

## SOME PARALLELS BETWEEN THEOLOGY AND SCIENCE.

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IT HAS LONG been tacitly taken for granted that the theories of the universe formulated respectively by theologians in the religious beliefs of the world and by scientific men in systems of nature and philosophy, not only stand utterly apart from each other, but need harmonising by a more or less forced process of "reconciliation." It may nevertheless be shown that the two classes of views really spring from a single root in human knowledge, the one representing an earlier, the other a later stage in the evolution of the knowing faculty. In this view of their relations, the need of religion and science is not so much to be "reconciled" with each other as to have their natural affinities adequately formulated as the outcome of a process common to both.

We shall see our way to this newer treatment of the subject by recognising that in the study of nature two principles of interpretation are open to the investigator—the subjective method, earliest in the historical development of knowledge, and the later objective method, which has been followed with such success by science. In the first, men trust implicitly the sensations produced in them by the activities of the external world; in the second they use appearances merely as the raw material of that deeper knowledge which is reached by the discovery of what nature is for herself, apart from the knowing organism. Thus subjective knowledge, as it may be called, deals with the sensation of color as if the color perceived really exists in the object, while in objective knowledge the investigator discovers that the only reality in the external world which corresponds to color is the ether waves that give rise to the sensation. The subjective method taught the ancients that the sun and moon were round, flat disks, that the earth stood

still, and the heavenly bodies moved around it ; it was only by the use of the objective method that men gradually learned the real relations to each other of the various members of the solar system. It was the same subjective way of viewing the phenomena of nature that made it impossible for our ancestors to understand the cosmos save by explaining its changes and movements as due to will and personality : hence it was that they peopled their environment with spirits and deities innumerable. It was only when nature came to be studied objectively—apart from subjective processes, and with the human bias eliminated—that men found they had to deal, not with a host of supernatural personages, but with so many powers of nature, variously combined and co-ordinated.

It may therefore be said that all progress in our knowledge of the universe has been achieved by the gradual substitution of the objective for the subjective method of interpretation, and that the change has taken place not for the gratification of any abstract preference for one, as compared with the other, but because the interests of the race demanded the passage to a way of knowing things in their actual relations to each other from a way of regarding them in which those relations were imperfectly if at all perceived. We are therefore entitled to look for a sustained parallel, correspondence, or congruity between the views taken of natural phenomena when subjectively interpreted, and the later scientific or objective views of such phenomena. As, moreover, all early explanations of phenomena are simply the subjective forms of the later objective explanations, we shall find that while the truer view displaces the more imperfect, it is always symbolically pre-figured in the latter.

Let us begin by contrasting the ancient with the modern ideas of matter. At first atoms were represented as clinging together by means of hooks, or their unions were attributed to desires, affinities, and the like—a view which symbolically anticipated the later objective theories of attraction and repulsion held by modern physicists. So the idea of light as due to flying corpuscles emitted by the luminous body has gradually given way to the modern account of it as a wave disturbance in ether, the theory of propagation by a medium taking the place of the theory of propagation by moving material particles. Kepler's notion of a vortex of fluid whirling planets round the sun may in like manner be regarded as a symbolical anticipation of the impact theory of gravitation. The same working of the human mind in the direction of an objective view of gravity is seen in Le Sage's hypothesis of moving corpuscles,

which obviously prefigures the later explanation of gravity as due to differential pressure by the ether system. An analogous mental progress will be noted in the fact that while Descartes (*Passions de l'Ame*, Article vii.) described the nerves as "little threads or tubes, which all come from the brain, and, like it, contain a very subtle air or wind, termed the animal spirits," the physiologists of a later epoch advanced from the idea of "animal spirits" to that of a "nervous fluid," and finally learned to describe the transmission of impulses from the brain as effected by molecular motion of brain and nerve substance. So in seeking to explain heredity, Mr. Darwin (*Variations of Animals and Plants*, Vol. 2) advanced the hypothesis of Pangenesis, in which the gemmules supposed to be gathered from every part of the organism may be regarded as a more or less subjective, or symbolical anticipation of the later germ-plasm theory of Weismann.

A similar relation is to be noted between the early subjective interpretation of phenomena and the later objective explanation of them when regard is had to the larger aspects of nature. Observe, for example, correspondence between views in the realms of religion and science, as well as between the various stages in development of those views. At first one, religion and science come gradually to be differentiated from each other, yet they manifest throughout the same fundamental characters, and pass in their historical course through identically the same process. In the beginning worship is associated with isolated objects or phenomena, whence it passes by coalescence into worship of a few, and finally into worship of a single being or deity. So science, which is at first knowledge of many objects and forces, conceived as independent of and isolated from each other, ascends by an analogous process of coalescence into knowledge of a few objects and powers and finally into knowledge of a single object or power, the universe. As, moreover, religions, beginning with the idea of a divided control over things, pass in the end to the idea of their dependence on a single will, so science, setting out with the conception of independent and unrelated centres of power, reaches at last the idea of a single dominating power, which is the universe in its totality. The gradual purification of science, moreover, from the grosser metaphysical elements of knowledge has its analogue in the progressive elimination from monotheism of the grosser anthropomorphic elements, while the approximation of the object of knowledge has gone so far that the two may for modern thought be declared to be identical in all save superficial characters.

In their advanced stages, the ideas of science and religion are everywhere fundamentally alike, and point to a single origin as their common source. The unity which the scientist sees in nature was sung more than five thousand years ago in the Valley of the Nile as the unity of God. The ordinary view of the universe as infinite has had its parallel in every theistic system, and the modern doctrine of the unknowable was already announced in the inscription on the fane of the temple of Athene-Isis at Sais, "I am all that was, and is, and shall be; nor my veil, has it been withdrawn by mortal." For the Almighty and Omnipotent of scriptural phraseology we have modern equivalents like that of Herbert Spencer (*First Principles*, p. 112), "The Power manifested through all existence," and that of Matthew Arnold, "The Eternal Power, not ourselves, which makes for righteousness." Most definitions of religion, moreover, are little more than scientific truths expressed in theological terms. Thus Schleiermacher declares that "religion consists in our consciousness of absolute dependence on something which, though it determines us, we cannot determine in turn." Pfleiderer describes the kern of religion as "the relation of our life to the world-ruling power which is to share life with it" (*jene Lebensbeziehung auf die weltbeherrschende Macht, welche zur Lebensgemeinschaft mit ihr werden will*). To Max Müller religion is "the perception of the infinite under such manifestations as are able to influence the moral character of men." Herder traces the origin of religion to "a feeling of the invisible in the visible, of the one in the many, of power in its effects, as the root of all ideas of the reason." For Schleiermacher the "contemplation of the universe," and "the feeling of the infinite in the finite" was the pivot of all religion. Strauss boldly defined religion as feeling for the universe (*Gefühl für das Universum*).

How inevitably, in their expression of religious emotion, men turned for the object of their worship to conspicuous characters of the external system is shown by such deistic epithets as Shangti (Supreme Heaven), Dyaus-Piter, Zeus, Jupiter (Sub Jove); by the widespread belief in gods sprung from the union of heaven and earth—the regnant feature of hundreds of primitive religions—and by the multifarious forms of sky, sun, and star worship. In some mythologies the external system is declared to be identical with the Deity himself. "God," runs an Orphic saying, "is the head and middle of all things. God is the abyss of heaven, the depth of the sea, and the life of all breathing creatures. All these three, abyss, depth, and life are parts of His vast body." In the sacred

song of the Hindu we read of Purusha, and that from the sacrifice of him sprang horses and all animals—the moon from his soul, the sun from his eye; from his navel arose the air, from his head the sky, and from his feet the earth. The Scandinavians also pictured the universe as one, for the sons of Borr took the universe giant Ymir, and of his flesh they formed the earth, of his blood the seas and waters, of his bones the mountains, of his teeth the rocks and stones, of his hair all manner of plants, of his skull the firmament, and of his brains the clouds. In Chaldean story, Bel, having cut the world woman Omorca in twain, converts the two halves of her body into heaven and earth. For Egyptian, as for Greek, plants, stones, metals, and other natural objects arose by like metamorphosis from the bodies of once-worshipped gods. Among the Iroquois Indians Chokanipok was a universe giant whose limbs, bones, and blood had been utilised to the making of the world. To this day the South Australian regards the universe as the great tribe, to one of whose divisions he himself belongs, and all things animate or inanimate which belong to his class as portions of the body corporate of which he himself is part.

The immanence of God in things—the omnipresence of that Power which science sees everywhere in the universe—finds the most constant and withal multifarious expression in theological and quasi-theological writings. “Fool!” exclaims Carlyle (*Miscellanies*, Vol. 5, p. 49), “God is not only *there*, but *here*, in that life breath of thine, in that act and thought of thine—and thou wert wise to look to it.” Jelaled-deddin, a saint of the Persian sect of Sufis in the twelfth century, was the author of the saying: “When we cry in our prayer, ‘O my Father,’ the answer is in the prayer itself; in the ‘My Father,’ lies hidden ‘Here, my child.’” The Platonic Bishop Synesius sang:

“Thou art the begetting,  
And the begotten:  
Thou art the illumining,  
And the illumined:  
Thou art the manifest,  
And the hidden—hidden by thy glories:  
One and yet all things Thou,  
One in Thyself alone,  
And throughout all things One.”

The like idea, in its Eastern form, is also reached in the “Brahma” of Emerson:

“If the red slayer think he slays,  
Or if the slain think he is slain,

They know not well the subtle ways,  
I keep, and pass, and turn again :

“ Far or forgot to me is near ;  
Shadow and sunlight are the same ;  
The vanished gods to me appear ;  
And one to me are shame and fame ;

“ They reckon ill who leave me out ;  
When me they fly, I am the wings ;  
I am the doubter and the doubt,  
And I the hymn the Brahmin sings.”

Paul declares that God is “ the fulness that filleth all things,” that the Deity is “ above all, and through all, and in us all,” that “ in God we live and move and have our being,” and that “ from Him, through Him, and to Him are all things.” Spinoza held God to be “ the underived, original, and universal force underlying and including all forces.” For Vico “ God knows all things, because He contains in Himself the elements of which He composes all things.” “ There is but,” says Descartes, “ one infinite substance, and that is God. Whatever is, is in God, and without Him nothing can be conceived. He is the Universal Being of which all things are the manifestations.” Malebranche also described God as “ the absolute substance ” who “ contains all things in Himself.” “ When we assert that God is infinite,” writes Conder (*Basis of Faith*, p. 65), “ we mean . . . . . that God is present wherever space extends.” Sir Isaac Newton maintained that God, by existing, constitutes time and space, and Dr. Clarke urged that space is an attribute or property of the infinite Deity. Pope speaks of God who

“ Lives through all life, extends through all extent ;  
Spreads undivided, operates unspent :  
To Him no high, no low, no great, nor small—  
He fills, he bounds, connects and equals all.”

The essential identity of God with nature, now described as the world and now as natural laws, has been constantly asserted in one form or other since the beginning of clear thought. This conception is expressed in the Rig Veda, where, as rendered by Sir Monier Monier-Williams (*Mandala*, x. 90) the “ embodied spirit ” is “ himself this very universe—whatever is, has been, shall be.” “ In point of Being,” according to Zeller, the Stoics regarded “ God and the world ” as “ the same ; the two conceptions are identical.” For Schleiermacher “ God and the world are two values for the same thing ” (zwei Werthe für die gleiche Sache). Herder said that no God was possible without a world, just as no world

was possible without a God (Es ist also kein Gott ohne Welt möglich, sowie keine Welt ohne Gott). Pope's lines,

"All are but parts of one stupendous whole  
Whose body nature is and God the soul,"

contain the same idea as that which Goethe puts into the mouth of the earth-spirit in *Faust* :

"So schaff' ich am sausenden Webstuhl der Zeit,  
Und wirke der Gottheit lebendiges Kleid :"

"From this point of view," wrote W. B. Carpenter (*Nature and Man*, p. 53), "I should look upon the whole Kosmos as the corporeity of the Deity, a doctrine which some may think pantheistic, but which seems to me necessarily to follow from that of His universal and immediate agency, which I cannot but regard as the highest method of viewing his *modus operandi*." Strauss has urged that there are no attributes of God which are other than the laws of nature, and Herder (*On Man*, Preface, xiv.) writes :

"Nature is no real entity; but *God is in all His works*. . . . Let him to whose mind the term nature has been degraded and rendered unmeaning by many writers of the present day, conceive instead of it that *almighty power, goodness and wisdom*, and mentally name that invisible being, for whom no language upon earth can find an expression."

For Hume the proofs of the existence of God depend on the conception of cause; St. Augustine (*Confessions*) declared that "whatever leads to the knowledge of God has value, and therefore physics is justifiable, which, if it did not lead to this result, would be quite useless"; and Francis Ellingwood Abbot (*Scientific Theism*) asserts that "in the final upshot, what men think of God must depend on what they know of nature, and that knowledge is science." On Theism and Atheism J. R. Seeley (*Natural Religion*) writes as follows :

"I say that man believes in a God who feels himself in the presence of a Power which is not himself, and which is immeasurably above himself, a Power in the contemplation of which he is absorbed, in the knowledge of which he finds safety and happiness. . . . The average scientific man worships just at present a more awful, and, as it were, a greater Deity than the average Christian (p. 18) . . . . Whether they say God, or prefer to say Nature, the important thing is that their minds are filled with the sense of a Power to which their own being is inseparably connected, in the knowledge of whose ways alone is safety and well-being, in the contemplation of which they find a beautiful vision (p. 22) : . . . Since every sort of theology agrees that the laws of Nature are the laws of God, it is evident that in knowing Nature we do precisely to the same extent know God. Regarded in this way, we may say of God that so far from being beyond knowledge, He is the one object of knowledge, and that everything we can know, every proposition we

can frame, relates to Him. . . . Scientific men do now tell us in the very language of theology that all hope, that all happiness lies in the knowledge of Nature and by Nature they mean the Universe." (P. 51.)

The view which science is rapidly reaching that the universe as a whole is the cause of all the movements, changes, and modifications that take place within it finds its natural parallel in the theological view that God is the source, author, and maker of things. The Stoics taught that "God is at once universal matter and the creative force which fashions matter into the particular materials of which things are made." Leibnitz declared God to be "the primitive unity, the simple, original substance, of which all created or derived monads are the products." Herbert Spencer (*Religion: A Retrospect and Prospect*) speaks of "an infinite and Eternal Energy, from which all things proceed," or, as originally written, "an Infinite and Eternal Energy by which all things are created and sustained." To John Fiske the "infinite Power that makes for righteousness" is also "the everlasting source of phenomena." The Rig Veda (*Müller's Ancient Sanscrit Literature*, p. 569) adores God as the giver of light, the creator of earth and heaven; "I have made the earth," sings the prophet Isaiah, "and created man upon it; I have stretched out the heavens . . . I am the Lord that maketh all things." "That everything is from God," says Schelling (*Werke, Abth. 2*, Vol. 2, p. 280), has been at all times felt, as it were—nay, one may say that just this is the true primitive feeling of humanity." Martineau declares that "God is "no longer conceived as the First Cause prefixed to the scheme "of things, but as the Indwelling Cause pervading it—as the One "everlasting Objective Agency, the modes of which must be classified and interpreted by science in the outer field, by conscience "in the inner." The hymn of Proclus expresses the Orphic idea of the Deity:

" Zeus is first, last, the head and middle of all things :  
From him all things come : He is man and woman ;  
The depth of the earth, the height of heaven,  
Sun, moon, stars, fire—origin of all, king of all,  
One Power, God, Ruler."

"All that lives," wrote Cleanthes, the Stoic, "all that moves, "all that exists as mortal upon the earth, we are all born of thee. ". . . This universe suspended over our heads, and which seems "to roll around the earth, obeys Thee alone; it moves and is governed in silence by thy command." To Aristotle God is "the

first mover, imparts motion, and pursues the work of creation as something to be loved." Dante (*Paradiso, Canto Primo*) speaks of

"La gloria di Colui che tutto muove,"

and Bruno (*Opere, Vol. 1, p. 209*) addresses the Deity as

"Causa, principio, et uno sempiterno,  
Onde l'esser, la uita, il moto pende."

Wordsworth, in one of his poems, acknowledges a Power

"Whose dwelling is the light of setting suns,  
And the round ocean, and the living air,  
And the blue sky, and in the mind of man ;  
A motion and a spirit that impels  
All thinking objects, all objects of all thought,  
And rolls through all things."

Adi-Buddha is described in Sanscrit literature as one who, "himself not made, has made all things." At Thebes, Amun-Ra was worshipped as "Maker of all things, above and below"; so Osiris "made the world and all things, and maintains law in the universe." The Vedic God, Varuna, is credited with the saying "Like a clever carpenter, I have fashioned all things and supported heaven and earth." Finally, scientific and theological truth meet for the modern mind in the child's hymn :

"Each little flower that opens,  
Each little bird that sings—  
He made their glowing colors,  
He made their tiny wings."

A similar parallel is to be noted in the realm of causality. Thus Pfeleiderer (*Development of Theology in Germany Since Kant*) summarises Schleiermacher's position regarding causality in the following language :

"God is the correlative unity to the multiplicity presented as the world. Creation and preservation are forms of expression for the eternal causality or omnipotence of God, which is so completely represented in the totality of being that in the divine omnipotence there is no excess of potentiality beyond the totality of the actual nor in the latter anything in excess of the former. Omnipotence and the totality of natural causes are commensurate, the former never coming in the place of the latter to meet a defect, but everything exists and arises solely and wholly by means of the natural system of things ; so that, each thing existing by virtue of all, and all things entirely by the divine omnipotence, all things undivided subsist through one (p. 111).

Note also the frequent reference of forces and their effects to the operation of a divine will. Sir William Grove, for example, maintained that "causation is the will, creation the act of God."

In Sir John Herschel's view, "it is but reasonable to regard the force of gravitation as a direct or indirect result of a will or consciousness existing somewhere." "There is no such thing," asserted Clarke (*Evidences of Natural and Revealed Religion*, p. 300) "as what men commonly call the course of nature. The course of nature, truly and properly speaking, is nothing else but the will of God producing certain effects in a continued, regular, constant, and uniform manner." The Duke of Argyll (*The Reign of Law*, p. 127) urged that "it may be that all natural forces are resolvable into some one force," adding: "It may also be that this one force, into which all others return again, is itself but a mode of action of the Divine Will." Martineau has held that "Theism is at liberty "to regard all the cosmical forces as varieties of method assumed "by God's conscious causality, and the whole of nature as the evolution of his thought."

All mysteries in religion are ascribed to some divine power, attribute, or way of acting not yet understood, just as all mysteries in science are attributed to unexplained powers and modes of movement in the universe. It thus constantly happens that the difficulties of the theologian are at bottom the difficulties of the scientist, and that the clearing up of the mystery of the one is the solution of the problem of the other. "By conceiving of life," says George Henry Lewes (*Aristotle*, p. 231), "simply as the function "of the organism, we do not rob it of its solemn mystery. It is still "the dark Dynamis which must ever remain impenetrable; but a "similar mystery hangs over the course of the planets, the ebb "and flow of the tides, the vehement impulses and repulsions of "the chemical elements." Here we see characterised by a common term—as if the very nature of thought connected them, demanding a single solution for all—those phenomena which in the scientific view need the universe to explain them, namely, life, gravitation, and chemical action. From a totally different point of view, yet with a suggestiveness not less profound, Tennyson sings:

" 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."

The poet perceives the divine in the humblest type of animate existence, and in doing so expresses the objective truth that knowledge of the meaning of the life of the simplest flower would involve

knowledge of the relation in which man and all other organisms stand to the universe, and therefore knowledge of the universe as the ultimate *raison d'être* of life in all its manifestations. One other example of the same kind of parallel may be cited from Whittier ("The Prayer of Agassiz"):

" Said the master to the youth,  
 ' We have come in search of truth,  
 Trying with uncertain key  
 Door by door of mystery ;  
 We are reaching through His laws  
 To the garment-hem of Cause—  
 Him the endless, unbegun,  
 The Unnameable, the One,  
 Light of all our light the Source,  
 Life of Life, and Force of force ;  
 As with fingers of the blind,  
 We are groping here to find  
 What the hieroglyphics mean  
 Of the Unseen in the seen ;  
 What the thought which underlies  
 Nature's making and disguise ;  
 What it is that hides beneath  
 Blight and bloom, and birth and death.' "

The poet here again refers the mystery of life, with its characters of "blight and bloom, and birth and death," to the unseen source of things, while in describing that source he uses epithets which few scientific thinkers would hesitate to apply to the universe.

The theologian's submission to the will of God reappears for the objective method in the calm content with which the student of nature accepts the ceaseless working and interworking of the forces around him. Even the so-called pagan addresses the universe in this modern spirit. "Dare," says Epictetus, "to lift thine eyes to God and to say, 'Use me for what thou wilt. I agree, and am of the same mind with thee. I refuse nothing that seems good to thee. Lead me where thou wilt, and I will go.'" The same writer expands his idea in this language:

"All things obey and serve the world (universe)—earth and sea and sun, and the rest of the stars, and the plants of the earth and animals. And our body obeys it also, both in disease and in health, when it (the universe) chooses, both in youth and in age, when it is passing through the other changes. What is reasonable, then, and in our power, is this, for our judgment not to be the only thing which resists it (the universe); for it is strong and superior, and it has determined better about us by administering (governing) us also together with the whole. . . . Wherefore we also ought to be of one mind with God, and making this division of things, to look after those which are in our power; and, of the things not in our power, to intrust them to the Universe."

Pope's view that "partial evil" is but "universal good" found early expression in the writings of Antoninus :

"Everything harmonises with me which is harmonious to thee, O Universe! Nothing for me is too early nor too late which is in due time for thee. Everything is fruit to me which thy seasons bring, O Nature! From thee are all things, in thee are all things, to thee all things return. The poet says 'Dear city of Cecrops,' and wilt not thou say 'Dear city of Zeus?'. . . . Let the perfecting and accomplishment of things which the common nature judges to be good be judged by thee to be of the same kind as thy health. And so accept everything which happens, even if it seem disagreeable, because it leads to this, to the health of the universe, and to the prosperity and felicity of Zeus (the Universe). For he would not have brought on any man what he has brought if it were not useful for the whole."

The idea also occurs in Goethe :

"Well may each separate self its life forego,  
In the infinite to find itself, and so  
Be freed from disappointment evermore;  
Where fevered wishes, wild desires, once reigned,  
Where hard laws ordered, strict commands constrained,  
'To give up self is bliss,' is now my lore."

To the same class belongs Cardinal Newman's hymn :

"Lead, kindly Light, amid the encircling gloom,  
*Lead Thou me on;*  
The night is dark, and I am far from home,  
*Lead Thou me on;*  
Keep Thou my feet; I do not ask to see  
The distant scene; one step enough for me.

"I was not ever thus, nor prayed that Thou  
Shouldst lead me on;  
I loved to choose and see my path, but now  
*Lead Thou me on;*  
I loved the garish day, and, spite of fears,  
Pride ruled my will; remember not past years.

"So long Thy power hath blessed me, sure it still  
Will lead me on  
O'er moor and fen, o'er crag and torrent, till  
The night is gone;  
And with the morn those angel faces smile,  
Which I have loved long since, and lost awhile."

And if it be asked why the scientist's attitude towards the universe process should partake of the spirit of the child's supplication, "Thy will be done on earth, as it is in heaven," the reply may be given in the words of Carlyle: "All that is right includes itself in this of co-operating with the real tendency of the world."

This has been expanded by John Beattie Crozier (*The Religion of the Future*) into the passages :

"A few simple principles, endlessly varied and combined, make up this magnificent panorama of life. . . . On an attentive consideration, then, we shall find that they all work for the good of the whole, that is to say, for justice, and that the result is a gradual progress and amelioration (p. 21). . . . The great laws—physical, organic, and spiritual—work impartially for the benefit of all ; and he who best obeys them is the most in harmony with the decrees of his Maker, and, in the great sense, alone succeeds (p. 25). . . . As the central Law of the world is Justice and Goodness, of which the thousand-fold complexities of physical and organic law are instruments, so the central Law of man is dependence on that just and good will ; all the superficial laws of his nature, physical and organic, being merely instruments of this central Law—subsidiary and subordinate to it. Hence the first duty of man is self-renunciation. This is a total change of heart and will, or, in other words, a conversion. It is what is known in Scripture as a being 'born again.' " (P. 29, 30.)

That yielding oneself "to the perfect whole" comes really from a belief that "All things work together for good to those who love God," has often found scientific expression in a variety of forms. Thus Vico, as summarised by Robert Flint, believed "all "that happened was for the best, and that the severest sufferings "of humanity were of a remedial and educative character. Even "the punishments which destroyed nations he held to be needed ; "the most savage passions could be shown to have been made instruments of good ; and the darkest superstitions he regarded as "approximations to truth and as instructive even in so far as false : "'Nelle stesse tenebre degli errori splende Iddio." Kant (*Idee zu einer allgemeinen Geschichte*) applies this view to the antagonism between the egoistic and the social impulses in man ; and Maudsley (*Body and Will*, p. 168) sees the like truth in all human actions :

"In the social state the egoistic passions of men—their antagonistic rivalries, jealousies, emulations, ambitions, avarices, and the like, being constrained and utilised in spite of themselves to serve the common good—are really the conditions of social progress."

It may be said generally that all fundamental truths in theology and religion are but so many subjective aspects of fundamental truths in science. Thus the subjective truth that God is an intelligent being, partially reiterated in quasi-scientific descriptions of the universe as consisting of "mind-stuff" (Clifford) or as containing "the indwelling mind of all" (Martineau), in the frequent ascription of mental characters to the divine mind, declared to be the prototype of the human mind, and in the view that organic forms are concrete thoughts of the Creator (Agassiz) reappears for the objective method in the form of the truth that all activities of

the universe take place in definite, unvarying ways, which may be called universal laws, and that the intelligent adaptations observed in organic life are ultimately due to the universe. The saying, common to most systems of religious belief that everything happens by the will of God, is a subjective expression of the scientific verity that no change of any kind or amplitude can occur save as determined by universe power. The belief that every birth and death is alike an act of God—long rejected as superstition—is here seen to be but an aspect of the truth that the universe is instrumental in giving existence to organic forms, and in removing them when their cycle is run: the universe being, in the scientific, as in the Hindu conception, not merely the creator and maintainer of the organism, but also its destroyer. The statement, again, that all knowledge is from God must be regarded for the purposes of the present comparison, as equivalent to the assertion that the material of knowledge comes to us from the external system, and is, like life itself, a product of that system. The belief that men may be inspired by God, as well in its primitive form that particular men may be so inspired, as in the modern form according to which the highest thoughts of all men are regarded as due to divine inspiration, has its objective parallel in the scientific view that all thought, and all ideas, are ultimately communicated to human beings by the universe, and that the higher thoughts, like the higher aims of men, are results of the universe process. Thus the view that God has revealed Himself to man is but the subjective aspect of the truth that the universe, as a whole, has impressed a knowledge of itself upon its highly complex, its highly unified part, the human organism. For that early form of the subjective view which divided processes into "natural" and "supernatural" means objectively no more than that processes understood excite no wonder, while those not yet explained are marvelled at and regarded as mysterious: every step taken by science into the unknown being so much territory won from the supernatural and annexed to the natural—so much conversion of the magic and sorcery of the savage, the miracle of the theologian, into the phenomenal commonplace of the scientist.

In morals the same parallels are to be noted between the subjective and the objective view, all facts of duty, conscience, right and wrong being as clearly expressible in objective terms as are any of the fundamental doctrines of theology. Righteousness in the widest meaning of the term is that complete adaptation to the human and the natural environment which results to the organ-

ism in the highest possible well-being or blessing; so the sin which, in the subjective view of the theologian, offends God, is in the objective view of the scientist conduct which is injurious, or is believed to be detrimental, to the welfare of the human group or kind, and therefore opposed to that general process of things of which the universe is the ultimate determiner; while the testimony of conscience proclaiming an action to be right or wrong is from the objective point of view the testimony of organised racial experiences prescribing conduct which is socially and individually beneficial, deterring from conduct which is socially and individually injurious. Finally, the warning of the theologian that compliance with the divine commands yields happiness, and that the disobeying of them brings punishment, has its not less impressive parallel in the creed of the scientist which declares (Herbert Spencer, *Controversy with Frederick Harrison*) that "there is an Order of Nature "pervading alike the actions going on within us and without us, to "which from moment to moment our lives must conform under "penalty of one or other evil; and . . . therefore our first business "must be to study this Order of Nature."

Nor is the belief in immortality altogether without its objective analogue. We may connect it scientifically with many theories that merely imply as well as explicitly assert the certainty of the future life—theories like those, for example, which proclaim the transmigration of the soul, hold that men inherit good or evil from a previous state of existence, or provide for them in coming states a series of rewards and punishments. These without exception have their objective side in the general fact of the potential immortality of the organic type—in the inevitable inheritance from previous generations, the inevitable descent to succeeding generations, of all improved characters and all mal-adaptations that succeed in establishing themselves in the structure of the organism. For if the scientific view of the meaning of heredity be true, it must be clear that, in all its fundamental characters—in all, that is to say, save conscious individual experiences—the organism really lives again in its offspring. Thus the intensity of one's faith in a future life, whatever other justification it may have, is confirmed from the objective point of view by the tremendous importance of a process which, while it makes man but one link in the chain of human existence, yields him glimpses of that before and after with which he is indissolubly bound—glimpses of the past from which he has come, which has made him what he is, glimpses of the future which he also assists to mould, and in which his present actions

must find themselves again for good or ill in the stream of human events :

"Our birth is but a sleep and a forgetting ;  
The soul that rises within us, our life's star,  
Has had elsewhere its setting,  
And cometh from afar."

Here, then, the attempt to show a parallel, implying essential agreement between the subjective and objective sides of Knowledge, may be brought to a close. The examples given of the correspondence between religious and scientific ideas are brought forward to suggest, not that religion and science are the same, not that the God of the theologian and the universe of the scientist are the same, but that the ultimate object of worship and the ultimate object of knowledge are for the objective method identical, and differ only for the subjective mode of perceiving them. This is true, moreover, even in cases where the divergence seems wide: thus the so-called worship of the infinite is really worship of the Power which is believed to be infinite, and not of any quality of infiniteness abstracted from existence—of the power, that is to say, to which no limits can be assigned; so men worship the Power they believe to be a Unity, to be Eternal, or Unknowable, and not any of the qualities which they ascribe to that Power. It is also to be noted that the supposed creation of the universe as the totality of things constitutes no negation of the meaning of causality as here set forth, since such totality signifies in every case no more than the visible universe of earth sun, planets, and stars—not the ether system, which has only recently come into the realm of knowledge, but simply the whole of material things in the narrower and older sense of the term "matter." The truth that matter thus conceived could not move itself, could not re-arrange or "create" itself, seems to have been perceived from the earliest times, and so the theologian, far in advance of the formal processes of the scientist, reached the idea of some invisible power to which all things were due. "The invisible things of Him from the creation of the world," says Paul, "are clearly seen, being understood by the things that are made, even His eternal power and Godhead." Calvin declared that God "by creating the world (*mundum*), being Himself invisible, has presented Himself to our eyes conspicuously in a certain physical form." It may thus be urged that the search of the theologian for a cause behind the visible world of matter is fundamentally of the same kind as the quest of the scientist for an ultimate system of things, now beginning to be disclosed by our

knowledge of ether, from which that world had its origin and derives its power.

The position here taken must therefore be that while religious feeling is at first always instinctive perception of universe power, never formal or reasoned knowledge of that power, it is yet the same external system or universe which inspires the one and urges man to cultivation of the other. Worship is always directed to the external system—to that which has power over the worshipper and over the conditions which limit and determine his existence; it finds its goal, that is to say, in the universe, or in parts thereof representing the universe; it is directed to representative external objects, or to representative essences believed to reside in those objects, or to that which, while formally conceived of as outside of and distinct from the universe, is yet logically conceived (by assumptions made as to its connexion with and power of giving rise to and of acting on the system) as forming part of, and being to a greater or less extent identical with, the universe. The idea of God and of the universe, meeting so manifestly in the causal relation, come together again in the conception of personal welfare, since the theologian is as strenuous in claiming that it is to the interest of the human being to know God and His laws, as is the scientist in holding that it is to the interest of the organism to know the universe and its processes: if the object of worship were not also the ultimate object of knowledge, this aiming at personal welfare in both worship and knowledge would be unintelligible. The question whether a complete knowledge of the universe would also be a complete or an incomplete knowledge of God does not for a moment affect the evidence offered in the present article, since the answer to such a question would turn, not on any real, any actual difference between God and the universe, objectively considered, but wholly on the difference between ideas based on instinctive perception of universe power and the formal or reasoned knowledge of that power.