III

The Cardinal Difficulty of Naturalism

> We cannot have it both ways, and no sneers at the limitations of logic . . . amend the dilemma.
> I. A. RICHARDS, *Principles of Literary Criticism*, chap. xxv.

If Naturalism is true, every finite thing or event must be (in principle) explicable in terms of the Total System. I say "explicable *in principle*" because of course we are not going to demand that naturalists, at any given moment, should have found the detailed explanation of every phenomenon. Obviously many things will only be explained when the sciences have made further progress. But if Naturalism is to be accepted we have a right to demand that every single thing should be such that we see, in general, how it could be explained in terms of the Total System. If any one thing exists which is of such a kind that we see in advance the impossibility of ever giving it *that kind* of explanation, then Naturalism would be in ruins. If necessities of thought force us to allow to any one thing any degree of independence from the Total System—if any one thing makes good a claim to be on its own, to be something more than an expression of the character of Nature as a whole—then we have abandoned Naturalism. For by Naturalism we mean the doctrine that only Nature—the whole interlocked system—exists. And if that were true, every thing and event would, if we knew enough, be explicable without remainder (no *heel-taps*) as a necessary product of the system. The whole system being what it is, it ought to be a contradiction in terms if you were not reading this book at the moment; and, conversely, the only cause why you are reading it ought to be that the whole system, at such and such a place and hour, was bound to take that course.

One threat against strict Naturalism has recently been launched on which I myself will base no argument, but which it will be well to notice. The older scientists believed that the smallest particles of matter moved according to

strict laws: in other words, that the movements of each particle were "interlocked" with the total system of Nature. Some modern scientists seem to think—if I understand them—that this is not so. They seem to think that the individual unit of matter (it would be rash to call it any longer a "particle") moves in an indeterminate or random fashion; moves, in fact, "on its own" or "of its own accord." The regularity which we observe in the movements of the smallest visible bodies is explained by the fact that each of these contains millions of units and that the law of averages therefore levels out the idiosyncrasies of the individual unit's behaviour. The movement of one unit is incalculable, just as the result of tossing a coin once is incalculable: the majority movement of a billion units can however be predicted, just as, if you tossed a coin a billion times, you could predict a nearly equal number of heads and tails. Now it will be noticed that if this theory is true we have really admitted something other than Nature. If the movements of the individual units are events "on their own," events which do not interlock with all other events, then these movements are not part of Nature. It would be, indeed, too great a shock to our habits to describe them as *super*-natural. I think we should have to call them *sub*-natural. But all our confidence that Nature has no doors, and no reality outside herself for doors to open on, would have disappeared. There is apparently *something* outside her, the Subnatural; it is indeed from this Subnatural that all events and all "bodies" are, as it were, fed into her. And clearly if she thus has a back door opening on the Subnatural, it is quite on the cards that she may also have a front door opening on the Supernatural—and events might be fed into her at that door too.

I have mentioned this theory because it puts in a fairly vivid light certain conceptions which we shall have to use later on. But I am not, for my own part, assuming its truth. Those who like myself have had a philosophical rather than a scientific education find it almost impossible to believe that the scientists really mean what they seem to be saying. I cannot help thinking they mean no more than that the movements of individual units are permanently incalculable *to us*, not that they are in themselves random and lawless.

And even if they mean the latter, a layman can hardly feel any certainty that some new scientific development may not tomorrow abolish this whole idea of a lawless Subnature. For it is the glory of science to progress. I therefore turn willingly to other ground.

It is clear that everything we know, beyond our own immediate sensations, is inferred from those sensations. I do not mean that we begin as children, by regarding our sensations as "evidence" and thence arguing consciously to the existence of space, matter, and other people. I mean that if, after we are old enough to understand the question, our confidence in the existence of anything else (say, the solar system or the Spanish Armada) is challenged, our argument in defence of it will have to take the form of inferences from our immediate sensations. Put in its most general form the inference would run, "Since I am presented with colours, sounds, shapes, pleasures and pains which I cannot perfectly predict or control, and since the more I investigate them the more regular their behaviour appears, therefore there must exist something other than myself and it must be systematic." Inside this very general inference, all sorts of special trains of inference lead us to more detailed conclusions. We infer Evolution from fossils: we infer the existence of our own brains from what we find inside the skulls of other creatures like ourselves in the dissecting room.

All possible knowledge, then, depends on the validity of reasoning. If the feeling of certainty which we express by words like *must be* and *therefore* and *since* is a real perception of how things outside our own minds really "must" be, well and good. But if this certainty is merely a feeling *in* our own minds and not a genuine insight into realities beyond them—if it merely represents the way our minds happen to work—then we can have no knowledge. Unless human reasoning is valid no science can be true.

It follows that no account of the universe can be true unless that account leaves it possible for our thinking to be a real insight. A theory which explained everything else in the whole universe but which made it impossible to believe that our thinking was valid, would be utterly out of court. For that theory would itself have been reached by

thinking, and if thinking is not valid that theory would, of course, be itself demolished. It would have destroyed its own credentials. It would be an argument which proved that no argument was sound—a proof that there are no such things as proofs—which is nonsense.

Thus a strict materialism refutes itself for the reason given long ago by Professor Haldane: "If my mental processes are determined wholly by the motions of atoms in my brain, I have no reason to suppose that my beliefs are true . . . and hence I have no reason for supposing my brain to be composed of atoms." (*Possible Worlds*, p. 209.)

But Naturalism, even if it is not purely materialistic, seems to me to involve the same difficulty, though in a somewhat less obvious form. It discredits our processes of reasoning or at least reduces their credit to such a humble level that it can no longer support Naturalism itself.

The easiest way of exhibiting this is to notice the two senses of the word *because*. We can say, "Grandfather is ill to-day *because* he ate lobster yesterday." We can also say, "Grandfather must be ill to-day *because* he hasn't got up yet (and we know he is an invariably early riser when he is well.)" In the first sentence *because* indicates the relation of Cause and Effect: The eating made him ill. In the second, it indicates the relation of what logicians call Ground and Consequent. The old man's late rising is not the cause of his disorder but the reason why we believe him to be disordered. There is a similar difference between, "He cried out *because* it hurt him" (Cause and Effect) and "It must have hurt him *because* he cried out" (Ground and Consequent). We are especially familiar with the Ground and Consequent *because* in mathematical reasoning: "A = C *because*, as we have already proved, they are both equal to B."

The one indicates a dynamic connection between events or "states of affairs"; the other, a logical relation between beliefs or assertions.

Now a train of reasoning has no value as a means of finding truth unless each step in it is connected with what went before in the Ground-Consequent relation. If our B does not follow logically for our A, we think in vain. If what we think at the end of our reasoning is to be true, the correct

answer to the question, "Why do you think this?" must begin with the Ground-Consequent *because*.

On the other hand, every event in Nature must be connected with previous events in the Cause and Effect relation. But our acts of thinking are events. Therefore the true answer to "Why do you think this?" must begin with the Cause-Effect *because*.

Unless our conclusion is the logical consequent from a ground it will be worthless and could be true only by a fluke. Unless it is the effect of a cause, it cannot occur at all. It looks therefore, as if, in order for a train of thought to have any value, these two systems of connection must apply simultaneously to the same series of mental acts.

But unfortunately the two systems are wholly distinct. To be caused is not to be proved. Wishful thinkings, prejudices, and the delusions of madness, are all caused, but they are ungrounded. Indeed to be caused is so different from being proved that we behave in disputation as if they were mutually exclusive. The mere existence of causes for a belief is popularly treated as raising a presumption that it is groundless, and the most popular way of discrediting a person's opinions is to explain them causally—"You say that *because* (Cause and Effect) you are a capitalist, or a hypochondriac, or a mere man, or only a woman." The implication is that if causes fully account for a belief, then, since causes work inevitably, the belief would have had to arise whether it had grounds or not. We need not, it is felt, consider grounds for something which can be fully explained without them.

But even if grounds do exist, what exactly have they got to do with the actual occurrence of the belief as a psychological event? If it is an event it must be caused. It must in fact be simply one link in a causal chain which stretches back to the beginning and forward to the end of time. How could such a trifle as lack of logical grounds prevent the belief's occurrence or how could the existence of grounds promote it?

There seems to be only one possible answer. We must say that just as one way in which a mental event causes a subsequent mental event is by Association (when I think of parsnips I think of my first school), so another way in which

it can cause it is simply by being a ground for it. For then being a cause and being a proof would coincide.

But this, as it stands, is clearly untrue. We know by experience that a thought does not necessarily cause all, or even any, of the thoughts which logically stand to it as Consequents to Ground. We should be in a pretty pickle if we could never think "This is glass" without drawing all the inferences which could be drawn. It is impossible to draw them all; quite often we draw none. We must therefore, amend our suggested law. One thought can cause another not by *being*, but by being *seen to be*, a ground for it.

If you distrust the sensory metaphor in *seen*, you may substitute *apprehended* or *grasped* or simply *known*. It makes little difference for all these words recall us to what thinking really is. Acts of thinking are no doubt events; but they are a very special sort of events. They are "about" something other than themselves and can be true or false. Events in general are not "about" anything and cannot be true or false. (To say "these events, or facts are false" means of course that someone's account of them is false.) Hence acts of inference can, and must, be considered in two different lights. On the one hand they are subjective events, items in somebody's psychological history. On the other hand, they are insights into, or knowings of, something other than themselves. What from the first point of view is the psychological transition from thought A to thought B, at some particular moment in some particular mind, is, from the thinker's point of view a perception of an implication (if A, then B). When we are adopting the psychological point of view we may use the past tense. "B *followed* A in my thoughts." But when we assert the implication we always use the present—"B *follows* from A." If it ever "follows from" in the logical sense, it does so always. And we cannot possibly reject the second point of view as a subjective illusion without discrediting all human knowledge. For we can know nothing, beyond our own sensations at the moment unless the act of inference is the real insight that it claims to be.

But it can be this only on certain terms. An act of knowing must be determined, in a sense, solely by what is known; we must know it to be thus solely because it *is* thus.

That is what knowing means. You may call this a Cause and Effect *because*, and call "being known" a mode of causation if you like. But it is a unique mode. The act of knowing has no doubt various conditions, without which it could not occur: attention, and the states of will and health which this presupposes. But its positive character must be determined by the truth it knows. If it were totally explicable from other sources it would cease to be knowledge, just as (to use the sensory parallel) the ringing in my ears ceases to be what we mean by "hearing" if it can be fully explained from causes other than a noise in the outer world—such as, say, the *tinnitus* produced by a bad cold. If what seems an act of knowledge is partially explicable from other sources, then the knowing (properly so called) in it is just what they leave over, just what demands, for its explanation, the thing known, as real hearing is what is left after you have discounted the *tinnitus*. Any thing which professes to explain our reasoning fully without introducing an act of knowing thus solely determined by what is known, is really a theory that there is no reasoning.

But this, as it seems to me, is what Naturalism is bound to do. It offers what professes to be a full account of our mental behaviour; but this account, on inspection, leaves no room for the acts of knowing or insight on which the whole value of our thinking, as a means to truth, depends.

It is agreed on all hands that reason, and even sentience, and life itself are late comers in Nature. If there is nothing but Nature, therefore, reason must have come into existence by a historical process. And of course, for the Naturalist, this process was not designed to produce a mental behaviour that can find truth. There was no Designer; and indeed, until there were thinkers, there was no truth or falsehood. The type of mental behaviour we now call rational thinking or inference must therefore have been "evolved" by natural selection, by the gradual weeding out of types less fitted to survive.

Once, then, our thoughts were not rational. That is, all our thoughts once were, as many of our thoughts still are, merely subjective events, not apprehensions of objective truth. Those which had a cause external to ourselves at all were (like our pains) responses to stimuli. Now natural

selection could operate only by eliminating responses that were biologically hurtful and multiplying those which tended to survival. But it is not conceivable that any improvement of responses could ever turn them into acts of insight, or even remotely tend to do so. The relation between response and stimulus is utterly different from that between knowledge and the truth known. Our physical vision is a far more useful response to light than that of the cruder organisms which have only a photo-sensitive spot. But neither this improvement nor any possible improvements we can suppose could bring it an inch nearer to being a knowledge of light. It is admittedly something without which we could not have had that knowledge. But the knowledge is achieved by experiments and inferences from them, not by refinement of the response. It is not men with specially good eyes who know about light, but men who have studied the relevant sciences. In the same way our psychological responses to our environment—our curiosities, aversions, delights, expectations—could be indefinitely improved (from the biological point of view) without becoming anything more than responses. Such a perfection of the non-rational responses, far from amounting to their conversion into valid inferences, might be conceived as a different method of achieving survival—an alternative to reason. A conditioning which secured that we never felt delight except in the useful nor aversion save from the dangerous, and that the degrees of both were exquisitely proportional to the degree of real utility or danger in the object, might serve us as well as reason or in some circumstances better.

Besides natural selection there is, however, experience—experience originally individual but handed on by tradition and instruction. It might be held that this, in the course of millennia, could conjure the mental behaviour we call reason—in other words, the practice of inference—out of a mental behaviour which was originally not rational. Repeated experiences of finding fire (or the remains of fire) where he had seen smoke would condition a man to expect fire whenever he saw smoke. This expectation, expressed in the form "If smoke, then fire" becomes what we call inference. Have all our inferences originated in that way?

But if they did they are all invalid inferences. Such a process will no doubt produce expectation. It will train men to expect fire when they see smoke in just the same way as it trained them to expect that all swans would be white (until they saw a black one) or that water would always boil at 212° (until someone tried a picnic on a mountain). Such expectations are not inferences and need not be true. The assumption that things which have been conjoined in the past will always be conjoined in the future is the guiding principle not of rational but of animal behaviour. Reason comes in precisely when you make the inference "Since always conjoined, therefore probably connected" and go on to attempt the discovery of the connection. When you have discovered what smoke is you may then be able to replace the mere expectation of fire by a genuine inference. Till this is done reason recognises the expectation as a mere expectation. Where this does not need to be done—that is, where the inference depends on an axiom—we do not appeal to past experience at all. My belief that things which are equal to the same thing are equal to one another is not at all based on the fact that I have never caught them behaving otherwise. I see that it "must" be so. That some people nowadays call axioms tautologies seems to me irrelevant. It is by means of such "tautologies" that we advance from knowing less to knowing more. And to call them tautologies is another way of saying that they are completely and certainly known. To see fully that A implies B does (once you have seen it) involve the admission that the assertion of A and the assertion of B are at bottom in the same assertion. The degree to which any true proportion is a tautology depends on the degree of your insight into it. $9 \times 7 = 63$ is a tautology to the perfect arithmetician, but not to the child learning its tables nor to the primitive calculator who reached it, perhaps, by adding seven nines together. If Nature is a totally interlocked system, then every true statement about her (e.g. there was a hot summer in 1959) would be a tautology to an intelligence that could grasp that system in its entirety. "God is love" may be a tautology to the seraphim; not to men.

"But," it will be said, "it is incontestable that we do in fact reach truths by inferences." Certainly. The Naturalist and I both admit this. We could not discuss anything unless we did. The difference I am submitting is that he gives, and I do not, a history of the evolution of reason which is inconsistent with the claims that he and I both have to make for inference as we actually practise it. For his history is, and from the nature of the case can only be, an account, in Cause and Effect terms, of how people came to think the way they do. And this of course leaves in the air the quite different question of how they could possibly be justified in so thinking. This imposes on him the very embarrassing task of trying to show how the evolutionary product which he has described could also be a power of "seeing" truths.

But the very attempt is absurd. This is best seen if we consider the humblest and almost the most despairing form in which it could be made. The Naturalist might say, "Well, perhaps we cannot exactly see—not yet—how natural selection would turn sub-rational mental behaviour into inferences that reach truth. But we are certain that this in fact has happened. For natural selection is bound to preserve and increase useful behaviour. And we also find that our habits of inference are in fact useful. And if they are useful they must reach truth." But notice what we are doing. Inference itself is on trial: that is, the Naturalist has given an account of what we thought to be our inferences which suggests that they are not real insights at all. We, and he, want to be reassured. And the reassurance turns out to be one more inference (if useful, then true)—as if this inference were not, once we accept his evolutionary picture, under the same suspicion as all the rest. If the value of our reasoning is in doubt, you cannot try to establish it by reasoning. If, as I said above, a proof that there are no proofs is nonsensical, so is a proof that there are proofs. Reason is our starting point. There can be no question either of attacking or defending it. If by treating it as a mere phenomenon you put yourself outside it, there is then no way, except by begging the question, of getting inside again.

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A still humbler position remains. You may, if you like, give up all claim to truth. You may say simply "Our way of

thinking is useful"—without adding, even under your breath, "and therefore true." It enables us to set a bone and build a bridge and make a Sputnik. And that is good enough. The old, high pretensions of reason must be given up. It is a behaviour evolved entirely as an aid to practice. That is why, when we use it simply for practice, we get along pretty well; but when we fly off into speculation and try to get general views of "reality" we end in the endless, useless, and probably merely verbal, disputes of the philosopher. We will be humbler in future. Good-bye to all that. No more theology, no more ontology, no more metaphysics. . . .

But then, equally, no more Naturalism. For of course Naturalism is a prime specimen of that towering speculation, discovered from practice and going far beyond experience, which is now being condemned. Nature is not an object that can be presented either to the senses or the imagination. It can be reached only by the most remote inferences. Or not reached, merely approached. It is the hoped for, the assumed, unification in a single interlocked system of all the things inferred from our scientific experiments. More than that, the Naturalist, not content to assert this, goes on to the sweeping negative assertion "There is nothing except this"—an assertion surely, as remote from practice, experience, and any conceivable verification as has ever been made since men began to use their reason speculatively. Yet on the present view, the very first step into such a use was an abuse, the perversion of a faculty merely practical, and the source of all chimeras.

On these terms the Theist's position must be a chimera nearly as outrageous as the Naturalist's. (Nearly, not quite; it abstains from the crowning audacity of a huge negative.) But the Theist need not, and does not, grant these terms. He is not committed to the view that reason is a comparatively recent development moulded by a process of selection which can select only the biologically useful. For him, reason—the reason of God—is older than Nature, and from it the orderliness of Nature, which alone enables us to know her, is derived. For him, the human mind in the act of knowing is illuminated by the Divine reason. It is set free, in the measure required, from the huge nexus of non-

rational causation; free from this to be determined by the truth known. And the preliminary processes within Nature which led up to this liberation, if there were any, were designed to do so.

To call the act of knowing—the act, not of remembering that something was so in the past, but of "seeing" that it must be so always and in any possible world—to call this act "supernatural," is some violence to our ordinary linguistic usage. But of course we do not mean by this that it is spooky, or sensational, or even (in any religious sense) "spiritual." We mean only that it "won't fit in"; that such an act, to be what it claims to be—and if it is not, all our thinking is discredited—cannot be merely the exhibition at a particular place and time of that total, and largely mindless, system of events called "Nature." It must break sufficiently free from that universal chain in order to be determined by what it knows.

It is of some importance here to make sure that, if vaguely spatial imagery intrudes (and in many minds it certainly will), it should not be of the wrong kind. We had better not envisage our acts of reason as something "above" or "behind" or "beyond" Nature. Rather "this side of Nature"—if you must picture spatially, picture them between us and her. It is by inferences that we build up the idea of Nature at all. Reason is given before Nature and on reason our concept of Nature depends. Our acts of inference are prior to our picture of Nature almost as the telephone is prior to the friend's voice we hear by it. When we try to fit these acts into the picture of Nature we fail. The item which we put into that picture and label "Reason" always turns out to be somehow different from the reason we ourselves are enjoying and exercising while we put it in. The description we have to give of thought as an evolutionary phenomenon always makes a tacit exception in favour of the thinking which we ourselves perform at that moment. For the one can only, like any other particular feat, exhibit, at particular moments in particular consciousnesses, the general and for the most part non-rational working of the whole interlocked system. The other, our present act, claims and must claim, to be an act of insight, a knowledge sufficiently free from non-rational causation to be

determined (positively) only by the truth it knows. But the imagined thinking which we put into the picture depends—because our whole idea of Nature depends—on the thinking we are actually doing, not *vice-versa*. This is the prime reality, on which the attribution of reality to anything else rests. If it won't fit into Nature, we can't help it. We will certainly not, on that account, give it up. If we do, we should be giving up Nature too.