Religion and Science as Ways of Knowledge.

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Most of us are somewhat weary of hearing about the conflict between science and religion. But nearly all the intellectual difficulties, which in one form or another press upon us, spring directly or indirectly from the reign of natural science over the modern mind; and our weariness of our perplexities does not make them less urgent or less in need of a genuine solution. So perhaps no apology is necessary for attempting a fresh treatment of a very familiar theme.

I would begin by suggesting that the general difference in point of view between religion and science is somewhat analogous to the difference in point of view between the artist and the craftsman. The artist I understand to be the man who makes things to be admired, the craftsman the man who makes things to be used. The difference between a tool or a piece of machinery and a work of art is that the first is truly itself only when it is being used for an end beyond itself, whereas the second is essentially the expression of some value, and has only to be rightly seen or heard, not used, in order to be appreciated.

Imagine a poet and an expert seaman looking at a sailing-ship. To the poet it is a thing of beauty expressing all the romance of the sea. To the seaman also it may be that—for most sailors are potential poets—but to him it is first and foremost a means of transport. Or imagine an architect and an engineer contemplating Waterloo Bridge and the problems just now connected with it. The first is regarding mainly the value of the architecture itself, the other the function of the structure as a means of supporting weights.

But these differences go farther and deeper. The poet and the architect are each viewing the object as a whole in relation to the whole context in which they see it—the ship as a whole in relation to sea and sky, the bridge as a whole in relation to that particular reach of the river and the buildings on the shore. The seaman and the engineer are each, if only subconsciously, analysing the object into its component parts, and considering how each part is performing its instrumental function. The sailor can explain why each sail is set as it is, and will perhaps criticise in detail the handling of the ship. The engineer thinks of the bridge as a system of forces and pressures, and probably greatly prefers a bridge 'where every bit is doing its work' to one which is a model of artistic form.

All these differences arise from the fact that an artist is in the strict sense a theorist, a man whose aim is to *see*. The craftsman, the mechanic, the engineer are practical men, who want to use things, and to control other things by their means. That is why they always analyse the objects they contemplate. *Divide et impera* is the motto for controlling Nature as well as for controlling man. But to see and appreciate things in their full significance, you must look at them as wholes. Divide, if you would rule; but unify, if you would admire.

Now at this point, I would suggest, we have reached a principle which helps us to understand a fundamental difference between science and religion, in so far as each is a way of knowing reality.

The ultimate aim of science (though not necessarily of all scientists) is practical. It seeks to enable man to control his environment. That is why it treats the world as a mechanism. I do not mean that the knowledge it gives is not genuine knowledge of truth, or that this truth may be rightly ignored by religion. But I do mean that the knowledge which science seeks and attains is the kind of knowledge which will help man to achieve his purposes of control; and this aim of science explains its method.

What is its method? First, each particular science separates off its own subject-matter from that of other sciences. Psychology takes the mind, biology the living organism, physics and chemistry lifeless matter, and so on. Then, within its subject-matter each science seeks to discover uniform sequences of cause and effect, which show how things work, so that by learning how things work, the human agent may be able to modify their working and direct it. Every obstacle presented to scientific understanding is met by further analysis of the subject-matter into simpler and more elementary components, so that apparent uniformities, which, on examination are found not to hold good of larger or more complex entities, may be replaced by uniformities which do hold good of the smaller or simpler. An excellent, if frivolous, illustration of the method is afforded by a well-known academic fable. A man of some reasoning powers, but no experience, drinks on

successive days whisky-and-water, rum-and-water, and gin-and-water, in considerable quantities. His primary analysis leads him to the conclusion that it is the water which intoxicates. When this hypothesis fails to be verified by experiment, he analyses further and discovers the other uniform element present in all three drinks. It is, I imagine, in this general kind of way that the simpler and less obvious components of the physical universe have been discovered. And in several directions the sciences have pushed their analysis so far that they now deal with entities which are not themselves perceptible at all, but are only guessed at from the changes which they are supposed to cause in perceived phenomena. Physics has dissipated objects first into atoms, then into electrons, and now into event-particles or vibrations of x. Even biology deals in genes, and psychology has passed into psychoanalysis. The universal rule is that things as significant wholes have no interest for the sciences. For science a whole thing is just a subject for further analysis. The reason is not that science seeks only 'practical' knowledge, in the sense that one may seek to know only how to do things without being really interested in *truth* at all. Science, of course, is interested in truth; but it is that general kind of truth, expressible in 'laws' of cause and effect, which gives knowledge of the mechanism of things and therefore assists man's control of them.

Religion also seeks knowledge, but with an interest which is different, and indeed opposite. In religion man endeavours to know reality, not in order that he may control, but rather that he may be controlled. As Schleiermacher long ago pointed out, 'the instinct of dependence' is fundamental in religion. And as the religious soul can only rest satisfied in worshipping and being wholly dominated by the ultimate reality, so the quest of religion is to see the significance of all things as pointing to the supreme being present and ultimately manifest in all. And as the purpose of religion in knowing is opposite to that of science, so also are its method and its way of overcoming difficulties. Religion deals with recalcitrant facts not by analysing them, but by synthesizing them with others, by putting them in a wider context, so that the significance, which fails to be apparent in the narrower sphere, may nevertheless manifest itself in the larger. The unquenchable faith of religion is that, if we could but see all, we should find God's ways to man justified in spite of present appearances. It is easy for the mere intellectualist to ridicule the simple believer's consolation that 'God moves in a mysterious way,' and that one day the reason for what now seems so unintelligible and perverse will surely be revealed. Such is the essential consolation of religious faith, whether in the charcoal-burner or the metaphysician. Faith always seeks to reduce the ugliness of the present by viewing it together with a remembered past or a hoped-for future, and trying to see the goodness of the whole pattern in the wider range. Listen to the Hebrew psalmist:

Hath God forgotten to be gracious?
And will he shut up his loving-kindness in displeasure?
And I said, It is mine own infirmity:
But I will remember the years of the right hand of the most Highest.
I will remember the works of the Lord:
And call to mind thy wonders of old time.

Or hear the modern philosopher-poet:

Grow old along with me!
The best is yet to be,
The last of life, for which the first was made
Our times are in His hand
Who saith 'A whole I planned,
Youth shows but half; trust God: see all nor be afraid!'

Let us consider a further illustration of the difference between the religious and the scientific point of view. Think of their different ways of regarding an act of visual perception, a man looking at a flower. Physics gets to work on it. At once the flower and the light are dissolved into complex systems of wave-groups or vibrations setting other vibrations in motion, until the series of movements travels up the optic nerve to the brain, and then—what sees what? Physics knows nothing either of the percipient or of the object seen; but it may tell me much about the mechanism of my vision which is exceedingly valuable. Psychology will treat in a similar way the mental machinery which is involved in seeing, and give much true and useful information about the origin and nature of visual hallucinations. But how does a religious poet treat the subject?

Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower—but *if* I could understand
What you are, root and all, and all in all,
I should know what God and man is.

And again, of the non-religious man, by antithesis:

A primrose by a river's brim
A yellow primrose was to him,
And it was nothing more.

In those verses of Tennyson and Wordsworth we see the essentially religious way of dealing with a common act of vision. Religion puts it in the widest possible context of relations, and draws out its most universal significance. Thus it is that the scientific and the religious points of view represent different interests. Each gives truth. But science is always interested in the process of vision as a causal series of events, and thereby acquires the knowledge of mechanism which assists control. Religion is interested in the widest meaning of the whole act and object of vision, and thereby acquires the knowledge which leads to worship. And so it is that, while Peter Bell is justly condemned for seeing nothing more than a yellow primrose, the physicist may be as justly commended for seeing nothing like so much.

Here, then, in recognizing difference of function, we should hold the clue to reconciliation. But it is no easy matter to follow it in the maze of modern thought. An epoch dominated by ecclesiastical religion has been succeeded by an epoch dominated by experimental science. And the practical triumphs of experimental science have been so astounding that its limitations as a guide to truth are almost inevitably ignored. In effect, religion and science seem to have changed places. It is to the experimental sciences that men look for the ultimate truth about the world, and for the aims and standards of human life as a whole. Religion has become a departmental activity, intended in the main for a few specialists of peculiar gifts and temperament, while affording one of the subordinate and minor interests in life to a wider circle of mankind. It is the making of religion into an experimental science and the making of experimental science into a religion, which is the deepest source of our intellectual bewilderment.

Experimental science cannot provide the ultimate interpretation either of everything or of anything (if it could do the one, it could do the other); nor can it really set the ultimate aims and standards of life. For its powers remain essentially departmentalized and practical. It teaches us how to do things, while it provides the ever-increasing knowledge and skill which enable us to do more and more. But it cannot teach us what we should want to do, or what should be our aim in doing. And though it provides us with knowledge amazing in range and detail, it is all in principle knowledge of machinery, knowledge of causal sequences, knowledge of how the universe works; it is not knowledge of the intrinsic significance or value of anything at all. Experimental science cannot help us to appreciate a Beethoven Symphony; it can only inform us about the working of the sound-waves, which are the machinery of music; and to its teaching we owe the power to put the symphony on a gramophone-record and to broadcast it by wireless.

What, therefore, must happen when experimental science sets itself up as a final authority in the realm of truth? Simply this, that it enthrones what is perhaps the most radically false and characteristically modern of all philosophies, the pragmatism which maintains that knowledge, reason, and conscience are themselves but means of action, useful instruments for controlling environment and achieving purpose, mechanisms for assisting the survival and dominance of the race. The consistent pragmatist has to explain all truths and errors, all ideas and ideals, every act of crime or heroism, not as symbolizing or veiling the inner nature of an eternal reality, but simply as so many successful or unsuccessful experiments made by an organism in endeavouring to achieve its own purposes in the world of time. Thus it is that biologists and psychologists commend religion as a means of producing a sense of mystery, without which the human soul feels ill-adapted and uncomfortable; while they would deprecate as meaningless any question whether religious doctrines are really true. The fact that they seldom apply the same strictly pragmatic canons to their own scientific theories is, one supposes, due simply to that scorn of ordinary logic which is one of the intellectual fashions of the day.

Perhaps, however, the most interesting example of pragmatism in practice is to be found in Marxian materialism as it is understood in Soviet Russia. Having rejected the whole notion of eternal reality, the Communists seem to have laid down the absolute dogma that the preservation and survival in time of the Communist State is the one supreme end of all human activities. The Communist State is the working mechanism to which absolute value is attached. It follows that all theories and doctrines are judged, not by their truth, in the ordinary sense of that term, but by their usefulness in securing and advancing the interests of the State. This is the point of the Communist identification of theory with practice. On the same principle, all justice is administered, not with any final regard for what is ordinarily called justice at all, but simply as part of the State's activity of self-preservation, so that the determining consideration in any given case is not whether the accused is guilty or innocent of the crime alleged against him, but

whether his condemnation or acquittal would be most expedient to the Communist authority.[1]

If once experimental science were completely to oust religion or to take its place, I imagine that similar or analogous results would follow everywhere. The one absolute value would be the survival and biological efficiency of human society, and the words truth, right, morality, reason, and conscience would acquire new meanings which would place them in a merely instrumental category. Spiritual life would perish altogether, and the human race would become like an infinitely more complicated and efficient beehive. Thus it might continue aimlessly conquering and surviving until mankind, able at last to do anything it wanted, would perish in the end from not knowing what it wanted to do, or else from an ultimate refrigeration of the atmosphere which would make all insect-life impossible. These are certainly conceivable ways of attaining what the religious man would call perdition—ways more long drawn out and less attractive than the simpler expedient of inventing and letting loose a poison-gas which would finish the sorry business out of hand.

Meanwhile the pressing danger is lest religion and theology themselves should be intimidated into trying to make an agreement whereby they may be allowed to call a certain narrow department of life their own, on condition that they leave the rest to the unchallenged control of experimental science. It is a real temptation to us to allow some arrangement of this sort, which would in effect contradict the very nature of genuine religion. In an age of turmoil, confusion and pessimism, it is becoming more and more attractive to make religion into an asylum and a refuge; and this is a temptation most deadly when it uses the language of other-worldliness. It is so easy to say, 'These problems of unemployment, social reform and industrial and financial organization are, after all, merely secular concerns of this world; but religion is other-worldly, its province is worship and inward devotion.' Such a plea is the worst kind of half-truth. For the effect of allowing it can only be that, while we profess an other-worldly religion, we are acquiescing all the time in the sway of the scientific principles which confine religion to one department of the life of this world. The only true other-world which true religion can recognize is the other-world of God who rules and judges and seeks to redeem this world and all that is in it.

[1] My information about Russian Communism is derived from Gurian's *Bolshevism: Theory and Practice* (Sheed & Ward).

We are sorely tempted to-day to try to make out that God 'breaks through' at certain points of our life and experience, and to confine our communion with God to these points, if only we may exempt them from the criticism which would apply the same canons to these as to the rest. It is as plausible to say 'religion is religion' as to say 'business is business,' with the same implication that one particular part of life is not subject to certain general laws or standards which claim authority over all. There is, therefore, the more need to remember that according to the Christian faith the supreme occasion when God intervened in human life was also the supreme occasion when He refrained from intervention, when, having manifested Himself in the whole manhood of Jesus, He permitted that Man to suffer the extreme of failure and humiliation which the commonest of mankind can endure. When God did not exempt the chosen vessel of His redeeming love from meeting the contradiction and contempt of ordinary men, the Christian must indeed beware of claiming for his religious experience a sanctuary altogether removed from the questionings and problems of the secular intellect. For the tragedy of the earthly life of Jesus was allowed to work itself out to the bitter end, precisely so that afterwards faith might find God's presence in all experience, even 'at the place of a skull,' no less than in the Holy of holies itself. And the scientific criticism of religion may take away from us a deity manifested only in particular experiences, so that in the end we may find the true God working in all.

All life is the sphere of religion, since in all God is working out His eternal purpose. All life also is open to scientific criticism, in so far as it is a spatio-temporal process. Religion needs science to enable it to understand the whole mechanism of process both in religion itself and in the world, and by this understanding to correct narrowness in its own ideas, and to control the better its own processes. Science, on the other hand, needs religion, not to interfere with its methods or conclusions, but to supply the ultimate motive and direction for its whole activity. In religion alone can be found the end and meaning of all life.

Finally, it seems that only in some form of knowing or seeing can we embrace the ultimate end of life. Action is inherently instrumental. It is a means of bringing about something which does not now exist. Assuredly it is not a *mere* means, when it is personal and moral action; but where there is nothing that needs to be changed, there is no reason to act. In a world conceived of as final

or perfect, the soul must be thought of as losing itself in adoration, vision, contemplation, and as thus transcending the time-process which is realized only as we do things that other things may be brought about. Religion, therefore, as being concerned with the end of life rather than with the means and process of living, is necessarily opposite to science in subordinating doing to knowing or seeing; it can make no terms with pragmatism. Such has always been the traditional teaching of the Christian Church. 'God *saw* all that He had made, and, behold, it was very good.' And He created man in His own image so that ultimately, in his tiny measure, man might share the vision. The vision of God and of the world in God has constantly been placed before the Christian soul as the highest and farthest goal of its aspiration. It is a very unfashionable doctrine nowadays to make contemplation the end of action. It is inevitable that this should be so in a scientific age, which is characteristically interested in mechanism and process, and finds the very notion of finality repugnant. But religion, while it confesses that we are pilgrims and sojourners here below, resolutely rejects the veiled scepticism of the doctrine that 'it is better to travel hopefully than to arrive.' All St. Paul's deepest and loftiest prayers are directed to asking that his converts may know fully and understand the love of God in Christ; and St. John speaks of the final heaven as that world in which 'we shall be like him, for we shall see him as he is.' Here on earth we have faith, not vision, to live by; and faith, being 'the substance of things hoped for,' is necessarily temporal, directing our forward journey towards that which we see not yet. For faith, action comes before knowledge in the immediate order of importance. And yet ultimately even this world can only be changed and recreated in the heavenly image by those who believe that the God of love is the eternal truth of the universe, and that the goal of all endeavour is that He should be fully manifested and expressed in all. It is the longing to see Him as He is, which is the religious, and therefore the most real, motive for abolishing slums. If this be so, we must record our agreement with A. E. Taylor, K. E. Kirk, and the upholders of the Platonic tradition in Christian theology, against brilliant modernist writers, like Macmurray, who, in appearing to reject the distinction between theory and practice, comes perilously near to a pragmatism which destroys the meaning of truth.[1]

There will always inevitably be tension and opposition between the activities of religion and of science. Science will always be throwing fresh light on the mechanisn of the world; and its discoveries will constantly be hard to harmonize with the religious interpretation of the whole. The more science analyses the parts, the more difficult it will be perhaps to fit them altogether again in any intelligible unity. Yet it is by loyally facing and grappling with the difficulties that religion really learns the truth of God, and verifies the faith that all things work together for good for them that love Him.

[1] See his *Freedom in the Modern World* (Faber), and his essay in *Adventure*, ed. by Streeter (Macmillan).

Missionary Problems of Today.

II.

Swaraj in the Mission Field.

By Professor the Reverend J. F. McFadyen, D.D., Nagpur.

In the early days of a Mission the missionary regards it as his chief work to try to win individual converts. At this stage he has one function only, that of a missionary. Soon he will associate some of his converts with himself in his missionary activities. If these are devoting the whole of their time to the work, they will receive a salary. Sometimes there is a secondary reason for engaging them, namely, to provide work for those whose Christian profession has excluded them from the ordinary means of earning a livelihood. Thus the missionary takes on a second function, that of an employer and paymaster. From the beginning the missionary and the converts will worship together;