J. S. Erskine

TRUTH, RELIGIOUS AND SCIENTIFIC

A GREAT DEAL OF INK has been spilled recently in controversy over the tendency of the day to accept the authority of science at the expense of the authority of religion. Both parties in the discussion are convinced of the importance and even of the sacredness of truth, but how truth can have two faces seems to have been left out of the debate. Obvious superficial differences between the two approaches are recognized. Scientific truth is supposed to be arrived at by induction, a conclusion based upon observed facts; religious truth is dogmatic, based upon divine revelation as found in sacred books or in the utterances of inspired prophets or authoritative churches. Scientific truth is protean, progressive; religious truth is fixed and therefore dependable.

Societies go through different phases during which one type of truth or the other is dominant. If there was any scientific thought in Europe during the first twelve centuries of our era, it was carefully hidden, and even today the proportion of people using this type of thinking is very small indeed. In one of his novels, C. P. Snow pointed out the fact that, in their policies as in their thinking, most basic scientists were leftist and most engineers were conservative. Specialization among scientists carries this even farther, and most scientists who grope with open mind into their own specialty remain comfortably dogmatic with regard even to the rest of science. To the vast majority of our contemporaries, science means only hydrogen bombs and colour television. It seems most unlikely that scientific truth is taking the place of religious truth, but it is quite possible that both may give place to no truth at all.

There are two scientific attitudes toward truth. One might be called "truth by approximation". In this, each new theory must be tested by application to real conditions, and inevitably it is found to fit, at best, with some imperfections. This demands a new theory by which the imperfections are diminished but not eradicated. So investigation continues toward ultimate perfection of knowledge. This perfection, however, is never reached. The other approach might be called the "sceptical". Bertrand Russell described

the change in the concept of the electron during his lifetime. At first the electron was a minute, measurable, impenetrable ball; later it became a concentration of energy with its centre definable and its influence diminishing outwards to boundaries coterminous with the universe. This latter concept might be a symbol of sceptical truth. A fact may have a definable nucleus, but it is affected by, and affects, everything in the universe and so cannot be known. The sceptical is undoubtedly the better recognition of the nature of truth, but it has the disadvantage of being unpractical. Science is, after all, pursuing understanding rather than truth, a humbler and more useful achievement. Scientific progress is made largely by approximation and deduction. A new, if incomplete, truth is used as a stepping stone toward a more complete understanding which will probably contradict in part the assumptions upon which it was based. This does not matter. Newton may be rendered obsolete by Einstein, but astronomers will continue to use whichever formulation is the more effective, since a good approximation is of value while an impossible perfection is useless.

The origins of scientific and religious behaviour are to be found far back in the development of life. Fabre considered that his insects were completely mechanical in their behaviour, instinctive. A complete instinct consists of a chain of reflexes which makes possible the carrying out of a complex action without benefit of previous experience. Hodgson, on the other hand, found that many of his Mesopotamian wasps showed considerable intelligence in reconstructing interrupted patterns and in learning to improve defective performance of their instinctive roles. As we go up the scale of complexity in mammals, we see the rigidity of the instincts becoming more and more broken up and experience or training becoming needed to link them together. In man, the instincts are so fragmented that it is possible for American psychologists to deny their existence, although they admit the survival of elements called "drives".

From the evolutionary point of view the utility of both instinct, which is hereditary behaviour, and intelligence, which is learned or experimental behaviour, is their applicability to survival. Without instinct the intelligent would not know what to do, for they would not want anything for lack of "drive"; without intelligence the instinctive could not alter behaviour to meet new circumstances. The desirable balance between the two must vary with conditions.

At some time in the Eocene period, a branch of the Insectivora divided into two groups. One took to the ground where both food and enemies were

most abundant, and these developed into rodents. From the conventional Darwinian point of view, these had chosen the better part. Our common meadow-mouse is a triumph of natural selection. A female will mature in three months and thereafter will produce a family of some seven young every three weeks for the rest of her life. So many predators depend upon meadow-mice that they are not destroyed by their own abundance. Among so many offspring there must be a plethora of genetic mutations, the raw material of hereditary change, and with so much predation only the most efficient can survive. They should be the most rapidly evolving of mammals. Certainly they are very efficient if not very intelligent mice.

The other group took to the treetops, a very bad choice, and became the primates. Because treetops can be very cold, they were limited to the tropics; because they had to move constantly from one food source to another, it was difficult for them to carry young, which had to be reduced in number—usually to one a year; because treetops offered few enemies, selection was scanty. In fact, by conventional theory they should not have evolved at all, yet they did evolve. They seem to have hit upon the path of intelligence, of disjunct instincts which could be reassembled readily into new patterns to suit the environment. They did not need to wait for mutations of their instincts, but, if these came, they had already learned behaviour-patterns into which to fit them. So they evolved.

The ancestors of man returned to the ground, accepting its dangers as less lethal than starvation in the diminishing treetops. It is likely that at first they were little troubled, since the predators of the ground had no instinctive recognition of them as food. They shifted from a vegetable to an animal diet, and from that time we cannot deduce the habits or diet of men from their skeletons, as we do with other creatures. Their evolution was not concerned in any way with physical mutations, but only with changes of behaviour. Brains became progressively larger to a peak in the Upper Paleolithic period and then began to decline.

The triumph of intelligence, however, had been more apparent than real. Intelligent behaviour is not necessarily satisfactory behaviour. Intelligence makes it more possible to do what we wish to do, but what do we wish to do? That depends upon our instinctive drives, and these, like our muscles, tend to come in pairs of opposites. We have an instinct for construction, since we enjoy it, but we also enjoy destruction. We enjoy dominating and being dominated, friendship and quarrelling, home and travel. The list could be extended indefinitely. As far as we know, man and his ancestors have

always been sociable. How could these disorderly drives be kept in useful pattern? A band of monkeys is comparatively orderly and co-operative; pet monkeys are notably unreliable creatures, changing abruptly from one attitude to another. One part of the solution has been the long childhood during which the young ones ape the behaviour of the older and learn their behaviour pattern. The band is not a heterogeneous gathering but an orderly hierarchy in which each individual knows his status and limitations. His innate drives are linked by learned behaviour into a social pattern which each generation passes on to the next. In man, such tribal *mores* are accepted; but they also need explanation in myth, and so religion grows up and gropes toward enduring social truth.

With the growth of the band, the constructive evolution of the individual man seems to have ceased. The coherence of the society has become more important than the efficiency of its members. A few intelligent leaders in the society are sufficient, and, indeed, too many of them might make a great confusion. In the last fifteen thousand years human societies have evolved immensely while the individuals within them have declined somewhat in physique and size of brain and have gained only in resistance to disease. Very long ago the Protozoa found a way to safety and power by joining together, surrendering all individual initiative and personal identity to the Metazoic organism, becoming within it specialized cells, muscle, bone, or nerve, incapable of independent survival. In the same way man has been surrendering his individuality to society, a leviathan whose instinct is religion.

The duty of religion is to unite the people into a single body with a common purpose. Ninety-nine per cent of man's million years has been spent as a hunter and gatherer, always in danger of starvation, so that food was the first external aim of religion. In the caves of France and Spain are found the famous pictures of animals and with them dotted patterns which have been interpreted as sexual symbols. It has been suggested that the animal pictures are part of sympathetic magic, giving control over the animal by making his image, perhaps also training his spear by guiding it to the heart of the pictured bison. Punctures around the heart in some pictures make it probable that this explanation is in part correct. Another suggestion is that the association of animals and sex is a magical method of increasing the abundance of the game animal. This may be, though cause and effect seem to play little part in the thought of primitive hunters. But sex is one of the most ancient of instinctive drives, a releaser of energy and a solvent of reason. We find it in most early religions—in India, Babylon, Greece—as a form of ecstatic worship. Religion,

even the religion of hunters, may use sex to intensify religious feeling, and the attitude of the hunter toward his prey is one of love and respect.

Without religion, intelligence is dangerous. If one man sees another carrying desirable food, his intelligent reactions include that of knocking the man down and taking the food. The *mores* of society forbid this, since such action must weaken society as a whole; but the prohibition lessens the intelligence of the man's actions. The function of intelligence is to find ways of fulfilling instinctive drives; the function of religion is to pattern these drives into actions that will benefit society. Abstract ideas of morality mean nothing to the primitive or to the child, so they take the form of myth and cautionary tales, and the tale tends to become more important than its content. The pattern is learned early and so it lasts, and religion becomes the great conservating element in society.

With the coming of agriculture, man emerged gradually from preoccupation with wild animals, but they remained as symbols of bounty and terror and gave their forms to new gods. The rapidly growing societies were unfamiliar and needed more gripping religions to control them, and we find them linked by intensifiers such as human sacrifice and cannibalism. It seems probable that the Osiris play began with the sacrifice of a human victim in the part of the slain god and followed it with a cannibal feast as in Aztec Mexico. Among the kindly Egyptians the sacrifice was merely acted, and the feast became bread and beer. As agriculture became routine, the powerful intensifiers gave way to a pattern of worship—in Rome, of the gods of the ploughing, the cross-ploughing, the sowing of the seed and the harrowing, in their proper sequence. Beer or wine remained as an intensifier, since alcohol damps down intelligent self-control and releases the enthusiasm of instinct.

The lag of religion affects all societies and usually ends with the religion obsolete and the people undisciplined except by force. This process may be very slow, but in Egypt of the XVIII dynasty it came abruptly. Since the expulsion of the Hyksos, Egypt had built up wealth and empire under a series of warrior god-kings and the secular management of the priests of Ammon. Then Amenhotep IV came to the throne. His dreamy intelligence found no satisfaction in the religion of which he was god incarnate, so he replaced it with a monotheism in which the god was represented by Aton, the disc of the sun, whose name he took. Akhnaton's conception of god was far more refined than the animal gods of the twelve nomes, but that meant nothing to the labouring fellah whose life depended upon the bounty of Osiris and Ammon, and the reformation destroyed the network of religion that had held

the country together. Akhnaton's empire collapsed around him, and within two years of his death his religion had disappeared as well. The old religion was restored, but its control over the people had been broken. Military dictatorship and the rule of law followed, and Egypt, now linked by force and no longer by its gods and conventional morals, declined rapidly. Within a century it was depending upon mercenary soldiers, usually a symptom of schism between rulers and people.

Man has always been the principal enemy of man, and the comparative peace of Egypt, an oasis surrounded by thinly populated desert, found no parallel nearer than China. Between India and Greece were agricultural populations and vagrant pastoral peoples, and war was a constant threat. Religion changed to meet it, and the animal gods of food gave place to human gods of war. Assyrians, on the frontier of the rich valleys, learned from their enemies and turned their troops of cavalry, archers, and iron-armed infantry against their neighbours, and—under the leadership of their war-god, Assur—founded the greatest empire of their time. Tribes were uprooted and transplanted or taken as slaves, and soon the empire was a great bubble with an outer wall of armed worshippers of Assur and within an increasing multitude who hated Assur and his people. Two defeats and the bubble burst, leaving nothing behind. Force was not enough.

Empires were forming from China to Greece, made possible by the new weapons, but they divided and fought district against district for lack of any code of behaviour beyond that of tribal warfare. Everywhere prophets appeared and preached new doctrines of justice and love. Zoroastrianism, one of the earliest and most influential movements, provided a new morality for rulers and made possible the racial tolerance of the Persian and Hellenistic empires. Taoism, Buddhism, and (later) Christianity were religions of social despair, giving patterns of behaviour that would make life bearable to the underdog oppressed by a crushing ruling power. Confucianism and Roman Stoicism produced civil-service moralities of enduring value. We do not know to what extent these movements affected each other, but their basic moralities were remarkably similar. "Return good for evil" was taught by Lao-tse and Plato; "Do not do unto others what you would not have them do unto you" was Confucius' golden rule.

We know only scraps about the reactions of the conventional to the new religions. In Athens there was strong antipathy to sophists and philosophers on the ground that they undermined the state religion, which was true enough. In their intelligent pursuit of reason they encouraged thought about matters

which had been decided forever, but the misfortunes of Athens seem to have been due much more to the hysterical *demos* than to the friends of Socrates. Marcus Aurelius, painfully conscientious in his task of keeping the Roman Empire alive in spite of the Romans, saw the Christians as an un-coöperative un-assimilable nuisance, and persecuted them. The Christians knew nothing of science and cared little for philosophy. "What good is it to us that Socrates knew only that he knew nothing? We need to know." In this they were right. They needed a firm knowledge that would give them faith, hope, and charity to meet a threatening future. In their situation scientific fact and philosophical logic had nothing to offer. "I believe because it is impossible", said Tertullian.

The proof that they were right lay in their survival, even in Rome where the proletariat had ceased to be prolific, where the hope of the poor lay in riot and looting. What had happened to the disciplined Roman plebs which, in their early protests had threatened to secede but never to use violence to Rome? The Hannibalic war had destroyed the small-farm system and had driven the plebs into the cities; the wealthy had rationalized farming and had brought in slaves to do what work was needed. The old religion based upon agriculture and war had become meaningless, and the result was a bedlam of unchannelled instincts.

The situation of the American Negroes is much the same. The black tribes of Africa were orderly enough until the slave-trade broke in upon them. They were brought by the thousand to new lands and kept under conditions which prevented them from re-forming into new societies. When at last they were released from bondage, they were poor pariahs in a society in which they had little share. Where land was available, the mere fact of ownership kept them comparatively stable, if unprogressive. In such regions as Brazil and Central America, where colour was of small importance, they merged into the general community and contributed good men and bad like any other element in the melting pot. Especially in the Southern States they stagnated, often as sharecroppers, until the new machines displaced them and they turned to the cities of the north in search of jobs demanding no education or skill. Again they were reduced to the chaos of the slave days and the dominance of instinct, and even the control of ruthless power was lacking.

The fate of the Indians has been just the opposite. They were given reservations and allowances in exchange for the lands taken from them. They were tribally together, so they kept their customs, which had been suitable enough in hunters' wigwams but disqualified them for incorporation in the

growing society around them. Many shifted into the white man's world, and in a generation they were accepted and absorbed. On the reserves the old culture withers with every generation, and there is no social pressure toward adopting the alternative culture.

We attribute these troubles to our racial discrimination, but what of the white slums? The rationalization of farming has driven the unskilled whites also into the cities. Daniel Webster boasted that in his New Hampshire country no one needed to lock doors, since all people could be trusted. Today the crime rate in American cities is a disgrace to civilization. What more honest and responsible people can one find than the French-Canadian *habitants,* yet today criminals are one of Montreal's chief exports. Schools attempt to take the place of the decaying family and community life in which accepted standards and public opinion moulded the simian instincts of children. We are reaping the harvest of urbanism, for which we have no religious pattern.

As Don Quixote said: there are no eggs in last year's nests. The tribal ideals of the Old Testament threaten the peace of the world today. The communism of early Christianity ended with Ananias when divine power had to be called upon to supplement the Persian sanctions of heaven and hell. The popes reached a position of power only in the eleventh century, after ages of having been chivvied about by tribal kings and Roman nobles, and immediately the schism of gigantism began, the double standard of rulers and ruled. Since then, every century or two, a new revival has been needed to bridge the gulf between them—the Franciscans, the Lollards and Hussites, the Reformation, the Puritans, the Methodists, the Salvation Army—while, mingling with official religion, the social ideal shifted to tribal nationalism and the worship of money.

The ecumenical movement of today does not represent so much an increase in kindliness and tolerance as a weakening of the old divisive dogmas. A lather of soap-bubbles is weakest when the bubbles become largest. If the poor should revert to basic Christianity, they and society might benefit; if all should seek to be poor, humble, pacific, the motivation and the defence of society would collapse. The plight of our society is too complex for simple solutions.

So long as our economic machine can be kept turning, science will move on and religion will struggle to retain every last drop of the bath-water without regard to the neglected baby. The proof of the rightness of a religion does not lie with the book of Genesis but with the survival and evolution of the believers. The need for religion has never been greater. The world of today is faced with three alternatives: we can move on toward becoming a social

organism in which the individual will become a cell and lose all freedom; we can regress toward the state of zoo baboons, using the intensifiers of sex, destruction, and illusion to increase confusion; or we can find a new religious pattern in which a minority can live together in constructive harmony. Under the shadow of the hydrogen bomb it is more than ever necessary to love life and mankind, and to believe in them because it is impossible.

THE ECHO-GRAPH

M. Travis Lane

The echo sounder's cracked or wry—
in such a sea!
The wind makes fishy squeals. The engines grind
and stutter. Each wave's shock
jars on the graph a false abyss.
My speaker's dumb.

The chart I have? Hakluyt's, his Marignolli's, who
within ten miles of Paradise, reported
he lay to a night and heard
God's fountains roar.
Afraid of flames he did not see, high rocks,
he noted Eden in his log,
but kept off shore.

For me no antiquated stars.
My radar's mystic: all is green.
The sea noise deafens. Shall I make
sea-anchor in unsounded sea? The echoes break
the echo-graph. And port?
I thought I heard—what lofty garden fountaining!
My compass spins: fireworks; the sea's electric.
Call again. Where Marignolli stood . . .
delusions of the fifteenth-century mind.

I start the echo. "Here."
The whole sea answers, rises
as a hill. (How beautiful the feet of those—)
Too noisy, I can't hear. I log
"sea squall; the instruments disturbed."