

THE EMERGENCE OF GOOD AND EVIL

by *Oscar Riddle*

Whatever they may be said to be, good and evil have their home in living organisms. More definitely, their home is almost limited to fellow creatures of our own species—to individuals, each of whom Shafer has called “a fearful compound of grandeur and misery.” And, paradox or not, these moral twins have no existence apart from their self-building home. Too, this home—the marvelous body of man—is the most evolved and intricate of living units in the known universe. But the bodies of animals were forefathers of those of man, and a series of simpler animals sprouted roots for morality long before the blossom—good and evil—could arise. It thus becomes clear that a biologist may examine these twins in the cradle where they were born. This task would seem easier if that cradle were a thing firmly fixed in space and time. Actually, however, we deal with a cradle that is slowly self-building, fluid, repetitive, conditional—all for the good reason that it is *living organism*.

An organism—any organism—can be neither swiftly dissected nor easily grasped in thought. A century of astonishingly successful biological experience has provided us with several concepts relating to organism which are not yet a part of popular thought. The thing that we call an organism must be regarded as a self-building, self-united whole. It is not a machine. It definitely is an integrated unity whose integrity, at every instant, is dependent upon pervasive showers of regulated release and transfer of energy, and on free-flowing adjustments, all made at both molecular and bodily levels. The continuing total or sum of such transfers and adjustments provides the phenomenon we call life; an organism itself does not exist apart from this living process.

Since it will later be found that good and evil do not exist apart from “choice,” one here notes that they are narrowly limited to a part of the

Oscar Riddle is a physiological biologist who was on the research staff of the Carnegie Station for Experimental Evolution for more than three decades. This paper is from an address given in 1956 to the conference on “Good and Evil” under the auspices of the Institute on Religion in an Age of Science. A portion of this address appeared in the now discontinued *Unity*. It is published here in full (with some revisions by the author) for the first time.

animal world—and wholly absent from the entire gamut of plant evolution. “Choice” is tightly associated with fully expanded nervous systems and quotas of special hormones. The organism called man is a relatively new item—the species now floating at the flowering end of a long line of natural processes which have attended all moments of the epoch of life on earth.

EVOLUTIONARY ORIGIN OF MORALS

In looking for the origin of good and evil, the search might, nevertheless, properly extend to whatever is known to exist or to have probable existence. Within the universe, since the Darwin of 1859, the natural sciences find that the something that is truly “universal” is *process*; and this says philosopher John Dewey, “is the most revolutionary discovery yet made.” Two features or phases of that process—both really emergents of transformism or change with time—include the whole of that process. A brief reference to those two phases here called principles, will assist the closer view which rational thought requires.

The doors to the ever-emerging new are opened by the blended operation of the two principles of chemical combination and that of integrative levels. Even chemical union between two atoms or molecules yields a molecule with properties not present in either of the two units that entered into it; new properties thus emerge. This endless, inevitable, and self-propelling procedure, continued through all time, seems to have provided us with all the complex molecules or compounds now found in the non-living universe and in the living world and also—subject to what is said below on integrative levels—with all of the new properties attached to these compounds.. It is entirely probable that some such compounds and properties, new to our earth, are still arising for the first time within the living world.

The factors concerned in changes in species have been found to include not only the natural selection of Darwin but also mutation, recombination, and population drift. Heritable changes are thus covered by this law of modification with descent. In fact, it is to a series of special molecules called genes—proved bearers of heredity—that we now confidently look for rewarding insight into the intimate processes which build the organism, which both initiate and usually conserve changes in organism, and which make a primary contribution to the thread of life on which the organism endures from epoch to epoch. Other principles or laws relate to several more localized areas or processes of the single organism, such as digestive and psychic activities; all reference to such laws is omitted here. At this point, however, it may be added that

ZYGON

the principle of chemical combination acting in the inorganic world is already known to have yielded differing molecules by the thousands; while in the protein-infested living world, such molecules have spawned in terms of millions. Also one notes that the word "emergence," as used here, refers simply to the new properties which arise compulsively from new chemical associations; by no possibility does it have an antimechanistic meaning.

Within the scale of increasing complexity of the actual world, that is, along the path taken by all evolutionary process, the competent student meets—or seems to meet—a very few "wholes" which exhibit new and notably unpredictable properties. Such states, stages, or "wholes" are called "integrative levels." One such is the highly complex molecular state that attained the property of self-duplication and growth (liveness; organism). This superior type of aggregate became subject to biological laws—to which many rather similar groupings were not subject—and through the ages have proved their capacity to yield further new and unpredictable dimensions and properties. Another such level—and topmost in the entire evolutionary process—is human society. This supra-organism is clearly man's own creation. But only relatively recent men—men already equipped with such rare emergents as language and abstract thought—could begin to give it form, power, and promise. The laws and properties of society are, again, unpredictable and wholly unlike those of the individual men who compose it. Largely anticipating the conclusion to which this sketch leads, one may here remark that it is only in the fluid man-made realm, society, that morals—good and evil—acquire their essential stature and meaning. If man had proved himself a type of "lone wolf," there would now exist on earth no such things as language, man-made society, good, and evil.

MORALITY EMERGES ONLY AFTER CHOICE-MAKING EMERGED

One must join John Dewey (*Human Nature and Conduct*, 1933) in saying that "morals has to do with all activity into which alternative possibilities enter. For wherever they enter a difference between better and worse arises. . . . The better is good. . . . The worse or evil is rejected good; until it is rejected it is a competing good." Here is essential aid to perspective, to clear definition, and to inclusion of the available facts. Incidentally, it should not be surprising if, in the always growing complexity of man's social life, some things now and again rejected (as evil) in individual or even in group "choice," are ultimately accepted as "good" by that or another group. Hence, there is a need for ever increasing comprehension, for endless discussion, and for fresh exam-

ination of the presumed good and the presumed evil. On this broad playground of human choice, one may suspect that, to date, biological man has made more hits than errors, though social man may be still merely striving to learn the rules of the game.

Since good and evil emerge only when an alternative activity is elected, it follows—through definition—that the home of these twins is limited to those higher animals which meet this condition. “Morals is at home wherever considerations of the worse and the better are involved,” says Dewey. It is, then, wholly clear that *Homo sapiens* is foremost in this field, and we here omit discussion of such minor details as which of his own ancestors, including earlier species of *Homo*, and which if any of his competitors among higher animals share morality with him. It is notable, however, that morals—good and evil—do not automatically attach to all stages and conditions of a human being. The period of infancy of all of us and the period of insanity of some of us are excluded; they are *unmoral*. There, no consideration of better and worse is involved.

On the other hand, the precursors or roots of morality are found in abundance in quite dissimilar higher but subhuman species. Those roots are several loosely related things, and even a slight search among them discloses something very like a conscience in many dogs. Likewise, bear cubs and the young of baboons are disciplined by their parents; and here the habits thus early formed and enforced in the offspring, lead to one *parent-desired* alternative activity instead of another.

MORALITY ALSO INSEPARABLE FROM SOCIAL LIFE

Among the innate roots of morals and of conscience in higher animals are sociality, sympathy, parental love. The trait of sociality is especially meaningful, since in some species of monkeys and apes it led to the “family” group. Scholars quite generally agree that the human family has been the foremost institution in the development of man’s basic morality. In regard to early Nile Valley man, Breasted (*The Dawn of Conscience*, 1933) says:

As we look back into human beginnings we discover at once that man began as an *unmoral* savage. . . . It is safe to conclude that, like modern natives still surviving in a primitive stage of life, the earliest Egyptians had only *unmoral* local gods, and a body of customs which had not yet become morals. In their own deepening experience and broadening vision we must find the magic which transformed these primitive hunters and their little settlements of wattle huts into a great society. . . . Furthermore the earliest morals were only folk custom which might have nothing to do with the gods or with religion. . . . The moral

ZYGON

impulses in the life of man have grown up out of the influences that operate in family relationships. . . . As historical fact, it is to family life that we owe the greatest debt which the mind of man can conceive.¹

The word "conscience"—neglected to this point—crept into the statement just made above. It is distinct from good and evil, and the difference should not remain unnoted. But it takes no long excursion along the ladder of living things to learn the nature and the home of conscience. One does need to look mainly to man, and there focus sharply on one usually overlooked contingency in the life of a human being. The whole matter is well summarized in this single sentence of T. H. Green: "No man makes a conscience for himself; he needs society to make it for him." A human being reared in isolation, wholly apart from all humankind, would have no conscience. This valued human asset is among the magnificent evolutionary emergents at the family and social level—a product of suitable human association.

Quite evident now is the fact—very clearly restated by Weston LaBarre (*The Human Animal*, 1954)—that "human society is just as firmly rooted in biology as is ant society; that the very possibility of 'family life' arose when our primate ancestors added a non-seasonal sexuality to the ancient mammalian concern of a mother for her young—in other words, when a female could be interested in a husband and children at the same time. Only in a permanent group like this could children be taken care of through a longer infancy; only where all this was true was it possible for *language* to be developed. With language came the possibility for abstract thought and for truly human society." Further, since only society can build a conscience for the individual, society shares heavily with all the basic (genetic) biology in the building of human morality. Again, though our cultural satisfactions are numerous indeed, anthropologist LaBarre thinks that they are deeply founded in "pleasure in other people's bodies" and, moreover, that the only two "unqualifiedly good things in human life are connubial and parental love."

The purely natural and quite inevitable characteristics of good and evil are well illustrated by some qualities which are merely the extremes of one and the same thing. They are good when present in small or moderate amount; evil when present in excess. They are qualitatively the same, and only quantitatively do they differ. Anxiety is such a trait or quality. Anthropologist Margaret Mead (*New York Times Magazine*, May 20, 1956) has well described these two aspects of anxiety. It is civilized man that is anxious; the untaught savage is frightened or terrorized. "It is clear that we have developed a society which depends on

having the right amount of anxiety to make it work." It is good to have enough anxiety to wish to get well when sick, to see a doctor about a symptom which may indicate cancer, to check up on the old life insurance policy, and to refuse an auto ride with a near-blind or irresponsible driver. But it is evil to have the excess of anxiety that breaks one's own mental health or that, through vocalization or other expression of such anxiety, disturbs all family life.

EVIL OF REJECTING NEW REVELATION ON GOOD AND EVIL

With the preceding lines we end this chore of sketching present insights into the nature and biological-social origin of good and evil. Indeed, we end a sketch of some explosive scientific insights which overwhelm an age-old theological dogma but which—because of the power of religion—can neither spread the news of its victory nor become socially useful knowledge. But here and now we could avoid examining this dilemma only by flouting candor and by mocking the need to use new facts for constructive thought and moral act. Is this New Revelation an effective possession—or likely to become a possession—of any people or society of our time? For all peoples—at least outside the Iron Curtain—the answer is clearly "No." And, to the author, the deeply menacing implications of this answer are known to include also an array of such items of scientific enlightenment which our own generation is "conditioned"—by the world religions—*not* to hear, accept, or use.

The reason for this is, of course, readily traced: The new facts forcefully tend to replace supernaturalism with naturalism, and now, as always, there are persons, laws, traditions, and powerful religious institutions ready to resist any naturalistic view of self, and reluctant to give anything more than a quick and careless nod to the extraordinary creative powers of the human self. The supporters of supernaturalism—the organized religions—effectively exclude a wealth of such information from practically all of the schoolrooms of the free world. The facts and frame of thought briefly sketched above can be taught in the primary and secondary schools of no Christian nation. Further, in only a minority of their colleges does a thin fraction of students get even sketchy instruction in any of several such meaningful areas as are surveyed in the preceding pages.

So clearly paramount is my appraisal of the harm done by religion's suppression of sensitive scientific thought—in the schools of advanced nations during the century since the Darwin of 1859—that I may simply try to express it as an epoch in which the religions—despite their many services—are left in deep debt to those peoples and to our present

ZYGON

civilization. The personal observations supporting that conclusion spread to five continents and to an extensive study (with five others) of our own high schools.²

From the above indictment of the organized religions, it also follows that during that same century scholarship in general has inadequately met much that is meaningful, perhaps essential, for the building of a genuinely modern society. How, then, may we expect our lawgivers, administrators, businessmen, teachers, ministers, and writers to have met and digested these far-flung disclosures only recently wrenched—in hard-earned fragments—from the widely stretched inorganic and living worlds? Why expect adequate penetrance of this tabooed knowledge into even the highest scholarship of art, literature, or history when it is quite clear that even many scientists—more especially those trained in the physical sciences—remain unaware of some or many vital segments of the evidence that establishes it? For example, more than a few of our foremost scientists do not accept the *natural* origin of the *good*—that is, of morals—and they may give this as a basis for their belief in a “universe of the spirit,” and so in a form of religion. In 1953, chemist Conant, former president of Harvard, expressed this view with unusual clarity:³

As to the unifying materialistic World Hypothesis, my doubt stems from its manifest inadequacy. As a conceptual scheme attempting to account for everything in the whole universe, it seems to me unsatisfactory because it is incomplete. It fails to provide for the altruistic and idealistic side of human nature . . . for the unselfish ways in which human beings often act with compassion, love, friendliness, self-sacrifice, the desire to mitigate human suffering. In short, it is the problem of “good,” not evil, that requires some other formulation of human personality than that provided by the usual naturalistic moralist.

We ask: When one considers the belated, slight, and occasional college instruction offered on these scattered elements of learning, may one expect more than a fraction of physical scientists—a group compelled to go deeply into mathematics in addition to both physics and chemistry—to have mastered what our Darwins, Frazers, Deweys, Freuds, Breasteds, and their legion of successors have done to uncover the sources of morality? Completely contradicting Conant, our most competent investigators of the areas involved are in full agreement that “good” and evil came to us as a pair—and in the way lightly sketched above. To them, *naturalism* most definitely does *not* “fail to provide for the altruistic and idealistic side of human nature.” This region of crucial fact is known—and it is usually wholly convincing—to practically all competent students of *animal* biology and of genetic psychology; but it is unknown

or unfamiliar ground to most botanists and physical scientists. This untaught but incisive attainment of animal biology and also this prime source of uncritical "religious" thought in many scientists are among the subjects treated more adequately in my book *The Unleashing of Evolutionary Thought*.⁴

For all advanced literate peoples, the huge task ahead is the *undoing* of a wrong moral choice—the *uprooting* of an evil now firmly fixed in much human history. Unless or until large segments of a liberated "religious" *fervor* are enlisted actively in this task, it may fail; the contribution of science and scientists is perhaps not enough. It is everywhere a schizophrenic culture that only half-consciously grapples with the as yet unfaced, unaccustomed, but clear-cut and prime moral question: Is supernaturalism good or bad in the leading societies of today?

One conclusion from my book of 1954 contributes greatly to an answer to the questions just asked. It seems more than a possibility that the major indictment of Christianity, supernaturalism included, rests upon the total of its role—mainly outside of Russia—during the two phases of the Russian Revolution of 1917 and the preceding twenty to fifty years. Within the latter period, Russian reaction—sequentially in the intelligentsia, menshevism, bolshevism—was originally a university-based movement directed sanely and mainly against czar, nobles, and church, with bolshevism eventually winning (against several months of Kerensky's menshevism) only by a narrow margin. The main question is this: Would a displacement of supernaturalism by naturalism in any leading democracy *prior* to 1900–1917 (this was surely prevented by Christianity) have served to shape the total Russian Revolution in a way much more friendly to the West?

My own extensive study, made indeed only partly within my professional training, has fully convinced me that it was mainly Christian influence—through its long and harmful over-all conditioning of Western scholarship and its effective control of education—that prevented one or another such Western nation from displacing supernaturalism with plenary secularism (as already had been accomplished in science and was accomplished overnight by the revolt in Russia) at some time between the Darwin of 1859 and the bolshevik overturn of November, 1917. I am convinced, too, that this would have much dulled the Russian ax before it was fashioned. Of course, there is need for full debate on this interpretation of the two complicated subjects involved. But the broad record before me requires that we hold Christianity responsible for a part, or possibly for all, of the Western world's incalculable costs

ZYGON

and dangers of our continuing Cold War and also for the recent "Hot Wars" in Greece, Korea, and Viet Nam.

NOTES

1. James H. Breasted, *The Dawn of Conscience* (New York: Charles Scribner's Sons, 1933). Sentences from pp. x, 24, 12, 18, 121, 411.
2. O. Riddle (ed.), *The Teaching of Biology in Secondary Schools of the United States* (Lancaster, Pa.: Science Press, 1942).
3. James B. Conant, *Modern Science and Modern Man* (New York: Columbia University Press, 1952), pp. 98-99.
4. New Hyde Park, N.Y.: University Books, 1954.