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VOL. XIX.—1944

LONDON:
MACMILLAN & CO., LIMITED
ST. MARTIN'S STREET, W.C.
1944

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THE BRITISH INSTITUTE OF PHILOSOPHY

Message to Readers

The work of the Institute, in spite of great difficulties connected with the war, still goes on. The stringency of the times, however, calls for a special effort to be made by members of the Institute and readers of its Journal to help, in so far as they are able, to make up for the Institute's depleted income.

All who can introduce new members and subscribers to the Journal will be performing a very real service. The Council also appeals for donations from sympathisers, and once more expresses the hope that they will remember the Institute when making arrangements for bequests.

The membership subscription of the Institute is one guinea, which includes the receipt of the Journal, and the option of attending all lectures without further charge.

SINCE the last issue of the JOURNAL went to press, two distinguished philosophers have been lost to British Philosophy by death—Professor de Burgh and Professor Susan Stebbing. The Editor expresses on behalf of readers of PHILOSOPHY deep regard for the memory of these eminent thinkers, who on many occasions made valuable contributions to the pages of the Journal.

We also regret to announce the death, in August last, of Professor R. F. A. Hoernle, Professor of Philosophy in the University of the Witwatersrand, Johannesburg, S. Africa.

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PHILOSOPHY

THE JOURNAL OF THE BRITISH INSTITUTE OF PHILOSOPHY

VOL. XIX. No. 72 APRIL 1944

MORALS WITHOUT FAITH[1]

W. D. FALK, M.A.

YOU have invited me to speak about *Morals without Faith.* Briefly, I take it, this question means: is there any moral law for agnostics? But it might be more interesting to put it rather differently: to ask, not simply whether there is a moral law for those who do not believe in God, but whether there is any such law even for those who do *independent* of their belief? We are then asking: Does being under a moral law mean nothing more than being commanded by God? Is the only incentive for obeying it in our love or fear of Him, the only criterion by which to judge the morality of actions in their conformity to a revealed standard? Or would it be more true to say that the law which God wishes us to obey is that law to which we ought to conform because it corresponds to our nature and conditions in this world, a law which, apart from being God's will, we can understand as being indispensable to the kind of beings we are?

Much depends on which of these alternatives is in fact the case. If the first were true, then, indeed, there would be no morals for agnostics, and for believers none, except those particular laws to which their religion commits them. Hence, if only people could rid themselves of the belief in God's watchful presence they could with a sigh of relief turn to being as grasping, as aggressive, and as self-indulgent as they liked. But, if the second were true, then, even if they disregarded the revealed will of God, they would still only have exchanged one authority for another. Something in their own nature would give them the sense of a categorical *must* keeping their desires and ambitions in check.

In this paper, I shall state the case for this second view. It is the view implicit in the classical tradition, and revived—with passionate emphasis—by the great moralists of the seventeenth and eighteenth

[1] Paper read to the Oxford University Socratic Club, October 18, 1943.

centuries, by Grotius, Spinoza, Bishop Butler, Hume and Kant. What prompted this revival was the desire to emancipate morals from religion; and the reasons which made success in this undertaking an issue of vital importance are worth recalling. The moralists of that time were faced with forces which tended to disrupt moral life altogether, and they thought these could only be matched if the foundations of morality were natural and independent of creed or faith.

There were three main forces of disruption: the advance of science, the Reformation, and the birth of the nation-state. With the advance of science metaphysical speculation about nature was superseded by mathematical demonstration and observation; and men steeped in these methods began to distrust restrictions based on nothing more than supernatural inspiration. Moreover, the Reformation—with the many sects to which it gave birth—multiplied the interpretations of the scriptures: there were many conflicting precepts for each of which someone claimed that it was rightly derived from the same revealed text. For a Lutheran, the Bible taught that man owed unconditional subservience to established political authority, for a Leveller that all men were equal before God, and that no man had a right to make himself the master of another. Each view was held with religious fervour, and hence all became discredited for the more sober-minded. They observed that the law of God is only known through man's fallible interpretation and through texts which may have been corrupted in their transmission. Was there then any code that could be regarded as authentic, or was for lack of certainty one way of behaving as good as another? Hence, for many, sectarianism combined with the new scientific outlook terminated in moral scepticism. This conclusion appealed above all to the politicians. If divine law and divine sanctions were as uncertain as they appeared, the State at least, having no soul to lose, might disregard them. Why not agree with Machiavelli that the State's right went as far as its might, and that politics was out of the bound of morality? Hence, Grotius wrote of his times: "I saw prevailing throughout the Christian world a licence in making war of which even barbarous nations would have been ashamed; recourse being had to arms for slight reasons or for no reasons; and when arms were once taken up, all reverence for divine or human law was thrown away, just as if men were henceforth authorized to commit all crimes without restraint."

The remedy, it was thought, lay in the *emancipation of morals from religion*. As long as morals rest on nothing but the love and fear of God, then, as Lord Shaftesbury observed, "the stress being laid wholly here, if this foundation came to fail, there is no further prop or security to man's morals." And, with men who had ceased

to believe in a personal God, and others perplexed about what rules God expected them to keep, this foundation had come to fail. Hence, it was vitally important to find another foundation for morals: to show that men as men are under a law, necessitated by their nature and accessible to their understanding. This law was found in the *Law of Nature*, a conception familiar to mediaeval thinkers, but now re-examined and given first place. The Law of Nature commands men to respect the life and interests of others, to keep agreements, to refrain from war except in the defence of rights, and to conduct war without pillage and cruelty. This law has authority because men must be ready to follow it if they want to act consistently with their social nature and long-term well-being. It can be discovered by anybody with the power and will to reflect; it applies to all men since their natures and conditions are uniform, and it substantially coincides with the main tenets of Christian revelation. Where it differs, it was thought, the supposed revelation must give way. God would not have enabled us to discern natural laws of conduct if he had not meant us to do so. He has given us *revelation* so that the uninstructed may know what they ought to do before they can discern it for themselves; but He has given us *understanding* so that we may discover the need for moral conduct for ourselves and may be able to correct our corrupted or fanciful interpretations of His word by reference to the Law of Nature. Hence, though Divine Law has priority in the *historical* order, natural law has priority in the *logical* order. Christian revelation, as Bishop Butler put it, is a "re-publication of the Law of Nature"; it is binding only when it prescribes what is reasonable for men to do. "Reason," he said, "is indeed, the only faculty we have wherewith to judge concerning anything, even revelation itself. . . . For revelation may contain clear immoralities or contradictions and either of these would prove it false."

Not all of this seems to me defensible. The age of reason, for all its admirable sobriety, was too prone to believe in easy short-cuts from the worst to the best of all possible worlds. I think it is true that we are naturally bound to live by *some* rules or laws. Yet, I don't think that our understanding can disclose a system of rules which is final, and not in need of further scrutiny and revision. Nor is it certain that the dictates of natural reason must be the same for all men at all times, or that they must always agree with all aspects of Christian revelation. Moreover, some Christian duties essentially presuppose religious belief. The duty to confess our sins to God presupposes belief in God's word, and it cannot be justified independently of this belief. The agnostic is not bound to it. Nor do I think will the religious find the arguments for the complete subordination of revelation to natural reason conclusive. They might

well argue that God has given us revelation because of the imperfections of our understanding, and that we would fail in our duty to God if we tried to set our mind against His.

Still, I think, none of this invalidates the vital importance of a *lex naturae*. If there are rules or laws, ascertainable, however imperfectly, by our own understanding, and compelling because they conform to our nature and conditions in this world, then, even heathens and agnostics are under some moral restraints. And also, I think, it is then true of the adherents to any religious creed that as little as they can lightly set the dictates of natural reason against what they think has been revealed, as little can they lightly set revelation against the dictates of natural reason. For as God has given them the one, He has given them the other. And where natural reason and supposed revelation manifestly conflict, where religion appears to demand what natural reason considers wholly uncalled for if not pernicious, the fault *may* equally be either in our corrupt understanding of God's will, or in our corrupt understanding of our natural duties. Hence, if there are dictates of natural reason, they can never lightly be ignored, and they must serve as some corrective to the conclusions which we draw from belief. However, it is not for me to attempt to draw the correct line between reason and faith. All I shall try to show is that for those who seek them there are dictates of natural reason even if there may be rules of faith as well.

What I can say on this topic is, to be sure, very inadequate. The problem has engaged philosophers from Plato to the present day. It is *the* problem of moral philosophy. Most philosophers have regarded it as soluble, but their answers differ widely. Obviously, I cannot enter into polemics. All I can do is to sketch my own grounds for holding this view.

Now, to begin with, I must grant that the conception of a natural law of conduct is very perplexing. In what sense is it *natural* and in what sense is it a *law*? There are difficulties here which we must try to understand before we can attempt to solve them.

First, it is plain that when we think of a moral *ought* we think of a *command* or *imperative*. Something within me says: I *must* write this letter which I have put off so long, or I *must not* give away this secret although it would make such a good story; and I must do the one however much I should like to avoid it, and must not do the other however much I feel tempted to do so. The point about the moral ought is that it commands without deference to our wishes.

But this is only one aspect of the matter. There is also another. For, on our supposition the moral command is a *natural* one, and hence it must not simply be the expression of some other being's will, but the expression of something within our own will. If the duty to write the letter is a law of our own nature, we must be

bidden to write it by some voice within us that is *part of our self.* And, indeed, this is what we commonly have in mind when we think we *ought.* We think we are somehow internally constrained, that we cannot neglect our known duty without disregarding an *impulse* whose influence we had previously felt. Nor could this be otherwise. For we do assume that "ought implies can," that a man can only have a duty which he can be expected to fulfil. But we cannot be expected to do anything if we feel no impulse whatever to do it. It could not seriously be my duty to write the letter simply because somebody else wanted me to write it, and while the thought of doing so left me totally indifferent. The presence of some natural impulse is constitutive of a natural duty to do anything.

Here is our first difficulty. When we say, we have a duty to write the letter we cannot simply mean that we *want* to write it; and, yet, in some sense, we must mean that we *do want* to write it. To be obliged is to be impelled, yet not to feel inclined; it is to feel impelled with some special imperativeness or necessity.

Some popular accounts of the origin of natural morality overlook this difficulty. There are some who say we realize that we have a natural duty simply when we see that an act open to us would be of a certain kind, e.g. that it would be just, or equitable, or would cause more happiness or good all round than any other. But, plainly, merely to realize that I *could* do any of these things is not the same as to realize that I *must* do it. I know I could, but why should I if I did not want to? Clearly, I could only be induced to do it by an impelling motive; and as we have seen, if this motive is to be a sense of duty, it must be a special sense of internal constraint. Hence, what makes equitable or just or good acts duties is not simply, that we know that some acts of ours *would* be of this kind *if* we did them, but that we know in addition that we are somehow *necessitated to do* such acts.

There are others who agree that to have a duty is, in some manner, to be impelled, but they think that the moral impulse consists in instinctive dispositions to do actions of a *certain kind*: in an instinctive desire to preserve the species, to be truthful, just or charitable, to refrain from cruelty or faithlessness. But, once more, this does not explain why we *ought* to do any of these things. To act truthfully or charitably from an instinctive desire, even if it has the best of objects, is to act from *inclination*, not from a sense of *having to act in this way and no other.* This sense sometimes accompanies our natural readiness to act in any of these ways, but by no means always. I may feel inclined to tell the truth, and yet think I ought to withhold it, e.g. from somebody too ill to bear the shock of tragic news. I may feel inclined to support a friend, but think I ought rather to pay my bills; and, yet, in some circumstances, I may

think that the support I am inclined to give is also the one I ought to give, even if my creditors have to wait. Consequently, it is not simply my natural readiness to do any of these things which makes me *obliged* to do them. In order to be obliged, I must be ready, but ready in a way which seems peculiarly *inescapable*, and the sense of this inescapability is not permanently attached to *any* particular impulse.

We have then to account for this sense of inescapability, of constraint, of necessary readiness, in some other manner, but there is a further difficulty to be met on the way. If I *ought* to write this letter means "I *must* be ready to write it", I am using the term *must* in a very unusual way. I am not using it as it is used in physics or psychology. If I say, the sun *must* rise to-morrow, or Jones *cannot* resist taking things he does not need because he is a kleptomaniac, I think that this is what, in fact, is bound to happen. These events must occur because they conform to some causal law. But, when I say, I must write this letter, meaning not that I am an obsessional letter-writer, but that I *must* in the moral sense, then, I don't think that this is what in fact is bound to happen. On the contrary, I may think I must, and yet, knowing myself, expect confidently that I won't. The necessity of the moral law is the very contrary of a bare physical or psychological necessity.

All this makes talking about natural laws of conduct seem very paradoxical. If there are such laws man must be a very curious being, a Jekyll and Hyde, with a dual nature. He must be able to feel ready to do certain things and even to think that he has *no option* but to do them, and, at the same time, he may feel quite unready to do these same things, and will in fact not do them. One part of himself tends in a direction from which some other part shrinks away. No wonder, that some people feel repelled by such a strange hypothesis: that they think it preferable to suppose that the moral law is not the voice of one part of their natural self divided against another, but that it can only be the voice of another being's will, breaking into their nature from without.

And yet, there is really nothing strange or paradoxical about such a divided nature. The duality between *want* and *must, actual* and *ideal*, is natural to man because of the one faculty which distinguishes him from the animal: the power of reflection and judgement. His will when he is reflective is different from his will when he is unreflective, for his volitions depend in some measure on his understanding of the nature of the things which he wants to do. And since men are forever wavering between states when they are clear-minded and others when their minds are under a cloud, they are forever divided between volitions which correspond to the one and to the other state. This is the principle. How does it work out?

Here is one point which I am very anxious to stress. Moral philosophers, I should say, even moral philosophers, are inclined to regard the moral *must* with a kind of superstitious awe. It is an anomaly. There is nothing like it in the human frame. This, I think, is wrong. The moral *must* originates in reflection and judgement. We are unaware of any duties as long as we don't rise above mere passion and feeling and do some practical thinking. Animals, imbeciles, small children are incapable of having duties. "Lex Naturae est lex Intelligentiae, quam tamen ignorat Pueritia, nescit infantia", the schoolmen said. But practical thinking occurs not only on the moral level and it leads to more practical *must's* than the moral one. "I *must* ring up the dentist", "I *must* stay at home rather than go to the pictures", "I *cannot* really approve of wasting my time at sherry-parties", are familiar *must's*, though commonly not yet moral one's. They come to our notice as the result of practical thinking, and the thinking here involved affects and organizes our everyday lives at each step. In my view, the moral *must* is only the most highly evolved product of these same thought processes. Hence, as it is a sound principle in science to study the simple before the complex, the cell before the complex organism, so I think it would be a sound principle in ethics to study the simple functions of practical thinking before its more comprehensive one's, and the *little* practical *must* before the *big* one. If we do this we will no longer regard the moral ought as an anomaly, but rather as the termination of ordinary thought processes carried to their utmost limit.

Now, practical thinking is constantly operative in us in three different ways. It *directs* our desires for one object to others, as when we realize we must desire the means because we desire the end. It *awakens* desires for some objects and *eliminates* desires for others, as when we realize that we must really want to exercise our mind, or cannot really want to be cruel, if we consider adequately what doing the one or the other means. And, finally, it *selects* between different desires, as when we realize that our desire for a life of ease is incompatible with the desire to succeed in our career, and that since we cannot have both, we must devote ourselves to the one rather than the other. These are the *directive*, the *elective*, and the *selective* functions of practical thinking. They are distinct, though in practice they co-operate; and the effect of their operation is that we constantly *project* to ourselves the thought of what we *would have* to be ready to do, or *could not* be ready to do on reflection, and that we feel the thought of this conflicting with the natural drive of our unreflective volitions.

I should like to say something more about these three processes. The first is the most familiar. All the time, there are many things which we don't desire for their own sake, getting out of bed, or out

of a warm bath, or making a dentist's appointment; and, yet, we do them, and often only, because we think we *have* to. What happens is that we find these actions are also constituents of the process of attaining some other end which we do desire, having breakfast in time, or having our teeth seen to before they hurt. And hence we come to realize that, though not desirable in themselves, yet, when considered as constituents of this other attainment, the thought of these actions must attract us with the same force as the thought of the attainment to which they conduce. Our readiness to do the one is *borrowed* from our readiness to do the other.

Of course, I am not saying that the end always justifies the means. We may dislike getting in touch with our dentist on its own account: we may not have paid last year's bill. Then our considerations will be more complex: we will realize, that on account of our teeth we *must*, but that on account of the unpaid bill we *cannot* want to ring up our dentist; and we will then have to decide whether our end still necessitates the adoption of the means in spite of their intrinsic ineligibility, or whether we will have to abandon the end. But, whatever the conclusion, our considerations will terminate in a *must* judgement: that, in the circumstances, we must or cannot be ready to make the appointment. And the *must* expresses our conviction that this is what we would feel ready to do if we thought about it, and that as far as we can judge, we are *unable to alter* this impression by further consideration.

Clearly, this judgement does not express a mere *physical necessity*. We may think we must make the appointment, and yet not make it. It merely says, we would have to be ready to make it *if we were reflective*, but not also that we *will be reflective*. Of course, while we give undivided attention to the thought of what we would have to do, and the reasons for it, we are also in a state of readiness to do it. But this thought may go out of our mind before we have done it. Or, what is more frequent, it may become dimmed, because our attention reverts partly to our previous unreflective state of mind—the comfort of staying in bed, the unwillingness to make the appointment. And, then, we are only partly influenced by judgement, and partly by our feelings as they are without judgement. We are then *divided against ourselves*. We know we must be ready to get up, and yet we are not. Our unreflective volitions are at loggerheads with the thought of what our volitions would be if we reflected. "I must because I want, and yet I resent what I must," this is no anomaly, but the familiar state of mind of a being determined completely neither by mere impulse, nor by intelligence.

Directive must's are very common. Once we want to attain anything, there is usually a host of other actions which we must or cannot do on account of it, whatever our unreflective likes or

dislikes. If only for this reason, our life is invariably hedged in by injunctions and prohibitions. If we want others to consider our interests, we must be ready to consider theirs; if we want them to keep faith with us, we cannot be ready to break faith with them. So all-pervading are these directive necessities that some have thought them to be the very basis of natural morality.

But this would be going too far. The *moral must* commands categorically. It says, *you have absolutely no alternative but to do this.* But the *directive must* does not command categorically, for it merely says you must do one thing *if* you want to do another. You must work hard and be ruthless if you want to get rich. But what about this end? Is it eligible by itself? I may not have to get rich, and, then, it remains uncertain whether I really must work hard and be ruthless.

Now, the questioning of ends is the province of *elective* practical thinking. There are some who deny its possibility. They say, there are no ends which, considered by themselves, the reasonable man *must* or *cannot* desire. Desirable is what is desired and there is no disputing of tastes. As Hume said, "it is not contrary to reason to prefer the destruction of the whole world to the scratching of my finger". There is some truth in this. Ultimately, our desires depend on our dispositions. No one can convert me to the value of mental exertion if I am made to enjoy ease and comfort, or to the value of kindness if I am naturally indifferent to well-doing. Still, this admission is not fatal to the distinction between the *desired* and the *eligible.* Significantly enough, we constantly try to draw it. We feel like going to the pictures, but wonder whether we can really want to go. What do we do when we try to answer this question? We ask ourselves: what would going to the pictures really *mean*? We say: really, going to the pictures means sitting in a stuffy room, watching a poor story, feeling that sense of waste I had last time: and, when I consider all this, I *can no longer* desire what, before, had appealed to me

Here, in brief, is the distinction between the desired and the eligible. The *desired* is what happens to attract us, without an adequate consideration of its nature. The *eligible* is what would attract us if we formed, as Spinoza said, an *adequate idea* of it. The latter is what we *must* desire. For we judge that here is a desire which we don't have by accident, but one which could not be modified by any further consideration, and hence is forced upon us by the nature of the object in relation to our dispositions. Sure enough, no judgement of eligibility is more than probable. Nor need what is eligible for one be eligible for another. But in spite of this there is for everybody a distinction between the actually desired and the eligible as it is for him: between impulses inflated by fancy, or starved by lack

of insight and others which he thinks *must* move him or *could no longer* move him if he faced their objects as he thinks they really are.

But even the *elective must* is not the *moral ought*. To get rich may not only be desired, but also be eligible. But this alone does not make it categorically necessary for us to devote ourselves to the Stock Exchange. Nothing that considered by itself we must be ready to do is, simply for this reason, what we *ought* to do. Here I must appeal to another familiar experience. There is always a host of things which are intrinsically eligible: to have material security, to keep our body healthy, our mind alert, to care for our friends. But this is not to say that, on reflection, we can be ready to pursue these objects all at once. For, on reflection, we realize that pursuing the one is (wholly or partly) incompatible with pursuing the other. Hence, we get another restrictive *must*: that we cannot both be ready to do the one *and* the other, but only the one *or* the other. On what principle then do we select? Here we have the third, the *selective* function of practical thinking. We ask ourselves: must we rather be ready to do—without y, or y without x, develop our talents and forego material security, or get material security and forego developing our talents? We try to form adequate ideas of each, and we test our reactions to the thought of the one without the other, and the other without the one. And, when we have carried this process to the point at which we think we cannot modify the result any further, we realize that we *must be ready to do the one rather than the other*. This is choice. In choice, we ask a question and receive an answer, and the answer is a new *must*. This *must* often weighs on us particularly heavily. For since the excluded alternative is intrinsically eligible our attention is only too prone to revert to it: and then we are acutely and painfully aware of being divided against ourselves. Anybody, who has once chosen to pursue a long-term end knows the intensity of this conflict, between the thought of *what he cannot but prefer on reflection*, and the eminently eligible and yet forbidden alternatives which lie in wait for him on the way.

I think I have said enough to illustrate my point. I wanted to impress on you that the dualism between *want* and *must*, *actual* and *ideal*, pervades our ordinary life intimately, and in more ways than merely in the big conflict between natural impulse and moral ought. The elective, the selective and the directive *must* are essential normative principles. With their help we steady, co-ordinate and direct our natural impulses. They do not impose upon them an alien norm. They merely *project* to ourselves our impulses as they would be if they were determined by their objects as we think those objects really are, both in themselves and in their relations to one another. These impulses we regard as for us *rationally necessary*, because we think that no further mental exertion which we could make, would

make them any different; and it is against them that our unreflective volitions rebel as soon as we are off our guard. Here is the same conflict between *must* and *want* that is commonly associated with the moral law. And, I think, this strongly suggests that the moral law is not an unaccountable anomaly, but rather the crowning result of the same thought processes which present us with the *little must's* of our ordinary experience.

In my view, the moral law differs from the other forms of practical necessity in one respect only: it is *categorical.* It says, *you must do this and nothing else.* No other imperative goes as far. It is not categorically necessary to go out into a cold and rainy night if I think I must merely because I want to see an ill friend: for I may not *have* to see him; nor to go to see him if I must only because by itself this would be an eligible thing to do: for I may still find it necessary not to do it in view of the *means* to be employed, like walking through the rain and catching a cold, or because of some more eligible *alternative,* for example working. Nor have I reached a categorical necessity when I think I must pay the visit rather than work: for then I still think only I must do the first *rather than the second,* not I must do the first *rather than anything else.* All these *little must's* bind in view of only some facts considered in isolation from others. They say what we must do from *this or that point of view,* but not what we must do from *every point of view.*

Normally, we enquire no further. We judge of practical matters as we happen to have doubts about the one or the other aspect of the case. We either consider only the requisite means, taking it for granted that the end is eligible; or the end, taking it for granted that the means are eligible, and that the end does not conflict with alternative ends. We don't systematically combine all these considerations into one, carrying them to the point at which we can say: *this is what we must do everything considered.* But to do this is within our power, and when we do it we arrive at a judgement of *categorical practical necessity.* We then let a given project run the gauntlet of elective, directive, and selective practical examination, and we regard it as categorically necessary if it survives this test, and as categorically prohibited if it fails to survive it.

The process by which we discover categorical necessities has, I think, three stages. We have first to consider whether what we want or could do is *eligible by itself,* in view of its properties and effects. We ask: what will our visit mean to our friend, to ourselves, how would his landlady take it? Maybe this suffices to rule it out. Our first impulse may have been a sentimental whim. But, supposing we think that so far we have to do this act. Then the second step will be to consider the *means.* Here we must make both directive and selective judgements: What must we do in order to pay the

visit? And, would we still feel we had to pay it if we considered the intrinsic ineligibility of some of the means? Once again, a project may be ruled out at this stage. Charity, normally, must not be carried to the point of forging cheques. There is nothing more pernicious than the view that some ends are eligible absolutely, regardless of the eligibility of the means. But supposing we think we must do the act both on its own account, and in spite of the means. Then, the third step is to consider *alternatives*. Here we will first consider those already in our mind. We must want to pay the visit, but we cannot do this and go on working. Once more, our project will be ruled out if we decide that in spite of the eligibility of the first we must rather do the second. But let it pass this test as well; then, there is still one more step to be taken. For we want to know, not whether to see our friend is necessary for us in spite of *some* eligible alternative, but whether it is necessary *categorically*: and for this we must, lastly, consider whether it would still be necessary for us in spite of *any other* eligible alternative competing with it at the same time. If it is, then, we have reached an inescapable or categorical practical necessity. For, then, we are faced with an action which we think is *unalterably forced upon us by the thought of its own nature and effects, and despite any sacrifice involved in doing it.* As far as we can see there is no alternative to this action in the circumstances, and hence there is *nothing for it but to do it.*

It is plain that categorical necessity can never pertain to any particular kind of action merely considered as such. It can pertain only to an action *in relation* to given circumstances, that is, if in these circumstances it is not only *intrinsically* eligible, but also *more* eligible than any other which it excludes. Hence we can never say that to tell the truth or to keep the peace or anything else will *always* be categorically necessary: for it depends on the circumstances whether or not there is something else which *by comparison* has greater eligibility. All we can say, is, that if we consider any situation as a *whole* we will always find something or other the thought of which, we think, *must* move us on its own account, and *must* remain pre-eminently moving in spite of everything that has to be subordinated to it.

Now, I think, that when we are moved in this manner we are moved by a sense of *natural duty*, and hence we have come to the end of our long search. For we can now answer the question from which we set out: in what sense is a natural law *natural*, and in what sense is it a *law* or *duty*?

Plainly, the sense of categorical necessity on which I have tried to focus your attention can be accounted for without reference to anything beyond ourselves. It is rooted in our constitution as human beings, and it issues jointly from the *rational* and the *appetitive* part

of our nature. *Materially*, natural duties depend on our natural dispositions, *formally*, they depend on reflection and judgement. There would be no duties for us without the one *and* the other. The duty to care for the sick, to obey the laws of the State, to devote myself to creative work, depends on some natural incentive to do any of these things, whether this incentive be rooted in an innate disposition to be kind, or an acquired disposition to be law-abiding, or in the expectation of good for ourselves. But, equally, no natural incentive alone constitutes a duty. I may be honest, temperate, industrious, I may even endanger my life for the sake of others from a strong inclination to behave in these ways, and yet this is not to act from a sense of natural duty. There can be no duty without an awareness of necessity, and this awareness can only be acquired by reflection and judgement. It is not enough to *feel* ready to give our lives. We, must *judge* that this readiness is also inescapably called for of a person of our temperament and upbringing, by the nature of the case; and, moreover, that it is inescapably called for, in the situation, despite the means to be employed, and the alternatives to be sacrificed. Only, then, do we obey a *dictate of conscience.* Conscience is more than feeling. It is inward knowing, con-*scientia*, in-*wit*, Ge-*wissen.* Feeling alone could not give us the sense that *here we stand, we cannot do otherwise*: for the absence of any alternative must be judged of, it cannot be felt. Moral thinking is discursive, not intuitive.

You may object, that this is to over-rationalize the moral sense. Do we not know what we ought to do without protracted deliberations? Certainly, sometimes we do, but at others we don't. It depends on the case, whether deliberation must be protracted; but protracted or not, there must be deliberation. It is easy to see that we ought to answer a letter, but hard to decide whether we ought to visit a sick friend abroad. Here, the nature of the project, the means, the alternatives may keep us in suspense for a long time. I say, for a long time, but there may be no time for delay. Here is a factor which, in a sense, simplifies moral decisions. Conscience must give its verdict before the moment for action has passed. There is no time to lose when I see a child in the water; and then, however complex the decision might be if there were no hurry, I can only make it by reducing it to its simplest terms. But even in this case I have to make it, or else I act from a sense of *panic*, not from a sense of *duty*. For an instant, at least, I must question my impulse: and at that moment I must *judge* that, as far as I can see, and naturally I cannot see far, *this and nothing else is what I must do.* In fact, the time-factor always forces us to make decisions before we can be *certain* that the data on which we make them are complete. Perfect insight would require infinite time. In some ways this simplifies the moral calculus; but it

entails that no moral decision is ever certain to conform to the ideal standard of perfect insight, and that most are likely to fall considerably short of it.

I need hardly repeat that the *morally* necessary is not the same as the *physically* necessary. To think that we *must*—in the moral sense—is not to think that we *will*. It is to think that we would have to be ready to do some action *if* we maintained the effort of being reflective; but this is not also to think that we will maintain it. It is true, while we are informed by the judgement that this is what we must do on reflection, we cannot fail to be under its influence. But we may forget. Or, more commonly, our attention may become divided between the thought of what we must do if we were reflective, and what we want to do while we are not; and, then, the force of the moral ought is inhibited. Once again, we are then divided against ourselves, and faced with the conflict between *want* and *must*, *actual* and *ideal*. I have maintained throughout this paper that this conflict is a natural consequence of man's power of rational self-determination, and, obviously, it must be most pronounced in case of the *moral must*. This *must* projects to ourselves our own will as it would be if it were determined by reason as completely as we think we can make it; and it therefore conflicts most with our uninformed passions, our thoughtless indolence, and all those aversions and desires which, however legitimate in themselves, must give way so that our predominant impulse may live. No wonder, that the law of our nature appears to command without deference to our wishes.

And, yet, I think, there is no escaping this law. It is true, we impose it upon ourselves by reflection and judgement. We could be without it if we were prepared never to face the thought of the rationally necessary. But this, I think, is the very thing we can never afford to do. For one thing, we would forsake the only means we have for directing and adjusting the outflow of our natural energies: we would be unready to do what is requisite for the attainment of our ends, ready to do what is not worth doing, afraid of doing what is not worth avoiding; we would dissipate our energies in the futile attempt to combine what cannot be made compatible and subordinate the more to the less satisfying. I am not denying that the escapist may not *sometimes* be lucky nor maintaining that the conscientious is *always* rewarded by success. Our insight is fallible and the outward effects of rational self-direction are remote and uncertain; yet this can never be a reason for abandoning the attempt.

But, moreover, rational self-direction has another effect which is near and certain, and which has a value for us to which the value of everything else is subordinate. To break into our impulses as they happen to affect us, to make them conform to adequate ideas, to subordinate the conflicting many to the predominant one, is to be

mentally alive: it is to *find the identity of our self in the diversity of our states*. Self-identity or unity of consciousness is not a self-subsisting thing: it is constantly in jeopardy, increased or diminished by the extent to which we offer resistance to our impulses, and view them before we follow them in relation to the true nature of their objects and to one another. Be engrossed in each impulse separately as it succeeds another, and each time you are no more than this impulse: *you* are your anger, your fear, your sympathy, for you are immersed in it. But attend to it and at the same time to what it would be on reflection, and you become aware of your self as the one perceiving subject of a diversity of feeling-states, distinct from each of them and conscious of them all. From a bundle of successive states you turn into a *person* conscious of and distinct from his states and enduring through them. This achievement is beyond the escapist. He may be lucky in attaining his particular ends, but he cannot be himself. For what essentially contributes to the formation and preservation of a unified consciousness is every single occasion on which we make a moral choice and abide by it. Each time we fail, its cohesion is broken, each time we succeed it becomes more closely knit. Hence, if it is worth being the unified, distinct, and enduring subject of our own feeling-states, then, we must always be ready to submit to rational self-determination.

But is it? I will venture a brief answer. I think, when we reflect, we will find that we value a unified self precisely as much as we value life itself: that the desire to be *is* a desire for personal identity. We are afraid of death because we are afraid of *losing* our personal identity, and physical existence without it we would not regard as worth having. The life that is valued is essentially the life of the soul, and clearly without it nothing else would be worth having: for we can only possess anything precisely to the extent to which we are mentally alive to having it. Now, it is in moral conduct that we gain a unified consciousness which is distinct from our states, and in escapism that we dissolve the unity of our person. And hence the need for submission to the laws of natural morality is rooted in our very desire for life and sanity itself, as Spinoza said in the "conatus in suo esse persevare". *The wages of sin is death*, even for the agnostic.

It is time to summarize my argument. I have been trying to show —with arguments which lay no claim to novelty—that there is a natural foundation for morality. There will always be some laws which are imposed on us from within, regardless of whether they are also imposed on us from without. We find them if we seek them, and we must seek to find them. Moreover, what we find will not be vastly different from the precepts of revealed morality. There are good enough reasons in our mental and bodily constitution and in

the conditions of social life to make it imperative to be temperate rather than self-indulgent, faithful rather than treacherous, modest rather than conceited, sociable rather than grasping and aggressive. Nevertheless, there is at least one fundamental difference between natural morality as I see it and life by a moral code accepted as a matter of faith. Natural morality cannot have the same finality. It does not make any particular duties necessarily binding on all men at all times in all circumstances. All, I think, we can say with confidence—although even this is either an empirical generalization or a matter of definition—is that sane human beings will always be bound to submit themselves to the rule of some law. But beyond this, I think, we cannot go. What people will find when they seek their duties depends on the way they are made, the circumstances in which their actions take place, and the degree of their insight into these circumstances.

This is an inevitable conclusion from our premises. We cannot divorce the moral eligibility of actions from their effects, from the means to be employed, and the alternatives to be sacrificed: any of these factors may vary with the circumstances of the case. Nor can we divorce it from the way people are made, since their dispositions may vary, both by nature and by education, and what is good for one need not be good for another. Nor, finally, can we divorce it from people's insight, since we can have no duty of which we are ignorant, and hence what we ought to do is what *as far as we can see* we must do, and not what we would have to do if we had *perfect insight*. Of some people we can expect no more than that they should be true to the values in which they have been brought up or which prevail in their social environment, and we may even think that, on reflection, they ought often to accept the limits of their own understanding, and not to try to evolve new evaluations of their own. Of others we will think that they have not only a right but a duty to question and to reverse preconceived notions of the eligibility of actions in the light of some new insight into their nature and effects. On the basis of natural morality no accepted standard is sacrosant, and the search for the *ideal* morality, based on *perfect insight*, is a never-ending adventure charged with responsibility and as full of potential perils as rewards. Such, I think, is the law to which we are bound if we disregard faith. It binds the agnostic, and, I think, it cannot be ignored by those who believe.

VOLTAIRE AND METAPHYSICS

IAN W. ALEXANDER, M.A.

IT is too often assumed that Voltaire is uninterested in metaphysics and that his whole attitude is inimical to such studies. This assumption is of course largely dependent on the definition of the term metaphysics. To modern minds metaphysics tends to imply knowledge of the absolute obtained by some direct intuition of reality, and to the Bergsonian definition of metaphysics as the science which claims to dispense with symbols the present writer would largely subscribe.[1] Given this modern definition of metaphysics, which is also the Kantian one, as a special mode of knowledge, it is an undoubted fact that Voltaire is not in this sense a metaphysical mind; the appeal to any peculiar or specifically *a priori* mode of thought was, of course, incompatible with his empiricism.

The question remains, however, whether in a more general sense Voltaire was not a serious student of metaphysics. It is the one great problem which confronts the reader of Voltaire.[2] The answer is simple if we define metaphysics in a quite general and universally acceptable manner as the study of the constituent elements of reality conducted in a serious and systematic way. This implies, first, an attempt to *constitute* reality, the study of the various elements of reality yielding finally to an organic view of the whole.[3] Secondly, this implies not the application of any special mode of knowledge, but the use of ordinary modes of knowledge in a peculiarly systematic way. It is in this sense that William James defined metaphysics as "only an unusually obstinate attempt to think clearly and consistently."[4]

If we agree to understand metaphysics in this general sense, we cannot rightly withhold from Voltaire the title of metaphysician. In the first place, throughout his work we find an effort to organize the elements of reality into a coherent system. The numerous passages where he disparages metaphysics must not blind us to this constant

[1] "La métaphysique est . . . la science qui prétend se passer de symboles." Bergson, *Introduction à la métaphysique*, Revue de Métaphysique, 1903, p. 4.

[2] Cf. Emile Faguet: "Nie-t-il toute métaphysique et est-il un pur agnostique, ou ne l'est-il que jusqu'à un certain point, c'est-à-dire est-il encore métaphysicien?" *Dix-huitième siècle*, p. 202.

[3] Cf. Charles Dunan: "La métaphysique . . . doit se définir une conception de quelque chose dans laquelle entre, avec plus ou moins de clarté ou de distinction, une conception de toutes choses." *Essais de philosophie générale*, 1902, pp. 436–7.

[4] *Textbook of Psychology*, Epilogue, p. 461.

preoccupation of his mind. If we take, for example, the article *Métaphysique* in the *Dictionnaire Philosophique*, it would seem, like so much of his other comment on metaphysics, to condemn entirely such a subject, but it has no real relevance to the question. Voltaire is here criticizing the inadequate definition of metaphysics given by Bossuet as the science having for object the immaterial, while at the same time having a tilt at that bane of his thought, the doctrine of the immaterial soul. But the philosophical works of Voltaire are there to testify to the legitimacy of metaphysical speculation having as its true and proper object the constitution of reality.

On the other hand, Voltaire would admit no peculiar, intuitive faculty nor *a priori* method in metaphysics. He remains faithful throughout to the empiricism derived from Locke and refuses to go beyond the data of experience and the few metaphysical probabilities which may be derived therefrom. It is this fidelity to the empirical method which characterizes Voltaire's metaphysical ideas. They constitute a coherent system which derives its strength from the certainty of its premises and the humility of its conclusions; an effort, in short, to establish a metaphysics on empirical lines. But we are not justified in claiming Voltaire as either an agnostic or a positivist, for the elimination of all metaphysical speculation as such is foreign to his thought.

As we read Voltaire's work, we are surprised at the persistence with which he returns to metaphysical problems, particularly in his later years; another proof that Voltaire was far from being recalcitrant to such studies or even from treating them as purely incidental to his thought. Voltaire has given us the explanation in the following passage:

"J'ai pensé que la nature a donné à chaque être la portion qui lui convient; et j'ai cru que les choses auxquelles nous ne pouvions atteindre ne sont pas notre partage. Mais malgré ce désespoir, je ne laisse pas de désirer d'être instruit, et *ma curiosité trompée est toujours insatiable.*"[1]

In this "insatiable curiosity" we have the explanation of Voltaire's obstinate metaphysical speculation which was, in spite of his doubts, rewarded by definite fruits. Such curiosity is undoubtedly one of the essential characteristics of the metaphysician, as William James rightly underlined when he spoke of the obstinate attempt of the metaphysical mind.

The works with which we intend to deal are the following. First, the *Lettres Philosophiques*, published in France in 1734, some six years after Voltaire's return from England. More negative than positive in character, being designed to oppose the French and the

[1] *Le Philosophe ignorant*, Œuvres complètes (Kehl), 1784, vol. xxxii, p. 82.

English ways of living and systems of thought to the detriment of the former, they yet contain in germ ideas born of contact with English empiricism which a more personal reflection was to bring later to fruition. Secondly, the first works of personal and disinterested speculation, namely the *Traité de Métaphysique*, composed in 1734; the *Eléments de philosophie de Newton* and the *Défense du Newtonianisme*.[1] In these works we find a first draft of Voltaire's metaphysical system. The constituents of reality are described, already reduced to two, namely God and matter; but the relationship between the two principles is described in a manner to be entirely superseded in the following phase. The third phase is initiated by the Lisbon earthquake of November 1755. This all-important event, by bringing up with a new force the problem of evil, obliged Voltaire to revise completely his previous conception of the relation of God to matter. The first works of this period are simple reactions of despair: Voltaire seems to relapse into a position of agnosticism, finding himself unable to bring together in a satisfactory explanation the various threads of his thought. These are the *Poème sur le Désastre de Lisbonne* and the famous *Candide*;[2] they represent a moment of crisis for Voltaire's thought, as witnessed by their accent of pessimism and their agnostic conclusions; but they do not, as has been largely assumed up to the present, represent Voltaire's final position. It is our object, indeed, to show how Voltaire, impelled by his "insatiable curiosity," courageously undertakes a total revision of his ideas and cautiously, but surely constitutes reality anew. This final position is represented by the last philosophical works grouped in the *Questions sur l'Encyclopédie* and which comprise the *Dictionnaire Philosophique* and numerous other works of which the most important for the present purpose are: *Le Philosophe ignorant; Il faut prendre un parti, ou le Principe d'action; Tout en Dieu, Commentaire sur Malebranche* (the latter figuring, with omissions, in the *Dictionnaire Philosophique* as section II of the article *Idée*).[3]

Thus we find the various threads of Voltaire's thought brought together, then burst asunder, and finally woven into a coherent pattern. His thought is thus seen to take on a new unity and a new meaning; it appears as a persistent and painstaking elaboration of a coherent metaphysical system.

The Philosophical Letters which concern us are those which expound the system of Locke and the physics of Newton. In the discussion of those topics Voltaire insists on two points at some

[1] The last two works were composed in 1738 and 1739 respectively.

[2] 1756 and 1759.

[3] Written in 1766, 1772, and 1769 respectively. Cf. G. Bengesco, *Voltaire. Bibliographie de ses œuvres*, Paris, 1882–1890, 4 vol.

length. In the first place, in the XIIIth letter, on Locke, he elaborates what had been simply a remark in the *Essay* on the possibility of matter being endowed with the property of thought. He argues that the denial of this possibility would imply a limitation of God's omnipotence:

"En effet, quel est l'homme qui osera assurer, sans une impiété absurde, qu'il est impossible au Créateur de donner à la matière la pensée et le sentiment?"

Sensation and thought would therefore, in Voltaire's view, be nothing but the product of organized matter; recourse to a spiritual substance or soul is superfluous:

"Je suis corps et je pense, je n'en sais pas davantage. Irai-je attribuer à une cause inconnue ce que je puis si aisément attribuer à la seule cause seconde que je connais?"

Now the importance which Voltaire accords to this discussion is sufficient to indicate that we have here a truly constructive idea; although it serves a propaganda purpose at the same time, being destructive of religious belief, it is none the less an idea which is to become a cardinal tenet of Voltaire's metaphysics—the elimination of the spiritual substance or soul as an element of reality and the reduction of thought to the role of a simple property with which matter is endowed by God. This latter idea is expressed in the significant sentence in which Voltaire shields Locke from the accusation of irreligion:

"Car quelle philosophie plus religieuse que celle qui, n'affirmant que ce qu'elle conçoit clairement en sachant avouer sa faiblesse, vous dit *qu'il faut recourir à Dieu dès qu'on examine les premiers principes*?"

The other point of importance which Voltaire develops in the Letters is a continuation of the same theme and is to be found in the XVth Letter, on Newton, where Voltaire upholds him against the critics who see in attraction a revival of the occult quality. Voltaire observes that the quality of attraction, inherent in matter and the cause of motion, is none the less a simple property and itself the effect of a cause unknown, and he concludes:

"L'attraction, au contraire, est une chose réelle, puisqu'on en démontre les effets et qu'on en calcule les proportions. *La cause de cette cause est dans le sein de Dieu.*"

In short, the quality of attraction is a property with which matter has been endowed by God. If we relate this passage to the previous one, we discern the lines on which Voltaire's thought is working: towards the constitution of a reality interpreted in terms of a single matter endowed by God with its various properties, such as attrac-

tion, sensation and thought, and wherein no place is found for any spiritual substance or element.

Thus in the *Lettres Philosophiques* we find, although tentatively expressed and its true significance not fully grasped, the main tenet of Voltaire's final system.

Although Voltaire's metaphysical ideas underwent a considerable transformation in the course of his life, he remained constant to a certain basic principle—the distinction between contingent matter on the one hand and God, the necessary Being, on the other. The contingence of matter seemed to him guaranteed by Newtonian physics, which could alone, in his view, provide an answer to materialism:

"Toute la philosophie de Newton conduit nécessairement à la connaissance d'un être suprême, qui a tout créé, tout arrangé librement."[1]

The principal guarantee of the distinction between contingent matter and the necessary Being is the Newtonian theory of the vacuum; for if a vacuum exists, matter must be finite and non-necessary, the creation of a necessary Being:

"Car si le monde est fini, s'il y a du vide, la matière n'existe donc pas nécessairement; elle a donc reçu l'existence d'une cause libre."[2]

Secondly, the definition of attraction as a quality inherent in matter and not essential to it, which Voltaire had underlined in the *Lettres Philosophiques*, implies likewise a First Cause as its originator:

"Si la matière gravite, comme cela est démontré, elle ne paraît pas graviter de sa nature, ainsi qu'elle est étendue de sa nature: elle a donc reçu de Dieu la gravitation."[3]

"L'auteur des Eléments a dit à la vérité, avec tous les bons philosophes, que la pesanteur, la tendance vers un centre, la gravitation est une qualité de toute la matière connue, laquelle lui est donnée de Dieu, et qui lui est inhérente: le terme d'*inhérent* est bien éloigné de signifier *essentiel*, il signifie ce qui est attaché intérieurement comme *adhésion* signifie ce qui est attaché extérieurement; l'essence d'une chose est la propriété sans laquelle on ne peut la concevoir, mais on peut très-bien concevoir la matière sans pesanteur."[4]

What is true of attraction is no less so of motion, likewise a non-essential quality of matter and therefore divinely implanted:

"Si les planètes tournent en un sens plutôt qu'en un autre, dans un espace non résistant, la main de leur créateur a donc dirigé leur cours en ce sens avec une liberté absolue."[5]

Lastly, the finality observed in the universe is in itself sufficient indication of its contingence and its organization at the hands of a supreme architect.

[1] *Eléments de philosophie de Newton*, xxxi, p. 26. [2] *Ibid.*
[3] *Ibid.* [4] *Défense du Newtonianisme*, xxxi, p. 247. [5] *Eléments*, p. 26.

In this way, Newtonian physics and Newtonian physics alone demonstrate the contingence of matter as created and endowed with its various properties by a Divine Being:

"Si la matière a du mouvement, si elle peut le communiquer, si elle gravite, si les astres tournent sur eux-mêmes d'Occident en Orient plutôt qu'autrement, tout cela est un don de Dieu, aussi-bien que la faculté que ma volonté a reçue de remuer mon bras. Toute matière qui agit nous montre un être immatériel qui agit sur elle. Rien n'est plus certain que ce sont les vrais sentiments de Newton."[1]

Cartesian physics, on the contrary, conceiving matter as infinite in extent and movement as essential to it, lead directly, in Voltaire's view, to the doctrine of the Single Substance:

"Il s'en faut bien que les prétendus principes physiques de Descartes conduisent ainsi l'esprit à la connaissance de son créateur . . . je dis que le systéme cartésien a produit celui de Spinoza; je dis que j'ai connu beaucoup de personnes que le cartésianisme a conduites à n'admettre d'autre Dieu que l'immensité des choses, et que je n'ai vu au contraire aucun newtonien qui ne füt théiste dans le sens le plus rigoureux.

Dès qu'on s'est persuadé, avec Descartes, qu'il est impossible que le monde soit fini, que le mouvement est toujours dans la même quantité; dès qu'on ose dire: Donnez-moi du mouvement et de la matière, et je vais faire un monde; alors, il le faut avouer, ces idées semblent exclure, par des conséquences trop justes, l'idée d'un être seul infini, seul auteur du mouvement, seul auteur de l'organisation des substances."[2]

Now the idea of contingence is, at this period of Voltaire's thought, related to the idea of finiteness. It is because and inasmuch as matter is finite that it is contingent; it is because and inasmuch as God is infinite that He is the unique necessary Being. Matter is expressly stated to be finite in space by reason of the vacuum and finite in time as a creation *ex nihilo*, resulting from a *fiat* of the divine will. Likewise God is stated to be infinite in time, space, and power:

"Je suis donc réduit à avouer qu'il y a un être qui existe nécessairement par lui-même de toute éternité, et qui est l'origine de tous les autres êtres. De-là il suit essentiellement que cet être est *infini en durée, en immensité, en puissance;* car qui peut le borner?"[3]

Given this relationship of a God, infinite in all respects and particularly in power, and a matter which is finite in all respects, matter is conceived as the free creation of divine free-will. The distinction between the necessary Being and contingent matter is thus expressed in terms of an opposition between the infinite and the finite. When, after the Lisbon disaster, Voltaire will arrive at a new conception of the relationship between God and matter, he will inevitably be obliged to express this fundamental distinction between the neces-

[1] *Defensé* p. 256.
[2] *Eléments*, pp. 26–7.
[3] *Traité de Métaphysique*, xxxii, p. 22.

sary and the contingent in new and, to his mind, more satisfactory terms.

We pass now to the examination in detail of Voltaire's metaphysical ideas as expressed in this first period of his speculation and notably in the *Traité de Métaphysique* and the *Eléments de philosophie de Newton.* We shall find therein a serious attempt at a coherent explanation of reality; but undoubtedly Voltaire meets with a check, for although he grasps the constituent elements of his universe, God and matter, he cannot solve to his satisfaction the problem of their relationship; the tentative solution he proposes in terms of divine liberty and creation *ex nihilo* is already beset with doubts which are to assume greater proportions in the following years and which are finally to necessitate a solution in the opposite sense.

In the *Traité* Voltaire advances two proofs of the existence of God. The first is the proof by final causes, expressed in the familiar terms of the watch and its maker:

"Quand je vois une montre dont l'aiguille marque les heures, je conclus qu'un être intelligent a arrangé les ressorts de cette machine, afin que l'aiguille marquât les heures."[1]

Similarly, consideration of both the order to be found in the universe and the ends to which each separate thing seems to be directed indicates the existence of a creator and sovereign architect. This proof, based on common-sense inference from observed fact, is empirical in nature and is therefore claimed to be "la plus naturelle et la plus parfaite pour les capacités communes."[2] But, owing to its certainty even, it implies nothing as to the nature of the Supreme Being or as to the manner of creation:

"Il est probable que je suis l'ouvrage d'un être plus puissant que moi, donc cet être existe de toute éternité, donc il a créé tout, donc il est infini etc., je ne vois pas la chaîne qui mène droit à cette conclusion; je vois seulement qu'il y a quelque chose de plus puissant que moi, et rien de plus."[3]

The second proof, as Voltaire says, is "plus métaphysique . . . et conduit à des connaissances bien plus vastes."[4] It is the well-known proof *a contingentia mundi* and, more especially, the contingency proof in its Leibnitzian form, based on the principle of sufficient reason. This proof argued that, inasmuch as the sufficient reason of any contingent thing is to be found in another or other contingent things, the final reason of things must be sought in a necessary substance, the source and explanation of them all.[5] It is this argument which Voltaire here reproduces by a process of tracing to its

[1] *Traité de Métaphysique*, xxxii, p. 20. [2] *Ibid.*
[3] *Ibid.*, p. 21. [4] *Ibid.* [5] *Monadology*, sects. 36, 37.

source the chain of contingent things in obedience to the principle of sufficient reason:

"J'existe, donc quelque chose existe. Si quelque chose existe, quelque chose a donc existé de toute éternité, car ce qui est, ou est par lui-même, ou a reçu son être d'un autre. S'il est par lui-même, il est nécessairement, il a toujours été nécessairement, et c'est Dieu; s'il a reçu son être d'un autre, et ce second d'un troisième, celui dont ce dernier a reçu son être, doit nécessairement être Dieu."[1]

Thus Voltaire states rightly that this proof is a metaphysical one, being none other than that of Leibnitz. It is for that reason a rationalist argument based on the *a priori* principle of sufficient reason, although Voltaire did not yet realize the fact. In any case, Voltaire places greatest hopes on it at this period and it is from it that he concludes the infinite attributes of God:

"Je suis donc réduit à avouer qu'il y a un être qui existe nécessairement par lui-même de toute éternité, et qui est l'origine de tous les autres êtres. De là il suit essentiellement que cet être est infini en durée, en immensité, en puissance; car qui peut le borner?"[2]

This contingency argument indeed consists in the regression of an infinite chain of finite beings to a first being who is not only necessary, but *actually infinite.*

In conclusion, the metaphysical proof is the all-important and significant one at this period; significant in that it implies a Supreme Being of infinite attributes, whereas the first argument makes no such implications. For the future development of Voltaire's system this point will be all-important. It is also suggestive that, although the second proof is given pride of place, Voltaire recognizes already that the argument by final causes is the more certain as being founded on experience and he notes with satisfaction that Newton prefers it to the former.[3]

The demonstration of God's existence is accompanied by a strong refutation of the materialists. Voltaire's arguments against the doctrine of the Single Substance can be summarized as follows. The materialist maintains that matter is necessary and that no element of the universe could be other than it is.[4] But such a statement is belied by the facts, replies the Newtonian Voltaire:

"Or, certainement cette table sur laquelle j'écris, cette plume dont je me sers n'ont pas toujours été ce qu'elles sont, ces pensées que je trace sur le papier n'existaient pas même il y a un moment, donc elles n'existent pas nécessairement. Or si chaque partie n'existe pas d'une nécessité absolue, il est donc impossible que le tout existe par lui-même."[5]

[1] *Traité*, p. 21. [2] *Ibid.*, p. 22. [3] *Eléments*, pp. 27–8.
[4] *Traité*, p. 32. [5] *Ibid.*, p. 22.

Secondly, to the argument that the laws of nature, as witnessed by their invariability, are implanted in the very nature of things,[1] Voltaire replies that though invariable they are contingent, for it was not necessary that such and such laws should be established in preference to others.[2]

Finally, the materialist is obliged to assert that motion is essential to matter and in a fixed quantity;[3] to which Voltaire replies in a brief sentence:

"Je produis du mouvement, donc le mouvement n'existait pas auparavent."[4]

From the contingence of matter, its laws and properties we must therefore conclude the existence of a God who has both created matter and endowed it with those laws and properties.

Having disposed of the materialists, Voltaire is now confronted by two important difficulties, the problems of evil and of creation.

At this period the problem of evil is the lesser of the two. Schooled in the optimism of Leibnitz and Pope and as yet inspired by the carefree view of life expressed in the *Mondain*, Voltaire is at no loss for an answer to this problem. He simply reproduces the optimistic conclusions of Leibnitz and Pope:

"Le mot de *bon*, de *bien-être*, est équivoque. Ce qui est mauvais par rapport à vous est bon dans l'arrangement général."[5]

This view may be rightly attributed to Leibnitz, for it signifies that what is judged *empirically* as evil may be justified by *a priori* reasoning. Voltaire here justifies evil on the grounds that the general structure of the universe is good; and no amount of common-sense or empirical argument can transform into good a whole which is in part evil; this is only possible by *a priori* reasoning, by the proclaiming a best of all possible worlds on the *a priori* ground of divine perfection. Voltaire's argument is none other than Leibnitzian optimism, and without doubt rests on a concealed *a priori* reasoning. This being so, the position of Voltaire on this question is at the moment a rationalist one.

To this main argument are added two others, equally Leibnitzian in origin: the first stressing the preponderance of good over evil in the world;[6] the second, more attributable to Pope than to Leibnitz, treating evil as an illusion due to the insufficiency of the human mind which cannot grasp the ends of divine justice.[7]

The problem of creation has greater force at this moment. Voltaire states the difficulty thus:

[1] *Traité*, p. 24. [2] *Ibid.*, p. 29. [3] *Ibid.*, p. 32.
[4] *Ibid.*, p. 22. [5] *Eléments*, p. 30.
[6] *Ibid.*, p. 31, cf. Leibnitz, *Theodicy*, sect. 13. [7] *Traité*, pp. 30–1.

"Si Dieu n'est pas ce monde matériel, il l'a créé, . . . mais en faisant ce monde, ou il l'a tiré du néant, ou il l'a tiré de son propre être divin. Il ne peut l'avoir tiré du néant qui n'est rien; il ne peut l'avoir tiré de soi, puisque ce monde en ce cas serait essentiellement partie de l'essence divine: donc je ne puis avoir d'idées de la création, donc je ne dois point admettre la création."[1]

Impossible therefore to admit either creation *ex nihilo* or eternal matter. But Voltaire is quick to recognize that the problem is falsely stated: it is already demonstrated that God and matter exist, and the problem is to discover what relation of freedom or determination obtains between God and his creation. The question centres on the problem of divine liberty, and Voltaire in the next paragraph restates it in these terms:

"Dieu aurait fait ce monde ou nécessairement ou librement; s'il l'a fait par nécessité, il a dû toujours l'avoir fait; car cette nécessité est éternelle; donc en ce cas le monde serait éternel et crée, ce qui implique contradiction. Si Dieu l'a fait librement par pur choix, sans aucune raison antécédente, c'est encore une contradiction; car c'est se contredire que de supposer l'être infiniment sage faisant tout sans aucune raison qui le détermine, et l'être infiniment puissant ayant passé une éternité sans faire le moindre usage de sa puissance."[2]

The problem posited in those terms, Voltaire has no difficulty in choosing the solution of creation *ex nihilo* on the grounds of divine liberty, as against eternally existing matter. His answer to his self-imposed objection is categorical:

"La volonté libre de Dieu est une raison suffisante du temps dans lequel il a voulu créer le monde. Si Dieu existe, il est libre; et il ne le serait pas s'il était toujours déterminé par une raison suffisante, et si sa volonté ne lui en servait pas. D'ailleurs cette raison suffisante serait-elle dans lui ou hors de lui? Si elle est hors de lui, il ne se détermine donc pas librement; si elle est en lui, qu'est-ce autre chose que sa volonté?"[3]

In conclusion, the creation of matter is an unmotivated decree of divine will. But although this is Voltaire's solution at the moment, we observe already a certain hesitation. In the *Eléments*, discussing *à propos* of Clarke and Newton the theory of the *sensorium*, whereby pure space and pure time are conceived as necessary, infinite, and eternal properties of divinity, Voltaire suggests that, if this is so, there is no reason why matter, although finite in space, should not also be necessary and eternal:

"Mais il n'y a point de contradiction à croire la matière nécessaire et éternelle, et Dieu nécessaire et éternel. Si l'espace existe par nécessité, la matière existe de même par nécessité. Vous devriez donc admettre trois êtres; l'espace dont l'existence serait réelle, quand même il n'y aurait ni matière ni Dieu; la matière, qui, ne pouvant avoir été formée de rien, est nécessairement dans l'espace; et Dieu, sans lequel la matière ne pourrait être organisée et animée."[4]

[1] *Traité*, p. 23.
[2] *Ibid.*, pp. 23–4.
[3] *Ibid.*, p. 29.
[4] *Eléments*, p. 36.

That Voltaire sees no contradiction in the assumption of eternal matter, although it is not his present belief, is significant. If he does not accept it, it is because of his adherence to divine liberty which is at the centre of the problem of creation.

Voltaire agrees with Newton at this moment in according to God a free-will or liberty of indifference; the passage previously quoted has already indicated this. In the chapter of the *Traité* devoted to the problem of liberty we find it explicitly stated that the divine will is not determined by motives:

"Il (Dieu) a voulu et il a agi selon sa volonté. Si on supposait sa volonté déterminée nécessairement, si on disait: Il a été nécessité à vouloir ce qu'il a fait; on tomberait dans une aussi grande absurdité que si on disait: Il y a un Dieu, et il n'y a point de Dieu. Car si Dieu était nécessité, il ne serait plus agent, il serait patient, et il ne serait plus Dieu."[1]

"La liberté dans Dieu est le pouvoir de penser toujours tout ce qu'il veut, et d'opérer toujours tout ce qu'il veut."[2]

In the *Eléments* Voltaire argues with Newton against the moral determinism of Leibnitz which, by virtue of the principle of sufficient reason, conceives the divine will as subject to a moral necessity, implicit in the divine goodness, whereby God is obliged to create, of all possible orders, the one His wisdom judges to be best. He reproduces at some length the arguments in this dispute between Clarke and Leibnitz. The latter's main argument against the indifference of things and in favour of divine motivation is the dissimilarity of physical bodies. To this the Newtonian Clarke replies, first, that the identity of atoms is the necessary corollary of physical causality, and that this identity implies precisely the indifference of divine will;[3] an argument which Voltaire stresses on his own account:

"Si j'osais ajouter ici quelque chose aux arguments d'un Clarke et d'un Newton, et prendre la liberté de disputer contre un Leibnitz, je dirais qu'il n'y a qu'un être infiniment puissant qui puisse faire des choses parfaitement semblables."[4]

Secondly, the movements of bodies, far from being necessary, are indifferent, in the sense that the only possible reason for such and such a movement taking place rather than another is the *fiat* of divine will:

"Mais pourquoi ce mouvement à droite plutôt qu'à gauche, vers l'Occident plutôt que vers l'Orient, en ce point de la durée plutôt qu'en un autre point? Ne faut-il pas alors recourir à la volonté du créateur?"[5]

As regards human liberty, Voltaire defines it also at this moment as liberty of indifference, although, as we shall see, expressing grave

[1] *Traité*, p. 57. [2] *Ibid.*
[3] *Elements*, p. 39. [4] *Ibid*, p. 39. [5] *Ibid.*, p. 40.

doubts as he proceeds. As proof of our free-will he appeals to our instinctive conviction, which cannot be called in question without impugning divine veracity.[1] God being the source of human liberty, there is no *qualitative* distinction between divine and human will; both are characterized by their independence of determining motives:

"Vouloir et agir c'est précisément la même chose qu'être libre."[2]

The sole difference between divine and human liberty is one of degree; whereas the former is entire and continuous, the latter is limited and intermittent.[3] Like our other faculties, our freedom is subject to deterioration:

"La liberté est la santé de l'âme; peu de gens ont cette santé entière et inaltérable."[4]

It is this periodic subjection of our will to the slavery of bodily passions which gives rise to the denial of human freedom; a reasoning no less false than that which, from the fact of human disease, would deny the existence of a state of health. In short, it is in its intermittent character alone that human liberty differs from divine:

"Si nous étions toujours libres, nous serions ce que Dieu est."[5]

In the same chapter of the *Traité* Voltaire replies to the argument of the determinists; in the first place, the argument which subjects the will to the understanding and declares it to be determined by the rational motive of what is best. Now Voltaire's reply would at first sight seem to give much, if not all, to the adversary:

"L'homme ne peut certainement vouloir que les choses dont l'idée lui est présente. Il ne pourrait avoir envie d'aller à l'opéra, s'il n'avait l'idée de l'opéra; et il ne souhaiterait point d'y aller et ne se déterminerait point à y aller, si son entendement ne lui représentait point ce spectacle comme une chose agréable. Or c'est en cela même que consiste sa liberté; c'est dans le pouvoir de se déterminer soi-même à faire ce qui lui parait bon: vouloir ce qui ne lui ferait pas plaisir, est une contradiction formelle et une impossibilité; l'homme se détermine à ce qui lui semble le meilleur, et cela est incontestable; mais le point de la question est de savoir s'il a en soi cette force mouvante, ce pouvoir primitif de se déterminer ou non."[6]

But his reply is quite compatible with his previous statement: he implies the identification of motives and act of will-power; a position somewhat similar to that of the modern partisans of freedom as against the crudely determinist position, which implies an arbitrary separation of motives and act and, as it were, a mechanistic action of rational motives upon the will. This is what Voltaire himself

[1] *Traité*, pp. 55–6. [2] *Ibid.*, p. 57. [3] *Ibid.*, p. 57.
[4] *Ibid.*, p. 59. [5] *Ibid.*, p. 59. [6] *Ibid.*, pp. 60–1.

argues, with more truth than he realizes, in terms which are not unlike those employed by Bergson:

"Ceux qui disent: L'assentiment de l'esprit est nécessaire et détermine nécessairement la volonté, supposent que l'esprit agit physiquement sur la volonté."[1]

As Voltaire says, they imply that mind and will are real entities rather than abstract ideas denoting "homme pensant" and "homme voulant." In the act of will the whole of the individual's personality and thought is engaged and projected in a single act, whose analysis into elements cannot fail to give rise to a mechanistic and *a posteriori* distortion of the primitive fact of liberty. Unfortunately, this clear view of liberty was later to be discarded by Voltaire under the pressure of other urgencies.

Another objection dealt with by Voltaire is the problem of reconciling human liberty with divine prescience. He simply refuses, following his master Newton,[2] to enter this labyrinth; he notes that the same argument would destroy divine liberty, for it could equally well be said that God's foreknowledge robs not only man but Himself of freedom;[3] and he concludes that liberty once established, it is not for us to determine how God foresees human acts of freedom.[4]

Now, although Voltaire in the *Traité* holds firmly to liberty of indifference, he has already conceived such doubts in the *Eléments* as to indicate that he is in a fair way to adopting the determinist position. How, he asks, is it possible to conceive a will undetermined by motives; how can human will retain a privileged position in a universe subject to rigorous causality:

"Cet univers ne paraît-il pas assujetti dans toutes ses parties à des lois immuables? Si un homme pouvait diriger à son gré sa volonté, n'est-il pas clair qu'il pourrait alors déranger ces lois immuables?"[5]

He gives his approval to Locke's criticism of indifference and to his definition of liberty as simply the power to act in conformity with motives.

"Voilà pourquoi le sage Locke n'ose pas prononcer le nom de *liberté*; une volonté libre ne lui paraît qu'une chimère. Il ne connaît d'autre liberté que la puissance de faire ce qu'on veut."[6]

From this time Voltaire becomes more and more antagonistic to the idea of free-will in man; and, as we shall see, it is this determinism which later, applied to divine will also, will bring about the complete transformation of his metaphysics.

As regards the soul, Voltaire is now convinced of its non-existence

[1] *Traité*, p. 61. [2] *Eléments*, p. 44. [3] *Traité*, p. 62.
[4] *Eléments*, p. 44. [5] *Ibid.*, p. 49. [6] *Ibid.*, p. 45.

as a separate substance, a conviction which he bases on Locke's remark, as in the *Lettres Philosophiques*:

"Locke paraît le seul qui ait ôté la contradiction entre la matière et la pensée, en recourant tout d'un coup au créateur de toute pensée et de toute matière, et en disant modestement: *Celui qui peut tout ne peut-il pas faire penser un être matériel, un atome, un élément de la matière?*"[1]

The only real argument he introduces is the fact, undoubted in his view, that we do not always think, witness sleep.[2] The attempt to maintain a rigorous dualism leads to the extreme of absurdity: either the Occasionalism of Malebranche, which affirms that on the occasion of the physical sensation, resulting from an external stimulus, God imprints on the mind a corresponding idea, and that likewise it is God who acts on the occasion of an act of human will; but then, says Voltaire with a certain justification, the preservation of an active mind is superfluous:

"Si Dieu ne nous a pas donné la faculté de produire du mouvement et des idées, si c'est lui seul qui agit et pense, c'est lui seul qui veut. Non-seulement nous ne sommes plus libres, mais nous ne sommes rien, ou bien nous sommes des modifications de Dieu même. En ce cas il n'y a plus une âme, une intelligence dans l'homme, et ce n'est pas la peine d'expliquer l'union du corps et de l'âme, puisqu'elle n'existe pas, et que Dieu seul existe."[3]

Or again, the pre-established harmony of Leibnitz; but this implies that the soul is a mirror of the whole universe, a supposition which Voltaire's rejection of innate ideas precludes him from admitting:

"Il est aisé de répondre à une telle hypothèse, que si Dieu a fait de l'âme un miroir, il en a fait un miroir bien terne."[4]

Besides, the system of Leibnitz reposes on the admission of a *plenum* which Voltaire refuses:

"Pouvez-vous bien avancer qu'une goutte d'urine soit une infinité de monades, et que chacune d'elles ait les idées, quoiqu'obscures, de l'univers entier; et cela parce que, selon vous, tout est plein, parce que dans le plein tout est lié, parce que tout étant lié ensemble, et une monade ayant nécessairement des idées, elle ne peut avoir une perception qui ne tienne à tout ce qui est dans le monde?"[5]

We must therefore fall back on the simplest explanation: sensation and thought are the product of purely material modifications. This materialism, with its elimination of the spiritual substance, remains a basic principle of Voltaire's metaphysics, and its full implications will be apparent in due course.

[1] *Elèments*, p. 58. [2] *Traité*, p. 49.
[3] *Eléments*, p. 60. [4] *Ibid.*, p. 62. [5] *Ibid.*, p. 74.

If we look back on Voltaire's ideas at this stage we notice obvious incompatibilities. The proof of God's existence *a contingentia mundi* is an *a priori* proof; *a priori* too is Voltaire's optimism, an optimism which colours all the works of the period, notably the philosophical tales and philosophical poems, such as *Le Mondain* and the *Discours sur l'homme;* the latter being a constant eulogy of Pope and Leibnitz. These vestiges of rationalism, and optimism in particular, are incompatible with Voltaire's empiricism, and it is not surprising that he should come to realize the discrepancy. This realization comes with the disaster of Lisbon, which has, however, wider implications, for not only was optimism to be discarded, but his whole metaphysics to undergo revision.

The Lisbon earthquake of 1755 brought to the fore the problem of evil. The fact of evil and suffering can no longer be denied and admits of no *a priori* justification. Voltaire's reaction to the disaster is to be found in the *Poème sur le désastre de Lisbonne* and in *Candide*, of which the first is the more illuminating philosophically. Voltaire turns his back on Leibnitz, Pope, and Shaftesbury and affirms the positive existence of evil; but then a seemingly insuperable problem presents itself. To understand Voltaire's dilemma we must quote the following lines:

> "Non, ne présentez plus à mon cœur agité
> Ces immuables lois de la nécessité,
> Cette chaîne des corps, des esprits et des mondes.
> O rêves de savants! ô chimères profondes!
> *Dieu tient en main la chaîne et n'est point enchaîné;*
> Par son choix bienfaisant tout est déterminé;
> Il est libre, il est juste, il n'est point implacable.
> Pourquoi donc souffrons-nous sous un maître équitable?
> Voilà le nœud fatal qu'il fallait délier."[1]

Leibnitz's optimism is based on the principle of determinism: God is subject to the moral necessity of creating the best of all possible worlds; creation has a character of necessity in that its parts and sequence of parts, each finding its sufficient reason in the others, represent an order necessitated by the divine wisdom and justice. This double determinism is the condition of any justification of evil, that is it must affirm the necessity of the universal chain of events and beings, and at the same time provide a determining motive in the divine mind for the choice of this harmony. Leibnitz justifies evil by declaring it a necessary element of creation which in itself and its internal arrangement is the necessary consequence of divine motivation. Voltaire, by accepting optimism, had, without realizing

[1] *Poème sur le désastre de Lisbonne*, xii, pp. 119–20.

it, been subscribing to this determinism; and now, under the stress of the problem of evil, he reaffirms his conviction of divine liberty:

"Dieu tient en main la chaîne et n'est point enchaîné."

Whatever necessity may reign within the parts of creation, creation itself is a free decree of divine power. The note appended to the above line is a reply to Leibnitz whom Voltaire names:

"*Tout est enchainé,* ne veut dire autre chose sinon que tout est arrangé. Dieu est la cause et le maitre de cet arrangement. Le Jupiter d'Homère était l'esclave des destins: mais, dans une philosophie plus épruée, Dieu est le maître des destins."

But then the problem of evil is all the more acute, for how can the existence of evil be reconciled with divine freedom? Voltaire declares himself unable to solve the problem: both the poem and *Candide* end on an agnostic note bidding us renounce vain metaphysical speculation and *cultiver notre jardin.*

Voltaire, however, is not content to remain there: the problem of evil remains intact and he cannot accept the risk of an ignorant pessimism which might destroy the belief in God. Besides, the "insatiable curiosity" of the metaphysican urges him on:

"Mais malgré ce désespoir, je ne laisse pas de désirer d'être instruit, et ma curiosité trompée est toujours insatiable."[2]

Impelled by it, Voltaire is led to examine anew the problem of the relationship between God and creation, for only by a revision of his ideas can he hope to throw some light, however feeble, on the problem which touched him most, the problem of evil. What we have seen makes it evident that the solution, or rather explanation, is only possible in and through a radical determinism; and we are not surprised to find in Voltaire's *volte-face* on the question of divine liberty the key to his final metaphysical system.

In dealing with this final phase of Voltaire's thought, reference will be made to the articles of the *Dictionnaire Philosophique* and to the following attendant works: *Le Philosophe Ignorant; Il faut prendre un parti; Tout en Dieu.*

Although in the *Eléments* Voltaire already expressed doubts as to man's free-will, it is safe to place his conversion to the determinist standpoint in the year 1749.[3] In the final period the negation of free-will has the force of a principle. Liberty of indifference is an illusion incompatible with universal determinism:

"L'homme est libre . . . quand il peut ce qu'il veut, mais il n'est pas libre

[1] *Poèm sur le désastre de Lisbonne,* xii, p. 126, note (*a*).
[2] *Le Philosophe ignorant,* xxxii, p. 82.
[3] Cf. G. Pellissier, *Voltaire Philosophe,* 1908.

de vouloir; il est impossible qu'il veuille sans cause. Si cette cause n'a pas son effet infaillible, elle n'est plus cause."[1]

The human will is necessarily determined by motives and liberty can have no meaning other than the capacity to act in accordance with those motives. Voltaire intends psychological determinism to be taken in the strictest "physical" or mechanistic sense, as is seen by his repudiation of the attempt to establish a compromise between necessity and free-will by recourse to a so-called moral necessity. Replying to Samuel Clarke, he writes:

"La nécessité morale n'est qu'un mot; tout ce qui se fait est absolument nécessaire. Il n'y a point de milieu entre la nécessité et le hasard: et vous savez qu'il n'y a point de hasard; donc tout ce qui arrive est nécessaire. . . . L'ignorant qui pense ainsi n'a pas toujours pensé de même, mais il est enfin contraint de se rendre."[2]

It is unfortunate, as we have said, that Voltaire should have reverted to such a mechanistic interpretation of the will, but, like most thinkers of his period, who, like himself, were under the influence of the modern scientific discipline, he was bound, once having given up the obviously inadequate conception of liberty of indifference, to state determinism in mechanistic terms.

The rejection of free-will, important in the domain of moral philosophy, was however to lead to even more important results in metaphysics. Voltaire, we have seen, up to the period of the *Poème* still refuses to attack divine liberty; but in the final period he comes to conceive the divine will on analogy with human will. Like the latter, the divine will is governed by motives:

"Le principe intelligent ne peut rien faire sans raison."[3]

Now there exists in the divine nature one eternally present and determining motive, that of action; and as we can admit no physical impediment to the carrying into effect of this dominant motive, we must agree that God has in fact created matter from all eternity:

"Cette cause universelle est nécessairement agissante puisqu'elle agit, puisque l'action est son attribut, puisque tous ses attributs sont nécessaires, car s'ils n'étaient pas nécessaires, elle ne les aurait pas. Elle a donc agi toujours. Il est aussi impossible de concevoir que l'être éternel essentiellement agissant par sa nature eût été oisif une éternité entière, qu'il est impossible de concevoir l'être lumineux sans lumière."[4]

Voltaire expresses the same idea by a more simple application of the principle of determinism: God is the First Cause, and, as a cause without an effect is an absurdity, creation is eternal:

[1] *Il faut prendre un parti*, xxxii, p. 178.
[2] *Le Philosophe ignorant*, pp. 94–5.
[3] *Il faut prendre*, p. 163.
[4] *Tout en Dieu*, xxxii, pp. 217–18.

"Une cause sans effet est une chimère, une absurdité aussi-bien qu'un effet sans cause. Il y a donc eu éternellement, et il y aura toujours des effets de cette cause universelle."[1]

Matter is then a necessary and eternal consequence of the divine essence and no longer a creation *ex nihilo*, product of an unmotivated *fiat* of divine will:

"Ces effets ne peuvent venir de rien, ils sont donc des émanations éternelles de cette cause éternelle."[2]

The rejection of creation *ex nihilo* leads Voltaire to examine anew the divine attributes. As usual, Voltaire insists on our incapacity to comprehend the nature of God, but he does not hesitate to put forward certain reasoned hypotheses. Hitherto he has conceived God as infinite in time, space, and power:

"Je suis donc réduit à avouer qu'il y a un être qui existe nécessairement par lui-même de toute éternité, et qui est l'origine de tous les autres êtres. De-là il suit essentiellement que cet être est *infini en durée, en immensité, en puissance;* car qui peut le borner?"[3]

He is now to become convinced that these affirmations call for strong reservations.

Voltaire continues to admit divine eternity. Infinity in time is logically necessary; the supposition that matter or any being can spring from nothing is absurd; therefore all existent beings, God included, are eternally existent.[4] But infinity in time is also a fundamental datum of experience; experience presents us with an infinite duration or continuum which does not admit of any division into discrete instants nor of any addition or subtraction. In the article ***Infini*** we read the following highly suggestive passage:

"Mais qu'est-ce qu'un infini qui est passé, un infini que j'arrête dans mon esprit au moment que je veux? Je dis, voilà une éternité écoulée; allons à une autre. Je distingue deux éternités, l'une ci-devant, et l'autre ci-après.

Quand j'y réfléchis, cela me paraît ridicule. Je m'apercois que j'ai dit une sottise en prononçant ces mots: 'Une éternité est passée; j'entre dans une éternité nouvelle.' Car au moment que je parlais ainsi, l'éternité durait, la *fluence du temps* courait. Je ne pouvais la croire arrêtée. La durée ne peut se séparer. Puisque quelque chose a été toujours, quelque chose est et sera toujours.

L'infini en durée est donc lié d'une chaîne non interrompue. Cet infini se perpétue dans l'instant même où je dis qu'il est passé. Le temps a commencé et finira pour moi; mais la durée est infinie. Voilà déjà un infini de trouvé, sans pouvoir nous en former une notion claire."[5]

[1] *Ibid.*, p. 218, cf. *Il faut prendre*, pp. 163–4. [2] *Ibid.*, p. 218.
[3] *Traité*, p. 22. [4] *Dictionnaire Philosophique*, xli, article *Infini*.
[5] *Ibid.* The text of the *Dictionnaire Philosophique* quoted is that of the Harbeth edition of the *Oeuvres Complètes* (1859). References are, however, given to the Kehl edition.

That Voltaire considers this temporal infinity as a fact of experience is shown in the last sentence, where it is spoken of as being found or given (*trouvé*), as opposed to the eternity of matter which is said to be demonstrated (*démontré*). The passage as a whole implies a radical distinction between time experienced, which is a flux (the use of the term *fluence* is significant), and space, which is discrete—a distinction which reminds us of Bergson's between *temps vécu* and space, and which demonstrates Voltaire's skill in psychological analysis. The point which Voltaire stresses is that, although we have no clear notion of this temporal infinity, it is a datum of experience and cannot be denied.

Thus both on logical and psychological grounds the infinity in time of both God and his creation must be accepted. But this is not the case with infinity in space: spatial, arithmetical and geometrical infinity is a purely nominal concept, derived from the capacity of the mind to make an indefinite addition of discrete parts; devoid of any real positive content, it implies the purely negative notion of absence of assignable limits:

"Une durée infinie s'est écoulée au moment que je parle, cela est sûr; je ne peux rien ajouter à cette durée passée, mais je peux toujours ajouter à l'espace que je conçois, comme je peux ajouter aux nombres que je conçois. L'infini en nombres et en étendue est hors de la sphère de mon entendement."[1]

And since spatial infinity corresponds to no reality, we are not constrained to admit the existence of a God or matter infinite in extent. As for infinite matter, Voltaire has always denied it by virtue of the vacuum; but he now comes to doubt the infinity of God in space. As creator and animator of matter God is the principle behind all creation, but is it reasonable to assume that He exists in the vacuum too? As we shall see, He is the cause of all events in matter, movements or ideas, and in this sense is present everywhere in creation as the force behind its modifications:

"Dieu est présent partout, dit Clarke. Oui, sans doute; mais partout où il y a quelque chose, et non pas où il n'y a rien. Etre présent à rien me paraît une contradiction dans les termes, une absurdité. Je suis forcé d'admettre une éternité, mais je ne suis pas forcé d'admettre un infini actuel."[2]

Although it cannot be said that the finiteness of God in space becomes a principle with Voltaire, it seems to him a strong probability.

Finally, infinity in power, like spatial infinity, is a nominal conception derived from the indefinite extension of the notion of power. Voltaire stresses the point that by denying divine free-will he is not destroying divine liberty as properly conceived, that is as the power to act. As God is to a greater degree than any human being free from

[1] *Le Philosophe ignorant*, p. 99.
[2] *Il faut prendre*, pp. 161–2, cf. *Le Philosophe ignorant*, p. 99.

all external impediment to His action, He is infinitely powerful in the sense that He is *very* powerful:

"L'être suprême étant très-puissant est donc le plus libre des êtres."[1]

But we are not warranted in affirming God to be *all*-powerful:

"Quand nous disons qu'il est infini en puissance, avons-nous d'autre idée sinon que sa puissance est très-grande? Mais de ce qu'il y a des pyramides de six cents pieds de haut, s'ensuit-il qu'on ait pu en construire de la hauteur de six cents milliards de pieds?[2]

Voltaire suggests that God may be limited by his own nature:

"Rien ne peut borner la puissance de l'Etre éternel existant nécessairement par lui-même; d'accord, il ne peut avoir d'antagoniste qui l'arrête: mais comment me prouverez-vous qu'il n'est pas circonscrit par sa propre nature?"[3]

Indeed, the essential attribute of God as creator itself sets a limit to His power, as witnessed by the fact that He is obliged to create, and to create a world wherein evil will prove to be a necessity.

In conclusion Voltaire, while holding to divine eternity, now tends to deny God's infinity in extent and power.

It is obvious that the relationship between God and creation has been totally transformed, and with it the basic concept of contingency. Whereas hitherto Voltaire made a clear distinction between the necessary Supreme Being and contingent matter by virtue of the infinite nature of the one and the finite nature of the other, he can no longer express the distinction in terms of an opposition. For God, although infinite in time, is no longer infinite in extent and power; while matter, although still finite in space and power, is infinite in time. Matter, from being a free creation of the divine will, has become the *necessary* consequence of divine essence. It has therefore acquired an element of necessity, while God has lost some of His infinite attributes. It is no longer possible to express the distinction between God and creation in terms of an Infinite Being and a finite world; in other words, matter must be contingent independently of whether it is finite or infinite in certain respects, just as God must be necessary irrespective of whether His attributes are in all respects finite or infinite.

Taken together, the existence of the vacuum, the non-essential character of material properties, the universal finality indicate that matter is the product of a necessary Being. Voltaire continues to maintain that the theory of the plenum leads directly to Spinozism and the doctrine of a single substance:

"Il (Spinoza) supposait le plein avec Descartes, quoiqu'il soit démontré ne

[1] *Il faut prendre*, p. 165. [2] Article *Infini*. [3] *Ibid.*

as a separate substance, a conviction which he bases on Locke's remark, as in the *Lettres Philosophiques*:

"Locke paraît le seul qui ait ôté la contradiction entre la matière et la pensée, en recourant tout d'un coup au créateur de toute pensée et de toute matière, et en disant modestement: *Celui qui peut tout ne peut-il pas faire penser un être matériel, un atome, un élément de la matière?*"[1]

The only real argument he introduces is the fact, undoubted in his view, that we do not always think, witness sleep.[2] The attempt to maintain a rigorous dualism leads to the extreme of absurdity: either the Occasionalism of Malebranche, which affirms that on the occasion of the physical sensation, resulting from an external stimulus, God imprints on the mind a corresponding idea, and that likewise it is God who acts on the occasion of an act of human will; but then, says Voltaire with a certain justification, the preservation of an active mind is superfluous:

"Si Dieu ne nous a pas donné la faculté de produire du mouvement et des idées, si c'est lui seul qui agit et pense, c'est lui seul qui veut. Non-seulement nous ne sommes plus libres, mais nous ne sommes rien, ou bien nous sommes des modifications de Dieu même. En ce cas il n'y a plus une âme, une intelligence dans l'homme, et ce n'est pas la peine d'expliquer l'union du corps et de l'âme, puisqu'elle n'existe pas, et que Dieu seul existe."[3]

Or again, the pre-established harmony of Leibnitz; but this implies that the soul is a mirror of the whole universe, a supposition which Voltaire's rejection of innate ideas precludes him from admitting:

"Il est aisé de répondre à une telle hypothèse, que si Dieu a fait de l'âme un miroir, il en a fait un miroir bien terne."[4]

Besides, the system of Leibnitz reposes on the admission of a *plenum* which Voltaire refuses:

"Pouvez-vous bien avancer qu'une goutte d'urine soit une infinité de monades, et que chacune d'elles ait les idées, quoiqu'obscures, de l'univers entier; et cela parce que, selon vous, tout est plein, parce que dans le plein tout est lié, parce que tout étant lié ensemble, et une monade ayant nécessairement des idées, elle ne peut avoir une perception qui ne tienne à tout ce qui est dans le monde?"[5]

We must therefore fall back on the simplest explanation: sensation and thought are the product of purely material modifications. This materialism, with its elimination of the spiritual substance, remains a basic principle of Voltaire's metaphysics, and its full implications will be apparent in due course.

[1] *Elèments*, p. 58. [2] *Traité*, p. 49.
[3] *Eléments*, p. 60. [4] *Ibid.*, p. 62. [5] *Ibid.*, p. 74.

Infinite Being but as First Cause or Principle; and in so far as he defines Him it is as Principle of Action or First Mover.[1]

Voltaire thus maintains the essential of contingency, while depriving it of certain pseudo-ideas which he had previously attached to it.

Voltaire refutes strongly Spinoza and Pantheism. In describing matter as an emanation of Divine Substance Voltaire is certainly giving something to Pantheism, but he is far from identifying God and matter:

"Mais ici on ne fait point Dieu l'universalité des choses; nous disons que l'universalité des choses émane de lui."[2]

So sensitive is he to the dangers of Pantheism that he rejects any notion savouring of it. Pantheism, to his mind, derives from the belief in infinitely extended matter: so too such notions as the unity of beings or the unity of events. In the article *Chaîne des êtres créés* he criticizes the Platonic conception, utilized by Leibnitz, of a gradation of beings extending from the atom to God; he does so on the ground that no such continuity exists, for observation shows gaps between the various species, while we must assume an infinite gap between the greatest of human beings and God. The source of this error, according to Voltaire, is the belief in a plenum; and indeed on the basis of an infinitely extended matter, together with Leibnitz's law of continuity, Diderot was to construct a rigorous Pantheism. In the article *Chaîne des événements* we have a criticism of Leibnitz's corollary notion, it too based on the plenum. The claim that all is linked in the universe, so that a change in one element produces a change in the whole, seems to imply Pantheism in Voltaire's view. The existence of a vacuum disproves it: any one movement will produce immediate effects, but these effects will be of gradually diminishing force and will finally be swallowed up in the vacuum.

"Il faut songer que tout n'est pas plein dans la nature, comme Newton l'a démontré, et que tout mouvement ne se communique pas de proche en proche, jusqu'à faire le tour du monde, comme il l'a démontré encore."[3]

The separation of the notions of necessity and contingence from those of infinity and finiteness leads automatically to the discarding of the proof of God's existence *a contingentia mundi* in favour of the proof by final causes. The former, based on the principle of sufficient reason, ascends the chain of finite beings to a Supreme Being who is not only necessary but actually infinite. Implying a God infinite in all respects, it can no longer be maintained. The second proof on the other hand, derived from the observation of the divine effects, passes

[1] *Il faut prendre*, p. 157.
[2] *Tout en Dieu*, p. 219.
[3] Article *Chaine des événements*, xxxviii.

directly to a Supreme Being conceived as Cause and concludes nothing as to His finite or infinite attributes. Whereas the former is the regression of an infinite chain, the latter is an immediate passage from product to cause; and as we have seen, the relation of God to matter is now seen as one of cause to product and no longer of infinite to finite.

There is also another reason why Voltaire rejects the proof *a contingentia mundi*: it is a relic of rationalism, based as it is on *a priori* reasoning. The teleological argument is the same contingency proof, that is utilizing the idea of contingency, but stated on empirical grounds.

This argument is for Voltaire invincible: "Rien n'ébranle en moi cet axiome: Tout ouvrage démontre un ouvrier."[1]

Any scepticism as to final causes falls upon the abuse of the notion: such absurdities as the statement that the nose is made to wear spectacles are not advanced by any serious Deist, who does no more than indicate the marvellous mechanism of the universe and of the human body.[2] Voltaire rejects entirely the thesis of the materialists, such as D'Holbach: no assemblage of atoms could account for the universal harmony: "On m'appelle *nature*, et je suis tout art."[3]

In the light of these conceptions Voltaire comes back to the problem which beset him, the problem of evil. Creation is seen to be a necessary consequence of the Divine Essence, from which it follows that whatever it contains is necessary:

"Tout ce qui existe est nécessaire: car quelle raison y aurait-il de son existence?"[4]

As evil is seen to exist in the world, we must conclude that it is a necessary element in a necessary creation and that, as such, God is its author:

"Mais le mal physique et le mal moral viennent donc aussi de ce grand être, de cette cause universelle de tout effet? . . . Il était donc nécessaire qu'il y eût du mal? Oui, puisqu'il y en a."[5]

By making God the author of evil Voltaire does not mean that He does evil, which is impossible, but that evil is a necessary condition of the realization of His essence or power. His conclusion on the problem of evil is well summarized in the following passage:

"Je demeurerai toujours un peu embarrassé sur l'origine du mal, mais je supposerai que le bon Oromase (i.e. Dieu) qui a tout fait n'a pu faire mieux. Il est impossible que je l'offense quand je lui dis: Vous avez fait tout ce qu'un

[1] *Le Philosophe ignorant*, p. 97, cf. article *Causes finales*, xxxviii.
[2] *Ibid.*, p. 101.
[3] Article *Nature*, xlii.
[4] *Tout en Dieu*, p. 223.
[5] *Ibid.*

être puissant, sage et bon pouvait faire. Ce n'est pas votre faute si vos ouvrages ne peuvent être aussi bons, aussi parfaits que vous-même. Une différence essentielle entre vous et vos créatures c'est l'imperfection. Vous ne pouviez faire des dieux; il a fallu que les hommes, ayant de la raison, eussent aussi de la folie, comme il a fallu des frottements dans toutes les machines. . . . Il me paraît impossible qu'un animal, composé nécessairement de désirs et de volontés, n'ait pas trop souvent la volonté de se faire du bien en faisant du mal à son prochain. Il n'y a que vous qui ne fassiez jamais de mal. Enfin, il y a nécessairement une si grande distance entre vous et vos ouvrages, que le bien est dans vous, le mal doit être dans eux."[1]

However similar in some respects, Voltaire's solution of the problem of evil differs totally from that of Leibnitz. In the first place, Leibnitz's solution is a rational justification based on *a priori* reasoning, whereas Voltaire's solution is a reasoned hypothesis founded on empirical grounds, being the conclusion of a line of reasoning which starts from the critique of human liberty, applies this critique to God and arrives at the necessary character of creation and its elements. Secondly, the Leibnitzian solution, especially as it is presented by his followers, implies the elimination of evil as a positive fact, whereas Voltaire refuses to accept any rational *escamotage* of the evil observed around us. For these reasons Voltaire's solution is in its implications totally different; whereas Leibnitz sees in evil a necessary element of an order which is the *best of all possible* orders, by virtue of God's subjection to His goodness, Voltaire sees in it a necessary element of an order which is the necessary and *only possible* order by reason of God's subjection to His creative compulsion. In short, the universe of Leibnitz is the best of all possible worlds; that of Voltaire is the best possible. God, according to Voltaire, has done the best He could, given the obligation to create; as he himself states in the above passage: "Je supposerai que le bon Oromase qui a tout fait n'a pu faire mieux." In other words, Voltaire does not *justify* evil, as does Leibnitz, but *explains* it; or to quote Lévy-Bruhl's excellent apposition: "Whereas Leibnitz justifies God, Voltaire excuses him."[2] Thus Voltaire offers his explanation only as an explanation, believing that the ultimate reconciling of God and evil is beyond the powers of human reason.[3]

In the final phase of Voltaire's thought the effort we have observed from his earliest work to explain reality solely in terms of God and matter is at last consummated. In the article *Ame* we find recapitulated the various arguments against the spirituality and the immortality of the soul; but it is in two works, *Tout en Dieu* and *Il faut prendre un parti*, that Voltaire makes a really systematic

[1] *Il faut prendre*, pp. 201–2.
[2] L. Lévy-Bruhl, *History of modern philosophy in France*, 1899, p. 186.
[3] *Tout en Dieu*, p. 224.

attempt to eliminate the soul as a separate substance and to explain sensation and thought on the basis of materialism.

If we observe the processes of growth, of movement, etc., in the natural world, we are obliged to conclude that they are simply the effects of certain properties with which matter is endowed, and that all such processes result from the play of certain mechanical laws:

"Qu'est-ce que la végétation? c'est du mouvement dans la matière. Quelle est cette faculté de courir? c'est l'arrangement des muscles qui, attachés à des os, conduisent en avant d'autres os attachés à d'autres muscles. C'est évidemment une mathématique générale qui dirige toute la nature, et qui opère toutes les productions."[1]

It is therefore reasonable to suppose, says Voltaire, that so-called spiritual or mental processes are also the effect of certain material properties:

"Dieu a fait dépendre de la mécanique toutes les actions de l'animal; donc Dieu a fait dépendre de la mécanique les sensations qui causent ses actions."[2]

The supposition of a soul is then entirely superfluous, since sensation and thought can be explained in terms of a material mechanism; and we must assume, given the Divine wisdom and power, that God has observed the utmost economy in His arrangement of the universe:

"L'auteur de la nature aura-t-il disposé avec un art si divin ces instruments merveilleux, aura-t-il mis des rapports si étonnants entre les yeux et la lumière, entre l'air et les oreilles, pour qu'il ait encore besoin d'accomplir son ouvrage par un autre secours? La nature agit toujours par les voies les plus courtes: la longueur du procédé est une impuissance; la multiplicité des secours est une faiblesse."[3]

The hypothesis of a spiritual substance leads to inevitable absurdities: for the dualist is obliged to claim that, whereas the animals are simply material substances endowed with the property of sensation, man, who has the same organism, requires in addition a soul which, although essentially different from matter, being unextended and indivisible, is yet constantly affected by matter.[4] Nor can the dualist remain there, for he is now constrained to explain the interaction of those two substances and to assume that the mind receives its sensations and ideas on the occasion of the physical modifications of the organs.[5]

If we reject this dualism, as we must, we must fall back on the simplest explanation, namely that sensation and thought, like vegetation, nutrition and motion, are properties of matter and are the effect of a purely physical and material mechanism.

It is an undoubted fact that this explanation of vital and mental

[1] *Tout en Dieu*, p. 210.
[2] *Ibid.*, p. 211.
[3] *Ibid.*, p. 212.
[4] *Ibid.*, pp. 214–15.
[5] *Ibid.*, p. 215.

processes in terms of material properties and mechanical laws constitutes a materialism; but if it is to be seen in its true light it must be remembered that Voltaire is not suggesting that such properties are essential to matter (in this respect he is no thoroughgoing materialist), but he is claiming that the two substances, God and matter, suffice to explain all movements, sensations, and ideas; he is proposing to explain reality totally in terms of one material substance created and endowed with its properties by a Supreme Being. From the *Lettres Philosophiques* onwards Voltaire has been striving in this direction, but only now, when he has defined to his satisfaction the relation of God to matter, is he in a position to sketch a coherent system, which we propose to summarize as follows.

There exists a necessary and eternal Being who produces necessarily and eternally, as emanations of His substance, matter and all its modes, and endows them with their various properties, such as attraction, movement, sensation and thought according to the organization of each:

"Il y a un être suprême, éternel, intelligent, d'où découlent en tout temps tous les êtres et toutes les manières d'être dans l'étendue."[1]

All things, being products of the Divine Essence, may be said to exist in Him and by Him:

"Dire que quelque chose est hors de lui, ce serait dire qu'il y a quelque chose hors de l'infini. Dieu étant le principe universel de toutes les choses, toutes existent donc en lui et par lui.[2]

By this statement Voltaire does not intend, like Spinoza, to identify God and matter:

"Mais ici on ne fait point Dieu l'universalité des choses; nous disons que l'universalité des choses émane de lui."[3]

The relation of matter to God is not one of attribute to substance but of product to cause; and by stating that all material modes exist in and by God he implies solely that they and their modifications have their origin in the action of the First Mover; in Voltaire's words: "God is inseparable from all nature,"[4] in the sense that God is the immediate cause of all events in matter.

God indeed must be defined as First Cause or, better still, as Universal Principle of Action; for not only is He the creator of matter and its modes, but He is the sole cause of their modifications. All movement in the universe is the result of divine action, not only in the general sense that God is the initiator of movement, but that

[1] *Tout en Dieu*, p. 222.
[2] *Ibid.*, p. 218.
[3] *Ibid.*, p. 219.
[4] *Ibid.*, p. 218.

He is the direct cause of any particular movement. God is the eternal animator of created matter and as such He is *cause agissante:*

"S'il agit sur tout être, il agit sur tous les modes de tout être: il n'y a donc pas un seul mouvement, un seul mode, une seule idée qui ne soit l'effet immédiat d'une cause universelle toujours présente."[1]

Thus all activity, whether of physical movement or of thought, is explained in terms of the direct action of an ever-present Cause on material things, human beings included, inasmuch as they are simply matter organized to receive ideas. It is this view of God as an ever-present Cause, acting on matter which leads Voltaire to argue that God Himself is, like matter, finite in extent, it being unreasonable to suppose Him existing outside of existence, for "notre dépendance du grand être ne vient point de ce qu'il est présent hors du monde, mais de ce qu'il est présent dans le monde."[2]

To return to the main topic, just as Voltaire claims that God is the true cause of all movements in the universe, he claims that He is the cause of all human movements and all sensations and ideas. The refusal to accord this role to Divinity has its source in the error of metaphysicians, who tend to treat both motion and the mental faculties as real entities; but just as there is no such thing as an entity movement, but only matter moving or in motion, so there are no such entities as perception, judgment, etc. (themselves considered as activities of a spiritual substance), but only beings who perceive, judge, etc., that is material bodies endowed with such properties:

"Mais qu'est-ce qu'une idée? qu'est-ce qu'une sensation, une volonté etc.? C'est moi apercevant, moi sentant, moi voulant. On sait enfin qu'il n'y a pas plus d'être réel appelé *idée*, que d'être réel nommé *mouvement;* mais il y a des corps mus. De même il n'y a point d'être réel particulier nommé *mémoire, imagination, jugement;* mais nous nous souvenons, nous imaginons, nous jugeons."[3]

Voltaire proceeds then to argue that God is the real source of our ideas: for neither we give ourselves our ideas, nor can the objects which occasion them be considered their real source:

"Avouons que les objets ne peuvent par eux-mêmes nous en donner; car comment se peut-il qu'un morceau de matière ait en soi la vertu de produire dans moi une pensée?"[4]

"Car ce ne sont pas les objets qui me les donnent. Une matière brute ne peut envoyer des pensées dans ma tête; mes pensées ne viennent pas de moi, car elles arrivent malgré moi, et souvent s'enfuient de même. On sait assez qu'il n'y a nulle ressemblance, nul rapport entre les objets et nos idées et nos sensations."[5]

[1] *Tout en Dieu*, p. 217.
[2] *Il faut prendre*, p. 163.
[3] *Tout en Dieu*, pp. 209–10.
[4] *Ibid.*, p. 209.
[5] *Le Philosophe ignorant*, p. 103.

In other words, Voltaire reasons that external objects are only the *occasional* cause of our ideas and sensations, which have as their sole true cause God Himself. Similarly, all human movements are caused by the action of God and are only occasioned by the action of our body or that of other bodies acting on our own. In this way God is made the sole actor in the universal drama: "Dieu fait tout."[1] And Voltaire is ready to praise Malebranche who, in spite of his extravagances, fastened on this great truth; he is prepared to repeat with him that we "see all in God," in the sense that He is the source of our ideas:

"Puisque nous sommes ainsi sous sa main, Malebranche, malgré toutes ses erreurs, a donc raison de dire philosophiquement que nous sommes dans Dieu, et que nous voyons tout dans Dieu, comme St. Paul le dit dans le langage de la théologie, et Aratus et Caton dans celui de la morale. Que pouvons-nous donc entendre par ces mots, *voir tout en Dieu*? Ou ce sont des paroles vides de sens, ou elles signifient que Dieu nous donne toutes nos idées. Que veut dire, recevoir une idée? Ce n'est pas nous qui la créons quand nous la recevons; donc c'est Dieu qui la crée; de même que ce n'est pas nous qui créons le mouvement, c'est Dieu qui le fait. Tout est donc une action de Dieu sur les créatures."[2]

It is evident that Voltaire is greatly influenced by Malebranche's Occasionalism, but the differences are obvious. He has eliminated from it the soul as separate substance and has therefore stripped it of its mystical content; for whereas Malebranche conceives thought as a communion with the Divine Mind (the vision in God), Voltaire sees in it simply an effect of divine action. The essentially intuitive and mystical character of Malebranche's doctrine is incompatible with Voltaire's empiricism which deprives thought of any real power. The parallel, however, must not be ignored; Voltaire's system is a sort of transposition of Idealism. He has attempted to construct a system in terms of God and matter, just as Berkeley attempted a system in terms of God and mind; it is in this parallel and opposition that Voltaire's originality as a philosopher can best be grasped. The following passage serves to bring out the essence of Voltaire's metaphysical ideas in their final shape:

"Il faut que vous choisissiez entre ces deux partis, ou d'être Dieu quand il vous plaît, ou de dépendre continuellement de Dieu. Le premier est extravagant, le second seul est raisonnable. . . . Nous sommes des machines produites de tout temps les unes après les autres par l'éternel géomètre; machines faites ainsi que tous les autres animaux, ayant les mêmes organes, les mêmes besoins, les mêmes plaisirs, les mêmes douleurs, très-supérieurs à eux tous en beaucoup de choses, inférieurs en quelques autres, ayant reçu du grand être un principe d'action que nous ne pouvons connaître; recevant tout, ne nous donnant rien, et mille millions de fois plus soumis à lui que l'argile ne l'est au potier qui la

[1] *Tout en Dieu*, p. 216.

[2] *Ibid.*, pp. 216–17.

façonne. Encore une fois, ou l'homme est un dieu, ou il est exactement tout ce que je viens de prononcer."[1]

In conclusion, a necessary Supreme Being, creator of eternal matter and its modes, acting eternally on them as direct cause of their modification, such is the final conception of Voltaire, the culmination of a long effort to reduce reality to the two terms, God and matter.

Voltaire's final system (and his various professions of ignorance must not blind us to the fact that it constitutes a system, that is a coherent body of conceptions), is difficult to classify, as it fails to go the whole way in any given direction. By its doctrine of eternal matter conceived as an emanation of divine substance, it gives much to Pantheism; it is impossible not to recognize here a return to Alexandrinian Pantheism, but by the refusal to identify God and matter Voltaire avoids the extreme Pantheism of Spinoza. Similarly, by his elimination of the soul and his explanation of thought in terms of matter, he gives a great deal to materialism (in fact he is as much a materialist as Berkeley is an idealist), but once again, by maintaining a God as creator and animator of matter, he avoids the extreme doctrine of the single substance.

Voltaire's metaphysics is not a system in the cartesian sense; it is not derived from *a priori* conceptions, nor does it employ a geometrical method and it cannot claim the logical unity of the doctrines of Descartes, Malebranche, Spinoza, and Leibnitz. It is rather an empirical metaphysics; it is derived from a close study of observed facts, both physical and psychological, and constitutes a body of reasoned hypotheses or probabilities, and its truth depends on its internal coherence as much as on its capacity to fit those facts.

Hence Voltaire's professions of ignorance are not insincere, nor are they expressions of crude agnosticism or scepticism; he puts forward his metaphysical hypotheses as probabilities and is able, at the same time, to disclaim any final validity for them. In company with the other empiricists of Locke's school he knows that reasoning with evidence is restricted to the domain of abstract notions and that in the domain of all existing things only probability of varying degrees can be expected.[2] For some of his ideas he claims a strong, semi-scientific probability, as, for example, the existence of God; a less strong probability for the eternity of matter and psychological determinism; a fairly weak probability for such suppositions as God's finiteness in extent, etc. But the validity of the system of beliefs derives from their ability in conjunction to explain, in what Voltaire considers a coherent and satisfactory manner, the real world as observed.

[1] *Il faut prendre*, pp. 173–5.

[2] Cf. article *Certain, Certitude*, xxxviii.

We may decline to accord much value to an empirical metaphysics, and require in the metaphysician a central intuition of reality, but it cannot be denied that much marginal speculation in metaphysics is of this hypothetical character; and where a coherent system is constituted under the pressure of a systematic and obstinate searching after truth, philosophy cannot withhold its serious attention and appreciation.

ON MISUNDERSTANDING PLATO

PROFESSOR G. C. FIELD

To anyone who has been engaged in teaching and studying Plato, particularly the *Republic*, for the last thirty or forty years, one fact must stand out with special prominence. That is the remarkable increase during that period of the direct applicability of Plato's discussions to our own problems. Thirty-five years ago the concrete situations which Plato had in mind in these discussions, the general assumptions at the back of them, the possibilities for good or evil that he envisaged, would all seem to the student of that time remote and almost unreal, and it required a considerable exercise of the imagination to discover that there were certain underlying ideas in them which had application to our own time. If we wanted contemporary illustrations of the rise of a tyrant we had to turn to some of the most backward States in South America. The idea of a completely planned society existed only in the minds of the writers of Utopias, to whom we were accustomed, sometimes, to say rather patronizingly that they had forgotten that constitutions grow and are not made. We could study the criticisms of democracy as an intellectual exercise without any feeling that they might be one day applied in practice. How different is the situation now! Many of the possibilities are as near for us as they were to Plato. Many of the general ideas of Plato's day are as readily assumed by us as they were by him. Indeed the difficulty now is greater in trying to gain a sympathetic hearing for the ideas of thirty or forty years ago than for the ideas of the fourth century B.C.

But the greatly increased liveliness and actuality that this has given to the study of Plato has brought with it certain drawbacks, at least from the point of view of those who are seriously interested in trying to understand correctly the thought of a past age. For there has been perceptible a certain tendency in some quarters to translate Plato almost completely into our own age, and to try to implicate him on one side or other of our own contemporary controversies. And some writers who have found it difficult to fit him in on their own side in these controversies have identified him almost completely with the side of their opponents, with the result that he has been treated, not as a serious thinker to be understood, but as an enemy to be attacked, sometimes with all the vigour of invective and insinuation that we associate with the bitterest party warfare.

One of the earliest of recent works to take this line was a curious book by an American professor, Professor Warner Fite, published about nine years ago under the title, *The Platonic Legend.*[1] Some years later an equally savage attack on Plato was made on rather different grounds by Professor Farrington in his book *Science and Politics in the Ancient World.* And a very similar attitude can be detected in stray remarks of several writers, such as Professor Hogben, Professor George Thomson, and others. Even the authorized interpreter of Plato to the millions of B.B.C. listeners, Mr. Crossman, though in some respects he has made valuable contributions to the understanding of Plato, has in others, as I think can be shown, seriously misrepresented him. To discuss all the points raised by these authors in detail would be an endless task. One can only say that any reader would be well advised to compare their statements on specific points very carefully with the original evidence before accepting them. But it should be possible to pick out the main accusations against Plato, and consider their validity in the light of what Plato actually says. Needless to say, I shall not attempt to decide finally whether Plato was right or wrong. Indeed, as I have argued elsewhere,[2] the very idea of labelling and dismissing the arguments of a great thinker as just "right" or "wrong," as if we were correcting a schoolboy's sums in arithmetic, is a mark of superficial thinking. I may add that anyone who thinks that it is impossible to learn valuable lessons from the arguments of such a thinker, even when he disagrees with them, is displaying a sad lack of capacity for philosophical thought.

What, then, is the gravamen of the charges against Plato? Firstly, of course, that he was not a democrat, and disbelieved in democracy. And this is certainly true, at least if we mean by democracy what the Greeks meant by it. In making this proviso I am not thinking of the distinction, on which much stress used to be laid, between direct democracy, as practised by the Greeks, and representative government, as known to us. That is a real distinction, but not very important for the present discussion. Plato would doubtless have said of our system of Parliamentary government that it was not complete democracy, like the Greek government by a popular assembly, but that it did contain a considerable element of democracy, and that his criticisms would apply just in so far as this element was effective. But he would equally certainly have said that to be called a democracy in any sense or to any degree a state

[1] This work was reviewed by me in *Philosophy*, 1935. In the same journal for 1937 there is also a review of Mr. Crossman's broadcast talks, published in book form under the title of *Plato To-day.*

[2] See my article on "Plato's Political Thought and its value to-day" in *Philosophy*, 1941.

must have definite machinery, established and used, by which on some important questions the whole body of citizens could express their opinions and take the decisions that would be acted on.

It is important to emphasize this, because in some recent writing there has been a tendency, doubtless out of compliment to our great ally, to suggest that democracy should be used in a wider and vaguer sense. In one such work by a well-known writer it was argued that any government which received the whole-hearted support of the great body of the people deserved to be called a democracy. Now there may or may not be good reasons for thus extending the meaning of the term. But that was emphatically not what the Greeks meant by democracy, and it was not what Plato was criticizing. Indeed by that test his own ideal State, as described in the *Republic*, ought to be called a democracy. For one of its cardinal virtues was the general agreement throughout the city as to who should and who should not do the actual work of governing. Indeed, even in the existing state of things Plato expresses the hope that the general public, once they had been brought to understand the kind of men the ideal rulers would be, would be ready and willing to accept them as rulers. No one who has read the *Republic* with the slightest care can possibly carry away from it the picture of an aristocracy, with interests of its own, holding down an unwilling population by force.

But, taking democracy in its more usual sense, one may ask whether it is necessarily a sign of mental depravity to criticize it. A critic of democracy is not necessarily a Nazi or a Fascist, and the defenders of democracy would be very ill-advised to dismiss reasoned criticism of it by a simple reference to one or other of these contemporary views. In a recent broadcast, Mr. Crossman intimated that Plato's political views in the *Republic* could be ignored as being the sort of thing we could hear from Marshal Pétain. This, perhaps, represents an advance on an earlier pronouncement in which he was reported to have said that Plato was the first Nazi. But it is none the less a misrepresentation. Plato was not in the least like Marshal Pétain, his views were not at all the same as Marshal Pétain's views, and neither he nor his country were in the situation of Marshal Pétain or France.

A democrat, of all people, ought to be glad to have the case against democracy stated and argued rationally, and there can be little doubt that Plato, if rightly understood, provided the basis from which any rational anti-democratic argument must start. His fundamental objection, as is well known, is that democracy does not apply to the work of government the principle of division of labour and specialization of function which is recognized as the condition of efficiency in every other activity. He would regard the work of

ruling as one function among the many others—though doubtless much the most important—which had to be performed for the benefit of the whole society, and, like every other function, it had to be entrusted to those who had the natural qualities for it and were in a position to devote their whole time and energy to carrying it out. His ideal society is one in which everyone pursues the vocation for which he is naturally most fitted for the benefit of the whole, and he believed that that was the condition not only of the most efficient society but of the greatest degree of happiness for the individuals in it. This ideal may be one-sided, and may doubtless be misapplied, but it is not in itself an ignoble one.

But there is a special feature about Plato's view which ought to arouse some degree of sympathy in modern times. He was struck, as many thinkers of the present age have been, by the contrast between the chaotic uncertainty of political judgments and the clarity and certainty of the scientific knowledge of his time, particularly in the field of mathematics and astronomy. He believed—and this may well have been his fundamental error—that he had found at least the beginnings of the way to make politics a science. Now science is certainly not a democratic activity, except in a most Pickwickian sense which has nothing in common with the democracy which Plato was criticizing, and it is really as expert scientists that his ideal rulers would claim authority. Once more Plato may well have been wrong, but when rightly understood there is nothing in this idea which ought to shock us.

To appreciate the significance of Plato's views fairly one must also realize how far modern democratic ideas, as compared with those of antiquity, have gone to meet Plato. We have made a considerable concession to him when we have accepted the view that a large part of the work of government really does demand a degree of special knowledge and concentrated attention which cannot be possible for the great majority of the population. We recognize this when we accept a professional civil service as a necessary part of the machinery of government. There were no permanent civil servants in Athens, except a few slaves. We recognize it, too, in the very different attitude that we take to our political leaders. We expect them to take responsibility and exercise power in a way which would have excited the sharpest suspicion and resentment in Athens. The words of Sidney Webb, "We need the professional politician just as we need the professional doctor and the professional chimney sweep," show a marked advance towards the Platonic point of view. In fact, modern democratic ideas represent a compromise between—or perhaps a synthesis of—Greek democratic ideas and Plato's criticisms of them.

Another line of attack which appears in most of the writers

quoted consists in equating the political conflicts of ancient Greece with the conflicts of the present day and, once more, trying to implicate Plato in them, of course on the wrong side. This line is pursued temperately by Mr. Crossman and very intemperately by Professor Farrington. The former argues that Plato believed that his potential rulers "will mostly be found not among the peasants and artisans, but in the ranks of the gentry," or again that "from the proposition 'most men are incompetent to govern themselves' he glided imperceptibly into the assertion 'the working classes are incompetent to govern themselves.' " Therefore, it is argued, his advocacy of government by an ideal aristocracy selected purely for ability and devotion to the public good became in practice an advocacy of power for the existing anti-democratic parties. The latter, if I understand him rightly, presents us with a picture of an enlightened, progressive, humanitarian democracy in close alliance with Ionian science going on and on and on and up and up and up, but opposed and attacked by a reactionary Plato "in the interests of an ideal of a slave-owning, class-divided, chauvinistic city-state which was already an anachronism." Very similar statements can be found in some of the other writers referred to.

What is the historical evidence for all this? So far as I can discover there is none at all, nor does any seem to be known to previous historians who have written on this period, nor to scholars who have made a special study of Plato. To begin with, it seems to present us with an excessively roseate vision of Greek democracy, even of Athenian democracy which appears, from the little we know of others, to have been a most favourable specimen of its class. It is impossible, for instance, to find any evidence of a special connection between democracy and the advance of science. Indeed the available evidence seems rather to point the other way. To read the phrase just quoted from Professor Farrington one would suppose that, if Plato is condemned for being a chauvinist and advocate of slavery, the scientifically inspired democracy must have been abolitionist and pacific. Yet what could be further from the truth? The Athenian democracy, it is true, had certain provisions against some kinds of ill-treatment of slaves. But there was never even a suggestion of any movement for the abolition of slavery, and they were quite content to draw large revenues from the horrors of slavery in the mines of Laurion. As for chauvinism it was precisely the democracy which was in general the war party, and the imperialistic party, too, which desired to establish and maintain Athenian rule over subject communities. Or again, in what sense is it possible to maintain, with any plausibility, that at the time Plato wrote the city-state was "already an anachronism"?

But it is more important to consider the views attributed to

Plato. Was his ideal, for instance, "a slave-owning, class-divided, chauvinistic city-state"? "Class-divided" might be truly applied to the ideal State of the *Republic*, if we are careful to point out the exact sense in which it would apply. It is certainly not a class-division based on wealth, nor on heredity, but is a division of functions to which people are to be assigned purely on grounds of their natural capabilities. Plato makes it quite clear that, whatever the position of a man's—or woman's—parents, if his own natural qualities fit him for a higher or lower position he is to be assigned to that. It is necessary to emphasize this, because some of the critics of Plato attempt to weaken or explain away his statements on the point, doubtless because of the difficulty of fitting them into their indictment. But there can really be no doubt about it at all. What he says is perfectly unequivocal, and is stated more than once.

"Chauvinistic" is the last word that can be plausibly applied to Plato. He took it for granted, of course, as any Greek of the time would have done with only too much reason, that his State would have to prepare for war and be ready to defend itself if attacked. But he clearly never even contemplated anything in the nature of a war of aggression or conquest. As for slavery Plato took for granted that in any actual State slavery, a universal institution in the ancient world, would exist. So would any other Greek of the time have done. There were, it is true, certain theoretical criticisms of slavery, most of them, probably of a rather later date than Plato. But of any practical movement for abolishing the institution there is no discoverable trace anywhere.[1] In that respect, therefore, Plato was not in advance of his time. Indeed it may be freely admitted that some of his incidental remarks on the subject make an unpleasant impression on a modern reader, though cruelty to slaves is strongly reprobated in the *Laws*. But it is quite false to say that slavery formed part of his ideal society. For in the organization of the perfect city of the *Republic* there is no place for slavery at all.

When we come to Mr. Crossman's more moderate criticisms once again we ask for evidence and once again we get none. Plato may have thought that the qualities he wanted for his ideal rulers would be more frequently found among the "gentry"—I am not quite sure what people Mr. Crossman means to include under this term—than among other classes. It may even have been true, a point Mr. Crossman does not consider. But there is absolutely no evidence at

[1] It is worth remembering that the oft-quoted assertion from the orator, Alcidamas—"God has made all men free: nature has made no man a slave"—was put forward, not as a general challenge to the institution of slavery, but specifically in support of the claim of the Messenians to be free from the Spartan rule. There is no reason to doubt that the Messenians, when they were free, had slaves of their own, like everyone else.

all that he thought so, and it is quite clear that he did not believe that these qualities would be found *exclusively* in any of the existing classes. The further conclusions that Mr. Crossman draws from this seem equally unsupported by evidence. There is no case recorded in which Plato gave his support to any existing oligarchical party or in which such a party appealed to Plato's theories. Indeed it is hard to see how they could possibly do so in view of what he says about oligarchy. It is true that in the *Republic* he thinks it one degree less bad than democracy as practised in Greece, though later he came to the conclusion that a bad oligarchy was worse than the worst democracy. But his criticisms of it as a form of government are completely damning. So with other forms of government then existing. The tyrannny, or dictatorship based on force, he always denounced as the most evil form of government of all. For the Spartan constitution he had, no doubt, like many Greeks, an admiration which we could not share. What impressed him about it was the spectacle of a perfectly planned State with a clearly conceived end and everything organized to secure that end. Modern enthusiasts for a planned society ought to be able to appreciate this. Indeed there were certain Spartan characteristics in the best days of the city which everyone must admire.[1] What he disliked about Sparta were just the features that we dislike, its reliance on force, its basis in serfdom, its devotion to war, its neglect of the things of the mind. It may be true that he was so impressed by the one side that he was not quite severe enough to the other. But that is not a very damning indictment.

Mr. Crossman develops this line of attack by suggesting that as a practical policy Plato concentrated his interest on existing oligarchies or dictatorships, because he thought there might be some chance there of converting the rulers to his views. He was not interested in the democracies, even Athens, because he knew there was no chance there. Mr. Crossman adds that "his pupils were chiefly drawn from the sons of tyrants or leading aristocratic politicians." In fact, the historical evidence on these points is extremely small, but what there is is against Mr. Crossman.

Any statement about where Plato's pupils were drawn from must be pure imagination. We do not know even the names of more than a minute proportion of the many hundreds who must have passed through his hands. And even when we know the names we often know nothing about their social position or political connections. As for the other points, it is no doubt true that if Plato had found

[1] For an instance of the powerful impression that Sparta can make on a writer of sensitive historical imagination, but with no sympathy for the Spartan outlook as a whole, I would refer to the historical novels of Mrs. Naomi Mitchison.

an oligarchy, or even a tyrant who showed signs of being converted to his views, he would have welcomed the opportunity. But there is no ground for thinking that he had any special expectation of this.[1] The bearing of his visits to Syracuse on this point has been misinterpreted by ignoring the fact that Plato only went there very reluctantly under strong pressure, and never had much hopes of any good coming of it. It is unjustifiable, therefore, to take the Syracusan affair as in any sense a test case of the application of Plato's ideas in practice. If we knew anything about the sort of legislation introduced in the various cities which, as Plutarch tells us, invited different pupils of Plato to draw up laws for them we might really have some material for judging. But unfortunately we know no more than their names.

It is not true that Plato and his school ignored the democracies and had no hopes at all for them. For he tells us quite clearly, in the passage in the *Republic* already referred to, that he had hopes that the mass of the people might come to see that the sort of philosophic rulers, whom he hoped to produce in the Academy, were the kind of people to whom they might fitly entrust the control of the State. There is some evidence that some of Plato's pupils took an active part in Athenian politics. And if they did they must certainly have accepted the democracy, for there was no oligarchical party in Athens from the fall of the Thirty till long after Plato's death. Lycurgus, who is said to have studied in the Academy, was a sound democrat enough in practice, whatever his private ideals may have been, and his power rested on the support of the people.[2] Indeed, the Academy could hardly have been tolerated so long or attained the position it did, if there had been the slightest suspicion of it as a centre of oligarchic propaganda. All this part of Mr. Crossman's case seems quite unhistorical.

We must turn now to another point to which an entirely dis-

[1] In the *Laws* 180, Plato says that *if* those in power could be converted to his views the transition to a satisfactory state would be easiest in the autocratically governed city, and most difficult in an oligarchy. Democracy comes in between. But, as I read the passage, he expresses no opinion about the relative *likelihood* of this conversion taking place in the different kinds of state. In any case I am not prepared to accept the *Laws* as decisive evidence of Plato's views throughout the greater part of his life, in spite of Professor Farrington's curious view that opinions expressed in the *Laws* must be given "the crowning place" in Plato's philosophy, on the ground that it is the latest (and also, oddly enough, the longest) of the dialogues.

[2] Euphraeus, another Athenian student of Plato's, subsequently went to Oreus and became active in the politics of that place. We hear of him from Demosthenes who praises him highly, particularly for his anti-Macedonian activities. It is clear from Demosthenes' account that he was a democratic leader, even though, as so often happened, the democracy eventually threw him over.

proportionate amount of attention has been given by the critics. That is Plato's alleged advocacy of the use of falsehood as a regular method of government. On this point the accusations rise to an amazing pitch of shrillness. Mr. Crossman, relatively mildly, says that Plato believed that the people must be "fed on" propaganda, and compares his methods to the methods of the modern dictators. Other writers speak much more violently. Professor George Thomson in a brief note at the end of his *Aeschylus and Athens* speaks of Plato's "fantastic system of education designed to poison the minds of the people by dissemination of calculated lies." Professor Farrington goes further still. According to him Plato "thought that the remedy for human ills was the edifying lie." A little later, we hear that he "had devoted his life to the elaboration of the wholesome and necessary lie that was to save Greek society." Elsewhere he says that "he feared the truth," and again that "by the end of his life the employment of pious fiction had become so much a second-nature with him," and so on. The conclusion appears to be drawn that we can never be sure that Plato really believed anything he wrote.

What is the foundation for all this portentous erection? It may seem hard to believe to those who have not learnt by long experience the lengths to which exaggeration and distortion can go, but in fact it is all based on a single passage in the *Republic*. There Plato says that, though truth is of the highest value, there are occasions on which a spoken falsehood may be necessary "as a medicine." Now, we may well ask whether anyone seriously denies this as a general principle. The Prime Minister stated, not so long ago, that in time of war it was proper to use language that would deceive the enemy, even if it might mean deceiving one's own people also for the time being. That is precisely one of the possible occasions to which Plato refers. Again, before Italy attacked Greece, the cruiser *Helle* was torpedoed by an Italian submarine. The Greek government stated officially that they did not know the nationality of the attacker, though in fact they knew perfectly well that it was Italian. This was done, largely at any rate, to avoid arousing undue excitement among their own people. I venture to assert that any government, sincerely desirous of preserving peace, might have acted similarly in a moment of acute tension when the issues of peace and war were hanging in the balance, and that their action would meet with subsequent approval, as that of the Greek government did. This again is clearly an instance of another sort of case that Plato had in mind. At any rate, however much we may argue about particular cases, few serious thinkers, except Kant, have ever asserted that there can be no possible occasion on which it would be right to tell a lie. And unless this is asserted there can be no serious ground for quarrelling with Plato's statement.

Plato speaks in general terms of occasions such as those just described. But the one specific instance of a legitimate fiction which he gives is of a different kind. That is the well-known myth about the creation of men out of different metals, which he suggests should become a sort of foundation myth of his Republic. What he is, of course, doing here is to put the general views about human nature which he believes to be true in the form of a concrete story of the creation of man. Such a procedure would not very readily occur to us. But then we have not been brought up as the Greeks were on a body of legendary stories about our own origins, and the origins of most of the communities into which we are divided. It is difficult for us to put ourselves at the point of view of the Greeks with regard to these myths. They were, it seems, regarded as having some sort of authority or claim to special respect. But there was no obligation on anyone to believe them as statements of fact, though no doubt many did so. In that respect the nearest modern parallel is, perhaps, the attitude of many Christians towards some of the stories of the Old Testament. But, unlike the Old Testament, these myths were the staple subject of the imaginative literature of the time, and were retold again and again by poets and dramatists, with variations of their own which, in some cases, were probably intended to bring out a moral or political lesson. There was, therefore, nothing very startling in Plato's proposal, and it is difficult to see anything gravely objectionable. Certainly it lends no bases for the extravagant inferences that have been drawn from it by Plato's modern critics.[1]

There is still one more count in the indictment to consider before concluding. And that refers to Plato's views on education. Here again we get, as was to be expected, the usual accusations of class-bias. Plato confined his higher education to a select aristocracy. He did not believe that the working-classes were capable of education, and so on. The facts, simply stated, are these. Plato believed that human beings varied very widely in natural intellectual ability. So far the existing evidence is on his side. He also believed that a relatively small proportion had the natural ability to grasp subjects like the higher mathematics and philosophy. Here again most people with any practical experience of teaching would agree with him. And, finally, he did not believe that those who had not the natural ability should be taught those subjects. What is there objectionable in this? Every University that imposes a matriculation examination as a condition of entrance adopts the same view.

In the ideal city of the *Republic*, therefore, the "working classes"

[1] The late Professor Cornford has pointed out, in his translation of the *Republic*, the subtle element of exaggeration that is introduced by the consistent translation of ψευδος by "lie." In fact, the word was used of any kind of fiction, and could be quite naturally applied to the work of the poets.

—a misnomer, of course, for they included what we should now call business men just as much as those who worked with their hands—were not considered capable of this higher education simply because all those who were capable of it had already been selected and assigned to a different function. But there is no ground for interpreting this to mean that Plato thought that no one capable of a higher education could be found among the existing workers. On the contrary, he mentions the possibility in the *Republic* that some of the few genuine students of philosophy might come from the ranks of the craftsmen. One of the rare specific instances where we know the origin of Plato's pupils is to be found in a fragment of Aristotle which tells us of a Corinthian peasant who was so impressed by reading the *Gorgias* that he sold his farm and came to Athens to study at the Academy.

But the main line of attack is rather different. This is based on the familiar assertions that Plato despised the sensible world, "treated it with contumely" according to Professor Hogben, or regarded it as a positive danger according to Professor Farrington. Further, he is blamed, particularly by the former writer, for having taught that the knowledge of the non-sensible realities should be pursued as an end in itself for the sake of "spiritual refinement," or to provide an occupation for a leisured class, whereas scientific knowledge should, of course, be pursued for the sake of the technical applications of it. These two lines of criticism are not necessarily the same, though I am not sure that the critics always distinguish them. It is, obviously, perfectly possible to be interested purely in the knowledge of some aspect of the sensible world, and still pursue this for its own sake, without any thought of its practical applications.

With regard to the first point, much has been written on this, and it would take far too long to discuss at length Plato's real attitude to observation by the senses and knowledge of the sensible world. I have examined it at length elsewhere,[1] and, so far as I know, my arguments have never been seriously controverted. But on the second point a word or two does require to be said.

This is connected with the view, popular in certain quarters, that science only progresses when kept in close connection with technology and pursued all the time with an eye to its practical application. To discuss this at length would obviously be impossible here. I will only say that the view does not seem to me to be tenable as a universal statement, but to be true only at certain periods or stages in the development of particular sciences, while at other stages the reverse is true. But at any rate we can probably agree that it would be foolish to blame Plato for not having foreseen all

[1] In my article on "Plato and Natural Science," in *Philosophy* for 1933, subsequently reprinted in my *Studies in Philosophy*.

the possibilities of development in the practical application of science which have been realized since.

Plato's own views on this matter have been much misunderstood. It is true, of course, that he believed that certain non-sensible objects, such as the objects of pure mathematics and moral ideals, were real in a sense in which objects perceived by the senses were not. But he had serious reasons for this, even if they do not appear to us altogether convincing now. It is obviously impossible to expound these here. But they exist, and to dismiss Plato's views on the subject as mere prejudice can only be taken as showing ignorance of Plato or incompetence in philosophical thinking. It is true, also, that he believed that knowledge of these real objects was more completely satisfying than any other form of knowledge could be. His reason was that only in this kind of knowledge can we actually attain that complete clarity and certainty which we are trying to attain in all serious thinking. That, again, may be disputed, but it is a serious argument. It is true, finally, that he believed that the pursuit and attainment of knowledge was, for those who were capable of it, the most completely absorbing and satisfying experience possible, and that such people, if they consulted only their own inclinations, would choose to devote themselves to this before anything else.

What is emphatically not true is that Plato thought that they ought to do this, or that he organized his system of education with this end in view. It is surely too well known to need emphasis that in the ideal State of the *Republic* the philosophers are required to devote a good part of their lives to the practical work of ruling. It should be equally well known that Plato asserts more than once that to do this work properly practical experience and knowledge are just as necessary as philosophical knowledge. It is, therefore, somewhat surprising that there appears to be an inability to grasp the plain fact that Plato's scheme of education in the *Republic* is primarily designed for practical ends. That does not mean, of course, what we usually mean nowadays when we speak of the practical aim of a scientific education, that it was directed to the production of skilled technicians. But it is quite as untrue to describe it as directed towards the training of a leisured class. It was directed towards the production of a busy class of civil and military administrators.

Both in the *Republic* and the *Laws* Plato refers to the direct practical application of the mathematical studies he prescribes to the work of warfare and household and social economy. But that is not, of course, the chief consideration. His main general principle is that, from the point of view of society, the object of the system of education is practical, to train students so that they will do their

work in the world efficiently, but that this practical result will not be attained unless, in the course of their training, they come to value the knowledge of the subjects studied for its own sake. Added to this is his conviction that for the supreme direction of the State a grasp of the philosophical principles involved is essential. These ideas form a point of view well worth consideration. Many of us would be prepared to defend it as fundamentally true, though no one probably would apply it in all details just in the way that Plato applied it.

Perhaps, as a postscript, a word might be added about Plato's attitude to technical skill and craftsmanship. It is true that in certain passages, particularly when speaking of the proper education for a statesman, he speaks disparagingly of this. But there are other passages in which his tone is less unfavourable. In the *Philebus*, for instance, it is included among the essential goods of the good life. What is important to emphasize, however, is the complete erroneousness of the idea that he deprecated the application of scientific knowledge to technical craftsmanship. On the contrary, both in the *Republic* and the *Philebus* he stresses the desirability of making craftsmanship as nearly scientific as possible by the application of precise measurement and the use of mathematical calculation to it.

There are other points on which a good deal might be said, for instance about Professor Farrington's concentrated attack on Plato's religious teaching. But to discuss all these points would be an endless task. I will conclude, therefore, with two general observations.

A good deal of the kind of criticism that we have been discussing comes from those who have been influenced by or are sympathetic towards the doctrines of Marxian Communism. And I should like to suggest to them that they try the experiment of changing their line of approach to Plato, and presenting him as a forerunner of Marx. No doubt this might need a little distortion, but it would be far less in amount than the distortions involved in their present line of attack. Thus they would find in the *Republic* a clear statement of the economic basis of the social and political structure. They would find statements of the economic causes of war and of the inevitability of the class struggle in the nearest approach to capitalist societies that ancient Greece knew. They could find many parallels between Plato's guardians and the Communist Party in Russia. Indeed the Soviet Union is much more like the city of the *Republic* than it is like an ancient Greek democracy. On the other side, the use of the γενναῖον ψεῦδος in propaganda and the forcible repression of false ideologies would not, as far as one can judge, appear very shocking to practical Communists. Clearly a much stronger case

could be made out on these lines than could be, or at any rate has been, made out for the wholesale condemnation of Plato.

The other point is connected with this. It will easily be seen that the unspoken assumption of a good deal of this criticism is the doctrine that the theories of any thinker must generally be regarded as, in the main, a reflection of his social class. This is a doctrine which makes a considerable appeal to some people, not least of its attractions being the ease with which it enables them to dispose of a view without the painful effort of trying to understand it and judge it on its merits. The application of this doctrine to Plato provides a good test of its value. No doubt it is possible to find a certain number of remarks in his writings which seem to reflect the prejudices of his social class, and still more often, perhaps, the prejudices of his race and time. Some of these make an unpleasing impression on a modern reader, and if an anthology is made of them and presented by itself the total effect will be unfavourable, But it will also be wholly false. I hope that I have shown that, even in the cases where it might seem most plausible, this principle of explanation could only be applied to Plato's thought at the cost of great exaggeration and distortion of what he says. But that is, of course, only half the story. To estimate Plato fairly one would also have to study all the dialogues or passages in them which are not quoted by the prosecution and in which they have not been able to find anything that would afford plausible support to their case. When this is done fairly it seems to me certain that we shall have to recognize the occasional symptoms of racial or social prejudice, not as the key to the understanding of Plato's whole thought, but as superficial excrescences which leave the significance of the main arguments unaffected. And the greatness of Plato as a thinker will stand out all the more clearly in the light of the attacks made on him.

OUR KNOWLEDGE OF ONE ANOTHER[1]

PROFESSOR R. I. AARON

1. There can be no doubt that we *do* know one another. We know that others exist and we know a good deal about others. The question is *how* we know others. To say that others do *not* exist would be to assert a solipsism—a theory which no serious philosopher has ever maintained. Solipsism is absurd. Not because it is self-contradictory, for there is nothing self-contradictory in the notion that I alone exist having the experiences and thoughts which I do have and that apart from me nothing and no one else exists. It is absurd simply because others *do* exist and I know this; because, that is to say, it contradicts the known evidence. This is the sole—but the adequate—ground for concluding solipsism to be absurd. Any discussion of this present problem, therefore, must begin with the recognition of the fact that knowledge of others occurs.

But now is this knowledge certain, or is it merely probable? Philosophical arguments have been put forward from time to time which claim to prove that it is at best merely probable knowledge. Nevertheless, we do in fact feel quite certain about such knowledge, and cannot bring ourselves to doubt it. Thus we cannot doubt, without at once perceiving the absurdity of the doubt, that the people around us exist. Can I doubt that my friend exists? Could David bring himself to deny that Jonathan existed whilst he still lived? Could Abélard doubt the existence of his Héloïse? The supposition seems foolish.

Consequently, there is something strained and unreal in the traditional philosophical theory that this knowledge of others is an argument from analogy and is probable only, as is all knowledge reached in that way. A more obvious account would be that it is direct knowledge since we are so certain. Cook Wilson's celebrated passage in *Statement and Inference* (p. 853) seems to be merely the re-assertion of this more natural view in face of the artificiality and unreality of what had become the official philosophical theory. "If we think," he says, "of the existence of our friends, it is the 'direct' knowledge which we want; merely inferential knowledge seems a poor affair. To most men it would be as surprising as unwelcome to hear it could not be directly known whether there were such existences as their friends, and that it was only a matter of (probable)

[1] In substance, though considerably altered, this paper is the Dr. Williams Trust Lecture delivered at Carmarthen in October 1942.

empirical argument and inference from facts which are directly known. And even if we convince ourselves on reflection that this is really the case, our actions prove that we have a confidence in the existence of our friends which can't be derived from an empirical argument (which can never be certain), for a man will risk his life for his friend. We don't want merely inferred friends." The knowledge is so certain, that is to say, that we cannot admit it to be merely probable or even inferred; it cannot be an instance of analogical reasoning or of any other form of indirect reasoning. It must be direct.

But is there such direct knowledge of others? We clearly cannot take its existence for granted, for many philosophers have emphatically denied its existence. The fact that the argument from analogy is the traditional philosophical argument should itself give us pause. And certainly we cannot argue *a priori* that since this knowledge is certain it *must* be direct, and rest content with this argument, as some of the supporters of the direct theory seem to do. On the contrary, at the present juncture it is very necessary if the direct theory is to be re-asserted that there should be no doubt at all as to what is meant by it. We shall find, however, that there is in fact much doubt as to the sense in which this knowledge is direct.

It is generally supposed that each one of us has direct knowledge of his own self in introspection, although even here the questions, what is a *self* and what is *introspection*, are certainly not without difficulty. But it is usually supposed that in introspection one does have at any rate direct knowledge of one's own mental states. What of the mental states of others? Is one aware of them in the same way? Apparently not. Introspection, this turning inwards, this reflexive movement, reveals one's own mental states, but does not reveal the mental states of others—or, as it has been neatly put, there is no *extra*-spection. Hence that which is generally taken to be the direct element in the process of knowing one's own self does not appear to be the direct element in one's knowledge of another. One does not introspect another's mind.

2. It might be claimed, however, that we do have *extra*-spection and do know other minds directly in telepathy, and it would be wise to begin our examination of the knowledge of others by considering this claim. Myers defined telepathy as the "communication of impressions of any kind from one mind to another independently of the recognized channels of sense," and this seems as good a definition as any. Telepathy in this sense would appear at first to be the very thing for which we are searching, namely, immediate or direct knowledge of another. Yet we shall find that few, if any, supporters of the direct theory make any appeal to telepathy, and this in spite of the fact that most philosophers and most psycho-

logists to-day accept the view that the case for telepathic communication is a strong one. The reason why no such appeal is made will become clear on a little reflection.

In the first place, telepathy if it occurs at all occurs only rarely. Our knowledge of others, on the other hand, is certainly not a rare occurrence; it is a wholly familiar experience to all. Consequently, it clearly cannot be the case that our only knowledge, or our chief knowledge, of others is telepathy. It has been suggested, however, that telepathy may occur more frequently than we at first imagine. Thus in listening to what another says we hear the other's words and interpret them, but in addition to this listening and interpreting there may also be present in our minds a telepathic element—so weak, however, and so bound up with the rest of the experience that we do not notice it.[1] Even so, it is still these other elements, the listening and the interpreting, of which we are explicitly conscious in the experience, and which *primarily* deserve our attention when we seek to explain such knowledge. The telepathy present would be a minute part of the whole process involved. Certainly, explicit telepathy, that of which we are conscious, occurs rarely. Some people never seem to experience it, others only once or twice in a lifetime. Those who are frequently telepathic are very few indeed. Obviously, the full explanation of so common an experience as knowing others cannot lie in this somewhat uncommon occurrence of telepathy.

In the second place, is telepathy rightly described as direct *knowledge* of another self or mind? Telepathy seems most often to be an infection or a contagion rather than a knowing, as Professor H. H. Price has pointed out. For instance, I am thinking of a tune and you suddenly think of the same tune and neither of us knows that you have "caught" the tune from me. You may, however, begin to hum it, much to my surprise; and I shall then say you are telepathic and have "caught" it from me. But it is surely obvious that in such a case it would not be correct to describe your state of mind when you first thought of the tune as one of knowing my mind directly. You are simply thinking of a tune and humming it. Thinking of a tune and humming it is not knowing another's mind, even though in this case the other mind is thinking of the same tune. Or we may take a slightly different case. A boy wounded on the field of battle may call out for his mother, and his mother thousands of miles away, attending to her work, may suddenly find herself thinking intensely of him and know that he is in distress, or even perhaps hear him cry out her name. This kind of case is frequently recorded (cf. for instance, Chap. V of the classic on telepathy, Gurney, Myers, and Podmore, *Phantasms of the Living*). Here again it seems hardly

[1] Dr. Broad, in *Mind and its Place in Nature* (p. 331) once made some such suggestion.

correct to say that the mother knows her son's mind directly. She is rather disturbed, she has "caught" his pain. There is here, admittedly, one development on the first case, for she connects the pain with her son. But she cannot rightly be said to know her son's mind directly. This is still a sort of infection rather than a successful conscious effort to know what is happening in the mind of another.

In such cases of telepathy, then, the receiver is infected by, or "catches," the thought of the other.[1] As a matter of interest I should like to ask here whether, having granted (as we must) that some telepathy is an "infection" in this sense, we should be right in concluding that *all* telepathy is "infection". I have in mind cases of telepathy of which one sometimes hears, in which a person consciously wishes to know what is going on in the mind of another and succeeds in doing so by telepathy. The following instance will illustrate this kind of telepathy: *A* asks *B* a question of the answer to which *A* is completely ignorant, and, *before B* answers, *A* knows what *B* is going to reply, and sure enough a second or two later *B* gives this reply. *A* finds himself "reading *B*'s mind," and he is convinced that he has done so, the experience indeed being made remarkable by the strength of this conviction. *B* in replying confirms this conviction. One occasionally hears of such telepathy. If it does occur the "infection" or "contagion" theory, it seems to me, hardly does justice to the case. This does seem to be very much like a direct knowing of another's mind. However, the general conclusion to which we have come would in no way be shaken by this further development. Our knowledge of others cannot be wholly explained in terms of telepathy, even though we are forced to admit that in some very rare instances telepathy is direct knowledge. For if the direct element in our knowledge of others were solely this sort of telepathy then that element, we should have to conclude, would be infinitesimally slight, and to assert such a theory would in effect be equivalent to asserting an indirect theory. As I have stated, however, the upholders of the direct theory hardly ever base their case on the occurrence of telepathy, and the reason why they do not do so is, I hope, now clear.

3. More frequently we find them making appeal to what is sometimes termed "social feeling," the gregariousness of human beings. We are *born* gregarious, and this of itself explains our knowledge of

[1] Incidentally, if I am genuinely satisfied that I *have* "caught" the thought of another, that provides me with a *proof* of the existence of at least one other mind. For if I am infected another mind must be infecting me—since I cannot be infected by a non-existent mind. This causal proof would rest on the supposition that I had in fact experienced a telepathic experience and that I had recognized it as such. It would also presuppose, of course, an acquaintance with the notion of other minds existing.

one another. "It is," says Professor Alexander, "because we are social beings and have the social instinct that we become aware of others as like ourselves and the possessors of minds." And this doctrine has since been echoed by many other writers. The origin of our knowledge of others is to be found not in any inference from observed facts, but in a feeling deeply implanted within us, in a certain innate disposition to feel sympathetically towards others and to respond to our own kind.

Now the first obvious difficulty with this doctrine is its vagueness. I do not see how it is possible to deny that we are born gregarious in this sense. But what does this prove? Does it, for instance, prove that we have innate knowledge of the existence of others? And if so, of what kind? Do we come into the world knowing the general proposition: *Persons other than myself exist?* Or do we know innately that some particular persons exist, for instance, parents? In either case, this would be innate *a priori* (and in that sense direct) knowledge of the existence of others. But I do not suppose that anyone would seriously contend to-day that we have innate knowledge in just this sense, and of course it would be wrong to attribute this view either to Alexander or to those who speak with him. But what then have they in mind? They appear to have in mind innate tendencies, innate dispositions to respond socially, which, short of being explicit innate knowledge of others, are in fact primarily emotional rather than cognitive, and are cognitive only as potentialities. We are, as it were, prepared beforehand for social and personal relationships.[1] But if this is what is meant, then, without in any way minimizing its importance, it is surely obvious that we do not find in it that for which we are now in search. For how can what we wish to explain at the present moment, namely, the quite explicit and confident assertion of another's existence, be explained in terms either of a vague feeling more emotional than cognitive, or, again, of a vague potentiality with which we are innately endowed? Consequently, without entering into the matter further, we may at once conclude that if this be the direct knowledge in the experience of knowing others and all the rest be indirect, then once again, as with telepathy, it seems somewhat foolish to claim such a theory as a *direct* theory, since what is important in it, from the point of view of knowing others, is the indirect element of which thus far the theory has given no account.

4. We already seem to have exhausted the possibilities on the

[1] Might not one say with equal truth that we are prepared beforehand for relationships with animals and indeed with plants? For we find that the emotional responses of human beings are frequently directed towards animals and plants, and even to physical things.

"direct" side. Our direct knowledge of one another should, if we are to be guided by contemporary writers, be an instance of one of three alternatives, introspection, telepathy, and innate social knowledge, and there are no further alternatives. Yet we cannot find that any theory in terms of any one of these is at all promising. Introspection is confined to our own mental states and gives us no knowledge of others. Telepathy is mostly an "infection" and is not properly speaking knowing, and if we suppose that on some occasions it is knowing, these occasions are so very rare in human experience as to make it impossible to build a theory of our knowledge of others upon telepathy. Lastly, social feeling is so vague that it gets us nowhere. What we are after must be something familiar, for the experience of others is so familiar; it must be something present constantly in our experience. But what is it? Perhaps after all we are searching for something that does not exist; perhaps we have no direct knowledge of others. On reflecting, it does at least appear true that, even if we did know the *existence* of other minds directly, it would still be true that, with the doubtful exception of telepathy, we have no direct knowledge of the states of minds of others. We do not extraspect the mental states of others. For if we had this power then the perceivings, feelings, desirings, willings of others would be as well known to us as our own. What a strange world it would be, and how unlike the world in which, in fact, we live! The privacy of each mental life would have been lost. But we know that in this sense the mental life of each of us *is* private, so that in this sense we clearly have no direct knowledge of others.

Must we then go back to some form or other of the indirect theory on the ground that none of the direct theories which we have considered is adequate? It would be wise in what follows to examine them briefly, in view of the breakdown of the direct theories, and also because even if not wholly true they may yet be partially true, so that their examination may help us to solve our problem.

5. It would be best to begin with the traditional philosophical account of this matter, namely, that we know that others exist by analogy. This theory may be stated as follows: Amongst the bodies which surround me I observe certain of them which behave in a manner resembling that in which my own body behaves. I know that my own body's behaviour is prompted and controlled by my mind—the mind of which I am directly aware in introspection. I therefore conclude that controlling the like behaviour of these other bodies are minds resembling my own, and so indirectly and by analogy I know that other minds exist as well as my own, and I know also the sorts of experiences which they enjoy and can say what is going on in their minds.

This argument at first may appear simple and straightforward

but a little reflection soon reveals its weaknesses. It is meant to explain how we come to know that others exist and how we know what goes on in their minds. Take the first point. We first come to know that others exist, according to the argument, as the consequence of a comparison we make between the behaviour of certain bodies before us and our own. Now it is clear that very young children know the existence of others. It ought to follow, then, on this argument, that they begin by knowing *themselves* as minds and as bodies, that they then observe the behaviour of other bodies and discover likenesses between the behaviour of such other bodies and their own. But surely such a theory is unsatisfactory. In the first place, to say that children begin with a knowledge of their own bodies and then observe the knowledge of other bodies seems to be a reversing of the true order, for they would first appear to know more about the behaviour of other bodies than of their own. In the second place, the argument supposes that each child begins by being something of a solipsist, knowing its own self alone. But where is the evidence for this very remarkable supposition? The behaviour of the youngest children shows that they are, to say the least, as aware of others as they are of themselves. In the face of these considerations can we seriously hold that we begin just knowing ourselves and that we then infer the existence of others by perceiving analogies between their bodily behaviour and our own?

The unsatisfactory nature of the argument from analogy in this first form needs no further illustration. Efforts have been made, however, to state it more carefully, and it has been supposed that the most careful statement would be in phenomenalist terms. It is said that though we *talk* of knowing our own minds and of observing the behaviour of our own bodies and of other bodies, none the less we are in fact confined to two classes of objects, sensations, and introspections. Having in the past experienced concomitantly a sensation *s* with an introspection *i* (for instance, the sensation of a red patch when I cut my finger with the introspection of a feeling of pain), we now argue that since a like sensation is before us at the present moment and since *we* are not enjoying the introspection, there must be occurring somewhere else an instance of this sort of introspection.

Now the first thing one can say about this argument is that it is a somewhat unusual instance of the argument from analogy. The usual form of that argument may be stated thus: In two situations *A* and *B* *a b c d* both occur, *e* also occurs in *A*, therefore it is likely that *e* will occur in *B*. Or, again, *A* and *B* are two substances having *a b c d* as common qualities, *A* has also *e* and so *B* is likely to have *e*. But consider the present argument. I see a red patch and have at the same time, as a concomitant experience, a feeling of pain which

I introspect. In the second place, I see a similar red patch, I have no such introspection myself, but I conclude that there is somewhere else an introspection. Now all that the argument from analogy could justify me in doing would be to pass from my seeing the red patch to *my* introspecting. I could say that by an argument from analogy (incidentally, a very weak one) I *ought* to be introspecting the feeling of pain in this case as in the past. In fact, however, I do not introspect the pain and the argument from analogy can help me no further. I have *ex hypothesi* no notion at this point of another mind. How, then, can I in these circumstances by an argument from analogy pass from my sensation to the assertion of *another's* introspection? Moreover, I do not know and cannot know what sort of mental experiences the experiences of others would be, even if I knew that other minds existed. I have no direct knowledge of such mental states, either by sensation or by introspection. There is no extraspection of other minds corresponding to the introspection of my own. Accordingly, supposing that I know that the other exists, I still do not know that feeling a pain is the same sort of mental experience for him as it is for me, just as I cannot know whether seeing red is the same sort of experience for him as it is for me. And even after we have come to converse together it is impossible for either of us to know that seeing red in my case is precisely the same mental experience as seeing red in his case. Since this is so, it is clear that the glib argument from my sensation of red to *another's* introspection of a feeling of pain, and so to the existence of the other, is indeed altogether unjustifiable. The argument from analogy, we may conclude, is not the source of our knowledge of others, nor, for that matter, can we find in it a satisfactory proof and confirmation of such knowledge.

Are there any other forms of the indirect theory to which we may appeal? Two have recently been suggested. According to the first we come to know others by inferring their existence from the observation of purposive behaviour; according to the second, by reflecting on the fact of significant communication through language. Both arguments, it has been held—and the criticism is not unfair—presuppose that we already know that other minds exist, and in so far they are defective, being circular. Of course, if these arguments are used merely to *confirm* what we know already they are not then open to this criticism. In this paper, however, we are dealing with this earlier problem of how we first come to know the existence of others and it does seem to be true that neither of these arguments could possibly be the explanation of that knowledge. To recognize a piece of behaviour as intelligent or purposive is to be already aware of a world of beings responsive to things and to each other. In the same way, the recognition of language presupposes a knowledge of a

"social" world, a world of intelligences or persons seeking to communicate with each other. The stage of interpreting sounds heard and understanding what these sounds mean is obviously later than the stage of recognizing the existence of others like ourselves who are responsive to us. Of course, I may not have been previously aware that *this* intelligence existed whose purposive behaviour I now observe and whose spoken words I now understand. My observation of his behaviour or again my reflection on certain significant words heard does give me my first knowledge, in this case, of *his* existence. And this fact may have led to some confusion. For what needs to be stressed, then, is that we could not have made use of this line of argument in order to come to know of *his* existence, without having already known that others existed. The notion of the existence of other minds is necessarily prior to the use of either of these arguments. I need hardly add that we of course increase and deepen our knowledge of others by observing their intelligent behaviour and by listening to what they have to say. But this does not justify us in supposing that we first come to a knowledge of others by these means.

6. None of these theories, we conclude, whether direct or indirect, is wholly satisfactory in itself, though each would appear to contain some truth. Nor can we find the truth by any synthesis of the theories; for what is missing in each taken singly is missing also in all of them together. We need to discover some one piece of knowledge in this whole process of knowing others which is certain and beyond all doubt, and at the same time extremely familiar since it is universally shared. We all know very well that others exist, so what we are seeking for must in some sense be near at hand if we could only find it. And yet none of the solutions proposed in the past provide us with what we require and our position seems almost desperate.

Is it possible that we have been asking the wrong question? Have we missed the solution because we tend, unintentionally, to set the problem in such terms that no reply is possible? The problem is usually stated: How do we know other minds? But is this the right question to ask? For, after all, what is a *mind*? Is it of other *minds* that we are so certain? Is it their existence that we know so well? Hardly, for one does not know one's own *mind* in any very satisfactory fashion, not to mention the minds of others. Introspection gives some information, and one gropes around unsuccessfully for an adequate understanding of what it means to be a mind in one's own case. And as for understanding what we mean by *another* mind, this is clearly an exceedingly difficult task. We have only the vaguest and the most faltering notion of *mind*, whether of one's own mind or of another's. But if this is so, then when we talk of so ordinary an

occurrence in human experience as knowing others we cannot be meaning the experience of knowing this mystery, the *mind* of the other. The problem, it would appear, has been posed wrongly and we have been confused as a consequence. When I say I know that Robinson exists, am I really thinking of the existence of a mind? No, I mean that that person over there exists, he whom I now hear speaking, he who brushed against me a moment ago, that living human being to whom I can point, and, by pointing, define, as the philosophers say, ostensively.

Now if our knowledge of others be thought of in these terms, the next suggestion I wish to make is that we *can* then find quite a satisfactory basis for it and that not in vague feeling, which is only knowledge in a doubtful sense, nor in abnormal telepathy, nor finally in any indirect argument which tends to hang in the air and to leave something essential unexplained. The foundation for our knowledge of others in the sense I have now explained is undoubtedly our perception of others through the senses. Here is Robinson before me. Why is it absurd to say that Robinson doesn't exist? Why am I convinced that he does? Well, I see him here now. You ask me how I am certain that Robinson exists and I answer, "Well, look, there he is!" Surely it is perceptual knowledge of this sort which lies at the base of our knowledge of others, and here surely is the source of our certainty, the direct knowledge for which we seek.

But this, you will say, is at best a knowledge of Robinson's body and we want to know Robinson's mind. But do we? Is not this way of speaking the very cause of our confusion and of our inability to explain the certain knowledge present in the experience? For surely what we are certain of when we say we are certain that Robinson exists, using these words in the ordinary sense, is not the existence of Robinson's body nor of his mind, but the existence of Robinson himself. When children are certain that other people exist they do not first have to make clear to themselves the distinction between body and mind. Very young children know that others exist, but this is surely no knowledge of the other person's mind-other-than-body, or of his body-other-than-mind. Of course, when later we do make the distinction between body and mind we can and do ask what we know of the *mind* of the other, and we find that we know very little if anything with complete certainty. The reasons for this are now patent. First, there is the general difficulty as to the nature of *mind*; secondly, there is the absence (in the case of the non-telepathic person, at least) of direct knowledge of the other mind, the absence of extraspection. And so I am never quite sure of what is going on in my friend's mind. But I am quite sure that he exists. It would be absurd for anyone to say that he does not exist when I see him here before me and hear him talk and watch him move that

chair. Phenomenalists, it is true, might still argue that I cannot be quite certain; but I am going to assume for the purposes of this paper that phenomenalism is false. For anyone else, this *is* certain knowledge, and this is the knowledge, I argue, which enables us to say so confidently that others exist.

7. Once this fundamental point has been made clear, we find ourselves in a much more hopeful position for solving our problem. We can make use of what is true in earlier theories and at the same time rest our own theory upon this foundation of certainty. In what follows I propose to suggest the general lines of the solution, having no space here to work out the full details.

Our knowledge of others begins with the certain and indubitable perception of objects in the world around us and rests finally upon this perception. Soon the child learns that certain of these objects respond to it in a way in which others do not. They respond by meeting its special needs, both the immediate organic ones for food, warmth, and so on, and also those deeper needs, the satisfaction of its gregarious dispositions. It is not unnatural that these responsive objects should become the most interesting to the child. By a process of trial and error it learns what to do in order to provoke the desired responses and already a rudimentary communication between one person and another occurs, though at this stage of its development the child can hardly be said to be conscious of that communication. Gradually, however, it learns to recognize purposive behaviour in others. It realizes that to achieve certain ends it must use certain means. At the same time in the events occurring around it, it observes means to ends, though the ends are no longer *its* ends. Not that the child argues from the observation of such occurrences indirectly to the existence of beings which it did not previously know. It knows the existence of such beings as *responsive* objects already, but now it realizes that the purposive activities which it observes belong to these responsive objects, and so it recognizes the latter as intelligences. About the same time, it learns to speak. At first, perhaps, it merely expresses its feelings, but soon it learns to communicate its needs through speech. This behaviour shows that it is already beginning also to understand language. It finds others using speech intelligently. It hears a voice saying *There's your milk behind you*, it turns around and finds the milk, which it did not know to be there. Its consciousness of another intelligence is confirmed.

Then it will come to use language to communicate its feelings to others and to learn how others feel, and thereby its knowledge of the other is greatly increased. It begins to use that class of sentences sometimes called psychological sentences, which indicate something

about its own mental states or that of others. How does it understand, for instance, the sentence *I've hurt myself badly* when it hears it uttered by another? It knows what the sentence *I've a pain* or *I'm hurt* means in terms of its own experience and it supposes that the other, outside itself, who makes the statement is experiencing an experience like its own when hurt. It does so no doubt on the basis of a rudimentary argument from analogy, having by this time realized that the other's behaviour and its own are not unlike, and concluding that since *it* has mental experiences the other is likely to be having analogous experiences of his own. Thus it slips into the assumption that others have mental states like its own. Here is an assumption we all make early, and continue to make throughout our life. Later we realize that it *is* an assumption and that it can never be fully justified, for we never do know with full certainty what the mental states of others are like, though from our constant observation of their behaviour and from constant intercourse with them, we have come to feel fairly sure that their experiences *are* something similar to our own. But to the very end there is room for doubt. To the very end I cannot be sure that when you say you are now seeing a red colour or having a pain in your arm, you are having exactly the same experiences as I have when I see a red colour or have a pain in my arm. Here there remains always an element of uncertainty in our knowledge of others. But there is, as we have seen, no uncertainty about the existence of another, for the existence of the other is not inferred by analogical reasoning. It is known directly in sense-perception.

Our knowledge of one another, thus begun in sense-perception and developed in all the ways mentioned, grows daily. By conversation and reading, by sharing experiences with others, by observing, we come to know more and more of one another. Of those persons whom we know intimately we can even foretell how they are likely to act in any situation and how they are likely to think. And such knowledge attains a very high degree of certainty, although for the reasons given, it never attains absolute certainty. It may also become a supremely rich experience, as when we find the satisfaction of the deepest parts of our nature in others and with others. Yet all this knowledge, I would claim, is but the climax of a process beginning in sense-perception, and *to that extent* is no different from our knowledge of the external world.

8. This brings me to the final point. In view of the foregoing, what are we to make of the claim frequently put forward that our knowledge of one another is of a unique kind, different from our knowledge of *things*? We see already that sense-perception is an important factor in the knowledge, but sense-perception, of course, does not

pertain uniquely to the knowledge of others. Furthermore, inference and reasoning are present, and in particular analogical reasoning, but analogical reasoning and reasoning in general are useful elsewhere and can in no sense be confined to the knowledge of others. The argument from analogy involved here, as we have seen, presupposes introspection, and no doubt introspection is something unique, but it is not unique as knowledge of *another* but as knowledge of *oneself.* If there were an extraspection of others corresponding to introspection of oneself, this no doubt would be unique. The uniqueness as knowledge of a telepathy, which really was knowledge of another's mental state (and not merely a peculiar sort of "infection"), would have to be admitted. But are we satisfied that there is such extraspection? Lastly, should we admit that there exists between persons, between for instance, very intimate friends or between a mother and her child, some deep sympathy, a "knowledge of the heart" as it has sometimes been called, and that this is a unique type of knowledge? It may be so; but this language, it appears to me, is somewhat dangerous, and until further analysis of such experiences is carried out it would be best to suspend judgment. For is not this experience unique rather in respect to the intensity of the emotion involved, than as a distinct kind of knowing, wholly different from any other knowledge which occurs in human experience? I therefore suspect the claim that this is unique *knowledge.*

At the same time, however, it must be admitted that there is one feature of personal knowledge which has no counterpart elsewhere, namely, that it always contains an element of revealed knowledge. I no doubt know much about my friend by, for instance, simply observing his behaviour; but I know most about him by the things he tells me about himself, by his direct revelation of himself to me. To know another is in a large measure to accept another's revelation of himself—and though we frequently find ground for doubting the truth of some of these revelations, most of our knowledge of other persons is in fact gained in this way. Thus in knowing another person the object known itself communicates information, and this *is* a unique feature of this sort of knowledge. Nevertheless, two points should be noted, namely, first, that it is not human beings alone which reveal themselves in this manner since animals, for instance, also are communicative and reveal themselves. Secondly, in admitting the uniqueness of this feature of "personal" knowledge (in a very wide sense of the term *person,* to include at least animals) we do not thereby in any way imply that the general account given in this paper of how this knowledge comes about is false.

TWENTY-FIVE YEARS OF PHILOSOPHY IN THE U.S.S.R.

EXCERPTS FROM A PAPER READ BY ACAD. M. MITIN AT THE JUBILEE SESSION OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.

[M. Maisky' the Ambassador in this country of the U.S.S.R., has sent this article to the Editor through the good offices of Lord Keynes, with the remark that he thinks it would serve a useful purpose to have the article published here "as it would help to strengthen the cultural ties between our two peoples." Readers will observe that the method of approach to philosophical problems is somewhat different in Russia from that followed in this country. Many will entertain a doubt whether the "shock tactics" described in the article are the most appropriate for a successful wooing of the elusive goddess "Truth," but *quot homines tot sententiael*—EDITOR.]

PHILOSOPHY has been raised to an unparalleled level in the Soviet Union, making the U.S.S.R. a country of *high philosophical culture*. Many problems in philosophy which are being argued by outstanding philosophers abroad have been solved here on the basis of dialectical materialism.

During the years of Soviet power our leading philosophers have carried out tremendous research work on the solution of the most important problems presented by the science.

In the sphere of the *History of Philosophy*, the materialist trend in philosophy has been investigated and light thrown on the subject throughout the whole historical period beginning with the ancient Greeks. The real historical significance of many undeservedly forgotten philosophical systems and thinkers has been brought out. Their progressive influence on world culture has been proved and demonstrated. Soviet philosophers have produced a number of monographs on Democrites, Aristotle, Descartes, Spinoza, Robinet, Hegel, Feuerbach and others.

The dialectic trend and the development of the dialectic method in philosophy has been investigated. Lenin's notes in the *Philosophical Notebooks* formed the starting-point for a number of such investigations. Lenin's *Philosophical Notebooks* and the excellent characteristics, rich in content, which Lenin gives of a number of historical-philosophical problems, are the basis from which our philosophers started in their systematic treatment of problems from the history of dialectics and materialism.

Considerable work has also been done during recent years to throw light on and develop Russian philosophical thought and another extremely important task has been begun—the study and development of the philosophy of the peoples of the U.S.S.R. A number of monographs have been written, and a large number of articles published on the philosophical views of Chadayev, Belinsky, Hertzen, Chernyshevsky, Pisarev, our naturalist-materialists. Investigations have been published concerning the Georgian philosopher Johann Petritsia, the Armenian philosopher David Anakut, the Uzbek philosopher Ali Sher Navoi, the Azerbaijan philosopher and public figure Akhundov, the Kazakh pedagogues, Chekhan Valikhanov and Abas Kunanbayev and the Buryat Mongolian pedagogue Banzarov.

On the basis of such widely developed scientific research work in the field of the history of philosophy it has been found possible to commence work on the publication of a lengthy many-volumed *History of Philosophy*. Two volumes of the work have already appeared. The first volume covers the history of philosophy amongst the ancients and in the Middle Ages, the second deals with the history of philosophy in the 16th and 17th centuries. The third volume will appear shortly and the fourth has already been written. Even during the patriotic war this scientific work has not been neglected.

Research into *problems of dialectical materialism* covers the most important problems of the Leninist stage in the development of Marxist philosophy. Light has been thrown on the new material which Lenin has added to the philosophy of Marxism. Of particular importance is that which has been done to work out the categories of materialist dialectics, particularly clear light having been cast on the teachings on contradictions and antagonism, the teaching on causality, problems of possibility and reality, etc. Materialist dialectics formulate the general relations and laws of nature, society and of thought itself. The study and examination of these relations and their unity with one another, in other words, the *all-sided treatment of materialist dialectics as the philosophical science of Marxism*—that is the valuable and fruitful direction taken by our scientific work.

Many monographs, as well as a large number of articles published in our scientific theoretical journals, were devoted to problems of *theory of reflection*, to the question of primary and secondary qualities, to the correlation of the theories of knowledge and logic, etc. A specially large number of works have appeared since the publication of the *History of the Communist Pary of the Soviet Union* (a short course) and Comrade Stalin's work *On Dialectical and Historical Materialism.*

Until recently the absence of a work on logic, particularly formal logic, was a great problem in our work. Work has recently been begun on the treatment of these questions and on the compilation of a text-book, the necessity for which is indisputable.

With regard to questions of *historical materialism*, some work, though far from sufficient, has been done in studying and investigating the history of socialist teachings. The theory of classes, the state, production forces and production relationships, of ideology as a form of consciousness, etc., have been studied in a number of monographs. In this respect the publication of the *History of the Communist Party of the Soviet Union* (Short Course) was a powerful stimulus for the development of the work of popularization, for articles and monographs on scientific research into these problems. A large number of works have appeared clearing up the most diverse questions of the Marxist teaching on society.

Such, in brief, is the theoretical work which our Soviet philosophers have carried out on a number of philosophical subjects. Especially large demands are now being made on our theoreticians in connection with the patriotic war, in connection with those problems which the war has raised, and in connection with the task of crushing the enemy.

Before the revolution in Russia a very small group of people occupied themselves with philosophy, the publication of literature on philosophy was insignificant and philosophical culture was not available to the wide masses of the people. Very small editions of philosophical works were published before the October Revolution. For example, in the twenty years from 1897 to 1917 Aristotle's works were published in an edition of 1,000 copies, Hegel 5,000 copies and Diderot 2,000 copies.

The flourishing of philosophical culture in our country finds expression

in the great attention paid by our Soviet intelligentsia to the great works of philosophy. One of the indications of the constant raising of cultural standards which is taking place in our country is the extensive circulation of classical philosophical literature.

The world classics of philosophy play an important part in the cultural growth of Soviet people. Engels stated that the history of philosophy is one means of ideological training, that the study of the history of philosophy is a splendid way of learning to think theoretically. This, however, is not the only explanation of the great interest which people in the U.S.S.R. display in the history of philosophy. The peoples of our country are the real lawful heirs of the whole of world culture. This explains the wide interest in classical philosophical literature in the U.S.S.R.

Here are a few figures on the publication of the classics of philosophy during the Soviet period and for twenty years prior to the Revolution.

Publication of the Classics of Philosophy

	From 1897 *to* 1916	*From* 1917 *to* 1938
Aristotle	1,000 copies	78,300 copies
Voltaire	65,000 ,,	228,600 ,,
Hegel	5,000 ,,	200,500 ,,
Diderot	2,000 ,,	139,100 ,,
Spinoza	8,000 ,,	65,200 ,,
Feuerbach	10,000 ,,	44,000 ,,

The works of Bacon, Goldbach, Helvetius and Democrites were not published at all in Russia between 1897 and 1916.

During the period from 1917 to 1938 the following have been issued:

Bacon	23,000 copies
Goldbach	79,400 ,,
Helvetius	67,500 ,,
Democrites	10,000 ,,

During the Soviet period we have published the works of Aristotle, Lucretius, Giordano Bruno, Hobbes, Descartes, Spinoza, Leibnitz, Locke, Toland, Priestley, Rousseau, Condilliac, Lametry, Diderot, Robinet, Vicot, Mellier, Fourier and others.

The translations, introductions, forewords and notes to these editions of the classics of philosophy, in which for the first time a Marxist analysis of these works is given side by side with the text, represent considerable scientific work carried out during these years. We may quote as an example the introductory chapters to Hegel's *Philosophy of Nature*, *Philosophy of History*, *History of Philosophy*, *Philosophy of Justice*, and *Aesthetics*, and the introductions to the works of Spinoza, Robinet, Toland, Priestley and others.

Large editions of the philosophical works of Lomonosov, Belinsky, Chernyshevsky, Hertzen, and other Russian thinkers have been published during the Soviet period.

The philosophical works of Marxism-Leninism are an ideological weapon for changing and transforming reality. The significance, therefore, of the spread of the works of Marx, Engels, Lenin and Stalin, may be readily understood. In the fifty years that preceded the October Revolution a total of 500,000 copies of the classics of Marxism-Leninism were published, whereas from 1917 to 1938 in the Soviet Union, 327,200,000 copies of the works

of Marx, Engels, Lenin and Stalin have been issued in the languages of the peoples of the U.S.S.R.

The mastery of dialectical materialism gives people a straightforward, clear-cut world outlook (Weltanschauung), enables them to understand the laws underlying historical events, arms them with a theoretical weapon for practical use.

Dialectical materialism gives a comprehension of the course and laws of war, an ability to distinguish temporary, transient factors and phenomena in war from factors which are permanent and decisive. It enables one to realize the inevitability of the defeat and destruction of fascist Germany and the necessity for mobilizing all forces to convert this possibility into reality.

Dialectical materialism enables us to understand that in the final analysis historical events are not determined by the will of "conquerors and oppressors" of states and nations, but that *the fate of nations is in the hands of the nations themselves.*

The Marxist-Leninist world outlook arms people with confidence in the victory of our cause and an ability to analyse all the intricacies of historical events.

Dialectical materialism is a *great contemporary philosophical doctrine.* Every development of science in our country has been made on this basis. As a result of the spreading of the ideas of dialectical materialism and the influence of those works of genius, Engels' *Dialectics of Nature,* Lenin's *Materialism and Empirio-Criticism,* and Stalin's *Dialectical and Historical Materialism,* dialectical methods are being applied to all branches of scientific investigation in our country.

In this connection the great ideological struggle which took place a few years ago in the realm of philosophy and which attracted considerable public attention in our country, was also of significance. A serious ideological struggle developed on the philosophical front in order to overpower and expose two reactionary distortions of materialist dialectics: mechanistic materialism on the one hand and Menshevik idealism on the other.

The limitations of mechanistic materialism with its purely quantitative approach to reality and its metaphysical conception of matter were criticized as "unqualitative"; its anti-historical character, the lack of understanding of the specific nature of certain forms of matter and their motion were also criticized.

At the same time it became necessary to overcome the dangerous anti-Marxist theories of Menshevik idealism—the characteristic of all idealism—divorce of theory from practice, inclusion of reality within the schema of Hegel's categories, the denial of the Leninist stage in the development of Marxist philosophy.

Even a blind man can now see that the essence of this struggle was the confirmation of the *position of Marxism in science.* It was a matter of exposing every kind of vulgarizing tendency inimical to Marxism.

This struggle on two fronts was a very important condition, establishing a basis for the intensive, profound, and fruitful development both of philosophy itself and of the application of the method of dialectical materialism to the natural sciences. The exposure of the attempts of the vulgarizers to involve, outwardly and scholastically, certain branches of science in these dialectic schemas was of great significance. After the rout of all these erroneous and dangerous tendencies the *necessary conditions for the flourishing of dialectical-materialist natural science were created.*

Dialectical materialism makes great demands of our scientific workers. Dialectical materialism does not recognize science for science's sake. It demands

the unity of theory and practice. Raising the rôle and significance of theoretical generalizations of science to a very high level, dialectical materialism examines science from the viewpoint of what it can do to improve the lives of the people, demanding from science therefore, practical results. Dialectical materialism as a revolutionary method is against all routine, against frozen dogmas; it does not recognize any fetishes in science. Dialectical materialism is against one-sidedness in science, it insists on the examination of natural phenomena in all their connections and interactions. It demands an ability to see, uncover and explain contradictions in the course of scientific progress. And finally, dialectical materialism demands the historical examination of natural processes.

But then, what prospects, what wide scope, it opens up before scientists! There are no boundaries to the scientific knowledge of phenomena. There are none of the blinkers and fetters which idealist, agnostic philosophers use in such abundance to hamper the path to knowledge. There are no obstacles to penetrating more deeply into the secrets of nature with the object of discovering its laws and applying them in practice. It is only a matter of investigating these laws with the maximum of accuracy and good-will.

Soviet natural scientists and philosophers have already done much to make general the newest discoveries of the natural sciences. The time is now ripe for a generalizing work on the dialectics of nature on the basis of that new material which the development of modern science has given us in such abundance.

Gigantic forward strides have been made during the past two or three decades in the field of physics. At the beginning of the 20th century *the atom* was the centre of attention in physics, whereas in modern physics the main attention is paid to *the nucleus of the atom.*

The discovery of the "secrets" of the structure of matter, the deeply delving analysis of the laws of nature, have again illustrated the correctness of Lenin's prognosis concerning the inexhaustibility of the atom and the electron and of the *changeability of all forms of motion in matter.*

The new physics has enthusiastically set about the task of explaining the great theoretical contradictions which it has discovered in the course of its stormy development: mass and energy, matter and motion, corpuscles and waves, intermittence and continuity, etc. Extremely intricate and fine material processes studied by modern physics have discovered the limitations and inapplicability of the old, habitual conceptions of classical physics.

The extremely fine methods of physical analysis now used by science have raised *new questions—those of taking into consideration the interaction of the micro-processes being studied and the instruments and apparatus used for observation and analysis.*

All this has shown that only the dialectic-materialist method can provide the investigator with a dependable compass—not only that he may understand these processes but that he may also solve the contradictions which have accumulated, and thus move science forward. The great service rendered by Soviet physics during the past years is due to its having more and more mastered this method. One may make bold to say that *our physics* (the works of Academicians Joffé, Vavilov and others) *now holds first place from the standpoint of the correctness of its philosophical generalization of the newest scientific data.*

Interesting in this respect is the handling of Einstein's Theory of Relativity. A new stage in the development of physics and mechanics is undoubtedly linked up with Einstein's Theory of Relativity. Einstein's theory has led to a complete breakdown of the old, habitual postulates of the mechanics of

Newton. The appearance of the theory of relativity, the newness and unusualness of its postulates in a number of the most important problems in physics, in particular in questions of time and space, has caused considerable scientific movement. The smashing of old views and dogmas could not but lead to an impassioned struggle in science. The idealist camp was badly shaken. Since the theory was first propounded a large amount of literature has appeared, giving an idealist interpretation of the theory of relativity. This was made the more easy on account of the fact that the author himself in some of the philosophical bases of his theory, and in a number of his other general philosophical statements, does not show complete consistency.

Amongst the physicists of our country, beginning in 1922, two diametrically opposed opinions were established and formulated concerning the theory of relativity; one—mechanistic-metaphysical, absolutely and completely denying the theory of relativity as a theory which is idealist and Machist in essence; the idealist, which absolutely and completely accepts the theory of relativity, and not only its scientific-physical content but also those idealist, Machist conclusions which are drawn by the author himself and by many of his idealist followers.

As a result of the tremendous work which our philosophers and physicists have carried out, as a result of the many impassioned discussions, the battle of ideological principles, it may now be said that our philosophical conclusions concerning the theory have been firmly established.

From the physical content developed in this theory there springs *neither* the rejection of the existence of an objective world *nor* the rejection of the objective conception of nature. *The theory of relativity does not deny that time and space, matter and movement, are absolute in the sense of their objective existence outside human consciousness.* Nor does the theory of relativity admit of any anarchy in the laws of Nature's development. If anything happens anywhere, then this fact in the sense of its objective existence in the real world is not relative but absolute. No "point of view" of an observer, no "system of reckoning" established as a starting-point for the theory of relativity, has any power to destroy the objective fact of natural processes.

The theory of relativity establishes only the *relativity of the results* of measuring time and space by observers who are *moving relatively to one another.* According to the theory of relativity every system of reckoning has its own time, its own space indivisibly bound up with the moving body. Time and space are indivisible from the moving body and must be regarded relative to that movement. In this respect time and space are relative.

In place of the old Newtonic schema of absolute space and absolute time as an empty receptacle, something like "empty boxes" in which world processes take place, the new physics gives us the *dialectical teaching of the unity of time and space, matter and movement.*

In place of the old metaphysical conception of pure time and space which had only geometric qualities we obtain a new theory of time and space inseparably bound up with bodies and movement.

Thus the real scientific-physical side of the theory of relativity even apart from those geometrical conclusions which are drawn from it, is a step forward in discovering the dialectic laws of nature.

One of the services rendered by Soviet philosophers is their ability to overcome and master the idealist interpretation of the theory of relativity. Our science, armed with the method of dialectical materialism, proved to be able to give a real assessment of the rôle and significance of this theory, consistently to draw all the conclusions that arise out of it, and correctly

to interpret the theoretical content which is the exponent of its world-outlook.

Now let us take an example from another branch of scientific research.

In the 60's of the last century *the great Russian scientist Sechenov* in his work *Reflexes of the Brain*, laid the foundation for an objective, materialist study of higher nervous activity, an objective study of the behaviour of the higher animals.

The fruitful foundation laid by Sechenov was brilliantly built upon and developed in the works of Academician I. P. Pavlov and his school of physiologists. The research work carried out by Pavlov and his numerous pupils acquired particularly wide scope in the Soviet period. Without touching on the special physiological content of Pavlov's theory of conditioned reflexes we must mention *the tremendous principle significance which Pavlov's works have for the natural-scientific basis of materialism.* In his works on the study of the *material* basis of psychic processes, and his rich, faultless experimental material on the study of the objective basis of higher nervous activity, Pavlov opened a new chapter in the development of physiology, and gave materialism a new, dependable, natural-scientific weapon for the rout of any kind of idealist, anti-scientific tendencies. It would be difficult to overestimate the philosophical significance, or the importance as a determining factor in world outlook of the brilliant works of Academician Pavlov. It is important to mention the fact that during the past few years an extremely interesting and important process has been taking place overcoming the mechanistic superstratum assumed in the teaching on conditioned reflexes.

It is well known that several of Pavlov's pupils (Savich and others) tried mechanically, directly and indirectly, to transfer the laws of higher nervous activity in animals to the psychology of man and to social relations in human society, which led them to incorrect and even reactionary conclusions. Under the influence of extensive critical work exposing the idealist and vulgar materialist tendencies in philosophy, and as a result of the struggle against mechanistic tendencies in the teaching on conditioned reflexes, research work has at the present time begun to develop in the right direction. In connection with this it must be mentioned that Pavlov's pupils can find for themselves very valuable and important directives in his works, especially in his posthumous *Conditioned Reflexes.*

Analysing the question of the limits of the application of the teachings of conditioned reflexes to man Pavlov wrote: "During the development of the animal world to the phase of man *an extraordinary addition* to the mechanism of nervous activity took place." This "addition" Pavlov defines as the "second signal system" peculiar to man and connected with the spoken word. This means, in other words, that the addition is connected with the social life of man Pavlov's posthumous directives are so important that they open up new perspectives in the study of the objective basis of higher nervous activity.

The works of Pavlov and his school, the gradual overcoming of several mechanistic limitations, the brilliant *dialectic* content of the teaching on conditioned reflexes (for example the solution of the problem of the relations between the processes of stimulation and inhibition) show us that in this field every real step forward in the development of the science means also a more profound and conscious application of the creative method of materialist dialectics.

Our science has achieved great results in the sphere of the physiology of the neural-muscular system. Up to the present time the ruling view in world literature is that phenomena which takes place in the neural cells and fibres and also in muscle cells may be regarded as physical or physico-chemical processes. One-sided abstraction on this question led to the creation of a

number of *physical and physico-chemical models* to explain processes occurring in neural cells. In so far as the processes taking place in nerve cells are of a very intricate nature and represent something which is *qualitatively* higher than the simple physical or physico-chemical model it is natural that science was faced with certain difficulties in this respect. The service rendered by Soviet scientists, biochemists and physiologists, lies in the fact that they are directing their attention to a profound disclosure of the specific laws of neural processes. By way of example we may cite the development in the Soviet Union of the neuro-humoral theory of nervous stimulation (the work of Academicians Ukhtomsky Orbeli and others) as compared with one-sided, mechanistic, physical and physico-chemical theories.

Thus in this field the dialectic method of investigation leads the way forward, makes it possible for our scientists to pave new ways in science.

From the point of view of the way in which the dialectic method has penetrated into science the works of Academician V. L. Komarov are of great importance. Such works are: *The Origin of Plant Life, The Science of Genus in Plants.* In 1936 Academician Komarov in his work the *Origin of Plant Life,* wrote:

"No fantasy and no metaphysics; scientifically proved facts and generalizations illuminated by the theory of dialectical materialism—that is our path."

Following this path he gave us a clear picture of the origin and development of plant life—a picture of changes in material and form leading in the final analysis to the appearance of rye, wheat and other cultivated plants. Developing Darwin's theories and continuing in the traditions of K. A. Timiryazef, V. L. Komarov demonstrated his theories using botanical specimens, using in his explanation source material taken from Engels and Lenin.

Darwinism has been further developed in our country in the labours and writings of the great transformer of nature I. V. Michurin, and in the works of Academician T. D. Lysenko.

This permits us to call our country Darwinism's second home. It may be mentioned that the development of Darwin's theory of evolution necessitated overcoming certain one-sidedness and limitations which hampered it. In this respect our Soviet scientists are going ahead, paving their way in science, guided by the method of dialectical materialism. Michurin wrote: "Natural history is by its very nature materialistic materialism and its roots lie in nature. Natural history draws naturally to dialectics. To avoid erroneous conceptions in mastering it a knowledge of the only correct philosophy, the philosophy of dialectical materialism is necessary."

Academician Lysenko is carrying on active work in changing the nature of plants. T. D. Lysenko's basis for this is the theoretical premise that all plants either as a genus or as individuals are changeable; that there are no absolutely unchangeable aspects of a plant, that all features in a plant have been subjected to change in the course of the evolutionary development of the organism, that not only the sexual cells or their component parts take part in the development of the organism, but also the organism as a whole or the cells as a whole; that not only features of the organism are subject to change but also the hereditary basis; that man, by creating certain conditions, can influence development in any way he desires—all these important fundamental postulates of Lysenko's are, no doubt, a *further development of a number of postulates of Darwinism and result from the application of the method of dialectical materialism to biological science.*

Such, in short, are a few examples from various branches of the natural sciences. There are still many points in these investigations which are unclear or which have been exaggerated in one direction. There are still many incorrect

postulates or even errors in them, still many unfounded postulates and unfounded schemas. Much will have to be changed in the future, many questions still remain to be discussed. But the main, fundamental thing is important. *The main and fundamental thing is that in our country the fruitful process of the birth and establishment of dialectic materialist natural science is taking place.*

The fascist barbarians have raised the knife over the life, honour and dignity of man, over all his spiritual and material achievements. German imperialism is attempting to enslave our country. Everything that is most dear to our men of science is being threatened—our great and beautiful country, the social relationships of socialism, which open up fresh vistas for science. That is why our scientists are mustering all their efforts in order to assist in hastening the rout of the fascist cannibals.

The great patriotic war against the Hitlerite plunderers and invaders is a trial of the strength and might of our social system and of the spiritual strength of the peoples of the U.S.S.R. This trial has shown that there is no power which can crush our people, our Soviet State and our Red Army.

NEW BOOKS

The Ages of the World. By F. W. J. VON SCHELLING. Translated with Introduction and Notes by FREDERICK DE WOLFE BOLMAN, JR. (New York: Columbia University Press. London: Milford. 1942. Pp. xi + 251. 20s. net.)

The monument over Schelling's grave at Ragaz describes him as "Germany's foremost thinker." It is doubtful if anyone would make such a claim for him now, almost ninety years after his death. But he was a man of genius, at once scholar and poet, mystic and philosopher, and it may be true that, as Professor Brightman suggests in his foreword to this volume, he has been insufficiently studied in English-speaking countries. As Hegel, once his friend and close associate, remarked, he developed his philosophy in the eyes of the public, issuing book after book from the age of nineteen, so that his publications contain rather the successive stages in his own development than expositions of the separate divisions of philosophy. Even so, they do not reveal the position which he ultimately reached, for his publications practically ceased when he was thirty-seven, and his final philosophy is contained only in lectures and manuscripts written in the second half of his life and published after his death. *Die Weltalter,* which is here translated into English for the first time, was one of these manuscripts. It was written about 1811, and it remains a fragment, though tolerably complete in itself, dealing with the past; the sections on the present and the future seem never to have been written.

Schelling's published work is mainly concerned with "what" and "how" the world is; his later "positive" philosophy attempts to illuminate the existential reality of things. He had come to hold that the concepts of idealism presuppose but are powerless to explain this reality, and, finding himself now confronted with the problem: "why anything"?, he is driven back from the question of the creation of the world to that of how God Himself comes to exist. God, he holds, as the ground of existence lies "beyond being," like Plato's form of good; He neither is nor is not, but is only the "eternal freedom to be." But both science and feeling require a God who is really present, and the difficulty is to see how God, in Himself neither being nor not-being, can *be,* even in a way specifically distinct from His essence. Schelling regards this problem as at bottom the same as that of how God, in Himself self-absorbed, can become externalised and revealed in the creation of nature and spirit. God is both freedom and necessity, love and wrath, yes and no. How can His self-revealing "potency" of love get the better of His self-withdrawing "potency" of wrath, so that His self-revelation can occur? It is with these problems (made insoluble, some will think, by the very terms in which they are stated) that *The Ages of the World* is mainly concerned.

Schelling tells us early in his essay that he is not "philosophizing for beginners," and this may prepare the reader for a difficult text. But the difficulty arises not so much from the philosophy as from the interfusion of poetry or mysticism with what professes to be speculative metaphysics. For this, too, Schelling prepares us by saying that "not only the poet but also the philosopher has his ecstasies." And indeed we require more than the "purity of intention, earnest will, and honest effort" which he asks of us, if we are to

accept such "ecstatic" assertions as (to take examples almost at random): "Nature captures itself and overcomes its own necessity by the power from above, yielding . . . thereby to the eternal delight . . . of the godhead which in itself neither is nor can be conceived." "It is quite conceivable that the unconscious and the conscious in God were comprehended in the same indivisible act of becoming conscious, the conscious as what is eternally present, but the unconscious with the character of what is eternally past." "Are not most products of inorganic nature (e.g. the inexplicable bitterness of the ocean) visibly children of dread, terror, and even despair?"

Nevertheless, despite the strange, and even forbidding, character of Schelling's text, Mr. Bolman has rendered a service by producing this work of careful scholarship. He has given us a useful introduction, describing Schelling's philosophical development and illustrating *The Ages of the World* by references to his other works, especially his later lectures; and the translation, considering the difficulties involved, is admirable; the places where the renderings seem dubious are so few that to enumerate them would be hypercritical. To some readers the book will have a purely historical interest as an edition of an important document from the Periclean age of German philosophy; others again, who may be out of sympathy with the general argument, will value the philosophical acuteness evident in some incidental passages (e.g. the discussions of contradiction, of "mediary concepts," or of Descartes or Spinoza); but there will also be those whose appreciation is more direct in that the main doctrines expounded sometimes foreshadow modern "existential" philosophy and are reminscent of the work of Kierkegaard.

T. M. KNOX.

Friedrich Nietzsche, Philosopher of Culture. By FREDERIC COPLESTON, S.J. (London, Burns Oates and Washbourne, Ltd. 1942. Pp. 217. Price 8s. 6d. net.)

When Nietzsche once sent a composition to the famous musician Hans von Bülow, this artist replied that the music was not only terrible (according to Nietzsche's own confession), but even more terrible than Nietszche believed it to be, for it was detrimental to the development of his personality. This bluntness exercised the healthiest influence on the author, and saved him from a blind alley. Father Copleston's book reminded me of this incident. For in the face of Nietzsche's whole literary production he passes this verdict: Nietzsche was not only wicked, as he confessed himself to be, "he was—intellectually—a very wicked man." Now I wonder how Nietzsche would have responded to this verdict. Would he have replied in the same modest and obliging manner as he did to Bülow, or would he have retorted: "He who does not understand how to hit the right nail on the head should not try to hit it at all," and "This thinker does not need anyone to refute him, for he provides the means for his own refutation"?

We cannot embark on a discussion of this judgment; but the fact that it occurs in the preface and not at the end of the enquiry, suggests that it may be a pre-judgment likely to hinder a true appreciation of the facts. For the premiss, that Nietzsche "deliberately cultivated, maintained and propagated atheism" may not contain the whole truth, and may therefore prove an insufficient basis for this judgment. But this judgment determines the structure of the book: for the problem that rightly interests the author most, namely "Nietzsche and religion" or "Nietszche and Christianity," being prejudged in this way, disappears into the background, and the foreground is occupied by Nietzsche, the philosopher of culture. Thence arises the thesis

(which is not new, and which is accepted by text-books like Ueberweg's) that Nietzsche's philosophy centres around the problem of culture. Consequently, after a sketch of Nietzsche's life, the book discusses his "Cultural Ideal," "The History of Culture," "The Superman and the Will to Power," his "Criticism of Morality," and "The Jews." The background philosophy comes in in chapters like "Antichrist" and furnishes the basis for the critique of the foreground philosophy. The central thesis is that Nietszche believed in the value of culture, that he passionately desired the attainment of a higher and truer culture, but that at the same time he rendered its attainment impossible by depriving it of its basis. "Man, for Nietzsche, has no roots in eternity, in transcendent-immanent Godhead—for there is no God—and the spiritual foundation of culture is entirely wanting!" Culture without religion, i.e. Christianity, is impossible. "We cannot go back to Greece, we cannot go above Christianity: if we abandon Christianity we go, not higher, nor even simply 'apart,' but down" (p. 203). Bergson, we are told, who also confessed a philosophy of life, recognized this by the reception of sacramental baptism and thereby showed the solution of the Nietzschean problems. But this conclusion, unfortunately not based on facts, breaks down.

The discussion of this book must concentrate on its central problem; for if this is not seen in its right perspective no solution of the peripheric problems is possible. In other words, we have to reverse the order of the problems: the background problems must become foreground problems and *vice versa*. This is unavoidable because the problem of culture does *not* form the centre of Nietzsche's thought. "Jesus rejects church, state, society, art, sciences, culture, civilization. All wise men have rejected the value of culture and of state. organization: Plato, Buddha" (XIII, p. 324). "Culture is but a thin peel of an apple around a glowing chaos" (XII, p. 343). He was, moreover, quite clear that no one could be "apostle of culture" in these days except by "making a mission of his unbelief in culture" (*To Brandes*, 8.1.1888). It is true that a Nietzschean philosophy of culture exists, and the book (which should bear the title "Nietzsche's philosophy of culture") may be recommended to those interested in this topic, whose different aspects find here a well-documented analysis. Nietzsche, the philosopher of culture, has not only to be supplemented by Nietzsche, the philosopher of life, as the author admits; he may even be (what the author fails to discuss) one of the masks (like Nietzsche, the philologist, Nietzsche the Wagnerian, Nietzsche the *Freigeist*, or Nietzsche the prophet of power) which he adopted in order to hide his innermost feelings. A comparison of a specific interpretation of our book with Nietzsche's self-interpretation may illustrate this point. The *Birth of Tragedy* is, according to Father Copleston, "an analysis of Greek culture in which Greek culture before Socrates—Dionysian strong and grand—is contrasted with Greek culture after Socrates—rationalistic, anaemic and feeble" (p. 10). But Nietzsche himself confesses: "Here spoke a strange voice, the apostle of a still 'Unknown God,' hiding himself for the time being under the hood of the scholar, under the clumsiness and dialectical gravity of the German, even under the bad manners of the Wagnerian; here was a mind with uncommon, still nameless needs, a memory, bristling with questions, experiences and secrecies, to which the name of Dionysos was attached like a question mark; here spoke something like a mystic and almost maenadic soul which, undecided whether it should disclose or hide itself, stammers as in a strange tongue." This quotation confirms that the central problem is religious and that the philosophy of culture is a mere mask.

Nietzsche is of capital importance to us because the crisis of modern man (which is in the last analysis a religious crisis) reveals itself in him with un-

mistakable clarity. The 'Madman' who runs through the market shouting "I am searching for God" and adding "Where is God? I will tell you. We have murdered him—you and I. We all are his murderers . . . God is dead! God remains dead! And we have murdered him" (*La Gaya Scienza*, 125), this madman is Nietzsche. Confessing in words of extreme exaggeration and accusation the crime of modern man who has betrayed God, he is nevertheless searching for Him, because he cannot live without Him. This is the most terrible self-contradiction under which a human being can suffer. If Nietzsche was an atheist his chief aim was surely not the propaganda of atheism, but the search for God, for the Unknown God. This basic contradiction contains the clue for understanding Nietzsche, his development and final collapse. The desperate attempt to find a new God replacing the lost God of his youth fills his whole life. But tragically, instead of finding God he arrives at an apotheosis of man, namely of the artist (under Wagner's and Schopenhauer's influence in the first period), of the freethinker (under the influence of Ree and the Positivists in the second period) and of the prophet Zarathustra in the third period. Everything in the human sphere, life, body, power, cruelty, sometimes culture, and superman partakes in this deification, until in the end self-deification brings the catastrophe. (There is no room here for a corroboration of this thesis, which is in any case unnecessary since it is a well-established result of the most penetrating studies of Nietzsche).

This is *the* tragedy of modern man, lived, suffered and expressed by a man endowed with the greatest philosophical sensibility I know of, with a Lynceus eye for human qualities and faults and with an exceptional gift for artistic expression. The crisis becomes catastrophe because, with the betrayal of God, God's attributes too are perverted into their contrary. For this interpretation of the Universe is based on a deeply pessimistic or even nihilistic conception of reality as cruel, contradictory and senseless. The will to illusion, to deception, and to change is accepted as more fundamental than the will to being. Dream and illusion are more real than reality. Maya supersedes Brahman. We need, he says, the lie in order to live in this Universe; metaphysics, ethics, religion and science are merely creations of man's will to art, to lie, to flight from truth, to negation of truth (XVI, p. 271). Lie is to him Divine. This *Artisten-Metaphysik* which glorifies art as the redemption of man as a knowing, acting and suffering being (like its child, the metaphysics of power, which replaces 'the will to art' by 'the will to power') dissolves itself through the logical contradiction on which it is based. Nietzsche is right, he provides the means for his own refutation.

That he missed the spiritual basis of culture which is for him a spiritual phenomenon can hardly be maintained. He expressed a deep longing and love for eternity. He does not deny that culture without religion is impossible, but he rejects the thesis that culture without Christianity is impossible. He denies neither the problem of transcendent—immanent Godhead nor the problem of transcendence, but he reformulates both problems on the basis of our present situation. What he denies is that these problems are solved by Christianity. His struggle with Christ (Dionysos against Christ in the inner sphere, the Devil against God in the wider sphere), fought in his soul as a struggle against himself, on a half-Greek and half-Christian basis and with a translation of Christian terms into his own language, cannot be followed up here. But there he stands, a challenge to Christianity, and not to religion, which he could not abrogate. Certainly he has failed in his attempt to create a new myth and a new religion, but his challenge remains. Can it be met by condemning him as very wicked? Is that still possible at a moment when millions of people in the totalitarian States practise what he merely

confessed? If we really were to say that all these people, numbering probably hundreds of millions, are very wicked, would that serve the future of religion? No: the challenge would remain in a double form. The first concerns the word. How has the word of religion to be re-formulated in order to reach the ears of men in the stage of utter dissolution? The second concerns action. For if Christianity wants to regain the hold over mankind which it is losing now, it can re-establish itself only through truly and whole-heartedly Christian action in the broadest and deepest sense. For what is religion if it is not a power permeating all spheres of human activity? This task seems likely to be tremendous, since Fascist action has established itself as anti-Christian. and satanic in essence, and as dominating all spheres of human life.

Our age is an age of trial for Christianity and for all the religions of the earth, and the future alone will decide which of them survives the ordeal.

F. H. HEINEMANN.

Towards a Christian Philosophy. By Leonard Hodgson, D.D. London, Nisbet and Co., 1942. Pp. 195. 10s. 6d. net.

This book, according to its preface, is primarily a restatement of what its author principally wants to stand by in two earlier volumes almost entirely destroyed by enemy action. From the same preface one gathers that the author would like to be a robust and candid realist in philosophy who, accepting the Gospel narrative (clarified by modern scholarship) as plain historical fact, regards these historical events as the clue to the riddle of reality and proceeds to verify the sufficiency of the clue by severe rational reflection.

Many of us, I think, would agree that an honest Christian has to hold that the Incarnation was a piece of history and that whatever clues it gives for a philosophy of "all that is" should be scrupulously examined by logical reflection. Some of us, however, may be very doubtful whether there is very much metaphysics to be extracted from the Gospel narrative so understood, and I have to confess that I find Dr. Hodgson rather easily satisfied on this head. Thus on p. 146 he says emphatically (and I believe truly), "What we know by faith is that we are redeemed by Christ, and by Him brought into communion with God; this and nothing more." How, unless we knew in advance that God was the Creator of the universe, could we infer that the being with whom, through Christ's spirit, we had communion, *was* the Creator of the universe? (and similarly of much else in metaphysical theology). The clue seems to me to be pretty slender; and it is not enough to say that it is the best we have. Dr. Hodgson, noting that two bodies must occupy different places at the same time, seems willing to accept the fact as the ground of the individuation of human persons and thence to welcome the suggestion that "space and time are God's machinery for the creation of individual souls" (p. 174). Such canons of verification seem to me to be rather slack.

The author's "realism" is subject to the fundamental principle "Only if reality be such as to justify its own existence by its goodness shall we cease to ask why it should exist and be what it is. It must be a self-authenticating reality" (p. 40). He carries this principle so far as to hold that "there must be intelligence in that which is intelligible" (*ibid.*) and that "mere matter of fact" would be *unknowable* even by God (p. 106) [One might try this on "this cow has a crumpled horn"]. In short the author is a very pronounced idealist in most senses of that word, and most of his realism appears to consist of a dislike for too much epistemology. These remarks are not made in a spirit of criticism, but the author should be censured I think for his prostration

before the idol of so-called *philosophia perennis*. This seems to me to be the worst kind of philosophical authoritarianism, invented by modern scholastic philosophers in support of the encyclical *Aeterni Patris*, smugly satisfied with European peninsularity (Dr. Hodgson's kindly and perfunctory references to the East are always to its unwitting Christianity) and excluding good and honest philosophers because they haven't got their tickets. I allow it is not quite clear from Dr. Hodgson's pages who *are* excluded. The materialists are; and I suppose we might safely infer that Hume would get a kick in the pants and that Locke would be shown the door. At a venture I should say that Kant would be allowed into the vestibule but not farther, and that Berkeley would be admitted but told to efface himself as much as possible. He wasn't a Dominican.

In much of the book and for most of its meandering middle portion (the other parts don't meander, or not much) Dr. Hodgson is very anxious to "take time seriously"—but not too seriously. Part of the difficulty (according to him) is contingency—though this, so far as I can see, is derived not from an analysis of time but from the (alleged) moral requirement of (causeless) "liberty to sin." The solution (e.g. p. 109) appears to be that the universe contains "realities which, being as they stand irrational and unintelligible, have to be *made* different before they can be seen differently and so truly known." If anyone thinks this statement rational and intelligible I am glad to differ from him, and I don't see that the affair is bettered by an apparently Plotinian doctrine of "creaturely" and other semi-real "modes of being." If men are creatures and have communion with God, what in these half-reals really does have real communion? Sinners in so far as they are *made* sinless "and so truly known"? Temporal creatures in so far as they are *made* eternal "and so truly known"? Or mortals when they have *ceased* to be mortal and put on immortality? This is but one of my difficulties and I do not find it diminished by such statements as that God "goes on making time as it is required and puts it forth to be the medium of the universal process until that process is complete."

JOHN LAIRD.

Introduction to Logic and to the Methodology of Deductive Sciences. By ALFRED TARSKI. Translated by Olaf Helmer. (New York: Oxford University Press. 1941. Pp. xviii + 239. English price 14s. net.)

The complex symbolism and systematic rigour of Mathematical Logic necessarily proves a stumbling block to many students of this comparatively new subject, especially to those who have no particular aptitude for Mathematics. Mr. Tarski's new book will certainly be welcomed by such as these, and by others who only wish for a knowledge of the subject sufficient to fill an awkward gap in their picture of modern thought, or to enable them to grasp its bearing upon their own particular branch of study.

It is not enough to say that the book is simple. In contrast with many other works on modern Logic, which are regrettably scant in their verbal explanations and appear to treat the student as a machine for absorbing page upon page of undiluted symbolism, great care has obviously been taken over the presentation, and the possible limitations of the reader are continually taken into account. There are scarcely any proofs except towards the end, and their purpose is not the construction of a system of logical truth, but to complete the various illustrations of theories and methods in Mathematical Logic. There are no new discoveries nor any suggestions towards new discoveries, for that does not fall within the purpose of the book. Even those problems of modern Logic which demand a systematic investigation, such as

the exhibition of number as a type of classes, are left strictly alone. Mr. Tarski is concerned entirely with the demands of the student who perhaps has some philosophical or mathematical training, but is faced with modern Logic and the logical treatment of Mathematics for the first time. For this reason the logical material is carefully selected, and numerous exercises are appended to each chapter.

It seems that the attempt to afford sufficient illustration and explanation has even, in some places, overstepped the mark. For instance, a much shorter and straightforward proof is obtained for Theorem 14 on p. 178 by proving directly that if $x \not< y$ then $z < t$, and if $z \not< t$ then $x < y$. Presumably the reason for the proof chosen is that it illustrates the method of *reductio ad absurdum*. The forced application of the method in this instance, however, tends to confuse rather than clarify the understanding of it.

In Part I, the last chapter (Chapter VI), which is on the deductive method, deserves special attention. As an example of a deductive theory two axioms of a geometrical character are taken, together with two theorems proved from them. It is pointed out that the proofs make use only of what is explicit in the axioms, not of any other easily assumed statements about the terms. As far as the deductive theory is concerned, these terms could therefore be replaced by *variables*, subject only to the conditions laid down by the axioms. By giving different values to the variables corresponding "models" of the original axiom system can be obtained. I believe it is Nicod who uses the concept of *solution* instead of *model*. By the concept of *model* each subsequent theory is related directly to the original theory, but by the concept of *solution* each theory, including the original one, is related to the matrix formed when the primitive terms are replaced by variables. Nicod's method is evidently the more logical, since the original theory is logically co-ordinate with the others and only the matrix belongs to a different logical type.

This leads to a method of determining, in some cases, whether a given sentence of the same kind as the axiom system (i.e. containing the same primitive terms) can be proved by that system. If a model (or interpretation) of the axiom system can be found which contradicts the sentence in question, the sentence cannot be proved by that system.

Another way of stating this is that the sentence in question is *independent* of the axioms. Thence essentially the same method is used in Chapter IX to determine whether the axioms of a given system are each independent of the others. In the same chapter the method is utilized once more in treating the problem of *completeness* of a given theory, which is the problem whether every sentence in the primitive terms of the theory can be proved either true or false by the theory. For in regard to a given sentence it may be possible to find two interpretations of the theory, the one interpretation proving the given sentence true and the other proving it false. This would show that neither the sentence nor its negation could be proved by the original theory, which is therefore proved incomplete. All this is admirably illustrated by a concrete example from Mathematics (§ 60).

An historic example of the method of proving the independence of axioms is to be found in *The Principles of Mathematics*, § 121, where Russell quotes the reasoning by which Peano and Padoa prove the independence of the five primitive propositions defining number.

The last four chapters (7–10) are grouped together under the heading "Applications of Logic and Methodology in Constructing Mathematical Theories." Chapter VI again proves of value as an introduction to this second part of the book, including as it does an explanation of what is meant by "methodology of deductive sciences." E. TOMS.

PHILOSOPHY

Science, Religion and the Future. CHARLES E. RAVEN, D.D. (Cambridge University Press. 1943. Pp. x + 125. Price, 7s. 6d. net.)

Dr. Raven has written a delightful book. A pupil of Bateson's, he has continued to be a biologist all his life and has refreshed himself continually by indulging his field-naturalist's passion for the study of bird life in the wild. Recently by his admirable book on "good old John Ray," he has increased his extensive knowledge of the history of science especially in Britain. Thus he can talk about science from the inside. And he is an admirable talker, quick, provocative, entertaining and fond of mischievous sallies. It is superfluous to add that Dr. Raven has also had a life-long passion for theology, but it may be just worth remarking that he is as kind to his theological friends and as sharp to his theological opponents as he is in the sphere of biology.

I don't know how good a thing it would be if all scientists were sincere Christians and if all sincere Christians were scientists, or what the effect would be on this frantic new world; and, personally, I should deplore an "agreed metaphysics." We must all admit, however, than an unco-operative metaphysics is a cultural disaster and that civilization, if it ever exists, is weakened by a pull devil pull baker contest where scientists regard theologians as the devil, and theologians take science to be just a baker.

On p. 92—to choose one of many instances—Dr. Raven says that "few examples of human bewilderment are more striking than the attempts of scientists untrained in philosophy to deal with teleology." Such comments might be justified on the part of one who himself was equally bewildered; but I do not think that Dr. Raven regards himself in that light. If my suspicions here are justified, I think he really should have told us, with some precision, how he himself has avoided bewilderment. So far as I can see he has made no such attempt in the present volume, unless philosophizing by reference is charitably to be regarded in that light. To be frank, I think that "teleology" in these pages is a far from lucid pool which contains at least one rotting corpse (either design or blind chance) and sundry sunken things alleged to be jewels but in fact quite possibly paste. The *Bridgewater Treatises* are highly commended; but so is Bergson who was at pains to show that he was not very Bridgewatery.

Among the alleged jewels are "value" and (it would seem) all answers to the question "Why." Let us consider the latter. If I ask a man "Why did you volunteer for service in Spain?" I would commonly be supposed to be asking about his motives. If I asked him "Why did you make so many mistakes in arithmetic this morning?" I should be insulting him if I were asking about his motives and would expect him to say, for instance "O! There were two alerts last night and I was tired." If I asked him "Why did you reach such and such a conclusion." I would be asking him not about his motives or about his freshness but about the logical grounds for his views.

None of these senses of "Why" is identical with "Why" in the sense of "With what purpose or design?" The first may come near it, the second is in flat opposition to it, the third would coincide only in the case in which the man's sole purpose was to argue correctly. The conclusion would seem to be that "purpose" answers the question "why" only when "why" *means* "with what purpose?"—in other words, that it gives a solution by tautology.

JOHN LAIRD

NEW BOOKS

Bradley's Dialectic. By RALPH WITHINGTON CHURCH, D.Phil., Associate Professor of Philosophy in Cornell University. (George Allen and Unwin, Ltd., London, 1942. Pp. 189. 10s. 6d. net.)

It is unfortunate that "Dialectic" has acquired an undeservedly sinister meaning, which the author excludes at the outset in favour of "method of elucidation"; and this, still further, involves the radical reinterpretation, if not in fact the rejection, of the Laws of Identity. Non-Contradiction and Excluded Middle. But whether this establishes the Principle of Excluded Muddle is precisely the issue between the "dialectic of contrariness" and the "logic of contradictories"; and although the first of these is the "true logic," Prof. Church himself occasionally sharply distinguishes "Logic" from "Dialectic."

His highly competent discussion is throughout technical and by no means elementary; inevitably so, since Epistemology is an extremely difficult science whose problems can be solved by no mere "analysis." His volume is the outcome of many years' work, but its condensation is an undeniable asset. Equally unquestionable is its pertinence to the current situation, since a recent Gifford Lecturer confused Objective Idealism with a quasi-Berkeleianism—a typical consequence of the long neglect of its exposition by Bradley and his colleagues.

The author's own criticism of Bradley's opponents is severe. Professor Broad and Dr. Ewing are charged with a thorough misinterpretation of his treatment of Relations, and Professor H. H. Price with ignoring Monism; but these protagonists will no doubt defend themselves. Closely connected with this is the far too frequent abuse of "Absolute." Its proper sense is comparatively simple, denoting Reality taken in its wholeness. This is certainly not so elementary as it seems at first sight; for "short of the Absolute nothing is absolutely real"; on the other hand "everything is real to a degree"—to the extent, that is, in which any entity attains the perfection of irrefragable self-consistency. It is obvious, again, that Absolute Reality is infinitely complex and transcends, therefore, the utmost reach not merely of human comprehension but of all Thought as such. For Thought, of its very nature, is restricted to the relational sphere, whereas "the Absolute is not, and cannot be thought as, any scheme of relations." It is, rather, essentially and inherently "supra-relational" and "beyond thought"; and were "the intellect to go beyond the relational to the Absolute" it would thereby "commit suicide." This contention should in itself suffice to refute the familiar charge that Objective Idealism identifies Reality with Thought of any kind; quite the contrary, since "no quality is wholly intelligible by the relational way of thought"; similarly "the truth attainable by thought may not be absolute," so that "the Absolute is not available to finite minds," even though "the relational way of thought is always thinking what is *some* degree or other of reality."

These foundations of Bradley's system have always appeared to myself to increase the difficulties of his insistence that "reality is sentient experience," so that I still feel that, on this point, he never fully succeeding in avoiding the perils of subjectivism. In any case, Absolute sentience must be transcendent, while all that is finite incessantly strains beyond its own bounds. This is the true implication of "Ideality" as "the self-transcendence of moments of process or Appearance" in eternal "unrest"; it is unfortunate, therefore, that the term should too readily suggest ideas or ideals, neither of which are actually involved except indirectly.

Dr. Church has given due prominence to the aspect of Process involved throughout Bradley's Idealism, and concludes with what is perhaps the most valuable feature of his work—the discussion of "Some Basic Difficulties"

inseparable from the baffling connection between "Relational and Absolute Identity." This should sustain his reputation as a keenly critical expositor, and at the same time, I trust, re-arouse attention to Objective Idealism in its genuine form, free from those scandalous misrepresentations which, too often, "have made Bradley a synonym for nonsense." J. E. TURNER

Books also received:—

THE REV. E. L. MASCALL, B.D. *He Who Is* (A Study in Traditional Theism). London: Longmans, Green & Co. 1943. Pp. xiii + 210. 15s. net.

BERTRAM MORRIS. *The Aesthetic Process.* Evanston: North-western University. 1943. Pp. ix + 188. $2.25.

SIR HAROLD SPENCER JONES, F.R.S. (H.M. Astronomer Royal). *Copernicus.* (The Selby Lecture, 1943. Cardiff: University of Wales Press. Pp. 32. 1s. 6d.

BEN-AMI SCHARFSTEIN. *Roots of Bergson's Philosophy.* New York: Columbia University Press. 1943. Pp. x + 156. English price, 11s. 6d.

PAUL OSKAR KRISTELLER. *The Philosophy of Marsilio Ficino* (Trans. into English by Virginia Conant). New York, Morningside Heights: Columbia University Press. London: Oxford University Press. 1943. Pp. xiv + 441. English price, 30s.

KARL R. WALLACE. *Francis Bacon on Communication and Rhetoric.* The University of North Carolina Press. 1943. (London: Oxford University Press.) Pp. ix + 277. English price, 30s.

JACQUES MARITAIN. *Art and Poetry.* Trans. by E. de P. Matthews. New York: Philosophical Library Inc. 1943. Pp. 104. $1.75.

INGEMAR DÜRING. *Aristotle's De Partibus Animalium: Critical and Literary Commentaries.* Göteborg: Wettergren & Kerbers Förlag. 1943. Pp. 222. Price, 10 Kronen.

FRANCIS SHOEMAKER. *Aesthetic Experience and the Humanities.* New York: Columbia University Press. 1943. Pp. xv + 339. English price, 23s. 6d. net.

A. D. LINDSAY. *Religion, Science and Society in the Modern World.* Oxford University Press. 1943. Pp. 64. 3s. 6d. net.

JULIAN S. HUXLEY. *Evolutionary Ethics* (The Romanes Lecture, delivered in the Sheldonian Theatre, June 11, 1943). Oxford University Press. 1943. Pp. 84. 2s. net.

BERTRAM EMIL JESSUP. *Relational Value Meanings.* Eugene, Oregon: Oregon University Press. 1943. Pp. 175. $1.25.

E. BERKOVITS. *Towards Historic Judaism.* Oxford: East and West Library. 1943. Pp. 144. 5s. net.

CECIL ROTH. *The Jewish Contribution to Civilisation.* Oxford: East and West Library. 1943: new edition. Pp. xiv + 370. 5s. 6d. net.

CECIL ROTH. *A Short History of the Jewish People.* Oxford: East and West Library. 1943: revised edition. Pp. xii + 450. 5s. 6d. net.

HELMUT KUHN. *Freedom Forgotten and Remembered.* Chapel Hill, N.C.: The University of North Carolina Press. 1943. Pp. 267. $2.50.

F. P. CLARKE and M. C. NAHM (Editors). *Philosophical Essays in honour of Edgar Arthur Singer, Jr.* Philadelphia: University of Pennsylvania Press. London: Humphrey Milford, Oxford University Press. 1942. Pp. x + 377. English price, 21s. 6d. net.

L. SUSAN STEBBING, M.A., D.Lit. *Men and Moral Principles* (L. T. Hobhouse Memorial Trust Lecture, No. 13). 1944. London: Humphrey Milford, Oxford University Press. Pp. 28. 2s. net.

Proceedings of the Society for Psychical Research: Part 167, Vol. XLVII. *Experiment in Precognitive Telepathy,* by S. G. SOAL and K. M. GOLDNEY. December 1943. Price 6s. ($1.50).

ANNOUNCEMENT

THE American Philosophical Association has received a grant from the Rockefeller Foundation for a Commission on the Function of Philosophy in Liberal Education. The task of the Commission is "to re-examine thoroughly the nature and function of philosophy in higher education and in general culture, and to study ways and means of reorganizing the teaching of philosophy in order to make the contribution of philosophy to the post-war world most effective." The Board of Officers of the Association selected for membership on the Commission the following:

Brand Blanshard, Swarthmore College
Curt J. Ducasse, Brown University
Max C. Otto, University of Wisconsin
Arthur E. Murphy, University of Illinois, Chairman
Charles W. Hendel, Yale University, Secretary.

In the terms of the grant liberal education is conceived very broadly. It includes not only education in college and university but also the development of a free and reflective life in the community at large. Thus the work of the Commission is to inquire into the general function of philosophy in the life of the individual and society.

The Commission can best perform so extensive and important a task if it is able to marshal to its aid the combined wisdom of all concerned. It is therefore seeking the views of scholars and teachers in philosophy and wishes especially to get testimony from the various schools of thought. A number of meetings is planned in different parts of the country where not only members of the profession but also others from different walks of life may discuss what philosophy means at present to the community and what it should mean, especially in the days to come. Both the needs of the plain man and citizen and the demands of scholarship are to be considered. Studies will also be made of the following questions: recent trends in professional philosophy during the past twenty-five years; the philosophy that reaches the general public through non-professional channels and literature; the relations of philosophy, science and religion; the rôle of philosophy in schools of education; the content and method of graduate instruction and training in philosophy; the place of philosophy in proposed reconstructions of the liberal arts curriculum. The Commission will bring together the results of all these studies and consultations into a report that should yield a clearer view of the objectives of philosophical study and teaching today.

All who are in any way concerned are invited to give the Commission the benefit of their views on any of these questions. The Commission will be particularly interested in learning about courses of study presently offered or planned, special methods of instruction, the nature and extent of collaboration between scholars in philosophy and those in other disciplines, and ways in which philosophy is given a practical bearing on human affairs.

The address of the Secretary is 327 Hall of Graduate Studies, Yale University, New Haven, Connecticut.

C. W. HENDEL,
Secretary.

INSTITUTE NOTES

On Friday, November 26th, at 3 p.m., Mr. D. M. Mackinnon delivered a lecture to the Institute on "Our Knowledge of Other Minds"; while on Wednesday, January 26th, at 4 p.m., Dr. A. C. Ewing lectured on "States and their Ethics."

On the eve of going to press arrangements have been made for the Rev. A. M. Farrer to lecture on "The Existence of God" on Friday, February 28th.

AMERICAN WAR REFERENCE LIBRARY

Members of the Institute have been invited to use the American Library which has been established by the U.S. Office of War Information as a special war reference library. This valuable collection contains basic printed data explanatory of all phases of American life. Every effort is being made to secure the rapid transmittal of at least a single copy of a wide range of American periodicals, books and documents. It is *not* a lending library.

The Reading Room is located on the ground floor (Room 21) of the American Embassy, 1, Grosvenor Square (Telephone number: Grosvenor 3422, extensions 5308 and 5311).

OBJECTS OF THE INSTITUTE

The British Institute of Philosophy exists to bring leading exponents of various branches of Philosophy into direct contact with the general public, with the purpose of satisfying a need felt by many men and women in every walk of life for greater clearness and comprehensiveness of vision in human affairs.

With this broad educational purpose in view, the Institute—

(1) Provides at suitable times in the day and evening courses of lectures by leading exponents in the more important subjects coming within the scope of Philosophy. All branches of Philosophy are represented —Ethics and Social Philosophy, the Philosophy of Law and of the Sciences, of the Fine Arts and of Religion, as well as Logic and Metaphysics and Psychology.

These lectures are free to members.

(2) Issues a quarterly philosophical journal (free to members).

(3) Proposes to form a philosophical Library.

(4) Gives guidance and assistance to individuals in their philosophical reading.

(5) Encourages research in Philosophy.

There are Local Centres of the Institute at Bangor, Cardiff, Liverpool, Manchester, Newcastle and Durham, and Sheffield.

Further information and forms of application for membership may be had on application to the Director of Studies, at University Hall, 14 Gordon Square, London, W.C.1.

[Suggested]

FORM OF BEQUEST

I bequeath to THE BRITISH INSTITUTE OF PHILOSOPHY the sum of ..... free of duty, to be applied to the purposes of that Institute, and I declare that the receipt of the Honorary Secretary, or other proper officer for the time being of that Institute, shall be sufficient discharge for the same.

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THE BRITISH INSTITUTE OF PHILOSOPHY

Message to Readers

As mentioned in the last number of the JOURNAL, the war with its world-wide dislocation has caused a considerable loss of income to the Institute. This loss has been accumulating for several years, and has now reached serious dimensions. The Institute has practically no endowments, and its work, including the arrangement of lectures and the conduct of the JOURNAL, cannot be carried on from revenue derived solely from subscriptions of one guinea per annum. The obvious need of the Institute in order to remedy the situation is a large increase in membership, and the Council therefore appeals to its supporters to do what they can to introduce new members, so that the benefits of the Institute may be extended to a wider circle and its revenue augmented. It also appeals for donations, small and large, from sympathisers, and suggests that those who wish to see the Institute's work flourish in the future might like to make arrangements for bequests to the Institute.

EDITORIAL

THE Editor recently spent two nights in Oxford. At breakfast one morning two young men sat at his table, and a conversation took place concerning the spirit that should animate education. At the moment of going to press a letter has arrived from one of them, a Squadron Leader in the Royal Air Force. The following is an extract, which seems to the Editor likely to be of interest to readers:

> ". . . I only regret we could not have stayed longer to discuss such vital subjects. . . . I see so much of the stark tragedy of war that I wish more people could find pleasure in an appreciation of the Arts.
>
> "It is easy to live on an operational squadron and understand how unimportant are many of the world's material gifts. I have lost nearly all my friends and seen the sorrow on the face of remaining wives and parents. That is the price of war. I am convinced that we need a new spirit and an education which trains people to think for themselves. Then perhaps there will be hope for the future. . . ."

The Editor understands that this point of view is very widely held amongst thoughtful young men in the different Services. Is it not the duty of statesmen and educationalists to take full account of it?

PRINTED IN GREAT BRITAIN BY
UNWIN BROTHERS LIMITED, LONDON AND WOKING

PHILOSOPHY

THE JOURNAL OF THE BRITISH INSTITUTE OF PHILOSOPHY

VOL. XIX. No. 73 JULY 1944

IMPARTIAL THINKING

IRENE M. HUBBARD, B.A.

PHILOSOPHERS are apt to assume that impartial thinking is both possible and desirable. This article, originating in a very definite doubt of this assumption, is an attempt at an examination of the problem.

To begin with the indispensable definition—what is impartial thinking? Let us agree to define it as judgment upon evidence, which judgment is not influenced by the personal passions, hopes and fears of the judge. And "personal" must not be understood as equalling "self-regarding." A Judge of the Law Courts must be proof, not only against fear of an adverse public opinion and love of notoriety, but also against righteous indignation and compassion. The scientist, upon the verge of an epoch-making discovery, must control his natural human impatience for results in the interests of accuracy; he must not, in the glow of enthusiasm produced by achievement, proclaim as a certainty any conclusion which, however likely, yet does not pass the test of strictest scientific proof. The philosopher, in his reflections upon God, Freedom and Immortality, must strive to keep his intellectual vision clear of the distortion of prejudices and the blur of emotion.

Having arrived at a definition of impartiality, we will go on to enquire whether it is possible.

It will probably be generally conceded that, given moral integrity, intellectual vigour and a sound training in the laws of thought, a great measure of impartial judgment is attainable. Judges do, in the majority of cases, give a fair and balanced summary of conflicting evidence; scientists, if worthy of the name, and we can safely assume that there are many such, do staunchly apply the strictest scientific tests to their discoveries. When, however, we come to assess the philosopher's capacity for impartiality, we find ourselves at the heart of our problem.

How are we going to separate ourselves, our aims and values, our individual temperament, our whole cultural heritage, from our beliefs about the Universe? It is not only a question of getting rid of prejudices and of neutralizing personal hopes and fears, although to achieve even this is difficult enough. Which of us can say that we approach the problem of the existence of God with no lingering trace of prejudice surviving from youthful days, when the Divine Being was, perhaps, a source of interesting speculation, or, possibly, a bogey? Which of us can approach the question of the immortality of the soul and the survival of man in a spirit of cold detachment? And which of us can be sure of doing full justice to the doctrines of determinism when, at any attempt to impose them in the spheres of life and mind, our deepest being rebels and we recognize that rebellion as a manifestation of one of the finest aspects of our nature?

A spirit of complete detachment in all these matters certainly seems difficult enough. But nothing less than complete detachment will suffice for what we mean by perfect impartiality of thought. In a recent address to the Institute, Professor H. H. Price has emphasized the difficulty of an impartial assessment of evidence. We do not, he holds, consciously distort the data at our disposal at the time of forming our judgment on a given question. The distortion has already taken place by a process of unconscious elimination of the facts that tend to a conclusion we dislike. This may very well be true and to make matters worse the process may work two ways. We have not only to contend with the tendency in human nature to believe what it wants to believe. Most of us, if we have any capacity for self-criticism, are aware of this tendency in ourselves, but not so many, perhaps, are aware of a tendency which is the exact opposite and which may yet exist alongside the other. In our anxiety not to be the dupes of our own hopes and desires, not to live in a fool's paradise, not to be escapists, we go to the other extreme, become hypnotized by what we don't like and give it a prominence it does not deserve. Thus we may be led to the rejection of an agreeable conclusion without giving its premises due consideration. It is the last asceticism of which the human mind is capable.

Such difficulties as these are, however, but a part of the obstacles which the philosopher has to contend with in his search for reality. With his finite mind, he has to try to fathom infinity and thereby he imposes his own limitations upon the illimitable. His very postulate of infinity is a leap in the dark, comparable to Kant's introduction of the "thing-in-itself." We can never prove infinity any more than we can prove the existence of the thing-in-itself. We can only infer and assume it.

Again, at the very heart of the philosopher's quest there is conflict and emotional stress. As Professor Berdyaev has pointed out, as some of us know of ourselves, the soul of man recoils in horror and anguish before eternity, whether of life or death, and we cannot see our way to reconcile the antinomies of our thought. The popular idea of the philosopher as someone who can bear the toothache patiently and who sits with his chin in his hand, after the fashion of Rodin's "Thinker," meditating upon abstractions in an atmosphere of passionless calm, is about as false as popular ideas usually are. Anguish and terror, conflict and contradiction, the inalienable dower of the fallen human soul, dog the footsteps of the philosopher from the cradle to the grave. Just because, *qua* philosopher, he has a clearer apprehension than most men of absolute values, he is more conscious than most men of the contradiction between this realm and the world of relativity, of the contrast between man's high nature and his fallen state, and horror and anguish are increased for him an hundredfold.

Thus at the very beginning of the search for truth we find division, contradiction and the emotional stress that conflict brings. It would seem that if a cold, dispassionate aloofness is the weapon by which we are to hack our way through the jungle of ignorance and folly, it is irretrievably blunted in our hand. And it is not only our ready-made mental equipment which limits us. The use we make of that equipment, the lines along which we choose to, or are obliged to, direct our thought and living, determine to a very large extent what we see of reality. We may liken ourselves to men exploring a large, dark and crowded house by the light of hand torches. What each man finds is conditioned by what each man is looking for and what each man looks for is dependent upon what he wants to find. Even if one man is actuated solely by the consideration "What is in this house?" the things he finds will depend upon the parts of the house he chooses to explore. If he stumbles upon the bathroom and concludes that there are no books in the house he may be mistaken. The searcher who discovers the kitchen and spends his time numbering the pots and pans, may remark that if there is a music room in the house, he has not come across it. Another may find his way to the private chapel and become so entranced by the beauty and significance of the architecture that he does not trouble to explore any further, while the fourth may declare triumphantly that the only thing the house really contains is the drain.

The fact that a man's beliefs about the nature of the Universe are so largely conditioned by his individual personality and mode of life was probably at the back of the heresy-hunting of the Middle Ages. In declaring that men may rightly be blamed for their beliefs, orthodox churchmen could claim the support of Aristotle, who

declared that some kinds of ignorance are blameworthy. Given belief in moral responsibility, in a moral standard, and that men make or mar themselves in relation to that standard by their motives and actions, it follows that man does make his own personality. And, as we have seen, personality conditions belief. It is an easy step from this point to the conclusion that there are some beliefs that a man has no business to hold. Do we think that anyone who accepts the axiom "Every man for himself and the devil take the hindmost," is in a state of moral health?

Can the various hindrances to impartial thinking be overcome? Can the critical intellect become so strong that it triumphs over emotional discord and stress? Or can the inner conflicts of the soul be so resolved that they cease to be discords at all?

Affirmative answers are given to both these queries; to the first, by the Augustinian theology, with its doctrine of Divine Illumination; to the second, by modern psychology, with its claim to be able to resolve all discords by its own peculiar technique and by its denial of any reality to the spiritual life.

According to the Augustinian theology, knowledge of truth is possible but not by any effort on man's part, except the effort entailed by perseverance in the Christian way of life. The Wisdom of God "illuminates" the mind of man, as the light of a lamp suddenly directed into a dark room. It is not so much that knowledge is introduced into the human intellect from an outside source as that the ability to acquire knowledge is thus introduced by means of external Divine aid.

St. Augustine was a very shrewd psychologist and the whole framework of his thought bears the stamp of personal experience and of observation, both of his own thought-processes and of the outside world. Many of us are familiar with the experience of "illumination" in quite mundane matters. "Suddenly it all came to me"; "Suddenly I saw the whole thing"; such descriptions of moments in the process of learning are common enough.

Though this "illumination" certainly has an objective source in that it is not the result of conscious effort at the time, there is no need to attribute to the agent that produces it all that St. Augustine meant, or all that we mean by the term "God." The existence of the unconscious mind (although the term is a contradiction, because the attribute of consciousness is contained in the idea of mind) can be accepted as a fact, though one as incapable of scientific proof, in that it cannot be isolated under a microscope or expressed in a mathematical formula, as is the existence of God. And it seems at least as likely that the unconscious mind is the source of mental illumination as that this illumination is due to the direct action of the Deity upon the human personality. It is, of course, perfectly

reasonable to maintain that the action of God takes place in and through the unconscious mind.

These considerations do not, however, affect the main point, namely—Is the phenomenon known as illumination a trustworthy source of knowledge? There would probably be a consensus of opinion among those who have experienced it that it is. It must rank with empirical knowledge, like the results of scientific research, but there is no need to deny it value on that account.

Modern psychology affirms that truth can be discovered and impartial thinking attained, not by any process of external illumination, but by doing away with the emotional conflicts which produce bias and prejudice and are general hindrances to contact with reality. It does not say that the finite mind can overcome the limitations of the finitude and comprehend the Infinite, because it is not concerned with the Infinite at all.

According to the professional psycho-analyst, truth is discoverable to anyone of average intelligence if he will submit himself to a long course of psycho-analytic treatment, learn to recognize the shifts and evasions of his own mind for what they are, i.e. his own unconscious attempts to escape from reality (reality being, as a rule, the universe as presented by orthodox science) into a comfortable dream world of his own creation. The conflict of flesh and spirit, the agony of the philosopher before the problem of eternity, the guilt and shame of the fallen human soul before the transcendent majesty and holiness of God—all these are traceable to emotional conflicts in early childhood and may be of a sexual nature or the result of an inferiority complex, according to the school of thought to which the analyst belongs. They are purely subjective and have no relation to the constitution of the Universe in reality. God has no objective existence and the idea of God is either a substitute for sex or an attempt to salve the pain of wounded self-esteem. Such cowardly and selfish evasions of an uncomfortable reality can be recognized and got rid of, given time and patience and the will of the sufferer to put himself completely in the hands of the analyst, to relax and let the unconscious rise to the surface, as it were, when the resultant scum can be skimmed off, by a process of suggestion supplied by the analyst.

The trouble with this kind of epistemology is that it has no absolute standards. The standard of truth is, in the last resort, the mind of the analyst. It is not even, in all cases, the generally accepted conclusions of orthodox science, for psycho-analysts have been known to reply "So much the worse for science" to those who have criticized their faith on the ground that it is not scientific. Granted that psycho-analysis can be a useful means of teaching the crudely uncritical a certain kind of self-knowledge and of opening their

eyes to their own prejudices and limitations, what is the standard by which these errors are defined and judged? The analyst himself, by his knowledge, has the right standard, is the reply. But may not the analyst himself be prejudiced and limited? No, for he has himself been analysed, comes the answer. But we do not come into the world ready-analysed. Who was the First Psycho-Analyst? (We are back in the Infinite Regress of the Mediaevals!) Professor Freud? But who analysed him? And if nobody did, how can his followers, according to their own tenets, claim that he may not have erred? And if this be admitted, the possibility of error and limitation in his followers must be admitted also. And intellectual error and limitation will result in a false and narrow interpretation of the Universe as a whole.

So the infallibility of modern psychology as a guide to truth goes on to the scrap-heap, along with others of its kind. In truth, there is no infallible source of knowledge for struggling humanity. Man must accept his burden of mental toil. If there is such a thing as Divine Illumination, and there seems reason to think that there is, it does not absolve us from the need for the effort and self-discipline of honest thinking and patient search for truth.

St. Thomas Aquinas, whose psychology, though more objective than Augustine's, is just as suggestive, and should be better known, postulated, following Aristotle, an "active" and a "passive" intellect. These seem to correspond respectively to the critical and ratiocinative faculty and the workaday mind whose function it is to carry out the practical business of everyday life. The link between the active intellect and the Mind of God is very close; there is no suggestion that it is subject to weakness, poverty, sin or any kind of imperfection, although it differs in kind from the Angelic intellect and the Divine Intellect, being discursive in its nature. It seems to perform much the same function as Augustine's "illumination."

This doctrine is borne out to some extent by our own introspection, which shows that our critical faculty is very tough. Even in moments of intense emotional stress, such as acute temptation, it remains singularly aloof and unmoved. It is like conscience—it takes a lot of killing. Probably many people have had the impression of being merely a spectator of their own struggles, of sitting apart and judging the issue quite calmly while two conflicting impulses struggle for mastery. It may be that, given a healthily developed critical faculty, we are not quite so biased as philosophers, in their anxious self-criticism, tend to believe and as others, not remarkable for intellectual breadth, so roundly assert. We see this exemplified in political life, where the warring parties accuse each other, often quite unjustly, of class bias, whenever there is a dispute over the

desirability or otherwise of legislation to remedy some social or economic ill.

We can admit, perhaps, that impartial thinking is possible. Let us now face a further question —is it desirable? Is it the way to truth? Are we more likely to arrive at the truth about the Universe if we approach it in a spirit of cold detachment? Or are our loves and hates, our hopes and fears, aids and not hindrances to our understanding of reality? And do we, in some sense, make reality by what we desire it to be?

It seems fairly obvious that we cannot think with our emotions. We can think about them, accepting them as part of the data of our problems. But there are realms of knowledge, e.g. the realm of art and the world of human relationships, where thought in the sense of ratiocination, a process of analysis and abstraction, is only one element in the apprehension of reality.

To see the truth of this we need only ask ourselves if our understanding of our friends is wholly a matter of objective and analytic thinking. Does a man understand wife and child better if he approaches them with the detachment of a scientist? We have only to ask the question to see its absurdity. No one seriously imagines that we should be nearer to the truth about our fellowmen if we were to approach them as a surgeon approaches a corpse on the dissecting table. The terms "insight," "sympathy," "intuition" are uncomfortable. They cannot be easily defined and their meaning eludes us if we try to understand them by analysis. But we do know what they mean. Our apprehension of them is concrete and synthetic. They are wholes, and so are the objects to the understanding of which they are the means. A whole is more than the sum of its parts, as experimental psychology has shown, and it can only be understood as a whole, immediately and intuitively. In the world of art this is a commonplace. We cannot arrive at the truth about the Parthenon or a Beethoven Symphony by an analysis, conducted in a spirit of detached inquiry, of its parts. We have to bring our whole selves to the understanding of a whole.

We cannot refuse to include immediate, intuitive knowledge in the thought process. As Locke has shown (*Essay*, Bk. 4, Ch. 17, Sect. 14) it is the foundation of all knowledge. Even scientists acknowledge that insight, imagination, the intuitive leap of the mind toward new truth, is a valuable part of their own mental equipment.

If we can say anything about the Universe with certainty, surely it is that the Universe is a whole. Must we not, then, bring our whole selves to its understanding, as to the understanding of a great work of art?

The demand for "impartiality," for a cold detached objectivity,

is largely forensic in origin and without doubt in this realm it is absolute and inexorable. There are other realms which would be the better of a larger measure of detached thinking, notably politics.

But there are elements in thought which cannot, nor ought to be, objective and detached. To illustrate this let us take a judgment of value, e.g. "Courage is good." If this affirmation is made with full understanding and conviction, it is the result of subjective experience, of emotion, of living and striving, of moral perception and spiritual effort. Of course the affirmation may also be made as the result of a chain of abstract reasoning, but if so it will be merely formal and not really the same affirmation because the connotation of the terms will be less.

Our whole selves, the past we have made, the future to which our will is bent, go to make up our beliefs about the Universe and about ourselves. And by our beliefs we do actually create reality for by our beliefs we to a large extent create ourselves, and we impress ourselves upon the Universe, as an artist expresses himself upon his canvas. In a sense, we can and must believe what we want to believe. If we want to believe in justice and charity, it is because we value these qualities, and if we value them we cannot very well avoid expressing them to some extent in our lives and personalities, and thereby making them part of reality. But of reality in what sense?

I suggest that there are two kinds of reality. There is the reality which Plato had in mind when he envisaged a world of Ideas, the substance and structure of the Universe, inapprehensible directly to the senses, not created by man but the ground of man's being, imposing itself on and perhaps expressing itself in man's creative activity. And there is the reality of the empirical world of space and time, the world of flux, which materialists in every age, from the early pre-Socratics to the modern Marxists, regard as the only reality.

The scientist may deny that the former kind of reality is existent for him, although it is in truth the ground of all his thinking, and the philosopher, *qua* philosopher, may deny that the latter can influence his reasoning, although *qua* man, he must take it into account in order that he may continue to exercise his reason within the framework of the material universe. But both kinds of reality are facts, that is, they do impinge upon man's being and consciousness, however much he may object to and even deny this fact.

Unless we accept that development of Kant made by Fichte and Schelling and hold that the soul of man created the Universe as a kind of exercise for its own moral and spiritual faculties (a doctrine in the opinion of the present writer too simple, plausible and attractive to be true), we must admit that we are not responsible for the

creation either of the Universe or of our own minds. That is not to say that we cannot, with our fatal gift of free-will, go far towards spoiling, if not destroying, both. We cannot, however, create reality in the first sense, for we are ourselves its creation. But we can create reality in the second sense. We can create beauty and goodness if we co-operate with the "world of ideas," where beauty and goodness eternally exist.

In a sense, we cannot be impartial about the Universe, because we are part of it. By the constitution of our being we must love and hate, and the greater our intellectual and spiritual development the more intensely we must cleave to goodness and beauty. And this produces a passionate partiality, a loyalty, against all the odds we know, to the best we know, a loyalty that judges the world of appearance and finds it wanting.

A sentence from a half-forgotten Victorian preacher puts in a few words the deepest conviction of the moral consciousness. "If there were no God and no future life, even then it would be better to be kind than cruel, better to be brave than a coward, better to be chaste than licentious." If we think ourselves, as Thomas Hardy thought, bound by our reason and the evidence of our senses to conclude that the Universe is the product of blind chance or unconscious life-force or spiteful and malicious gods who play with human lives as an insensitive schoolboy sports with a fly, and in the face of this belief can echo these words of Robertson of Brighton, we are being both partial and impartial. Partial in our adherence to moral values without which the Universe becomes only an abomination of desolation, and impartial in our appraisement of empirical reality, which so signally fails to express the Idea of the Good. And following this judgment must come an effort, conscious or unconscious, to give the Idea a deeper and more complete embodiment in space and time. Thus, knowingly or not, man does create reality, reproducing in the world of appearance the creative activity to which he himself owes his being.

THE RELATIONS BETWEEN SCIENCE AND PHILOSOPHY

C. D. HARDIE, M.A.

THIS paper has been written in the light of recent discussions on the relevance of the New Physics to Philosophy, and with particular reference to a symposium held at the Royal Institution on May 19, 1943.[1] It seemed to me that, at the symposium, there was some misunderstanding both on the part of the scientists and on the part of the philosophers, mainly due to the fact that neither quite realized what the opposite side considered to be the function of science and philosophy. One of the few things that emerged clearly was that the scientists thought the new physics (by which was meant the developments in physics associated with the names Einstein, Planck, Rutherford, Bohr, Heisenberg, Schrödinger, Dirac) had very definite relevance for philosophy, while the philosophers thought that it had no relevance at all. It would seem that such disagreement could be due only to disagreement about what the new physics attempts to do, or to disagreement about what philosophy attempts to do. I shall consider each of these in turn.

Many opinions have been advanced about the function of science, but there are, I think, three main views. There is first of all the view that scientific activity results from social conditions and is directed to the improvement of social conditions. Social conditions must be interpreted, of course, in a very wide sense, and when so interpreted there is a great deal of truth in such a view. Science has always been stimulated by such important social events as wars, geographical discoveries, epidemics, and so on. On the other hand, I think it is true to say that throughout the whole of history there has always been some scientific activity which has been done "for itself alone" out of pure intellectual curiosity. It is difficult to see any other reason for most of the work of Pythagoras, Euclid, Archimedes, Leonardo, Copernicus, and Galileo, to mention only those who lived before Newton. And since Newton's day it is fairly obvious that some scientific work has had little or no connection with social conditions. I think it will be generally agreed that the new physics is part of

[1] The principal speakers were Professor Stebbing, Sir James Jeans, Mr. Braithwaite, Professor Whittaker. A short account of the proceedings is given by Professor Stebbing in *Nature*, June 19, 1943.

such work, so I shall take it as obvious that its aim is not to improve social conditions.

A second aim or function of science has often been put forward under some such phrase as the discovery of laws of nature. This appeals to common sense, and is consistent with the type of science which is taught in schools and in the junior classes of universities. It is also the view of science which is held by most logicians who write text-books on Induction. I should think that until the end of last century such a view would have been universally accepted, and it is still the view accepted either explicitly or implicitly by most scientists. This view of science holds that the new physics has come about because, through technological advances, it has become possible to explore regions dealing with the very large and the very small and the very fast. The laws of nature in these regions, it has been found, are somewhat different from the laws of nature in the regions previously investigated.

A third aim of science has, however, achieved some popularity recently, and has been admirably expounded by Professor Dingle.[1] This view is that the aim of science is to correlate our experiences as widely as possible, for example, in the way in which the "facts" of physics have recently been correlated with the "facts" of chemistry. This view will be discussed in more detail shortly.

That is a very brief, although I hope not unjust, account of the three aims which have most often been put forward for science. Let me turn now to consider the aims of philosophy. Here, I am afraid, I am on less sure ground, for many more aims have been given for philosophy than for science. At the present time, however, I think it might be safe to say that there are two main schools of thought on this subject. The first school is what may roughly be called the analytical school in which I am going to include such people as Moore, Russell, Wittgenstein, and all varieties of Logical Positivists. I am acutely conscious of how much these philosophers differ among themselves, and yet I am hopeful it may be admitted that they do hold roughly a common aim for philosophy. I take this aim to rest on their view that philosophical problems are in some sense or other primarily linguistic. That is, they do not consider that philosophy should deal with facts of a special kind, but should rather accept the deliverances of common sense and the special sciences, and attempt to analyse their meaning. Thus their attitude to such a proposition as "other human minds exist" is to accept its truth, but to compare its syntax with the syntax of such propositions as "billiard balls exist," "unicorns exist," "billiard balls are white," and so on. It then often becomes evident, according to this school, that what appears to be

[1] Especially in his book *Through Science to Philosophy* (Oxford University Press, 1937).

a question of philosophic fact, is actually a question as to how words are used; for example, questions as to what facts are ultimately real are not actually questions about what sort of facts have a peculiar property to be discovered only by philosophical study, but are questions about the usage of the words "fact," "ultimately," and "real."

The second school of thought about the aim of philosophy also contains many philosophers who differ among themselves. Yet on the whole I think they would agree that the aim of philosophy was to form some kind of general picture of the world or of the universe, or at least of man's experience of the world. They regard philosophical thought as in some sense over and above common sense and the sciences, and they consider that its aim should be to obtain general conclusions about the universe which are consistent with all the sciences and also consistent with the non-scientific parts (if any) of our experience. For example, Sidgwick says "It is the primary aim of philosophy to unify completely, bring into clear coherence, all departments of rational thought, and this aim cannot be realized by any philosophy that leaves out of its view the important body of judgments and reasonings which form the subject matter of ethics."[1] It seems to me that some such aim for philosophy is held by philosophers of the calibre of Whitehead, Hocking, and Stace in America, and in the recent past by Alexander and Collingwood in this country. This view of the aim of philosophy I shall call the metaphysical.

Now the view which is taken of the relations between science and philosophy will depend very largely on the views accepted about the aims of science and philosophy. In the nineteenth century scientists and philosophers generally held the second view of the aim of science, and also the second (that is, the metaphysical) view of the aim of philosophy, with the result that disagreement was common, because the philosophers were often not able to understand the scientific results on which they were supposed to meditate, and which they were supposed to reconcile with other aspects of experience. At the symposium recently held, however, it seemed to me that the philosophers held the analytical view of the aim of philosophy together with the second view of the aim of science, while the scientists held the metaphysical view of the aim of philosophy together with the second view of the aim of science. The result was again to produce disagreement, although this time it appeared to be due to misunderstanding. Let us consider this in more detail.

If the analytical view of philosophy is accepted then it follows at once that no new scientific discoveries can have any relevance for philosophy. For it is explicitly assumed that the business of philosophy is to accept the propositions of science and of common sense,

[1] Henry Sidgwick: *A Memoir*, Appendix I.

and to analyse as far as possible their meaning. In particular, of course, if follows that the new physics cannot have any consequences for philosophy. If, however, the metaphysical view of philosophy is held, together with the second view of science, then clearly if laws of nature which we had previously thought to hold universally are found to be not quite true in a certain branch of science, philosophy must take account of the change. This is the view which, I take it, Sir James Jeans advocates. At the beginning of this century, many philosophers, having reflected on the findings of all the branches of science, came to the conclusion that the universe as a whole had certain characteristics among which were (1) matter, in the ordinary sense in which a table is a lump of matter, could neither be created nor destroyed, and (2) the movements of all material bodies were subject to universal laws. The second conclusion was not completely proved, for example, for those bodies known as living, but it had been proved to be true in so many other cases that many philosophers considered it highly probable that the gap in the proof was due merely to our ignorance, and that it would be filled in the future. In the present century, however, it has been found that neither (1) nor (2) can be asserted to hold for certain very small particles of matter, which admittedly are not alive. There seems therefore to be good ground for holding that the general view of the world held by those philosophers who believed in the universal validity of (1) and (2) should be changed.

It therefore appears to me that both the scientists and the philosophers who took part in the symposium were correct from their own point of view. But it is perhaps unsatisfactory to leave the matter at this point, and I shall now go on to consider what seems to me to be the correct outlook on this matter. In brief, this is that the aim of science should be the third, and the aim of philosophy should be partly analytical and partly metaphysical.

Let us consider first the aim of science. How should such a question as what is the aim of science be decided? One would think that the best thing would be to leave such a question to professional scientists. The difficulty arises, however, that professional scientists, while in practice they agree, give different answers, and, as the answer which is given affects the conception which we have of the relations between, for example, science and philosophy, it is perhaps not too impertinent for non-scientists to consider the question. If so, I think, nevertheless, they must be careful to consider what it is that scientists actually do rather than what they say.

Now, if we examine what scientists actually do, I think it has to be admitted that their activity is directed to something more than the discovery of laws of nature. I take a law of nature to be a proposition asserting that if such and such an operation is conducted, then

so and so will be observed. (The so and so may be subject to numerical limitation as imposed by the calculus of observations.) With such an interpretation there is little doubt that much of the work of scientists is directed to the discovery of laws. But this is not the whole story. Scientists often want to know why it is that so and so will be observed, and much of their activity is directed towards satisfying this curiosity. Now as far as I can see this curiosity may be satisfied in two ways. It may be satisfied by an appeal to a more general law. For example, there is a law to the effect that iron sinks in water, or to put it in the operational form, if a piece of iron is put into water, then it will be observed to sink. If it is asked why does it sink, then an explanation may be offered by appealing to the more general law that any piece of matter whose weight per unit volume is greater than the weight per unit volume of water will sink when placed in water. There is no doubt that a great deal of explanation in science is of this type. But it is always possible to ask a question about the more general law similar to the one about the less general law, so that unless there is some other type of scientific explanation this kind of question will never be answered. Now there is a school of thought, the extreme positivist school, which holds such a view. It maintains that science should make no effort to answer questions starting "why . . .," but should seek only to obtain such connections between phenomena as can be stated in a general law. The only answer to this seems to me to be that no one has any right to say what science should or should not do. All that anyone can say is what science actually does; and there is no doubt that it does often attempt to answer questions starting "why . . ."

This second way in which science attempts to satisfy our curiosity is by constructing certain abstract deductive systems, which when suitably interpreted, give laws which are known to be true. The most famous example of this is, of course, Euclidean geometry. We find in the world of ordinary experience, for example, that the sum of the angles of any physical triangle is approximately two right angles, and that the angle in any semicircle is approximately a right angle. And we can explain why these laws are true by the abstract system known as Euclidean geometry. This system, starting from a group of postulates, deduces by the ordinary rules of inference a large number of consequences such that, when the postulates are suitably interpreted in terms of our experience, the consequences become laws of nature. We are thus able to correlate a large number of laws with each other by showing that they are all interpretations of consequences deduced from the same set of primitive postulates. It is also possible, of course, that hitherto unknown laws will be discovered in this way. For if the primitive postulates, when suitably interpreted, give propositions which are laws of nature, then all

possible consequences of the postulates, when suitably interpreted, ought also to give laws of nature. But whether the system does lead to hitherto unknown laws or not, it is of value in satisfying our desire for an explanation of the known laws—the explanation showing that the laws are connected with each other by means of the deductive system.

Now the system of Euclidean geometry is the oldest and is, in some ways, the most successful of all such attempts at explanation. But from the time of Newton onwards, and in particular in physics, the most developed of the sciences, there have been many deductive systems developed which have some of the laws of physics as their interpretation. Now this fact seems to me to make it quite clear that the third view of the aim of science is a much more accurate statement of what science does than the second. According to this view, science attempts to correlate as much of our experience as possible, and it achieves this correlation in two sorts of way—first of all by trying to find those uniformities in our experience which are called scientific laws, and secondly, by constructing deductive systems which link the laws together.

The new physics is essentially an attempt to construct such a deductive system or systems. At the end of last century and at the beginning of this one, certain experiments, such as the Michelson-Morley one and ones on electrical discharge through gases, showed that some laws of physics could not be correlated with others by means of the deductive systems then in force. These were the systems known as Newtonian mechanics and Euclidean geometry, although, of course, there were some laws of physics which even then could not be correlated by either of these systems, in particular some of the laws of light. Consequently the deductive systems had to be altered, either by altering the postulates or the interpretations of the postulates. The new physics attempts to do this, and will be successful or not according as it does or does not correlate to a large extent the laws recently discovered as well as the laws which were known last century. In this respect it seems to me to have been remarkably successful; for not only does it have among its consequences (when suitably interpreted) those laws which were interpretations of consequences of the Newtonian system, but it has also consequences which, when suitably interpreted, gives statistical laws when statistical laws are all that can be observed. (I mean by this that it may predict that so many flashes will be seen on a fluorescent screen in a given time, but that it does not predict when a flash will occur, nor, moreover, can any law be found predicting anything more than this.)

Let me consider now the aim of philosophy. Again it would seem to be wisest to leave this matter to professional philosophers, but just as with scientists, professional philosophers do not give the same

answer. The best policy therefore is again to see what it is that professional philosophers do. But here we come across a difficulty which did not face us in the corresponding field of science. For whereas scientists on the whole agree excellently in practice, philosophers on the whole do not, some even going so far as to assert that what other philosophers do is nonsensical.

But, as I indicated earlier, I think it is possible to divide philosophers roughly into two camps, those in the first camp considering that the function of philosophy is to make clearer the meaning of propositions, through a study of the uses of language, and those in the second camp considering that the function of philosophy is to make some very general propositions about the nature of the universe or our experience of it, after taking account of the results of the special sciences and, indeed, of all our experience. It is fashionable at present to deride to some extent those in the second class, and although I think that they have written a great deal of nonsense in the past, I do not think that they have done so as often as is sometimes alleged, and I still feel that their attitude to philosophy is reasonable.

The following are two examples where it seems to me to be possible to make very general propositions about the universe. I do not know whether the propositions are true, but I think it is important that philosophers should consider them. The first example is in connection with the problem of induction. It is generally agreed that the probability that a general proposition is true approaches unity with successive independent verifications of it, if it originally had a finite prior probability. For this requirement to be satisfied some Principle of Limitation of Independent Variety in the universe, after the fashion of Keynes, or some Principle of Simplicity, after the fashion of Jeffreys, or some other principle of a kindred nature, must be true. Now it seems to me to be important to decide which such principle is most plausible. The positivist attitude is, of course, to say that a general proposition is only a summary of past experience, which we can adopt in the future or not as we please. But this ignores the fact that we all feel it is reasonable to adopt a generalisation that is well-founded in the past, and I think it is the business of philosophy to explain why we think it is reasonable. If some general proposition about the universe is true, similar to the ones mentioned, then such an explanation can be given.

A second example is the assertion of propositions about ideas which are completely general, in distinction from ideas which are the concern of the special sciences. The most obvious of such ideas is that of time. Not only physics, but, I think, sciences as different as biology, geology, psychology, as well as common sense, all make use of this idea, and it seems to me that philosophy should be con-

cerned with propositions which involve it. It is for this reason, if I am not mistaken, that Whitehead takes exception to many of the expositions of Relativity Theory. Thus while I am willing to concede that analysis is perhaps the main business of philosophers, I think it is also the philosopher's duty to consider the truth of some very general propositions about the universe, and to be, to this extent, a metaphysician.

In the light of these comments on the activities of scientists and philosophers, let me consider finally the problem which prompted this discussion. This problem is whether the new physics has any relevance for philosophy. We have seen that those who hold the analytical view of philosophy say that it has not; while those who hold the second view of science with (at least) a partly metaphysical view of philosophy say that it has. What about those who hold the third view of science with (at least) a partly metaphysical view of philosophy?

I think the answer is again that it has, but the reasons are somewhat different. To those who hold the second view of science, the new physics is relevant to philosophy because it has discovered laws in the regions of the very small and the very large and the very fast, which are inconsistent with certain wide generalisations which some philosophers had held to be true throughout the universe. This answer is not open to me. For I consider that "the very small" and "the very large" are part of a certain interpretation of a certain abstract system. If the laws alleged to be about the very small and the very large are to be verified, they are verified by going through a series of operations and noting the results, but at no stage of the process do very small or very large bodies (in the ordinary sense of very small and very large) play a part. In other words, they are verified in just the same way as the laws of classical physics. But the new physics is relevant to philosophy, in my opinion, because it suggests limitations in the amount of correlation which can be achieved in our experience. In the nineteenth century, it was possible for science to hold that eventually all the events of the universe would be intercorrelated by the systems of Newtonian mechanics and Euclidean geometry, so that eventually I should always be able to say what I would observe when I performed such and such an operation. It is true that science in practice was a long way from such an ideal, especially as regards what was called living matter. But there seemed no reason to doubt that this was due to the great complexity of all that was alive, and that just as with sufficient study and care it would be possible to predict which way a coin would fall from the initial conditions, so it would be possible to predict the behaviour of living matter from sufficient knowledge of the laws governing its behaviour and of its initial conditions. The new physics suggests

that this ideal must definitely be abandoned. It has done this in a really remarkable way. For it suggests that correlation can be obtained between these events where uniformity has been found, such as the fall of an apple to the ground, and those events in a gas discharge tube where there is no uniformity as regards the individual flashes seen, although there is statistical uniformity over a period of time. In other words, by securing correlation between fields of experience which were previously uncorrelated, namely the field covered by Newtonian mechanics and the field opened up by recent experiments, it suggests that there is a limit to the correlation which can be achieved inside the latter field.

There is one rather obvious objection to this. I believe it has been calculated that the average life of a theory in science is twenty-five years. The objector may therefore say that surely it is possible for a newer physics to arise which not only secures correlation between different fields of experience, but also secures complete correlation inside each field. It would then be possible to say when a flash would be observed in a tube under given conditions, and at the same time such events would be correlated (by the abstract system of the newer Physics) with the common or garden uniformities of classical physics. I do not think such a possibility can be ruled out. On the other hand, the new physics has suggested for the first time by the methods of science that the universe is such that if we are to achieve a wide correlation of our experiences, there will be events inside this correlation which remain uncorrelated. Such a conclusion appears to me to be of great philosophical importance.

THEISM AND ABSOLUTISM

T. A. BURKILL, M.A., B.D., Ph.D.

THEISM is sometimes defined by reference to the contrasted doctrines of Deism and Pantheism. Deism, it is said, lays stress on God's transcendence, while Pantheism emphasizes his immanence to the exclusion of his transcendence. Theism, on the other hand, mediates between these two one-sided doctrines and affirms that God is at once both immanent and transcendent. He is in the world and yet beyond it. This definition, however, can only be accepted with qualification because some forms of Pantheism are arrived at by stressing, not the immanence, but the transcendence of God. According to Neo-Platonism, for example, the ineffable Absolute is so transcendent in existence and value that the world is reduced to the humble status of a mere illusory appearance and all veritable reality is absorbed in the Divine. This complication of the matter means that when studying the nature of Theism it is necessary to consider the opposition between Cosmism and Acosmism as well as that between transcendence and immanence The cosmistic tendency is to affirm, whereas the acosmistic tendency is to deny, the ultimate reality of the finite individual's effective autonomy. Theism is cosmistic, in the sense that it refuses to reduce the finite individual to a mere dependent mode of God. Nevertheless, the acosmistic tendency is very evident in many so-called theistic systems—so much so in some cases, indeed, that what is alleged to be Theism really amounts to Pantheism in disguise.

The cosmistic and acosmistic tendencies have always been important in theological interpretation, and the ancestry of their modern manifestations can often be traced back to the philosophies of ancient times. Their history, in fact, suggests a rather interesting illustration of the truth contained in Matthew Arnold's well-known theory that Western civilization owes its distinctive features to its inheritance of the cultural legacies of ancient Greece and Israel, for if modern Cosmism is a legacy of Hebrew prophecy, modern Acosmism is derived from the philosophy of ancient Greece. Hebrew thought, though profoundly religious, was not mystical in the sense of Neo-Platonism. It emphasized the reality of history and volition, both human and divine. Theology was mainly concerned with the historical plan of Yahweh's interventions into the temporal course of events on behalf of his people. Thus history and salvation were intimately related, and to make time a "moving image of eternity"

would be tantamount to subverting the whole framework of the soteriological scheme. Again, for the Israelite the world was peopled with tokens of volitional activity, either his own or someone else's. Whatever happening could not be referred to the actual willing of a finite being, he attributed to the will of God. It is very natural, therefore, that he had a very keen sense of his own personal reality, since it is primarily as active agents that we are aware of our independent existence. "I am" follows more directly from "I will" than from the Cartesian "I think." Thus, in spite of the intensity of his religious faith, the Israelite never thought of his being taken up and absorbed in the life of God. On the other hand, the Greek philosopher was conscious of himself, not so much as an active agent, but rather as a contemplator of existence, as a being whose proper function is to understand the world. Now in the pursuit of knowledge we strive after an objective and impersonal standpoint, and one might argue that all thinkers who propound true propositions ultimately think the same thoughts as they are endeavouring to understand the same world. With this sort of approach it is not difficult to proceed to the conclusion that finite thinkers are not, in the last resort, independent entities, but so many modes of a Universal Cogniser. Thus ancient Greek speculation exhibits the acosmistic tendency just as surely as Hebrew thought is characterized by the contrasted cosmistic tendency.

Though a Hebrew by birth, Spinoza was theologically Greek, for his metaphysical system stands as a classic example of Acosmism. God is the *Ens Realissimum* and finite individuals possess only dependent reality as modes of the Divine Essence. The Monadology of Leibniz, on the other hand, represents a grand attempt to give metaphysical justification within a theistic scheme to the characteristically Hebraic claim for the independent reality of the finite agent's individuality. Another interesting contrast is afforded within the circle of Hegelian thought in that Hegelianism of the Right tends to be acosmistic, while the opposed cosmistic tendency is evident in the heretical Pluralism of McTaggart. This contrast within Hegelianism is of special interest because it serves to indicate that the two tendencies in question are liable to create a tension in philosophical theology which can be most readily overcome by suppressing one tendency or the other in Atheism or Pantheism. But neither of these obvious alternatives is open to the Theist. As Pringle-Pattison has said:

> "Both philosophy and religion bear ample testimony to the almost insuperable difficulty of finding room in the universe for God *and* man. When speculation busies itself with the relation of these two, each in turn tends to swallow up the other. The

pendulum of human thought swings continually between the two extremes of Individualism, leading to Atheism, and Universalism, leading to Pantheism or Acosmism."[1]

Thus the task of the theistic philosopher is one of peculiar difficulty just because he has to find room in the universe for God and man. If we may so express it, he has to be acosmistic enough to affirm the reality of God and he has to be cosmistic enough to uphold the effective autonomy of the finite individual. His system, we may say, must satisfy at least four conditions. It must posit the existence of God, be cosmistic and exhibit internal and external coherence. Internal coherence is tantamount to logical self-consistency and may therefore characterize a body of thought which is purely hypothetical. A theistic system, however, is not purely hypothetical inasmuch as it claims to be founded upon a sympathetic understanding of the primary ideas of the religious life.

But we must now make further consideration of Spinoza's system in order to examine more closely the suggestion that absolutist metaphysical principles are incompatible with a genuinely theistic scheme. During the seventeenth century deistic conceptions generally prevailed among thinkers. It was commonly held by the man of science that God, who at some remote period in the past had created the universe out of nothing, stood in but an external relation to his creation, although he occasionally condescended to disturb his blissful state of isolated felicity by miraculously interfering with the natural course of events. Spinoza, however, had no sympathy with a theology which appeared to make existence the arbitrary product of a supernatural fiat, and contended that the productive essence of reality, being rational, must exhibit rational necessity. All things flow from the necessity inherent in God's nature and participate in his essence. The Divine Substance alone is self-dependent. God is in himself and is conceived through himself. All other species of existence are finite and conditioned, physical events being modes of God's attribute "extension" and psychical events modes of his attribute "thought." An attribute is defined as that which the intellect perceives as constituting the essence of substance. Thus the "modes" are not external modifications of substance within the sphere of the attribute concerned, as motion in Cartesian cosmology is an external modification of extension, but are immanent consequences of the inherent activity of substance under the attribute. Accordingly, neither efficient nor teleological causality is real because all causation is ultimately immanent under the form of eternity and so can be represented in terms of the logical relation of ground and consequence. Everything is directly referred to the intrinsic activity

[1] *Hegelianism and Personality* (Edinburgh, 1887), p. 162.

of God, to whose all-embracing essence everything belongs. Clearly, this position is acosmistic for finite self-dependence and finite self-determination are made completely illusory. Self-dependence belongs exclusively to God and all determination is at once substantial and divine.

In Spinoza's epistemological and ethical doctrines, however, the Hebrew in him asserted itself. He insists on the essentially dynamic nature of knowledge, maintaining that concepts by which thought interprets reality are not lifeless representations, but active organs of intellection. They communicate with reality and reality is activity. But the human mind does not attain to full communication with reality without the effort whose possibility depends on the *conatus sese conservandi* which animates all things. Hence knowledge is subject to development and Spinoza distinguishes three ascending stages in the process of its advancement to truth. "Imagination" or "opinion" is the lowest grade of knowledge in which one simply assents to the particulars of sense-experience. The attitude adopted is pre-scientific, for space appears to be occupied by things detached and almost independent. "Reason," the second stage, brings insight into the laws of the inter-connection of things, banishing the mystery of isolation. The final stage, called "intuition," remedies the abstractness of rational reflection by affording a synoptic vision of the universe as a whole. When "intuition" supervenes upon ratiocination the entire situation is taken into account at once. Accordingly, when knowledge of this order is achieved, the whole is seen as expressing itself in its parts and the parts are apprehended as detailed exemplifications of the principle of the whole.

So far from setting thought in dualistic opposition to volition, Spinoza co-relates this general conception of the advance in knowledge with man's moral progress to the higher freedom of self-determination. He holds that freedom from the bondage of the senses by the realization of ourselves in God, constitutes the true end of living. This effort of self-realization is controlled by reason which aims at identifying itself with the love of man and the love of God. At the stage of "imagination" man appears as the slave of circumstance, but nevertheless there is that potency within him which enables him to transcend his limitations and escape his bondage. He is in the service of passion so long as he is bound to the contingent world by the limited orientations of sense-experience. An emotion is "passional" in so far as it operates beyond rational control. Thus knowledge means freedom, for "an emotion which is a passion ceases to be a passion as soon as we form a clear and distinct idea of it." Reason overcomes passion by showing up its true nature, and so freedom is won only within the highest order of knowledge. God is not determined by anything external to himself.

He never acts arbitrarily, but solely in accordance with the laws of his essence, and similarly man is free when he strives to fulfil the inner rationality of his being. Thus as man moves upwards to perfection, his increasing insight into the necessity which rules all things elevates his mind above the bondage and turmoil of passion and sense, until at last he attains to the intellectual love of God and to the enjoyment of that blessedness which characterizes perfect self-activity.

We are here confronted with the grave incoherence of introducing an important cosmistic factor into the general framework of a metaphysical system which is fundamentally acosmistic. The human mind is no longer—to employ the words of John Caird—"an evanescent mode of the infinite substance, whose independent existence is an illusion, and which can become one with God only by ceasing to to be distinguishable from God," but is represented as "a nature endowed with indestructible individuality, capable of knowing both itself and God, and which, in becoming one with God, attains to its conscious perfection and blessedness."[1] According to the metaphysical principles, all determination is Divine and all apparent modes of finite initiative are but specialized expressions of the productive essence of God. The mechanism of God's causation is at once universal and complete in his eternal being. On the other hand, in the ethical doctrine Spinoza appears to recognize the veritable existence of finite initiative, for it is held that man has a certain potency within him by which he can transcend his limitations and win deliverance from the servitude of passion and sense. Thus moral emancipation is made possible in the only way in which it could be made possible, namely, "by driving a breach through the nexus of determination." In a recent paper on the subject, Mr. de Burgh, following Guzzo, points out that the breach occurs in a section of the *Ethics* where "the mechanism of Spinoza's theory is most pronounced, in the 43rd Proposition of Part 3."[2] The determinism is such that "love" breeds "love" and "hate" breeds "hate" so that "if A is hated, or loved, by B, he must hate, or love, B in return." (3.40) But a little later (3.43) Spinoza writes that "hatred is increased by reciprocated hatred, and on the other hand can (potest) be destroyed by love." The first clause is quite intelligible, but the second plainly controverts the principle that "hate breeds hate." On the basis of that principle, how *can* a man respond to another's hatred with love so as to destroy that hatred? The *potest* signifies the existence in man of a potency, independent of the mechanistic scheme of Divine determination, whereby he can initiate "the saving process of liberation."

[1] Caird: *Spinoza* (Edinburgh, 1888), p. 303.
[2] See *Philosophy*, July 1936, vol. xi, no. 43.

Having remarked on this incoherence in Spinoza's philosophy, John Caird goes on to argue that it is due to "the limitations of an imperfect logic" and contends that "the philosophy of a later time"—by which he means Hegelianism—"has taught us how it is possible to embrace in one system ideas which in him seem to be antagonistic." He claims to discern in Spinoza's teaching an imperfect representation of the idea of a negation which is only a step to a higher affirmation, or "of that *self*-negation which is the condition of self-realization in the intellectual, the moral and the religious life." Scientific knowledge, he maintains, discloses a world of objective realities which the finite individual can neither make nor unmake and which only he who abnegates his personal opinions and fancies can apprehend. The intellectual life is lived by surrendering the particular self to an absolute and universal intelligence. Similarly, in the moral life, "it is possible to reconcile Spinoza's denial of any reality to the finite in face of the infinite, with his reassertion of its reality in and through the infinite," because self-abnegation is a necessary step to self-realization. Man's spiritual life is enriched as his sympathies are broadened and deepened, and its ideal perfection is only conceivable as the renunciation of his natural self and the identification of his higher self with the life of God. True religion is not the mere prostration of man before God, but involves the realization of the highest perfection of which humanity is capable. Finally, he holds that this negation and reaffirmation of the finite through the infinite requires a correlative conception of the Divine nature. To use his own words:

> "The infinitude which is preserved only by the absolute negation of the finite world is a barren infinitude. Its greatness is the greatness of a metaphysical figment, the greatness which is attained by leaving out from it all those elements of life and thought and love which constitute the wealth of a spiritual nature. On the other hand, an infinite whose essence is intelligence or self-consciousness, whilst it contains within it the necessity of relation to a finite world, is not limited by that necessity. For in so conceiving of it, the limitation we ascribe to it is a limitation which is the medium of its own self-realization—a going forth from itself which is no lessening or loss, but only a step in the process by which it returns upon itself in a complete fulness of being."[1]

Thus Caird professes to have effected the required reconciliation of absolutist metaphysics with cosmistic Theism.

A careful examination of his work, however, plainly shows that he arrives at a theistic position only by surreptitiously withdrawing

[1] *Op. cit.*, p. 312.

the absolutist principles from which he starts. Though he continues to call God "infinite" his theology is really finitist. His doctrine implies that God never *is* in his absolute perfection, but that he is ever realizing the fulness of his perfection in the incessant flux and reflux of his life. But if there is a process in God whereby he realizes the fulness of his nature, Divine existence must be in some way temporal, for the idea of a timeless process is a flagrant self-contradiction. Moreover, Caird's metaphysics of the Divine not only implies that God endures in time, but also that he is not unconditioned. In the above statement it is expressly affirmed that God's essence contains within it "the necessity of relation to a finite world." Although that necessity is described as a limitation which is yet the means of God's realization, it still remains that without it God would not be God. Divine existence is thus necessarily conditioned by the spatio-temporal universe. God presupposes the world just as much as the world presupposes God. The Absolute, on the other hand, is, by definition, "infinite," that is to say, eternal and self-sufficient. It is obvious, therefore, that Caird only comes to his theistic position when he has renounced the absolutist metaphysics which he professes to defend. His refusal to explain the finite individual away necessarily imposes a limitation upon the alleged infinity of God.

Josiah Royce, whose system represents one of the most elaborate attempts in the history of philosophy to combine Theism with Absolute Idealism, squarely faces such difficulties as those we have mentioned, but it cannot be said that his repeated endeavours to overcome them proved successful. In view of his claim to be theistic, it is natural that Royce should shrink from the expedient of directly dismissing time-experience as a mere illusory appearance, and he argues that the whole time-series is taken up in the "eternal now" of God's universal and immediate knowledge.[1] God, it is maintained, knows all things at once. But surely if all that God knows is present to his consciousness in an eternal now, there must be some things which he does *not* know, namely, occurrences in temporal succession. In other words, it seems impossible without self-contradiction, to maintain that God knows all things in an eternal present. Temporality enters into the very texture of my experience as a finite being, and it would appear that if God is to be acquainted with that experience he must know it in its temporality. On the other hand, Newton Clarke contends that no incongruity is involved in the view that the Perfect Mind enjoys both knowledge of things in succession

[1] *The Religious Aspect of Philosophy* (Boston, 1885), p. 441; cp. *The World and the Individual* (New York, 1900–1901), vol. 2, pp. 138ff. A most interesting critical appreciation of Royce's philosophical theology is contained in R. H. Dotterer: *The Argument for a Finitist Theology* (Lancaster, Pa., 1917).

and knowledge of things in an eternal present, although within the sphere of our imperfect experience the opposition between the two modes of knowing seems to be a real one.[1] Such a contention, however, comes dangerously near to an openly anti-intellectualist theology which without compunction ascribes to God mutually contradictory attributes. At any rate, according to the logic of human experience, to know things in succession is certainly not tantamount to knowing things in an eternal present, and therefore on the assumption that God's intuitive knowledge is the only real mode of knowledge, the legitimate inference would be that the finite individual's time-experience is in some way unreal. It might be objected that this statement of the case does not put the position fairly, and that it should be said that reality appears under two aspects, namely, under the temporal aspect of human discursive knowledge and under the timeless aspect of God's absolute intuition. But we are still confronted with grave difficulties. For what guarantee is there that aspects so very different from each other are aspects of the *same* reality? And how can metaphysics which is necessarily discursive, give an account of God's absolute intuition? Again, it is no easier to extract intelligible significance from Royce's alternative statement that all time is present to the Absolute as a *totum simul*,[2] because in the temporal order there is the unlimited past and the unlimited future. However long ago an event may have occurred we can always think of an earlier date, and however far into the future we may cast our imagination we can always think of a still more distant future. How therefore can time be realized as a totality all at once? If a series is infinite it can never be completed so as to constitute a whole. As Renouvier maintained,[3] infinitude never *is*, but always *becomes*. Infinitude only exists as an indefinity, that is, as a process which has no end, for nothing exists which has so much magnitude or smallness that it is impossible to think more of it. In his famous thesis on the subject, Couturat repudiates this doctrine and contends that the necessity of finitude imposes itself, not on "reason," but only on the senses and the imagination.[4] He argues that the concept of number itself is not a given product of brute experience, but a more or less original creation of the mind functioning in accordance with its own laws. Similarly, the idea of infinity cannot come from experience, nor from the imagination which merely "repeats and multiplies the data of sense" and so can produce nothing more than the idea of the indefinite. From this,

[1] *The Christian Doctrine of God* (Edinburgh, 1909), p. 346.

[2] *The World and the Individual*, vol. 2, p. 141.

[3] See *L'année philosophique* (Paris, 1890), p. 56; *Les dilemmes de la métaphysique pure* (Paris, 1901), pp. 122 ff., etc.

[4] *De l'infini mathématique* (Paris, 1896), pp. 508 ff.

however, he infers that the infinite, in contradistinction to the indefinite, is an *a priori* necessity of rational intuition, though he gives no precsie indication as to the nature of the world which such intuition discloses and its relationship to the world of perceptual experience. It appears that the two worlds are sharply differentiated from each other and simply left in mutual opposition, a conclusion which is most unsatisfactory in that it offers no explanation of the evident *rapprochement* of mathematics and nature in physical science. The truth is rather that the mathematical infinite is a conceptual development of the indefinite or potential infinite of experience. Mathematics takes series which prolong themselves *ad infinitum*, considers their governing principles and discusses the laws of their possible complications. But as far as an actual realized infinite is concerned, it is as unacceptable to reason as it is to sense and imagination. Actually, the realized totality of a scheme lacks nothing in the sense that it includes all that the scheme can possess. But with an infinite scheme, *any* assemblage of its contents would not be all-embracing so as to form a totality, since there would for ever be conceivable contents beyond its scope.

Furthermore, the history of thought shows that no philosophy which attempts to be theistic on the basis of absolutist principles, affords a satisfactory explanation of the manifest existence of imperfections in the world.[1] Thus, according to Spinoza,[2] whatever we think to be injurious and evil arises from our conceiving things in a distorted and mutilated fashion. From the standpoint of the Absolute, where existence is seen as a whole, all is perceived to be as it ideally ought to be. Evil is merely a consequence of our limited perspectives. But how can a philosopher, who writes from the limited standpoint of a human being, affirm that completeness as such is preferable to fragmentariness? And if all is perfect in absolute experience, why should men strive to overcome evil and ameliorate the conditions of life? Speculative Absolutism, like Calvinism, logically implies a morality of acquiescence. But Royce does go so far as to admit that evil is not merely "an illusion of the partial view," but seems to stand "in positive crying opposition to all goodness." Evil can often be said to be a necessary factor in the production of goodness, but Royce confesses that there are certain evils such as "pestilence, famine, the cruelties of oppressors, the wrecks of innocent lives by cruel fortunes," which, humanly speaking, have no justification for their existence. They are "facts which

[1] Mr. de Burgh says that "no explanation of the problem of evil is or can be completely satisfactory." (*From Morality to Religion*, London, 1938, p. 230, note 1). But this statement should have been qualified by the addition of the *proviso*—"on the basis of Absolute Idealism." For Metaphysical Relativism, evil is no more difficult to explain than goodness.

[2] *Ethics*, 4, 73.

we can in no wise assimilate, justify or reasonably comprehend."[1] Similarly, Joachim finds in falsity and error something more than an imperfect expression of "the perfect truth of completed experience," for a man who is unwittingly in error claims that his knowledge is something which it actually is not, a claim that is so definitely hostile to the very notion of truth that it cannot be interpreted as an expression, however imperfect, of absolute truth. A house divided against itself will not stand. Towards the conclusion of his essay, therefore, Joachim has to avow that his absolutist metaphysics finally leaves him amid insuperable difficulties, for it has to show how completed truth "involves as a necessary 'moment' in its self-maintenance the self-assertion of the finite modal minds, a self-assertion which, in the extreme form is error," and it must "reconcile this self-assertive independence with the modal dependence of the self-assertive minds."[2] But if absolutist principles lead to difficulties such as these, it would seem that the rational thing to do would be to renounce those principles, and this, not surreptitiously, but openly.

Theism, then, is incompatible with metaphysical Absolutism in its Hegelian as well as in its more ancient forms. The reason for this is the simple one that on absolutist principles there is, in the last resort, nothing real but the Absolute itself. The *Ens Realissimum* includes all reality as the one transcendent, eternal and self-sufficient Perfection. But if all reality is included in the Absolute, it is clear that no reality can belong to the world of finite experience. Finitude is engulfed and lost in the vortex of the Absolute's infinitude. The human individual, devoid of all effective autonomy, is at most a mere adjective or transient mode of the Absolute, and his moral struggles, founded as they are upon the distinction between good and evil, represent nothing more than "an illusion of the partial view." Hence, to employ Pringle-Pattison's phraseology, metaphysical Absolutism finds room in the universe only for the Absolute, and the God of Theism is accordingly less than the Absolute, as Bradley and Bosanquet insisted,[3] since Theism finds room in the universe for man as well as for God, Theism, that is to say, does not identify God with the totality of real existence, but affirms that the finite individual has an effective autonomy of his own which is quite distinct from the activity of God. In short, whereas Theism is cosmistic, Absolutism is necessarily acosmistic.

Nevertheless, in spite of the evident incompatibility of Absolutism

[1] *The Religious Aspect of Philosophy*, pp. 456 ff., and *The Sources of Religious Insight* (Edinburgh, 1912), p. 233.

[2] *The Nature of Truth* (Oxford, 1906), pp. 170 f.

[3] Cp. Bradley: *Appearance and Reality* (London, 1897), pp. 438 ff. and Bosanquet: *The Value and Destiny of the Individual* (London, 1913), pp. 249 ff. Cp. W. James: *A Pluralistic Universe* (London, 1909), pp. 111, 134. etc.

and Theism, we find a constant tendency on the part of writers who profess Theism to describe God in terms which are appropriate only to the Absolute. In a large measure this unfortunate tendency is due to the peculiar nature of our Western theological tradition which, as we have already suggested, has inherited the Cosmism of Hebrew prophecy and the Acosmism of much Greek philosophy. Primitive Christian thought was quite definitely Hebraic, but with the Church's growth and expansion in the Eastern Empire the Christian tradition came to imbibe more and more ideas from Hellenistic culture. This, of course, was inevitable, but it has had unfortunate consequences, for, as Dean Matthews puts it:

> "The parts of the Platonic teaching which had entered into the current philosophy and were adopted by the Christian Platonizers were not those in which the philosopher speaks as an ordinary Theist, but those parts in which he develops his transcendent metaphysic of the ideal world and of the supreme idea of the Good which is *epekeina tēs ousias*."[1]

That transcendent metaphysic logically amounts to Pantheism or Acosmism, but primitive Christian thought assumed the autonomy of man and affirms that human individuals have their part to play in the fulfilment of God's purposes. The God of primitive Christianity is a theistic God in the sense that he is not sufficient and complete in himself, but requires for his completion the realization of his Kingdom which comes as the result of a co-operative enterprise between God and men. Accordingly, we may say that the dualistic character of our theological tradition is to be held largely responsible for the tendency on the part of writers who profess Theism to describe God in terms which are appropriate only to the Absolute.

The tendency in question has, in fact, been so strong and so extensive that essays in Theism worked out on the basis of an Absolutist idea of God may be termed "Theistic Orthodoxy." Almost without exception theological manuals represent God as being timeless, self-sufficient and infinite in power and perfection. Now although such attributes may be quite applicable to the *Ens Realissimum*, they are certainly not applicable to the God of a genuinely theistic scheme. As we might well expect, therefore, Theistic Orthodoxy is shot through with logical inconsistency. Thus the orthodox Theist maintains that God "limits himself" in order to fulfil an eternal purpose, namely, the creation of an ideal society of free personalities capable of fellowship with himself. But quite apart from the fact that the idea of purpose is excogitated within

[1] *God in Christian Thought and Experience* (London, 1930), pp. 95 f.

the category of time—involving as it does the distinction between present deficiency and possible achievement in the future—examination shows that the doctrine of God's self-limitation either saves his omnipotence at the expense of his moral perfection or saves his moral perfection at the expense of his omnipotence. The reason for this is that the accomplishment of God's purpose is effected in a world which God himself created and which yet involves evil as well as good. To quote from W. R. Sorley's Gifford lectures:

> "The character of a free agent is made by facing and fighting with obstacles. . . . Facile adaptation to familiar environment is no test of character. The personal life cannot grow into the values of which it is capable without facing the hardness of circumstances and the strain of conflict, or without experience of failure. . . . And I will hazard the statement that an imperfect world is necessary for the training and growth of moral beings."[1]

But if God's purpose consists in the training and growth of moral beings, and if, as Sorley holds in common with other representatives of Theistic Orthodoxy, God is not limited by anything outside his own nature,[2] then God himself must be held responsible for the imperfections involved in the medium of moral growth. In other words, God's nature is not infinitely perfect. It might be replied that God is not lacking in perfection because it was incumbent upon him to create the imperfect medium in order to fulfil his purpose. Such a rejoinder, however, would give the whole case of Theistic Orthodoxy away, since it implies that God is limited by something other than himself which excluded the possibility of his creating a medium of moral growth free from imperfections and positively constrained him to create the world that is.

Furthermore, in spite of its pretensions to elucidate the Sufficient Ground of all things, Theistic Orthodoxy cannot account for the bare fact of spatio-temporal existence. We are told that God created the world, but we are not told how or why he came to create it. The orthodox conception of God's self-limitation takes the mind back to the distant epoch prior to God's decision to limit himself, when he presumably lived in a state of isolated blessedness, endlessly contemplating the self-sufficiency of his own nature in its unimpeded activities. Such a projection of the imagination into the darkness of pre-cosmic history is made in the part of Schiller's poem quoted by Hegel at the end of his *Phenomenology*:

[1] *Moral Values and the Idea of God* (Third Edition, Cambridge, 1924), pp. 343 f.
[2] *Ibid.*, pp. 492 f.

Friendless was the mighty Lord of worlds.
Felt defect—therefore created spirits,
Blessed mirrors of his blessedness . . .
From the chalice of the world of souls
Foams for him now infinitude.[1]

But Schiller's solution is not open to the orthodox Theist for whom God, being completely self-sufficient, could not possibly create finite beings in order to supply a felt insufficiency in his Divine nature.

Accordingly, we seem justified in concluding that Theistic Orthodoxy is untenable because it satisfies only the first of the four conditions for an authentic Theism which we laid down at an earlier stage of the present chapter. It does posit the existence of God, but it is logically acosmistic, and is neither internally nor externally coherent. The obvious inference to be drawn from this conclusion is that the traditional conception of God must be radically revised if we are to be successful in our aim to construct a coherent theistic system. The idea of God with which we are commonly confronted in our theological manuals stands as an unfortunate legacy of an age long since passed. It combines Aristotle's Eternal Contemplator with the ancient idea of the absolute monarch, and certainly possesses no external coherence with the God who clothes the lilies and who finds occasion for spiritual refreshment in the responsive love of the human heart.[1]

[1] Cited by Pringle-Parrison in his *Idea of God* (Second Edition, Oxford, 1920), p. 296.

[1] Cp. Pringle-Pattison: *op. cit.*, p. 407; Whitehead: *Process and Reality* (Cambridge, 1929), pp. 484 f.; Bergson: *Les deux sources* (Paris, 1932), p. 273; Laird: *Mind and Deity* (London, 1941), pp. 55 f. In his *Purpose of God* (London, 1935) Dean Matthews writes: "The self-sufficiency of God in and for Himself is an abstract idea which cannot be allowed to dominate our theology without disastrous results. To maintain that God in and for Himself is not self-sufficient is, from the standpoint of traditional Christian theology, a gross heresy. Christian thought has been dominated by the idea that the divine nature is impassable and incapable of change. I observe that Dr. Temple adheres to this venerable theological tradition, with the consequence that his views on purpose and freedom seem to me to be obscure. In my opinion, the doctrine of the self-sufficiency of God should be rejected. And we may defend this departure from the main lines of theological tradition by pointing out that the abandonment of this purely philosophical notion will bring us closer to the heart of the Christian religion." (pp. 173 f.)

MEMORY: A CLOUD OF WITNESS

E. M. ROWELL.

THE experience of each one of us is individual, private and particular, and in its immediacy is incommunicable. Images of all sorts, sense factors, figments of the imagination, mental comments and judgments, all these impressions, some persistent, some fleeting, follow one another in endless passage through the consciousness.

But this progress is by no means linear; at every moment a whole organic situation passes; every slightest impression has a context and is inseparable from that context; every image belongs to some neighbourhood, and its neighbours not only influence it, but make themselves in some way part of its very being.

And your sense impressions and mine, at a given moment, have different neighbours though we may be associated in the same environment and confront the same scene. For we *choose* our own neighbours, as it were, and we choose in accordance with our individual preoccupations. I am on the South Downs sharing a bread-and-cheese lunch with an artist friend, and yet, together as we are, I know that the play and colour of light and of shadow over these lovely uplands is perceived and enjoyed by my companion in a degree quite beyond me, while on the other hand he remains untouched by the song of the lark above us, and is altogether indifferent to the good savour of our homely cheese!

In any given situation our awareness is a snapshot of our preoccupations, and the snapshots of the same situation will differ for you and me as much as do our personal photographs. But you may say we *do* both see the same shadows, we hear the same bird song, we taste the same cheese flavour! True, these are common features, but then in our photographs do we not all have "item, two lips, indifferent red; item, two grey eyes, with lids to them; item, one neck, one chin and so forth."

Each situation in the here-now is then individual, and each situation passes with the passing moment.

But though the stream of impressions passes, the impressions do not pass *away*.

For memory, which, as we shall find, mingles inextricably with each and all, yet binds these fragmentary experiences together and endows them with an amplitude which is other than that of the immediate situation. Memory, though implicated in the presentness of the present, yet gives immediate experience as it were a *second*

context; it provides each impression with a new neighbourhood, the neighbourhood of time. Each fleeting image now differs for you and for me because of what *has been* for each of us.

Memory takes into its keeping the experience which passes and holds it in trust for our future use, while at the same time it provides our present situation with neighbours from near and far in time; memory closes the gap between past and present; memory is the *disponibilité* of the past to the uses of the present.

Time is perhaps in its *ultimate* character the tension between will and act, a tension ever resolved in the act and ever renewed in the fresh will to act. Without memory such renewal would be discontinuous, and time in its mediate mode of extension would cease to exist. Memory is then, as it were, the body of time, that which gives time its continuity of being and its efficiency of action, that which confers upon it a *presence.*

Memory holds all the particularity and privacy of individual experience, but holds always in reserve for future use. The past must give place to an urgent present, the present struts upon the stage of action, but memory it is that prompts the actor there away behind the scenes.

For in the first place memory has at its disposal—and ours—that which is relevant to the needs of the moment; like friction, memory would seem to be self-adjusting, and only such memories are released on any occasion as will be useful for the immediate situation.

Or perhaps consciousness holds the door, and only grants admission to such members of the past as are likely to be able to help in unifying and interpreting the present. Memory would thus be at the bidding of consciousness, impelled and elicited by what is to be, called to join in the frontal attack of the present on the future, summoned, in a word, to *action.*

But whatever be the rôle of consciousness in this call-up, it would seem that memory is not only impelled but is also impelling. The doors of the present are besieged by an army of recruits from the past, recruits which come to support their comrades in the front line.

The past is contiguous with the present just in so far as it has any slightest association with its events, and in respect of memory the neighbourhood of the present is potentially the whole of the past. There is a constant coming and going from near and far in time; and such neighbourly memories modify, amplify, and interpret all that is contained in the little world of an immediate consciousness.

But memory subsists also in a mode quite other than that of surface co-operation with consciousness. There is memory which, as it were, conserves itself in secret, which is not strung out in succes-

sion and impelled by the dictates of life, memory which exists *massively* and which gives us a strangely massive sense of living, in strong contrast to the thinly drawn designs of everyday life. We *are* so much more than we *do*; no amount of action can make a *world* for me; I need and I possess a denser medium. All the things I have seen and heard and smelt and tasted, and all the things I have learned and thought and felt and imagined and suffered, form this medium; they abide there behind my action in a certain totality which is perhaps the measure of my own share in the sum of things.

Such memory adds density to drift, to the drifting successiveness of conscious life.

In his dialogue *Eupalinos*, Paul Valéry depicts something of what human life would be like without action or the power of action; he describes a half-life among the shades of memory, a half-life which transforms men into shades, a half-life in which consciousness has no longer its two-way movement towards the past and towards the future, but is turned back wholly, and confined to the one-way track of the past. Here without purpose men revolve endlessly round their old memories, there is no forward motion; these beings have been cast up on the shores of time, and no longer move in the stream of time. Of this stream the poet says: "Il ne rejette que les âmes sur cette rive, mais tout le reste il l'entraîne sans effort."

Such an existence is *triste et morne*, lacking both the tension of time and the attainment of eternity. Of eternity we cannot speak, but certain it is that the zest of life is in action, action focussed in the luminous point of the here-now. Without the salience of the present, without the here-now with its knife-edge abruptness, we should be very dull dogs! And we should accomplish nothing in a stationary world in which *les projets eux-mêmes sont souvenirs*.

We might try perhaps to set alongside of this half-world of memory the companion picture of another half-world of action. We might imagine a world in which there was only doing, and no remembering. Life in such a world would be fragmentary and discontinuous, and its action would be thin and brittle, thus bereft of memories which normally feed and support it. You might think that such a world would at least be dramatic, but this is not so; drama involves the interpenetration of past and present, and action separated from memory falls back into mere mechanism. A machine may spend itself in continuous doing, but mere doing has not the density required for the activities of a self. Without memory, life would indeed be "just one damned thing after another!"

If at any moment we stop and turn in upon ourselves, we are in some sense and in some degree aware of the deep dense medium of memory in which we live; we are aware of this as of an abiding presence, presence which is also partly absence, but *absence créatrice*,

inasmuch as all that is inaccessible to us in memory yet moulds and makes all that we are and do. We impel to our use our conscious memories, and we are at the same time impelled by vast forces of the hidden memories which abide in the deep places below the threshold of our consciousness. If all memories should be accessible to us, then they would be at the bidding of the conscious mind, which would no doubt set about the work of organizing them, to the great detriment and diminishment of their virtue and their power. We can do much through conscious memories, we can do infinitely more through the more deeply grounded memories of the subconscious.

The concentration of so much modern psychological research upon pathological cases has, I think, resulted in an over-emphasis of the portions of the unconscious memory which make for frustration and inhibition, and which bear their dire fruit of complex and neurosis. It is true that, unknown to ourselves, we may be haunted by the ghosts of past events, of past ill-deeds, of past fears and repressions. "The evil that men do lives after them." And psychotherapy can do a great work in clearing out and ridding men of these slums of memory. Nevertheless I believe that in the unconscious are many mansions, mansions where dwell the truth, the beauty and the goodness which in the past have touched our lives with blessedness, and that from these far abiding places they still bless every moment of our everyday lives.

I think that I have a goodly heritage and a fair lot in part because the loveliness of yesterday and of very many yesterdays is mirrored in my morning view to-day, because the glow of past happiness is there with me, deepening every present satisfaction and casting too its healing rays upon all my present discontents.

The past is not dead. In memory there is neither near nor far, and unconscious memories are our good neighbours; they serve us well.

> How oft do they their silver bowers leave
> To come to succour us, that succour want,
> How oft do they with golden pinions cleave
> The flitting skyes, like flying pursuivant,
> Against foule feendes to aide us militant.[1]

So we have no need to hold the passing moment, since memory receives it into her safe keeping; and we have no need to force remembering upon our memories, for our memories abide.

We do not forget.

A wise old friend once said to me: "If I die and you should come to forget me, do not mind and do not reproach yourself. There is more to it than that; surface forgetting does not matter. In a real sense you will not have forgotten."

[1] *Faery Queene*, Spenser.

And the unconscious mind may give help in more direct and obvious ways. Our memories may be "past recall," nevertheless from time to time members of this free community of memory join company with us. We cannot recall them at will, but at our need they often come with a swift and lovely spontaneity.

It may be that we have some idea in our mind which seems interesting and worth developing, but, though we may hammer away at it, it remains formless and isolated. Then we let go, we cease to prod the reluctance of our material and attend to other matters. Presently we find that the idea is now encompassed by a great cloud of witnesses, there presses forward into our consciousness a host of supporting ideas, thoughts and fancies and questionings which bear on the subject, tags of quotation it may be, words we have heard, poems we have learned, impressions of the past from near and from far, from now and from then, all these things witnessing in their own manner, a very tower of Babel! The material is now assembled, it remains only for the conscious mind to undertake its own special task of assessing the various claims, of sorting and co-ordinating, and of making out of a multitude of things just one *thing*.

It would seem that such witnesses from the subconscious join issue with us through some principle of spontaneous association more subtle than that of the surface association of our practical surface minds. The contents of the unconscious mind appear to have no order or chronology, no hierarchies of any sort; their ingression into time is in a sense random, but this chance is more finely touched, more truly relevant, than is the timely calculation of the conscious mind.

The unconscious sends forth its cohorts, and their mission done these fall back into the brooding totality of memory, a totality which is, as it were, the matrix of self. Some portions of this totality are too deeply implicated ever to emerge, nevertheless, as we have seen, the submerged elements may endow our lives with depth and poise, and perhaps influence even our most fleeting impressions.

The question of the self in its unique quality, its quiddity, does not concern us here, but it may be observed that self-feeling is intimately bound up with the sense of memory. When a man as we say loses his memory, the deep distress he experiences is due not so much to the fact that he has lost his bearings but to the realization that he has in some sense lost his very self. And no one can restore a man's past to him by any recital of past events: a man's self and his past interpenetrate each other in a fusion which is unique and incommunicable.

Perhaps this is why you and I in sharing an experience yet remember it so differently.

"Do you remember an Inn,
Miranda?
Do you remember an Inn?
And the tedding and the spreading
Of the straw for a bedding,
And the fleas that tease in the High Pyrenees,
And the wine that tasted of the tar?" [1]

Yes, of course, Miranda remembers all these things! Nevertheless, Miranda remembers differently, and her poem, if she wrote it, would be a very different one. There would be the same highlights—possibly the fleas, the wine perhaps, certainly the muleteers and the dancing girl and the guitar—but the whole tone and stress would be different.

It would seem then that memory is incommunicable and that we live in a world of our own.

And yet we share a world with our fellows. But that is another story!

[1] *Tarentella,* H. Belloc.

WHITEHEAD'S PHILOSOPHY: *THEORY OF PERCEPTION*

SYDNEY E. HOOPER, M.A.

WHEN the weather is fair, it is the custom of the writer to take a walk across the common which abuts on to his house and garden. This morning he observed the fresh green of the spring grass, and at the same time heard from an adjacent hawthorn bush the cheerful song of the thrush. As he proceeded, the scent of burning brushwood in a clearing near by was smelt. He picked up a stick lying on the grass and used it as a staff. Within a few minutes he had enjoyed sense experience through eyes, ears, nose and hands. In the autumn he hopes to gather from the bushes a handful of blackberries, as he has done in many previous years, and enjoy their luscious taste.

It is usual to call the experiences just described "perceptions." How do they arise and what processes are involved in them? This is one of the problems dealt with in the Organic Philosophy, and I propose to show how it is treated in this system of thought.

In the first place we are urged to remember that our bodies are a part of the wider realm of nature to which we belong. They are certainly a very intimate department of this realm, but nevertheless they are as much a part of nature as the landscape which confronts our gaze as we take a country walk. Consequently, when considering the question of perception, we must regard our bodies as a part of our environment. We may say that the most *immediate* environment is constituted by the various organs of our bodies—eyes, ears, nose, palate, the organ of touch, as well as internal "viscera": our more *remote* environment is the physical world in which we live, move and have our being. In the Organic Philosophy the term "environment" means other actual things which are "objectified" in some important way so as to form component elements in an individual experience.

In a previous article we learnt that the real things of which the world is made, are "actual entities" or "actual occasions." These actual entities are individual centres of experience, consisting of a process of growth from phase to phase terminating in a definite achievement. The concrescent process is a way of bringing various elements into a real unity, and this is accomplished by a genuine creative synthesis. The actual entities which constitute the world are individualized modes of the ultimate creative activity of the universe, and are to be regarded as self-creative. With this view of

the nature of actual entities before our minds, we can pose the question how we are fruitfully to think of perception? The answer given by the Organic Philosophy is that we must conceive it in the light of a primary phase in the self-production of an actual entity or actual occasion of experience. The reason given for this answer is the fact that an actual occasion arises through the synthesis into a unity of diverse perceptions, feelings, purposes and other activities connected with primary prehensions of the environment. Further, since the notion of the "self-production" of an actual entity is only another name for "activity," we must assign to a percipient actual occasion an activity functioning in the genesis of its own experience. This means that from the point of view of the percipient, the perception which it enjoys is an *internal relationship* between itself and the things perceived.

It is a cardinal doctrine of the Organic Philosophy that all actual entities in their concrescent process of becoming, experience perceptions in some form or other. There is, however, a wide range of differences in perspective experience, corresponding to the infinite grades of actual entities constituting nature in respect of simplicity and complexity. In the inorganic realm, the perceptions of actual entities are, for the most part, "blind"; whilst in the organic realm, perceptive experience increases in definiteness and vividness as we ascend the scale of life from low-grade to high-grade organisms. In this article we shall be mainly concerned with the experience of perception in high-grade organisms.

In opening his inquiry into the nature of perception,[1] Whitehead draws attention to the fact that philosophers, from the Greeks onward, have been accustomed to overconcentrate attention upon "visual" perception. They have looked at some object—say a "grey stone," and have perceived that it was grey. But it happens that visual perception is the most elaborate and sophisticated of all perception. In visual perception, what Whitehead calls "crude and primitive perception" is most completely covered and obscured by certain *originative* phases which are especially prominent in human experience. If we are to succeed in understanding perception, it is necessary to disentangle from the more advanced originative phases two earlier prehensive phases in the concrescent process of an actual entity, namely (1) the "datum," and (2) the "subjective response." In order to effect this disentanglement, attention must be directed to what is common to *all* modes of perception, ignoring for the moment the great variety of "originative amplifications."

Whitehead begins this process of disentanglement by quoting the two following passages from Hume bearing upon the subject:

[1] *Process and Reality*, pp. 164 *et seq.*

(1) "But my senses convey to me only the impressions of coloured points disposed in a certain manner. If *the eye is sensible* of anything further, I desire it may be pointed out to me" (*Treatise*, Part II, para. III).

(2) "It is universally allowed by the writers on optics, that the *eye* at all times sees an equal number of physical points, and that a man on the top of a mountain has no larger an image presented to his senses, than when he is cooped up in the narrowest court or chamber" (*Treatise*, Part III, para. 9).

(In the second passage, the reference to the number of physical points is a reference to the excited area of the retina.)

Whitehead wishes us to notice that in these passages Hume explicitly asserts that the *eye* sees. He maintains that Hume (in spite of his philosophy) is correct in his assertions, which can be regarded as expressing the ultimate truth of animal perception. The assertions are correct because "the ultimate momentary 'ego' has as its datum the "eye as experiencing such and such sights." According to the Organic Philosophy, the "eye as experiencing such and such sights" is passed on as a *datum* from the cells of the retina, through the train of actual entities constituting the relevant nerves, up to the brain. There is a comparatively long series of actual entities to be traversed from the eye to the brain, with the consequence that "any *direct* relation of eye to brain is entirely over-shadowed by this intensity of indirect transmission."[1] When we say we are seeing anything, such as a "grey stone," the point to be emphasized is that the "eye as experiencing such and such sights" is the datum which is passed on, through the appropriate nerves and brain, to the ultimate percipient occasion. But Whitehead extends the truth concerning the eye's function in visual perception, to the functioning of other organs in the body. Not only is colour perceived *by* the eyes, but sound is perceived *by* the ears, taste *by* the palate, smell *by* the nose. Further, "the feeling *of* the stone is *in the hand*; the feeling *of* the food is the ache *in the stomach*; the compassionate yearning is *in the bowels*, according to biblical writers; the feeling of well-being is in the viscera *passim*; ill-temper is the emotional tone derivative from the disordered liver."[2] Whitehead insists that the fundamental fact of human perception is that the datum presented to the percipient includes the objectification of an antecedent part of the human body, either eye, ear, palate, nose, touch organ, or viscera. In the case of sight, which is the most elaborate form of sense perception, it is admitted that the *supplementary* phase in the ultimate perceiving subject "overbalances in importance the phase of the datum from the eye."[3] But in touch, "the datum, 'the feeling in the hand,' maintains its importance, however much the intensity, or even the character, of the feeling may be due to supplementation in the ultimate subject."[4]

[1] *Process and Reality*, p. 166.
[2] *Ibid.*, p. 166.
[3] *Ibid.*, p. 166.
[4] *Ibid.*, p. 166.

Concerning the other bodily experiences involved in perception, and referred to above, Whitehead says: "In the instance of the ache, the stomach, as datum, is of chief importance, and the food, though obscurely felt, is secondary. . . . In the instances of compassion, well-being, and ill-temper, the supplementary feelings in the ultimate subject predominate, though there are obscure references to the bodily organs as inherited data."[1]

From what has just been said, it will be clear that according to the Organic Philosophy the root of perception is the perception of various bodily organs as passing on their experiences by channels of transmission, such experiences receiving enhancement *en route*. We have learnt from earlier articles that the body, as well as other enduring objects, is made up of actual entities or actual occasions. This being the case, we are invited to regard perception in its basic character, as the transmission of experiences through the various actual entities which compose certain parts of the body, to a central percipient occasion. Along its route of transmission there is direct inheritance from antecedent to subsequent occasion, with enhancements accruing upon the way, or added at the goal of final integration. The body, with its system of nerves communicating from the periphery to the brain, is built and co-ordinated in such a way as to ensure effective transmission.

It is Whitehead's view that in uncovering the transmission of experiences from one occasion to another along a chain of inheritance and enhancement ending in a "percipient occasion," we have penetrated to the roots of perception. He says that the crude aboriginal character of perception is inherited "vector" feeling tone. By the term "vector" we are to understand that the feeling inherited bears evidence of its origin: it indicates that it has been passed on from earlier occasions. In the higher grades of perception, the original vague feeling-tone differentiates itself into the various types of sensa characteristic of touch, sight, sound, smell, etc., and these sensa are then "transmuted" by the final percipient into a definite prehension of a contemporary nexus with a "qualitative" or tonal character. That is to say, sensa which originate through the transmission of vector feeling along a route of inheritance in the animal body, are, in high-grade perception, precipitated upon the contemporary world as qualities of objects.

Two Modes of Perception

According to Whitehead's theory, there are two modes of perception, each belonging to a different phase in the concrescent process of a percipient occasion. These two modes are called respec-

[1] *Process and Reality*, p. 167.

tively (1) the mode of causal efficacy, and (2) the mode of presentational immediacy. Both modes, in their own respective ways, "objectify" for us the actual things in our environment. That is to say, both causal efficacy and presentational immediacy introduce into human experience certain components which are analysable into (*a*) actual things of the actual world, and (*b*) abstract attributes, qualities, and relations. These attributes, qualities, and relations are especially interesting in the study of perception, since they express *how* other actual things contribute themselves as components to our individual experience, i.e. they are the *media* of objectification. In ordinary human experience of the perception of things, the two distinct modes just mentioned are *fused* into one perception. The synthetic activity effecting this fusion is termed "Symbolic Reference." By means of symbolic reference, the various actualities disclosed respectively by the two modes are "either identified, or are at least correlated together as inter-related elements in our environment,"[1] and the actual world is for us what it is, namely, "that datum in our experience productive of feelings, emotions, satisfactions, actions, and finally, when mentality intervenes with its conceptual analysis, the topic for conscious recognition."[2] We will first give our attention to Whitehead's explanation of the mode of causal efficacy.

Causal Efficacy

The primary and primitive form of perception is the feeling of the causal efficacy of the external world. Earlier in this article attention was drawn to the obvious truth that the body is only the more highly organized and intimate part of the general environment for the dominant actual entity which at any given moment is the ultimate percipient. But it is important to understand clearly what happens when the route of occasions involved in the experience we call "perception," passes from without to *within* the body. I quote Whitehead's words on this subject. "The transition from without to within the body marks the passage from lower to higher grades of actual occasions. The higher the grade, the more vigorous and the more original is the enhancement from the supplementary phase. Pure receptivity and transmission gives place to the trigger-action of life whereby there is release of energy in novel forms. Thus the transmitted datum acquires sensa enhanced in relevance, or even changed in character, by the passage from the low-grade external world into the intimacy of the human body. The datum transmitted from the stone becomes the *touch-feeling* in the hand, but it preserves the vector-character of the origin from the stone. The touch-feeling in the hand, with this vector origin from the stone, is trans-

[1] *Symbolism*, p. 20. [2] *Ibid., loc. cit.*

mitted to the percipient in the brain. Thus the final perception is the perception of the stone through the touch in the hand. In this perception the stone is vague and faintly relevant in comparison with the hand. But, however dim, it is there."[1] Causal efficacy, then, is the passing on of a certain character along a chain of occasions by means of inheritance from antecedent to subsequent. This role of transmission is called the "vector-character" of the datum. We are now in a position to understand Whitehead's definition of perception in mode of causal efficacy, as "consciousness of the causal efficacy of the external world by reason of which the percipient is a concrescence from a definitely constituted datum."[2] The meaning of the definition is this. When we are perceiving in the mode of causal efficacy, we are experiencing the settled world of the past constituted by its feeling-tones, and through those very feeling-tones disclosing itself as efficacious in generating *our* experience.

Let us picture in our minds a route of occasions, A.B.C.D. . . along which the inheritance of the vector-character of the datum is transmitted to an ultimate perceiving subject, which we will call M. What kind of picture are we to form? According to Whitehead's account, it should be something like this.[3] "A is objectified by the eternal object 'S' as a datum for B; where S is a sensum or a complex pattern of sensa. Then B is objectified for C, and C for D. Now because B is objectified for C, it will readily be seen that the datum for B (namely A) is capable of some relevance for C. Consequently 'A' as objectified for B becomes re-objectified for C. Next there is objectification of C to D and so on throughout the chain of objectification." Then for the ultimate perceiving subject M, the datum includes A as thus transmitted, B as thus transmitted, C as thus transmitted and so on throughout the line of objectifications. But it is necessary to go a little more into detail. Whitehead tells us that the final objectifications for the percipient subject M at the end of the chain are effected by a set of eternal objects (S^1) which is in some respects a modification of the original group (S) characterizing the earlier phases of the concrescence. This modification consists "partly in relegation of elements into comparative irrelevance, partly in enhancement of relevance for other elements, partly in supplementation by eliciting into important relevance some important eternal objects not in the original set (S)." It may here be asked whether the final percipient occasion M clearly distinguishes each separate sensum passed on from occasion to occasion along the route of inheritance? The answer is "No," since "generally there will be vagueness in the distinction between A and B, and C and D, etc., in their function as components in the datum for M. Some of the line (A and C for instance) may stand out with distinctness by reason of

[1] *Process and Reality*, p. 168. [2] *Ibid.*, p. 169. [3] *Ibid.*, pp. 168–9.

some peculiar feat of original supplementation which retains its undimmed importance. Other members of the route may sink into oblivion. For example, in touch, there is a reference to the stone in contact with the hand, and a reference to the hand; but in normal healthy bodily operations, the chain of occasions along the arm sinks into the background, almost into complete oblivion. Thus M, which has some analytic consciousness of its datum, is conscious of the feeling in its hand as the hand touches to stone."[1]

Such is the picture we are invited to form in our minds of the *modus operandi* of perception in the mode of causal efficacy. As we have earlier remarked, it is the primary form of consciousness of the causal efficacy of the external world. It is through this efficacy that there comes into being a percipient occasion generated by a process of concrescence from a definitely constituted datum. Whitehead instances memory as an example of perception in this mode. He says: "Memory is perception relating to the data from some historic route of ultimate percipient subjects M1, M2, M3, etc., leading up to M which is the memorizing percipient."[2] In other words, memory is a special instance of an earlier act of experience becoming a datum of intuition for a later act of experience.

Direct Perception of Causal Efficacy

Both the empirical school derived from Hume, and the idealist school derived from Kant, contend that "causal efficacy" is a way of thinking or judging about sense-data. Hume called it a "habit" of thought, Kant a "category" of thought. But if causal efficacy is nothing else but a way of thinking about sense-data, the *inhibition* of thought and the vagueness of sense should prove unfavourable to a prominent appreciation of causality in experience. According to Hume's and Kant's view, the notion of causality and behaviour pre-supposing this notion, should be mainly exemplified in high-grade organisms possessing the power of thought. Now, says Whitehead, it is certainly true that "long-range" identification of cause and effect is bound up with complex processes of reasoning. But, as he points out, "Each step in such reasoning depends on the primary pre-supposition of the immediate present conforming itself to the settled environment of the immediate past."[4] Consequently in considering the matter of causal efficacy, "we must not direct attention to the inferences from yesterday to to-day, or even from five minutes ago to the immediate present. We must consider the immediate present in its relationship to the immediate past. The overwhelming conformation of fact in present action to antecedent settled past is to be found here."[4]

[1] *Process and Reality*, p. 169.
[2] *Ibid.*, p. 169.
[3] *Symbolism*, p. 49.
[4] *Ibid.*,p. 49.

Far from it being the case that presupposition of causality is confined to high-grade organisms, we find that this conformation of present fact to immediate past is more prominent in behaviour and in consciousness when organisms are low-grade in the scale of existence. For example, "a flower turns to the light with much greater certainty than does a human being, and a stone conforms to the conditions set by its environment with much greater certainty than does a flower. A dog anticipates the conformation of the immediate future to his present activity with the same certainty as does a human being."[1] The dog fails when calculations and remote inferences are necessary, but it never acts as though the immediate future were irrelevant to its present. In short, organisms generally, and animals and man in particular, always act on the presupposition of the relevance of the immediate future to the present, i.e. on the presupposition of causal efficacy. When there is irresolution, it is because the relevance of the future to the present is felt as a somewhat "distant" relevance, and because there is also experienced difficulty in evaluating its precise type of relevance.

Concerning the implication in the Humian and Kantian theory that "vividness" of sense-data should prove favourable to the apprehension of causal efficacy, Whitehead points out that, as a matter of fact, the contrary is the case. The experience of great vividness in respect of sense-data actually inhibits the intuition of relevance of the future. Moreover, certain powerful emotions, such as anger and terror, are apt to inhibit the awareness of sense-data: but these emotions wholly depend upon a keen appreciation of the relevance of immediate past to the present, and of the present to the future.

Finally, in regard to Hume's view that the apprehension of causality is the mere "habit" of experiencing sense-data in the temporal relation of antecedence and subsequence, Whitehead maintains that it is the inhibition of sense-data that provokes terrifying experiences of "vague presences effective for good or evil over our fate." Most creatures of day-time habits, in the absence of familiar visual sense-data, are more nervous in the dark; but were Hume right, our consciousness of unseen presences in the dark is the very opposite of what should happen.[2]

Primitiveness of Causal Efficacy

Causal efficacy is the primitive factor in our experience of the external world, and the perception of causal efficacy is the experience of conformation to realities in our environment; conformation to our bodily organs, and through them to the vaguer world which lies beyond. This primitive form of experience is that of blind emotion

[1] *Symbolism, loc. cit.* [2] *Ibid.*, p. 50.

with a vector character. That is to say, it is emotion felt as determined in another occasion and pointing to a future which is to be determined. The present occasion appropriates this vector feeling from the past "conformally" as a subjective passion. The feeling, Whitehead says, may be called "sympathy" in the sense of feeling conformably with another. It is true that the sense of relevance to a world beyond is vague, but it is there; and this feeling of reference to an external world passes into the present occasion as a constituent of its immediate experience.

The organic philosophy teaches that in this vector transmission of primitive feeling, provision of width for contrast is secured by "pulses of emotion." Whitehead tells us that in physics these pulses of emotion in the actual occasion appear as wave-lengths and vibrations when the occasion is co-ordinately divided. Moreover, in any particular cosmic epoch, nature, in order to avoid incompatibilities, "secures the necessary differentiation of function, by shepherding the sensa characteristic of that epoch each into association with a definite pulse."[1] By this he means that the transmission of each sensum is associated with its own wave-length. In physics, each transmission can be regarded as corpuscular or undulatory according to the special importance of particular features undergoing investigation and consideration. As we should expect, when we subject to scrutiny experience higher than that belonging to the realm of physics, it is found that the complex phases of concrescence necessary for such higher experience, both increase the dimension of width and elicit contrasts of other types. Moreover, in human experience, and even in animal experience, it is not "bare" emotion that is felt, but emotion interpreted, integrated and transformed into higher categories of feeling. Nevertheless, says Whitehead, "the emotional, appetitive elements in a conscious experience are those which most clearly resemble the basic elements of all physical experience."[2]

It is to be noted that consciousness only dimly illuminates prehensions in the mode of causal efficacy, because these prehensions are primitive elements in the process of concrescence, and consciousness only irradiates the later phases in the process. In contrast with our vivid sense experience of colours, sounds, smells, etc., perception in the mode of causal efficacy is "heavy with the contact of the things gone by which lay their grip upon our immediate selves."[3] The experience of causal efficacy dominates those primitive living organisms "which have a sense of the fate from which they have emerged, and *for* the fate towards which they go." Whitehead here has in mind those lowly organisms which "advance" or "retreat," but hardly discriminate any clear-cut sense-data.

[1] *Process and Reality*, p. 228. [2] *Ibid.*, p. 228. [3] *Symbolism*, p. 52.

In human experience, this causal efficacy is most strongly felt, says Whitehead, when there is "perception of the pressure from the world of things with characters in their own right, characters mysteriously moulding our own natures."[1] At such periods in our lives, either some primitive functioning in our organism is unduly heightened, or a part of our habitual sense perception is abnormally enfeebled. Anger, hatred, fear, terror, attraction, love, eagerness, massive enjoyment, are, it is maintained, closely bound up with the primitive functioning of "retreat from" and of "expansion towards." These states of emotion arise from the apprehension of some primitive functioning dominating the organism. But "retreat from" and "expansion towards" unaccompanied by any detailed spatial discrimination, are merely reactions to the external environment, which is impressing its own characters upon the organism. This is the case, because obviously. there can be no advance or retreat from subjectivity. The primitive emotions bear in their very content the certainty of other things acting upon us. As Whitehead says, when we hate, we do not hate sense-data, but an individual; when we fear, it is actual things or persons that are the objects of this emotion. Thus causal efficacy is the operation of the external world upon us evoking our reactions, reactions which must conform to it in appropriate measure if we are to survive. It is essentially conformation of the immediate present to the immediate past, whereby what is already existent becomes a determinant of what is in the making. The present can only come into being subject to the limitation laid upon it by the nature of the immediate past.

Presentational Immediacy

We now turn to the topic of perception in the mode of Presentational Immediacy. Consider the visual experience of perceiving a grey stone. The mere visual perception is confined to the illustration of the geometrical perspective of a certain spatial region by the mediation of the colour grey. Of course we know that a stone is more than a grey coloured shape. If small enough it can be used by a boy as a missile for his sling; if large enough as a foundation stone for a cathedral. As a stone it is one of the things in the actual world. But when looking at it, we merely perceive a coloured shape. Now "*perception which merely by means of a sensum rescues from vagueness a contemporary spatial region, in respect of its specific shape and its spatial perspective for the percipient*"[2] is called by Whitehead perception in the mode of presentational immediacy.

Whitehead tells us that if we wish to find examples of "pure" experience of presentational immediacy, we must have recourse to

[1] *Symbolism, loc. cit.*

[2] *Process and Reality*, p. 170.

what we call "delusive" perceptions. Here are some instances: "the image of a grey stone as seen in a mirror illustrates the space behind the mirror; the visual delusion arising from some delirium, or some imaginative excitement, illustrates surrounding spatial regions; double vision due to maladjustment of the eyes; the sight at night of the nebulae and the milky way, illustrate vague regions of the contemporary sky; the feelings in amputated limbs illustrate spaces beyond the actual body; a bodily pain referred to some part not the cause of the disorder, illustrates the painful, though not the pain-giving region."[1] These examples indicate one truth about presentational immediacy which should be noted at the outset. They supply evidence that the mediating eternal object (or "quality" of the experience) is not to be ascribed as a character of the region which is perceived. Consequently we must say that the eternal object in question acquired its ingression in this mode of presentational immediacy from one of the earlier *originative* phases of the percipient actual entity.

It would seem at first sight that perception in the mode of presentational immediacy implies that all that is perceived is that the object has extension and is involved in a system of extensive relatedness with the body of the perceiver. But clearly such a view is inadequate to do justice to perception in its fullness. In the first place, it does not explain how we know more about the world than mere coloured extension. In the second place, if we only perceive the physical world in this barren way, we have no basis for ascribing the origination of the mediating sensa to the functioning of the human body, a fact established by the science of physiology. If our bodies are excluded from the picture, we are driven to reduce our consciousness of the world to awareness of mere "impressions" of the mind, and are thus ultimately plunged into scepticism concerning the existence of a real world of actual things. Perception of mere coloured extension cannot then be the full account of perception. It needs supplementation.

As expounded in the organic philosophy, presentational immediacy is our immediate perception of the contemporary world, appearing as an element constitutive of our own experience. It is an experience in which the world discloses itself to be a community of actual things, actual in the same sense as we are. The appearance of all these things is effected by the mediation of qualities or sense-data, such as colours, sounds, tastes, etc. Whitehead tells us that we can, if we wish, regard these qualities as our "sensations," or as qualities of the actual things perceived. But we can only isolate them in this way and impute them either to our minds or to external things, by "abstracting" them from the spatial scheme of related-

[1] *Process and Reality, loc. cit.*

ness, whereby all these perceived things are related to each other and to the subject who perceives them. Neither the objects perceived nor subjects perceiving can escape from implication in the general scheme of spatial relatedness, since this scheme embraces all things whether objects or subjects.[1] The way in which each actual physical organism enters into the constitution of its contemporaries must conform to this scheme. It is wise, therefore, to regard these qualities as in essence "relational." The organic philosophy teaches that sense-data, such as colours, sounds, tastes, smells, touches; or bodily feelings, such as pain, and the vague sensations associated with digestion and the viscera, are the entities which introduce the external physical things into our experience under perspectives provided by their spatial scheme. It is true that both the spatial relations and the sense-data in themselves are abstractions. But the perspectives of the sense-data provided by the spatial relations, are the appointed relations whereby external contemporary things play a part in constituting our experience. This principle applies not only to things outside the body: the various contemporary organs of the body itself are introduced into percipient experience in this way; and the sense-data effecting this introduction are then called bodily feelings. That is to say, the "environment" for the perceiver includes both the contemporary world external to the body, and the bodily organs themselves. Generally it can be said that in perception in the mode of presentational immediacy, the sense-data depend on the percipient's organism and its spatial relations to the things perceived; and that the contemporary world is exhibited as extended and as a community of inter-related actual entities. Whitehead reminds us, however, that perception in this mode is confined for the most part to high-grade organisms, it being merely embryonic in low-grade organisms.

It has been said that the organic philosophy teaches that the sense-data illustrating the contemporary world are derived from the functioning of the bodily organism. But it is important to understand that there are no "bare" sensa which are first experienced and then "projected" on to the external world. Whitehead would have us realize that the "projection" is an integral part of the total situation, and as original as the sense-data. Suppose we are looking at a coloured wall. The true description of our experience is that the wall contributes itself to our experience "under the guise of spatial extension combined with coloured sense-data." That is to say, our perception is not confined to universal characters such as "disembodied colour" or "disembodied extensiveness." The experienced fact in its concreteness is "colour away on the wall for us." The colour and the extensiveness are in themselves abstract relational

[1] Cf. *Symbolism*, p. 26.

elements, and their function is to relate "the percipient at the moment" and the other real thing "the wall at that moment."[1] In the total concrete situation, the spatial relationship is essential both to the percipient and to the wall, but the colour relationship, though part of the constitution of the percipient, is at the moment of perception indifferent to the wall. The point to grasp in this connection, is that sense-data in themselves, and spatial extensiveness in itself, are merely *relational* elements connecting the perceiver and other actual things in one concrete inclusive prehension.

Presentational immediacy reveals itself as the peculiar way in which contemporary things are "objectified" as constituents in the experience of a novel concrescent actual entity. Now contemporary events (subject to their spatial relationships) happen independently of each other: that is to say, they are not causally related. Perception in the mode of presentational immediacy is, therefore, a disclosure that contemporary events, although independent, are nevertheless *relevant* to each other. In spite of their mutual independence, they enter as constituents into each other's constitution. "This relevance amid independence," says Whitehead, "is the peculiar character of contemporaneousness."[2] The entry of other things into the constitution of an actual entity, although a physical fact, is not necessarily accompanied by consciousness. Consciousness only arises when (i) physical experience and (ii) conceptual imagination are integrated into a complex synthetic experience yielding "knowledge." Such a complex integral feeling yielding knowledge is called a "comparative feeling."

The "solidarity" of the actual things of the contemporary world disclosed by presentational immediacy, is due to their participation in the spatial scheme which embraces them all impartially. As to the "knowledge" afforded us by this mode of perception, it is certainly vivid and precise; and to a certain extent under the control of the will, in the sense that one moment of experience can determine to a considerable extent by inhibitions or intensifications what the experience of succeeding moments shall be. But in other respects it is "barren." By the term "barren" is meant, that it is not permissible directly to connect the qualitative presentations we apprehend with any real characters of other things. For example, we may see the image of a coloured chair in the space behind the mirror, yet, as Whitehead says, "we thereby gain no knowledge concerning any intrinsic character of spaces behind the mirror."[3] Nevertheless, the coloured chair seen in the mirror is just as much an immediate presentation of colour qualifying the world at a specific distance behind the mirror, as when we turn round and see the chair as a piece of furniture in our room. We must, therefore, draw the conclusion

[1] Cf. *Symbolism*, p. 19. [2] *Ibid.* [3] *Ibid.*, p. 28.

"that sense-data involved in presentational immediacy, have a wider relationship to the world than these contemporary things can express."[2] It is only through an understanding of this wider relationship that we can determine the importance or otherwise of the apparent qualification of contemporary objects by sense-data. And this wider relationship can only be understood by investigating the alternative mode of perception, namely causal efficacy.

It has been asserted more than once in the foregoing exposition, that other actual things, by the mediation of sense-data, such as colours, sounds, touches, bodily feelings, etc., are introduced as constituents into a contemporary percipient occasion. It is pertinent to ask how is such a thing possible? Certainly if the world consisted of independent *substances* with qualities, such an assertion would seem to be unintelligible. But the organic philosophy denies that the world is made up of such things as these. Rather it must be conceived in terms of "functional activity." By this expression it is meant that every actual entity is something by reason of its "activity," and that its very nature consists of its relevance to other things, and is *constituted* of its synthesis of other things in so far as they are relevant to it. But in the objectification of other things as constituents in the becoming of a novel actual entity, it is important to realize that no actual entity is objectified for another in its formal completeness. Only certain aspects of its full existence are objectified. Whitehead says that "abstraction is nature's method of interaction, and this method is universal." Even "thought," when it abstracts from the subject-matter upon which it is concentrating attention, is merely exhibiting itself as an element in nature, and conforming to the general procedure of nature—"synthesis and analysis require each other." Thus the world of other actual occasions enters into the constitution of the contemporary percipient occasion by way of an abstraction of their full individualities. What is objectified only exemplifies *some* of the elements of their complete formal existences. The philosophical conception of the world demanded by its method of abstract objectification for the purpose of further creative advance, is that of the interplay of functional activity. Through this functional interplay "each concrete individual thing arises from its determinate relativity to the settled world of other concrete individuals, at least so far as the world is past and settled."[1]

Geometrical Relations in Perception

In concluding this section on Presentational Immediacy, it is necessary to say something about certain important feelings called "strains" involved in complex processes of concrescence in those

[1] *Symbolism, loc. cit.* [2] *Ibid.*, p. 34.

organisms constituting enduring objects. A "strain feeling" felt by an actual entity, is one in which the "forms" exemplified in the datum presented to it for novel synthesis concern *geometrical* elements of the environment, i.e. "geometrical, straight and flat loci." In a datum characterized by these geometrical forms, certain other elements express themselves as *qualities* and are implicated in these forms. These additional qualities are the forms or eternal objects characterizing simpler *sense* feelings associated with the "geometrical seat" of the strain in the actual entity in process of concrescence. It is to be understood that the interest dominating the growth of a strain is a geometrical interest, and this geometrical interest "lifts into importance the complete lines, planes and three-dimensional flats, which are defined by the *seat* of the strain." The geometrical seat of a strain feeling is composed of a certain set of points, and these points belong to the volume defining the standpoint of the experient subject of the actual entity in question. Now the strain feeling, when analysed, is seen to involve a geometrical region as *part of itself* called the "focal" region, which extends *beyond* its own regional standpoint. The "focal" region is a region of dense occurrences of straight lines defined by the "seat" of the strain. These lines have a two-fold function as determinants of the strain feeling of the concrescent actual entity in question. In the first place they define the "strain" of the feeler; and, in the second place, they define the "focal" region which they thus relate to the feeler. *Consequently the pattern or eternal object involved in a strain feeling, relates the subject of an actual entity* (via *the "seat" in its volume*) *to a definite spatial "focal" region external to itelf.* Now this definite contemporary focal region is a nexus of occasions which is part of the objective datum of the novel concrescing actual entity. Thus the actual entity's feeling of efficacy in its concrescence is the feeling of the sense datum as implicated in the *whole* region, viz, of (1) antecedent "seats" of earlier occasions from which it has sprung, and (ii) the "focal" region geometrically defined by its inherited strain. The patterned region, illustrated by the sense datum, is peculiarly dominated by the final "seat" in the body of the feeler, and by the final focal region external to the region of the perceiver. In other words, the sense datum or "quality" has a general spatial relation in which *two* spatial regions are dominant, viz.: the region which is the standpoint of the perceiver, and the "focal" region related to the perceiver by projectors from the "seat" of the strain feeling. Strain feelings are inherited by many strands from the antecedent bodily nerves, but it can be said generally that these many strands of transmission of bodily efficacy converge upon the same "focal" region picked out by the many bodily strains; and that the "strain" in the final percipient actual entity at the end of a route of occasions

transmitting inheritance from antecedent to subsequent, defines the "seat," the "focal" region, the intermediate regions, and more vaguely the whole of "presented" space.

Whitehead tells us that the intimate association of sense qualities and definite geometrical relations, is the basis of what is called in physiology the "projection" of sensa. The projection of sensa in a strain takes various forms according to the differences among the strains themselves. "Sometimes the 'seat' retains its individual importance: sometimes . . . it has been almost eliminated from the final synthesis of feelings into the one strain. Sometimes the whole extensive region indicated by the wider geometrical elements is only vaguely geometricized . . .: the strain then takes the form of feeling certain qualities which are vaguely external. Sometimes the extensive region is geometricized without any corresponding elimination from the 'seat.' In this case, there is a dual reference to a seat *here*, and to some objectified region *there*. The *here* is usually some portion of an animal body; whereas the geometricized region may be within, or without, the animal body concerned."[1]

The organic philosophy teaches that presentational immediacy is the mode in which vivid feelings of contemporary geometrical relations, with special emphasis on certain *focal* regions, enter into consciousness. The projection of sensa is said to depend entirely upon the state of the brain and upon the systematic geometrical elements characterizing the brain. If the brain is stimulated, no matter how, the experient perceives some definite region of contemporary space, illustrated by sense data. From one point of view presentational immedicacy appears to be but a barren aesthetic display of colours, sounds, smells, etc., together with mathematical relations, but devoid of all elements, emotional, appreciative, purposive. But from another point of view, presentational immediacy has overwhelming significance. In the language of Whitehead we can say that it exhibits the complex of systematic relations which participate in all the nexus of actualities of our cosmic epoch. It is because of the disclosure of systematic relatedness that intellectual comprehension of the universe is possible. By reference to this framework, vagrant and evanescent events in our world of abundant variety can have their mutual relations correlated in terms common to a universal system. "Sounds differ qualitatively among themselves, sounds differ qualitatively from colours; colours differ qualitatively from the rhythmic throbs of emotion and of pain: yet all alike are periodic and have their spatial relations and their wave-lengths. The discovery of the true relevance of the mathematical relations disclosed in presentational immediacy, was the first step to the intellectual conquest of nature. Accurate science was thus born. Apart from these

[1] *Process and Reality*, p. 440.

relations as facts in nature, such science is meaningless, a tale told by an idiot and credited by fools."[1]

Symbolic Reference

In high-grade organisms, the two distinct modes of perception, causal efficacy and presentational immediacy, are fused and unified in a mixed mode. This unification is necessary if there is to be efficient perception to serve the purposes of living, since presentational immediacy by itself gives no information concerning the past and the future. It merely defines a cross-section of the universe. But high-grade organisms need information about the past and some insight in respect of the immediate future, if they are to make use of their delicate methods of adjustment for self-preservation. The interplay of the two modes makes this knowledge possible, and perception in this mixed mode is termed "Symbolic Reference."

Clearly there cannot be any reference between percepts derived from causal efficacy, and percepts derived from presentational immediacy, unless a pair of such percepts have elements of structure in common. That is to say, there must be *intersection* of some sort if there is to be symbolic reference. It happens that there are two elements of common structure shared by a percept derived from causal efficacy and by another derived from presentational immediacy. These elements are (i) locality and (ii) sense data. We will consider the common feature of locality first.

Locality or "locus" is not very distinctly apprehended in causal efficacy. Nevertheless it enters subordinately into this perceptive mode, vaguely exemplifying its participation in the general scheme of extensive interconnection. Consider the status of a percipient occasion in respect of its awareness of locality. Certainly the various causal pasts of the *contemporary* world of actual occasions are not wholly identical with its own causal past. This must be acknowledged. But so far as *important relevance* is concerned, the causal pasts both of the percipient subject and of the contemporary world are practically identical. Because this is the case, even in the mode of causal efficacy, there is a perception of past actual occasions which are efficacious both for the percipient and for the relevant events in the presented locus. In other words, it can be said that the percipient prehends under the limitation of its own perspective, the casual influences operating in the presented locus. This amounts to the assertion that in the mode of causal efficacy, there is an *indirect* perception of the "locus" disclosed in presentational immediacy. It must be admitted, however, that there is extreme vagueness of the temporal and spatial perspectives in the mode of causal efficacy.

[1] *Process and Reality*, p. 465.

Whitehead tells us that in this mode of perception there is a most insistent perception of a circumambient external world of efficacious beings, but no clear and exact discrimination of thing from thing and of position from position. Even in regard to the human body, although the various organs efficacious in the regulation of sense-data and of the feelings are defined in the perceptive mode of causal efficacy, there is not complete adequacy of definition until it is assisted by symbolic reference.

When we turn to presentational immediacy, we find that the presented locus is directly perceived, and that it is illustrated by sense-data. For example, we perceive a coloured patch. The weakness of this mode is in respect of causality. It does not furnish us with direct information about the past and the immediate future. We perceive clearly enough the locality, but the causal past, the causal future and the other contemporary events are not directly perceived. They are only indirectly perceived by means of their *extensive relations* to the presented locus. Thus in the mode of presentational immediacy, there is clear discrimination of locality, and only indirect apprehension of causality; whilst in the mode of causal efficacy, there is direct perception of causality, and only vague and indirect apprehension of locality. The respective roles of the two modes are exemplified in scientific procedure. Whitehead points out that all scientific measurements, "such as determinations of relative spatial position, determinations of sense-data, such as colours, sounds, smells, temperature, feelings, touch feelings, etc., are made in the perceptive mode of presentational immediacy; and that great care is exerted to keep this mode pure, that is to say, devoid of symbolic reference to causal efficacy. In this way accuracy is secured. . . . On the other hand, all scientific theory is stated in terms referring exclusively to the scheme of relatedness, which, so far as it is observed, involves the perception in the mode of 'causal efficacy'."[1] It happens to be the case that the phenomena capable of being distinctly registered, are found, for the most part, among the percepts in the mode of presentational immediacy. On the other hand, the things we want to know about, either for the sake of knowledge or for the purpose of technology, chiefly reside in the realm of causal efficacy. The "presented locus" is a common ground for symbolic reference, because it is distinctly perceived in presentational immediacy, and vaguely and indirectly perceived in causal efficacy.

We can now consider the status of sense-data in the two modes respectively. In presentational immediacy sense-data are "given." We have merely to use our senses and there they are. They are not, however, "given" in causal efficacy. But, as Whitehead points out, what is "given" in presentational immediacy must be derived from

[1] *Process and Reality*, p. 237.

assumed that the contemporary region is the "prolongation" of the historic route of occasions of the past into the presented locus.

We are now in a position to trace the genesis of the perception of the "grey stone." What are the phases in the process? The first phase in the concrescence is called the "responsive" phase. In this early stage, the grey colour and the geometrical relationships between the efficacious route of bodily occasions and the contemporary occasions, are experienced as *subjective sensations*. Both the grey colour, and the geometrical relations involved, are felt in the form of vivid sensational qualities, with only the vaguest possible reference to the external world. The second phase of the concrescence which follows is called the "supplemental" phase, and in it something important takes place. The presented duration, to which the percipient occasion belongs, is lifted into conspicuous and vivid distinction, so that the vague efficacity of the external world constituted of occasions in the immediate past, is precipitated upon the representative regions of the contemporary present.[1] Moreover, the supplementary phase heightens the relevance of the colour sensum, and also supplements the geometrical relationships of the past, by selecting the contemporary region of the stone to *represent* the efficacy of the historic route of occasions involved. The language commonly employed to express what happens in this supplemental phase of the concrescence, speaks of the "projection of sensa" on to the contemporary world. This is correct as far as it goes. But it should be understood that the sensa belonging to the earlier phase of causal efficacy, and subsequently in the supplementary phase "projected," are already implicated with certain geometrical relationships, involving the external world. There are no sensa in causal efficacy which are not bound up with geometrical relations, but in that primitive phase of concrescence these relationships are vague and hardly relevant. Their relevance is exhibited in the supplemental phase leading to the experience of presentational immediacy.

Thus, in the growth of the percipient's experience ending in the perception of a grey stone, there is, first, the phase of subjective sensations, with only vague reference to the external world. There follows the second phase in which there is a heightening of the colour sensum, felt in the earlier phase as a subjective sensation; a discrimination and supplementation of geometrical relations; and, finally, a precipitation of these characters on a representative region of the contemporary world. In this process there is a passage from causal efficacy to presentational immediacy. Presentational immediacy, yielding an experience such as the perception of a "grey stone," is thus seen to be the enhancement of sensa and geometrical relationships already present in the datum on the plane of causal

[1] Cf. *Process and Reality*, p. 243.

efficacy, though on this plane their relevance and importance are not clearly discriminated. In other words, the two modes of perception, causal efficacy and presentational immediacy, express the same datum in different degrees of relevance. But since presentational immediacy requires certain complicated processes only possible in the supplementary phase, this mode of perception is mainly limited to organisms of high-grade.

This is the account of perception given by the organic philosophy. It does not agree with traditional philosophy in the view that presentational immediacy is the primary fact of perception. It does not admit the contention that clearness and distinctness in consciousness is evidence of primitiveness in the genetic process. On the contrary it maintains that causal efficacy is the primitive mode of perception, and that presentational immediacy is a derivative and more sophisticated type of experience. The organic philosophy denies that our notion of causality is nothing but a "habit" formed by our minds as a result of observing the repetition of associated presentational events, and that behaviour implying causation is nothing else but the subjective response to presentational immediacy. "The notion of causality arose because mankind lives amid experiences in the mode of causal efficacy."[1] The organic philosophy attributes dim feelings of casuality throughout Nature. Whitehead says: "When we observe the causal nexus, devoid of interplay with sense presentation, the influx of feeling with vague qualitative and vector definition is what we find."[2] The inorganic realm of nature lacks the two higher phases of process, namely the supplemental and the "mental" phases, but in this realm causality never relaxes its hold. In the organic realm of nature where the two higher phases of experience referred to are enjoyed, there is also a definite feeling of causality: "a jelly fish advances and withdraws, a plant grows downward to the damp earth and upwards to the light," and, it may be added, a man blinks when suddenly in the dark a bright light is directed upon him, because, as he truly says, "the flash made me blink." Causal efficacy is in truth the primitive mode of perception.

Whitehead sums up the differences between perception in the mode of causal efficacy and those in the mode of presentational immediacy in this way:[3] Causal efficacy is prior throughout nature. It produces percepts which are vague, uncontrollable, heavy with emotion, and conveying a sense of derivation from an immediate past, and of passage to an immediate future. Causal efficacy is the general sense of existence and our bodies are largely contrivances whereby some central occasion may inherit the basic experiences of its antecedent parts. Presentational immediacy has the opposite characteristics. Percepts in this mode are distinct, definite, con-

[1] *Process and Reality*, p. 248. [2] *Ibid.*, p. 250. [3] Cf. *Ibid.*, pp. 249–50.

trollable, apt for immediate enjoyment, and containing the minimum of relevance to past and future. "Symbolic Reference" effects a combination or union of these two separate modes in the experience of high-grade organisms. It is to be thought of as the elucidation of percepts in the mode of causal efficacy "by the fluctuating intervention of percepta in the mode of presentational immediacy." Symbolic Reference is thus a mixed mode of perception.

It must be admitted that perception in this mixed mode is not infallible: it can be erroneous. We must never forget that in the mixed mode of symbolic reference, it is our bodily organs which determine what is perceived. And it may happen that perceptive regions in the presented locus claim to be associated with inheritances from the past, which in fact have not been transmitted into those presented regions. Whitehead tells us that this "gap in the perceptive logic" is due to the fact that the body, as an instrument for synthesizing and enhancing feelings, is faulty "in the sense that it produces feelings which have but slight reference to the real state of the presented duration."[1]

One final word. In the course of the development of his theory of perception, Whitehead subjects to a penetrating criticism both the empirical school derived from Hume, and the transcendental school derived from Kant. Considerations of space, however, have compelled the writer to reserve an account of Whitehead's treatment of these two thinkers for a future occasion.

[1] *Process and Reality*, p. 254.

NEW BOOKS

Aristotle. By A. E. TAYLOR. (Thomas Nelson and Sons, London, etc. Pp. 157. Price 3s.)

This is a reissue, with additions and corrections, of Prof. Taylor's introduction to Aristotle, first issued in 1912 and reprinted in 1919. He has added a short final chapter on Aristotelianism after Aristotle.

Prof. Taylor's book is already so well known that it is unnecessary to reintroduce it to the public. It is enough to say that no better introduction could easily be imagined. Prof. Taylor has displayed great skill in conveying in short space and in the clearest possible language the essence of Aristotle's *Weltanschauung*. In particular, he has conveyed a very just idea of the extent to which Aristotle remained a Platonist, though reacting strongly against some important features of Plato's teaching.

Not only in the last chapter but throughout the book he has kept in mind the influence of Aristotle on later thought, and has made telling use of his knowledge of the Schoolmen and of Dante. His knowledge of this field is so great that one could have wished that the final chapter had been longer; but it would have been very difficult to make better use of the space at his disposal.

W. D. Ross.

Aristotle's De Partibus Animalium: Critical and Literary Commentaries. By INGEMAR DÜRING. (Göteborg: Wittergren & Kerbers Förlag. 1943. Pp. 223. Price Kr.10.)

This is a very valuable contribution to the study of one of Aristotle's greatest works. It begins with a chapter on the structure and growth of the book. The author emphasizes the fact that Aristotle's works on biology may be expected to belong, as his works on metaphysics and ethics, for example do, to various periods of his life, and to exhibit many traces of a changing standpoint. It is well known that Aristotle's works abound in references to other works by Aristotle himself. Düring regards it as doubtful whether any of these have been added by a later hand (e.g. by Andronicus, who in the first century B.C. compiled the great corpus of Aristotle's works on which all later editions are founded); he regards the references as the work of Aristotle himself, but allows for the probability that many of them were later additions by Aristotle, so that we cannot safely infer that a work which refers back or forward to another was in fact written after or before that other. Thus his study of the references in or to the *De Partibus*, while it is a very careful one, and useful to the student who wants to know what exactly is being referred to, does not in itself lead him to any important conclusions about the order of the writing of the works. The general conclusions which he draws (p. 21) are that *De Part.* I is not referred to either in *De Part.* II–IV or in any other work—with one important exception; that the few references in *De Part.* I imply that the course of lectures on physics (*Physics*, *De Caelo*, *De Gen. et Corr.*, *Meteor.* I–III) has just been concluded; that *De Part.* I and *ib.* II–IV were originally separate lecture-courses; that there are differences of view between the two on certain biological questions. His proof of the last point is not, however, very convincing. He maintains (p. 22) that the bio-

logical works show an advance from the Platonic method of starting with the "strongest" hypothesis and accepting conclusions which agree with this, to a method in which the importance of observation and verification is more and more clearly recognized. Now no one doubts that in Aristotle's earliest works—the dialogues and the other lost early works—his standpoint was much more akin to Plato's than in the surviving corpus; but Düring offers little evidence to show that *within* the biological corpus such an advance can be traced; and indeed he emphasizes that even in the latest parts of it Aristotle, in spite of all, remains a metaphysician and always stresses the importance of λόγος (*ib.*). The antithesis ἀπὸ τῶν ἀρχῶν–ἐπὶ τὰς ἀρχάς is treated rather fumblingly and without any real proof of a change from deductive to inductive method within the works of Aristotle's maturity which form our corpus. A similar vagueness attaches to the short discussion of the antithesis καθ' αὑτό–συμβεβηκός (p. 24). Aristotle's growing recognition that not all biological facts are to be explained by final causes is inappropriately described (*ib.*) as "dawn of scepticism." The facts cited in the paragraph beginning "The doctrine of μεσότης" (*ib.*) seem to have nothing to do with that doctrine. This whole part of the first chapter shows a certain lack of familiarity with the logical background of Aristotle thought. But while the arguments adduced are not strong, I think the writer's conclusion (p. 25) that *De Part.* I is later than *ib.* II–IV is not improbable. Düring distinguishes three successive courses in biology: (1) The *Historia Animalium*, giving a systematic account of facts and promising (491 a 10) later enquiry into the reasons for them. The material for this work Düring, following D'Arcy Thompson, rightly thinks to have been chiefly gathered before and during Aristotle's stay on Lesbos, before 343–2 (p. 26). Meantime, he holds, Aristotle was working on *De Part.* II–IV and on the *De Incessu*; a number of close affinities are pointed out between these two works (p. 26 n. 3). But surely he is wrong in treating as evidence of the earliness of these works the presence of a "keen logical trend" in them; none of Aristotle's works is lacking in that.

(2) In spite of these affinities he assigns *De Part.* II–IV to the second biological course. I find his view here difficult to understand. He thinks it "likely that Aristotle as well as Theophrastus began their biological studies in the traditional Ionic manner by pondering the αἰτίαι" (p. 27), but that during their co-operation on Lesbos "Theophrastus probably influenced Aristotle considerably towards empirism." It is strange, then, that he assigns an earlier origin to the *Historia Animalium*, which is in the main purely occupied with the ὅτι, than to *De Part.* II–IV, which is occupied with the διότα.

To the same period he assigns (p. 29) the *De Respiratione*, the *De Juventute et Senectute et De Vita et Morte*, early versions of the *De Sensu* and the *De Anima*, and perhaps *Meteor.* IV. This set of works is rather loosely assigned to the years after the death of Plato and Aristotle's break with the Academy (p. 28). But that is just the Lesbos period to which the *first* biological course has already been assigned.

(3) The third course, he thinks, contained the *Historia Animalium* (revised and enlarged), *De Part.* II–IV, *De Incessu*, *De Anima*, *De Motu*, *Parva Naturalia*, *De Generatione Animalium*, with *De Part.* I as a methodological introduction to the whole. He considers that this was given as a lecture-course soon after Aristotle's return to Athens in 335 (p. 30). He is not very satisfactory about the date of *De Part.* I. He thinks (*ib.*) it was put together after the opening of the Lyceum (335 B.C.). Yet he assigns some of it, and indeed all Aristotle's biological works, to the years before and immediately after 340, i.e. to the Assos, Lesbos, Pella period (p. 34). He thus, on the whole,

differs from Jaeger's view that the biological works belong in the main to the last period of Aristotle's life.

I have dealt in some detail with the first chapter of the book, because it is concerned with the topics of the greatest general interest. But it is the least satisfactory part of the book; most of the conclusions—particularly the conclusion that *De Part.* I was written later than *De Part.* II–IV—seem to me not improbable, but one is left with the feeling that the whole question needs much more thorough examination.

The second chapter contains a full and careful study of the MSS., in which he concludes that the great Paris MS., 1853 (E), is the most reliable single authority for the text. He assigns also considerable value to the commentary by Michael, and makes effective use of it in his notes on particular passages. The third chapter contains a really first-rate account of Aristotle's style, based partly on Aristotle's own account of the principles of style, in *Rhet.* III, and partly on a careful examination of the biological works. He concludes, and rightly (I think), that many of the readings in the later MSS., and of the emendations by modern scholars, reflect a mistaken attempt to smooth out the anfractuosities of Aristotle's highly individual style.

The 80 pages of introduction are followed by 138 pages of commentary on individual passages. It would be out of place to examine these in detail here; but I wish to record the view that the writer has here made a great contribution both to the establishment and to the interpretation of the text. In particular, he has shown how much a careful revision of a punctuation of its text can do towards elucidating Aristotle's meaning.

W. D. Ross.

Corpus Platonicum Medii Aevi. Edidit Raymundus Klibansky. Plato Arabus, Vol. II. *Alfarabius de Platonis Philosophia. Ediderunt Franciscus Rosenthal et Rihardus Walzer. Londini* MXMXLIII, pp. xxii, 30 (with 23 pp. Arabic text).

A double word of explanation and apology. Vol. II of the *Plato Arabus* should have been preceded by Vol. I, but the publication of this, which was being printed in Beyrut, has been delayed by the present war. The task of preparing this notice should of course have been entrusted to a Platonic scholar who is also an Arabist, but has been reluctantly undertaken by the present writer in deference to the representations of the Editor of *Philosophy*.

What we have before us is a text, with Latin version and an introductory Preface, of the second part of a dissertation by the famous tenth-century Mohammedan Peripatetic Alfarabi *On the Attainment of Beatitude*, in which the author attempts a compendious account of the teaching of Plato on the subject. (There is a third part, dealing in the same fashion with Aristotle. The original text of the above was recently printed for the first time at Hyderabad in 1926. For the constitution of the text there is also available a thirteenth-century Hebrew version by Skemtob ben Joseph ibn Falaguera.)

Alfarabi's version of the Platonic philosophy is a curious one. According to him Plato's whole philosophy is throughout practical and "dogmatic"; it is a systematic answer to the questions, is there a supreme beatitude of which man is capable, what is it, and how may he come by it? And this answer is given methodically in the thirty-six items which compose the nine tetralogies of Thrasyllus, if only one will study them in what Alfarabi asserts to have been the actual order of their composition. This order is one which we do not know ever to have been adopted by any other expositor, and will certainly surprise the philological student: it begins with *Alcibiades I, Philebus, Thea-*

etetus, and ends with *Clitophon, Menexenus, Epistles*. By this singular arrangement Plato is made to begin by proving that there is an attainable *summum bonum* of man as man, which is a certain knowledge or science. It is then shown "by induction" that this science is not identical with any of the already recognized special sciences, nor with any of the "arts and crafts"; that it is the science of the "philosopher," who is also the true and rightful "king"; that it cannot be acquired except under the impulse of the rightly directed Eros, that analysis and synthesis are the philosopher's characteristic methods, and that for instructional purposes he needs both the dialectic of Socrates (for the gifted few) and the rhetoric of a Protagoras or Thrasymachus. It is then established that the philosopher will inevitably have to set himself in opposition to current belief and practice, and must be prepared rather to die than to lead a life which is no better than that of the "beasts." Next Plato depicts (*Republic*) the life of a society with philosophers at its head, where a man can live as a man should, provides it with a compendium of divinity and natural science (*Timaeus*), and a rule for civilian life (*Laws*), and describes the attainments of philosophic rulers who conjoin speculative and practical science (*Critias*). Finally the *Epinomis* tells us what manner of men the philosopher-kings themselves must be, the *Clitophon* shows how they must in their instructions employ the rhetoric of Thrasymachus by the side of the Socratic dialectic, the *Menexenus* how it is proper for their fellow-citizens to honour them, and the *Epistles* how the philosopher may continue to protect himself amid the dangers to which he is exposed, and even introduce gradual reforms into actual social life. Thus the whole more metaphysical side of Platonism (the doctrines of immortality, "recollection" and the "Ideas") are simply ignored. It is obvious that such a one-sided exposition is of no value to us as an account of Plato and his philosophy, but it has its interest as throwing light on the history of the interpretation of the dialogues. Manifestly Alfarabi is depending on some Greek "handbook to Platonism" from which he has chosen his singular arrangement of the dialogues in serial order. (I should conjecture, though our editors do not discuss the point, that the Greek author must have intended only to indicate the order in which he would recommend a student to read the dialogues, and that the conversion of this into a chronological order of composition has been introduced *de suo*, either by Alfarabi or by the Syriac intermediary through whose hands the Greek work appears to have passed). It thus becomes an interesting question to determine, if we can, the date or identity of this unknown Greek expositor of Plato, and it is to this task that the bulk of our editors' Preface is devoted. Since there is no trace whatever of Neoplatonism in the text, the *Parmenides* and *Timaeus* being, for example, treated simply as works respectively on "dialectic" and on natural science, our unknown author may be safely dated before Plotinus. On the other hand he consistently represents Platonism as a "dogmatic" philosophy and entirely ignores the "sceptical" and negative side of Plato's thought. Hence he cannot be earlier than Antiochus of Ascalon who, as we know from Cicero's *Academica*, made a great sensation in the first century B.C. by claiming Plato, in defiance of the then reigning Academic opinion, as a "dogmatist." We can thus safely say that Alfarabi's source is a writer of the "Middle Platonism," living at some time between the middle of the first century B.C. and that of the third century A.D. and—like e.g. Albinus—belonging to the *Richtung* inaugurated by Antiochus of Ascalon. Beyond this we cannot go with any certainty. Our editors, indeed, remind us that the Arabian writers mention a treatise on Platonic interpretation by Theon of Smyrna (the well-known writer of an extant handbook to the *Mathematics of Plato* in the reign of the Emperor Hadrian, i.e. towards 120–150 A.D.). But

since this work, if it really existed, has completely disappeared, the conjecture that it may be that from which Alfarabi is drawing must remain a mere unsubstantiated guess, and I conceive is not regarded by the Editors as anything more. A. E. TAYLOR.

The Metaphysics of Value (Vol. I): General Principles and the Kingdom of Values. By K. R. SREENIVASA IYENGAR. (Mysore: University of Mysore, Studies in Philosophy No. 2. 1942. Pp. xxxi + 645.)

There may be differences of opinion concerning precisely how good a book this is, but few could deny that it is a very good book. British philosophers may need to be told this. They are less likely to have heard of the author than Indian or American philosophers, to whom his name is presumably familiar since he has contributed extensively to Indian philosophical journals and congresses for many years, and has published a number of articles in American philosophical journals.

My first duty, then, is to say that in my opinion this book should be widely studied in these islands—despite its length. This is only Vol. I, but it contains over a quarter of a million words.

Vol. I has two parts, "general principles" and "the kingdom of values." Its successor will deal with certain general problems in the theory of values (e.g. their commensurability) and with the "empire of worth," "worth" in the author's terminology being distinguishable from "value."

The author's chief concepts are "validity," "value" and "worth," the middle term "value" dominating the stage in the present volume. In rough outline, x is "valid" for y when it is usable by y in furtherance of y's trend of behaviour. Thus the breast is "valid" for the infant. At the conscious level such validity describes an "interest," a human interest for conscious human beings. According to the author such an "interest" is not "value." He therefore differs from Perry, Prall and other well-known American writers in this field, although accompanying them gladly for a good part of their way. There is "value" he maintains, only when the subject values, i.e. consciously (and, indeed, reflectively) appreciates the "validity" which serves his "interest." Such value is conditioned and is also relative in the appropriate sense or senses, and it *requires* thought although it is not true that "thinking makes it so" in all relevant senses of "make." Human values are always teleological, but "worth" (or perfection) is beyond the quicksands of end and means. If perfection should come, action would flow from it but would not be an object of pursuit.

Part I of this volume is analytical. There has been a "great confusion" (we are told) between "a general science of human welfare" and philosophies which presuppose a moralistic interpretation of "good." The former is the subject of the present work and is sometimes called "axiology"; but our author prefers the term "normatics." "Value," he says, "is the status of satisfyingness of an object emerging out of its contemplation by a subject, both determined by a universe of desire which is realizable by means of the former and to which the latter is attached." This definition includes the marks of teleology, instability (value is a "transistent"), relativity, norm-pattern and width of the same. An account of certain vexed questions, viz. the extent to which value is "objective," "existential" and of the way in which it is relative follows. Thereafter we have an account of the psychology of valuation and of the implications of the emergence theory in this application. The former is scarcely avoidable in discussions of this kind and gives

the author his chance to make several acute observations upon purpose, choice and desire. The latter is 30,000 words long, but of course if you take "emergence" seriously you have to take "time" and "novelty" seriously, and your conscience may rebuke you if you don't plunge into metaphysics. Even if there is a certain lack of proportion in this chapter (or chapter-monograph), however, it would be harsh to complain. The author has his own considered views on these topics, and is too well-informed to be content with a sketchy presentation of them.

The second part of the book could not be short, for it is a phenomenology of the subject, i.e. an attempt to induce each great department of human value to reveal its secrets by sedulous and detailed self-description. There is ample precedent for such a method, e.g. in the work of von Ehrenfels.

First we have a chapter on body-values, pleasure and play, including, among many points of interest, a subtly qualified acceptance of (psychological) hedonism, and a treatment of play which allies it with art. Next the economist's conception of value is discussed and denounced, not from the outside but, learnedly, from within the economic field. The chapter on "Personal and Social Values" which follows is largely about the Green-Bosanquet way of treating the "State," appreciative but critical, and again proceeding learnedly and acutely from within outwards. Thereafter we have the True, the Beautiful and the Good, in that order. The first, in the main, is a critique of British idealistic logic in the light of the author's theory of presuppositions. The second passes with ease and competence into the language of contemporary aesthetics. In the author's opinion art brings us very near to the top of value. It would be quite at the top if it did not need to have a product outside the spirit. Morality or the "self-creation of spirit," "the artistry of *life*," is higher still. It has no product outside itself and falls short of worth only because it remains teleological.

Mr. Iyengar's account of moral value suffers in an expository sense because he thinks it necessary to refute the new Oxford deontology at great length. (To this he devotes an entire chapter, valuable and searching in its special field, and better than most such discussions.) His own view is that moral value is self-creation including self-expressions, and self-expansion in their most liberal sense. He sums up in the formula: "So act that the line of your action may purify your desire, weaken the hold of possessiveness and enlarge your spirit," and he makes a vigorous though not very convincing attempt to show that this formula encounters no exceptions and almost always enables us to distinguish fairly easily between what is moral and what is immoral.

Mr. Iyengar makes very few references either to Eastern philosophy or to the life of the East. In the present volume at least the entire climate of the argument is Anglo-American—and contemporary at that. This may make his book the easier for British and American philosophers, but if, as I sometimes suspect, there is an Eastern background to much of his thought not disclosed in the present volume we who live outside Asia would be the gainers, I think, if we learned more about it.

JOHN LAIRD.

The Origin of Dewey's Instrumentalism. By MORTON G. WHITE. (New York: Columbia University Press. 1943. Pp. xv + 161.)

The publication of this book marks the first award of the Woodbridge prize, founded by Professor F. J. E. Woodbridge, and given annually for the publication by the Columbia University Press of the most deserving piece of research in the department of Philosophy in Columbia University.

The subject is eminently appropriate to the occasion, in view of Professor Dewey's long association with Columbia. It can be said at once that Dr. White's book deserved the honour, for its straightforward approach, its modesty, and its lucidity. The author has not tried to be exhaustive. He has painted no picture of the changing social environment in which Dewey grew up, made no conjectures as to the kind of influences playing on him. He has not even followed out any of the clues offered by Dewey in his self-portrait in the volume of Contemporary American Philosophy, or by Miss Dewey in her sketch of her father's development in the large volume on Dewey in the Library of Living Philosophers, though he is, of course, fully aware of them. He has simply taken Dewey's writings from 1884 to 1903, the date of *Studies in Logical Theory*, and tried to see what they tell us about Dewey's starting point, and about his development from Hegelianism to Instrumentalism.

In doing this, Dr. White has put us in his debt by many quotations from papers that cannot be easily got at in this country. He does not himself probe very deeply into them, but is always clear and interesting, and is on the alert for indications of Dewey's later views. As Dewey began as a Hegelian, we are given in the first chapter a sketch of the point of view of his Hegelian teacher, G. S. Morris. I think Dr. White's understanding of Dewey would have been deepened had he had a more intimate knowledge of the writings of the British Idealists of the period, especially of Caird and Green. He knows them pretty well, but he does not always seem to realise the extent of common ground between them and Dewey.

When Dewey went to Johns Hopkins as a young graduate to study philosophy, the philosophical department contained not only Morris, but Stanley Hall, one of the great pioneers of experimental psychology in the United States, and C. S. Peirce. Hall influenced him greatly. Dr. White regrets that Morris's influence should have been predominant, and that it was only many years later that Dewey realized the value of Peirce's work. I am not sure that he need have this regret. The idealism of the eighties was an admirable nursery for philosophic minds, having as it did a range and a richness of content rarely found either before or since. The idealists were so sure of the ultimate unity of all things that they could afford to explore the variety and the differences in the world without fear of being tempted to lose sight of the unity; they were so sure of the rationality of the world that they could stress the apparent irrationalities; so sure of the eternal that they could stress the evolving, so sure of the spiritual that they could stress the material. Always, of course, as elements or partial aspects within the whole. Taking them in the mass, the idealists were full of curiosity for the features of these partial aspects, and never forgot to search out the ways in which the partial aspects were modified by and reacted on the other aspects with which they were found conjoined. Thus the idealists had done more than half the work of preparing the ground for a variety of rivals: if you rejected their characteristic doctrines of the unity of the world and the primacy and the changelessness of the Absolute, if you insisted that the "partial aspects" were the real things, you had a wealth of detailed studies at your disposal in their writings, to help you in the adventure of making a new synthesis. Dr. White brings out well the number and importance of the principles by which Dewey the idealist could prepare the way for Dewey the instrumentalist; for example, the denial of immediate knowledge (119), the doctrine that other people's awareness is in principle knowable—on which Dr. White comments, "Without avowing a behaviouristic approach, he thus prepares for one" (46). Again, the stress on the material aspects of the world, the welcome given to evolutionary

conceptions (xiv–xv), the close inter-relation between theory and practice (78, 99). A good deal of the richness of Dewey is to be attributed, I think, to his idealist beginnings.

The chapter dealing with Dewey's articles in *Studies in Logical Theory* is disappointingly short, and the result is that the book breaks off just when the new Dewey is beginning to peep out. We should like more. Perhaps when the world once more revolves on its own axis Dr. White will give it us. The last chapter, in which the conclusions of the whole inquiry are summed up, is an excellent piece of lucid writing. The whole book is beautifully produced by the Columbia University Press.

L. J. RUSSELL.

Evolution: the Modern Synthesis. By JULIAN HUXLEY, M.A., D.Sc., F.R.S. (London: George Allen and Unwin Ltd. 1942. Pp. 645. Price 25s.)

In his first chapter Dr. Huxley sketches the historical background against which he has written his latest book. The publication of the *Origin of Species* in 1859 once and for all established evolution as the central fact of biology and inaugurated a period of intense activity in speculative phylogeny. In the absence, however, of any solid basis of knowledge of the mechanism of natural selection, these speculations tended to become increasingly divorced from experimental reality and, inevitably, a reaction against them began to set in towards the end of the century. This reaction was intensified when Mendel's work was rediscovered and the occurrence of relatively large mutational jumps was established. During the period just before the last war the death of Darwinism was widely proclaimed by biologists, and theologians were not slow to cash in on the scientific respectability with which these proclamations clothed their beliefs.

During the last 20 or 30 years, however, the intensive study of genetics, cytology, ecology, embryology, and other branches of biology has gradually shown, at any rate to the majority of biologists, that the mechanism of heredity which this study has revealed, so far from disproving the theory of natural selection, enables us rather to build a reasonably solid edifice in place of the Darwinian scaffolding of 1859. It is this edifice that Dr. Huxley describes and examines in the present work. He brings to his task not only a most persuasive enthusiasm for the merits of the building, but also an extraordinarily thorough knowledge of its lay-out, from cellar to attic.

Probably the best plan for the present review will be to summarize very briefly the contents of each chapter and then to deal more fully with one of the subjects most likely to be of special interest to readers of PHILOSOPHY, namely evolutionary progress.

In his second chapter Dr. Huxley emphasizes that although, broadly speaking, evolution may be said to proceed by a process of natural selection acting on variation, within this framework there is an abundant multiformity of method. It is dangerous, therefore, to argue from one group to another. For example, in marine animals evolution appears to have followed a relatively gradual and straight course, whereas in some land plants there is evidence for the abrupt and discontinuous formation of new species. Or again, evolutionary method in groups containing an abundance of widespread individuals differs markedly from that in groups where the individual members are rare and relatively confined in their distribution. "No single formula can be universally applicable," he says; "the different aspects of evolution must be studied afresh in every group of animals and plants." This fact is not easy for the modern "man in the street" to grasp, provided, as he is, with

a neat slogan for the solution of every problem, however complicated; but it is of fundamental importance in the study of evolution.

Dr. Huxley's next two chapters deal with the mechanism of heredity and variation in relation to evolution, and form, in a sense, the foundation on which the remainder of the book is built. They are, in the reviewer's opinion, the best short exposition of the results of recent genetical and cytological work available and, though certainly stiffish reading for the layman, should be comprehensible to any intelligent reader willing to make the necessary mental effort. It would be out of place in this review to summarize, in any detail, the contents of these chapters. The main thesis, however, is that Mendel's work and the twentieth-century developments from it, both genetical and cytological, have shown, beyond doubt, that the attributes of an organism are a direct expression of the interaction between the genic make-up of its chromosomes and the environment, both within and outside the chromosomes, and that variation in these attributes is due to changes which take place in the genic make-up and in its relationship to the environment. This variation forms the raw material on which natural selection brings about, in the course of time, evolutionary changes in the attributes of the organism.

This bare statement gives no idea of the range of subjects Dr. Huxley deals with nor of the great wealth of illustrative detail with which he clothes his thesis. One or two instances may be mentioned. The majority of non-biologists, though they may have a general idea of the part played by genes in heredity and variation, probably still think of each gene as governing the appearance of one character, irrespective of the remaining genes in the chromosomes and of the environment in which the organism develops and has its being. This is far from the truth. Modern work has revealed an astonishingly complex relationship between genic constitution and character expression. For example, a single gene may affect a whole range of characters in the organism containing it, while, conversely, a single character may be the result of the action and interaction of a large number of genes. Or again, a particular gene may produce one set of characters in one gene-complex, or under certain environmental conditions, and have a totally different effect if the complex or the conditions are slightly altered. The idea of a "one to one" relationship between gene and character has, in fact, now been replaced by the concept of a "gene-complex" acting under varying conditions and producing its effects as a result of a delicately balanced mechanism of a complexity undreamed of 20 or 30 years ago.

Other subjects discussed in these two chapters are mutation rates and their bearing on evolution, orthogenesis, the deleterious nature of the majority of mutations, the inheritance of acquired characteristics (with an excellent summary of the famous case of the darkening of certain species of moth in industrial areas), the various rival theories on the evolution of dominance, the development of genetic systems (e.g. polyploidy) and their bearing on evolution, and the genetical aspects of sex differentiation. Where discussion of these subjects involves a choice between what may be conveniently called teleological and mechanistic interpretations, Dr. Huxley shows himself a ruthless wealder of Occam's razor, the "little something extra" postulated by vitalists receiving short shrift at his hand.

Chapters 5, 6, and 7 deal with the nature, origin, evolution and significance of "the Species"—that *première danseuse* in the "unearthly ballet" of categories that has haunted the biological stage for 400 years—and does much to clarify this obscure region where science and philosophy hold somewhat uneasy intercourse. He goes on to distinguish four main factors which bring

about the isolation necessary for the formation of new species, namely time, space, function and intrinsic (genetical and cytological) mechanism. The methods of speciation (i.e. successional, geographical, ecological and genetic) correlated with each of these types of isolation are considered in turn.

In chapter 7 Dr. Huxley deals with a particularly controversial, but fascinating, aspect of modern evolutionary work, namely its effect on taxonomic practice. Essentially it is a problem of putting the new wine of genetical and cytological research into the old bottles of traditional taxonomy in such a way as to avoid either losing some of the wine through the cracks, or patching the bottles beyond recognition. Dr. Huxley explains fully and clearly the various divergent views on the solution of this problem, and especially valuable is his analysis of the difference between the *genealogical* relationship of individuals, and the *phylogenetic* relationship of groups, two concepts which are constantly confused in discussions on phylogenetic classification.

The facts of adaptation form one of the firmest planks of the teleologist's platform and hence tend to be minimized by the mechanists, and over-emphasized by the vitalists. Dr. Huxley, in his chapter on adaptation and selection (No. 8), treats these facts objectively as being explicable "on good mechanist principles, without the intervention of purpose, conscious or sub-conscious, either on the part of the organism or of any outside power," and shows how they can be fitted into the selectionist picture. In his section on "regularities of adaptation" he deals with the occurrence of similar adaptive tendencies in different species in similar environments, a widespread phenomenon not without bearing on the diffusionist controversy in the sphere of human cultural history. He discusses at length the Lamarckian *versus* the Selectionist explanation of adaptation, and comes down heavily (and, in the reviewer's opinion, with overwhelming justification) on the side of selection.

Adaptive evolution at the specific level leads naturally to the consideration, in chapter 9, of longer range evolutionary trends. These, too, are largely adaptive (Dr. Huxley calls them "ecological divergence in the grand manner") and, as at the specific level, include adaptive evolution within a single group, and the complementary phenomenon of the parallel adaptation of different groups under similar conditions. Some trends, however, appear to be definitely non-adaptive. Dr. Huxley discusses the various possible explanations of these, such as correlation with adaptive trends or with the developmental mechanism involved, but comes to the conclusion that some, at any rate, appear to be true cases of "orthogenesis." These are often trends leading to the extinction of the group (for example, the overcoiling of the shells in certain fossil molluscs) and are therefore not easy to explain on any hypothesis, whether selectionist or teleological.

In his final chapter Dr. Huxley tackles the problem of evolutionary progress. His treatment of this subject has been somewhat modified in his recently published Romanes Lecture on "Evolutionary Ethics" and it seems best to deal with the two expositions together, thereby having before us his latest view on this elusive problem. Before doing so, however, it may be useful to try and distinguish three rather different uses of the words "progress" and "progressive" in ordinary parlance.

The first use refers to advancement along a course implicit in the definition of the activity concerned, and has nothing to do with the *aim*, if any, of that activity. For example, one can speak of progress in the weathering of a piece of rock, or progress in the silting up of a river estuary. Here the use of the word progress means no more than that a certain amount of the type

of change implied by the words "weathering" and "silting up" has taken place.

The second use, on the other hand, refers to the advancement of a particular aim or purpose of the activity concerned. For example, if one asks "Have the negotiations progressed?", one does not mean "Have there been a large number of meetings and a protracted correspondence?", but rather, "Has the aim of the negotiations been advanced?" Or again, "progress in a cure at Davos" means something more than a succession of meals, siestas, and x-ray examinations on the "Magic Mountain."

Thirdly, the word "progress" can acquire a capital P and designate that somewhat mystical entity "Progress"—"Progress" not towards any specific aim, but a "Platonic Form" of Progress to which the actual progresses of the sensible world owe their being. Progressive Schools, Progressive Policies, and Progressive Societies are a few of the children of this fertile Victorian parent.

Bearing in mind this threefold significance of the word progress, we can now summarize very briefly Dr. Huxley's thesis on evolutionary progress as put forward in the work under review, and in his Romanes Lecture. After discussing the objections of those who hold that such progress does not exist, either because *all* evolutionary change cannot be described as progressive or because, an arbitrary evolutionary goal of their own having been set up, the failure to reach that goal is demonstrated, Dr. Huxley proceeds to an inductive examination of the course of evolutionary change. Such an examination reveals that the type of change leading to the production of successful groups is characterized by two main features, increasing control over the environment and increasing independence of the environment. "Thus advance in these respects," he says, "may provisionally be taken as the criterion of biological progress." Pursuing this idea, he goes on to define evolutionary progress as "a raising of the upper level of biological efficiency, this being defined as increased control over and independence of the environment." In his book *Evolution* Dr. Huxley, although hinting at a further refinement of this definition, lets the matter rest here. In his Romanes Lecture, however, he expands these earlier hints and emphasizes that the important point, as regards progress, about such increase in general biological efficiency is that *it leads to the possibility of further change*. Evolutionary progress, he says, "consists in the capacity to attain a higher degree of organization *without closing the door to further advance*" (italics mine). He thus contrasts progressive evolution of this type with trends involving increased specialization in relation to a particular environment and ending, finally, in stagnation or extinction.

In relation to the three meanings of progress distinguished above, it will be seen that Dr. Huxley's use of the word, while avoiding the implication of "aim" involved in meaning No. 2 and, *a fortiori*, the Platonic quagmires of No. 3, does not conform strictly to the terms of No. 1, under which *any* evolutionary change, in whatever direction, would merit the designation "progress." Dr. Huxley has, in fact, devised a perfectly legitimate and highly valuable extension of the meaning of the word, namely, "change leading to conditions containing the possibility of further change," and thereby produced a solution of the problem of evolutionary progress which escapes, on the one hand, the frequently negative attitude of the materialist and, on the other, the teleological assumptions of the vitalist. It is to be hoped that in subsequent editions of *Evolution* Dr. Huxley will expand his present treatment of the subject in line with his Romanes Lecture.

Dr. Huxley's book will undoubtedly form a landmark in the development of twentieth-century evolutionary thought. It not only synthesizes in a

masterly way the present trends in the selectionist view of evolution, but, on almost every page, puts forward suggestions how that view may be fruitfully applied to evolutionary problems in the future.

JOHN S. L. GILMOUR.

Evolutionary Ethics. By J. S. HUXLEY. (Oxford University Press, 1943. Pp. 84. Price 2s. net.)

This small booklet comprises the Romanes Lecture of 1943. The difficulty which troubles me in connection with it is to see how the ethics put forward is supposed to be derived from the study of evolutionary biology. The opening pages express great concern that we should be able to maintain an ethics that is not merely subjective. "We live under the grim material necessity of defeating the Nazi system, ethics and all, but no less under the spiritual and intellectual necessity, not merely of feeling or believing, but of *knowing* that Nazi ethics are not just different from ours, but wrong and false; or at least less right and less true" (p. 5). And it is clear that the author thinks evolutionary biology to provide the objective foundation required. Yet with hardly any of the ethical principles that he lays down in the course of the book is it clear how they follow from biological premisses or from a study of the actual process of evolution, which can indeed tell us what has happened but not what ought to happen or what is best. They seem to me to be, on the contrary, either intuitive convictions of the author or based on reasonings which could have been used by somebody who had never heard of evolution at all. If we take his summary on p. 41 and examine the three he mentions we find the first, that it is right to realize those possibilities which are valued for their own sake, to be either tautologous or *a priori* according to our view of the principle that it is right to produce what is good-in-itself, and certainly nothing that could be established by an empirical science. The second, that "it is right both to respect human individuality and to encourage its fullest development," seems to me an example of an ethical intuition which was not given at the start but which we are slowly and painfully coming to see; and the third, "that it is right to construct a mechanism for further social evolution which shall satisfy these prior conditions as fully, efficiently, and rapidly as possible," follows straightforwardly from the first two. For, if the ends are right, it is right to adopt efficient means to produce them. I cannot see that the case for the principles is proved or even in any way strengthened by the theory of evolution. We can say that it has emphasized the fact of change, but the required emphasis might well have been obtained from other quarters, especially in view of the extreme slowness of change in the evolutionary process as compared to the rapid changes known to everyone in individual men and in social development. That the scientific climate of thought which has grown up during the last century, partly owing to the establishment of the evolution theory, has profoundly affected our ethical ideas and our general *Weltanschauung* I do not wish to deny, but any attempt to found ethics on biology must fail because of the impossibility of deducing what ought to be from what is.

The same type of criticism can, I think, be applied to the author's other deductions from scientific theories. He thinks that modern psychology shows a "purely intuitive" (p. 14) and an "absolute" ethics (p. 15) to be untenable. No doubt there are senses of "absolute" in which an "absolute ethics" is untenable, and again, as the author says, a "purely intuitive" ethics cannot be defended, but there is much room for legitimate doubt as to whether

the evidence of psycho-analysis is either necessary or adequate to show this and as to whether any very notable thinker has maintained a purely intuitive ethics. The passage in question, indeed, taken by itself, conveys the impression that the author holds that moral obligation is an illusion generated by infantile experiences; but this is evidently not the case since the passage quoted earlier and its whole context (pp. 4–6) shows his intention to be to give grounds, based on the notion of evolution, for an objective ethics. If so I can only say that he has failed in his task, while indeed contributing much of interest, though hardly of relevance to this primary object, by the way. I hold indeed that the objectivity of ethics can be defended, but I do not think he has defended it. And I do not think that it is of much use saying that obligation is or is not "absolute" without distinguishing different senses of "absolute," or having a shot at the straw-figure of the pure intuitionist without realizing that philosophical intuitionists base their ethics not on intuition alone but on this combined with reasoning and experience. It does not seem to me that the author has at all realized the difficulties involved, no doubt because he is far better acquainted with the scientific than with the philosophical background. The lecture is very interesting to read and at times very impressive, and it gives a striking survey of certain aspects of the evolution process and of ethical questions, but I do not think that it comes any nearer a solution of the real philosophical problems involved. Perhaps the author has in mind more of a solution than is apparent in print, for he several times says that something, e.g. that the individual is higher than the State, "is clear on evolutionary grounds" without saying what the grounds are, but if so it is a great pity that he did not state them.

A. C. EWING.

He Who Is, A Study in Traditional Theism. By E. L. MASCALL, B.D. (Longmans. Pp. 198. Price 15s.)

"Traditional theism" is not Sunday-school Christianity, but the *philosophia perennis*. The revival of Thomist studies is one of the most significant features in modern religious thought. Its ablest exponents have perhaps been Frenchmen, but it has a firm hold in English and American theology, by no means only among Roman Catholics. Mr. Mascall is an Anglican, though of the advanced Catholicizing school.

The main assertions of "traditional theology" are summed up in the Preface. "The human mind can, from the consideration of finite beings, arrive without appeal to religious experience or revelation at a sure knowledge of the existence of a God whose primary character is that of self-existing Being. The finite world derives its existence and its persistence from a free act of will on the part of God, to whom it is altogether unnecessary and who would be in every respect complete without it, but whose concern with it is none the less a manifestation of the deepest condescension and love."

The existence of God is not given *a priori*, but is a valid inference. The world is not as necessary to God as God is to the world.

Mr. Mascall's book is able and learned; the bibliography is copious but incomplete. The Platonists, ancient and modern, with the exception of A. E. Taylor, are entirely neglected, and three of the most important studies in English of the perennial philosophy seem to have escaped his notice. These are E. I. Watkin's *A Philosophy of Form* (1935); F. J. Sheen's *God and the Intelligence* (1930); and W. Urban's *The Intelligible World* (1929).

That these neo-scholastic books are a powerful reinforcement to theistic belief can hardly be denied. And yet the case for religion, many will think,

would be strengthened by arguments which the disciples of St. Thomas are chary of using. Our author wittily suggests that one reason why the schoolmen preferred Aristotle to Plato was that Aristotle had no religion to speak of and therefore could be given one, while Plato had a religion which was not Christianity. But as an intellectual system Aristotle's philosophy may be detached from Christianity; Plato is almost a Christian before Christ.

The followers of the Angelic Doctor have always distrusted the mystical experience. This is strange when we remember that St. Thomas laid down his pen after a vision of God which seemed to him to make argument superfluous. Mr. Mascall objects that though what we now call religious experience may be convincing to the contemplative himself, it is not transferable and can carry no conviction to others. This is surely absurd. If a dozen honest men tell me that they have climbed the Matterhorn, I am convinced that the summit of that mountain is accessible. The testimony of the mystics is of very great evidential value.

A kindred error, as we must think it, is their refusal to use the ontological argument for the existence of God. The opponents of this argument, including Kant, have stated it in a form which any child can see to be fallacious, and have then rejected it as worthless. Lotze has answered them once for all. "This is obviously a case where an altogether immediate conviction breaks through into consciousness; to wit, the conviction that the totality of all that has value—all that is perfect, fair, and good—cannot possibly be homeless in the world or in the realm of actuality, but has the very best claim to be regarded as an imperishable reality. This assurance, which properly has no need of proof, has sought to formulate itself after a scholastic fashion in the above-mentioned awkward argument."

It is in our apprehension of the absolute values that we are brought into direct contact with reality. We are not called upon to worship "a valid inference" or "an alogical probability," any more than to pray to Jeans's divine mathematician—"O x^n, have mercy upon us."

Once more, the scholastic theory of revelation forbids the schoolmen from following the argument fearlessly. The conclusion is imposed upon them, and they dare not contradict it. A well-known example is when Aquinas discusses the creation of the world in time. He feels that the arguments are in favour of a universe without a beginning; but revelation tells us that it was created in time. How such a fact could be revealed he never asks himself.

Catholicism in all its forms is committed to a dualism of natural and supernatural. God occasionally intervenes in the natural order. The educated Christian does not say that miracles are impossible, but he does say that they can prove nothing which is interesting to the religious mind. Unfortunately, however, these "acts of God" are exactly what the *simpliciores* demand.

We cannot follow St. Thomas quite all the way; but essentially the *philosophia perennis* is the philosophy of Christianity, and such books as Mr. Mascall's may be read with profit by those who have a deep distrust of popular irrationalism, and who wish to base their faith on sound logical arguments.

W. R. INGE.

The Bhagavadgita and Modern Scholarship (Interpretations of the Bhagavadgita, Book I. By S. C. ROY, M.A., I.E.S. (London: Luzac & Co. 1941. Pp. 279. 5½ × 8½. In paper cover. Price 7s. 6d.)

The problems with which a closer study of the Gītā is concerned are grouped under three headings: (1) textual and exegetical problems within the Gītā;

(2) the question of the position of the Gītā within the great encyclopaedic Epic of India called the Mahābhārata; (3) the relation of the Gītā to the Bhāgavata religion.

The investigation proceeds by way of a critical review of modern attempts to settle these various problems. A good many such attempts have been made since a systematic historical study of Indian philosophy and religion, including the common background of both, began in Europe and America and found its echo in India itself. If the analytical science of the West has sometimes overshot the mark, the opposite has been the case in the East, and our author has succeeded in a happy blending of the two, critical where criticism was invited and wisely restrained in the case of indigenous tradition. He has undertaken his task with skill, scrutiny, and assiduity, drawing on an immense fund of erudition. His clear ratiocination combined with befitting enthusiasm makes the book fascinating reading.

It is impossible here to give the results arrived at in detail. Only a few outstanding points deserve special attention. "The text of the Gītā has remained substantially unaltered" (p. 55). "The Gītā was not written by a sectarian poet for a particular sect" (p. 56). "The Gītā was, in its origin, a distinct and separate treatise, belonging to the class of older (metrical) Upanishads which was afterwards appropriated by the editor of the Mahābhārata in course of the subsequent stages of the development of the latter" (p. 144). "The Mahābhārata and the Gītā have both received their Kṛṣṇaite character at a later period and Kṛṣṇa himself has played the role of a human hero and a divine incarnation in successive stages of the development of the Epic" (p. 151). "Far from the Gītā being a product of Vaiṣṇava religion, it is the fountain-head from which Vaiṣṇavas and other sectarian worshippers drank the nectar of a spiritual, rational, ethical, devotional, catholic, liberal, and universal religion based on philosophical wisdom" (p. 244). "The Gītā was composed by a Ṛṣi of the Upanishadic age who must have assimilated from his environment all that was best and noblest in the Vedic and Upanishadic lore. . . . He was evidently a Reformer of the religious and social life of the contemporary Vedic-Aryan as well as non-Vedic and non-Aryan people" (p. 245).

Mr. Roy is too critical and broad-minded a scholar not to recognize that his own conclusions are not infallibly final, and in the further books on the problems of the Gītā which he has promised us, he may even arrive at modifications of his theory. It must, however, be said that he has advanced a hypothesis and strengthened it with arguments, clearly reasoned and systematically arranged. He has given us an estimation of the Gītā which may be called both historically correct and in harmony with the character of the "Song Celestial" as a treasure-trove of typically Indian religious mysticism and unassailable moral and rational philosophy.

W. STEDE.

The Nature of Explanation. By K. J. W. CRAIK. (Cambridge University Press. 1943. Pp. viii + 123. Price 6s.)

Dr. Craik's main thesis is that "thought is a term for the conscious working of a highly complex machine, built of parts having dimensions where the classical laws of mechanics are still very nearly true, and having dimensions where space is, to all intents and purposes, Euclidean. This mechanism has the power to represent, or parallel, certain phenomena in the external world as a calculating machine will parallel—and so be able to "give an account of" or "predict" most easily—those phenomena whose mechanism most re-

sembles itself" (pp. 94–95). Explanation, then, is just a special case of causal relation. The author's argument seems ill-designed to establish his conclusion. As his avowed intention is to develop a hypothesis of the scientific type capable of detailed application to fact, one would have supposed he would follow this up with a study of how nervous or other bodily processes parallel thought processes. But Dr. Craik shows no interest in this. He goes so far as to suggest that examining actual nerve processes is less likely to yield information than examining large-scale models of combinations of nervous processes (p. 113). This is an impossible suggestion, because the nervous impulse, the basis of everything, is an "atomic" process confined within certain dimensional limits, probably indicated by the biggest and smallest existing nerves. A large-scale model of a nerve cannot work any more than a large-scale model of a flea can jump, for the flea's jumping powers depend on its small size.

Dr. Craik has a good deal to say about models and quotes interesting cases of parallelism between the working of machines and thought processes. However, since these machines are all human inventions fulfilling human purposes, they are all symbols used by thought, equivalent in their way to words or mathematical signs. Parallelism between thought and machines surely points, not to Dr. Craik's conclusion, but to the converse Kantian one—reason has insight only into that which it produces after a plan of its own.

The most interesting things in the book are criticisms of some modern physical theories and a defence of causality in the traditional sense.

A. D. RITCHIE.

Copernicus. By SIR HAROLD SPENCER JONES, F.R.S. (University of Wales Press. 1943. Pp. 30. Price 1s. 6d.)

From Copernicus to Einstein. By HANS REICHENBACH. Translated by Ralph B. Winn. (New York: Philosophical Library, Inc. 1942. Pp. 123. Price $2.)

The first of these books is the Selby Lecture delivered in Cardiff in 1943 by the Astronomer Royal, and commemorates the four hundredth anniversary of the death of Copernicus and the publication of his book. It contains a sketch of the life of Copernicus, a man of many interests and activities: an account of astronomical theory as Copernicus found it, showing that the Ptolemaic system itself provided a useful hint: a precise statement of Copernicus's theory and his arguments for it: how it struck his contemporaries: lastly a brief outline of later developments. The whole is a model of what a commemorative address should be and a model of historical method, showing us how astronomical problems were seen at the dawn of the modern epoch.

The other book is an account of the development of physical cosmology and the concepts of time, space and motion, from the first revolutionary change introduced by Copernicus to the still more revolutionary changes introduced by Einstein (but no further). In spite of the translator's clumsy English, it is on the whole a good and clear account. The exposition of space and time in the last chapter is obscure in places and once or twice apparently confused. This may be the translator's fault, but there are some historical errors which must be the author's. He says that Copernicus thought the solar system occupied practically the whole space of the universe (p. 22). This is contradicted by one of the quotations from Copernicus in the Astronomer Royal's lecture. Copernicus would have been very stupid had he not seen that on his theory of the earth's motion the apparent fixity of the fixed stars proved them to be far outside the solar system. A trivial, but irritating, mistake is the repetition of the baseless legend about Newton having to wait

twenty years for a sufficiently accurate value of the earth's diameter on which to base his calculations. A. D. RITCHIE.

Francis Bacon on Communication and Rhetoric: or The Art of Applying Reason to Imagination for the Better Moving of the Will. By KARL R. WALLACE. (The University of North Carolina Press. 1943. Pp. xi + 277. Price $5.)

Mr. Wallace, the author of this careful and exceptionally interesting study, is Associate Professor and Head of the School of Public Speaking in the University of Virginia. His concern with communication and with rhetoric may therefore be reasonably presumed to be practical as well as historical and theoretical. Here, however, he is occupied principally with the history of ideas, and has produced a book upon Bacon which deserves close attention from all who have any interest in Bacon's life and achievements.

The delightful subtitle of the book comes from the *Advancement of Learning* (*Works*, III, 49), where it is written: "The duty and office of Rhetoric is to apply Reason to Imagination for the better moving of the Will." This of itself shows how Bacon's (largely classical) conception of rhetoric involved a background and to some extent even a foreground of logic, psychology and ethics; and Mr. Wallace accepts the responsibility of developing that conception of the subject from Bacon's writings. So the first six chapters of the book (that is, more than half of it) are very largely a philosophical discussion, and reach a very high level in that genre. To bring this about Mr. Wallace had to collect Bacon's views on rhetoric from hints and small parcels of discussion scattered through his writings, and had to put them together in a connected narrative both explanatory and critical. No one who has not spent years upon Bacon could say with authority precisely how well this difficult task has been performed. I am not a Baconian authority in that sense, but, being not altogether uninformed about Bacon, I consider myself entitled to express the opinion that Mr. Wallace has done an admirable job, not the least of whose merits is its *ars celare artem*. The reader is eased, as he should be, and the author's pains and trouble are off the record.

The last three chapters of the book deal with the relation between Bacon's conception of rhetoric and the classical tradition, the beliefs of his contemporaries and the theories of his successors (chiefly English). Since Bacon himself was a magician in his use of words, there are special dangers in speculating on the question whether English rhetoric should have followed his lead with greater devotion than it actually showed. It is difficult even to follow the inimitable. All the same, the general question of the office and true intent of rhetoric has perennial importance and raises the practical question whether the dropping of rhetoric from the curriculum of the liberal arts in modern Britain is really an advance on the mediaeval and Elizabethan practice. The subject to-day has little more than a vestigial existence in our Universities, surviving in the title to some chairs, e.g. "Logic and Rhetoric," or "Rhetoric and English Literature." I have read few books which raise the question more acutely whether a return to an older practice might not be desirable.

The book ends with a valuable bibliography which includes a fascinating and very informative list of works on rhetoric printed in England in the sixteenth and seventeenth centuries, and a less complete but invaluable list of Continental work on the subject during the same period. I have not enough technical knowledge of the printer's art to venture to say quite how good the printing of this book is, but it seems to me to have reached an unusually

high standard for either side of the Atlantic. The chapter headings are particularly pleasing, reviving a manner not infrequent in mid-Victorian times but now seldom used. The book is also very well bound. Wherever one opens it, it remains open with uniform and admirable docility. JOHN LAIRD.

Arts and Poetry. By JACQUES MARITAIN. Translated by E. de P. Matthews. (New York: The Philosophical Library. 1943. Pp. 104.)

Twenty-one pages of this book are given to somewhat lyrical appreciations of three painters, Chagall, Ronault and Severini. Twenty-seven are given to so-called "Dialogues" that are in fact elaborate aphorisms about artists and writers, of which the shortest is: "Poetic purity is a mineral purity. Purity is a human virtue."

Thirty-four are given to an essay, "The Freedom of Song," whose burden is summed up thus: "All works of art are made of body, soul and spirit. I call *body*, the language of the work . . . the whole of its technical means; *soul*, the operative idea . . . born of the abundance of the heart; and *spirit*, the poetry. . . . There is 'magic' in a work when the spirit transcends the soul. . . . A work can be beautiful through the body, or through the soul, or through the spirit. And there is a fourth line which is no longer precisely beauty, but grace, in the sense in which Plotinus said that grace is superior to beauty; and in this line it is the magic of the work that is important." The style is one which must obviously have suffered by translation, however skilful. The matter presupposes a fair acquaintance with contemporary French art. E. F. CARRITT.

Why Exhibit Works of Art? By ANANDA K. COOMARASWAMY. (London: Luzac & Co. 1943. Pp. 148. Price 6s. net.)

The author of these essays is already well known as the interpreter-in-chief of Oriental art to the Western world. It is not surprising that when he ascends from the exuberance of Asiatic inventiveness in painting and sculpture to the broadest generalizations, he should propound a doctrine familiar to the Middle Ages and to contemporary neo-scholastics, who have reclaimed art from the layman as a material embodiment of religious ideology. He relishes the scholastic terminology, which inherited from Aristotle the theological distinction between "form" and "matter." "Form," in this sense, is the subject portrayed by the artist and communicated to others by the work of art; "matter" is the medium which the artist fashions to represent his ideas. Art is therefore defined as "the material embodiment of a preconceived form." And beauty is tantamount to perfection, or the suitability of an artefact to the purpose for which is was constructed. The discomfiture of the humanists and psychologists is completed by the application to art products of these tenets of rational religion.

The poverty of a theory which only catches religious art in its net, and allows the secular art that has flourished in Europe since the Renaissance to elude it, is obvious. But it may even be asked whether the essentially aesthetic quality of religious art resides in its doctrinal or symbolical content, and if those who do not believe in Catholicism or the religions of the East cannot appreciate the art and poetry produced by the Christian and Oriental religions as fully as their most orthodox adherents.

LISTOWEL.

Proceedings of the American Catholic Philosophical Association for the year 1942: "Truth in the Contemporary Crisis." (Catholic University of America, Washington, D.C.)

Those familiar with previous volumes of these Proceedings will be aware that the Catholic Philosophical Association can be relied upon to present in a clear and unpretentious way certain aspects of the Scholastic doctrine, with especial reference to contemporary needs. In an interesting paper Dr. von Hildebrand traces the "dethronement of truth," so characteristic of the totalitarian state, to the spread of subjectivism and relativism, though he does not hesitate to fix upon the shoulders of the later Scholastics some measure of blame. "Even in facing any new valuable insight, one was more concerned with the question whether this can already be found in Thomism than with the truth of this insight. Moreover, many Catholic philosophers reduced their philosophy to a mere communication of abstract formulas to their pupils . . . instead of establishing a real intuitive contact with being and engendering a real philosophical eros, the thirst to find truth. . . ." Even in this present volume we have an uneasy feeling that some of the contributors are, at least subconsciously, concerned to justify Scholasticism by an almost pragmatic test. Those who are interested in the philosophy of Scotus will find a useful discussion of sources for his life and a summary of the evidence for or against the authenticity of the different works ascribed to him. The volume shows signs of a over-hasty preparation for the press. Misprints are not infrequent. T. CORBISHLEY, S.J.

Polyphonie. By DR. CHARLES DE MONTET. (Neuchatel: Editions de la Baconnière. Pp. 259. Price unknown.)

The problem treated by Dr. de Montet is the problem of the One and the Many, Permanence and Change, Appearance and Reality, considered from an original angle, in the light of a general conception of the activity of Mind, which has something in common with both modern French Idealism and modern Vitalism on the one hand and with contemporary Existence philosophy on the other.

The first part of the work is theoretical in character, the second being devoted to a verification of the general thesis in terms of a detailed analysis of human experience.

In the first part the problem is introduced. How can we explain the fact that all conceptions, laws, interpretations, and ideals are subject to constant revision? The author finds the answer in the *principle of relation*, the condition of all existence. All things are related and at bottom inseparable. But the relation which is at the foundation of all existence is not the uniform, constant, causal relation uniting directly two clearly defined and isolated terms; for if life consisted of such relations, both life and knowledge would be clear and logical, which is belied by the fact that knowledge is subject to infinite revision. On the contrary, the relation which constitutes the foundation of the real is variable and mediate, uniting a multiplicity of heterogeneous and inseparable elements. Life and reality is a process of changing relations.

The *écart* between the laws, concepts, ideals of reason, fragmentary and incomplete on the one hand, and the inexhaustible totality of real virtualities on the other, characterizes the structure of existence. Indeed it is the condition of consciousness, reason and morality. For the former are only possible in a universe of change; rules of reason and moral imperatives are exigencies

and expectations and can exist only on the condition that they are never fully realized and remain merely potential.

The analysis of conception and perception confirms this view. Such operations imply choice, distinction of elements within an ensemble of related virtualities. In both processes there is implied separation of some finite content from what is in essence an infinite process transcending all particular contents.

In the drama of life the principles of uniformity and of change play a complementary role. The effort to reduce change to identity and the many to the one is the condition of all practical activity; and indeed it is in making this effort that further diversity and correlation are revealed. At the same time the revelation of the inadequacy of the principle of uniformity brings in its train the revision of established conceptions; and thus the process of *verification*, the making and unmaking of new relations, continues in conformity with the law of change which is the law of life.

From this general statement Dr. de Montet proceeds to a discussion of Thought and Change. He denies that thought is a purely individual function, and defines it as activity rather than content, mobilization of virtualities in which the individual participates. Similarly, the self is at a point of intersection between the one and the many, the identical and the changing, existing only in and through its changing relations with others.

Turning to the problem of Thought and Action, a similar correlation between action and change is made. Here again the attempt at a causal explanation of human acts in terms of the principle of uniformity breaks down. Actions are not reducible to any specific motives, thoughts or feelings said to determine them. Psycho-analysis, by its revelation of repressed factors, has made it impossible to assign to any action a definite cause. Action, then, finds its true source in change, in the heterogeneity of virtualities and possibilities which constitute the real and which in the last resort are undefinable. Thus all particular and individual thoughts and actions are actualizations of infinite possibilities and, as such, essentially ambiguous and irreducible to specific causes or motives. Language furnishes the chief instance of such actualization. Here again there is no uniform or causal concordance between thought and language, but the actualization of dynamic virtualities, as is confirmed by the virtualities of musical and poetical expression.

Dr. de Montet treats a final question: whether change is refractory to law. He believes, on the contrary, that law is involved in change, uniformity in variability, the one in the many, and that this legitimates the processes of reason, comparison, and judgment. The multiplicity which constitutes the real is of the same essence and does not exclude resemblance. Like William James he finds in Pluralism a place for identity. Thus, for example, in the domain of human behaviour the individual acts as others do, but at the same time as himself. Language too confirms this, for although having its source in change, it is yet the contrary of anarchy, exhibiting within the limits of change both law and order.

In conclusion, the structure of the real is *polyphonic*; beyond all categories of good or evil, truth or falsity. It exhibits, however, law within the limits of change. Particular laws and concepts, all individual acts and selves, are manifestations or actualizations of infinite and common possibilities; all are embraced in the one supreme principle which defines the structure of life, the principle of variability. This reality is the "psyche," spirit or mind conceived not as content but as activity.

The second part of the work is devoted to a verification of the preceding general thesis by means of an analysis of human experience. The first chapter

treats of sincerity, and both in its spirit and in certain of its conclusions shows the influence of contemporary Existentialism. Sincerity implies a judgment of value or supposition of uniformity, namely that a state of mind is characterized by a certain specific quality. But no state of mind or sentiment is reducible to a particular content. All are ambiguous by virtue of the polyphonic structure of consciousness. And this inadequacy of content destroys the claim of any value such as sincerity to be more than an unrealizable exigency.

The inadequacy of content to express the polyphony of consciousness is attested by the fact of "transubstantiation," whereby we attribute one name to a multiplicity of sentiments and vice versa, as for instance love, which includes affection, jealousy, indifference, etc.; by the fact of human behaviour, which is never strictly equivalent to the sentiment expressed; by the variability of intentions; by the absolute necessity in practical life of acting contrary to avowed ideals of morality; by the lack of concordance between acts and motives. All these facts indicate that variability is the *structural law* of life and that the latter constitutes a multiple, correlated and changing whole transcending any specific content or value.

Linked with the problem of sincerity is that of *comprehension*. Communion of selves is inexplicable in terms of causal relationship. Knowledge of self and of others is essentially non-causal and at bottom irrational, by reason of the fact that no self can be reduced to stable identity, but constitutes a fragile actualization of common virtualities in which he participates. The communication of selves with each other is not a relation of the causal type between clearly defined terms, but communion in a field of possibilities common to both. The terms faith, hope, and charity express precisely this variable and non-causal relationship.

The following chapter is psychological in character, and in it Dr. de Montet draws on his specialized knowledge of medical and pathological psychology. Psychology as a science, he maintains, originates in the analysis of mind into a series of autonomous powers, will, reason, sensation, etc. for its further understanding. None of these psychological entities, however, has any substantial existence nor can be shown to act, as the psychologist claims, in a constant and uniform manner. On the contrary, the mind can be shown to transcend all isolated faculties, contents, and classifications. This is borne out by the study of abnormal psychology. The strength of an obsession or complex derives not from the content of the obsessing idea, but from the importance attributed to it. Such obsessions therefore are on a plane with normal concepts, ideas, and sentiments in being actualizations of virtualities. In other words, the radical distinction between normality and abnormality, value and non-value is faulty. Life is not exclusive of any type of manifestation, and manifestations, normal or morbid, are inexplicable in terms of strict causality, as they cannot be reduced to any specific cause or condition.

The analysis of sensation confirms this view; as abnormal sensation indicates, there is no strict equivalence between sensation and stimulus. Nor can sensation be explained causally, as is testified by the variety and contradiction of the various scientific explanations advanced, e.g. Freud, Adler, and Jung. Here again sensation, in Dr. de Montet's view, is the actualization of general virtualities transcending individual consciousness.

In particular, the attempt to explain the mind causally shows itself insufficient in the case of homosexuality. Explanation in terms of sexuality fails when it is observed, for instance, that cases of inversion have children. Indeed Dr. de Montet rejects the Freudian thesis and refuses to accord the prime role to sexuality. He believes that there is no ultimate distinction between

normal and abnormal sexuality and that in both cases we are confronted with individual and varying realizations of ultimate virtualities subsumed under the term life.

The conclusion is that no clear distinction exists between the normal and the pathological and that life transcends such classifications; and he adds that psychology as a science dependent on such concepts is capable of being transcended by a superior viewpoint.

Dr. de Montet has interesting remarks to make on psychiatric treatment. Believing that the arbitrary distinction between the normal and the pathological is dangerous and that no symptom, normal or pathological, is explicable in terms of specific causes, he considers that ordinary diagnosis of disease, with a view to the tracing and removal of specific causes, is inadequate. He would assimilate the role of the doctor to that of the friend, and treatment to what he has termed "comprehension." The latter would involve, like the communication of selves described above, contact between patient and doctor, and if need be others, with a view to the establishment of dynamic relationship between them and a common participation in the virtualities of thought and feeling which are the common source of individual consciousness and manifestations. He has on this point interesting remarks to make on the method of the American psychiatrist Ira Weill in his treatment of abnormal children.

The third chapter, entitled "Conflicts," discusses relations between individuals and between nations. Many of his remarks are inspired by the present war, and our praise and gratitude are due to him for lifting the conflict on to a superior plane, revealing it against the background of the eternal life of the Spirit, and offering us grounds for hope that beyond the present struggle of opposites new syntheses will be possible and the destiny of man fulfilled.

All values and contents are fragmentary and fragile, life and activity alone are constant. The object of love changes, ideals are unfulfilled, hopes unsatisfied; constant infidelity to his moral values is the lot of mankind; but life with its change is the ultimate justification of what seems the ruin of morality.

Conflicts between parties, creeds, and nations are due to the clash of values conceived as absolute. But no such conflicts are exclusive; they must be borne courageously; values must be fought for; but philosophy encourages the conviction that opposition will not be final; life itself reconciles the opposites, and the Spirit, beyond its temporary manifestations, marches on through new clashes, bloody or peaceful, to new expressions. For life is change, relation, and communion; no single creed or party is ultimately privileged, although it is the condition of human existence that each conceive itself as such. And beyond all temporary values is the source and condition of them all, life itself. This passage, which bears a Nietzschean stamp and is aimed at a somewhat similar "transmutation of values," marks an attempt to maintain the things of the spirit in a world torn by a conflict between its manifestations.

A short chapter deals with Space and Time and their relativity as appearances. It distinguishes the uniform time of the scientist and the *temps vécu* or time of experience. Within the latter it makes a further distinction between physiological time, the time of the human organism, which varies according to the different parts of the latter, and the time of consciousness, equally variable from person to person and moment to moment. Time and space are "suppositions" or appearances beneath which lies the reality of spirit defined as the coexistence of changing and multiple elements.

The final chapter treats of religion and serves as a conclusion. As might be

expected, the author denies any finality to dogma, symbols or rites, which for him do not constitute an essential element of religion. Religion he conceives as the life of the spirit, or life in short, participation in the changing process of the real. Prayer he defines in terms of faith in unknown possibilities of mind. The Agony and the Crucifixion he interprets as a symbol of the common destiny of man, subject to Time, limited to fragmentary appearances and separated, as a self, from the living and never completed Whole. God is the name we apply to the "psyche" from which all selves and appearances spring and in which they participate.

There is no privileged Church or Temple; all are one in the temple of the spirit, in their communion in this life of the principle of change, the *anima mundi* or realm of common virtualities and correlations which transcend all particular contents and individual consciousness.

This conception of life and the universe, which resembles, as Dr. de Montet underlines, that of the French poet and thinker Paul Claudel, draws on many sources—Spiritualism, Vitalism, Neo-Hegelianism, Existence philosophy, Jung, Bergson, etc. The value of the work as a whole is in its defence of the life of the spirit, combined with a rich analysis of human experience, which takes into account the irrational as well as the rational, the abnormal as well as the normal, and seeks to create a synthesis of multiple and diverse elements as a basis for a revised concept of psychology and a general metaphysics.

IAN W. ALEXANDER.

My Self, My Thinking, My Thoughts. By K. W. MONSARRAT. (Liverpool: University Press. 1942. Pp. ix + 140. Price 7s. 6d. net.)

Mr. Monsarrat is a surgeon with exceptional faith in the practical value of epistemology and the persuasive power of a dry disquisition. He believes that if "the human millions" are to think correctly and to choose wisely, they must first study the nature of knowledge. To persuade them to embark on this enterprise, he has written a book about his own thinking and thoughts.

He has many bees in his philosophical bonnet, and his disquisition (mixed, as it is, with scraps of speculation about extraneous matters) is somewhat chaotic. Nevertheless, it is possible to outline what he attempts. He begins with three "primary affirmations," which he regards as neither needing nor being capable of proof. These are that he is active, that he is related to what he does, and that he endures in time. He goes on to consider his sensa, his images, his ideas, his memory, his reason, and the relation between his mind and his body, which he regards as fundamentally alike in that each is an assembly of powers. He concludes by emphasizing the importance of endopsychic and social concord, the necessity of realizing that the world can be improved only by our own rational actions, and the futility of relying on any "doom-and-rescue fable" or of "waiting vaguely for the work to be done by some influence that is the product of our abstraction and fantasy."

In the course of this argument, many things that have long been matters of serious debate among philosophers are quickly decided. Thus any attempt to draw a radical distinction between mind and matter is described as "muddled metaphysics" and as "an artefact of our unreason"; and the view that propositions like $7 + 5 = 12$ are synthetic, which was given so much importance by Kant, is curtly dismissed as "one of the curiosities of Logic-teaching": it arose simply through "neglect of the significance of the plus sign." Mr. Monsarrat's most confident (and most cherished) conviction is that which he expresses in the self-contradictory statement that the pursuit of truth is a nonsensical and fatal delusion; it derives from his view that no one comes

into contact with anything but himself and his own sensa and images, and that no one can do more, in the verification of his beliefs, than to make sure that they are congruent with each other and with his self's primary affirmations. This conviction, when he remembers it, leads him to refer, not to a cow, but to his "cow-image"; not to the thalamus, but to "that part of the brain-image that is named the thalamus"; not to facts and falsehoods, but to "actual" and "fantastic" images. But he is not always on his guard, and external reality keeps breaking in. When he is not carefully straining his language to suit his subjectivism, he writes of people and things as though they did not consist of his thoughts about them, and, in spite of his denial of objective truth, he refers to T. H. Huxley's "*mistaken* reading of history" and to someone else's "*false* reasoning" (my italics).

Besides being pervaded by doubtful philosophy, this book is even more handicapped by its defective psychology. Mr. Monsarrat's method of studying the mind recalls Ward, Herbart, and the nineteenth century. He relies on armchair inspection and analysis of his own mental processes, combined with *a priori* speculation. He makes no mention of the facts that have been revealed by experimental and clinical psychology. The result is an essay on epistemology from which we can derive no more benefit than we should derive from an essay on endocrinology that took no account of the relevant researches of the past forty years. REX KNIGHT.

Lamps of Anthropology. By JOHN MURPHY, D.Litt., D.D., Emeritus Professor of Comparative Religion in the University of Manchester. (University of Manchester Press. 1943. Pp. ix + 179. Price 7s. 6d. net.)

Though the essays in this book were written at various times and for different occasions over a considerable period, they make a well-connected and readable book, pertaining as they all do to the development of the human mind and that of moral, religious, and social institutions, and display throughout the light shed on these developments by Anthropology.

Briefly, the author sees this development as a series of four ever-widening horizons, the Primitive, the Tribal, and the Civilized, out of this last arising the Prophetic, that wonderful age in the last millennium before Christ to which we owe the origin of the best and highest developments of the human spirit.

His use of the word "horizon" is illustrated by the homely remark of the Scottish shepherd that his "cottage was in the centre of the surrounding district," and he explains the cultural horizon as "all a man can see when he looks out upon his world as he knows it, his group, his tribe, his nation or his civilization."

The Primitive Horizon is that of the simplest groups of hunting and gathering peoples, past and present, with their mainly semi-instinctive, perceptual, and concretistic way of thinking. The larger and more closely organized Tribal societies show a more developed imagination, and are deeply involved in custom, which is their law and ethics, and held by the solidarity of the group. Out of this in the great river valleys of antiquity develop the beginning of the Civilized mind, when people begin to realize their power over what they have accomplished, to organize their resources, and in specialization of work to realize individuality. The pauses in steady work which occur in an agricultural civilization give opportunities for thought about directions and values which the older hand-to-mouth life denied. Finally, the growth of the great civilizations, trade and commerce, the

increase in power of the nomads of the steppes, getting in each other's way, and consequent wars and hybridization of cultures, bring about the great period of the last millennium before Christ, when the Confucians in China, the Buddhists in India, the Prophets in Israel, and the Scientists and Philosophers in Greece lay the foundations of freedom of thought, and of ethical and religious values.

Corresponding to these horizons, the author sees animism coming out of the more rudimentary animatism, then polytheism in the early civilized horizon tending towards monotheism, and attaining it in some civilizations in the prophetic.

As a broad view and general introduction to the student of comparative sociology and religion, and especially in its presentation of the interlocking of Philosophy and Anthropology as complementary studies, it is an admirable work, giving as it does a clear plan for dealing with an enormous mass of material, and a sound short bibliography on which to start.

T. K. PENNIMAN.

Early Pythagorean Politics in Practice and Theory. By E. L. MINAR. (Baltimore: Waverley Press, Inc. 1943. Pp. x + 143. Price $2.)

This is a thorough investigation of the political activities of the religious and social clubs in Magna Graecia which honoured Pythagoras as their founder. Perhaps the nearest historical parallel is the ascendancy of Calvin at Geneva. The two great names in the school are Pythagoras himself and, much later, Archytas, to whom it may be that we owe our Plato, since it was the intervention of the Pythagoreans of Tarentum that procured the release of Plato from his detention at Syracuse. Pythagoras (or Pythagores as he no doubt called himself) was a native of Samos, not a Dorian; he is said to have been a disciple of Anaximander. Of his genius as a mathematician there can be no doubt. His famous rule of life certainly owed much to the Orphics, but the patron god of the Pythagoreans was Apollo, not Dionysus. Some have found Indian affinities in his philosophy; some Indians have ingeniously maintained that he was a Hindu sage, whose affectionate disciples called him *Pitta-guru*, "father teacher." Urwick has traced the resemblances between Plato and Indian philosophy; others have found Oriental influences in Plotinus. The true conclusion is that so-called Asiatic philosophy and religion are no strangers in Europe. The fantastic theory of numbers, developed by Pythagoras, "runs like a golden thread through the thought of Plato," says Professor Minar. It has had a long history, by no means entirely "golden."

Dicaearchus says that the best known doctrines of Pythagoras were that the soul is immortal, that it passes into other bodies, that things happen in cycles, and that all living beings are akin. The soul is joined to the body as a penalty; another doctrine which has had a great history. Pythagoreanism was an attempt to intellectualize and moralize the Orphic religion; except as a mystery-cult it had no long life, until it was revived as a precursor of Neoplatonism. Professor Minar need not have accepted the absurd statement that Sybaris in 510 B.C. put 300,000 men into the field against Croton. But even Mommsen (e.g. *Provinces of the Roman Empire*, vol. 2, p. 222) did not realize how utterly worthless ancient statistics, whether of armies or massacres or populations, are.

W. R. INGE.

PHILOSOPHY

Freedom Forgotten and Remembered. By HELMUT KUHN (University of North Carolina Press, 1943. Price $2.50.)

The author of *Freedom Forgotten and Remembered* is a German who left his country some time after the Nazis came to power and is now a member of the philosophy department in the University of North Carolina; and his book is the result of his reflections on the Nazi revolution. There may seem to be nothing remarkable about that. German refugees have expounded the secret of Hitler and explained his success so many times and in so many ways already that one more attempt will scarcely excite comment. Yet it would be a pity if these considerations prevented recognition of the merits of the present work. *Freedom Forgotten and Remembered* is very different from the average run of books about Nazi Germany, with their stale recitals of familiar facts and unconvincing explanations; it is, at the lowest estimate, a bold and well-executed attempt at a unified interpretation of a baffling series of events, presented with a clarity and, despite the handicap of a foreign tongue, eloquence of exposition which may well excite envy. And to those who find the author's thesis at all convincing it is much more: not only a clue to events in Germany but a call to the democracies too, a reminder that their state is not so gracious that they are altogether free from spiritual disease. Whether we agree with its analyses or not, the book most certainly deserves to be read.

The ideal of Western Civilization, according to Mr. Kuhn, has been that all should live a life of free responsible choice, based on rational apprehension of good and evil. Behind this ideal was the widespread acceptance of the main doctrines of Christian theology and metaphysics, with their recognition of the value of the individual. Despite this, the fight for freedom has never been easy, and because of its responsibilities men have sometimes been only too willing to surrender it once attained. It was such a flight from freedom that Germany made in 1933. But in the case of Germany the turning away from freedom was particularly violent and particularly thorough: not only did she embrace a life of disciplined direction from without, but she further supported it with a new set of fundamental beliefs, utterly at variance with the Christian tradition. And indeed it is this creed, passionately propagated as it is, which explains more than anything else the remarkable success of the Nazis with the German nation despite the poverty of their intellectual apparatus and the blatant inconsistencies of their actions. The truths of Christianity had faded from the German mind; the Nazi creed, however unsatisfactory, filled a genuine gap. Once that is realised, both the fact and the acceptance of all the horrors of the Nazi regime become more credible, if not more excusable.

Yet the transition from the ideals of Western Civilization to those of the Nazis is such a violent one that one would have expected more resistance to it, at least on the part of the German intellectuals and respectable classes. Why did the Germans give themselves up to Totalitarianism? They did it, Mr. Kuhn answers, in a mood of despair occasioned by the sufferings and humiliation of defeat. The action itself cannot be explained, since it resulted from free choice, but its possibility can. More than one factor had prepared the minds of the educated German for acceptance of the Nazi philosophy. Thus, leaving aside the decline of belief in religion and scepticism about moral standards, the Historicism which derived from Dilthey and the *Existenzphilosophie* which owed its origin to Kierkegaard, the two fashionable academic doctrines of the '20s, were both hostile to the life of rational choice, the former because it was deterministic, the latter because, though admitting choice, it denied its rationality. At the moment of Hitler's triumph these opposites came together to provide for the academic mind a justification for accepting the *fait accompli*: Historicism urged that the revolution must be

acquiesced in just because it had happened, the Existentialists that it was desirable because it offered something like that irrational leap into the "totally different" of which Kierkegaard had spoken. Thus were the minds of the cultured in Germany easily seduced from their old allegiance, their positive support of which had in any case long declined. The result was that when the testing time came the only educated group which made any effective protest against the new barbarism was the Confessional Church under Niemoeller, which in a brief moment of insight recognised and proclaimed the Nazi movement for what it was.

What then of the respectable classes? Mr. Kuhn argues that to be respectable is to fall in with the accepted traditions of your society. "Respectability," he says (p. 62) "at all times and among all nations follows might. Respectability is a secondary phenomenon, concomitant of the faith embodied in a social organism. After the faith is gone, and with it a cause worth defending, its remnant, greatly though it resembles a solid structure, is but a whited sepulchre. The rebel, once he is successful, becomes respectable to the respectable people." Respectable people in Germany were at first horrified by the extravagancies of the Nazis; as time went on they all compromised, with greater or less grace, with their former enemy. The dominant traditions in German society had changed.

Having dealt thus with some aspects of the historical side of the 1933 revolution, Mr. Kuhn passes in the second part of his work to its essential nature. He approaches the question through a further consideration of freedom as the ideal of Western Civilization. The basic liberty for the western world is freedom of conscience, and freedom of conscience, whether we like it or not, was originally claimed on the strength of religious convictions. With the growing secularization of the modern consciousness the roots of freedom were forgotten. Positivist philosophers, insisting as they did that only "facts" were real, that transcendent ideals were an illusion and that passion was to be avoided, unconsciously undermined the cause of liberty, though their optimism about the future belied their own doctrines. It was Nietzsche who first rejected the Christian tradition with his eyes open. "Unlike the positivists in the democracies, he was not forgetful of the fact that God, if anything, was the object of Passion—in other words, that in the belief in God an absolute hope and a total fear were involved" (p. 120). Nietzsche transferred the hope and fear to Man, and mobilized the passion behind his will to power. It would be absurd, Mr Kuhn argues, to see in the Nazi movement any direct persistence of Nietzsche's philosophy: Nazi sophistication does not reach that level. But for all that it is clear that the effect of Nietzsche and the succession of mock prophets who followed him was to leave a vacuum in the German mind; and this the Nazis were quick to fill. They had realized the appeal of true religion, which is, in the author's terminology, a "logic of passion"; and they offered their own logic of passion, their own catechism, as a substitute. The attraction of this surrogate lay in its immediate practicability; the millennium was just round the corner, the eternal enemy lived next door. "Does this sound unconvincing because the answers of the Nazi faith were crude, an outrage to both common sense and decency? But no starving man is fastidious. Or because the recommended practice was cruel and violent? But a mortally sick man will not expect recovery through a mild homoeopathic cure" (p. 144). The mind of Germany was mortally sick, and the Nazi cure was accepted in default of any other.

So much for the German malady: what of the spiritual state of the democracies? In the concluding portion of his book, Mr. Kuhn stresses the dangers we face and makes a powerful plea for the revival of belief in the essential

truths of religion. The two fundamental dogmas of democratic thought—the sanctity of the individual and the instrumental character of the state—both rest ultimately on the acceptance of religious ideas; and with the increasing disregard of those ideas it becomes increasingly hard to communicate them to fresh generations. The strength of the appeasement movement before the war was a striking proof of how far things had gone. "In the modern liberal state, the basic principles largely . . . survive as ingrained habits. . . . As the liberal mode of life and the liberal conception of the state are challenged it becomes imperative to re-translate habits into principles. The implicit belief must be activated into a living faith" (p. 169). The main struggle for democrats is no longer against the privileged classes but against the totalitarian enemy; and to triumph we must know our cause. To do that, the author thinks, we must revive belief in religion.

The reader will realize that it is impossible in a review of this length to do justice to a book of this type, and I must warn him that many excellent incidental points (e.g. the disquisition on economics on pp. 173–180) have been passed over in silence. Nor can comment be at all adequate in the space available. I should like, however, to make the following notes for what they are worth. (1) In a work with this title one might have expected an explicit discussion of the nature of freedom as it was conceived in the Weimar republic, since that obviously was not without effect on the Nazi triumph. The liberty from which the Germans fled in 1933 was the liberty to do whatever they pleased, without restraints of any kind: a liberty prized above everything else and for its own sake. This is the freedom which Plato describes as typical of democracy in the *Republic*, and it is but a short step from it, as Plato saw, to dictatorship. Mr. Kuhn is far from sharing Plato's view of democratic liberty, but does not explain the position so fully as he might. (2) While the author's analysis of the acceptance of Totalitarianism by the Germans is doubtless sound, it may be questioned whether it offers a general account of the spread of such doctrines. Misunderstanding of the powers of reason, and confusion of its different functions, have surely been of major importance in encouraging that anti-rationalist frame of mind which is so closely bound up with the Totalitarian spirit. The reason in which men put their trust in the time of the Enlightenment was the reason of natural science; and they expected it to produce the answer to every question. When it was discovered that science could only pronounce on the way to attain our ends, not on their comparative value, a tendency arose to disparage reason altogether and say that we must trust to instinct or intuition for all the vital decisions of life. The works of Mr. Aldous Huxley illustrate this process as it has gone on in a particularly civilized and acute mind; its effects in the political sphere are only too obvious. The remedy, if there is one, is philosophical: to formulate and expound a true conception of moral reason. (3) Mr. Kuhn's final suggestion is in effect a revival of explicit belief in Natural Theology, though he has no wish to dispense with sectarian differences. There are two questions we might ask about this. First, are the truths of Natural Theology really the basis of Western Civilization? Is it not rather because they have believed the teachings of *revealed* religion that men have acted as they have? What e.g. is the basis of the faith that every individual soul is of infinite worth if it is not the doctrine that Jesus Christ died for all men? And can Natural Religion rouse the passionate conviction of the rightness of our basic principles which we need? Secondly, passing over these difficulties, what status does Mr. Kuhn assign to the propositions of theology? He seems to suggest that they are matters of *knowledge*, but nowhere raises the philosophical issue involved. Yet surely we can't be told, all this time after Kant, that *philosophia perennis* (Plato,

Aquinas, Descartes, Hegel?) is right and its critics wrong without any attempt to argue the point. There is an urgent need for this whole question to be raised; and Mr. Kuhn might do worse than turn his attention to it next. He certainly shows in this book qualities of understanding and sympathy which would stand him in good stead if he did. W. H. WALSH.

Relational Value Meanings. By B. E. JESSUP. (University of Oregon Press. 1943. Pp. 175. $1.25.)

This substantial work—for there are considerably more than 400 words to the page—is No. 1 of the Monograph Studies in Philosophy of the University of Oregon. It is a worthy pioneer. The author has a very extensive acquaintance with recent and contemporary value-theory, especially American and English, and also in the recent and contemporary psychology of these countries. He pays very full attention to a great many views, always showing a marked desire to be fair, and, for the most part developing a very pretty vein of criticism. The reason I have qualified this final statement is that I think his critical commentaries rather surprisingly unequal. Mingled with predominant good sense and adequate if not always meticulous logic, one finds sudden arbitrary statements of a very different quality.

The author chooses as his motto a saying of Ralph Hidgeon, a Chester monk of the fourteenth century, strongly suggesting that most philosophical discussions about "value" are so much hot air. Since his own conclusion is that the "value of y" always means in the end "I like and desire y," it is not surprising that he should choose such a motto. But he is very patient with "our lore," even when it isn't "sooth."

The book has six chapters. The first gives a general account of the relational situation within which value occurs. The second discusses "value" between "objects" (i.e. where there is no subject), and the third deals with the view that value holds between a subject and an object. The fourth discusses the meaning of subjective value in general, and concludes the main argument. The fifth and sixth, though occupying nearly half the book, are attempts to consolidate the position by explaining what the psychological facts in valuation really are, and by crediting the subjective theory of value with whatever objectivity (e.g. steadiness, coherence, or rationality) it may possess. These chapters make easier reading than their predecessors.

Part of the difficulty of the earlier discussion is due, I think, to the author. Some of his logical divisions seem to me to be more resolute than clear. Thus on p. 5 he enumerates three classes, superficially co-ordinate, although (2) is in fact one of the many subspecies of (3). The difficulty here is aggravated by the circumstance that the author proceeds to include under (3) what could not by definition belong to (3), and is in fact a subaltern of (1).

In a general way I should say of the author's main argument that although very important on account of the thoroughness with which he challenges various authors to translate vague plausibilities into clear statements, its probative efficacy is less than Mr. Jessup thinks. Ultimately he attempts a method of elimination, always dangerous because the list of the proscribed may not be complete. And usually he tries to eliminate by attempting to force his adversaries to pass the baby. If you take A's view I shall force you to pass the baby to B; and so on, till the baby ultimately is dropped. If B, let us say, sticks to the baby or passes it back to A the game becomes more open. I do not think that Mr. Jessup has succeeded in making such tactics impossible. Again, as he himself says about Santayana on p. 158, we should

not be certain that "the failures exhibited specifically in Santayana are necessary failures in the view as such."

Again, what is excluded should really *be* excluded. If subjectless values are dismissed in chapter II, why should so much of chapter III return to a discussion of them? But it does. Survival-value e.g. would apply to honeysuckle (which need not be supposed to be either a conscious or a subconscious subject), and self-realisation would apply to a cabbage or to a logical system unless the "self" in the case is taken to mean a thinking or feeling ego. Many will agree with Mr. Jessup that there can at best be sub-values, conditions of value, not value itself below conscious experience. Many may also agree with him that most accounts of the "values" of or between non-experiences or non-experiencers are hopelessly impoverished. But that is saying, "What you say you mean is not what I say I mean."

Mr. Jessup's central chapter upon "subjective value meaning" becomes very frank at the end, asserting that it is a tautology to say that the valuable is the valued, that the "valued" is just a general name for what A likes, what B likes, and so on, and that an eccentric is an Ishmael who is banished into the wilderness, "and rightly so because his value does not define our goods." In fact, unless "valuable" means simply "*can* be valued," there is no such tautology, and it is to be hoped that *no* value theory justifies such an appalling heresy-hunt as is here suggested.

Mr. Jessup makes an elaborate attempt to prove that pleasure-theories and desire-theories of value are not inimical, but are "co-implicational." In the course of it he makes some remarkable statements as, for example, when he says on p. 137 that, after a good meal "one still desires to have eaten the meal which has been eaten, even while one is satisfied in the state of having done so"—a hopeless confusion of the relevant tenses. In the last chapter he makes what I think excessive claims for the "objectivity" permissible in terms of his subjective theory of "primary" (and indispensable) value. His defence of "reason," for instance, could only succeed if "reason" were the *only* ruling passion. But it isn't. Again, since collections of men cannot feel or desire, and so cannot be valuing subjects, it follows that a man can only "include the interests of others in his own" in so far as he *takes* an interest in them, which is not enough for the moral and other lessons that Mr. Jessup seems to wish to draw.

JOHN LAIRD.

The Ideal Foundations of Economic Thought: Three Essays on the Philosophy of Economics. By W. STARK. International Library of Sociology and Social Reconstruction. (Kegan Paul. 1943.)

Dr. Stark, in these three essays, follows neither of the two usual lines of approach to the history of economic thought. Of the six writers he has selected (Leibniz and Locke, Hodgskin and Thompson, Gossen and Jennings), five were too insignificant as economists to make it possible to trace through their writings the logical growth of economics as a science. Their insignificance would be no obstacle to a sociological approach which would treat their thought as ideology and relate it to its social and historical background; but the scantiness of biographical and historical data provided by Dr. Stark clearly shows that this is not his object either. The object of the book, in fact, is not historical at all, but philosophical: it raises the problem of the relation between economics as a science and political economy as a system of thought directed towards a social ideal. But while the problem is raised, it is doubtful whether the author has chosen the most fruitful method of

analysis. He has little difficulty in showing that the change from seventeenth- and eighteenth-century political economy to nineteenth- and twentieth-century economics, as exemplified by his six selected authors, involved the shedding of a social ideal, and the divorce of economics from social reality. But in the historical chapters the argument is not developed sufficiently to prove that the change was anything more than the metamorphosis of the exponents of capitalist ideology from the protagonists of a rising class to the defenders of an established system: the reader is inclined to suspect that a choice of two seventeenth-century Tories and two modern radicals might have led to the opposite conclusions. The philosophical problem proper is not really tackled until the few final pages of the postscript, and then in the form of a mere personal plea for a reunion of economics and social idealism. If the book none the less holds the attention of the reader, it is because of a vigorous style and the skilful presentation of the quaint ideas of the four nineteenth-century writers.

H. W. ARNDT.

Books also received:—

RICHARD KRONER. *How Do We Know God?* New York and London: Harper & Brothers. 1943. Pp. xii + 134. Price $1.75.

OSKAR KRAUS. *Albert Schweitzer: His Work and His Philosophy.* With an Introduction by A. D. Lindsay, Master of Balliol. London: Messrs. A. & C. Black, Ltd. 1944. Pp. x + 76. 6s. net.

Proceedings of the Aristotelian Society. New Series. Vol. XLIII. London: Harrison & Sons Ltd. 1943. Pp. xxvi + 222. 25s. net.

W. E. AGAR, F.R.S. *A Contribution to the Theory of the Living Organism.* Melbourne & London: Melbourne University Press (in association with Oxford University Press). 1943. Pp. 208. 12s. 6d.

M. D. PETRE. *Alfred Loisy: His Religious Significance.* Cambridge: at the University Press. 1944. Pp. xi + 129. 7s. 6d. net.

RICHARD HUNT and RAYMOND KLIBANSKY (eds.). *Mediaeval and Renaissance Studies.* Vol. I, No. 2. London: The Warburg Institute. 1943. Pp. 186. 18s.

RADOSLAV A. TSANOFF. *The Moral Ideals of Our Civilization.* New York: E. P. Dutton & Co., Inc. (1942). London: George Allen & Unwin Ltd. 1944. Pp. xx + 636. 30s. net.

FRANKLIN D. ROOSEVELT. *The American Way* (Selections from public addresses and papers, edited by DAGOBERT D. RUNES). New York: Philosophical Library Inc. Pp. 72. $1.50.

A. C. MUKERJI, M.A. *The Nature of Self.* Allahabad: The India Press, Ltd. 1943. Second Edition. Pp. xiv + 403. Price 7 rupees 8 pies.

Annual Report of the Smithsonian Institution for the Year ended June 30, 1942. Washington, D.C.: United States Government Printing Office, 1943. Pp. xiii + 421. Price $1.50.

M. H. CARRÉ. *Does It Follow? (Practice in Logical Thinking).* Edinburgh: Thomas Nelson & Sons, Ltd. 1944. Pp. 166. 5s. net.

CORRESPONDENCE

To the Editor of *Philosophy*

"OUR KNOWLEDGE OF ONE ANOTHER"

Dear Sir,

It has been remarked (by Dr. John Baillie in *Our Knowledge of God*, 1939, p. 201) that there "is no more hopeful element in the philosophy of our time than the re-opening of the question of the nature of our knowledge of one another." It is because I agree with this statement that it seems to me important, in relation to the article by Professor Aaron on this subject in your April issue, to reaffirm the element stressed in these "reopening" discussions, which Professor Aaron's article seems to disregard. This element is mutuality. What is direct or unique in our knowledge of one another is that by each of us others are known as, in Dr. Webb's phrase, "partners in social intercourse." Every other person is to me potentially a *Thou* to whom I in turn am *Thou*. That element of self revelation which Professor Aaron admits as a unique feature of personal knowledge presupposes this mutuality; but when mutuality is to be traced to its earliest appearance, before self-revelation in speech has become possible, we must analyse what Aaron terms "a rudimentary communication," when a child—or half-human animal—experiences response of another being to its needs and learns to evoke such response.

In attempting analysis of the development of a child at the present time, it seems necessary to keep in mind those innate dispositions, "cognitive only as potentialities" (*loc. cit.*, p. 67) which we refer to ancestral experience. When the child's face smiles or puckers in response to the mother's smile or frown, it seems not rash to assume that the consciousness accompanying this inherited bodily reaction is tinged with something we might almost term an inherited reminiscence of mutuality. During the ages when the human organism was acquiring capacity to smile and frown, and otherwise react responsively to expressed feelings and purposes of others, it was acquiring also capacity to recognize itself and others as interacting persons. It is within this inherited capacity of interaction that we trace, as individual experience is clarified, both the growing awareness of self and others as persons continually co-operating or thwarting one another in action, and consciousness also of persons as distinct from things whose aiding or obstructing of action involves no such mutuality.

We cannot, Professor Aaron argues, explain our explicit assertion of another's existence in terms of "a vague potentiality with which we are innately endowed." Our knowledge of others, he asserts, "begins with the certain and indubitable perception of objects." What recent reflections upon the *I-Thou* relation would suggest, qualifying or in criticism of that assertion, may be put thus: our indubitable perception of objects is only achieved as we come gradually to distinguish within our innately determined social experience interacting subjects—self and others—and the objects known and used in common by these subjects in their interaction.

Yours faithfully,

Maud Bodkin.

Welwyn Garden City, April 1944.

To the Editor of *Philosophy*.

Dear Sir,

I should be grateful if you would allow me to make a brief comment on Dr. Heinemann's review of my book on Nietzsche in *Philosophy* for April 1944.

The character of Dr. Heinemann's treatment of my book seems to have been partly determined by his objection to certain paragraphs of my preface in which I speak of the personal "wickedness" of Nietzsche in strong terms. Apart from the

fact, unknown to the reviewer, that these paragraphs were inserted (for a reason which I do not propose to dwell upon) only after the whole book, including the preface, had been written, I do not see that Dr. Heinemann is justified in suggesting that, because such passages occur in the preface, they constitute a pre-judgment and determine the character of the book. Dr. Heinemann entirely neglects the sympathetic treatment otherwise accorded to Nietzsche, attention to which was drawn by most other reviewers.

Yours faithfully,
F. C. COPLESTON, S.J., M.A.

HEYTHROP COLLEGE, CHIPPING NORTON, OXON.

TO THE EDITOR OF *Philosophy*

L. S. STEBBING MEMORIAL FUND

SIR,

It is believed that many colleagues, pupils and other friends of the late Professor L. Susan Stebbing will concur in the desire that some permanent memorial should be instituted to her life and work. The suggestion is made that to this end funds be secured to endow a scholarship for postgraduate study in Philosophy. It is not proposed at the outset to define the conditions or possible places of tenure of such scholarship, but to draw up later a scheme for its administration.

Professor Stebbing cared deeply both for the advancement of philosophical studies and for the encouragement and aid of students. It is thought that the form of memorial put forward is one that she herself would have approved, and that it will be supported by all who admired her personality and her work in whatever field.

Contributions (the envelope marked "Stebbing Memorial Fund") should be sent to the Hon. Secretary-Treasurer of the Fund, Professor Dorothy Tarrant, Bedford College, Regent's Park, London, N.W.1.

Yours faithfully,

C. D. BROAD
G. JEBB
C. A. MACE
JOHN MACMURRAY
GEORGE E. MOORE
H. H. PRICE
HELEN M. WODEHOUSE.

INSTITUTE NOTES

On Friday, June 2nd, Professor H. H. Price gave a lecture to the Institute entitled "Two Theories of Sensation."

Members will be notified of the Annual General Meeting in due course.

OBJECTS OF THE INSTITUTE

The British Institute of Philosophy exists to bring leading exponents of various branches of Philosophy into direct contact with the general public, with the purpose of satisfying a need felt by many men and women in every walk of life for greater clearness and comprehensiveness of vision in human affairs.

With this broad educational purpose in view, the Institute—

(1) Provides at suitable times in the day and evening courses of lectures by leading exponents in the more important subjects coming within the scope of Philosophy. All branches of Philosophy are represented —Ethics and Social Philosophy, the Philosophy of Law and of the Sciences, of the Fine Arts and of Religion, as well as Lògic and Metaphysics and Psychology.
These lectures are free to members.

(2) Issues a quarterly philosophical journal (free to members).

(3) Proposes to form a philosophical Library.

(4) Gives guidance and assistance to individuals in their philosophical reading.

(5) Encourages research in Philosophy.

There are Local Centres of the Institute at Bangor, Cardiff, Liverpool, Manchester, Newcastle and Durham, and Sheffield.

Further information and forms of application for membership may be had on application to the Director of Studies, at University Hall, 14 Gordon Square, London, W.C.1.

[Suggested]

FORM OF BEQUEST

I bequeath to THE BRITISH INSTITUTE OF PHILOSOPHY the sum of ..... free of duty, to be applied to the purposes of that Institute, and I declare that the receipt of the Honorary Secretary, or other proper officer for the time being of that Institute, shall be sufficient discharge for the same.

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THE BRITISH INSTITUTE OF PHILOSOPHY

Message to Readers

MY appeal in the July issue of the Journal for new members and donations led a few readers of PHILOSOPHY to send generous donations, which are gratefully acknowledged. It is hoped that further donations will continue to come in and new members be enrolled in considerable numbers. During five years of war the Institute has carried on its work in London as far as circumstances have permitted, and British philosophic thought on important human issues has been expressed uninterruptedly in the pages of the Journal. The future is now irradiated with brighter hopes, and before long it may be possible to resume the full activities of the Institute.

For the benefit of well-wishers of the Institute, the following figures indicate the loss of income from subscriptions, which is the principal source of the revenue of the Institute, during the past five years:

	Income from Subscriptions
1938–39	£1,185 14 6
1939–40	£1,101 8 5
1940–1	£937 12 8
1941–2	£930 13 0
1942–3	£840 10 1
1943–4	£832 5 9

In order to remedy the situation, the obvious need of the Institute is a large increase in membership, and the Council appeals to its supporters to do what they can to introduce new members, and to extend the knowledge of its Journal, PHILOSOPHY, among friends interested. It also appeals for donations, small and large, from sympathisers with its work, and suggests that those who wish to see the spread of interest in Philosophy in the future might like to make arrangements for bequests to the Institute.

Editor.

PRINTED IN GREAT BRITAIN
BY UNWIN BROTHERS LIMITED
LONDON AND WOKING

PHILOSOPHY

THE JOURNAL OF THE BRITISH INSTITUTE OF PHILOSOPHY

VOL. XIX. No. 74 NOVEMBER 1944

COMMUNITY PURPOSE AND THE NAZI LESSON

PROFESSOR J. W. HARVEY

CONTEMPLATING the catastrophic course of the Nazi Revolution we may well find it all too easy to see nothing in the spectacle but the nether darkness made visible; and if we are advised that it is not merely permissible but highly advisable to learn from the enemy, we may be tempted to think that whatever the Nazi war-machine has to teach the strategist and the technician, the *political* history of Germany in the last decade, and in particular the political ideology that has imposed itself upon the German mind with such apparent thoroughness, can yield only the negative lesson of a warning, by displaying upon the world-wide stage the doomful consequences of wrong principles ruthlessly pushed to their extreme. But it is certainly an error to deny that nothing of more positive value has emerged out of the revolutionary cauldron: and indeed it would be more than strange, where such whole-hearted energies of mind are being enlisted in the evil cause of Nazism, if none of its votaries had ever stumbled for a time into wisdom.

In this article, however, I am not concerned primarily to appraise the Nazi system as a therapeutic for the political malady of pre-war Germany, still less to deny that the remedy was far more deadly than the disease. I wish rather to consider its significance from the point of view of diagnosis rather than from that of therapy. A doctor's diagnosis might be penetrating and acute even though the treatment he prescribed might be eccentric and even malignant. I would suggest that, whatever else it so deplorably is, Nazism does or did recognize a serious political gap or hiatus left by the Liberal XIXth century, which the Weimar Republic rather pathetically inherited. To leave a room in your house empty too long is, as we have scriptural warrant for saying, to invite the entry of devils. They have indeed made their entry, and thereby made a drastic exposure of the empti-

ness of the premises. What is the particular lack to which they bear witness?

The political theory of the last five hundred years (to go no farther back) and the practice which has in varying degrees influenced and in turn been influenced by it have nearly always oversimplified the issue by presenting it as a bi-polar instead of as a tri-polar problem. That is, it has been presented as the problem of reconciling *two*, and only two, fundamental needs or principles, instead of that of harmonizing *three* in such a way that each enforces and enriches the others. These three fundamental requirements are, the need for a stable or settled socio-political Order or Pattern, the need for personal Freedom, and the need for an Energy that passes through the person into the community. The solution of the problem will therefore mean that Order or Pattern is not so set as to cease to be in some degree plastic, living, like bone, rather than merely rigid, like stone. Freedom, again, must be neither undisciplined disordered licence nor indolent passivity and enjoyment. And finally Energy must not be feverish and capricious but calm and expressive of a solid communal purpose. But such a solution has never been completely achieved even in theory, still less in practice. There has usually been either an open failure to resolve one or other of the three tensions implied in the business of organizing a community, or one or other of the three factors that make for tension suffers temporary eclipse to the advantage of the others. It is not always the same factor that is thus disregarded. Recently the most common bi-polar over-simplification has been that which represents the political problem in terms of the tension between the claims of Order and Freedom (Liberty versus authority, the individual person and his place in a planned society, etc.). Each of these contrasted poles may become a cause enlisting adherents and provide a rallying cry for a party, and so it becomes easy (and is perfectly legitimate up to a point) to present a political development, such as that of Victorian England, as a duel between these two forces. But it has not always been in this way that the tri-polar situation has been over-simplified into a single bi-polar opposition. There is (if a phrase of a somewhat Athanasian ring may be permitted) not one indispensable but three indispensables, and to neglect any one of the three, or even to take it too easily for granted, will make for a distortion that sooner or later is bound to prove disastrous. And this is what has happened. The history of political thought provides revealing illustrations of each of the three passing for a time into eclipse or at any rate passing into the inexplicit background; that is, *either* the importance of personal freedom, *or* that of social pattern, *or* that of communal energy comes to be either ignored or (which is sometimes the same thing) taken simply for granted.

Consider first Machiavelli, writing his manual on statecraft just four hundred years before the first World War. A Florentine, living in the brilliant Renaissance society which had discovered a new meaning in individuality, Machiavelli does not, I take it, disbelieve in personal freedom. He simply faces away from it because his thought has been given under the stress of events a different orientation. The foreground of his mind is occupied by the two spectres—or rather the two ogres—of collective impotence and anarchy, on account of which the Italy he loved was torn in internecine strife and the foreign barbarian admitted upon her territories. Hence his main pre-occupation is how in the first place to achieve instead of the disintegrated confusion of mutually frustrating dukedoms and principalities a single integral Italian order, and how in the second to invigorate this with resolute will and purpose carried over from the individual to the social sphere. His concern in short is with "il Stato"[1] (the stable pattern) and with "Virtu" (dynamic energy), and his problem is how order is to be energized, or (which is the same thing from the other side) how human energy is to be made to contribute to a purposeful social order. Machiavelli may have been sincere enough in denying that he was an advocate of tyranny such as Cesar Borgia had attempted. But he failed to realize that the liberties of men cannot be left to take care of themselves while these other indispensables are being sought after, that (as a later thinker was to remind us) the cause of freedom will be lost if it is not being all the time consciously and vigilantly promoted.

The position of Hobbes, often bracketed with Machiavelli for the reprobation of pious British moralists, is different, mainly because he did not share his predecessor's major interest in politics, but on the other hand did have a more serious hold upon ethical values. Politics forms indeed the theme of the more substantial part of Hobbes' writings, but it is, I think, clear that his whole bent and predilection lay elsewhere. Political discussion meant political upheaval and that meant the danger of anarchy, the supreme evil. What was wanted was a system that would once and for all set men free from political preoccupations to pursue their own various interests, such as polemical controversy with the mathematicians of the Royal Society. But this need of a fixed assured pattern of social living with all the sanctions of Government to guarantee it was at once so urgent and (in an antinomian world of recklessly competing loyalties) so little realized, that a large part of his labours was devoted to expounding it. Hobbes took for granted, as well he might at a time when vigour of mind and vigour of action were both so strong, that a sufficiency of social energy would never be lacking. But what of the third primary

[1] Machiavelli is said to have been the first to use the word "State" in the modern sense.

need, personal freedom? He has some cynical remarks about liberty, and he detested its abuse, whether as social licence or religious aberration. None the less he assumed that in a rightly patterned social order there would remain large regions in which private initiative and personal idiosyncrasy would find expression. Leviathan has the monopoly of power and can tolerate no competitors: but in theory absolute, in practice it would be a power held in reserve to meet any possible challenge rather than a power actively and pervasively functioning through every department of life. Thus Hobbes' conception of society, though wholeheartedly *authoritarian*, is far from being in the contemporary sense *totalitarian*. It of course remains none the less true that his thought is to a unique degree dominated by the single consideration of the need for a stable communal order or pattern.

Two hundred and fifty years after Machiavelli, and little more than a hundred after Hobbes, Rousseau wrote the *Contrat Social*. In this, as it seems to me, he showed a characteristic of nearly all democratic theory since that time, though in a mode peculiar to himself, in concentrating upon solving the antinomy of Freedom and Order to the undue disregard of the third "indispensable," social energy. This may, to be sure, seem an odd comment upon a book which, despite its misleading title, is in fact mainly concerned with the problem of the General Will: for does not Will imply energy? But it seems clear that the General Will is not thought of by Rousseau as something to be achieved, brought into being and maintained in being against all the undertows of human indolence and apathy and inertia. It is thought of, or rather it is taken for granted, as something already and securely at hand if only it can be released and exposed: and the business of democratic institutions as Rousseau conceived them is to release, expose, articulate, and then to implement a social purpose that is there all the time. To Rousseau possibly, to the revolutionary leaders his disciples certainly, consciousness of a great fund of baffled energy in the French people, ready to burst through the cramping and stifling patterns of the old order, was a matter of primary assumption in their political diagnosis. It did not need to be stressed, it certainly did not need to become an object of special preoccupation. Historically there was, of course, every excuse for such an estimate of the situation. But just as Machiavelli made a fatal error in supposing that Freedom could take care of itself in a rightly energized political order, so did Rousseau in assuming that Energy could take care of itself—would, that is, be always available—in a political state which had achieved the pattern of liberty or (which is, as before, the same thing from the other side) in which personal freedom had been harmonized in a stable social order.

For it is after all possible for liberties not to be forfeited, or disowned, but to become stultified by paralysis and a general weakening of social and individual vigour. This was in fact very much the malady that had befallen the English people in the judgment of Rev. John Brown who wrote his "best-seller" in national pessimism —*Estimate of the Manners and Principles of the Times*—in 1757, only a few years before Rousseau's *Social Contract.* In that book the manly sense of honour and the martial spirit of the French are forcibly contrasted with the prevailing softness and foppery of the English. Mr. Brown's lugubrious prognostications were fortunately to be falsified almost as soon as his book had been issued by the triumphs of the new administration of which Pitt was the inspiring and organizing genius, and his undisguised admiration for the dynamic character of the French State reads ironically today. He gives, however, his own countrymen credit for a respect for law and order (which means a capacity to preserve intact the social pattern) and a sincere interest in personal liberty; what, he thought, they lacked was a virility and vigour that should animate and render effective a national policy.

We have a different atmosphere again in mid-Victorian England. The nineteenth century—surely the British, or at least the Anglo-Saxon century *par excellence*—begins with a cramping quarter-century of reaction, chilled by the dark shadows of the French Revolution rather than warmed by its glow. Then the "epoch of concentration" gives way to an "epoch of expansion" (the phrases are Matthew Arnold's) which has only died away in living memory. But no less than the early periods, so too this self-confident nineteenth century shows its own characteristic omission; the current of thought dominant in it is channelled by a characteristic Victorian assumption. Just as Machiavelli in the early sixteenth century leaves liberty to take its chance in his insistence upon the paramount necessity for an energized Order, and Rousseau in the mid-eighteenth assumes that energy will always be forthcoming to give vigour and meaning to a harmonious ordered Freedom, so the typical Liberal of the mid-nineteenth never really questions the stability and security of the social pattern in its fundamental features. What he concentrates upon is opportunity for free personal initiatives and a field for energetic action, and these he finds in the world of uncharted economic and commercial enterprise thrown open to him by the benediction of *laisser-faire.* The essential adequacy of the fabric of British law, of the British constitution, and of the British social pattern or hierarchy; indeed, the security of all the institutional ways that go to build up what we call civilization; these things the men most representative of the main political trend of the age doubt so little that they may be said to take them for granted. Hence

their intolerable complacency. It is a complacency which is sometimes expressed as a sort of natural piety, as in the doctrine which Adam Smith handed on to his economist successors that the business of reconciling individual economic enterprise with a harmonious social order may be left to the "invisible hand" of an inscrutable Providence. It is expressed in verse in most of the more official political utterances of Tennyson, and in prose satire in the monumental figure of Dickens' Mr. Podsnap, where piety has died away, smothered in sheer surplusage and Philistine prosperity. (And it is to be noted that across the Atlantic precisely the same assumption was being made, the difference being merely one of national temper and the American environment, a vociferous and gesticulatory pretentiousness taking the place of a bland and pompous complacency. Dickens' Yankee Congressman Pogram, though twenty years earlier in date, is the perfect counterpart to Podsnap. The stress is all upon "smartness," initiative and personal liberty: it is taken for granted that "the institutions of my country," the established constitution, the usages and customs of the American order, are sufficient and unchallengeable.)

It is, of course, quite untrue that *all* the chief voices of nineteenth century political thinking made this assumption and held it so inexplicitly; took for granted, that is, that in its main structure the social order was not only stable and adequate but could, so to speak, be left to look after itself while individual citizens devoted their energies to activities in the economic sphere of free competition. There were always the representatives of the radical and rebel tradition, the Chartist, the socialist, the satirist. But apart from these it was only the minds endowed with exceptional intellectual or moral candour, like Mill, or with the insight of a prophet or a poet (however distorted and clouded by passion), like Carlyle, that could realize that the whole social pattern was in principle precarious and no more to be counted upon for self-maintenance and adequacy to human need without a constant vigilance of civic effort than was the cause of personal freedom itself.

And so the liberal nineteenth century devoted itself on the whole to the task of liberating energies or (another way of expressing the same thing) invigorating men's freedoms, and that in the main (and this was an unfortunate aberration) in the economic field. This was all very well, it was indeed inevitable, so long as the epoch of expansion lasted, so long as the "frontier" offered to individualist enterprise ever-widening horizons and unexhausted opportunities. For though we think of the "frontier" as a characteristically American feature of the nineteenth century scene, England, too, had its frontier, though it was a technological and not a geographical one. There was, I mean, the consciousness of unexplored territories of

invention, of virgin markets awaiting the pioneer, which was some sort of counterpart to the receding continental frontier that provided a further additional challenge and a stimulus to the American advance westwards. But as the age of the steam-engine drew to its rather weary close the region of the unexplored seemed to become exhausted, or at least came within sight of apparent exhaustion. There was no longer for the enterprise of the British industrialist the same sense of unlimited new scope and opportunity.[1] And at the same time the stability of the social order began to be more and more problematical.

There is, of course, nothing amiss in taking for granted, as something that needs no attention or care, this stability of pattern, provided that our confidence in it is well grounded and it is in fact capable of the adaptations to new needs and new conditions that are necessary if the community is not to be imprisoned in its own established usages and institutions; provided, in short, that it is a living and not a dead pattern. In such a case, on the contrary, *not* to make it a matter of assumption rather than conscious and perhaps painful preoccupation would be unnatural and a sign of social malaise. Something is wrong with a man of normal health and strength if he is constantly thinking about his own skeletal structure. We should think it more natural that he should show concern to secure the conditions needed for breathing (which here symbolizes personal freedom) and vigorous muscular activity (which here symbolizes personal-social energy). But it is otherwise if the bone structure itself is diseased; then, the better the thought brought to bear upon the problem of curing it (if this is possible), the wiser we should judge the man to be. And if the socio-political structure is unequal to the demands made upon it in a world of incessant, torrential, ever-increasing and ever-accelerating change, then there is no political virtue in retaining the assumption of its adequacy and permanence.

It is, I suppose, clear to most of us to-day that the nineteenth century social structure *was*, in fact, unequal to the demands that the new forces and the changes of the last generation have brought to bear upon it. And it is at the same time clear that the field in which that age, so impressive as it was in varied achievement, sought outlets for individual freedom and for the energies of men, the economic field, could not provide the satisfactions which it held out as a reward to enterprise. Dr. Inge is right to include "Economism" among the nineteenth century idols which the twentieth has seen falling or fallen. Mr. Peter Drucker is right when, expanding and anticipating Dr. Inge's contention while drawing from it a moral

[1] This was revived again in large measure with the advent of the internal-combustion engine and electrical power.

which the latter would certainly repudiate, he proclaims "the End of Economic Man." We have suffered collectively from the hypertrophy of certain interests, the economic interests, and our absorption in them has failed to deliver the promised returns, a life achieving rich human satisfaction through the energetic development of a free competitive economy. And along with, indeed the consequence of, this hypertrophy, has gone a weakening of other interests, the interest for instance in the art of ordering fruitful personal relationships, which is at least a large part of the significance of politics. And that meant an increasing impoverishment of motive[1] and therefore a sapping of individual and social energies.

Thus one legacy of the British nineteenth century (which did not end until 1914) was a growing misgiving as to the adequacy of the political-social order (if the pattern was not fundamentally wrong it was at any rate far too rigid), which the emphatic arraignment by socialist critics steadily increased; and at the same time a diminishing vigour of social will and purpose. The uneasy and disillusioned period between the two great wars, an "interbellum" of which complacency itself can hardly be proud, saw the development of these tendencies. And it was in this sort of situation that we saw (or rather for the most part failed to see) the strange, sinister and finally terrifying growth of the Nazi movement across the North Sea. Whatever else this was, it came as a tremendous reassertion of Energy and a determined reshaping of the political Pattern.

Hitler, in *Mein Kampf*, makes use of a word for which I do not think there is an English equivalent; the word *Halbheit*. It means, I suppose, literally "half-and-halfness." A people characterized by *Halbheit* may be tolerant and enjoy many freedoms, and may be docile and tolerably law-abiding. But their tolerance will be the tolerance of indifference rather than of magnanimity, their liberties will be flagging and vacillating and their policy timid, their acceptance of institutional usages and sanctions will evince not so much a robust belief in the established order as a waning hope in innovation, let alone in revolution. It would not, I think, be wholly unjust to the Weimar Republic, with all its undoubted virtues, or rather with the undoubted virtues of some of its leaders—reasonableness and honest intention—to regard it as having been infected with *Halbheit*. It would not, perhaps, be less true to recognize the same quality of community life in the Britain and the France of those inter-war years. And if that seems unwarranted pessimism we may perhaps take heart from remembering that one of the most sagacious of the Victorians, Mr. Matthew Arnold, detected the same quality in his

[1] A symptomatic utterance is that of Raymond Asquith (about 1910), brilliant inheritor of the tradition of late Victorian Liberalism, that he found life "increasingly bare of motive."

own day beneath the vigour and confidence of triumphing industrialism. If this was a "note" discernible in the vigorous '50s, we may hope that a seer of to-day might detect a counter-note in the jaded 1930s. At any rate the words of *The Scholar Gypsy* are perhaps the best annotation that could be given to the meaning of *Halbheit.*

> Thou waitest for the spark from Heaven: and we,
> Vague half-believers of our casual creeds,
> Who never deeply felt, nor clearly will'd,
> Whose insight never has borne fruit in deeds,
> Whose weak resolves never have been fulfill'd;
> For whom each year we see
> Breeds new beginnings, disappointments new;
> Who hesitate and falter life away,
> And lose to-morrow the ground won to-day——

Nazism was, in part at any rate, a reaction against a contemporary German half-heartedness and half-mindedness that was heading for frustration. It was—I think this has to be admitted—a movement to a very great extent actuated at the instinctive and temperamental level. The doctrines and ideology of Nazism are shams: they are almost entirely rationalizations of an urgency that evinces little genuine body of intellectual convictions. What is real and genuine in the movement is the emotional repudiation of drift and welter due to *Halbheit.*

We hear so much of the ideology of Nazism that it may be worth while to amplify this point a little further. Mr. Drucker is, I think, right in holding that there is *no* genuine set of "Nazi" doctrines. What we have is rather a variable apparatus of slogans, none the less empty for being so potent in action, together with some valuable ideas, but all alike taken up, emphasized, soft-pedalled or discarded, according as they advance or impede the Nazis' tenure of power, or rather, perhaps, that of the inner circle of gangsters who impose their power, first upon the party at large and through them upon the nation as a whole. There are, in short, no ideas *belonging to* the Nazi movement, as forming part of an integrated body of beliefs; but there *are* ideas, some of them important ones, *borrowed by* the apologists and propagandists of the movement for such efficiency-value as they may at any time possess. I would add that Fascism, so frequently treated as synonymous with Nazism (and not least by Russian propagandists who should know better), has here the advantage over its junior and (to some extent) its imitator in the revolutionary succession. Fascism does (or may we now thankfully say "did"?) have a more notable apparatus of political ideas integral to it, the theory of the corporative state. It is a movement characteristic of a more logical, or a less romantically-sentimental, people.

I believe, in fact, that we may have to admit a good deal of truth

in a suggestion put forward a year or more ago by two medical psychologists of Harvard, Drs. Sheldon and Stevens, in their book *The Varieties of Temperament.* It is their contention that the Nazi revolution is at any rate in part to be explained as the revolt of one of the three permanently distinguishable temperamental types (for these authors are trinitarian in their analysis) which had been too long socially depreciated and repressed against the dominance and social prestige of the other two. The revolting temperament (and the epithet has a double aptness) is that which the authors call, by a terminology I am not prepared to defend, the "somatotonic" type. It is prone to vigorous outward action, hard, courageous, unsympathetic, the temperament which finds life to be at its most meaningful in the experience of eager and energetic youth. I fancy this psychological diagnosis may at any rate be a wholesome corrective to interpretations in exclusively economic or historical terms. But whatever importance be assigned to it, it is at any rate clear that Nazism was in fact a violent repudiation of a political creed and system that had issued in an equilibrium of Liberties hardly different from inertia or even paralysis and an Order so unassertive that the whole community appeared to be becoming invertebrate. Against this it comes as an uncompromising and ruthless reaffirmation of the principle of Energy, and indeed of the absolute primacy of this over any other political need. Nazism virtually passes from the ringing "Am Anfang war die Tat" that is the challenge uttered by Goethe's Faust to the defiant "Am Ende ist nur die Tätigkeit."

Consider first the effect of this passionate reassertion of the all-importance of Energy in the modern political community in its bearing upon the social pattern. Nothing is certainly more surprising —or more disheartening—than the virtually total obliteration of the institutions of Law and Order under the impact of the Nazi assault. The whole fabric of the *Rechtstaat,* in which the German jurists and thinkers took so justified a pride,[1] appears to have crumpled up without resistance to the claim that Law must be the handmaid, or rather the bondservant, to the exigencies of an entirely opportunist Will to Power, and where the resistance of so imposing and massive a structure as that of German law was so flimsy, *a fortiori* that of other parts of the German Pattern, economic organization, educational usage and cultural tradition, was even weaker. It is possible that in a final judgment no single reckless blow by Nazism at the

[1] For instance, in the last paper which Hegel wrote, a criticism of the English Reform Bill, he contrasts, and with a great deal of justification, the capricious, irrational character of British law with German law with its systematically worked out rational principles. After a hundred years the wheel has indeed come full circle.

body of Civilization will have proved more disastrous or tragic than its enslavement of German Law.

What in the next place has become of personal Freedom? Rather than labour the obvious charge that freedom has ceased to exist with this enslavement of Law to Power it may be worth noting, first, that in addition the very citadel itself of personal liberty has been invaded: I mean the sphere of a man's personal relationships. Nor is it simply that the family as an institution has been effectively subordinated to State control: it is rather that the fine flower of the family and of other directly personal relationships, friendship or φιλία, has been claimed as a political function. Thus friendships between boys, or between girls, or between parents and children, are exploited as a means of effective espionage. There has been nothing, surely, like this in a civilized community since that abortive law proposed by Saint Just the henchman of Robespierre a hundred and fifty years ago, according to which a citizen would be compelled to register the names of his personal friends, and he and they were to be mutually responsible for one another's civic loyalty. And that *was* an abortive aberration; this has become a reality.

In the second place I would note that the Nazi movement has the merit of a piece of striking candour and insight, which is, however, spoiled by a piece of inevitable hypocrisy. The candour is that of having realized that when all is said the personal freedom of which the eighteenth and nineteenth centuries had so much to say does not represent a universally felt political *desire*: that, in fact, a large number of people do not only *not* passionately desire freedom, they mistrust and fear it and even desire to be unfree. The psychological and historical implications of this disconcerting fact have recently been brilliantly set out by Dr. Erich Fromm in his *The Fear of Freedom*. But it has taken two or three totalitarian revolutions for the fact itself to be realized by us of the sanguine British political tradition. The first of these, the Russian, was unrevealing on this matter; for, at the worst estimate, Bolshevism was no worse than the exchange of one tyranny for another, while on a more favourable one it could be reasonably presented as having brought about large enhancements of liberty. The Fascist revolution hinted the dislike of freedom more clearly. But the lot of the Italian peasant was so poor and his political intelligence so low that Fascism could still be depicted as the error of ignorance and inexperience and pitied as such. But the German was far more politically conscious, and moreover he had received an intensive political education in self-government since 1919. And yet we have this repudiation of the very alphabet and grammar of freedom!

The shock of realizing that personal freedom, counted by democrats as a basic, indeed perhaps *the* basic human demand, is definitely

not wanted by large numbers of persons of obvious intelligence is really a very salutary one for a democrat, but at first it is no doubt highly distasteful. The situation is in fact rather like that in the contemporary world of physics, where a somewhat similar mental disturbance is caused in the mind of a traditional rationalist when he discovers that in the Einstein universe of curved space parallel lines will meet and a straight line eventually come back to its own starting-point. For the belief that of course everyone wanted to be politically free when they really understood what that involved was a sort of Euclidean political axiom accepted as unquestioningly as Newton accepted the Euclidean view of space. It is wholesome to have such assumptions challenged if the result is a more penetrating rethinking of first principles. And in this case the solution was after all not very recondite. All that is needed is to distinguish the two quite different ideas of a universally felt *desire* and an indispensable human *need*, a distinction which is easily blurred by the use of words like want or demand, which have a foot in either camp. Ever since Locke, the theory of primary rights has, one may suspect, been expressed too often in the language of *claim* (conscious or would-be conscious) and not enough in that of *need*.

And that brings me to what I have called the piece of hypocrisy which goes with this Nazi candour in recognizing that many people do not wish to be bothered with political liberty and find it on the contrary a burden and an oppression which they will gladly exchange for something very like servitude. The hypocrisy I mean is simply that which (we are informed) is the tribute which vice pays to virtue. That is to say, the Nazi movement no more than any other political movement of any importance has been able finally to repudiate the *ideal* of freedom. But it is helped in this matter by the strength and weakness of the German philosophical tradition on this theme of freedom. No idea plays a more prominent part in German political philosophy, yet the reader has often—too often—an uneasy feeling that the Freiheit of which he reads so much, and so much that is eloquently and finely expressed, doesn't in the upshot cut very much political ice. In the course of the thinker's argument the idea has been, so to speak, etherealized: it has become a transcendental principle, or at any rate an ideal rather than a working method of political action. The value of this (and this is the strength of the philosophical tradition) is that the idea of freedom is preserved from narrowing or impoverishing associations; with, for instance, sectional or secondary interests like the economic. The fault, obvious enough to us of a different tradition, is that the idea loses its militant power as a value demanding incorporation here and now in the appropriate working institutions. Few people, it may safely be said, would ever risk death on the barricades in

the name of Freedom as interpreted, for instance, by Hegel. Our own strength and weakness are of course the opposite ones. We tend to keep the idea of freedom in the forum and the market-place, and it tends to become in consequence too easily soiled—sometimes shop-soiled. The principle of Freedom tends to be transcendentalized by German, and commercialized by English thinkers.

The application of this to Nazism is that while the democrat says (or at any rate ought to say): "Freedom is something to be learned stumblingly and empirically, its value and meaning are to be proved in practice, it is present means as well as end," the Nazi totalitarian says rather: "Freedom is a consummation and not a method of working out the common purposes of a community." But even here he is to be distinguished from authoritarians of another school. The Catholic, for instance, takes his stand ultimately on such a text as: "Ye shall know the Truth and the Truth shall make you free." Once again Freedom is to be a political fruition, in this case as a result of obedience to the rules and directions derived from the authoritative pattern-order. The Nazi, on the contrary, would appear to proclaim rather: "In the sense in which freedom is your right it must come as the outcome of membership in the collective power of the organized community." "Ye shall contribute to Power, and the Power shall make you (in a sense) free." In any case, he would add, you will have something better and nobler than freedom, the consciousness of sharing in communal and national greatness.

It is of course manifest that within and behind the Nazi movement were many and diverse motivations, individual and collective, historical, psychological and economic. No revolutionary movement can be imprisoned in a single explanatory formula. But whatever else it meant and was, it did mean this tremendous one-sided re-assertion of the Energy-principle in the world of domestic politics. The German community was to be saved from disorganization, the unstable equilibrium of self-mistrust and self-criticism that had resulted in a sort of political anaemia, by the engendering and release of new vigour in the service of national power: will for will's sake. In this article I have been concerned merely with the negative implications of this, the breakdown of inhibitions, not least the traditional deference to established pattern and the traditional sentiment for freedom, or rather, the uncompromizing subordination of both of these to the necessities of organized energy. But the mere breakdown of inhibitions does not of itself create *new* energy.

Where, then, was this new source of invigoration to be found? In seeking to appraise the Nazi answer to this question, we shall have to consider how far the movement showed true insights and what may be learned both from these and from its errors when we in our own political *halbheit* turn to face our own democratic problem:

that of energizing communal purpose without imperilling freedom or the stability of order.

The need was for some sort of blood-transfusion into the body politic, and that in turn necessitated some unexhausted supply of "blood" to draw upon: that is, some unstaled sources of invigoration. Two of those invoked by Nazism are of particular interest and significance.

The first is the new emphasis given in the conception of community —*Gemeinschaft*—to common blood and common contact with the national soil, *Blut and Boden*, irreverently nicknamed by the indigenous critics of Nazism "*Blubo*." This is, perhaps, on the whole the best thing in the whole Nazi movement, especially the "Boden" part of it, and something from which a useful lesson may be learned. I need not say that I do not refer to the atrocious sophistries about race-superiority, and absolute racial cleavages, and the sub-humanity of the Jews, or the fantastic fiction of the racial purity of the German people, one of the most mixed stocks in Europe. I mean the recognition that, as the Germans themselves would put it, *Gemeinschaft* is something more and richer than *Gesellschaft:* community is something more than conscious participation in common concerns. It has roots that reach down below the level of explicit thought or volition. What we call unity of race, a mysterious and elusive thing in any case, matters comparatively little. What is far more important is what we call *breed.*[1] I do not know whether the German language has any word to render this one which is anything like so rich in meaning. I suspect it has not, and that fact would itself be significant. It is as though the genius of the English language had given us no excuse for allowing ourselves to be victimized by the silly deceptions of the fanatics of race. "Breed" it is true is a wide enough term to include the factor of blood-kinship and common stock, but how much else does it not include! We speak of being "born *and* bred" such and such: and Shakespeare's "This happy breed of men" is far richer in meaning than "This happy race of men" would have been. All this is, of course, a familiar point enough. It has certainly long been recognized that the consciousness of community, the recognition by the individuals in a population of what the Germans call (nor need we envy them the ugly word!) their *Zusammengehörigkeit*, their "Belongingtogetherness," depends upon all sorts of implicit factors, conscious, semi-conscious and unconscious, common habitual attitudes of thought and feeling, common tradition and above all their common language. We in this country can learn as much from Burke, as the Germans can from Fichte, who, although he wrote a great deal of exaggerated nonsense about the

[1] This is the word that Robert Bridges puts to such pregnant use in "The Testament of Beauty."

unique value of the German language, hardly exaggerated the "breed" significance of language as such.

But truths may be familiar enough to pass almost into truisms and yet never really bite home, still less show themselves to have fresh reserves of power in them. I do not think we need deny that in this matter the Nazis have made of an old truth a new source of vigour in the practical application they gave to it, and a stimulus to communal co-operation. The secret perhaps lies in *Boden*: the common breed drawing life from contact with the common soil. Probably there was something fundamentally insincere in the propaganda developed upon this theme; it served, for instance, as a weapon against the hostile and suspicious organized urban proletariat to "boost" the value of country life and the almost mystical virtue of following rural and agrarian occupations. (Fichte has plenty to say on this point also.) But, as has already been suggested, it is difficult for keen minds that have "swallowed all formulas" not to stumble upon truths now and again. The Nazis have rummaged in the rich treasury of German thought and brought forth things new and old, some of them trash, others well worth keeping and using in a fresh way.

And it is being generally recognized that among the latter is this recognition that "the soil" may have upon our so easily uprooted populations an enriching influence which cannot be found so easily in urban surroundings. In the town conglomeration traditions are so easily obliterated, implicit ties severed, inherited patterns of thought shattered. Doubtless there are compensations: although that most usually alleged, the acuter urban intelligence, seems to receive little supporting evidence from the experience of those who have had to do with children evacuated from the great cities. But when Mr. Peter Drucker, in his latest book (*The Future of Industrial Man*), urging that we ought to adapt out mental attitudes to the dominant fact of industry, comments that it ought to seem to us as unnatural and mistaken that a man should never have been inside a factory as it *does* seem unnatural that a man should never have seen a cow, I think the answer is that our primeval inheritance, physical and psychological, gives us an affinity to the cow which we have not to the factory, and we are therefore drawing a draught from some deep well in our own nature when we refamiliarize ourselves with the experiences of the country and the soil.

Hence it is possible that even after a war which will have put a stigma upon anything derived from the Nazis we may in this country find it wise to adopt something like the Labour Camps in which urban and rural youth may fraternize, so that the town may recover its contact with the countryside and a mutual communal reinvigoration be stimulated. And we may remind those who are

not prepared to adopt any institution that has suffered the Nazi blight (as these camps in Germany certainly have), that the idea of them was first thought out in the days of the Weimar Republic, though the Nazis are not to be refused the credit of taking it over and pushing it vigorously forward.

The second energizing influence invoked by the Nazis to quicken and intensify the communal will is that of religion. We must I think call it that, while remembering that a religion may be very potent and yet very base. Devil-worship is religion of a sort. The Nazi religion is, if we will, an "Ersatz" affair, in which homage takes the place of worship, a limitless deference that of devout reverence, a fantastic mythology that of sober theology, and the party that of the church. But it has shown undeniable power to engender enthusiasm and enlist tremendous endeavour in what is presented as the community cause.

There is an illuminating contrast here with what has happened, and is now happening, in Russia. There the attitude of the Bolshevik revolutionaries to religion was from the first stultified by their adhesion to one of the shallowest aphorisms ever put forward by a man of commanding intellect, Karl Marx's "Religion is the opium of the people." (This maxim was a few years ago to be seen above the entrance to the Leningrad Museum of the study of Religions.) Obviously, if Religion is nothing but an anodyne it cannot be called upon to supply energy to invigorate the community's life. It is presumably only the sheer pressure of events, working especially upon the signally realist mind of Stalin, that has led to a change of attitude, in practice if not in principle. Religion has been recognized as a power-maker. And the resulting tacit toleration (up to a point) and even the qualified encouragement of religion in Russia to-day has made it clear how foolishly misdirected was the fear of the average Christian in this country a few years ago, who regarded the Bolshevist menace to his Faith as far more dangerous than that of the Nazis. (This, I think, was the attitude of Dr. Inge.) The truth was, of course, the contrary. The most formidable enemy of the true religion, as Plato long ago pointed out, is not the man who openly denies it, the infidel or professed atheist, but the man who perverts and corrupts it. And to my mind there is an aseptic quality in the fanatical opposition to religion of the Russian Communist which makes it much less sinister than the Nazi attempt to degrade the Christian forms by the subtle infusion of base meanings into them. Put it at the worst, one would rather be stunned in open attack by a declared enemy than slowly poisoned by a professed friend.

But the main point is that while the Nazi conception of religion is a distorted and low one it has succeeded in lifting its numerous devotees to a new level of energy. They have a cause to which to

dedicate themselves, a hope that is not a purely private hope, the sense of fellowship with other believers, the consciousness of self-realization in an endeavour that transcends their own efforts and of which the Leader is to them the personification and the guarantor. And here another contrast suggests itself, this time with the experience of our own country. For once again it may be said, this is a very familiar discovery. Has not the British tradition, and indeed the French tradition for that matter, at any rate as exemplified in Rousseau though not in his anti-clerical disciples, always assigned an important part to religion as an essential factor and influence upon the community's life? Sometimes, as with Burke, its role has been central; the State itself is to be regarded with something like religious awe, and all the sanctions of institutional religion are there to buttress it.

But just that, of course, is the point at issue. Religion in this country has in the last two hundred and fifty years been too often drawn upon *not* as a source of power to energize community purpose but to provide motives for the preservation of the community pattern. This is not quite the same as to call it an opiate, though it indicates the element of truth in the Marxian aphorism. (The saying would have been less remote from truth, though still no approximation to it, had it been applied to Romance rather than to Religion.) Nor is it quite the same as saying—what is certainly true enough—that orthodox Christianity has been, in the main, far too little conscious of the *revolutionary* elements in the Faith, for an abounding communal energy only issues in revolution when the social pattern has become intolerably rigid and obsolete. What is meant is rather that the positive political significance of organized religion in our own community has been predominantly that of a stabilizing and conserving influence (which does *not* necessarily mean sheer reaction or obscurantism) instead of a communal dynamic.

But this raises a crucial question, which brings us to the fatal aberration in the Nazi movement, though one, be it said, which all organized political communities share in their degree. How *can* religion of a high order, if it is to be true to its own nature, permit itself to be used in the narrow interests of a single community, to energize it, when that energy inevitably takes the form of a bid for power in a world of competing and rival power-states? Does not that mean a prostitution, just that poisoning of the true spirit of religion to which the Nazi organization is committed? Does it not mean a hypocritical attempt to worship a God who is "Judge of the Nations," and therefore impartial to them all, while yet claiming his support and patronage as "Lord of *our* far-flung battle-line." Kipling's "Recessional" in its groping inconsistencies of phrase is indeed a good illustration of the modern western mind's bewildered

attempt to combine a high reverence that knows nothing of competing national loyalties with a self-dedication to the service of a single exclusive national community. Surely no religion worthy of our allegiance can thus demean and narrow itself?

At any rate one thing is clear: there can be no compromise with the assumption that the only purpose and value in generating communal energy is to enhance the community's power as a compulsive unit, that is its military power. That the "end" of the State is Power (*Macht*) is indeed a familiar dogma in German political theory in the last hundred years, and to the Nazis least of all is it a contention that calls for any apology. But though our own tradition of democracy repudiates it explicitly, it survives in a covert and furtive form at the back of our minds, a devil whom few of us have succeeded in exorcizing, perhaps for the reason that we have a sneaking fondness for the creature. But we certainly see the full ugliness of it most unmistakably, because most honestly and unashamedly, exposed in the Moloch of Nazism.

The cult of the war-mind for itself, and the thrilling inspiration to be found in it, is indeed a third main source from which Nazism has sought to infuse vigour into the community life. And the implication is plain. War presupposes an enemy, and the war-mind therefore a perpetuation of enmity. Sir Ernest Barker in his recent *Reflections on Government* gives us some very revealing quotations from a German pamphlet published in 1932, the year before the Nazi triumph. Dr. Carl Schmitt's *Der Begriff des Politischen*. "The writer," says Dr. Barker, "argues that the essence of politics—the creative factor which brings 'the political' into being and action —is the antithesis of friend and foe. . . . The foe is not the private enemy, but the public: he is not one but many—a fighting group intrinsically opposed, by its very genius, to your own. Essentially. or at any rate ideally, he is a foreign group. The conception of friend and foe which is essential to politics is thus a polemical or military conception." "The political motive is thus one which 'affirms . . . war, and also the feeling of war.' " I would stress particularly in these words that the German writer—in this respect assuredly a true precursor and prophet of Nazism—finds this assumption of permanent hostilities, latent if not actual, to be, not the *stabilizing*, but the *creative* factor bringing the political into dynamic actuality. It may be said, and indeed has been said, that such a view is little more than the transference of the theory of Thomas Hobbes from the relationship between individuals (thought of as driven to a political union through their mutual fears and enmities) to the relationship between States. But I think this would be unjust to the Englishman. For whereas Hobbes conceives the very purpose and meaning of politics to lie in the transcendence of disunity which it

alone makes possible, the German thinker almost seems to suggest that the perpetuation of enmity is so essential to politics that if external enemies are not forthcoming an internal substitute must take their place. And if this is an unfair gloss upon his argument it at any rate exactly tallies with the *practice* of Nazism from the beginning of its tenure of power. Communists, Cosmopolitans, Liberals, Jews, Roman Catholics—all have provided grist for the terrible mill of hatred and enmity.

Nazism might in one sense be regarded as a very grim experiment which has answered the question: What would happen if the pursuit of a social dynamic is allowed to become dominant over every other political and communal aim, subordinating utterly to itself the claims of personal freedom and of established social order? The answer is, the result is the naked cult of power and the perpetuation of the spirit of enmity. And only a debased, tribal religion of ruthless exclusiveness can accord with such a programme and invigorate it. The religion of Mars, which may unite soldiers everywhere in a fraternity of mutual honour and respect, is far too magnanimous and inclusive. What we have rather is the religion of Moloch.

In conclusion let me try to put together certain findings in a compressed form, so as to point the moral of the whole discussion.

The problem of politics has not only suffered confusion and distortion through our propensity—natural and indeed necessary within limits in the sphere of practice—to narrow our attention upon one great need only, to the disregard of others. It has also suffered from a propensity to seek a solution of the one problem we are primarily concerned with along a path that leads and can lead to no really satisfying solution. Perhaps indeed our dissociation of one problem from the others, where all should be regarded as inherently indissoluble, makes such a failure to solve any one of them inevitable. That is at any rate what has often happened. Thus the problem of establishing and confirming the social pattern has been approached by invoking the possibilities of intimidation, servility and (our characteristic English variant) snobbery. The problem of ensuring scope and opportunity for individual freedom has been tackled in economic terms, by appealing to acquisitiveness and complimenting it with the reward of *laisser-faire*. And finally the problem of infusing drive and energy into the communal life has been solved, with superficially staggering success but at a frightful moral cost, by the acceptance of the war- and hate-mentality, and the ideal of naked power.

It must, of course, be acknowledged that this is a one-sided account of the matter. Obedience to the communal Order need not rely on merely slavish motives, nor belief in personal liberty on merely sordid motives. And communal energy need not, we must hope,

lead inevitably along the path of pride and aggression. But if the colours here used are too dark to give a true representation of the facts, they may yet serve to expose certain untoward tendencies. And among these is the fact that religion has been found in each of the three causes playing a part that is unworthy of itself, and which has provoked religious-minded men into repudiating what they have rightly regarded as a perversion of its truest spirit. Religion has given a sanction to Order, a backing to Freedom, and a motivation for Energy. But it has sometimes done so by approving political or governmental intimidation, condoning economic greed, and justifying national hatred.

And yet the cure for these unfortunate political interventions of religion cannot be to attempt to exclude and dispense with it; for that is merely to empty the room into which devils will later assuredly come stealing—the spirit of servility unashamed, Mammon unashamed, Moloch unashamed. The remedy can only be in more but better religion—or, if we may drop this neutral and non-committal word, a purer and more integral Christian religion.

And most of all is this so in relation to the special contemporary need with which I began. Nazism, with the cult of naked power that is its essence (as distinct from secondary features, some of them valuable, that are by comparison accidents) arose as the answer to the need of an enervated, self-mistrustful and undynamic world. Somehow a superior substitute has to be found for compulsive, bellicose national power as the goal and meaning of communal energy. Fifty years ago William James in a justly celebrated essay (*The Moral Equivalent of War*) discussed this theme in its individual aspect. How, he asked in effect, are we to find or contrive for the individual person compensating alternatives for the thrill of adventurousness, the bracing dangers and the heroic hardships that are the unquestioned moral assets of war to set against its greater and terrible liabilities? The question which James considered is certainly no easy one, but how far simpler it is than that which confronts our and the coming generations as never before, that of finding a *political* equivalent for war, an end and cause upon which the energies of a community *in its corporate capacity* may be concentrated, which may invigorate its life and vitalize its policies.

But to pursue this theme further would take me beyond the scope of the present discussion. I can only repeat that so far as I can see there can be no real solution of the problem except by turning again to the unexhausted inspiration of a religious interpretation and faith which can maintain a social order stable but unservile, because all political communities are seen to stand under the controlling laws of an eternal Order; a religion which can restore and quicken man's belief in, and desire for, freedom, because it can give

him, as none other, entry into the full meaning of personal responsibility; and finally, a religion which can energize life not only in individual action but in a community's pacific and creative purposes, because it draws upon the dynamic resources of a Reality that is beyond and greater than life and of a Will that is not directed to war but to peace.

Such a conclusion no doubt has a familiar ring. We are so used to homilies which end on the note of uplift, and to discussions which hark perversely back to old-fashioned misty attenuated pieties. I am well aware that the phrases used above are vague and that the position they point to ought to be stated more precisely and (if possible) justified rationally. But that would be another and more formidable undertaking, which the reader of this article may be well content to be spared.

KANT AND NATURAL SCIENCE

B. M. LAING, M.C., M.A., D.Litt.

THE title of this article might quite well be given the more hackneyed form, Has Kant answered Hume? Much of the discussion pertains to this latter question, but as the aim is also to emphasize some points concerned with Kant himself a deviation in title may be permissible.

From among the different types of proposition which Kant recognizes he selects the synthetic a priori type as his main subject of investigation. This type raises the twofold query—what are the meanings of the words *a priori* and *synthetic*? There are obscurities in Kant's doctrine, and it may even be said that his own examples of a priori and of synthetic propositions are not very fortunate, though of course this fact does not of itself invalidate the theory he wishes to expound: better examples might be forthcoming. Other requirements, however, must be fulfilled, and they will be noted in due course. One consequence of the obscurity appears in an interpretation and criticism which have sometimes been made even by distinguished Kantian commentators.[1] It has been said that the distinction between analytic and synthetic judgments, as exemplified in "body is extended" and "body has weight," is not absolute since the former, as Kant himself says,[2] was originally derived from experience and is therefore synthetic, while on the other hand the latter judgment must be regarded as an analytical one when once it has become a part of the mind's mental furniture, since the conception "body" then includes the conception "weight" as a logical part of itself. This reading would make the distinction vanish in a peculiarity of psychology. It is possible that Kant's examples ought to be considered both in relation to the historical controversy about the fundamental properties of matter and to the rationalist view, expressed in Cartesianism, that the essence or fundamental property of matter is extension. If this is so and if the above interpretation of Kant's distinction is correct, doubt must be felt whether Kant held that the predicate "extended" which is asserted of body is derived from experience, or if he did, whether he is quite in accord with Cartesianism for Descartes probably did not maintain that it was. Apart from this, however, the proposition "body is extended" requires on Kant's theory to be regarded as asserting a predicate

[1] E.g. Watson: *Philosophy of Kant Explained*, pp. 58–59. See also T. H. Green: *Works*, II, p. 61.

[2] Watson is being quoted.

which is contained already in the subject-notion, namely body. A point which Kant may have in view and which is very important if his doctrine is not to dissolve into psychologism must not be overlooked. On the interpretation given above the necessity which characterizes some propositions is reduced to a psychological compulsion to express what is one's notion of a body: there is no guarantee that this notion is correct, and hence the necessity or compulsion is relative.

Now what Kant assumed was that the proposition "body is extended" is true, that the predicate expresses the essence of body in a logical sense, and that the necessity of the proposition, consequently of all a priori propositions, is a logical necessity which is prior to and conditions the psychological compulsion. One may be permitted to question whether this doctrine of essence and logical necessity need be assumed, for the necessity which is apprehended and about which the dispute rages *may be* merely the necessity of having a minimal property if we are to talk about, or claim to apprehend, body at all. The relevant point about the proposition "body is heavy" or "body has weight," said to be synthetic, is that the property of weight cannot be logically deduced from, or is not logically implied in, the property of extension. This being so, Kant has to regard it as in a logical sense an addition to the property of extension, and hence arises his problem as to how the addition can be related to the extension, that is a problem of synthesis.[1] The latter term for Kant signifies unity, and his problem becomes one of conceiving how a body is or can be a unity seeing that it has a number of logically unconnected properties. What underlies Kant's argument is the assumption that since the oneness of an object cannot be conceived, in view of its logically disconnected properties, as a logical unity of properties implied in or deducible from an essence or fundamental property, that oneness must be sought in the general conception of *body* itself, even though in so doing he may be open to the criticism that all his subsequent argument amounts to little more than a repeated re-assertion of the point that a *body* is a *unity* of various properties. This logical interpretation of Kant's meaning when he uses such phrases as "being contained in the subject-notion" or "being additional to" what is so contained is in conformity with the rationalist tradition in which he was trained, removes the psychologism and relativity which otherwise would affect his distinction, and throws light upon his admission

[1] It might be noted in passing that Descartes has the very same problem: it appears in connection with sense-experience and its status as knowledge. He has to make use of the Deity to justify the synthesis of sense-qualities with extension or else sense-experience never is knowledge at all. Which alternative is the view of Descartes is not very clear. Kant's variation on Descartes' theme is interesting.

that the issue does not depend upon the presence or absence of empirical elements in the proposition.

But the propositions with which Kant is concerned are not merely synthetic ones: they are also a priori. Unfortunately the word *a priori* has come to be used in many diverse senses, and it is to be feared it is so used by Kant himself. There is one clear and precise meaning which he attaches to it, namely necessity and universality; but it also, in virtue of his views about necessity and universality, comes to mean what is independent of experience and even as what is contributed by the mind. The problem of the synthetic a priori proposition, now considered with reference to this a priori character, accordingly becomes one as to how a predicate or a property that is not "contained in" the subject-notion can be asserted of, or can be known to be related to, the subject-notion in a manner that is necessary and universal. An interpretation involving psychologism does not permit of any ground for the defence of this universality and necessity in the sense in which Kant obviously wishes to maintain it. His point, whether he always expresses himself consistently or not on this matter, is that universality and necessity characterize the proposition and they do so because and in so far as they are features of a relation between the subject and predicate of the proposition and not because they are features of a relation between the knower and the subject of the proposition. The significance of the a priori for Kant is, not so much, if at all, that the subject of the predicate or both cannot be derived from experience, but that the relation between subject and predicate where that relation is marked by necessity and universality cannot be derived from experience. Kant's own examples, as well as his form of statement, are unfortunate because they suggest that the distinction between analytic and synthetic propositions and consequently, since the former is always a priori, the distinction likewise between a priori and a posteriori, depend on whether the predicate (and even the subjects) of propositions are or are not derived from experience, this in turn presupposing that there are propositions whose subjects or predicates or both are not derived from experience. There is here a source of obscurity which pervades Kant's whole exposition and which would render absurd any pure a priori *knowledge* or principles having the status of *knowledge*, for knowledge requires both a priori and sensuous factors, the former without the latter being "empty." The obscurity can be avoided, although no claim can be made that difficulties can be removed, by recognizing that the matter of the proposition is not being brought under discussion at all but that it is the form, the relational factor, that is in question. What is therefore at issue is not whether the matter—subject and predicate—of the proposition is derived from or is dependent on

experience but whether the relation, and especially certain properties of the relation, between subject and predicate are derived from and are dependent on experience. Thus Kant might quite consistently admit that in the proposition "body is extended," though it is analytic, the predicate "extended" was originally derived from experience; it could be so derived and yet be apprehended as "contained in" the notion of body; but this is not the case with synthetic or even with synthetic a priori propositions. What Kant was anxious to illustrate by his examples was what he intended to mean by the a priori and what he conceived to be the problem connected with synthetic a priori propositions. In this attempt to interpret Kant's meaning only elucidation is being aimed at; and a caution must be entered against assuming that any concession is being made in favour of Kant that subject and predicate are not relevant to our knowledge of the relational factor and that the nature of subject and predicate has no important bearing upon the character of the relation between them.

It is always possible to raise the question whether there are any synthetic a priori propositions. This question has been much debated, and both affirmative and negative answers have been given. There is no intention to debate this issue at present. What, however, may be discussed is a confusion in Kant's own exposition about this matter, a confusion which it may be provisionally suggested has been responsible for much of that indecisive debate. Kant declares that there are such synthetic a priori propositions; they are found in mathematics and in natural science. Mathematical judgments, he says, are always synthetical, and proper mathematical propositions are always judgments a priori and not empirical. The science of natural philosophy or physics contains in itself judgments a priori as principles. Hence Kant gives an alternative formulation to his problem: how is pure mathematical science possible, and how is pure natural science possible? These questions, since synthetic a priori propositions are declared already to exist, refer to the conditions which are presupposed in the making of such propositions and which are discoverable by analysis. Having formulated his problem in the form of these questions Kant goes on to consider metaphysics and whether it is or is not possible as a science. One result of his theory is that metaphysics as a science is not possible, and at the same time it seeks to explain why it is not possible. In the present discussion which now reaches the main topic the possibility of mathematics or the synthetic a priori character of mathematical propositions is left aside and attention is concentrated on the second question—the possibility of physical science.

Kant's theory has generally been accepted as a refutation of empiricism, especially of Hume. He finds fault with Hume for not

conceiving his problem universally. Hume, he says, "stopped short at the synthetical proposition of the connection of an effect with its cause" and hence "all that we term metaphysical science is a mere delusion."[1] He seems to think that a denial of the a priori character of the principle of causation carries with it also a denial of the synthetic a priori character of mathematics, for he goes on to declare that Hume would not have been led to such a result if he had viewed the problem universally, for he would then have seen that according to his argument there could not likewise be any pure mathematical science. To this criticism an answer may be given in passing. First, Hume's view of mathematics is not quite so easily disposed of as Kant seems to suppose, even though it may have defects, for though he questioned the precision and accuracy of geometry he maintained that algebra and arithmetic were perfectly exact and certain.[2] Critics are apt to overlook the fact that Hume sought to draw a distinction between mathematical knowledge and physical knowledge in order to emphasize the very special problem which he conceived to be involved in the latter. Second, the view that metaphysics is a delusion, for which Kant condemns Hume's theory, finds confirmation in Kant's own doctrine regarding the impossibility of metaphysics as a science; hence one is tempted to draw the conclusion that, since the same consequence follows both on the rejection and the acceptance of the synthetic a priori character of the causal principle, this synthetic a priori character has no relevance to the possibility of metaphysics nor has the conceiving of the problem of a priori synthesis in a universal form any such relevance.

Kant's charge against Hume that he failed to conceive the problem universally must not be allowed to pass without attention being drawn to what Kant is assuming. Why should Kant declare that because Hume did not view the issue universally he did not see that his rejection of the synthetic a priori character of the causal principle committed him to the rejection of synthetic a priori propositions in other spheres, for example in mathematics, and Kant suggests *at first* in metaphysics? Is there any justification for this declaration which is to the effect that not merely did Hume not see what was involved but that whether he was aware of it or not he was logically committed to a universal denial of synthetic a priori propositions in virtue of his denial of the synthetic a priori character of the causal principle? It is certainly difficult to find any justification for this contention. It would be sound if it were true that all scientific propositions are a priori or else none are. But this cannot be admitted, and it is doubtful whether any contemporary neo-

[1] *Critique of Pure Reason:* Introd. VI.

[2] *Treatise of Human Nature*, Bk. I, Part III, Sect. i.

Kantians have sought to maintain any such assertion. It would be sound if it were true that all scientific propositions, whatever be the science, are and must be a priori (as well as synthetic), that their a priori character is in all cases traceable to one common source, and that to impugn this character in one case is to impugn it in all cases. Something like this set of propositions seems to be present to, and to influence, Kant's mind: he is quite definite about the first, the second expresses what he attempts to expound and is of course a mere matter of theory the effectiveness of which is conditioned by the truth of the first proposition, the third is in no way convincing.

To appreciate certain features of Kant's doctrine and especially his view of the synthetic a priori character of propositions of physical science it is worth while, indeed essential, to clarify for purposes of contrast Hume's problem as stated by himself. Hume's problem had two stages. First, what is called knowledge (that is physical knowledge) is made up of propositions concerning matters of fact, propositions such as "bread will always nourish," "water will suffocate," and all those propositions which make up the laws of nature, all being propositions which though based on present and past experience yet assert something that goes beyond present and past experience. Second, the question arises as to the basis on which we form such propositions; it is a subject "worthy of curiosity to inquire what is the nature of that evidence which assures us of any real existence and matter of fact beyond the present testimony of our senses or the records of our memory."[1] Hume proceeds to examine the causal principle because it is generally accepted as the basis on which propositions concerning matters of fact are formulated; and his examination must always be considered in reference to this issue. The kind of propositions in which Hume is interested must not be allowed to drop out of sight; his concentration on the causal principle is subsidiary to his interest in factual propositions.

This somewhat summary statement of Hume's problem is all that is necessary for the present purpose. Kant in dealing with physical science does not confine himself to the causal principle, but the latter is one of the principles and undoubtedly for Kant a very important one. Now at the present day it would be rash to lay down any rigid line of distinction between laws that belong to the body of a science and laws that do not. It is, however, possible to assert that the principle of causation is not in the ordinary sense a scientific proposition, certainly not in the sense in which the Gas Laws or the Law of Gravitation are scientific laws. Kant seems to

[1] *Enquiry*, Sect. iv, Part i. cf. *Treatise*, Bk. I, Part III, Sect. ii and iii, which is not in the formulation of the problem fundamentally different from the *Enquiry*.

recognize this for he goes on to talk about a pure physics (sometimes the term *general physics* appears), possibly on the analogy of, and possibly misled by the idea of, a pure mathematics. Pure mathematics is what is commonly understood as mathematical science; pure physics according to Kant consists of certain propositions which "are commonly treated at the commencement of proper (empirical) physical science,"[1] and he is at pains to assert specifically that there is such a pure physics. Obviously there is not a pure mathematics standing in the same relation to mathematics (the word *proper* would have to be added to secure correspondence with Kant's distinction within physics) as pure physics, in the sense conceived by Kant, stands to physics proper. (There is the modern distinction between pure and applied mathematics, but this does not appear relevant to Kant's distinction within physics.) If the analogy is accepted and stressed, then pure mathematics ought to be a matter of the axioms, definitions, and postulates solely—which is not the case. An examination of these axioms, etc., is really an epistemological or philosophical problem, even though it may be carried out by philosophically-minded mathematicians. But Kant's own example ($5 + 7 = 12$) to illustrate the nature of synthetic a priori propositions in mathematics shows that Kant did not conceive pure mathematics in that way.

The whole of Kant's discussion shows that it has nothing to do with physics in any generally accepted sense. At most there is this to be said in justification of Kant, namely that in his own time physics was usually spoken of as "natural philosophy" which on account of purely historical incidents included a good deal of discussion of propositions supposed to be valid of physical nature and which because of this was a mixture of philosophy and physics to an extent which would be probably now rejected. Physics does not treat of, or try to establish, "synthetical principles of the understanding," what Kant calls "axioms of Intuition," "anticipations of perception," "analogies of experience," "postulates of empirical thought." If this were so, Kant would have to be regarded as a physicist, a pure physicist, and his theory would be a physical one. In case this may seem to be pressing Kant too hard, it must be remembered that the principle of causation is included in pure physics and is discussed by him as one of the principles of the understanding, and that thus the distinction between his task and that of pure physics vanishes. In case also there may be considered here only a minor and insignificant matter of nomenclature it is necessary to point out provisionally—what will be in the sequel developed more fully—that this distinction between pure physics and physics proper or empirical sidetracks Hume's problem and

[1] *Critique of Pure Reason:* Introd. VI n.

leaves it unanswered. Kant expressly maintains that there are such principles as go to make up a pure physics, and that the latter is a rational science capable of being formulated on, the basis solely of an examination of the pure understanding and the way in which it functions.

Two main questions arise out of this attitude of Kant. The first one concerns pure physics and the propositions that constitute it. The second concerns the bearing which these propositions of pure physics have, even if Kant is correct about them, upon physics proper, and consequently upon what Kant has actually succeeded in establishing.

In regard to the first question it now becomes clear that when Kant insists that physical science contains synthetic a priori propositions the physical science he has in mind is pure physics. It almost appears that physics proper has dropped from his sight and therewith Hume's primary problem, never to be brought fully again into the limelight but mentioned only in incidental references. The consequence is that his theory remains fundamentally obscure in its aim and achievement. The propositions that make up a pure physics constitute a very mixed bag. Among them are propositions relating to the *vis inertiæ*, and propositions such as "in all changes of the material world the quantity of matter remains unchanged" (this may be compared with the proposition proved under the First Analogy that "in all changes of phenomena substance is permanent, and the quantum thereof in nature is neither increased nor diminished"), "in all communication of motion action and reaction must always be equal," "all changes take place according to the law of the connection of cause and effect," "everything that happens must have a cause," "in the series of phenomena there is no leap (*in mundo non datur saltus*)," "there is no break or hiatus between two phenomena (*in mundo non datur hiatus*)." This mixture of propositions has generally been overlooked or ignored, partly because attention has been mainly concentrated upon the principle of causation; the mixture, however, is a matter not irrelevant to an estimate of Kant's doctrine, for his starting-point is his contention that these propositions of pure physics do constitute an actual body of an existing science of pure physics, that they are synthetic, and that they are a priori or universal and necessary. There is, however, a certain amount of obscurity in Kant's exposition on this matter. In one statement of his problem he accepts the presence of synthetic a priori propositions in pure physics and then announces that his task is to show how such propositions are possible, that is to unveil the conditions implied in and by the fact that pure physics is synthetic and a priori. What his view of such conditions is need not be discussed here. What, however, happens if Kant's unquestioning

acceptance of such a synthetic and a priori character is challenged? To-day it is not merely the case that doubt is entertained concerning such a character but it is even the case that some of the propositions, if not all, are considered false and untenable. The principle of causation itself is under suspicion and is in some quarters rejected. It may be that Kant in some places writes as if he believed that he is not merely accepting such propositions but that he is showing them to be universal and necessary and by doing so proving them to be true. Which of the things he is doing, *accepting* as indubitable fact or *proving* such propositions and their a priori character, is what remains obscure. Nevertheless it requires to be stressed that if these propositions of pure physics—and it is with these that Kant is concerned—are not true or even are not free of doubt, his whole theory dissolves into an attempt to prove what is not the case and cannot be the case. Attention may be drawn in this connection to the fact that recently some philosophers, probably being anxious to make out a case for Kant, have exerted themselves in arguing that there *are* synthetic a priori propositions. The unsatisfactory nature of such arguments lies in the samples of propositions produced, for they are of minor significance usually so far as scientific doctrine is concerned, do not contribute much to the support of Kant, and do not, as they seem sometimes intended to do, serve to convict Hume who would, and probably did, accept some of them. The most that could be said of Kant's synthetic a priori principles of pure physics is that they are relative to an epoch, that particularly of Kant himself or of the seventeenth and eighteenth and possibly of the nineteenth centuries. But this admission deprives them of that necessity and universality which Kant wants to assign to them, and would tend to confirm Hume even if (as his critics generally assert he did) he *denied* causation.

This limitation to Kant's claims can be seen if one of the principles he cites is examined, just for purposes of illustration, namely, that action and reaction must be always equal. It is to be presumed that Kant had in mind one of Newton's laws of motion—only Newton added "and opposite." Now the justification of these laws of motion has always been a matter of difficulty and of considerable controversy. It is not at all, however, a clear proposition.[1] In fact, its interpretation depends upon the results of investigations in what Kant has called physics proper and upon the laws formulated there, and this is a point which has an important bearing upon the second issue to be raised presently, namely, the relation of these synthetic a priori principles of pure physics (Kant's terminology) to the propositions of physics proper. In regard to the proposition itself there is the question as to how equality and oppositeness are decided

[1] Broad: *Scientific Thought*, pp. 171 f.

and it is not permissible to assume that it is a matter of the line joining the two bodies. The law makes use of the two ideas of force and direction; and the composition of forces and of motions is not merely an arithmetical addition or subtraction. The conception of force which is implicated raises, from the modern point of view, questions about the necessity of the conception or about its tenability; and if its retention is advocated then a further question has to be raised about the kind of forces, whether Newtonian or non-Newtonian. The recent introduction of the notion of a "field of force" complicates the interpretation of the law or proposition. Hence Professor Broad can write that[1] "there is a *field* of force, to which every particle is subjected when referred to the axes in question; but it cannot be said that the force on one particle is balanced by an equal and opposite force on another particle. Some non-Newtonian forces, then, it would seem, do not obey the third law . . . it is only for Newtonian forces that the third law holds universally. This conclusion could, however, in theory be avoided by the introduction of hypothetical concealed masses; so that the non-Newtonian forces on observable masses might be regarded, as the third law requires, as one side of stresses between these observable masses and the hypothetical concealed ones. Thus all the laws of motion can be formally preserved relative to any frame of reference, provided it is assumed that new frames imply new forces, and provided that we are allowed to assume such concealed masses as we need." It does not matter whether Professor Broad is right or wrong; what is relevant is that the proposition which Kant accepts as synthetic a priori and which is accepted by him presumably as *true* is one that is extremely complicated, is one that requires careful examination and interpretation before it is possible to decide what its nature is or what it is asserting and in what respect and with what qualifications it is true. It seems reasonable to insist that, before a proposition is accepted as true and as universal and necessary, there should be a clear understanding of what the proposition is maintaining. It seems also reasonable to point out that Kant should have carried out a critical analysis of his synthetic a priori propositions, and that the task of a pure physics, such as he conceives it, would be just to carry out such a criticism and examination. In such a case pure physics would be coincident with what is now called a philosophy of science.

The second question to be raised is this: supposing that there are synthetic a priori propositions constituting what Kant calls a pure physics, what bearing have they upon what Kant calls physics proper? This is an issue which Kantian commentators pass over very light-heartedly. Yet it is the crucial point of Kant's answer

[1] *Scientific Thought*, p. 176.

to empiricism and to Hume in particular; and a failure to show that the synthetic a priori propositions of pure physics guarantee the necessity and universality of the propositions of physics proper is a failure to answer Hume and renders the whole of Kant's effort otiose. Kant's task was not, as is so often mistakenly supposed, accomplished when he showed, or is supposed to have shown, that the causal principle is synthetic a priori; his own reaction to Hume was that the latter's view of causality undermined the possibility of knowledge; he himself must not be allowed to get away with the claim that by establishing the a priori character of the principle of causation he has automatically and without the need of any more argument established the a priori character of empirical science, of the empirical propositions with which Hume was concerned. Kant's commentators have tended to overlook the significance of Kant's distinction between pure physics and physics proper and its relevance to the kind of *knowledge* which Hume and Kant respectively have in mind.

Attention has already been drawn, and is drawn again, to the fact that it is not enough, as some philosophers are doing at present, to seek to show that there are synthetic a priori propositions. A proposition to the effect that every patch of colour has shape would have been admitted by Hume as universal and necessary. "When a globe of white marble," he says,[1] "is presented, we receive only the impression of a white colour disposed in a certain form, nor are we able to separate and distinguish the colour from the form. . . . A person who desires us to consider the figure of a globe of white marble without thinking on its colour, desires an impossibility." Propositions of this kind have simply no relevance to Hume's problem of causation and to his solution of it. What is required is an argument to show that the propositions which make up physics as a science, that is, what Kant calls physics proper, are synthetic a priori. The controversy raised by Hume was primarily about such propositions and only secondarily about the synthetic a priori character of the law of causation. What Kant had to show was not merely that the propositions of pure physics were universal and necessary (that is, a priori) but that they stood in such a relation to the propositions of physics proper as to guarantee the universality and necessity of the latter. If the propositions of physical science (physics proper) are not shown to be synthetic a priori—with emphasis on the a priori or universality and necessity—the discussion about the a priori character of the causal principle ceases to have importance so far as scientific propositions are concerned. It will not do therefore to argue that examples of synthetic a priori

[1] *Treatise*, Bk. I, Part I, Sect. vii. But the point is fundamental to his view of space.

propositions exist and can be found; it is necessary to show that there exist synthetic a priori propositions of such a kind as are relevant, directly or indirectly, to physics proper being a science. Unless this contention is accepted there is no point in Kant's remark concerning Hume that his theory of causation made all science impossible. It appears therefore that Kant is somewhat confused about the problem which Hume raised and about what he himself is doing about it. If there is anything of importance in the task which he undertakes it is that there are at least *some* propositions the nature of which is synthetic, universal, and necessary, if there is to be a science of physics. These propositions are either part of the body of physical science itself, in so far as it is usually labelled an experimental and empirical science, or else they are such as to guarantee the universality and necessity of the propositions of such a science. If the latter requirement is not fulfilled, or cannot be so, physical science remains a body of probable propositions as it would be if Hume's position were such as his critics contend it is and as it is according to the candid admission of many scientists to-day.

With this clarification of the issue it is now possible to proceed to a consideration of Kant's view. If he is not clear about the issue, it cannot be expected that he can be clear in dealing with it. The obscurity comes in partly through his distinction between pure physics and physics proper, and partly through an attempt to view the problem of physical knowledge as exactly parallel with the problem of mathematical knowledge in spite of that distinction. Consequently there are two alternatives about which a student of Kant feels hesitation: either he *accepts* the universality and necessity of the propositions of physics proper, and hence considers that he has to show how they can be, or come to be, universal and necessary, or else he seeks to *prove* their universality and necessity by showing how they are derived from or dependent on the a priori principles of the understanding. Attention may once more be drawn to the fact that what are in question are the propositions of physics proper. In regard to mathematical propositions he holds that they are synthetic a priori because based directly upon the a priori form of space.[1] The difficulty is that physical propositions cannot be treated analogously to mathematical ones, partly because of the distinction between pure physics and physics proper to which there is no corresponding distinction in mathematics, and partly because of the unsatisfactory term "based upon," for mathematical propositions are rather to be regarded as being concerned with the analysis of the a priori form of space and as expressing the results of this analysis in a way in which the propositions of physics proper (whatever be the case with the propositions of pure physics) are not

[1] *Critique of Pure Reason: Analytic of Principles*, Ch. II, Sect. iii.

obtained by an analysis of the categories or a priori principles of the understanding. The phrase "based upon" may possibly be used in the case of the latter, although a doubt may be expressed whether it conveys satisfactorily what Kant would like to assert. What he does, however, expressly and elaborately seek to argue is that the synthetic a priori propositions of pure physics "follow from" the a priori categories of the understanding. What he *has* and *ought* to show is that the categories of the understanding by way of the universal and necessary propositions of pure physics (granting for the moment that they are universal and necessary) explain or guarantee the universal and necessary character of the propositions of physics proper. It is these propositions, let it be repeated, which are relevant and important in regard to Hume's theory.

What has Kant to say on this issue? "The pure faculty (i.e. of the understanding) of prescribing laws a priori to phenomena by means of mere categories, is not competent to enounce other or more laws than those on which *a nature* in general, as a conformability to law of phenomena of space and time, depends. Particular laws, inasmuch as they concern empirically determined phenomena, cannot be entirely deduced from pure laws, although they all stand under them. Experience must be superadded in order to know these particular laws; but in regard to experience in general, and everything that can be cognized as an object thereof, these a priori laws are our only rule and guide."[1] In another passage he writes:[2] "By nature, in the empirical sense of the word, we understand the totality of phenomena connected in respect of their existence according to necessary rules, that is, laws. There are therefore certain laws (which are moreover a priori) which make nature possible; and all empirical laws can exist only by means of experience, and by virtue of these primitive laws through which experience itself becomes possible." The more closely such passages as these are examined the more confused are they found to be; but what does seem evident, is that Kant has in view two types of law: first, primitive laws which render experience possible and which are presumably the "transcendental laws of nature" to which he refers in the opening of the paragraph following on the second quotation above; and second, empirical laws of nature. It appears that Kant views them in the following way: empirical laws "exist only by means of experience" which may be taken to mean that they are formulated on the basis of experience, experience itself however is possible in virtue of the transcendental laws of nature, these in turn being derived from the a priori conceptions of the understanding, hence the empirical laws of nature are dependent on (are derived from?) these transcendental

[1] *Critique of Pure Reason: Analytic of Conceptions*, Ch. II, Sect. ii, 22.

[2] *Ibid.*, or remarks on the three Analogies, following on Third Analogy.

laws of nature and ultimately on the a priori conceptions of the understanding, plus of course the matter of sensibility since "experience" includes this also.

Philosophers are just as prone as ordinary people to confuse assertion with proof. Has Kant merely made assertions or has he proved what was required of him? Professor Paton[1] in reference to Kant's doctrine says "that we can discover the causes of a given effect, only by means of empirical experience (*sic*)" and adds that in this respect Kant agrees with Hume. Two comments may be passed on this: first, this is just the issue raised by Hume, it is not enough to agree with him, it is the divergence from Hume that will constitute his answer to Hume; second, that we can discover the causes of a given effect only by means of experience may be true but it does not follow that such "discovery" is always correct, the conclusions formed can be wrong and the "law" unsound. According to Professor Kemp Smith[2] what Kant deduces is the quite general principle that every event must have *some* cause in what immediately precedes it. What in each special case the cause may be, he goes on to say, can only be empirically determined; and that any selected event is really the cause can never be absolutely certain. Professor Kemp Smith here makes an important admission, the significance of which is not obviated by his further contentions that the particular causal laws are discovered from experience, not by means of the general principle but only in accordance with it and that the general principle, as even J. S. Mill teaches, is assumed in every inference to a causal law, and save by thus assuming the general principle, the particular inference to causal connection cannot be proved. These contentions express ideas traditional in Logic, but that does not make them illuminating. The relation of the a priori conceptions of the understanding to the propositions of physics proper *via* the propositions of pure physics has not been made any clearer. At most Kant's commentators have asserted that according to Kant the propositions of empirical science have two factors—an a priori element and an empirical one. How they come to have the former has not been shown. This double character of physical propositions, which Kant seems anxious to establish, is commonly expressed in the form, as Professor Kemp Smith expresses it, that the particular causal laws are neither purely empirical nor wholly a priori. In one respect this form of statement is misleading, indeed absurd, and is allowed to pass only because of the ambiguity that attaches to the word "a priori." The most important meaning of the word is expressed by the terms universality and necessity and it is this meaning which attaches to it in the phrase "synthetic

[1] Kant's *Metaphysic of Experience*, II, p. 283.

[2] *Commentary on Kant's Critique of Pure Reason*, pp. 364–65.

a priori proposition." To say therefore that the propositions of empirical science are neither purely empirical nor wholly a priori is to say that they are not wholly universal and necessary, and that would be to grant Hume's claim and is contrary to what Kant wished to establish. Kant asserts that there are propositions which are without any qualification universal and necessary even though they assert empirical matters.

Kant himself is not at all clear as to how the universality and necessity come to characterize propositions of empirical science. In the passage quoted above he admits that "particular laws" "cannot be entirely deduced from pure laws, although they all stand under them." He writes also[1] that "all laws of nature, without distinction, are subject to higher principles of the understanding, inasmuch as the former are merely applications of the latter to particular cases of experience." Hence he seems to think in both these passages that the empirical law is a particular or less general case subsumed under the universal a priori principle; and if this were so it might seem to follow that the empirical laws of nature possessed an a priori feature, for he says[2] again that "even the laws of nature if they are contemplated as principles of the empirical use of the understanding possess also a character of necessity, and we may therefore at least expect them to be determined upon grounds which are valid a priori and antecedent to all experience." But in the first place, grave doubt exists as to what is meant by, or what is the process described by, the phrase "merely applications of the latter to particular cases of experience" and as to whether the laws of empirical science are discovered by any process that could be so described. In the second place, a similar objection must be made regarding the phrase "cannot be entirely deduced from pure laws." This may or may not mean the same thing for Kant as the preceding phrase; but it is relevant to ask what is it that is deduced and to what extent it is deduced, if it is deduced at all. In the third place, it has already been seen that Kant distinguishes between two kinds of laws of nature which have been labelled above as possibly being "transcendental laws of nature" and empirical laws of nature. When therefore he refers to "all laws of nature without distinction" he may be understood to mean both transcendental laws and empirical laws of nature. To do so, however, is to obscure the very special issue that is in question regarding empirical laws of nature and that arises because of the distinction between the two. In the fourth place, when Kant speaks of laws of nature being "contemplated as principles of the empirical use of the understanding" and, as such, having a "characteristic of necessity," it is difficult to see how the

[1] *Critique of Pure Reason: System of the Principles of the Pure Understanding*, Ch. II, Sect. iii. [2] *Ibid.*

laws of nature he has in view can be empirical laws of physical science without confusing his whole theory about the synthetic a priori principles which constitute pure physics. It is to be presumed, therefore, that he is referring to the latter or to the transcendental laws of nature. This interpretation is confirmed by the use of the phrase "all laws of nature without distinction" when he wants to include both kinds of laws. If this is so then the a priori characteristic belongs to these transcendental laws of nature and not to empirical laws of physical science. In the following paragraph, when making a distinction between empirical principles and principles of the pure understanding, he declares that empirical principles (there is, it is to be admitted, the qualification "merely") have no character of necessity "how extensively valid soever" they may be. What significance in this connection is to be attached to the distinction which seems to be introduced by the word "merely" remains in doubt and a discussion of the point would require a considerable additional space. On the other hand, he declares[1] that "our knowledge of the existence of things reaches as far as our perceptions, and what may be inferred from them according to empirical laws, extend." Unless such empirical laws have universality and necessity, any inferences from them will not have universality and necessity, and hence our knowledge of the existence of things will not have universality and necessity. Is Kant's theory itself thus subject to the criticism which it passes on Hume?

It is clear from all this that Kant's exposition is confused and serves to confuse the reader. The fact is that he misleads as to what he is doing and as to what he is achieving because of his varying use of the phrase "laws of nature." He misleads, as already pointed out, at the beginning of the Critique by declaring that physical science contains synthetic a priori propositions when that at most is true (if true at all) only of a pure physics. What he is discussing are not laws of nature in any scientific sense but metaphysical presuppositions of scientific thought. It may be that, as is suggested by some recent philosophico-scientific work, a distinction can be drawn between primitive or fundamental laws of physics and other laws (in the more usual sense) of physics; but whether Kant's a priori principles are anything like the former is doubtful. Even if the principle "every event must have a cause" is true and valid, the causal laws of nature are not deducible from it and their truth is not guaranteed by it. And it is so with Kant's other principles. There has been a long-continued belief but a mistaken one that Kant could refute Hume by showing that the principle "every event must have a cause" was synthetic a priori. The crucial point, this

[1] *The Postulates of Empirical Thought.* (Just before the Refutation of Idealism.)

article has tried to argue, lies in showing that this principle guarantees the universality and necessity of the propositions of physics proper. When an attempt is made to consider what Kant has to say on this crucial issue, it is found that he either ignores it or else gets into hopeless confusion. Earlier in this article it was stated that a student of Kant was confronted with two alternatives about which he felt hesitation as to which was the correct one, namely whether Kant *accepts* as a fact or *proves* as a conclusion that the propositions of physics are synthetic a priori. A qualification to this statement may now be added. It is the possibility that Kant never takes note of the propositions of physics proper but even when talking of laws of nature is thinking of the propositions of pure physics.

INTERESTINGNESS

PROFESSOR W. T. STACE

I PROPOSE to fashion this paper after the pattern of a conventional sermon. That is, I shall begin by taking a text, and shall then elaborate on it. My text is a sentence of Whitehead, and it reads as follows: "It is more important that a proposition be interesting than that it be true; the importance of truth is that it adds to interest."[1] To my knowledge Whitehead makes this identical remark at least twice in his writings. It appears in *Process and Reality*. And it appears again, word for word, several years later in *Adventures of Ideas*. The fact that he thus says it twice, in identical words, suggests to me that he is himself immensely pleased with it, and that he values highly the thought which it expresses. At this I am not at all surprised. For it seems to me that the remark enshrines one of those sudden flashes of insight for which Whitehead is famous, and which stamp him as, not merely the ordinary very clever or very learned man, but the man of genius. Speaking for myself, I can record that when I first read this remark it produced in me a sudden thrill, a sense of illumination, of the opening of new vistas, not wholly dissimilar to the thrill which, as a very young man, one felt when one first read certain stanzas of Shelley or Wordsworth.

Whitehead himself does not elaborate on his remark. Of course, it stands in a certain relation to its context in his pages. But the context does not really throw much light on it. And so, in a sense, it may be said to stand alone, as if it had no context. What he says just before it and just after it doubtless has its own meaning and value, but it is more or less a blank, or even a darkness, as far as this is concerned. And the remark stands out like a flash of lightning in this darkness. You either see it, or you are blind and don't see it. You either understand it or you don't understand it. It is of not much use grubbing through the pages for the meaning, page after page, after the fashion of the scholar. If you haven't understood it at once, you won't find the meaning of it in this way.

Though Whitehead does not elaborate on his dictum, I intend to do so. I do not mean that I am going to try to explain what Whitehead means by it. I am going rather to say what it means, or perhaps what it suggests, to *me*. Quite possibly Whitehead would not agree with anything I am going to say. My elaboration of it may be totally different from anything Whitehead might say if he were to elaborate on it.

[1] *Process and Reality*, Part III, Ch. VI, Sect. ii.

Let me draw attention first to the very paradoxical character of the remark. It runs counter to all our common thinking about truth. It might even appear shocking to some people. It is a remark too which seems to me to evidence great intellectual audacity. One recognizes that even if one had had the wit to think of it, one probably would not have had the courage to say it. For traditionally truth has been regarded as something enormously important, one of the supreme values. We remember that our grandfathers used to talk about the trinity of ultimate values, Goodness, Beauty, and Truth. We have been accustomed to talk of truth as on a level with goodness and beauty. It was at truth, we thought, that science and philosophy aimed, a pure ideal, sacred and inviolable. It is on the premiss that nothing could be more valuable than truth that the demand of academic freedom is based. The artist, we suppose, has the high function of seeking beauty, the saint has the high function of seeking goodness, the scientist and the philosopher have the high function of seeking truth. And now Whitehead's remark seems, as it were, rather to pour cold water on the ideal of truth, to say that it is something not very important. "It is more important that a proposition be interesting than that it be true," he says. This seems even to imply that if you are a scientist or a philosopher it would be better that you should construct a false theory, which happens to be interesting, than a true theory which is less interesting. It is true that he goes on to attach a value to truth. But it is a subordinate value. "The importance of truth is," he says, "that it adds to interest." A truth is not valuable because it is true, but only because, or if, it is interesting. This seems to suggest that it is a mere matter of chance that, for some irrelevant psychological reason or other, true ideas happen to tickle our intellectual palates more than false ideas do; and that this is the only reason why we ought to prefer true ideas to false ones; and even that if in any particular case a false idea should interest more than a true idea, we ought in that case to prefer the falsehood to the truth. And all this seems to suggest that truth, as such, has no real value at all. Or certainly it seems to reduce the traditionally exalted value of truth to a very low level. And all this might well tend to be very shocking to conventionally minded people, or at any rate to seem very paradoxical.

And yet I think that there are a lot of facts which seem to point to conclusions of this sort. For instance, it certainly is a fact that most people greatly value *originality* in a philosopher, or indeed in any writer. I am not here talking about the value of originality in art, but in ideas, in intellectual constructions, in propositions, in theories. We certainly do greatly value originality of thought. Why? If what we look for in a theory is simply truth, then it ought not to matter to us whether the theory is original or not. Yet I think that

most of us would rather read an essay with original ideas with which we did not agree—that is, which we thought untrue—than an essay full of commonplace and unoriginal ideas, even if we believed that these ideas were true. And we value a man who has interesting ideas, even if we disagree with them, that is, think them untrue. We value him more than a man who keeps telling us uninteresting truths. It is true that if we know, or suspect, that a theory is *wholly* false, if we think it simply fantastic, we tend to lose interest in it. At least we seem to require that it might *possibly* be true. It must have some sort of semblance of truth. But if it has this we may be extremely interested in it, even though we think it is most probably false. These facts seem to bear out Whitehead's remark that the importance of truth is only that it adds to interest. At any rate the high value we place on originality certainly shows at least that in a theory truth is not the only value. Our interest is aroused by the bare fact of newness. A new idea is like a new sauce. It tickles the intellectual palate as a new sauce tickles the physical palate. We value this new sensation.

Let me next note a personal fact about myself, which is known to me by introspection. Of course if it is merely personal and peculiar to myself, then it is of no importance in connection with our subject. But I think others, including my readers, may have noted the same sort of feelings in themselves. Sometimes a friend, wishing to please me, will say to me regarding a book or article of mine, "I quite agree with what you have written. I think it is all quite true." I find that this comment, instead of pleasing me, secretly tends to irritate me. It suggests that my ideas, although they are true, are only the sort of dull, uninteresting truths my friend might have thought of! But if a friend says to me, "I found your book extremely interesting," then even if I suspect that he thinks my book false, I am extremely pleased. Of course I do want my books to be true. But the chief thing I want is that they should arouse the reader's interest. An interesting book *must* be a good book. But a book of truths may be a good book, or it may not. It may be a book of platitudes. And I think I want to write good books even more than I want to write true books. Perhaps these are scandalous confessions. But I make them, of course, in the interests of truth!

Now what is at the back of all this? How do we explain these various psychological facts about the way in which we value propositions and theories? I think we may bring the issue to a head by asking the question: why do we ever want to know truth? Is it for the sake of its truth? Or is it for the sake of its interestingness? Why do we, in general, think true ideas better than false ideas? Why do human beings prefer knowledge to error?

There is one obvious answer to these questions which, however, is

not the answer I want. It is that we value true ideas because they are useful, because they are instrumental to other values. This, of course, is obvious. If I have the true idea that the ice on the pond is thick enough to bear my weight, I can safely walk on it; whereas if my idea is false, I may fall through the ice and drown. Of course it is true that true ideas have this instrumental value, but this answer is really irrelevant to my question.

Most certainly this instrumental value of truth is *not* the motive which normally impels the philosopher or the scientist to seek truth. The normal motive of such a man is simply curiosity, that is the desire to know for the sake of knowing, and not for the sake of any practical applications of his knowledge. At a meeting at which Einstein spoke a student asked him: "Why do scientists want to know about relativity and light-quanta? What is the use of this knowledge?" Einstein countered by asking the student: "Why do you eat?" The student replied, "I eat in order to preserve my life and health." "No, you don't," said Einstein, "you eat because you are hungry. And that is why the scientist wants to know about relativity and light-quanta, because he is hungry for this knowledge."

Of course it is perfectly legitimate to want knowledge for the sake of its practical utility. I am not denying that. I am simply saying that, as a matter of psychological fact, that is not the normal motive of the genuinely scientific or philosophic type of man. And if you do want knowledge solely for its practical utility, then, although you may be quite justified, you have not the temperament, the bent of mind, of the scientist or the philosopher. For this reason, if a student of philosophy is always asking: "What is the use of these ideas which you are asking me to study? What bearing have they on my life? How do I apply them to solve the problems of my life?" then, although I deeply sympathize with him, I know that he lacks the genuine philosophic spirit, and I think it is unlikely that he has any real gift for philosophy.

Let us go back to the question: why do we prefer true ideas to false ideas? Why do we prefer knowledge to error? I pointed out that we do of course prefer true ideas because they are practically useful, while false ideas are useless or harmful. But I said this was not the answer I wanted. Why not? Because what I am trying to discover is in what way truth *itself* is valuable. That is, I am asking about its *intrinsic* value. I am assuming that, quite apart from the practical utility of truth, we think that it is generally better to think true propositions rather than false ones. This is obviously the assumption on which the scientist and the philosopher proceed. And I think the same assumption is also made, at least to some extent, by all men. For all men possess, at least in some measure, the characteristic

of curiosity, that is the desire to know things for the bare pleasure of knowing them apart from any further end. The scientist or the philosopher is only the man in whom curiosity, of a certain sort, is an over-mastering passion. The same assumption was also obviously made by those philosophers who talked about the trinity of ultimate values, Goodness, Beauty, and Truth. For they meant that these were, or ought to be, the ultimate *ends* of human action, not that they were means to some other values. In fact, to say that truth has *only* an instrumental value is equivalent to saying that in itself it is not valuable at all. It is equivalent to answering my question, why do we prefer truth to falsehood, apart from utility, by saying that we don't prefer it, or at least that we ought not to. And so our question really is: why, apart from their practical utility, do we think true propositions better, or more valuable, than false ones? We may put the question in another way. It would be quite possible, I believe, to have an entirely self-consistent system of physics which should be entirely false. Why would not an Einstein, or for the matter of that anyone else, be satisfied with this? Why does he want a *true* system? If he does not want the truth for its practical applications, why does he want it? Why will not a false system of physics do just as well? And obviously we might put the same questions about philosophers and systems of philosophy.

The only answer I can suggest is that for some reason—and I don't know what the reason is—true ideas are more interesting than ideas which are known to be false. In other words, *what* we value in truth, if we do value it for its own sake and not merely for the sake of ulterior ends, is its interestingness. We may say, if we like, that true propositions tend to have a certain quality, the quality of interestingness, and that this quality is what is intrinsically valuable in truth. I want to be very careful to make it clear that I do *not* mean to imply that the quality of interestingness is an objective quality of some propositions in the sort of way in which some philosophers have apparently thought that goodness is an objective quality which certain things have. That may be the case for all I know, though I do not think it myself. I am not raising the question of the objectivity of interestingness or any other value. I want to leave it quite open, and not discuss it. I want what I say to be quite consistent with either a subjective or an objective view of value. So when I say that a true proposition tends to have more of the quality of interestingness than a false proposition, I do not really mean any more than would be meant by saying that true propositions are more interesting than false ones. I merely use this phrase because I think there are certain advantages in having a noun, interestingness, for the value I am talking about, which will be analogous to the value-nouns goodness and beauty.

But now what I am saying is not at all that true propositions have this quality of interestingness, and that false propositions don't have it, and that this is the reason why we prefer truth to falsehood. It is not so simple as that. For in the first place true propositions are not the only ones which are interesting. Some false ones are. I pointed out that even a theory which we believe to be false may still be interesting, though we tend to lose interest if it is obviously wholly false, fantastic, absurd. But even this, is not, I think, always true. I think there may be ideas in regard to which we believe that they are almost certainly false, and yet we find them interesting. Perhaps the idea of solipsism is an example of this. In the second place, not all true ideas *are* interesting. Some are much more interesting than others. And some are almost wholly uninteresting. What we call platitudes are among these. Again, the law of gravitation is, at least to many minds, extremely interesting. But if someone were to set about calculating or counting the number of blades of grass on the lawn outside the college hall, and were to announce, after prolonged study, that there are exactly 1,422,769 blades of grass on the lawn, this proposition might be true, but it would be, most of us would think, an extremely uninteresting truth.

For these reasons we cannot say simply that truth is interesting, falsehood uninteresting, and that for this reason we prefer true propositions to false ones. What I think we can say is this. Although some true propositions are uninteresting, and some false propositions are interesting, nevertheless it tends on the whole to be the case that true propositions are more interesting than false ones, and that this is the reason why we value truth above falsehood, although there may be particular cases in which this is not so, as for example where we prefer an essay containing interesting and original ideas, although we disagree with these and think them false, to an essay containing nothing but dull and commonplace truths. And this view is what, I think, is expressed by Whitehead when he says, "the importance of truth is that it *adds* to interest." This seems to admit that false propositions may be interesting, but to say that, if they were true, they would be more interesting.

Now I think it will be worthwhile to study this quality of interestingness, or rather the state of mind of a person who is interested in something. What happens when you are extremely interested in a theory, a book, a proposition, an idea? This state of mind of being interested is a state of great mental excitement and absorption. The mental faculties become very alert. They work fast. They are stirred up. There is intense mental activity. The opposite of being interested is being bored. In boredom there are the opposite characteristics, an absence of excitement, a dulling and slowing down of the faculties. Now the state of mental activity, excitement, alertness, which *is*

the state of being interested, is a fountain of intense delight. Its opposite, the dulling of the mental activities in boredom, is a condition of relative unhappiness.

Further, I think we may compare the mental state of a man who is interested in a set of ideas with the mental state of a man who is receiving a strong aesthetic impression from a picture or a piece of music. This also is, in some sense, a state of excitement of the mental faculties, though I leave its more precise analysis to the aesthetician. In both cases the mental excitement is a fountain of delight. And in both cases the delight is not connected with the expectation of any further ends and is, in Kant's sense of the word, "disinterested."

I am not saying that the two states of mind are identical. I am not suggesting, for instance, that our pleasure in a system of philosophy or physics is really an aesthetic pleasure, or that philosophy is a kind of artistic enterprise, or that a system of philosophy can be justified by its aesthetic values. Things of that sort are sometimes said, but I regard them as fundamentally erroneous. For beauty and interestingness, and the states of mind which correspond to them, have differences as striking and important as their resemblances. What I am trying to suggest is that interestingness is an ultimate value, co-ordinate with beauty, and independent of it. Interestingness is that ultimate value at which science and philosophy aim, just as beauty may be said—if we use the word beauty widely enough to mean valuable aesthetic experience of any kind—to be the ultimate value at which art aims. I do not think I believe that there is any trinity of values in the old-fashioned sense. But if we retained that idea we should have at any rate, according to my view, to make it Goodness, Beauty, and Interestingness. In accordance with Whitehead's dictum I substitute the value interestingness for the value truth. And we have to remember that some false propositions may possess this value. Truth as such is not, I should say, a value at all.

As to the difference between interestingness and beauty, of which I spoke, I think it is simply the difference between the value of abstract or conceptual ideas and the value of concrete forms. Interestingness has the same relation to concepts which beauty has to percepts. It is always *this* picture, *this* statue, *this* sunset, which is beautiful. It is always a thought, a concept, a proposition, a theory, a universal, which is interesting. This difference is the difference between the intellectual and the aesthetic. It is true that we often find a particular thing, this thing before my eyes, interesting. But it will be found that it is really always a *proposition* about this thing which interests us. It is the fact *that*. . . .

There are two criticisms of my view which I will try to meet. One is that, if it is followed, it may lead to very bad results. Instead of striving for truth we shall be led to pursue after any fantastic

ideas which may seem to us merely "interesting." The pursuit of truth will be degraded, robbed of its high seriousness. We shall be putting a premium upon crack-pot ideas.

We must sympathize with this criticism. Whitehead's idea—or perhaps I should say the idea which I have extracted from Whitehead—is dangerous. In this respect, however, it is in good company, for I think that most worth-while ideas are dangerous. There are, however, some safeguards. In the first place we must remember that truth has another value besides its interestingness, namely its instrumental value. And we do not as a rule keep these two kinds of value in water-tight comparments. We tend to pursue both together, without clearly distinguishing them. And our desire for useful ideas is likely to act as a check on our desire for interesting ideas. Secondly, the frank recognition that interestingness *is* a value which we seek should tend to save us from the suggested unfortunate results. For example, a philosopher may well study the idea of solipsism, examine its implications, and so forth, because the fact that it is a logically possible and perfectly self-consistent set of ideas makes it interesting, without ever supposing or trying to make others suppose that it is true. I think it is in exactly this spirit that some mathematicians have worked out self-consistent systems of geometry without any idea that they are, or ever could be, applicable to reality. Thirdly, we have as a final safeguard the fact, on which I have already insisted, that true ideas tend to be more interesting than ideas believed to be false. We shall continue on the whole to seek true ideas, because they are as a rule the most interesting.

Another possible criticism is that the pursuit of interestingness is in any case a trivial thing. To be absorbed in a merely interesting idea may, it will be said, be very delightful and pleasant, it may satisfy some impulse in us, such as curiosity, it may be a tickling of the intellectual palate, it may sometimes deliver us from boredom. And in all this there is no harm. But it is trivial. It cannot be regarded as a really important element in life. And to set it up as one of the supreme values, along with beauty and goodness, is surely unjustified.

I can only say that I think this criticism is sheer error, that it proceeds from a false scale of values. For if you look at it closely, you will find that it is really identical with the error of the man who thinks that aesthetic delight is unimportant and that art and beauty are trivial aims. This is, of course, exactly what many so-called practical men, who are Philistines, do think. In fact, this might almost be called the definition of philistinism. Everything our critic said about the triviality or unimportance of the delight of being interested in an idea, of having one's intellectual palate tickled, may

equally be said about the delight of being absorbed in the beauty of a picture or poem, or having one's aesthetic palate tickled thereby. The one is as much philistinism as the other. The error in both cases proceeds from the same source, the view that the only thing which is really important in life is the practical, the useful, which in most cases means the values of security, food, bodily comfort, wealth, the material values. The so-called practical man may, I think, be simply defined as the man who places material ends higher in his scale of values than he does the things of the mind and the spirit. And the criticism that interestingness is a trivial end proceeds from a scale of values thus perverted and turned upside down.

GLOBUS INTELLECTUALIS

F. H. HEINEMANN, Ph.D.

THE relation of philosophy to science, a problem of paramount importance for the future of philosophy, is reconsidered in this paper. Usually science has been accepted as the indubitable basis and philosophy has been made so dependent on it that it has become chiefly an investigation into the foundations, the results or the language of science. It has been wrongly assumed that science contains all possible material knowledge and that philosophy has but to analyse the language and grammar of science. Even where science has been criticized, as in the French Critique of Science, it has been accepted in its present form and restricted merely to the analysis of matter whereas the access to life has been claimed for philosophy (Boutroux, Bergson).

Rejecting this over-estimation of science in its present form and any kind of unilateral dependence of philosophy on it (or any philosophy which is mere *ancilla scientiae*), I ask: Is not the present crisis of humanity so deep-rooted that it necessitates a change both in philosophy and in science, and is not the problem of a transformation of science indissolubly connected with any possible transformation of philosophy? Thence a double problem arises, historical and topical in its aspects. The historical problem is this: Has not a transition to a new set of problems or to a new kind of science been made whenever a system of science had reached its utmost perfection, or when certain sets of enquiries had been carried through to such an extent that they did not promise any result new in principle? Was it not like that at the end of the Middle Ages (as before at the end of Antiquity)? The chief part of this paper will be devoted to this question. It tries to prove that the Re-Orientation of Science as part of the Re-Orientation of the Mind was the central problem of the two Bacons. The same problem reappears in a topical form to-day. We have again to ask: Is our highly-developed system of sciences adequate to describe the realm of reality? Or are there perhaps realms hitherto overlooked? Have we been going in the right direction or do we have to change it? Are our notions not chiefly adapted to certain spheres of our experience (e.g. sight), whereas other spheres (like smell and taste) are neglected? Why is it that tens of thousands of colour-shades exist, while we have only a limited number of words to describe them? Would it not be fruitful, therefore, to construct to-day a new *globus intellectualis* in

a manner similar to that of the two Bacons? Keeping these questions in mind throughout our enquiry we shall return to them at the end.

Roger Bacon

In the same century in which mediaeval thought reached its culmination in the scholastic systems of Albert the Great (1193–1280), Thomas Aquinas (1225/6–1274), and Bonaventura (1221–1274), in opposition to it, in the life of a simple, highly gifted monk, Roger Bacon (1214–1294), the re-orientation of the sciences becomes the central impulse. Every important landmark in his life, his refutation of Aristotle, his new study of nature and his experiments, his chief works written on Pope Clement IV's initiative (1266), his *Opus majus*, *Opus minus*, *Opus tertium*, and the intended *Compendium Philosophiae* or *Scriptum principale*, are all the expression of one single task which may well be called: "Proto-Renaissance of the Theoretical Mind."

Since the specialist studies of the nineteenth century have dissected the work of Roger Bacon, his rehabilitation is a just demand, I do not wish to go back to the interpretations of Victor Cousin.[1] E. Charles[2] and R. Adamson,[3] who saw in him only a precursor of modern times, though I shall make full use of Charles's invaluable book. Neither do I neglect the important research work done since then which has proved Roger Bacon to be closely connected with the general tendencies of the thirteenth century. But I shall controvert the opinion that he was not really original, that none of his ideas were his own, and that he did no more than apply and combine the ideas of others.[4] If, on the other hand, the impressive studies of Raoul Carton[5] revealed a second Bacon of the inner experience, a religious mystical imperialist, we must ask: what is the internal unity of these two Bacons? Was not his work at the same time theoretical and practical, scientific and religious?

The chief aim of the founder of his order, Francis of Assisi, to renew human life and to gain rebirth in following Christ, reappears here in a complicated form, implying a renovation of theology and science, whereof the latter only interests us in this paper.

Bacon rejects the science of his time, its principle, authority, and its results; to him it is fruitless and dead because those sciences

[1] *Journal des Savants*, Paris 1848, pp. 129, 432.

[2] *Roger Bacon, sa vie, ses ouvrages, ses doctrines*, Paris 1861.

[3] *R. Bacon, The Philosophy of Science in the Middle Ages*, Manchester 1876.

[4] A. G. Little, "Roger Bacon," 1928 (*Proceedings of the British Academy*, XIV, p. 11).

[5] *L'expérience physique chez R. B.*, Paris 1924; *L'expérience mystique de l'illumination intérieure chez R. B.*, Paris 1924; *La synthèse doctrinale de R. B.*, Paris 1924 (cf. Hoffmann, "L'expérience chez R. B.," *Rev. Néo-schol.*, 27, p. 170 (1925)).

necessary for the advancement of learning which could yield fruitful results are neglected. He attacks with remarkable vigour the authority of the Middle Ages, Aristotle, whose books he wishes to burn because study of them is but waste of time.[1] He criticizes Alexander of Hales, Albert the Great, the Franciscans, the Dominicans, all the scholars of his time[2] and, above all, the *stultum vulgus* of all times. He tries to free the human mind from its common errors, which are, (1) submission to faulty and unworthy authority, (2) influence of custom, (3) popular prejudice, and (4) concealment of our own ignorance.[3] The free decision of reason tends to take the place of authority. Thus the very basis of science is changed.

His positive aim is *vivificatio sapientiae*, a re-vivifying of wisdom as a whole, not only of parts of it,[4] nor of science alone, but of a wisdom that had been dead for generations[5] and which comprises philosophy as well as theology.[6] Real wisdom, the road to salvation (*sapientia est via in salutem*), is one, given by one God in its totality to one world for one purpose.[7] Therefore the giving of new life to wisdom forms part of a deeper process of the regeneration of the human mind and of man. Therefore the reform of science also is not attempted for a part, but for the whole.[8] Yet this whole is not treated in the mediaeval manner as a *summa* or *compendium* of all sciences, nor in a mere discussion of particular parts, but rather in a form which the second Bacon called a *globus intellectualis*, that is, a review of the scientific knowledge of his time with special stress on those parts hitherto neglected. These neglected parts are, in his opinion, precisely the most important; namely, those sciences which are necessary for the understanding of others and without which nothing can really be understood:[9] the key sciences, or the "roots" (*radices*), which contain the common origin of different branches of knowledge. A root-knowledge, as distinct from derived knowledge, is characterized by the fact that its applications and fruits are infinite:

[1] "Si enim haberem potestatem super libros Aristotelis ego facerem omnes cremari, quia non est nisi temporis amissio studere in illis, et causa erroris et multiplicatio ignorantiae, ultra id quod valeat explicari" (*Compendium stud. phil.*, ed. Brewer, p. 469).

[2] Cf. E. Charles, *l.c.*, pp. 97 ff.

[3] *Op. maj.*; cf. *Op. tert.*, cap. 22; *Comp. philos.*, cap. 2.

[4] *Op. tert.*, ch. 4.

[5] "Vivificatio sapientiae, quae mortua jam a multis temporibus jacuit, me valde instigabat" (*Op. tert.*, p. 17).

[6] *Op. maj.* I, ch. 14.

[7] *L.c.*, I, 33.

[8] "Nec pars potest veraciter cognosci, nisi in suo toto cum aliis" (*Op. tert.*, p. 18).

[9] "Enumeravi jam linguas et scientias quae ignorantur a vulgo studentium, et quae faciunt sciri omnes alias, et sine quibus nihil potest veraciter cognosci" (*Op. tert.*, p. 56).

Illae veritates sunt eligendae quae possunt vocari radices et elementa respectu ramorum et foliorum, quorum fructus vadit in infinitum.[1]

This notion is a variation of the old idea of elements which reappears in Leibniz as the idea of the "alphabet of human thoughts," that is, as the belief in the existence of a small number of fundamental truths from which all the others may be derived.

The root-sciences, the *rationes cognoscendi* of the other sciences, are called great sciences, for they have a special power over the other sciences and the things of this world. This notion, in itself important, starts the renovation of the scientific system by reducing it to six[2] or four roots.

> "There are four great sciences without which the other sciences cannot be known nor a knowledge of things secured. If these are known any one can make glorious progress in the power of knowledge, without difficulty and labour, not only in human sciences, but in that which is divine. The virtue of each of these sciences will be touched upon not only on account of knowledge itself, but in respect to the other matters aforesaid. Of these sciences the gate and key science is mathematics."[3]

The *vivificatio* of science implies a transformation of its notion. Mediaeval science was heteronomous, subject to an external authority, dependent on theology and subordinated to wisdom because the chief aim was the salvation of the soul. But though Bacon continues to pursue the same aim he makes "reason" the indispensable means for moral improvement and salvation, and considers wisdom as so important that the order or the disorder of the whole world depends on it.[4] Thus Science becomes autonomous, it is no longer based on authority, but on reason and experience.[5] It is not an end in itself; on the contrary it is no longer pure, but applied science whose value consists in its applicability. This transformation is essential because it connects knowledge with action and gives a new stimulus to the method of enquiry (the problem now being to develop theories which make new applications in practical life possible), and finally because it connects sciences hitherto divided. Bacon's merit is not the discovery of applied mathematics, for they were known to the Greeks, but his new

[1] Bodleian Digby MS. Nr. 76; quoted by Bridges, *The Life and Work of R. B.*, 1914, p. 82.

[2] "Sed modo reducam omnia ad quasdam radices certas, scilicet sex" (*Op. tert.*, ed. Brewer, p. 32).

[3] *Op. maj.*, ed. Bridges, I, p. 97. [4] *Op. tert.*, ch. 1, ed. Brewer, p. 11.

[5] "Quod per auctoritates probatum est experientia cuiuslibet certius dijudicatur" (*Op. maj.*, I, ch. 3).

emphasis on the application of mathematics to physics. Assuming that it is impossible to know the things in this world without mathematics,[1] he postulated a general science aiming at the reduction of all actions of natural bodies to mathematical principles, which he called *De multiplicatione specierum* or *De influentia agentis*.[2] This science, he says, is unknown in Paris and among the Latins, only twice treated in Oxford, and there are not three men who know its power. Applied science is judged by its utility, for sciences are formed out of necessity, utility, and difficulty. Mathematics are of especial value because of their many useful applications in philosophy, physics and theology.

The method of science changes together with the notion. Discarding the scholastic method as bad and insufficient, Bacon states that if we wish to know the truth we must know the methods by which to find it, for in each case a certain method must be followed.[3] He does not believe in a single unique method but follows in fact a double method. The one starts from the general and goes on to the particular, the other begins from the particular and ends with the universal. The first one is a specific *modus procedendi* or path given to us by nature:

> *"Nata est nobis via a communibus ad propria, et a radicibus ad ramos, et a fundamentis ad cetera, et a fontibus ad rivulos."*[4]

Here it becomes evident that the regress to the sources means the finding of a starting-point for the method whence to proceed to the consequences, and that the "root" is logically determined by its being the most general proposition or theory from which special propositions or theories may be derived.

This idea of method determines the structure, though not the contents, of his metaphysics. If Aristotle defined metaphysics as the science of the principles of being and knowledge, Bacon restricts it to the principles of knowledge, which may then be applied to being. In a wider sense "metaphysics through the common principles of all sciences investigates qualities metaphysically, and through the corporeal investigates the spiritual, and through the created discovers the Creator, and through the present life deals with the future life, and furnishes much introductory matter to moral philosophy."[5] But the specific character of his metaphysics is to distinguish all sciences, to give the rationale (*rationem*) common to them all: for it is common to all things and to all special sciences

[1] "Nam impossibile est res huius mundi sciri, nisi sciatur mathematica" (*Op. maj.*, I, p. 109).
[2] *Op. tert.*, ch. 11, p. 37.
[3] *Comp. Philos.*, ch. 1; cf. E. Charles, *l.c.*, p. 111.
[4] *Comm. natural.*, pp. 13–14; *Op. maj.*, I, ch. 9, p. 19; *Comm. math.* Charles, *l.c.*, p. 363.
[5] *Op. maj.*, Bridges, II, p. 226.

and has power over all of them.[1] It is the *scientia communis*, which needs to be known by any specialist:

> "Necesse est omni tractanti de scientiâ quacumque speciali, ut eam alias atque saepius comparet ad scientiam communem, quae metaphysica nominatur. Cuius proprium est dare divisionem omnium scientiarum magnarum, et differentiam et originem, et quod est proprium cuilibet, et ordinem illarum assignare, et quis eas invenit et quando inventae sunt, et ubi, et verificare principia earum."[2]

This idea, prevalent in his thought, determines his treatment of the special sciences. For he postulates a science, *Communia mathematicae*, containing what is common to all mathematical sciences, and another one, *Communia naturalium*, treating the common ground of all natural sciences.[3] He even postulates a natural science comprising inorganic as well as organic nature. For to him everything is "natural" in which the principle of movement and rest is effective, i.e. all elements, metals, colours, plants, animals and men.[4] Therefore it contains, besides the above-named common science, seven special parts, namely: (1) perspective, (2) astronomy, (3) the science of all the elements, in so far as they are parts of the world, or the science of weight, (4) the science of all those lifeless beings which originate from the elements, or alchemy, which corresponds to our chemistry, (5) a science of all living beings except man (*scientia animatorum precedentium hominem*), or agriculture, (6) a science of man (*scientia de anima rationali, scilicet, de homine et praecipue de sanitate et infirmitate eius, et de compositione et generatione illius*), and (7) experimental science.[5] He claims that his treatment of natural science is new, compared with any former treatment.[6]

The second method is experimental. *Duo enim sunt modi cognoscendi, scilicet per argumentum et experimentum.*[7] Experience instead of dialectic becomes the true basis of science; because without it nothing can be known sufficiently. That fire burns we learn by experience and not through reasoning. Yet this experimental method, notwithstanding Bacon's famous experiments, is more a postulate than a developed procedure. Experience, moreover, here includes not only external experience (*per sensus exteriores*) which is backed by instruments and trustworthy witnesses, but also internal ex-

1 *Comm. natural.*, ed. R. Steele, p. 9.

2 *Comm. math.*, Charles, *l.c.*, p. 362.

3 "Quapropter manifestum est quod una debet scientia esse naturalis philosophiae, quae omnia tractet communia naturalibus, et haec erit prima inter scientias naturales" (*Comm. math.*, ed. Charles, p. 371).

4 *Comm. natural.*, p. 2.

5 *L.c.*, p. 8. 6 *L.c.*, p. 10. 7 *Op. maj.*, II, p. 167.

perience through *illuminationes interiores* running through seven degrees.[1] Experimental science, the matter of all speculative sciences, has three prerogatives. It investigates the conclusions of other sciences by experiment; it arrives at remarkable new results which are neither principles nor consequences of arguments and could not be found in another manner, yet have a place in existing sciences; and finally it creates new sciences.[2] All this is more intention, more dreaming of new inventions (of ever burning lamps, of explosives, etc.) than discovery.[3] But it is the beginning of a method which later on leads to new discoveries.

This *vivificatio* of science, of its notion and method, results in a new evaluation of sciences and consequently in a reconstruction of their system. The evaluation is based on the value of usefulness: *Ceterum ante omnia utilitas cuiuslibet rei consideranda est.*[4] Logic, including grammar, is regarded as being a secondary or accidental science, of no great importance for invention or theory. It even depends on mathematics.

> "Neither can the fundamental principles of demonstration, nor conclusions, nor the subject as a whole be learned or made clear except in the realm of mathematics, because there alone is true and forceful demonstration."[5]

That does not imply a clear notion of mathematical logic, but indicates the need for it. A much higher value is attached to mathematics itself without which nothing can really be known in this world. He propounds these lapidary propositions: "*In sola mathematica est certitudo sine dubitatione,*" and "*sola mathematica . . . manet nobis certa et verificata in fine certitudinis et verificationis.*"[6]

A more detailed description of Bacon's system of root-sciences is unnecessary because it may be found in any handbook, and is irrelevant to my purpose. My chief point is: Roger Bacon's *Instauratio Scientiarum* is directed by a remarkable instinct for what is right and fruitful. He was right in his methods, both of which are fruitful, right in his evaluation of mathematics and experimental science, right in his postulating root-sciences, right in his estimate of optics.[7] This "right" is not to be understood in a merely historical sense as meaning that Bacon's results are reaffirmed by the development of modern science and philosophy, but right in this sense that he has proved not only the possibility but the fruitfulness of the

[1] *Op. maj.*, II, p. 171. [2] *Op. maj.*, II, pp. 172 ff., 215.

[3] For the legend of Roger Bacon, the magician, cf. W. H. Davenport Adams, *Witch, Warlock and Magician*, London 1889, pp. 27 ff.

[4] *Op. tert.*, ch. 5.

[5] *Op. maj.*, IV., ch. 2; I, p. 102; cf. *Op. tert.*, ch. 28.

[6] *Op. maj.*, I, pp. 106, 107. [7] *Op. maj.*, II, pp. 1 ff.

task called *Instauratio Mentis*. In a certain sense his beginning is more modern than the development of this idea by later thinkers.

Francis Bacon

While in Roger Bacon we find the problem of a fundamental renovation of the sciences in a tacit connection with a religious and theological reform of theology and the Church, we shall see that *Francis Bacon* introduces the proper terminology, transferring the problem to a more worldly sphere and separating it from all religious and theological motives. Again, the same idea becomes the ἐντελέχεια of a whole life. We must accustom ourselves to see the greatness of genius in its proper field. Francis Bacon's genius consists, in his intention, in his breaking through the walls of mediaeval narrowness, in his anticipation of ends realized only centuries later—and not in the manner, subtlety or perfection of his created work. In this sense he is one of the great figures of the Renaissance, gifted with all the virtues and all the vices of the time, but to really appreciate his greatness one must read his *Instauratio Magna* in the Latin text which Rawley saw altered year after year in twelve different drafts. The great plan of this work forms the skeleton of his most important philosophical tracts.

His *Instauratio* has a double tendency. Negatively it implies that the present situation of science is unfortunate. People know neither their wealth, nor their power, overestimating the one, underestimating the other. The ground of our former knowledge, rich in words, poor in works, is fallacious. Whereas the mechanical arts improve steadily and invention follows invention, philosophy and moral science are motionless as statues. Wanting to know the truth, we are impeded by the idols, by the delusions of the senses and by the understanding which overleaps experience and wants to arrive too quickly at general laws. The positive aim of the renovation is to establish the reign of man on earth, to make him master of nature, to augment human power. The way lies in the transformation of philosophy into an art of direction and invention: *Ars quaedam indicii et directionis, quae caeteras artes earumque axiomata atque opera detegat et in conspectum det.*[1] Bacon is looking not for new inventions, but for a principle of inventing.

This principle of renovation dominates the well-known features of Bacon's work. The new attitude towards experience, the new interpretation of nature, which implies a new kind of logic, inductive logic, and especially the *globus intellectualis*, are the means towards this end. They are all incorporated in the general scheme of his central work, which contains:

[1] *De Augm.*, V, 2, ed. Spedding, I, p. 622.

I. The division of the Sciences (in order to fill in the existing gaps).
II. The *Novum Organum*, or Directions concerning the Interpretation of Nature. (Here the new method of induction, as a means of discovering the secrets of nature, is opposed to the old deductive method.)
III. The Phenomena of the Universe; or a Natural and Experimental History for the Foundations of Philosophy (the whole of experience as the basis of a new philosophy).
IV. The Ladder of the Intellect (giving examples of the way of ascent and descent of the mind).
V. The Forerunners, or Anticipations of the New Philosophy (inventions of the author and of others).
VI. The Second Philosophy or Active Science (the result of all preceding endeavours).

This scheme makes it clear that the idea of the *globus intellectualis* is the starting-point of the whole work and consequently its basis. This idea is in Bacon closely bound up with his own person, with his striving for "discovering and augmenting objects and arts adorning human life," with his wish to become a benefactor of humanity, a founder of man's reign on earth, and the first to throw light on the boundaries of this province. As far back as 1591 we find him writing to Lord Burleigh:

> "I wax now somewhat ancient; one and thirty years is a great deal of sand in the hour-glass. . . . Lastly I confess that I have as vast contemplative ends, as I have moderate civil ends: for I have taken all knowledge to be my provinces; and if I could purge it of two sorts of rovers; whereof the one with frivolous disputations, confutations and verbosities, the other with blind experiments and auricular traditions and impostures, hath committed so many spoils, I hope I should bring in industrious observations, grounded conclusions, and profitable inventions and discoveries; the best state of that province. This, whether it be curiosity, or vain glory, or nature, or (if one take it favourably) philanthropia, is so fixed in my mind as it cannot be removed."[1]

Here he is already conscious of his life's mission, but the idea of the "intellectual globe" hidden in a beautiful but somewhat misty dream has not yet taken shape. Already the realm of science is recognized as *his* field of work and its cultivation as *his* task.

Just as in organic growth partial functions come into existence before the moment when they suddenly unite to form the total

[1] Spedding, VIII, p. 108.

function, so in spiritual life component ideas take shape before they merge into a whole. So in the *Valerius Terminus: Of the interpretation of nature* (probably written in 1603[1]) the partial idea appears that we impede knowledge by handling it in parts and by cutting off particular sciences from the root and stock of universal knowledge,[2] and that this fault will be corrected by reuniting the sciences wrongly separated. Apart from wrong separation and unification a second obstacle arises: "If men have failed in their very direction and address that error will never by good fortune correct itself" (*ibid.*, III, p. 232). Thus the problem of determining the direction becomes the most important of all, and a necessity in a troubled time where it no longer suffices that men should "put themselves on the way without foresight or consideration of their journey's end" (III, p. 232), following either their intuitive inclination or the advice and example of others, indiscriminately and without an attempt at analysis. We can thus reduce this complex problem to one question—"to secure and warrant a true direction" (III, p. 240).

This problem of finding a true direction, as important to-day as it was in Bacon's time, has been neglected because it does not fit in with natural philosophy, which has eliminated all teleological questions; nor with moral philosophy, for it concerns our scientific activity as well. Although the category of final cause is justly eliminated as a means of explanation of specific facts, science in its totality must have a certain aim, and follow a true direction. Therefore a set of teleological questions regarding science as a whole must be admitted. Bacon's entire philosophy is a philosophy of direction, in its intention, not in its performance. He intended to reach "perfection . . . not in the worth of the effect, but in the nature of the direction," in order "not to stir up men's hope but to guide their travels" (III, p. 235). The notion of direction itself remains undefined. Yet true direction is contrasted with the conjectural and the particular and restrained one, and the fulness of direction is determined by two conditions, certainty or infallibility and liberty. Liberty means that the direction is not restrained to some definite means, but comprehends all the means and ways possible.

These two partial ideas (a demand for a new union and division of the sciences and for a determination of the direction) combine with a third one expressed in the title of a chapter in the same *Valerius Terminus: The Inventory, or an enumeration and view of inventions already discovered and in use, together with a note of the wants and the nature of the supplies.* Here the idea of an art of invention (*ars inventoria*) comes in, but not, as often in European

[1] Adolfo Levi: *Francesco Bacone considerato in relazione con le filosofie della Natura del Rinascimento e col razionalismo Cartesiano* (Pavia, 1925, p. 151).

[2] Spedding, III, p. 228.

philosophy (e.g. in the art of Lullus) as a theoretical but as a practical problem. For Bacon proposes:

> "The plainest method and most directly pertinent to this intention will be to make distribution of sciences, arts, inventions, works, and their portions, according to the use and tribute which they yield and render to the conditions of man's life, and under those several uses, being as several offices of provisions, to charge and tax what may be reasonably exacted or demanded; . . . and then upon those charges and taxations to distinguish and present, as it were in several columns, what is extant and already found, and what is defective and further to be provided" (III, p. 234).

This idea of classification is new, as compared with the classic idea of the *encyclopedia* and the mediaeval idea of the *summa* in including arts, inventions, works, in making "usefulness to life" the principle of classification, and in aiming at new inventions. It seeks "to give some light of the nature of the supplies, whereby it will evidently appear that they are to be compassed and procured" (*ibid.*). This practical aim is so dominant that the theoretical arrangement is a mere inventory, a sort of tabulation.

It is only in the important work, *Of the Proficiency and Advancement of Learning Divine and Human*, published in 1605, but probably begun in 1603 that the partial ideas are united in the central idea of the "intellectual globe" with which its second and only important book starts and ends. Here he notes that one of the chief obstacles to the advancement of knowledge is that hitherto no proper investigation has been carried out as to which of the branches of learning are yet undeveloped.

> "Wherefore I will now attempt to make a general and faithful perambulation of learning, with an inquiry what parts thereof lie fresh and waste, and not improved and converted by the industry of man; to the end that such a plot made and recorded to memory may both minister light to any public designation, and also serve to excite voluntary endeavours; wherein nevertheless my purpose is at this time to note only omissions and deficiencies, and not to make any redargution of errors or incomplete prosecutions; for it is one thing to set forth what ground lieth unmanured, and another thing to correct ill husbandry in that which is manured" (III, p. 328).

The relation of the scheme to practical work is demonstrated by the introduction of a new conception of practical possibility.

The French Encyclopaedists, noting in this work only the encyclopaedic tendency, and the reference of the parts of human knowledge

to the three faculties of man's understanding, of History to his memory, Poetry to his imagination, and Philosophy to his reason, overlooked the fact that this scheme, this "encyclopaedia," is but the means to the "intellectual globe." Bacon is chiefly interested not in what we know, but in what we ought to know. Therefore, after a short explanation of his scheme, he begins at once:

> "History is Natural, Civic, Ecclesiastical, and Literary; whereof the three first I allow as extant, the fourth I note as deficient. For no man has propounded to himself the general state of learning to be described and represented from age to age, as many have done the works of nature and the state civil and ecclesiastical; without which the history of the world seemeth to be as the statua of Polyphemus with his eye out; that part being wanted which does most shew the spirit and life of the person" (*ibid.*, p. 329).

Thus he really completes a perambulation of learning, makes, so to say, an intellectual globe before the general conception of it is formulated. After having done so he recognizes:

> "Thus have I made as it were a small Globe of the Intellectual World, as truly and faithfully as I could discover; with a note and description of those parts which seem to me not constantly occupate, or not well converted by the labour of man. In which, if I have in any point receded from that which is commonly received, it hath been with a purpose of proceeding *in melius*, and not *in aliud*; a mind of amendment and proficience and not of change and difference" (*ibid.*, p. 490).

But although this concept dominates his whole book, it is not more elaborated than in the *Valerius Terminus*.

The idea is further developed in the *Descriptio Globi Intellectualis* (1612),[1] a fragment probably intended as a part of the great renovation. This treatise follows the method of the *Advancement of Learning* in dividing the provinces of human knowledge, with the object of discovering vast new territories, but introduces a new feature in its attempt to state all possible questions and all possible solutions for every subject it touches. This, however, is only elaborated for Astronomy.

The idea is actually fulfilled only in the *Instauratio Magna* (1620) and *De Dignitate et Augmentis Scientiarum*. Here style, plan, and execution bear witness to Bacon's high aspirations. The *distributio operis* in giving the plan lays stress on the problem of direction. The first part is to show (*monstrare*), the second—logic—to secure

[1] Spedding, III, pp. 727 ff. The date is inferred from an astronomical statement contained in it.

(*munire*), the third to use the ways (*inire vias*), the fourth is to give examples of enquiry and invention, gained in this way, the fifth is to contain the new discoveries of the globe, the sixth to set out the ensuing philosophy.

It is not the mediaeval *summa* he is aiming at; but, as it were, a negative *summa*, which shows what is not yet accomplished.

> "In laying out the divisions of the sciences, however, I take into account not only things already invented and known, but likewise things omitted which ought to be there. For there are found in the intellectual as in the terrestrial globe waste regions as well as cultivated ones" (IV, p. 22).

The "intellectual globe" lies between two *summas* (one which it replaces and one which it prepares, and which might come into existence if the waste regions were cultivated) or between the classico-mediaeval form of encyclopaedia-associated since Cassiodorus with the practical education of the *trivium* (grammar, elocution and logic) and *quadrivium* (arithmetic, astronomy, geometry, and music)—and the French eighteenth-century *Encyclopaedia* which it prepares for. It owes its existence to the contemporary exploration of the terrestrial globe. If in Dante's *Divina Commedia* the human soul longing for redemption wanders through hell, purgatory and the stars of heaven, so now the human intellect, excited by the explorations and discoveries of the period, especially those of Columbus, traverses the realm of the mind in search of new territories, of a "new world" (*novus orbis scientiarum*). The distinction of the "intellectual globe" from the "material globe" is more important, because it replaces the Greek antithesis between the world of appearance and the world of the intellect or of ideas. Bacon, introduces the principle "that nothing be found in the globe of matter which has not its parallel in the globe of crystal or the understanding" (*ut nihil inveniatur in globo materiali, quod non habeat parallelum in globo crystallino sive intellectu* [V, 59; I, 772]). The distinction between the two worlds is here no longer cosmologico-ontological as in Antiquity, nor cosmo-soteriological as in the Middle Ages. The material world is now the world of practical action, the intellectual world that of the mind. Bacon's parallelism means that a theory to which no parallel action may be found is empty, that every theory is worth as much as its practical consequences, or that the idea is nothing but the anticipation of a future action.

But if the "intellectual globe" differs in method from the ideas of the *summa* and the encyclopaedia, and in content from the terrestrial and material globe, what is its positive meaning? It is a methodical review of Bacon's *voyage of discovery* into the intellectual world, with the aim of making it fruitful, that is, translatable into action.

It is a method aiming at a reform of the system of sciences. His belief that the wrong division of sciences is one reason for their barrenness is justified by the unprecedented advance of physics as well as of mathematics since Galileo put an end to their mediaeval separation. On the other hand wrong connections check real knowledge; e.g. natural philosophy should be separated from theology because by their confusion the former becomes fantastic, the latter heterodox. Therefore Bacon rejects the introduction of final causes into science and starts the famous struggle, continued later by Hobbes and Spinoza, against this concept. This separation must on the whole be guided by the attempt to find the natural divisions, i.e. it is not a matter of artificial construction but of discovering the natural order of the sciences.

By uniting both unification and separation as polar moments of one and the same method, the intellectual globe becomes a method of discovery and invention. Of discovery, by revealing the realm of common sources supplying fields of knowledge hitherto considered unconnected and opening border-line problems. Of invention, because new work results directly from the theoretical insight. The moral of the non-existence of Literary History is: create it.

I cannot deal here with Bacon's interesting special postulates, e.g. for a history of civilization, for a *characteristica universalis* replacing language, for macrobiotics, some of them anticipating schemes put into practice only in later ages. One example must suffice. Bacon postulates a "science of man" as a third part of philosophy or real science; a conception so great that it implies: (1) a philosophy of humanity, related to the study of the individual, and (2) civil philosophy (*philosophia civilis*), a science of man as a social being (*homo congregatus in societate*), i.e. sociology, the philosophy of society. Here again the conception only is noteworthy, and not the execution.

To sum up: *Francis Bacon's "intellectual globe" is neither a summa nor an encyclopaedia, but a method of penetration, discovery and innovation, and of organizing the intellectual world. Its object is to join and to separate what is joined and separated in the natural order of things. Its content passes; the method, the way remains.*[1]

[1] I have pleasure in noting that I am in complete agreement with A. E. Taylor, *Francis Bacon* (Brit. Ac. Lect., 11. 12. 1926), and with Adolfo Levi's *Il pensiero di Francesco Bacone* (Torino, 1925), who both point out that Bacon must be judged as the author, not of the *Novum Organum*, but of the *Great Instauration*, in which the theory of induction is but one part among others, not as the mere logician, but as the man who had "taken all knowledge for his province" (Taylor, p. 8). This assumption formed already the basis of Spedding's edition. The reader will easily discover how much I differ from these authors in their further conclusions. A. E. Taylor wants to rediscover the external physical order itself as a fitting object of philosophical examination (p. 7). My central idea is the idea of the *globus intellectualis*.

The Same Problem To-day

The present system of science confronts us with the same problem in a different form. This fact could be confirmed by certain tendencies of the recent French *Critique de la Science*, as exemplified by Pierre Duhem's, Emil Boutroux's, Henri Bergson's and Edouard Le Roy's arguments in favour of a *physique qualitative*, or physics of quality and heterogeneity, and of a logic of invention, or generally, by their tendency to restore quality and concreteness to their natural rights (cf. "Instauratio Mentis," *Rev. Phil.*, 1935). I shall restrict myself here to contemporary British philosophy.

One excellent example of the actual unconscious working of this idea is contained in a work already regarded as a Classic, i.e. Russell's and Whitehead's *Principia Mathematica*. For in this book two branches of research previously separated are united.

> "The mathematical treatment of the principles of mathematics, which is the subject of the present work, has arisen from the conjunction of two different studies, both in the main very modern. On the one hand we have the work of analysts and geometers, in the way of formulating and systematizing their axioms, and the work of Cantor and others on such matters as the theory of aggregates. On the other hand we have the symbolic logic, which after a necessary period of growth has now, thanks to Peano and his followers, acquired the technical adaptibility and the logical comprehensiveness that are essential to a mathematical instrument for dealing with what have hitherto been the beginnings of mathematics. From the combination of these two studies two results emerge, namely, (1) that what were formerly taken, tacitly or explicitly, as axioms, are either unnecessary or demonstrable; (2) that the same methods by which supposed axioms are demonstrated will give valuable results in regions, such as infinite number, which had formerly been regarded as inaccessible to human knowledge. Hence the scope of mathematics is enlarged both by the addition of new subjects and by a backward extension into provinces hitherto abandoned to philosophy" (Pref. p. v).

There can be no question about the general tendency of the combination, and about its usefulness for mathematics as well as for logic, e.g. for the solutions of the so-called antinomies; though it may remain open to discussion whether this very useful combination has not led to a doubtful identification.

A similar tendency is at work in Whitehead, e.g. in his struggle against the "theories of bifurcation of nature" which put warmth and redness on one side, and molecules, electrons and ether on the

other side, dividing nature into causal and apparent components.[1] He wants to find all-embracing relations and to elucidate "the concept of nature, considered as one complex fact, for knowledge to exhibit the fundamental entities in terms of which all laws of nature have to be stated, and to secure that the entities and relations thus exhibited are adequate for the expression of all the relations between entities which occur in nature." Denying the materialistic analysis of natural events into three factors, time, space and matter, he wants to grasp the "unit factor, retaining in itself the passage of nature, the primary concrete element discriminated in nature." Thus he arrives at the relation of "extending over" or "extension" as the common element of time and space (which have been separated until Minkowski and Einstein) and at "events" as the two-termed relations of extension. Consequently time and space are mere abstractions, ways of expressing certain truths about the relations between events. Finally, he wants to see the unity of organic and inorganic nature, and his key notion is "that the energetic activity considered in physics is the emotional intensity entertained in life" (*Nature and Life*, p. 96).

R. G. Collingwood's discussion whether a map of knowledge is possible is closely connected with the trend of our enquiry (*Speculum Mentis or the Map of Knowledge*, Oxford, 1924). Discarding the traditional assumption that human experience is divided into the provinces of art, religion, science, etc., he denies paradoxically the possibility of a map of knowledge because there are no autonomous and mutually exclusive forms of experience, each of them being at bottom identical with all the others. "The various countries of our initial map . . . turn out to be variously distorted versions of one and the same country" (309). This one country is the world of historical fact, seen as the mind's knowledge of itself. The human mind is identified with the historical process and consequently the result must be: "There is and can be no map of knowledge, for a map means an abstract of the main features of a country, laid before the traveller in advance of his experience of the country itself" (309). This would be so, if there were only one traveller who had to make all his experiences anew, and not, as it is the case, one traveller after the other who has to undergo similar though not identical experiences, so that really each traveller makes use of the store of knowledge of the preceding generation. The "map" is, moreover, not concerned with the process of historical experience but with the sphere in which it moves, not with the traveller's individual experience, but with the structure of the countries he may visit. These countries have specific features independent of the

[1] Cf. for the implications and difficulties of this famous polemic the various references in P. A. Schilpp, *The Philosophy of A. N. Whitehead*, 1941.

visitor who may come to see them. Their established boundaries may be and are preliminary. But this fact makes the voyage still more adventurous since it gives us the freedom of altering them and of finding new land. A map is in a fundamental sense interposed between one experience and a new one, not in order to make experience superfluous but to make new adventures possible. Professor Collingwood's discussion of our problem is especially interesting because it reappears here unconsciously, and is *aufgehoben* by a kind of post-Hegelian dialectic (*aufgehoben* in the double Hegelian sense of "done away with" and "kept"). The problem of the autonomy of the different countries is of secondary importance but the problem of the internal organization of the "intellectual globe" and of the discovery of new countries remains as important as ever.

But we are not so much concerned with finding some analogies in present philosophy as with repeating those general questions from which we started: "Is the field of reality which our science covers wide enough or are certain regions overlooked? Are our notions perhaps adapted only to specific spheres of our experience, whereas other spheres are neglected?"

The method of the *globus intellectualis* allows us to answer these questions. *Modern science has indeed separated what ought to be united and has united what ought to be separated.* Its tendency towards separation has been so strong that in many cases the underlying unity has been lost sight of, as we shall see in the case of the science of man. Has not our psychology lost the original unity of the soul through its analysis of complex psychological phenomena into simple impressions and ideas, the soul becoming nothing but a "heap of impressions" (Hume)? Has not modern science, rightly excluding the final cause as a means of explanation, gone too far in making an absolute separation between the world of "facts" and the realm of values? Contemporary biologists and psychologists are right in demanding the reconnection of the two spheres.[1] On the other hand has been united what ought to be separated. The most fundamental of these wrong connections concern the notion of science itself, namely its too close connection with mathematics. This fact expresses itself in tendencies to identify what is not really identical. There is a tendency in modern thought, stronger on the Continent than in this country, to identify science and mathematics. It may be exemplified by Kant's dictum, that each special science is science only in so far as it participates in mathematics. It is true that mathematics plays a preponderant role through the rigidity of its

[1] Constantin von Monakov, the famous brain anatomist, died writing an essay on the problem of values. W. Koehler's book, *The Place of Value in a World of Facts*, is in this connection of importance. I agree with his problem but have no room here for discussing his solution.

methods, but to identify science and mathematics means to hamper inductive sciences, like biology, psychology and the so-called human studies, from reaching the specific form of "science" adequate to their purpose. The same applies to the mistaken identification of logic and mathematics, which forms a real obstacle to the understanding of the very nature of both subjects. This, however, is a subject of such importance that I shall treat it separately.

Through this connection with mathematics modern science, as distinct from ancient science, has neglected the vast realm of quality as quality. The Greeks, overrating quality, looked on it as something fixed and substantial. Anaxagoras kept in his "homoiomere" the irreducible qualities of all beings. For Empedocles and Aristotle the elements had constant qualities. Plato even transformed the qualities into eternal ideas ("the" good, "the" white, "the" red, etc.). Aristotle's physics is a qualitative physics. Thus the quality is ontological, is being, a principle determining the form of the substance.[1] Modern science with its programme of transforming every quality into quantity has erred at the other extreme; it has discarded quality altogether. Only some isolated individuals like Goethe, the Romantics, some Aristotelians like Duhem and thinkers like Bôutroux and Bergson protested.[2] Thus the problem remains of building up a science of quality which is neither substantialized into ontological being nor dematerialized into mere appearance, but which is considered in its relation to the subject and the order immanent in its realm. It is not so much the description of these qualities as such but the qualitative order, in contradistinction from a mere quantitative order, that matters. The colour circle may suffice as an example; for it contains a qualitative order of colours which is not quantitative and which, nevertheless, allows the realm of colours to be derived from it.

There are other *lacunae* in the *globus intellectualis*. Those sciences the object of which is man, the biological sciences (medicine, anthropology, ethnology), the psychological sciences (psychology, psychopathology, characterology), the historical sciences (pre-history, history, sociology, political economy, etc.) have developed in relative independence of each other. But is this extreme division adequate to the problem itself? Are not all these sciences related to the same object, namely to man? Must we not ask the following questions? (1) Do there not exist a fundamental structure and basic notions which constitute the "human" itself and which consequently re-

[1] Therefore Aristotle is able to call the universals the *ποιόν* regarding the individual being (*Cat.*, ch. 5, p. 3 b 16), and he defines *ποιότης* as *ἡ τῆς οὐσίας διαφορά* (*Met.*, 1020 b 14).

[2] For Goethe, cf. my paper "La phénoménologie de la nature chez Goethe," *Rev. Philos.*, 1935, and in general the other papers quoted in next note.

appear in all these sciences? (2) Are there some basic vital functions identical in body, soul and mind? (3) Is it perhaps possible to formulate axioms and laws which are common to the biological, psychological and historical sphere? (4) Is it perhaps possible to discover the principle of dissociation governing simultaneously the formation of the human body, of the different fields of sensation and of the special realms in the sphere of the mind? By these questions a new science is inaugurated, the science of man, which is the basic science of all the above-named sciences. It is important in so far as it is the basic material science of man. If it were only a formal basic science it would not arouse much interest because then the same logical propositions would be valid for other sets of sciences.

Therefore our problem implies the development of a basic material science (*materiale Grundwissenschaft*). Hitherto science has concentrated on the problem of formal order. It is my thesis that a science quite as fundamental as logic has been neglected, the science of material order. The questions have to be asked, and are already asked in biology and psychology, how are contents, qualities and functions connected? Which contents belong together? Which are mutually exclusive? How are they combined into wholes? What is the law of this union? How does a specific organic being arise from the connection of functions and qualities? Which mental states appear together? Which colour demands which other? With what other qualities are love, hate, and courage regularly associated? How do specific forms of the human body correspond to psychological types? I cannot here do more than mention these questions which demand a special study.[1]

Hope remains, therefore, that even in these days of world chaos a new beginning is possible, which, though a revival of old ideas, opens up the entrance to new worlds hitherto uninhabited by human thought.

[1] These questions are treated in greater length and in their application to a basic Science of Life (*Lebensgrundwissenschaft*) in the following papers:

1. "Vivo sum. Grundsätzliche Bemerkungen über Bedeutung und Targweite der Lebensphilosophie," *Neue Jahrb. f. Wiss. u. Jugendb.* 1933.
2. "Philosophische Anthropologie. Die Lebensphilosophie u.d. Problem einer Lebensgrundwissenschaft," *Amersfoortsche Stemmen.*, 1933.
3. "Instauratio Mentis," *Revue Philosophique*, 1935.
4. "Instauratio Scientiarum," *Actes du Congres Intern. de Phil. Scient.*, Paris 1935, vol. 8, p. 77.
5. *Odysseus oder die Zukunft der Philosophie*, Stockholm, 1939.

DISCUSSION

THE EXPERIMENTAL ESTABLISHMENT OF TELEPATHIC PRECOGNITION

DURING the last four years two papers have been published in the *Proceedings of the Society for Psychical Research* by Dr. S. G. Soal which demand the most careful attention of psychologists and philosophers. These papers record the methods and results of two admirably planned and executed series of experiments on card-guessing, and they provide evidence which is statistically overwhelming for the occurrence, not only of *telepathy*, but of *precognition*. There was already a considerable mass of quite good experimental evidence for telepathy, e.g. in the work of Dr. Rhine and his colleagues at Duke University, but Dr. Soal's results are outstanding in at least the following three respects. (1) The precautions taken to prevent deliberate fraud or the unwitting conveyance of information by normal means are described in great detail, and seem to be absolutely water-tight. (2) The results are susceptible of a perfectly simple and straightforward statistical treatment, and the odds against chance-coincidence have steadily grown during the experiments until they are now astronomical. (3) The conditions have been varied, and, probably for the first time in the history of the subject, correlations have been found between variations in certain of the conditions and variations in the phenomena under investigation.

The two papers are entitled *Fresh Light on Card Guessing* and *Experiments in Precognitive Telepathy*. The former is published in Vol. XLVI, Part 162. of the *Proceedings* of the S.P.R. and the latter in Vol. XLVII, Part 167. I shall describe them in turn, but I shall devote more attention to the second than to the first.

FIRST SERIES OF EXPERIMENTS. (1) *General Account.* The history of this first series has a certain dramatic interest. By November 1939 Dr. Soal had been working for five years, had tested 160 persons in card-guessing, and had accumulated 128,350 guesses. To all appearance the results were not significantly different from those which would have arisen if all the guesses had been quite literally shots in the dark and no paranormal cognition had been in operation. But another member of the S.P.R., Mr. Whately Carington, had been experimenting in Cambridge by exposing drawings night after night in a locked room and getting people to sit down each night in their own rooms and draw what came into their heads when they tried to guess what picture had been exposed on that night. He had found that what was drawn on the *n*-th night in any one such series did *not* show a significant amount of agreement with the picture exposed *on that night*. But he found that, when he conducted several such series, each separated from the others by a considerable interval, the drawings made in any one such series *taken as a whole* resembled the originals exposed in that series *taken as a whole* to a significantly greater extent than they resembled the originals exposed in other series. (These important experiments are described in Vol. XLVI, Part 162, of the S.P.R. *Proceedings* under the title *Experiments on the Paranormal Cognition of Drawings*.) On being told of this by Mr. Whately Carington, Dr. Soal re-examined his results in order to see whether the guesses made

by his subjects coincided to a significant extent, *not* with the card at which the guess was aimed, but with its *immediate predecessor* or its *immediate successor*. In the case of two and only two of his subjects he found that this happened to an extent which seems completely to rule out chance-coincidence.

(2) *Experimental Details.* (i) *The Cards and their Randomization.* Dr. Soal used the special cards called "Zener Cards" which were first used by Dr. Rhine in his experiments at Duke University. Each Zener card has on it one or other of five simple figures, viz., a cross, a circle, a star, a rectangle, and a pair of wavy lines like the Zodiacal symbol for the sign Aquarius.

Dr. Soal had his packs of Zener cards made for him by a firm of playing card manufacturers. Many experiments on ostensibly paranormal cognition are vitiated by grave doubts whether the backs of the cards do not provide slight sensory clues to the guessers. Even with a pack of cards made by a professional there may be small specks or other oddities on the backs of certain cards. Suppose that the same pack is used again and again with the same guesser, and suppose that he is allowed to see the back of a card before he guesses it and the front of it after it has been turned up to verify or refute his guess. Then he may come to associate minute peculiarities of the back with the figure on the front, and thus by quite normal means score successes which are significantly above chance expectation. This source of error was completely ruled out in Dr. Soal's experiments by the following two precautions. (*a*) The guesser was never allowed to see the back of any card that he was guessing. In every case it was either covered by a rectangle of white cardboard, or completely hidden by a screen, or sealed in an opaque envelope. (*b*) The same pack was never used twice on the same day with the same guesser.

Instead of trusting to shuffling in order to secure a random sequence of cards in the packs which he was using, Dr. Soal deliberately randomized them in the following way. He had in all 1,200 cards, viz., 240 of each of the five kinds. With each figure he associated a number, e.g., 1 with cross, 2 with circle, and so on up to 5 with wave. He then wrote down, from a table of seven-figure logarithms, the last digit of the logarithms of a series of five-figure numbers at intervals of 100, e.g., the logarithms of 10,078, 10,178, 10,278, and so on. If the digit happened to be one of the integers from 1 to 5 inclusive, the corresponding card-symbol was entered beside it in the list. If the digit happened to be 0 or one of the digits above 5, it was rejected. The 1,200 cards were then arranged in order in the sequence of the symbols taken from the list so constructed. Dr. Soal then took the first 1,000 cards of this sequence and divided them into 40 packs consisting of the first 25, the second 25, and so on. (Of course each such pack would *not* contain exactly five of each kind of card, and the whole 40 packs would not necessarily contain between them exactly 200 cards of each kind.) Each pack was then put into an envelope, and the envelopes were numbered 1 to 40. In the experiments a different pack was used on each successive occasion until the whole 40 had been used.

After this the 40 envelopes were shuffled so that they came in a different order, and the experiments were continued with the packs in the order in which they now stood. At this stage the pack in each envelope was taken out and shuffled, out of sight of the guesser, before being used.

So far the packs had remained in their original envelopes, though the order of the envelopes had been altered by shuffling and the pack in each envelope had been shuffled. But at the beginning of each week a further precaution was taken in order to prevent any association arising in the mind of a guesser between a particular envelope and a particular pack. The packs were at this

stage taken out of their envelopes, the empty envelopes were shuffled, and the packs were put back into different envelopes. Lastly, a completely fresh random distribution of 1,000 cards was made on the average after each 4,000 guesses.

(ii) *Presentation, Guessing, and Recording.* The experiments fell into two main divisions. (*a*) Those in which no one had any normal knowledge of the nature of the card at which the guess was aimed until some time after the guess had been made and recorded. In such experiments, if there was paranormal cognition of the card at which the guess was aimed, it must have consisted either of pure clairvoyance or of precognition, viz., fore-knowledge by the guesser of what would be seen by himself or by the experimenter when the card should afterwards be turned up to test the correctness of the guess. What is ruled out here is *simultaneous* telepathy. We can therefore describe these experiments for short as N.S-T. experiments. (*b*) Those in which one at least of the persons taking part in the experiments was aware of the nature of the card aimed at before and during the making of the guess. Any paranormal cognition of the card aimed at in such experiments might consist either of clairvoyant perception of the card, or of simultaneous telepathic knowledge of what was already present in the experimenter's mind. Such experiments are described as "undifferentiated" and may be called U.D. experiments for short.

In the N.S-T. experiments three different methods were adopted. As no significant results were got in these experiments, either on the card aimed at or on its immediate predecessor or successor, I shall not describe these methods in detail. What is worth mentioning about them is this. In the first method the guesses were checked against the actual cards after every *fifth* guess in *presence* of the guesser; in the other two they were checked after every *twenty-fifth* guess in *absence* of the guesser. Now suppose that significant results had been got, and that they had not been due to clairvoyant perception by the guesser of the card aimed at. Then the precognition must have extended to quite an appreciable distance in the future; for the actual cards were not seen by anyone until after the fifth guess in the first method and after the twenty-fifth guess in the other two. In the first method, if precognition were operating, it might be either non-telepathic or telepathic. For the guesser might be foreseeing his own future knowledge of the actual cards or the experimenter's future knowledge of them. In the other two methods, if precognition were operating, it would have to be telepathic. For only the experimenter, and not the guesser, will see the cards after they shall have been turned up.

I pass now to the arrangements for the U.D. experiments. In them it is of course even more important than in the N.S-T. experiments to guard against the possibility of normal clues being given to the guesser. In the N.S-T.'s no one is in a position to give a clue voluntarily or involuntarily to the guesser; for no one knows the value of the card at which the guess is being aimed until after that guess has been made and recorded. But it is an essential point of the U.D. experiments that someone shall know the value of the card at which the guess is being aimed before and during the period when the guess is being made, for we are trying to find out whether the guesser can telepathically cognize this knowledge.

I will premise by saying that in U.D. experiments the person who has normal knowledge of the objects to be guessed is called the "Agent," because, if simultaneous telepathy takes place, the information which the guesser (who is now called the "Percipient") acquires telepathically must have emanated from him.

The guesser and the agent sit at opposite ends of a table 5 feet long, and they are separated by a lateral screen which crosses the table in the middle and rests upon it. This screen is 2 feet 6 inches high. There is also a lateral screen beneath the table, which makes it impossible for the guesser to see or to touch the feet or legs of the agent and thus prevents clues being conveyed in accordance with a code by slight movements of the agent's feet. The experimenter, who was generally Dr. Soal himself, sits at the side of the table on the side of the screen away from the guesser and near to the agent. The guesser is provided with a scoring-sheet, and records his guesses on it as he makes them. The experimenter has a similar scoring-sheet, and is also provided with an ink-pad and five rubber-stamps each of which has one of the five card-symbols on it. The scoring-sheets are divided vertically into two halves headed (*a*) and (*b*). Each half is divided into two columns, of which the one on the left is headed G (i.e. column for recording *guesses*) and the one on the right is headed A (i.e., column for recording the *actual* card at which the guess was being aimed). Each column is divided into 25 rows, numbered 1 to 25.

The procedure is as follows. The pack, consisting of 25 cards randomized in the way described above, lies face downwards in the middle of the table on the agent's side of the screen. The experimenter shuts his eyes, lifts off the top card, holds it up (concealed by the screen from the guesser) with its face to the agent, who concentrates his attention upon it. Still keeping his eyes shut, so that no one but the agent has normal knowledge of the card, the experimenter calls out "First!" or "Next," as the case may be. Thereupon the guesser makes his guess and records it in the G column of his sheet. Meanwhile, the experimenter opens his eyes and notes the nature of the card exposed and then records it with the appropriate rubber stamp in the A column of *his* sheet. Neither the agent nor the guesser is allowed to speak during the experiment. When the guesser has recorded his guess he taps twice on the table with his pencil to tell the experimenter that he is ready for the next card to be exposed. Each card, after it has been exposed, is placed face downwards on the table in the order in which it has been drawn from the pack. When twenty-five guesses have been completed the guesser hands his sheet to the experimenter, who copies the entries in the G column of it on to the corresponding lines in the G column of his own sheet. This copying is checked by the agent, who now acts as a witness. The reason for the experimenter using the rubber stamps to record the actual cards exposed is that, if he were to draw the symbol with his pencil, the sound made might give away to the guesser that it was a circle or an oblong or some other symbol.

I think it is certain that Dr. Soal eliminated by these devices all possibility of the guesser receiving information by any known normal means about the nature of the card at which he was aiming his guess.

(3) *Statistical Treatment.*—The simplest way of considering the statistics of the experiments is the following. Let the probability that a cross will be guessed on the r-th occasion be p_1; let the probability that a circle will be guessed be p_2; and so on for the other three symbols. Then, since one or other of these five alternatives must be guessed, we have $p_1 + p_2 + \ldots . p_5 = 1$. Since the cards have been randomized, the chance of the actual card being of any of the five kinds is the same, viz., 1/5. If nothing but chance is operating, the probability of the compound event of guessing a cross and of the card actually being a cross is $p_1 \times 1/5$. Similarly, the probability of guessing a circle and of the actual card being a circle is $p_2 \times 1/5$, if the two events are independent of each other. And so on for the three remaining

alternatives. Now to guess rightly on the r-th occasion is either to guess a cross and for a cross to be the actual card, or to guess a circle and for a circle to be the actual card, or so on for the three remaining alternatives. Therefore, if agreement between guesses and cards aimed at is purely a matter of chance, the probability of guessing rightly on the r-th occasion is the probability of the disjunctive event composed of these five alternatives. Its value is 1/5, since $p_1 + p_2 + \ldots . p_5 = 1$. It is plain then that, if nothing but chance is operating, the most probable number of correct guesses in a set of n shots is $n/5$. The question therefore is whether the actual number of correct guesses differs from the number which would be most likely on the hypothesis of chance coincidence by so much as to render that hypothesis incredible

The test for this is to calculate the *standard deviation*; to find the ratio of the actual deviation to this; and then to find out from tables of the Error Function what is the probability that so great a multiple of the standard deviation would occur by chance. In our experiments the standard deviation, calculated from the usual formula, is 2/5 of the square-root of n. If the actual deviation exceeds $2\frac{1}{2}$ times the standard deviation, the hypothesis of chance coincidence begins to be highly improbable. Suppose that the actual deviation were found to be as much as 4 times the standard deviation. It would be found from the tables that, on the average, only one in ten thousand series of n trials would have so high a deviation as this if only chance were operating.

There is a somewhat more delicate method of calculating the expected frequency and the standard deviation, which has been worked out by the statistician Mr. W. L. Stevens. This makes use of the actual frequencies with which each kind of card is guessed and with which each kind of card actually occurs. Dr. Soal in fact made use of this, but he shows that the numerical results differ very little from those given by the cruder and simpler method described above.

(4) *Results.*—We will now consider the results of the 128,350 guesses made by Dr. Soal's 160 guessers. In order to do this I shall begin by distinguishing what I will call "direct" and "deflected" hits. If the r-th guess in a series coincides with the actual value of the r-th card in that series, i.e., with the one at which it was aimed, it will be called a "direct hit." If it coincides with one that was exposed earlier or later in the series, it will be called a "deflected hit." A deflected hit may be deflected either forwards or backwards, i.e., on to a card which had not yet been exposed when the guess was made or on to one that had already been exposed and aimed at by an earlier guess. So a deflected hit is either a "fore-hit" or a "back-hit." Suppose that the $(r - p)$-th guess in a series agrees with the r-th actual card in that series. Then I shall call it a "minus-p fore-hit." Suppose that the $(r + p)$-th guess in a series coincides with the r-th actual card in that series. Then I shall call it a "plus-p back-hit."[1]

(i) *Direct Hits.*—When Dr. Soal did these experiments he naturally thought at first only of direct hits, and when he first worked out the results he considered only such hits. The results were quite consistent with the hypothesis that nothing but chance was operating. This is so whether they are taken all together, or whether the N.S-T. results and the U.D. results are taken separately, or whether the scores made by individual guessers are taken

[1] The reader should note that Dr. Soal has altered his signs between his first and his second paper. He now gives + signs to *fore*-hits and − signs to *back*-hits. I have kept to the convention of the first paper throughout.

separately. There is nothing to suggest that paranormal cognition is taking place. I will give the relevant figures.

(*a*) *N.S-T. Results.*—70,900 guesses were made by 108 guessers. The number of direct hits was 201 *less* than the most probable number on the hypothesis of chance. The standard deviation is 89·51. So the actual deviation is 2·24 times this. This is below the level of significance. It might be expected to happen in about 2·4 % of a very large number of random series each of 70,900 guesses.

(*b*) *U.D. Results.*—57,450 guesses were made by 84 guessers. The number of direct hits was 51 *more* than the most probable number on the hypothesis of chance. The standard deviation is 96. So the ratio of the actual to the standard deviation is 0·531. This is quite insignificant. It might be expected to happen in about 60 % of a very large number of random series each of 57,450 guesses.

(*c*) *An Individual Result.*—I shall give one of the few impressive individual results, both because it is interesting in itself and because it led to startling conclusions when it was later investigated for deflected hits.

A lady called Mrs. S. did two sets of 1,000 guesses in the U.D. experiments. In her first 1,000 she scored 238 direct hits. This is a positive deviation of about 3 times the standard deviation, which, taken in isolation, is fairly impressive. It might be expected to happen in no more than 0·27 % of a very great number of random series each of 1,000 guesses. But it would be quite misleading to take it in isolation. At the time when Mrs. S. scored this result 43,000 other guesses had already been made. So her 1,000 guesses must in fairness be regarded as simply an outstanding set in 44 sets of 1,000. Since 0·27 % of these might be expected, on the hypothesis of chance, to give at least as good results as hers, the probability of getting at least one such set out of 44 is $1 - (1-0{\cdot}0027)^{44}$, which is approximately 44 times 0·0027, i.e., about 0·118. So that her score, when taken against the background of the rest of the experiment, is not surprising enough to cast doubt on the hypothesis of chance. It should be added that Mrs. S. scored only 209 direct hits in her second series of 1,000 guesses. This deviation of only 9 is quite insignificant. It was only when Dr. Soal was stimulated by Mr. Whately Carington's work to re-examine the results for deflected hits that he discovered what a remarkable performance Mrs. S. had accomplished.

(ii) *Deflected Hits.*—I will first state the statistical theory, and then give the results.

In a run of 25 guesses and 25 actual cards let us denote the r-th actual card by A_r and the $(r-p)$-th guess by G_{r-p}. Then for forecasts at a distance p cards ahead we have pairs of the form $G_{r-p}A_r$. The number of such pairs is found by letting r range from $p+1$ to 25. It is therefore $25-p$. The probability of any such pair being a hit is 1/5 on the hypothesis of chance coincidence. In N sets of 25 there are $N(25-p)$ such pairs. Therefore, on the hypothesis of chance, the most probable number of minus-p fore-hits is $N(25-p)/5$. The standard deviation is 2/5 times the square-root of $N(25-p)$. The expressions will be exactly similar for plus-p back-hits.

Now suppose that we take together direct guesses, minus-1 forecasts, and plus-1 backcasts. We get the three types of pair G_rA_r, $G_{r-1}A_r$, and $G_{r+}A_r$. A set of 25 guesses will give rise to 25 pairs of the first kind, 24 of the second, and 24 of the third, i.e., to 73 in all. The probability of any of these being a hit is the same, viz., 1/5. In N sets of 25 there will be $73N$ such pairs. Therefore the most probable number of hits of these three kinds in N sets of 25 guesses is $73N/5$, and the standard deviation is 2/5 of the square-root of $73N$.

DISCUSSION

When these considerations are applied to Mrs. S.'s results the following conclusions emerge:—

HITS IN FIRST 1,000 *GUESSES*

	Back-Hits + 1	*Direct*	*Fore-Hits* − 1	*All three*
Actual number . .	221	238	225	684
Most probable number	192	200	192	584
Actual deviation . .	+ 29	+ 38	+ 33	+ 100
Standard deviation .	12·4	12·66	12·4	21·6
Ratio Actual: Standard	+ 2·34	+ 3·02	+ 2·66	+ 4·62
Probability of so great a deviation on the hypothesis of chance	0·019	0·003	0·008	$< 10^{-5}$

HITS IN SECOND 1,000 *GUESSES*

Actual number . .	221	209	232	662
Most probable number	192	200	192	584
Actual deviation . .	+ 29	+ 9	+ 40	+ 78
Standard deviation .	12·4	12·66	12·4	21·6
Ratio	+ 2·34	+ 0·711	+ 3·22	+ 3·6
Probability . . .	0·019	0·478	0·0013	0·00032

HITS IN THE WHOLE 2,000 *GUESSES*

Actual number . .	442	447	457	1,346
Most probable number	384	400	384	1,168
Actual deviation . .	+ 58	+ 47	+ 73	+ 178
Standard deviation .	17·6	17·9	17·6	30.6
Ratio	+ 3·3	+ 2·63	+ 4·15	+ 5·82
Probability . . .	0·00097	0·0086	0·000035	10^{-6}

In order to avoid overestimating the significance of these results we must take this set of 2,000 guesses against the background of the whole number of 128,350 guesses which were made in this series of experiments. This can be regarded as consisting of 64 sets of 2,000 guesses. We must then ask ourselves the following question. On the hypothesis that nothing but chance coincidence is operating what is the probability that in at least one of these 64 sets the deviations would be at least as great as they were in this set of Mrs. S.'s? The answer is found by multiplying each of the probabilities in the last line of the third table by 64. The results are 0·062, 0·550, 0·0022, and 0·000064. There is therefore no good reason to think that Mrs. S.'s direct hits were due to anything but chance coincidence. But there is some reason for thinking that her back-hits on the card which immediately preceded that at which she was aiming were *not* wholly due to chance coincidence. And there is overwhelming evidence against the hypothesis of chance coincidence in the case of her fore-hits on the card which immediately followed that at which she was aiming. Finally, if we take together the cluster of three cards which consists of that at which she was aiming and its immediate predecessor and successor, the odds against her hits on these being due to chance coincidence are of astronomical dimensions.

On going over the results of the other guessers who had taken part in the U.D. experiments Dr. Soal found one and only one of them who had scored significantly in deflected hits. This was a Mr. B. S. He had done 800 U.D.

guesses. His score of direct hits was quite insignificant. In this he differed from Mrs. S., in her first 1,000 guesses, but resembled her in her second 1,000. But he resembled her in scoring significant positive deviations in his + 1 back-hits and his − 1 fore-hits. The results may be summarized as follows:

HITS IN 800 GUESSES

	Back-Hits		*Fore-Hits*	
	+ 1	*Direct*	− 1	*All three*
Ratio Actual: Standard	+ 3·74	+ 0·44	+ 3·65	+ 4·49
Probability . . .	0·0003	0·66	0·0005	10^{-5}

Now the whole 128,350 guesses can be divided into 160 sets of 800 and Mr. B. S.'s 800 can be regarded as one of these. Accordingly we must multiply the probabilities by 160 in order to find the probability that at least one set of 800 guesses will have at least as great a divergence from the expected number of successes as Mr. B. S.'s 800 had. The resulting probabilities are 0·048 for + 1 back-hits, 0·08 for − 1 fore-hits, and 0.0016 for the three central places taken together. It seems plain, then, that the hypothesis of random coincidence must be rejected here also for both + 1 back-hits and − 1 fore-hits.

(5) *Summary of Results of the First Series of Experiments.*—The following conclusions, negative and positive, emerge from the first series of experiments. (i) Two and only two of the 160 persons tested showed signs of possessing powers of paranormal cognition. (ii) Even in these two cases these powers were not displayed so long as attention was confined to *direct* hits. (iii) It was only in those experiments in which the possibility of simultaneous telepathy is *not* excluded that any sign of paranormal cognition, whether direct or deflected, was shown. (iv) In the two cases of Mrs. S. and Mr. B. S., there is very strong evidence for paranormal cognition in the + 1 back-hits and the − 1 fore-hits.

SECOND SERIES OF EXPERIMENTS. (1) *General Account.*—These experiments were conducted in 1941 and 1942 with Mr. B. S. as guesser. Altogether 13 different agents were tried, but successful results were got only with three of them, viz., two women R. E. and G. A. and one man J. Al. The results with J. Al. were in some ways unlike those with the two women agents. The experimenters in this series were Dr. Soal and another member of the S.P.R., Mrs. Goldney.

Beside the primary question whether B. S. would continue to score significantly in his + 1 back-hits and his − 1 fore-hits, there were two important questions of detail which the experiments of the first series had left open. (i) Were the fore-hits really instances of *precognition*? They need not have been. For the cards which would be turned up later in the series were already on the table in the pack in the order in which they would be turned up. Therefore a − 1 fore-hit might arise through the guesser clairvoyantly perceiving the figure on the card which is lying face-downwards on the top of the pack at the time when he is aiming his guess at its immediate predecessor. (ii) In general, is it necessary for the agent to know what was on the cards at which the guesses were being aimed? Would it be enough if the agent merely lifted the cards successively but did not look at the face of them?

(2) *Experimental Details.* (i) *The Cards.*—In these experiments there are five cards each of which has depicted on it in appropriate colours one of the following five animals, viz., Lion (L), Elephant (E), Zebra (Z), Giraffe (G), and Pelican (P). There is also a set of five white cards, each bearing one of the numbers from 1 to 5.

(ii) *General Arrangements.*—Two persons beside the Agent (A) and the Percipient (P), i.e., Mr. B. S., take part in each experiment. These are the Experimenter controlling the Agent (EA) and the Experimenter controlling the Percipient (EP). EA and A are together in one room, and EP and P are together in an adjoining room. The only communication between the two rooms is a door, which is kept slightly ajar in order that the "calls" made by one party may be audible to the other. The room in which A and EA sit will be called RA, that in which P and EP sit will be called RP.

In RA there is a table, 24 in. square and 25 in. high, situated at about 9 feet from the wall which divides RA from RP. This table is divided across the middle by a screen 31 in. wide and 25 in. high, which stands upon it. At the middle of the upper part of this screen is a little window 3 in. square. A sits on the side of the screen furthest from the door into RP and facing towards RP; EA sits on the opposite side of the screen and faces in the opposite direction.

On the table in front of A is a box closed on all sides except that which faces A. On the floor of this box are placed the five animal cards face-downwards in random order from left to right. The object of the box is to ensure that no confederate who might be concealed in the room above RA and provided with a hole in the ceiling could see the cards as they are turned up and signal their nature to P in RP.

On the table in front of EA are the five white number-cards arranged face upwards in order 1 to 5 from left to right.

P and EP sit on opposite sides of a small table in RP. The position of this is such that P could not see either EA or the screen even if the door into RA were wide open. *A fortiori* he cannot see A or the box in which A's animal cards are laid out, since they are on the far side of the screen.

(It should be mentioned that Mr. B. S. is a professional photographer, and that the experiments were performed at his place of business. RA was his Studio, and RP was the Ante-Room to it. Further experiments performed with him at the rooms of the S.P.R. met with the same measure of success as those which are now being described.)

(iii) *Randomization.*—The five animal cards are shuffled before each set of 50 guesses to be recorded on a single scoring-sheet. This shuffling is done either by the Agent or by some independent person, never by or in sight of either EA or EP. The cards are then laid down in the resulting order face-downwards from left to right on the floor of the box.

The other part of the randomization was effected in two alternative ways, viz., either (*a*) by means of prepared random numbers (PRN), or (*b*) by drawing counters.

(*a*) ***PRN Method.***—Dr. Soal prepared a random sequence of the first five integers as in the first series of experiments. On the evening before a day on which an experiment was to be done he entered these numbers in their random order into the successive rows of the two A-columns of as many scoring-sheets as would be used next day. These prepared sheets remained in his control until the experiment was about to begin, when he would hand them to EA.

As an experiment goes on EA lifts up his five number-cards one by one in the random order in which the five numbers occur in the successive rows of the A-columns in his scoring sheet. As he lifts each number-card he shows it for a moment through the window in the screen to A and then replaces it. A thereupon lifts the animal-card which comes at that number of places in the row from the left in the box in front of him, looks at it, and then replaces it face downwards as before. This method ensures that A looks at the animal-

cards throughout the experiments in a random order. EA does not know at the time which animal-card corresponds to which number, so there can be no complication due to his acting as a supplementary agent.

(*b*) *Counter Method.*—Here EA had a bag containing equal numbers of counters of five different colours well mixed up. A different number, from 1 to 5 was associated with each different colour, and a row of five number-cards with a counter of the associated colour laid on each of them was laid on the top of the box in sight of A. EA would draw a counter from the bag at random and show it to A at the window in the screen. A would thereupon note the number that had been associated with the colour, and would then lift and look at the animal-card which lay at that number of places from the left of the row of such cards on the floor of the box.

(iv) *Presentation, Guessing, and Recording.*—The experiments fell into two classes, viz., (*a*) those in which A saw the picture on the front of each card at which P was aiming his guess, and (*b*) those in which he did not know what picture was on that card. These may be called *Telepathic* and *Non-Telepathic* respectively. In the former the picture was presented to A's attention in the way just described. In the latter the difference was that A merely touched the back of the card corresponding to the number or counter shown to him in the window by EA.

The guessing was in all cases conducted as follows. P is provided with some empty scoring-sheets. When EA holds up the number or counter, which is his signal to A, he pauses for about a second and then calls out ONE if it is the first guess of a series, TWO if it is the second, and so on up to TWENTY-FIVE. On hearing EA call this serial number P writes down in the corresponding line of the G-column of his scoring sheet the initial letter (L, E, Z, G, or P) of the animal which he guesses to have been on the card presented to A. There is a pause of a few seconds between the completion of the first set of 25 guesses and the second set on the same sheet. EA then calls NEXT COLUMN, and the procedure just described is repeated.

When P has completed a sheet it will contain 50 entries of permutations of the letters L, E, Z, G, and P in the two G-columns and nothing in the A-columns. The corresponding sheet used by EA will contain 50 entries of permutations of the numbers 1, 2, 3, 4, and 5 in the two A-columns and nothing in the G-columns. EA now goes round to A's side of the screen and turns up the five animal-cards in the box, keeping them in the order in which they were lying. He thus finds the correlation between the ordinal number of a card from the left of the row and the picture on that card. He records this on his sheet in the form of a code; thus, e.g., it might be

1	2	3	4	5
E	L	G	P	Z

In the meanwhile P and EP remain at their table in RP.

The numbers corresponding to the letters in P's G-column are now entered in the corresponding lines of the G-column of EA's score-sheet opposite to the numbers which are already in the A-column. This is done by EA and EP with a witness and with A looking on.

The direct hits, the + 1 back-hits, and the − 1 fore-hits are now counted and entered on the sheet. Each completed sheet was duplicated in ink and signed by both EA and EP. The duplicates were then put in an envelope in presence of all, stamped and addressed to the present writer at Trinity College, Cambridge, and posted in presence of not less than three persons. Dr. Soal took the originals home with him and re-checked all the counts. He also counted the + 2 back-hits and the − 2 fore-hits.

(3) *Results.*—I will begin by remarking that Mr. B. S. finds it most comfortable to work with an interval of between 2 and 3 seconds between successive guesses. This may be called the *Normal Rate of Scoring*. We will take first experiments done at this rate, and will consider later those in which the rate fell outside these limits.

(i) *Telepathic Experiments.* (*a*) *With R. E. as Agent and the PRN method.*—The total number of guesses was 3,946. The actual number of hits did not differ significantly from the number to be expected on the hypothesis of chance coincidence except in the case of -1 *fore-hits*. But here the deviation is staggering. The ratio of the actual to the standard deviation is $+13{\cdot}2$, and the probability of getting so great a deviation as this on the hypothesis of chance coincidence is 10^{-35}. Since this is one of 5 alternatives, viz., direct hits, $+1$ and $+2$ back-hits, and -1 and -2 fore-hits, we must multiply it by 5 to get the probability that at least one of these categories would deviate by as much as the -1 fore-hits did. But this makes no appreciable difference to the colossal odds against chance coincidence.

(*b*) *R. E. as Agent and the Counter Method.*—Here 1,578 trials were made. As before, only the -1 fore-hits are significantly above chance expectation. The ratio of the actual to the standard deviation for them is $7{\cdot}45$. The corresponding probability is $2{\cdot}56 \times 10^{-12}$. As before, this should be multiplied by 5, but this still leaves the probability of getting such results by chance coincidence at the ridiculously low figure of $1{\cdot}28 \times 10^{-11}$.

(*c*) *With G. A. alone as Agent and the PRN Method.*—288 trials were made. These was significant scoring only for -1 fore-hits. The ratio of the actual to the standard deviation for these was $3{\cdot}56$. The corresponding probability is $0{\cdot}004$. Multiplied by 5 this gives $0{\cdot}002$.

(*d*) *Aggregate Telepathic Results for all experiments in which R. E. or G. A. took part by either Method.*—6,290 trials. No significant results except for -1 fore-hits. The actual number of such hits was 1,755 out of a possible number of 6,039. The most probable number on the hypothesis of chance coincidence is 1,234. The actual deviation is therefore $+521$. The standard deviation is 31. So the ratio of the actual to the standard deviation is $+16{\cdot}8$. The probability of getting at least as great a deviation on the hypothesis of chance coincidence is considerably smaller than 10^{-35}. (The tables do not cater for such fantastically great deviations. Those at the end of Yule and Kendall's *Theory of Statistics*, e.g., do not go beyond deviations of $4{\cdot}5$ times the standard, in which case the probability is $0{\cdot}00001$.)

(*e*) *With J. Al. as Agent and the PRN Method.*—720 trials were made. There were significant scores *both* on -1 fore-hits and on $+1$ back-hits, but not on any of the other three alternatives under consideration. In the case of the -1 fore-hits the ratio of the actual to the standard deviation was $+5{\cdot}42$; in that of the $+1$ back-hits it was $+5{\cdot}84$. The probability of getting such a result by chance coincidence is in either case about 6×10^{-7}. But we have to notice that here *two* deviations of this order are got in the five alternative positions which are being considered. The probability of this happening by chance is approximately 10 times the square of the individual probability, i.e., 10 times 36 times 10^{-14}, i.e., $3{\cdot}6 \times 10^{-12}$.

Before going further I want to provide the reader with a concrete picture of the degree of improbability of scoring so many successes on the hypothesis of chance coincidence. Let the reader imagine himself to be tossing a fair coin, and let him ask himself this question: "How long a run of nothing but heads would be as improbable as it would be to score so many successes as are scored in one of these experiments on the hypothesis that nothing but chance is operating?" The answer is easy. If the probability corresponding

to the ratio of the actual to the standard deviation in an experiment is 10^{-n}, then the length of an equally improbable run of heads in tossing a fair coin is the nearest integer to the quotient of n by the common logarithm of 2, i.e., by 0·3010. Let us apply this rule, e.g., to the Percipient's scores with J. Al. as Agent. To be on the safe side we will take the probability corresponding to the ratio to be 10^{-11} instead of the actual lower figure of $3{\cdot}6 \times 10^{-12}$. Now 11 divided by 0·3010 is approximately 36. So the improbability of such high scores as the Percipient made with J. Al. as Agent is about the same as the improbability of a run of 36 heads in tossing a fair coin. The same method can, of course, be applied to all the other probabilities mentioned above.

(ii) *Non-telepathic Experiments.*—Still confining ourselves to experiments in which the Normal Rate of Scoring was used, we will now consider those in which the Agent merely touched the back of the card at which the Percipient was aiming his guess and so was unaware of the picture on the front of it.

Two series of such experiments were done. In the first series two sets of 50 guesses made under Non-telepathic conditions were interspersed at each sitting, more or less at random and unknown to the Percipient, among sets of guesses made under Telepathic conditions. In the second series sets of 50 guesses done under Non-telepathic and Telepathic conditions were alternated regularly with each other, and the Percipient was told which was which.

The results are of extreme interest. In each series the guesses done under *Non-telepathic* conditions gave *no* significant results, whilst those done under *Telepathic* conditions gave the usual highly significant excess of — 1 fore-hits. The figures are summarized in the following table, for the two series taken together. The Agent was R. E. and the PRN method of randomization was used.

— 1 *Fore-Hits*	*Non-telepathic*	*Telepathic*
Maximum possible number . . .	768	864
Actual number	160	243
Most probable number on chance .	157	174
Deviation	+ 3	+ 69

For the Non-telepathic experiments the actual deviation is considerably less than the standard deviation, and there is not the slightest reason to think that anything but chance coincidence is involved. For the Telepathic experiments which alternated with the Non-telepathic, as described above, the ratio of actual to standard deviation is 5·84. The probability of getting so large a deviation by chance coincidence is less than 10^{-8}.

This alternation of insignificant and highly significant scores within the same series of experiments, when no other condition is varied except that the former are got under Non-telepathic and the latter under Telepathic conditions, is plainly of the utmost importance. It strongly reinforces the conclusion that the high scoring in — 1 fore-hits under Telepathic conditions is a genuine effect of non-random causes.

(iii) *Effect of varying the Rate of Scoring.* (*a*) *Quickening.*—Here we have two sets of experiments. The first was done with R. E. as Agent using the Counter Method of randomization; the second with J. Al. as Agent using the PRN Method. The main effect was a most interesting one, viz., that with both Agents the success in — 1 *fore-hits vanished* and was replaced by a significantly high score in — 2 *fore-hits.* With J. Al. there were certain additional peculiarities. In each case the guessing was done at about twice the normal rate, i.e., the average interval was between 1 and 1·5 seconds. The results are as follows.

(α) *R. E. as Agent.*

	— *Fore-Hits*	— 2 *Fore-Hits*
Maximum possible number	831	794
Actual number	154	236
Most probable number on chance . .	167	159
Deviation	— 13.	+ 76

The ratio of the actual to the standard deviation for the — 1 fore-hits is — 1·11, that for the — 2 fore-hits is 6·77. The former is quite insignificant, the latter enormously significant.

(β) *J. Al. as Agent.*—As I mentioned above, there is a peculiarity about the Percipient's scoring with J. Al. as Agent when the experiments are done at the *Normal Rate*. With J. Al., and with him only, there is a significant number of + 1 *back-hits* in addition to a significant number of — 1 fore-hits. (It is of interest to note that J. Al. acted as Agent for Mr. B. S. in the First Series of Experiments, and that there too there was significant scoring on + 1 back-hits.)

These peculiarities were reflected in a modified form when the experiments were conducted at the Rapid Rate. Three experiments were tried. In *none* of them was there any significant success in either + 1 back-hits or — 1 fore-hits. But there were significantly large numbers of + 2 back-hits in the first and in the third experiment, and significantly large numbers of — 2 fore-hits in the first and in the second experiment. Taking the three experiments together the results are as follows.

	Back-Hits		*Fore-Hits*	
	+ 2	+ 1	— 1	— 2
Maximum possible number . .	529	552	552	529
Actual number	151	112	126	149
Most probable number on chance	103	110	111	106
Actual deviation	+ 48	+ 2	+ 15	+ 43
Standard deviation . . .	9·2	9·4	9·4	9·2
Ratio Actual: Standard . .	+ 5·2	+ 0·21	+ 1·6	+ 4·7

It will be obvious to inspection that the success of both the + 2 back-hits and the — 2 fore-hits is enormously greater than can be reasonably ascribed to chance, whilst there is no reason to postulate anything but chance-coincidence in the other two positions.

(*b*) *Retarding.*—When the rate of guessing is reduced so that the interval between each guess becomes 5 seconds instead of the normal interval of 2 to 3 seconds Mr. B. S. shows signs of great discomfort and no significant numbers of successes are scored on any of the five alternative positions which come under consideration. In one series the Slow Rate and the Normal Rate were alternated; 384 trials at the slow rate gave a positive deviation of only + 1·5 from the number of — 1 fore-hits which might be expected on the hypothesis of chance coincidence. But the same number of trials at the normal rate gave a deviation of + 34·71, i.e., 4·4 times the standard deviation, which makes the hypothesis of chance coincidence quite incredible.

It is worth while to remark again that such systematic variations in the number of hits achieved when one condition is altered and all others remain unchanged is not only of intrinsic interest, but also reinforces the conclusion that the high scoring under Telepathic Conditions at the Normal Rate with — 1 fore-hits is a genuine effect of non-random causes.

(iv) *Psychological Conditions.*—The following observations on the relevance or irrelevance of certain psychological conditions in the percipient are worth recording.

(*a*) There was no significant correlation, positive or negative, between the Percipient's impressions that he had been successful or unsuccessful and the actual success or ill-success of his guesses.

(*b*) It is natural and convenient to ascribe the Percipient's overwhelming degree of success in guessing the nature of the card which the Agent has not yet looked at but will look at in a few seconds' time to "precognition" or "foreknowledge" on his part of what will be in the Agent's mind a trifle later. It is therefore natural and convenient to describe the result of the experiments by saying that they establish the occurrence of *Precognitive Telepathy*. We must note, however, that strictly speaking what has been established is "foreknowledge" or "precognition" only in the purely *behaviouristic* sense of "knowledge" or "cognition." What the Percipient does is to *write down the initial letter of the name of one of five pictures* on each occasion. What happens enormously more often than can be accounted for by the hypothesis of chance coincidence is that the letter which he writes down is in fact the initial letter of the name of the animal depicted on the card which the Agent will turn up next.

The Percipient says that he seldom gets a mental image of the animal, but writes down the initial letter of the name almost automatically. It should also be remarked in this connexion that experiments were done in which the Agent was provided with cards which had only the initial letters and not the pictures on them; and that others were done in which the cards had on them, instead of pictures, associated words, e.g., "Stripes" instead of a picture of a Zebra. In each case the results achieved by the Percipient were about as good as those which he got when the Agent used cards with pictures on them.

(v) "*Multiple Determination.*"—In Mrs. S.'s and Mr. B. S.'s results in the First Series of Experiments Dr. Soal discovered a certain interesting fact, which may throw some light on the causation of the phenomena. The same fact emerged from Mr. B. S.'s results in the Second Series. This fact is called "Multiple Determination," and it may be described as follows.

Consider G_r, the r-th. guess in any series of 25, and A_{r-1} and A_{r+1}, the cards which the Agent actually turned up immediatly before and immediately after the Percipient had aimed his guess G_r at the card A_r. It may happen either that A_{r-1} and A_{r+1} are the same, e.g., both lions, or that they are different, e.g., that one is a lion and the other a zebra. If they are the same, we say that the guess G is "multiply determined." It is plain that the question of multiple or non-multiple determination cannot arise for either the first or the last of a series of guesses. Therefore only the intermediate 23 out of each 25 guesses can be either multiply or non-multiply determined. Each of these guesses might be either a + 1 back-hit or a − 1 fore-hit. Some might be both, and indeed any of them that was multiply determined would have to be both if it was either. So in each set of 25 guesses the maximum number of + 1 or − 1 hits that *could* be scored by guesses which *could* be multiply determined is 2 × 23, i.e., 46. Now we can cross-divide these 46 possibilities into (*a*) those in which the guess was in fact either a + 1 or a − 1 hit, and those in which it was neither; and (*b*) those in which the guess was in fact multiply determined, and those in which it was non-multiply determined. The degree of association between being a + 1 or a − 1 hit and being multiply determined can then be calculated and we can use the ordinary χ^2 method to test whether it is significantly greater than might be expected on the hypothesis of chance.

Dr. Soal found that there is a significantly high positive association between a guess being multiply determined and its scoring either a + 1 or a − 1 hit.

This was so with both Mrs. S. and Mr. B. S. in the first Series and with Mr. B. S. again in the second Series.

Summary of Results.—The main results of the two Series may be summarized as follows. (1) Out of 160 persons whom Dr. Soal tested as Percipients 2 and only 2 scored a significantly greater number of successes than might have been expected on the hypothesis of random coincidence. (2) He continued his researches on one of these Percipients and continued to get successes fantastically beyond chance expectation. (3) The successful Percipients were so only with certain Agents. (4) With one Agent B. S.'s successful guesses took the form of both + 1 back-hits and − 1 fore-hits; with the other two they took the form only of − 1 fore-hits. With none of the Agents did he score significant successes on the card at which the Agent was looking when he was making a guess. (5) There was no evidence that the Percipient had any power of clairvoyantly perceiving what was on the face of a card lying face downwards which the Agent would merely touch on the back in the course of the experiment. (6) If the interval between successive guesses is increased to as much as 5 seconds no significant successes are obtained. If it is diminished to between 1 and 1·5 seconds, the success in scoring − 1 fore-hits is replaced by success in scoring − 2 fore-hits with all three Agents. With J. Al. as Agent the success in scoring + 1 back-hits is also replaced by success in scoring + 2 back hits. (7) The "precognition" which the Percipient shows of what *will* very soon be perceived by the agent, and the "retrocognition" which he shows of what *has* very lately been perceived by the Agent, are (so far as these experiments tell us) purely behaviouristic. If consciousness, in the ordinary sense of the word, is involved, it takes place at some level of the Percipient's mind which is not open to his introspection. (8) The Percipient's impressions of success or failure are no safe guide to the actual success or failure of his guessing. (9) The proportion of "multiply determined" guesses which are either + 1 or − 1 hits is significantly greater than the proportion of non-multiply determined guesses which have that property.

C. D. Broad,
Trinity College, Cambridge

July 5, 1944.

NEW BOOKS

Masters of Political Thought. Vol. 1: *Plato to Machiavelli.* By MICHAEL B. FOSTER. (Harrap. Pp. 294. Price 10s. 6d.)

This text-book, the first of a series of three under the general editorship of Professor Sait of Pomona College, California, is constructed on an original plan, and one that has very much to commend it both to the university student and to the general reader. It is at once hand-book and source-book, combining substantial extracts from the classics of political theory with interpretative comment. The authors included in this volume are Plato, Aristotle, Cicero, Augustine, Aquinas and Machiavelli: there is also a brief chapter on the period between Augustine and Aquinas, and a suggestive introduction by Dr. Foster.

In reviewing such a work, it is easy to point to omissions. It may be suggested for example, that, for the contemporary student of political thought, Plato's *Laws* (at least books IV–VII and X), that archetypal primer of totalitarian politics, is really more significant than the *Republic*; that the interval from Augustine to Aquinas is inadequately covered; and that room should have been found, if not for Dante's *De Monarchia*, at least for the *Defensor Pacis* of Marsiglio of Padua. The short bibliographies at the end of each chapter are generally excellent, though here again mention might have been made of J. N. Figgis' *The Political Aspects of St. Augustine's City of God*, and of A. P. d'Entrèves' *The Medieval Contribution to Political Thought*, not to mention the relevant chapter in Ross' *Aristotle*.

But such criticisms have a somewhat carping character, and it is fairer to judge the book upon its positive merits, which are obvious and undeniable. Dr. Foster, who is a Tutor of Christ Church and a Lecturer in Philosophy at Oxford, has shown a real genius for selection, and the chapter on Aristotle constitutes as good an introduction to the *Politics* as could be desired. Plato and Aristotle together dominate the volume and occupy by far the greater part of it. Dr. Foster is illuminating on *The Republic*, which is always a difficult book for the neophyte who comes to it from modern history without any grounding in the classics: he is well served here. But, as has already been suggested, the *Laws* can no longer be cavalierly dismissed as "too long to be recommended": so, for that matter, is *Mein Kampf*. (In the index, Cicero's *De Legibus* appears to be inadvertently attributed to Plato.) It is when he reaches Mediaeval Christendom that Dr. Foster is manifestly less familiar with the terrain, though his elucidation of Aquinas is decidedly helpful. He is happier when he comes on to Machiavelli: although he does not perhaps fully realize that the real charge against Machiavelli is not that he divorces ethics from politics, and private morality from public morality, but rather that he confuses ethics with politics by introducing a purely political criterion of good and evil: crimes successfully perpetrated by republics are meritorious, crimes successfully perpetrated by tyrants are ultimately reprehensible: but this simple diagnosis is complicated by his supplementary criterion—success or failure.

Succeeding volumes on same plan are to cover the periods from Machiavelli to Bentham, and from Bentham to the present day. The plan is brilliantly conceived, and Dr. Foster's execution of it is so skilful, particularly in the

earlier chapters, that his volume should ensure a ready welcome for its successors.

CHARLES SMYTH.

The Christian Philosophy of History. By SHIRLEY JACKSON CASE. (Chicago: University Press; London: Cambridge University Press. 1943. Pp. 8 + 222. Price 12s.)

Religion of To-morrow. By JOHN ELOF BOODIN. (New York: The Philosophical Library. 1943. Pp. 189. Price $2.50.)

To-day everyone who thinks is thinking of the morrow. Both these books are turned to the future. Mr. Case believes that the menacing future problems are best met by seeking to unlock them with the key of history. He begins with contrasting the "Providential" view of history with that of Humanism. He has no interest in any metaphysical principle which is supposed to dominate history, but prefers what he calls "observational procedure," whether the observer looks at history from the Godward or manward side. A very able chapter follows, based on the thesis that in times of crisis historical dualism re-appears, a "cult of crisis" as opposed to a "cult of progress." He finds this dualism popular to-day in the revival of the philosophy of Kierkegaard, in the Barthians, in Berdyaev, Tillich and Otto Piper, and even in Gerald Heard, John Macmurray, and C. H. Dodd, all of whom, in various ways, separate human effort in history from the divine intention, and disparage the former. With this revival of mediaevalism Mr. Case has little sympathy. He regards history as a continuous fusion of material facts and spiritual activities. He believes in a religious significance in history, but religion to-day needs "not less divine guidance but more human virility." God works through the instrumentality of man. Mr. Case finds history "reassuring": "God is not pressed for time," but he holds that righteousness grows, like an evolutionary process, by small increments, and "thrives under the strain of battle."

This is a book which the reviewer has been glad to read, not because it expresses exactly his own views, but because it is stimulating and suggestive. Mr. Case has an easy style, and can put forward his views unambiguously. He would be a very encyclopaedic person who failed to gain knowledge from this vigorous essay.

Mr. Boodin, who has a considerable reputation in the United States, presents in these pages convictions rather than arguments, and writes in a style more reminiscent of a prose poem than of what is usually found in philosophical work. It does not follow that either is a disadvantage, even if the book is regarded as more of an inspirational than an informative nature. Briefly the contention of the book is as follows. God is the underlying spiritual world ground, giving meaning to life. Each epoch in history establishes different relations with the divine. The soul of God seeks to incarnate itself in all varieties of life, and becomes spiritually creative through this. There is a revelation of divinity in a unique way wherever there is genuine friendship and loyalty. The creative love of God works in and through us in so far as we are ready to co-operate with it. Religion is the poetry of life, but, like all true poetry, leads to a fresh grasp of the truth. The religion of the future is co-partnership with the constructive genius of the universe. Especially is this law of creative continuity which passes our finite embodiments revealed in the ideals of Jesus.

There is nothing especially new in this way of regarding religion, but Mr. Boodin expresses himself well, and those whose thought runs on such lines will find a very useful embodiment of it in this book.

E. S. WATERHOUSE.

PHILOSOPHY

Roots of Bergson's Philosophy. By BEN-AMI SCHARFSTEIN. (New York: Columbia University Press; London: H. Milford. 1943. Pp. ix + 156. Price $1.75.)

This work, the purpose and limitations of which, emphasized by the author himself, require to be kept in mind, is not concerned with the analysis, purport, and metaphysical validity of Bergson's Philosophy; but returning to the question of Bergson's originality, to which conflicting answers have been given, and which in the author's opinion demands for a decisive answer a careful, though not hitherto made, investigation of the antecedents of the scientific and philosophical environs of his doctrine, enters, in full cognisance of Bergson's warning about attempts to trace influences, upon a valuable and interesting study in the history of ideas that covers particularly the latter part of the nineteenth century. Five main and outstanding features of Bergsonism—Time, Intuition, Psychology, Biology, Morality and Religion —right up to the time when Bergson was tending to come closer to Catholicism, are taken; and a consideration of the works produced during and even before his own period, supported by quotations from them, shows how ideas similar, sometimes very similar, to those of Bergson are found to be under discussion or in course of formulation. The author's account, which the reader may feel to proceed a little jerkily at times, introduces many thinkers, some of them well known, gives a comprehensive survey of what was being thought, successfully unfolds the ramification and the community of ideas and problems, and presents a clear and stimulating picture of the elaboration of these ideas and problems into a single and coherent doctrine, as he considers Bergson's philosophy to be.

B. M. LAING.

How Do We Know God? By RICHARD KRONER. (New York and London: Harper Bros. 1943. Pp. x + 134. Price 1 dollar 75 cents.)

Dr. Kroner, formerly Professor of Philosophy in the University of Berlin, publishes these lectures from America, where he now is employed. He answers his question by saying we know God through faith and faith alone. Knowledge of God is based on a living fellowship with the object of this knowledge. Revealed knowledge of God is granted us by God Himself through the mediation of prophetic inspiration and through the experience of events recorded in the Bible. Knowledge of God is intrinsically mystical, a personal fellowship with a Creator and Ruler of the Universe, who remains a mystery even when He reveals himself. This position one can understand. What is harder to understand is why Dr. Kroner is so severe upon empirical scientific theology, which is sharply ordered off the field. Our knowledge of God comes from faith, revelation and the Bible, it would seem, and we must not use our mundane methods of investigating reality when we seek for God. If this meant imply that the methods of science cannot be used to prove a transcendental hypothesis, it is surely a truism. But it seems to warn off all who try to unify knowledge to some extent, and, therefore, are willing to regard belief in God as a hypothesis for the explanation of experience. This Dr. Kroner will not allow. Yet how does he know that God is the "Creator and Ruler of the Universe"? Mystical experience surely does not afford a cosmogony! We are told it is the biblical conception of God. If Dr. Kroner has found such a conception in the historical books of the Old Testament, it is a discovery indeed. Why then speak of the "biblical" conception when that conception is attained only in the higher conceptions of the later prophets? Is any clean-cut separation between faith and knowledge possible, when all our knowledge, scientific

or religious, is based on an act of faith? Dr. Kroner represents intelligent fundamentalism. The combination is welcome, but it is not possible to regard the result as affording a satisfactory solution to the problem of how man can know God. Those who fly to revelation are quite unable to show how our minds, incapable of knowing God, can be capable of knowing whether the revelation is from God or not. It may be that the reality of the experience of God is given only through something like mystical experience. But there is more than one path beyond the senses, and it seems needless to insist that there is only one proper path to God.

E. S. WATERHOUSE.

Albert Schweitzer: His Life and Philosophy. By OSKAR KRAUS. With an Introduction by A. D. LINDSAY, Master of Balliol. (London: Adam & Charles Black. 1944. Pp. x + 75. Price 6s. net.)

Albert Schweitzer cannot be labelled and neatly classified in one's mind. His thought has that manifoldness which more prosaic people call inconsistency. Son of a Protestant pastor, Schweitzer began in a theology he outgrew but never wholly cast off. The book by which he became known—*The Quest of the Historical Jesus,* represented Christ as an eschatological enthusiast, who believing the end of all things at hand, preached but an *Interimsethik,* and threw His life away to precipitate a supernatural Kingdom of God on earth. Yet a few years later, Schweitzer, theologian, philosopher, musician, gave up his professorship at Strasbourg, studied medicine whilst his wife qualified as a nurse, and the two set out for the depth of Africa to tell the natives, as Schweitzer puts it, that the Lord Jesus has bidden them come to the Ogowe to heal them. "We, black and white," he says, "sit side by side and feel that we know by experience the meaning of the words: 'And all ye are brethren'." He regarded his immolation in Africa as an imitation of Christ compelling him to seek thus to expiate the sins of the West upon the coloured races.

Schweitzer's philosophy is the expression of the conflict of his nature rather than an orderly construction of his mind. He has no hope that the universe can show us anything of its own nature or of God. He wavers between Theism and Pantheism. He seems unable to decide whether the outlook of Jesus was optimistic or pessimistic. He concludes that all thought which thinks itself out ends in mysticism. His metaphysics is sceptical, and he rejects Kant's attempt to secure by practical reason what pure reason denies. Yet he demands that our ethics must be optimistic. His life affords what his philosophy denies, an inspiration to work while it is day believing the best and leaving the issue to God. In the Middle Ages Schweitzer would have been burnt for his theology or canonized for his faith!

Perhaps Schweitzer's psychological make-up explains the puzzle of his personality. As a lad he was too tender-hearted to fish. Suffering of any kind moved him intensely. "Ethics are pity. All life is suffering," he declares. Schopenhauer said as much and left it at that. Schweitzer lives his ethics. It would be difficult to read this illuminating study of a great man, without being thankful that this war-oppressed world can yet boast such a soul as Albert Schweitzer to prove that loyalty to and pity for mankind are not total casualties of war.

E. S. WATERHOUSE.

PHILOSOPHY

The Philosophy of Marsilio Ficino. By PAUL OSKAR KRISTELLER. Translated into English by VIRGINIA CONANT. (New York, Columbia University Press. 1943. Pp. xiv, 441. English price 30s.).

The present reviewer of this work, being qualified for his task, if at all, rather by interest in the subject than by knowledge of it—for he can claim no previous acquaintance at first hand of the writings of Marsilio Ficino—must for the most part content himself with summarizing the contents of the book before him.

It is to his translations into Latin of Plato and Plotinus that Marsilio Ficino chiefly owes his fame—it is interesting to learn (p. 13) that he also translated Dante *de Monarchia*, as well as some of his own works, into Italian—but so notable a figure in the history of the Renaissance deserved the attention required by such a study of his philosophy as is here supplied by Mr. Kristeller, a German scholar on the staff of Columbia University, whose work has been rendered into English by an American pupil, Miss Virginia Conant.

After a brief statement of Ficino's historical position—his background and sources, his life and works, and his influence on later writers—the author turns to consider his theory of Being, and of the relation of Being and Thought. While the world of Being is essentially finite, Thought ever seeks to transcend all limits, and, in so doing, is directed toward God, who, though the cause of Being, "is absolutely superior to and essentially distinct from the world as totality of all Beings" (p. 57) and is infinite, "an object toward which" the mind "tends in continual movement, but never quite reaches," and which can be described by "the paradoxical phrase *terminus infinitus*" (p. 59). The world, which Ficino (following here not the Neoplatonic but the Christian tradition) regards as created out of nothing by God (p. 60), is "the perfect creation of a perfect creator" (p. 61). The evil in it consists in man's attitude towards what in itself is good (p. 66). Yet Ficino, "unlike St. Augustine, avoids speaking of an evil will." "The right and the wrong attitude differ only in the fact that the will is either directed toward God" or "descends to the finite, particular goods that receive their goodness from God and can therefore never satisfy the infinite desire of the mind." A peculiar and interesting version of the famous 'ontological argument for the existence of God' is implied in a passage quoted (p. 72) from Ficino, in which he says: *sed quid curiose inepteque quaerimus utrum possibile verumve sit in universo esse immensum bonum necne? Cum nihil sit possibilius veriusque eo quo nihil potest potentius cogitari . . . Si in summo principio omnium atque fine. . . summa bonitas est et summa ipsa bonitas idem est prorsus ac summa potentiav veritasque, sequitur quicquid circa ipsum melius indicatur possibilius fore, imo iam verius esse.*

Although, as we have seen, Ficino departs from the Neoplatonic tradition in respect of the origin of the world, he is in agreement with the view of it as a continuous hierarchy which, as Mr. Kristeller says (p. 74), "became, through Dionysius the Areopagite, a fixed element in medieval thought." The question of the principle on which this hierarchy is based "had," says Mr. Kristeller, "no importance for ancient philosophy in its earlier periods, nor has it had for modern thought." When, however, he goes on to observe that "in the modern period the concept of substantial entity has been practically eliminated by natural science," and implies that with this has gone the 'hierarchical' conception, he does not consider the relation of this conception to that of 'evolution' *upward* which has in many quarters replaced the Neoplatonic principle of 'emanation' from above, but may also be described as 'hierarchical.' The seventh chapter is devoted to this 'Hierarchy of Being' as conceived by Ficino; as we should expect, he is guided by the Neoplatonic

principle that "anything that produces something must be more excellent than anything that is produced by it" (p. 87). Such a hierarchy is plainly the reverse of that divined in nature by the champions of 'creative' or 'emergent' evolution. No less significantly in contrast with evolutionary theories of all kinds is Ficino's adherence to an ancient tradition in his assertion that "rest is far more perfect than movement" (p. 89).

In Mr. Kristeller's seventh chapter we are concerned with Ficino's view of the unity of the world; in the eighth with his doctrine of causality; in the ninth with the notion of *primum in aliquo genere*. That of every quality there is a chief example, as fire of heat, which is the cause of the possession of that quality by other things is a mediaeval doctrine based upon Aristotle, *Met. a* 993, *b* 24 (though in *de Gen. An.* Aristotle expressly denies that fire *is* the source of all other heat), to which reference is often made by St. Thomas, but upon which Ficino appears to have laid a very special stress. In ch. 10 another Aristotelian conception, that of the *appetitus naturalis*, is considered as it appears in Ficino. Mr. Kristeller does not mention that in his 'philosophical justification' of the dogma of resurrection of the body (p. 195) by the natural inclination of each soul towards its own body, Ficino is following the doctrine of St. Thomas.

From Ficino's account of the Universe Mr. Kristeller passes to what he has to say of the soul and of God. The eleventh chapter on 'Internal Experience' is interesting, but difficult. We may note the view, said (p. 212) to have become through Ficino's influence prevalent in the sixteenth century, that Saturn should be considered a beneficent planet, the 'saturnine' or 'melancholy' temperament, natural to scholars and philosophers, being favourable to the liberation of the soul from dependence on outward things; as also his opinion that 'perfect contemplation,' in which God is known as he is (the 'beatific vision' of Christian theology) is occasionally, though very rarely, enjoyed in this life.

What Ficino has to say of the Knowledge of God is discussed in ch. 12; That of Will and Love in ch. 13. He appears, after at first assigning, in the manner of St. Thomas, the primacy to intellect rather than to will, to tend toward a reversal of this order, although in the end recognizing that, in the sense in which it may be called superior to intellect, it is itself an element therein (p. 275). It is of interest to note that Ficino seems (p. 285) to have been the originator of the phrase 'Platonic love.' For him it is definitely (p. 286) intellectual love between friends; it is easy to see why this should be associated with the name of Plato. On the other hand, the spiritual interpretation of love for a Beatrice or a Laura, of which the popular use of the expression for a love stopping short of passion is a vulgarized version, was not by them (this is certainly true of Dante; I have not verified the statement as regards Petrarch) connected with Plato.

'Morals, Art and Religion,' as treated by Ficino, form the subject of ch. 14. As regards art, Mr. Kristeller finds, as one would expect, no 'aesthetic' in the modern sense, no distinction of 'arts' from 'crafts.' Religion our author holds to be a natural endowment of our species "as natural for men almost as neighing is for horses or barking for dogs" (p. 318), proving even more decidedly than reason the characteristic distinction of men from other animals, since the more sagacious beasts have traces of reason, but none of religion (p. 319). The variety of religions is, he suggests, ordered by God to "produce admirable beauty in the universe" (p. 317). But he looks forward to a day when Divine Providence "will confirm the true species of religion," the highest, that is, in the hierarchically ordered genus, namely, Christianity, "through manifest signs among all peoples" (p. 322). It may be here noted

that the notion of the rational soul as the 'horizon' between the spiritual and material worlds found in this chapter was familiar in the mediaeval schools.

Ficino's belief in immortality, to which ch. 15 is devoted, seems to be chiefly based on the argument that for a 'natural appetite' a satisfaction must be provided in nature. The 16th and final chapter is entitled 'Evil and Outward Life.' Evil, for Ficino, is a lie about the divine goodness which exists only in the liar's mind (p. 352). We may note that, of the traditonal 'three lives,' he places the 'active' life, which aims at domination, below the 'voluptuous,' which aims at pleasure, and further away than this from the highest, the 'contemplative,' because of its greater restlessness.

Ficino's eschatology, which is studied in this chapter, while conformed to the teaching of the Church, sees in 'eternal punishment' the gravitation to its 'own place' of a soul irretrievably habituated to vice (which arises from an excessive affection for the body on the part of the soul). "Radically opposed" we read (p. 364) "to the real destiny of man," it "merely represents an extreme; it is reserved for those who during earthly life have removed from themselves the last traces of their higher being." In Ficino's final scheme the rational soul of man is the centre of the universe, which comprehends five degrees of being, God and the Angels above it, 'quality' and body below it, the soul itself, according to the mediaeval phrase above quoted, the 'horizon' between the spiritual and material, the eternal and the temporal spheres.

Would not 'descending' be more correct than 'rising' on p. 60, l. 11? Is not 'Decorum itself' a misleading translation (to say the least) of *ipse decor* (p. 69)? Can it be now said, as on p. 121, that modern science "maintains the relation of cause and effect as almost the only real relation between things"?

The statement on p. 173 about the term ὄρεξις for 'appetite' being "first coined by Plato" needs correction. The new edition of Liddell and Scott gives Aristotle as the earliest authority for it. It is true that it occurs in the so-called Platonic 'Definitions,' which are quoted as the earliest authority in the old edition, but these cannot be indiscriminately treated as genuinely Platonic.

The meaning would be clearer if we were to read on p. 182, l. 11, 'proceed for ever' for 'always proceed,' and p. 182, l. 7, p. 196, l. 1, 'for ever be' for 'be always' and 'always be.' (The original Latin of the second passage is *inanis semper esse non debet.*)

On p. 292, l. 17, for 'watch' read 'wake' (*vigilemus*, opposed to *dormitamus*).

C. C. J. WEBB.

Religion, Science and Society in the Modern World. By A. D. LINDSAY, Master of Balliol College, Oxford. (Oxford University Press. London: Humphrey Milford. 1943. Pp. 64. Price 3s. 6d.)

These three lectures—(1) Religion and Freedom, (2) Science and Freedom, and (3) Power and Freedom—were delivered by the Master of Balliol as the Terry Lectures at Yale on "Religion in the Light of Science and Philosophy." The discussion is throughout relevant to the distresses of our epoch, in which "we have seen the rise of a kind of society in which neither religion nor science or philosophy is possible," and in which all vital freedoms are in peril everywhere.

Looking back to the Renaissance and Reformation (often blamed for our present troubles), he does not agree that a wrong turning was then taken. "I am convinced," he says, that the beginning of the modern adventure in both science and religion was the revival of the essentially Christian conception of the infinity of God and the consequent realization that God had given

man an infinite task, in understanding and doing His will and knowing His world." To return to earlier conceptions of static perfection inherited from Greek metaphysics would fail us in a world where neither thought nor social forms will "stay put."

The institution which best embodied this spirit on the religious side was the Free Church, especially that of the Puritans of the Left. Here Roger Williams' "free, tolerant state"—the counterpart of these democratic fellowships—comes in for contrast with the *Leviathan* of his contemporary, Hobbes. "Do we not read Hobbes with different eyes when we have seen Hitler and learnt how modern scientific development and modern technology can produce in reality Hobbes' Leviathan?"

That science needs freedom follows from its nature—misunderstood by Hobbes, who thought it could flourish under absolutism. Kant was "the first man to understand what the new sciences were doing and how they did it." Its spirit required free universities—and found them first, and for long supremely, in Germany. Just why these surrendered so easily to Nazism is only hinted at by Dr. Lindsay as he proceeds to diagnose the sickness of our own Society whose symptoms of cynicism and disillusionment are, alas, too prevalent among students both here and in the U.S.A.

"What has gone wrong?" he asks. First, he notes a theoretical failure in applying, like Hobbes, the methods of physics to man and society, ending in a denial of values. The way out "of this mess" was, he thinks, correctly indicated by Dilthey with his fundamental distinction between the physical sciences, whose instrument is *Anschauen* (direct observation) and the social sciences whose instrument is *Erleben* (living through). The exercise of the re-creative imagination is necessary to the understanding of ourselves and others and specially needs cultivation in an industrial society.

The practical failure is considered in the closing chapter on Power and Freedom. The industrial revolution, with new forms of power, destroying the fellowship of a simpler society, has, despite democratic gains, brought upon the world a malaise due to a sense of frustration consequent upon "man's interdependence having vastly outstripped man's power of common control."

Hope may be derived from the fact that our misfortunes are largely due to our "not noticing what was happening to us." Without fearing the bogey of totalitarianism the power of the state must be used to remove "the disharmonies and corruptions which hinder the common life." We must "get straight this matter of the true relation between power and freedom." *Laisser-faire*—freedom, in the sense of being let alone—must be abandoned as an outworn ideal, harmful in our complex world. All the same, to make men free—the true end of power—is a delicate matter, as Dr. Lindsay very happily illustrates from the Gospels and modern psycho-therapy. "Only the control of the common man will keep power from being perverted from its task of serving freedom. But unless the churches and universities play their part in maintaining and increasing the common life of the community, the work of the state will be in vain." This little book, it is hoped, will be read by others besides students of philosophy, and it will show how valuable applied philosophy can be in relation to the problems of our dark times. A. E. ELDER.

Immaterialism. Annual Philosophical Lecture, Henriette Herz Trust, British Academy, By A. A. LUCE. (London: Humphrey Milford. 1944. Pp. 16. Price 2s.)

The lecture is a frank defence of Berkeley's main position as regards matter. What the author attacks is the notion of something different in

kind over and above the sensible realities with which the plain man thinks himself to be immediately acquainted, and the case against this is pointedly put. Dr. Luce thinks it better not to speak as if the issue were whether physical objects are in the mind or not; it is for him rather whether there are two non-spiritual worlds. One such world, the world of "sense-data," is indisputably given; so need we postulate a second? I think, however, that it is very misleading to say that "it is natural to believe in sense-data and not natural to believe in matter" (p. 4), for the word sense-data as commonly used already connotes dependence on the mind or at least on the sense-organs, and it is certainly not natural to believe that the objects of which we are immediately aware depend for their existence on us. What the author should have said is not "sense-data" but "the sensible." The question for him is whether besides this there is an obscure material substance which nobody could sense, and this question he answers emphatically in the negative. He does not refer here to the fact that common sense, while it does not want another mutton-chop quite unlike the one it sees and tastes, yet is quite convinced that the sensible things we perceive exist independently of being perceived by any human mind. Nor does he anywhere make it clear whether he would meet this demand by saying that physical objects persist in the mind of God, but the last page of the lecture shows sympathy with a view which while denying a material insensible substance different in kind from any groups of sense-data yet thought of some of the sense-data we perceive as persisting unperceived at least by human beings, since he holds it incredible that he himself as percipient should have made them.

Dr. Luce criticizes the attempt to link the two unrelated worlds of matter and sense-data by means of the concepts of likeness and cause. The concept of likeness, he holds, is inapplicable because we cannot compare matter and sense-data to see whether they are alike, and because, so far from being like the sensible, "matter was inserted for the express purpose of supplying the defects of the sensible; matter is, in the theory, just what the sensible is not" (p. 7). Nor will the concept of cause serve, for no material things can be causes in the proper sense, they cannot initiate activity. The regularity doctrine of causation as regards physical objects which Berkeley held and towards which modern science is inclined removes the necessity of postulating matter to cause sense-data. "People complain that they find Berkeley unanswerable, but unconvincing; that is usually because they take him seriously on matter, but not on cause" (p. 8). As for the demand for material substance, that "is simply the demand for the thing's other sense-data" (p. 15). "For purposes of study we often have to isolate a sense datum, and draw a ring round it, and then of course it may seem flimsy and unsubstantial; but restore it to its context and it is as solid as can be" (pp. 14–15). But Dr. Luce does not make it at all clear what account he would give of illusions, which he refuses to rank with sense-data, nor does he discuss what I think to be the most plausible form of the causal argument for physical objects, the argument from inverse probability.

It is refreshing to read again a straight argument for idealism, and the work has the merit of being particularly well written. A. C. EWING.

Books also received:—

F. W. EGGLESTON. *Search for a Social Philosophy*. Melbourne and London: Melbourne University Press (in assn. with Oxford University Press). 1941. Pp. 360. 15s.

NEW BOOKS

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HUGO LEIPZIGER. *The Architectonic City in the Americas.* Significant Forms, Origins, and Prospects. Austin, Texas: The University of Texas. 1944. Pp. 110. No price quoted.

Sir RICHARD LIVINGSTONE. *Plato and Modern Education* (The Rede Lecture, 1944). Cambridge University Press. 1944. Pp. 36. 1s. net.

JOHN LAIRD. *The Device of Government* (An Essay in Civil Polity). Cambridge University Press. 1944. Pp. 174. 6s. net.

Major S. H. FOULKES, M.D. *Psycho-Analysis and Crime.* Toronto, Ont.: The Canadian Bar Assn., Reprinted by The Dept. of Criminal Science, Faculty of Law, University of Cambridge, in the Pamphlet Series, *English Studies in Criminal Science.* 1944. Pp. 44. 2s.

WILLIAM CHASE GREENE. *Moira, Fate, Good and Evil in Greek Thought.* Cambridge, Mass.: Harvard University Press. London: Humphrey Milford, Oxford University Press. 1944. Pp. viii + 450. $5.

PASCUAL JORDAN. *Physics of the Twentieth Century.* New York: Philosophical Library, Inc. 1944. Pp. xii + 185. $4.

C. A. RICHARDSON. *Happiness, Freedom and God.* London: George G. Harrap & Co. Ltd. 1944. Pp. 221. 7s. 6d. net.

G. N. LAWANDE, M.A., Ph.D. *The Problem of Universals: A Metaphysical Essay.* Bombay: New Book Company. 1943. Pp. xii + 232. No price quoted.

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OBITUARY

The late Professor R. F. A. Hoernlé

It was my privilege to be a colleague of the late R. F. A. Hoernlé in two universities, and to be counted among his friends for nearly a quarter of a century. Though I was never a pupil of his, I did a little teaching for him in his Department at Armstrong College (now King's College), Newcastle-upon-Tyne, and was closely associated with him for more than ten years in the University of the Witwatersrand, Johannesburg.

The strongest philosophical influence upon Hoernlé was, I think, Bernard Bosanquet, whom he never tired of quoting. To the end he remained unconvinced by any of the attacks on the Idealist position which have been so notable a feature of philosophical thought in the present century. But nothing was more characteristic of Hoernlé than his capacity for mastering the views of other men and restating them fairly, succinctly, and with an admirable lucidity, even when this was only a preliminary to a destructive criticism of them. He had a more orderly mind than most other men I have met in life, and I think it was this more than any other quality in him which made him so impressive a teacher.

To this virtue were added quite unusual powers of work and great courage. The longer he lived the busier he got, until latterly he was doing the work of two or three men of ordinary capacity; indeed, doing more than a man even of his capacity could keep up. In addition to his Department, he had innumerable duties in connection with the Race Relations Institute (of which for a time he was Chairman), an institute primarily devoted to the interests of the Native and Coloured population of South Africa; and, at any rate from the year 1940, he was giving many hours a week to Army Education. When causes like these had taken him by the heart, nothing and nobody could stop him from overworking himself for them. And yet, however tired he might be, his mind always seemed to remain as incisive as ever. I have heard many lecturers and public-speakers inside and outside universities; but I have never heard anyone who could surpass Hoernlé in clarity of exposition, whether the topic was one of his own choosing or not, and in seeing the other man's point of view. He spoke his mind—no one more emphatically—whether the result was palatable to his hearers or not. To do so in a country like South Africa can sometimes be startling, not to say explosive. But Hoernlé feared no man, however powerfully placed he might be. And this at least was certain, that when Hoernlé had delivered himself on any question, national or parochial, metaphysical or academic, no one could remain in doubt concerning the opinions expressed; they were clear, orderly, and pointed.

That this often annoyed men of more confused minds has to be admitted. It is not flattering to a muddler to have his arguments arranged and restated for him better than he can do for himself. But the very annoyance that we all sometimes felt with Hoernlé was a tribute to his powers. And no one who knew him well ever doubted his forthright honesty of purpose at all times.

Hoernlé's first book was *Studies in Contemporary Metaphysics* (1920), which he followed up with *Matter, Life, Mind and God* (1923), and *Idealism as a Philosophical Doctrine* (1924). In 1939 he published a notable book on *South*

African Native Policy and the Liberal Spirit, of which Chapter III, on Liberty, is a particularly impressive statement of the Liberal point of view. During the last ten years of his life this was the only book he had time to produce, though he was steadily accumulating material for what might have been one of his best, a book on the philosophy of science. In these years, however, he wrote a number of important articles, most of them in English, but at least one in German, and one or two in Afrikaans. Of these I may mention "Freedom in the Present-Day World," in *Philosophy*, Vol. X, 1935; "Concerning Reason in Human Affairs," in *Mind*, Vol. XLV, N.S., 1936; "Would Plato have approved of the National-Socialist State?" in *Philosophy*, Vol. XIII, 1938, and "Kant's Concept of the 'Intrinsic Worth' of every 'Rational Being'" in *The Personalist*, Vol. XXIV, 1943.

Had Hoernlé been content to be a philosopher and little else, he might, and I feel sure would, have produced more books in the later years of his life. But he insisted on carrying his philosophy into the world of affairs, in which he had become one of the best known and most respected figures in South Africa. And the world of affairs is exacting. It allows a man too little time in his study.

J. Y. T. GREIG.

INSTITUTE NOTES

The Annual General Meeting, which was postponed indefinitely in July, will be held on Tuesday, November 21st, at 4.15 p.m., at 14 Gordon Square, W.C.1. On this occasion it will be a formal meeting only.

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