: giving expression to thought by the observable medium of words is like the work of the silkworm. In being made into silk, the material achieves its value. But in the light of day it stiffens; it becomes something alien, no longer malleable. True, we can then more easily and freely recall the same thought, but perhaps we can never experience it again in its original freshness. Hence it is always our latest and deepest insights that are *voce meliora*.



### III

## PHILOSOPHICAL WONDER

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It was said by Epicurus, and he was probably right, that all philosophy takes its origin from θαυμάζειν, philosophical wonder. The man who has never at any time felt consciously struck by the extreme strangeness and oddity of the situation in which we are involved, we know not how, is a man with no affinity for philosophy—and has, by the way, little cause to worry. The unphilosophical and philosophical attitudes can be very sharply distinguished (with scarcely any intermediate forms) by the fact that the first accepts everything that happens as regards its general form, and finds occasion for surprise only in that special content by which something that happens *here today* differs from what happened *there yesterday*; whereas for the second, it is precisely the *common* features of all experience, such as characterise everything we encounter, which are the primary and most profound occasion for astonishment; indeed, one might almost say that it is *the fact that anything is experienced and encountered at all*.

It seems to me that this second type of astonishment—and there is no doubt that it does occur—is itself something very astonishing.

Surely astonishment and wonder are what we feel on encountering something that *differs* from what is *normal*, or at least from what is for some reason or other *expected*. But this whole world is something we encounter only

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*Philosophical wonder*

once. We have nothing with which to compare it, and it is impossible to see how we can approach it with any particular *expectation*. And yet we are astonished; we are puzzled by what we find, yet are unable to say what we should have to have found in order not to be surprised, or how the world would have to have been constructed in order not to constitute a riddle!

Perhaps the lack of any standard of comparison can be felt even more strongly than over θαυμάζειν in general, when we are confronted with the phenomena of philosophical optimism and pessimism. There have been, we know, very notable philosophers—such as Schopenhauer—who have declared that our world is a sad and ill-made place, and there have been others—like Leibniz—who have declared it the best of all conceivable worlds. But what would we say of a man who, having never in all his life left his native village, chose to describe its climate as exceptionally hot or cold?

These phenomena of value judgement, wonder and riddle-finding, which do not refer to any particular aspect of experience but to experience as a whole, and furthermore have impressed themselves not on idiots, but on highly competent minds, seem to me to indicate that we encounter, in our experience, relationships which have never (at least so far), even in their general form, been grasped either by formal logic or, still less, by exact science: relationships which keep forcing us back towards metaphysics; that is, towards something that transcends what is directly accessible to experience—however much we may flourish a death-certificate bearing no less valid a signature than that of Kant himself.