PHILOSOPHY

THE JOURNAL OF THE BRITISH INSTITUTE OF PHILOSOPHY

Vol. XIV. No. 54. A

APRIL 1939

THE PRESENT RELATIONS OF SCIENCE AND RELIGION¹

PROFESSOR C. D. BROAD

FIFTY or sixty years ago anyone fluttering the pages of one of the many magazines which then catered for the cultivated and intelligent English reader would have been fairly certain to come upon an article bearing somewhat the same title as that of the present paper. The author would probably be an eminent scientist, such as Huxley or Clifford; a distinguished scholar, such as Frederic Harrison or Edmund Gurney; or a politician of cabinet rank, such as Gladstone or Morley. Whichever side he might take, he would write with the moral fervour of which Englishmen at that time had an inexhaustible supply. Nowadays the so-called "conflict between Religion and Science," which was then appetizingly hot from the oven, has acquired something of the repulsiveness of half-cold mutton in halfcongealed gravy. There seems to be a widespread opinion that Sir Arthur Eddington and Sir James Jeans, with some highly technical and not readily intelligible assistance from Professor Whitehead, have enabled the lion to lie down with the lamb. Well, I have no wish to pipe a discordant note in this scene of Messianic harmony. But I cannot help reflecting that psychology, anthropology, and psychical research have made considerable advances as well as mathematical physics; and that they seem prima facie much more likely to be relevant to religion. Even the ordinary common sense of the lawyer and the historian may still have something useful to say on such topics. So, at the risk of being thought a profane disturber

¹ A selection from this was given as a lecture to the British Institute of Philosophy, on Tuesday, January 17, 1939.

of the peace, I propose to raise once more the old questions, and to ask what bearing, if any, recent scientific developments have on the validity of religious beliefs.

In considering such beliefs I shall devote my attention mainly to Christianity, since this is the religion in which most of us were brought up, and is the only one with which most of us have any first-hand acquaintance. I fear that there may be some degree of unfairness in this. For there are certain peculiarities about Christianity which make it vulnerable to attacks that might be harmless to some of the other great religions, such as Buddhism, or to religion in general. I will therefore begin by mentioning the most striking of these peculiarities.

(1) The first and most important peculiarity of Christianity is that it is, to an unique degree, a doctrine about its own Founder. Some religions, e.g. Brahminism, do not claim to have any definite historical founder. Others, such as Buddhism in its original form and Confucianism, which trace their origin to a certain ostensibly historical person, claim no more for their founder than that he was an exceptionally wise and good man who first discovered and promulgated certain important moral and philosophical truths, and illustrated his doctrine by the special sanctity of his life. Others, again. such as Judaism and Mahometanism, would claim more than this for their founders. Moses and Mahomet are supposed to have been the recipients of special revelations from God. This, it is alleged, enabled them to know facts about God's nature and His commands to humanity which no amount of reflection on the data of ordinary experience would have disclosed to even the wisest and the best of men. But Judaism and Mahometanism would claim no more than this for Moses and for Mahomet respectively. These prophets are regarded as ordinary men who were extraordinarily favoured by God, not as supernatural beings occupying a uniquely important position in the universe. Now it is an essential part of Christian doctrine that, whilst it claims for the man Jesus all that Judaism claims for Moses or Mahometanism for Mahomet, it also claims something else which is different in kind and not in degree.

I have not been so fortunate as to meet with any account of the details of this doctrine about Jesus which I could fully understand. But, for the present purpose, a rough outline will be enough; and it may be given in the following propositions. (i) There is a single eternal and supernatural existent on which everything else that exists depends one-sidedly both for its origin and its continuance. This may be called "the Godhead." (ii) Within the unity of the Godhead there are three and only three most intimately interrelated "factors" or "moments," each of which can properly be called God. (iii) A certain two of these factors in the Godhead stand in a

peculiar kind of asymmetrical dyadic relationship, which is least imperfectly adumbrated by the analogy of fatherhood and sonship. In respect of this, one of them is called "God the Father" and the other is called "God the Son." The third factor in the Godhead is related to both the others by another kind of asymmetrical dyadic relation. This is denoted by the phrase "proceeding from," and the factor in question is called "God the Holy Ghost." (iv) There is some uniquely intimate relation between that eternal factor in the Godhead called "God the Son" and a certain man Jesus who was born at the village of Bethlehem during the reign of Augustus. This relation is such that it is appropriate to say of Jesus (and of no other man) that He was divine as well as human, and to say of God the Son (and of no other factor in the Godhead) that He is eternally human as well as divine. (I must confess that I can think of no interpretation of these statements which would enable me to attach a meaning to them.) (v) The birth of Jesus was miraculous, in so far as He had no human father. His mother was caused to conceive Him through the direct agency of the third factor in the Godhead, viz., the Holy Ghost. (vi) After preaching, and collecting a body of disciples, Jesus was eventually crucified by the Jewish ecclesiastical authorities at Jerusalem. He died on the cross and was buried, but His body never suffered decay. On the contrary, at some period during His burial it underwent a miraculous change in consequence of which it ceased to be subject to the physical and physiological limitations of the ordinary human organism. He emerged from His tomb, which was found empty and open, although it had been carefully guarded; and for a period of forty days He appeared from time to time, visibly, tangibly, and audibly, to certain groups of His disciples. The circumstances of some of these manifestations were such that no ordinary living man could have appeared and disappeared in the way in which Jesus is alleged to have done. (vii) After the expiry of a certain time these manifestations ceased, and Jesus is said to have ascended to His Father in heaven. Since this statement can hardly be admitted to be intelligible if taken in a literal spatial sense, it may perhaps be interpreted as follows. At the end of this period God the Son resumed a relationship with God the Father which had been suspended during the earthly life of Jesus, and He suspended or modified a relationship to the material world which He had entered into at the conception of Jesus. (I do not pretend to understand what could be meant by changes in the relationship of an eternal being either to another eternal being or to the temporal order of nature.) (ix) Henceforth Jesus guides and influences individual Christians and Christian communities by insensible means. He will continue to do this until the Day of Judgment, when He will reappear physically and sensibly, will allot fitting rewards and punishments to the whole human race, and bring the present order of nature for ever to an end.

(2) The second peculiarity of Christianity is that it took over without question the Jewish sacred scriptures; that Jesus Himself appears to have accepted them; and that apostles, such as St. Paul, whose writings are held to be inspired by the Holy Ghost, used certain statements in them as premises for the exposition and development of Christian doctrines. Now these scriptures contain an elaborate cosmogonical scheme purporting to describe the creation of the world, of animals, and of man. They profess to account for the origin and propagation of moral and physical evil by the disobedience of our first parents to God's commands at the instigation of an evil supernatural created being. It is an essential part of the Christian doctrine that mankind was thus alienated from God, rendered incapable of amending themselves proprio motu, and justly liable to be eternally punished. It is also an essential part of that religion that the incarnation of the Son of God in the man Jesus, and the life, death, and resurrection of the latter, rendered it possible (though not inevitable) for men to reconcile themselves with God, to amend their lives, and to attain eternal happiness. I think it is fair to say that there is no general agreement among Christians as to the precise way in which this cause renders this effect possible; and that there are profound differences of opinion about the part played by the voluntary co-operation of men, which is admitted to be, in some sense, a necessary condition of their salvation.

(3) There is a third peculiarity of Christianity which is closely connected with the first. The Christian scriptures and traditions, like those of most religions, contain accounts of ostensibly supernormal events. Now these reported miracles fall into two very different classes, viz. those which are part of the content of Christianity, and those which are, at most, part of the evidence for Christianity. It is an essential part of Christian doctrine that Jesus survived the crucifixion, and in some sense emerged from the tomb with a transformed body. Any ground for doubting or denying this is ipso facto a ground for doubting or denying a part of Christian doctrine. But it is no part of Christian doctrine that Jesus raised Lazarus from the dead or walked on the water without sinking. If every one of the latter miracles were rejected, this would not directly involve the rejection of a single Christian doctrine: though it might weaken the force of one line of argument for accepting Christian doctrines. Now the miracles of most religions fall entirely into the second class; i.e. they are, at most, evidential and not constitutive.

I hope that I have now indicated adequately and fairly the main peculiarities of Christianity. We can now ask ourselves how far, if

at all, the various sciences are relevant to the truth of that religion. I must begin by mentioning an elementary logical distinction which is often overlooked. It is one thing to say of a fact that it conflicts with a certain theory. It is quite another thing to say of the same fact that it undermines the grounds on which people hold that theory. It is quite possible that the former statement should be false and the latter true. If that were so, the theory would not have been refuted and would not even have been shown to be intrinsically improbable; but we should have shown that those who accept it have no valid reason for doing so. Thus our question divides into two. (I) Do the generally accepted methods and results of the various sciences conflict with Christian doctrines, i.e. are they either logically incompatible with those doctrines or such as to render them extremely unlikely to be true? (2) Do they undermine the only grounds which people have ever had for believing Christian doctrines? We will now take these two questions in turn.

(I) The doctrines peculiar to Christianity may be divided into two classes, viz. those which are *about* Christ, and those which, though taught by Him or inferrible from His teachings, are not about Himself. I have already enumerated the former doctrines. As examples of the latter we may take the ethical doctrines enunciated in the Sermon on the Mount.

Now it is quite clear that none of the empirical sciences has or could have any logical bearing on a great deal of the Christian doctrine about Jesus. It is absurd to suppose that empirical science could prove or disprove, make probable or improbable, the doctrine of the existence and triune structure of the Godhead and of the uniquely intimate connection between one of its differentiations and the man Jesus. The fundamental question is whether any part of this doctrine is intelligible, or whether it is nothing but meaningless verbiage masquerading in the grammatical form of intelligible sentences. Obviously that question cannot be answered by appealing to the methods or results of natural science. If any part of the doctrine be intelligible, the second question is whether it is true or false, antecedently probable or improbable. Now natural science is concerned with the interconnections between things or events in space and time; and it is specially concerned to discover uniformities of co-existence and sequence among classes of phenomena, and to collect these, so far as may be, into a deductive system with a minimum of first principles. Therefore the question whether nature as a whole system depends on a timeless non-natural existent, and whether a certain one man once in the whole course of history was related in an absolutely unique way to the latter, evidently falls altogether outside the sphere of natural science. Either these questions are meaningless or they are not; and it is for philosophers, not scientists, to settle this preliminary question. If they are meaningless, conflict between science and Christian theology is impossible for the reason which prevents a lion from fighting with a hippogriff. If they are significant, such conflict is impossible for the reason which prevents a lion from fighting with a whale. And similar remarks apply to co-operation.

It would seem, however, that natural science might have a considerable bearing on the miraculous element which forms, as we have seen, an essential part of the content of Christian doctrine. This includes, undoubtedly, the resurrection of Jesus and his subsequent super-normal physical manifestations to His disciples. Whether it also includes the story of His super-normal conception is a doubtful matter which we may leave to experts. I think that here we are at once faced with the general question: "Do the results of science make the occurrence of super-normal events impossible or highly improbable?" This question concerns other religions as well as Christianity, and it concerns alleged Christian miracles which are cited only as evidence for Christianity as well as those which are part of the content of Christian doctrine. Unless science has something to say against the possibility or probability of miracles as such, it can have nothing special to say against the possibility of those miracles whose occurrence is part of the content of Christianity. So it will be best to defer this question.

The sciences of geology, biology, archaeology, and anthropology have collected evidence which, in the opinion of everyone competent to judge, conclusively refutes the cosmogonical, biological, and anthropological doctrines of the Jewish scriptures. Though these doctrines are not in themselves essential parts of Christian theology, they are almost inextricably intertwined with others which are, e.g. with the doctrine that mankind is tainted and alienated from God, and that the incarnation, death, and resurrection of Jesus were necessary conditions without which no man could be saved. Moreover, the fact that these false propositions were, to all appearance, accepted literally by Jesus and made the basis of certain parts of His teaching would seem *prima facie* to throw some doubt on the Christian doctrine of His divine nature.

The only other point to be noticed under the present heading is that Christianity plainly presupposes that human beings survive the death of their present bodies and are, in fact, immortal. Since this doctrine is common to many religions, and is perhaps a necessary condition of any religion, we will defer the fundamental question whether science has anything relevant to say for or against it. For the present it will suffice to remark that, unless science renders the doctrine of an after-life, as such, impossible or highly improbable, it will hardly affect the probability or improbability of the specifically

Christian form of that doctrine. It is true that there are no empirical facts or scientific theories which would suggest that the present order of nature will be suddenly, radically, and permanently transformed at some date in the future. But it is no part of the Christian doctrine to assert that such a transformation will be due to the automatic development of natural processes. On the contrary, the Christian alleges that it will be due to the miraculous intervention of the Godhead. Therefore, unless science invalidates the other parts of Christian theology or renders survival and miraculous interventions unlikely or impossible, it has no relevant objection to make against specifically Christian eschatology.

It remains to consider whether science could render those parts of Christian doctrine which are not about Jesus and the Godhead improbable or impossible. For this purpose we may confine our attention to the ethical teachings of Jesus. Some people would hold that science makes complete determinism certain or extremely probable; and that, if men's actions be completely determined, the notions of moral good and evil and moral obligation can have no application. Some people would hold that anthropological and psychological investigations show that sentences in which ethical words and phrases occur merely express non-moral desires and emotions, repressed in the infancy of the individual or inherited from the pre-history of the race. We might describe either of these views as a form of "ethical nihilism" based on science. Now the question whether science proves or strongly supports ethical nihilism is absolutely fundamental, and goes far beyond the relation of science to Christianity. We will therefore defer it for the present and content ourselves with the following conditional statement. If we have any moral obligations, then natural science can throw no light whatever on those of them which are fundamental. At most it might support or refute certain derivative and secondary moral rules which profess to tell us how to carry out our fundamental obligations in certain specified kinds of situation. No conceivable development of any of the natural sciences could be relevant to the question whether a person ought or ought not to love his neighbour as himself. At most it might show that some secondary rule, such as "You ought to pour oil and wine into the wounds of persons whom you find lying injured by the wayside," should be rejected because it is not an efficient means of doing good to your neighbour in the circumstances supposed. Now most of the ethical teachings of Jesus express primary or fundamental obligations. Either science shows that all talk of moral obligation is meaningless or inapplicable to men; or, if not, it is completely irrevelant to this part of Christian doctrine.

It should now be fairly clear that there are not many points at

which the results of science and the doctrines peculiar to Christianity come into close enough contact for either conflict or co-operation between them to be possible. I think that similar reasoning would lead to a similar conclusion about the doctrines peculiar to any of the other great religions. If there is conflict, it will be over doctrines like the occurrence of miracles, the immortality of the soul, the freedom of the will, and the question whether moral predicates are significant and applicable to men and their actions. These doctrines are common to all, or nearly all, religions, and they are peculiar to none.

(2) We can now pass to our second question. Do the methods or results of the natural or the historical sciences undermine the grounds on which men have believed the doctrines of Christianity?

It seems to me that there is a fundamental logical difficulty, which is prior to any special objections that might be made to the evidences for Christianity on the score of literary and historical criticism or the comparative study of religions. It is this. I think it would be admitted by most Christians that an essential part of their reason for believing specifically Christian doctrines is that these were directly taught by Jesus or are necessary or probable consequences of other statements which He made. But this at once raises the question: "On what grounds do you accept Jesus as an authority on these matters?" I suppose that the answer would be: "Because He was a being of superhuman wisdom and goodness, who was in a position to know the facts and whose mission on earth was to reveal them to men." But this is itself the most central and fundamental of Christian doctrines; and, if Christians accept *it* on the ground that Jesus asserted it or other things which imply it, their whole position is logically circular.

Are there any independent grounds for accepting it? So far as I am aware, the only grounds that have been suggested are the following. Jesus wrought miracles in His lifetime, and was Himself the subject of the stupendous miracle of the resurrection after His death. He produced on those who knew Him so strong an impression of His divine nature and mission that many of them were ready to devote their lives and to meet a painful death in preaching His doctrines. St. Paul, who had never met Jesus and was bitterly and actively hostile to Christianity, underwent an experience which he took to be a manifestation of the risen Christ; he was converted thereby and confirmed in his new beliefs by subsequent supernormal experiences; and he spent the rest of his life in developing Christian doctrine and disseminating it throughout the Roman empire. Lastly, throughout history many people have found that certain Christian doctrines harmonize with their own deepest convictions, they have been willing to live and die for them, and

they have had experiences which seemed to themselves to be evidence for the continued existence of Jesus and for His personal intercourse with them.

Let us begin by giving the fullest weight to this evidence and raising no questions as to whether there is adequate ground for believing that the alleged miracles really happened. At the very utmost it would show only that Jesus was an extremely remarkable and impressive personality; that a whole cluster of noteworthy super-normal phenomena, both psychical and physical, were initiated by His death and continued for some time afterwards in the regions in which He had preached; that certain parts of His teaching harmonized with certain deep-seated feelings and aspirations which the existing philosophies and religions of the Roman empire failed to stir or to satisfy; and that subsequently, when Christian institutions had been established and children were brought up in Christian tradition and doctrine, these teachings (developed, interpreted, supplemented, and modified almost out of recognition) continued to express the aspirations and to evoke the devoted loyalty of many good men.

I can see nothing in all this to justify the doctrine that Tesus occupied that uniquely exalted position in the universe which Christians assign to Him. Therefore it seems to me (as it has seemed to almost everyone not brought up in the Christian tradition) unreasonable to allege the mere *ipse dixit* of Jesus as an adequate ground for accepting otherwise unverifiable propositions about the Godhead, about His own relations to it, and about the supernatural origin and post-mundane continuance of the human race. I should hold, then, that the only reasons which have been alleged for accepting the doctrines peculiar to Christianity are invalidated by these general objections, prior to all appeal to the methods and results of natural or historical science. Similar remarks would apply, *mutatis* mutandis, to any other religion which grounds its specific doctrines on the authority of its founder or its prophets. No doubt it is true to say that the development of Christianity was a unique phenomenon; but, in the only sense in which this is true, it is also true of any other great historical process, taken as a whole. No single historical event, such as the growth of Communism or of National Socialism since 1918, is *precisely* analogous to the growth of the Christian Church. But we can find a number of different partial analogies which, taken together, suffice to bring it into line with the rest of history. Again, it is true that the survival of Christianity in its infancy and its subsequent immense development depended on certain unpredictable and antecedently most improbable events. such as the conversion of St. Paul. It is natural for Christians, afterwards, to point to these events as "providential." But a moment's reflection shows that there have been, and indeed must be, such events in the early stages of *any* historical movement which starts from very small beginnings, is faced with strong opposition and has to compete with many rivals, and does nevertheless survive and become dominant. The innumerable germs of possible religions and polities which have perished and left no trace in history were just those in connection with which no such unlikely event happened. That is why such an event is called "providential" when it does happen and is viewed in retrospect.

Before leaving this part of the subject, I must very briefly consider the following contention, which is sometimes made by Christians. "If and only if," it is said, "you will consent to act as if Christianity were true and will take part uncritically in the corporate life of a Christian church, you will eventually have certain experiences which are in fact evidence for the truth of Christianity, and you will be in the right state of mind to appreciate their cogency." Now it is just conceivable that this contention might be true. But it is evident that there would be other, and considerably more plausible, psychological explanations of the apparent facts. Moreover, a precisely similar claim might be made by the adherents of any other religion, and it is in fact made by the practitioners of the Indian systems of Yoga. Lastly, it is obviously impracticable to carry out this recommendation in connection with all the important rival religions, and it is unreasonable to pick out one of them and to perform the experiment with that one only.

So far we have supposed, for the sake of argument, that there is good evidence for the miracles recorded in the Christian scriptures. We must now examine this supposition. Here again we can go a long way with the help of ordinary logic and common sense without needing to appeal to the special methods and results of the sciences. Let us grant for the present that miracles are not impossible, and that it is not inconceivable that there should be evidence available of such strength that it would be unreasonable to doubt that a certain alleged event did happen and was miraculous. Then I assert, without the slightest fear of contradiction from anyone who has studied the records, that there is no direct evidence for any of the New Testament miracles which is comparable in weight to the evidence for some of the alleged miracles of modern mediumship. For the levitation and other super-normal physical phenomena of D. D. Home we have the contemporary autographic testimony of Sir William Crookes, one of the ablest experimental scientists of the nineteenth century, who was deliberately investigating the phenomena in his own laboratory under controlled conditions. It would be merely impudent to suggest that the direct evidence for the resurrection or the ascension, available to us here and now, is comparable with this.

Now either a Christian apologist accepts these alleged mediumistic miracles or he rejects them. If he accepts them, he acts consistently, and moreover he can use them to show that the New Testament miracles are not altogether without parallel, and therefore not antecedently so improbable as sceptics allege. But, if he does so, he must give up the contention that the New Testament miracles testify by their uniqueness to the unique status of Christ and the complete reliability of His metaphysical and ethical teachings. If he rejects them, he can continue to hold that the New Testament miracles are unique. But now he must justify himself in accepting, on very weak direct evidence, antecedently improbable stories similar to those which he rejects where the direct evidence is extremely strong. So far as I can see, there are two and only two moves open to him at this point. The first is to allege that it is antecedently very improbable that miracles should happen in connection with a decidedly second-rate human being, like D. D. Home, whilst it is antecedently quite likely that they should happen in connection with a divine being such as Jesus was. So weaker evidence will prove in the latter case what even the strongest evidence cannot prove in the former. To this contention the simple and sufficient answer is that anyone who uses it cannot, without logical circularity, adduce the New Testament miracles as evidence for the divine nature and mission of Jesus; since he assumes the latter as part of his ground for accepting the former on the evidence available.

The other possible move is as follows. It might be said that, although the *direct* evidence available to us for the resurrection and the subsequent appearances of Jesus is incomparably weaker than the direct evidence for certain mediumistic miracles, yet the *indirect* evidence is overwhelming. The indirect evidence would be such facts as the change in the attitude of the apostles from despair to an active and lifelong conviction of Christ's survival, the conversion of St. Paul, and so on. I am certainly not inclined to underrate the force of this contention, for these changes seem well attested and very remarkable, and they do demand some kind of explanation. But the utmost that can be inferred is that *something* very queer must have happened soon after the crucifixion, which led certain of the disciples and St. Paul to believe that Jesus had survived in some supernatural way; and that they were able to transfer this conviction to many others. The following remarks may be made about this.

(i) I hold that the careful work of the Society for Psychical Research has made it almost certain that there is a residuum of truth in the many accounts of phantasms of the living at crises in their lives, of the dying, and of the recently dead, being "seen" by educated Englishmen who were awake and in normal bodily and mental health at the time. I assume that such experiences are initiated by some kind of telepathic "impact" received from the person whose phantasm is "seen"; that this sets up a subconscious process in the mind of the recipient, analogous perhaps to that which takes place in post-hypnotic suggestion; and that eventually this ends by producing a sensory hallucination relevant in its details to the circumstances of the person from whom the telepathic impulse originated. Now I should think it quite likely that Jesus, who was plainly a very remarkable personality, might be strongly gifted with the power to send out such telepathic impulses at the great crises of his life and perhaps at other times too. But this would not be any good ground for attaching implicit belief to all His ethical and metaphysical teachings. I should not be at all surprised, e.g., to find that Herr Hitler had this power. But, if he has, I should not ipso facto accept without question all those racial and political theories which he has preached with such intense conviction and applied with such conspicuous success.

(ii) However this may be, it is plain that a telepathic impact, once received, would be much more likely to develop into a fullblown sensory hallucination in the minds of men like the disciples than in a contemporary educated Englishman. With the latter any such development has to overcome extremely strong inhibitions, since the final product would be utterly alien to the whole "climate" of scientific materialism in which he has always lived and thought. Therefore I should expect that telepathically initiated sensory hallucinations, such as the S.P.R. have studied, would be far commoner and far more detailed and impressive among persons like the disciples than among contemporary educated Europeans.

(iii) A "tough-minded" scientist, who rejects without question all the alleged evidence for contemporary super-normal phenomena, might find it difficult to deal with the indirect evidence for the resurrection and the subsequent appearances of Jesus, if he ever fairly faced it. Actually, of course, he adopts the attitude of the ostrich and faces neither problem. But even he could claim with justice that there might well have been some quite simple and honest mistake, or some deliberate malpractice or deception on the part of some interested person or group, in connection with the body of Jesus; and that no direct evidence for it remains. Any particular theory of this kind will, no doubt, seem highly gratuitous and unlikely. But, after all, none of them can be so improbable antecedently as the theory that Jesus really rose from the dead, unless we assume what we have to prove, viz. that He was a divine being. And we must remember that, whilst each one of a number of alternative theories may be antecedently very improbable, it may be highly probable that one or other of them is true in view of the facts to be explained.

I should claim now to have disposed of all the alleged grounds for accepting specifically Christian doctrines, by the use of quite simple arguments without needing to appeal to modern science at all. I think we can safely assume that no appeal to science will *reverse* our decision, though it might reinforce it. It is also safe to say that we could have used similar arguments to show that there are no grounds for accepting the specific doctrines of any rival religion which relies on the authority of its founder or its prophets as the evidence for its teachings. I shall therefore devote the rest of my paper to certain wider questions, which we have hitherto set aside as being relevant to all or most religions, and not only or specially to Christianity. I will now take them in order.

(I) Has science anything to say for or against the possibility or the probability of miracles? Before we can answer this we must try to explain the term "miracle" or "super-normal event." This is not easy to do, but I think that the following method of treatment is fairly satisfactory. There are certain very general principles, mostly of a negative or restrictive kind, about mind and matter and their mutual relations, which we all commonly assume without question. These form the rigid framework within which all our everyday practice, our scientific theories, and even our ordinary fictions and speculations are confined. The following are some of the most important of these principles. (i) A body cannot enter or leave a closed vessel so long as the walls are intact. (ii) The weight of an object at the earth's surface cannot be altered except by immersing it in fluids of various densities. (iii) A human mind cannot directly initiate or modify the motion of any material thing except certain parts of its own organism, such as its arms and legs. (iv) It is impossible for a person to perceive any thing or event at a given moment unless this object has set up a physical process which affects the percipient's organism at this moment and produces characteristic sensations in his mind. (v) It is impossible for a person to have knowledge of a past event, except by inference or report, unless one or other of the following conditions is fulfilled. (a) The past event initiated a physical process which was transmitted with a finite velocity through space and has now reached the observer's organism and produced a characteristic sensation in his mind. Or (b) the past event was either an experience had by this person, or was the object of such an experience. The first condition is fulfilled in the case of a man perceiving an event which happened long ago in a remote star. The second condition is fulfilled in ordinary memory of past events. (vi) It is impossible for a person to have non-inferential knowledge of an event which has not yet happened. If he knows beforehand that such and such an event will happen, he must do so either by inferring this himself from his knowledge of general laws and particular facts about the past and the present, or by accepting the results of such an inference made and recorded by another person. Examples are provided by the two cases of an astronomer, and a student of the Nautical Almanac, knowing that a total eclipse of the sun will happen at a certain future date. (vii) It is impossible for one man A to know what experiences another man B is having, or what propositions B knows or believes unless one or other of the following conditions is fulfilled. (a) B makes a statement in speech or writing or some other form of conventional symbolism, and A perceives the record and is able to understand and interpret it. Or (b) A perceives B's gestures, facial expressions, interjections, etc., and draws inferences from them and from his knowledge of the general laws of human behaviour as to what is happening in B's mind. (viii) After a person has died, his mind either ceases to exist, or, at any rate, ceases to be capable of affecting inanimate matter or the bodies or minds of living men and animals.

I would not claim that this list of eight restrictive principles is exhaustive, or that they are all independent of each other. But I think it is good enough for our present purpose, which, it will be remembered, is to explain what is meant by "super-normal" or "miraculous." By an "ostensible miracle" I mean any event which seems to conflict with one or more of these principles, whether it does so in fact or not. By a "miracle" I mean an event which really does conflict with one or more of them. Phenomena which appear to conflict with well-established laws of nature, or which cannot be explained in terms of them, but which do not apparently conflict with any of these restrictive principles, may be called "abnormal"; but they will not be even ostensibly super-normal or miraculous.

Evidently there are always two questions to be asked about any account of an ostensible miracle. (i) Did such an event as is reported really happen, and is the description of it which the witnesses give completely accurate so far as it goes? (ii) If so, is it really miraculous? Does it really conflict with any of the restrictive principles which mark off the realm of normal and abnormal phenomena from that of super-normal phenomena? Could it not be accounted for without going outside these limits?

About the first question two of the sciences, both of fairly recent origin, have something very important to say. These are Abnormal Psychology and Psychical Research. It had always been known that human testimony is somewhat unreliable, and that human observation is somewhat defective as regards the details of perceived things and events. But no one had suspected how extremely unreliable they are, even under quite favourable conditions, until the S.P.R. investigated the matter experimentally. The classical paper on this subject is by Mr. S. J. Davey in Vol. IV of the Society's *Proceedings*.

The extent to which intelligent and educated persons, who were under no emotional stress, erred, both by omission and by supplementation, in their reports of what they had seen, is almost incredible; but Mr. Davey's results have been fully confirmed by later experiments. The contribution of abnormal psychology and psychoanalysis is to show that the real causes of much human action are hidden from the agent's introspection, and are concealed rather than revealed by his overt speech and action. We know that these causes often produce an inability to perceive or to remember or to report certain facts which were physically and physiologically well within the witness's field of observation.

In regard to the second question the most important points to be made are the following. (i) We may dismiss at once, with the contempt which it deserves, the statement that "Science proves miracles to be impossible." This is just ignorant bluff and bluster, which a moment's reflection on our definition of "miracle" and the nature of inductive evidence suffices to deflate. (ii) The development of physical science has shown that many events which were ostensibly miraculous are capable of a normal explanation. The growth of our knowledge of hypnotism, of multiple and alternating personality, and of the extreme sensory hyperaesthesia which characterizes certain hypnotic and hysterical states, tends in the same direction. (iii) The facts and theories of psycho-analysis, already mentioned above, very much weaken the force of such familiar arguments as the following. "This act must have been miraculous unless the agent was deliberately cheating. But it is incredible that a man of his high character, with absolutely nothing to gain by cheating, and much to lose if detected in fraud, should have practised deliberate deception. Therefore it must be miraculous." (iv) In spite of all this, I must express my conviction that psychical research has made it far more probable than not that certain kinds of phenomena which are miraculous, in the sense defined above, do in fact occur. I include under this heading telepathy (both experimental and sporadic), certain of the *mental* phenomena of mediumship, and precognition. I should not, as at present advised, include with confidence any of the ostensibly super-normal physical phenomena of mediumship. It remains to note that, if these super-normal phenomena should ever become familiar and be found to fall under general laws, we should eventually reject the restrictive principles with which they conflict and should then cease to call them "miraculous" or "super-normal."

(2) This naturally leads to our next question. Has science anything to say for or against the possibility or the probability of a person's mind in some sense surviving the death of his body? I will begin by remarking that, in my opinion, it is almost a *sine qua non* of any religious view of the world that some men at least should

PHILOSOPHY

survive bodily death. I take it that one minimal demand of religion is that what we count to be the highest spiritual values shall not be merely ephemeral by-products of complicated material conditions which are fulfilled only occasionally in odd holes and corners of the universe, and are unstable and transitory when fulfilled. Another minimal demand is that there shall be at least rough justice, e.g. that evil deeds shall in the long run bring evil consequences on the doer of them, and not wholly or mainly on others. I do not see how either of these demands could be even approximately met if no man survives the death of his body. For, if this be so, not only does all the value which depends on the character and dispositions and the personal relationships of an individual vanish at his death; but also human society must eventually come to an end, and with it must perish all the values stored up in social institutions, works of art, and scientific treatises. Moreover, it is a commonplace that wicked men often die before they have brought on themselves either bodily suffering or remorse, or the disintegration of their characters or intellects, whilst wise and good men are often stricken down at the height of their powers, or survive into an old age of disease and dotage. Therefore, if science does make human survival impossible or very improbable, it does, in my opinion, deliver a fatal blow to all religion.

Now, with the doubtful exception of psychical research, none of the sciences tells us anything which lends the least probability to human survival. On the contrary, all that biology teaches of the detailed affinity of ourselves with the other animals, and all that physiology and anatomy tell us of the intimate connection between lesions of the brain and nervous system and aberrations or obliterations of consciousness, produce an overwhelming impression of the one-sided dependence of mental life on certain very specialized and delicate material structures and processes.

As a professional philosopher, I am, of course, perfectly well aware that these scientific facts do not constitute a "knock-down" disproof of survival. If there were any positive grounds *for* believing in survival, it would be easy enough to devise hypotheses to reconcile it with the biological and physiological facts which seem to make it so unlikely. I am also well aware that there are philosophical arguments against accepting the one-sided dependence of mind on body as an ultimate truth. (I have dealt with these in various parts of my published writings, and I do not find them very impressive.) In my opinion there is literally nothing but a few pinches of philosophical fluff to be put in the opposite scale to this vast coherent mass of ascertained facts, unless empirical evidence from psychical research should be available.

Do the findings of psychical research up to date do anything 146

serious to redress the balance? Here we must distinguish between direct evidence for survival, and evidence which tends in the first instance only to throw doubt on the epiphenomenalist view of the relation of mind and body. As regards the direct evidence, there certainly exists a considerable amount of mediumistic communication which undoubtedly involves super-normal knowledge, and is in some respects strongly suggestive of the posthumous intelligent action of certain definite human beings, such as Edmund Gurney, Dr. Verrall, and others. Yet even this is so incoherent and repetitive, and so full of surprising ignorance and error, that one feels driven to seek some other super-normal explanation of it. Moreover, the contents of the communications give us no help in the frightfully difficult task of forming any plausible positive conception of life after the death of the present body.

This brings us to the second kind of evidence. If the occurrence of telepathy, clairvoyance, and precognition were established, this would have no *direct* bearing on the question of human survival. But it would have the following indirect relevance. It would tend to throw doubt on the adequacy of the theory (which all other known facts seem to support so strongly) that the human mind is one-sidedly and completely dependent on the brain and nervous system both for its existence and for every detail of its actions. Now it is this apparently well-established fact which makes the hypothesis of human survival antecedently so incredible. On the other hand, the establishment of telepathy, etc., would also work, for a different reason, in the opposite direction. For, if we grant these powers to ordinary men during their lifetime, we may be able to explain by means of them the mediumistic communications which constitute the only direct evidence for survival.

My conclusion is that, for this essential doctrine of religion, psychical research is the *only* possible gift-horse in the field of the sciences, and that even it is quite likely to prove to be a Trojan horse. In spite of the ambiguous character of the animal, I should hesitate, if I were a religious man, to look it quite so superciliously in the mouth as the leaders of religion habitually do.

Before leaving the subject of human survival I must touch very briefly on the following point. Christians often allege that the resurrection of Jesus constitutes evidence for human survival; that, without this evidence, the doctrine would be a mere pious aspiration; but that, with it, human survival becomes an established fact. This is a favourite theme of Easter-day sermons. Now, if I may say so without offence, this seems to me to be one of the world's worst arguments. Let us grant, what is at best questionable, that the resurrection really happened as described. Even so, the case of Jesus would differ from that of any ordinary man in at least two quite fundamental respects. In the first place, if Christianity be true, though Jesus was human, he was *also* divine. No other human being resembles him in this respect. Secondly, the body of Jesus did not decay in the tomb, but was transformed; whilst the body of every ordinary man rots and disintegrates soon after his death. Therefore, if men do survive the death of their bodies, the process must be utterly unlike that which took place when Jesus survived His death on the cross. Thus the analogy breaks down in every relevant respect, and so an argument from the resurrection of Jesus to the survival of bodily death by ordinary men is utterly worthless.

(3) I have now taken in turn two general doctrines, viz. the possibility of miracles and human survival, one of which is vital to Christianity, and the other perhaps to all religions; and I have considered the bearing of science on each of them. In this, the concluding section of my paper, I find it convenient to proceed as follows. I propose to take certain of the sciences; to state how they have been relevant to religion in the past; and to consider whether (and, if so, how) their effect has been modified recently or is likely to be modified in future. Before doing so I will make two remarks. (i) The influence of a scientific discovery or theory on a religion can hardly ever be put in the form of a definite argument which can be tested by the criteria of formal logic or probability-theory. It may not refute the religion, but it may make one's whole intellectual and emotional background so utterly different from that in which the religion originated and flourished that it becomes psychologically impossible for one to take the religion seriously. The religious beliefs of the ancient Greeks have never been refuted, and I do not see how they possibly could be. But no one would think it worth while nowadays even to raise the question whether there are beings answering to the description of Zeus or of Hera given in classical writings. (ii) In the case of any religion which is still alive, such as Christianity in contemporary England, the effect of such influences as I have been describing varies enormously from person to person even among those of much the same level of intelligence and culture. Moreover, those who are differently influenced now will, for that reason, be liable to make very different estimates as to the influence which the sciences are likely to exercise on religion in the future. Where this element of subjectivity is greatest I intend to make it quite explicit by talking in the first person and stating how I am affected and what I should anticipate. Such statements need not be of merely biographical interest, for they might happen to make explicit what many of my contemporaries are vaguely feeling. If and only if this is so, they are not wholly impertinent.

For our present purpose we may divide the sciences into three groups, viz. (i) the sciences of ostensibly non-living matter, (ii) the 148

biological sciences, and (iii) the sciences which deal with specifically human topics. This classification is hierarchical, in the sense that the second group presupposes the first, and that the third presupposes the second. In the first group the most important for our purposes are astronomy and physics. In the third group the most important are history and archaeology and anthropology; psychology, normal and abnormal; and psychical research.

I will begin with astronomy. Any religion which can be taken seriously by intelligent men must be cosmic and not merely parochial. As men we shall necessarily be most concerned with that part of the divine system which immediately affects our race and our planet; and, if we believe that a religion has been revealed to men, we may reasonably expect that the revelation will be most explicit about that part of the system which most concerns ourselves, and which we could not have discovered by our own unaided efforts. Nevertheless, it is essential to any religion on the grand scale that what immediately concerns us should not be something isolated and self-contained, but should be an integral part of a wider system which covers the whole universe. Now Christianity, like all the great religions, claims to be cosmic in range. But it is also to a very marked extent geocentric and anthropocentric. Christ came to earth, he became a man, and eventually he went back and ascended to His Father in heaven. Now, as it seems to me, Christianity contrived to be at once geocentric and cosmic only because it originated and evolved against a background of astronomical theory in which the earth was the centre of the universe. This would naturally be assumed without question as a popular belief by the apostles and all the early Christians; and, in the detailed scientific form of the Ptolemaic system, it is explicitly taken by the great medieval theologians as the material setting of the divine drama. It seems to me to be assumed by Christ Himself; and some of His statements, which are perfectly sensible on that assumption, seem to be pointless on any other hypothesis.

Now, since the eighteenth century we have known that the earth is one of a number of planets at various stages of development circulating about one of a number of suns. Naturally I am not so silly as to suppose that this constitutes a *refutation* of Christianity. All I can do is to record the fact that for me personally the Christian story and the Christian theology in a Copernican universe wither like a plant taken from a hothouse and bedded out in the Siberian desert. I know well that many of the greatest astronomers have found no difficulty in remaining simple and earnest Christians. I have no comment to make except that the human mind has a wonderful power of keeping different parts of its knowledge and belief in water-tight compartments. If there is anything at all in the difficulty that I feel at this point, no progress in astronomy which has been made since Galileo and Newton and no progress that may conceivably be made in the future can make any difference.

I do not think that the revolution in astronomy need have that detrimental effect on religion in general, or on most of the other great religions which, in my opinion, it has on Christianity. It has been said that an atheistic astronomer must be mad. I am not at present concerned to dispute this. What I do wish to suggest is that a *Christian* astronomer must have a more than Nelsonian capacity for applying his blind eye to his telescope on occasion.

We may now leave astronomy and pass to physics. In my opinion the logical bearing of mathematical physics, whether of the classical or the relativistic and quantic kind, on any form of religion is quite trivial. I am inclined to think that the only real logical connection is the following. The fact that all the immense variety of inorganic natural phenomena fall under a few very general laws, and that these laws are of a comparatively simple mathematical form, seems not to be logically necessary. It looks like a kind of uncovenanted mercy, and it constitutes a certain resemblance between inorganic nature and certain products of intelligent human action, such as games of skill, puzzles, musical compositions, etc. Again, the fact that human beings have been able to discover these fundamental laws of inorganic matter, and to acquire thereby a considerable degree of practical control over it, exalts our estimate of the human mind and enlarges the gap between it and any animal mind. These two facts and their interrelation do, so far as they go, lend some support to a view of man and nature which may fairly be called "religious."

I must next mention a supposed connection between mathematical physics and religious belief which I suspect to be unreal. A distinction has been drawn between two kinds of physical law, viz. "determinisitic" and "statistical." Until quite recently the fundamental laws of physics were held to be of the deterministic kind, and the statistical laws were held to be derivative. Nowadays, in the opinion of many eminent physicists, the situation has been reversed, and henceforth we must hold that the fundamental laws of physics are of the statistical kind. Now it has been alleged that, if the fundamental laws of physics are deterministic, all human volitions must be completely ineffective, i.e. that nothing in the material world would have been different if there had been no volitions, or if human beings had made different decisions. It is also alleged that, if the fundamental laws of physics are statistical, it is at least possible that some human volitions do make a difference to the course of events in the material world. Now it is plain that the ethical content of religion is closely bound up with the common-

sense opinion that some human volitions are effective. Therefore, if the allegation which I have stated were correct, it would be true to say that the classical physics was incompatible with an essential presupposition of religion. And it would be true to say that recent developments of mathematical physics had eased, if they had not completely removed, this conflict.

I believe that this argument is full of fallacies and confusions. I have gone very fully into the question in my contribution to the symposium on *Indeterminacy and Indeterminism* in the Aristotelian Society's Supplementary Volume X. I will therefore confine myself here to the following obvious remark. If the principles of classical physics do entail that all human volitions are ineffective, they conflict with the presuppositions of natural science just as much as with those of religion. For every scientist who ever devises and carries out an experiment assumes that his thoughts and volitions are making a characteristic modification in the course of events in the material world.

It remains for me to mention a certain psychological connection which probably does exist in the minds of many people between their religious beliefs and what they have heard about recent developments in theoretical physics. The conceptions of classical physics were perfectly straightforward and easy for anyone to grasp and to picture. Mathematical knowledge was needed only for working out their detailed consequences. The concepts of relativistic and guantum physics cannot be grasped except by a person of considerable mathematical training who sees them as factors in a whole complicated context of theory. And they cannot be pictured at all. When attempts are made to express these concepts and laws in familiar language to uninstructed persons who interpret it literally, a mass of paradoxical and apparently self-contradictory verbiage results. Now in the good old days those who attacked Christianity from the standpoint of science could make great play by contrasting the plain common sense of physics with the mind-destroying hocus-pocus of theology. It can now be retorted that the principles of modern physics look as nonsensical as the Athanasian Creed, and yet are vouched for by eminent scientists and validated by practical applications which we can all use and abuse. In consequence some people are inclined to think that there may be something in the mysterious and apparently nonsensical verbiage of Christian theology after all.

Well, it is not for me to say that there may not be. But I do say, without the slightest hesitation, that the psychological cause which I have just described is no rational ground for thinking that there is. There is nothing mysterious or paradoxical or self-contradictory in the physical concepts and laws so long as they are formulated in

the symbolism which is appropriate to them and are viewed in their own proper context. The mystery and the paradox arise only when this symbolism is translated into ordinary words which have certain familiar associations, and when those words are heard or read by persons who lack the knowledge which would enable them to reject or correct the images and ideas which they naturally evoke. I do not think that any theologian would pretend that the paradoxes and apparent contradictions of Christian theology arise simply from this kind of distortion of something which can be quite clearly and intelligibly stated in an appropriate symbolism to experts who have mastered it. Be this as it may, the following reflection is surely obvious. The fact that contemporary physics has to enunciate its principles in the form of apparent paradox and nonsense may be a good reason for hesitating to reject off-hand any doctrine merely because it looks paradoxical and nonsensical when stated. But it cannot be a good reason for accepting any one form of apparent nonsense, e.g. the Athanasian Creed, in preference to any other form, e.g. the Kabbalah or the Hegelian Dialectic.

We can now leave the science of inorganic matter and pass to the biological sciences. I said that Christianity was essentially geocentric and anthropocentric. We have considered its geocentric aspect in connection with astronomy; it is the anthropocentric aspect of it to which biology is relevant. Christianity arose, and Christian theology developed, in a certain context of beliefs about the relation of man to other living beings on earth. Man was created "a little lower than the angels," and he occupies a unique status in a hierarchy of living beings at the dividing point between the angels, who are purely rational beings without material organisms, and the brutes, who are perceptive and sensitive but wholly non-rational animals. I must confess that this seems to me to be still the best available description of the peculiarities of man as he now is and as he has been throughout the whole of his written history. But contemporary biology makes it practically certain that, if we go back far enough into the pre-history of the human race, we find it developing by insensible steps from ancestors who were purely animal.

Now I do not think that there need be any great difficulty in fitting religion in general, or certain of the great historical religions, such as Buddhism, into this changed biological framework. But, for my own part, I find it difficult to see how Christianity can be fitted into it without being so radically transformed as to be unrecognizable. Certainly I know of no satisfactory attempt at such a reconstruction of Christian belief; and, unless it can be accomplished, I suspect that Christianity will become less and less credible with each succeeding generation. It may survive for a long time as a kind of religiously toned "ethical uplift"; but I cannot believe that this

will persist indefinitely when cut off from its cosmological and biological roots.

I have already said all that seems necessary about the bearing of abnormal psychology and psychical research on religious belief in general and on Christianity in particular. It only remains for me to add a few words about the influence of the other specifically human sciences. I think there is no doubt that, for many people, the results of the comparative study of religion, and the data supplied by anthropologists and archaeologists, make religious belief impossible. It seems to them to be a pathetic survival of certain beliefs, emotions, and practices, which were natural enough in the childhood and ignorance and impotence of the human race, but have now lost all meaning and relevance. This is not quite the impression which these facts produce on myself. It seems to me that science has equally humble and disreputable origins, that there has been a development in depth and insight in religion as well as in science, and that both must be judged ultimately by their fruits rather than by their roots. On the other hand, I find that the facts of anthropology and comparative religion make any claim by any particular religion to an exclusive possession of the truth too utterly ridiculous to be worth a moment's consideration.

I have one more remark to make before ending my paper. To me the occurrence of mystical experience at all times and places, and the similarities between the statements of so many mystics all the world over, seems to be a significant fact. Prima facie it suggests that there is an aspect of reality with which these persons come in contact in their mystical experiences, and which they afterwards strive and largely fail to describe in the language of daily life. I should say that this *prima facie* appearance of objectivity ought to be accepted at its face value unless and until some reasonably satisfactory alternative explanation of the agreement can be given. Now I am well aware that certain psycho-analysts would give one explanation of it, and that certain Marxian theorists would give another. Such explanations do satisfy some people who have studied them, and they form the staple diet of a great many more who have not done so, but have swallowed them whole in order to be in the vanguard of culture.

Now I think that each of these two types of theory contains some interesting speculations which may turn out to be true, and may cover some of the facts. But each of them seems to me to suffer very obviously from two defects. The first is that they are plainly constructed by persons who have very little first-hand or even second-hand experience of religion, and are strongly antipathetic to it from one cause or another. I should feel some hesitation in accepting theories about the nature of music and its function in human life, excogitated by a tone-deaf psychologist whose wife had recently eloped with a musician. The psycho-analytic and the Marxian theories of religion seem to me to wear too jaundiced a complexion to inspire complete confidence. The second defect is this. Although the exponents of these theories make a tremendous parade of being "scientific," it is perfectly plain to anyone who has studied any genuine science that they have no idea of the *general* difficulty of proving any far-reaching explanatory hypothesis, or of the *special* difficulties which exist in a field where experiment is impossible, and even the "observations" consist largely of hearsay and tradition. The degree of their confidence is a measure of their scientific incompetence. They seem to have no notion of the importance of confronting their theories with negative instances, or of considering whether half a dozen rival hypotheses would not explain the facts equally well.

I have been obliged to paint the scene as I see it; and the prospects of Christianity, as I see them, are somewhat gloomy unless applied science (that blind Samson) should uproot the pillars of the house and bury pure science with it in the ruins. Though I am not a Christian, and never have been one since I began to think for myself, I take no pleasure in this prospect. Whether Christianity be true or false, Christ's parable about the subsequent fate of the man who was left "swept and garnished," after the expulsion of a demon that possessed him, seems to me to be profoundly true of humanity as a whole. Ordinary human nature abhors a vacuum, and it will not for long rest content without some system of emotionally toned and unverifiable apocalyptic beliefs for which it can live and die and persecute and endure. When I contemplate Communism and Fascism, the two new religions which have entered into the clean-swept place and possessed it, and when I consider the probable consequences of their sisterly bickerings, I appreciate the concluding lines of Mr. Belloc's Cautionary Tale about the boy who ran away from his nurse in the Zoo and was eaten by a lion. "Always keep a hold of Nurse, for fear of finding Something Worse."