

Evolution and Ethics

Thomas Henry Huxley

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Evolution and Ethics

Thomas Henry Huxley

PROLEGOMENA

I

IT MAY be safely assumed that, two thousand years ago, before Cæsar set foot in southern Britain, the whole country—side visible from the windows of the room in which I write, was in what is called "the state of nature". Except, it may be, by raising a few sepulchral mounds, such as those which still, here and there, break the flowing contours of the downs, man's hands had made no mark upon it; and the thin veil of vegetation which overspread the broad-backed heights and the shelving sides of the coombs was unaffected by his industry. The native grasses and weeds, the scattered patches of gorse, contended with one another for the possession of the scanty surface soil; they fought against the droughts of summer, the frosts of winter, and the furious gales which swept, with unbroken force, now from the Atlantic, and now from the North Sea, at all times of the year; they filled up, as they best might, the gaps made in their ranks by all sorts of underground and overground animal ravagers. One year with another, an average population, the floating balance of the unceasing struggle for existence among the indigenous plants, maintained itself. It is as little to be doubted, that an essentially similar state of nature prevailed, in this region, for many thousand years before the coming of Cæsar; and there is no assignable reason for denying that it might continue to exist through an equally prolonged futurity, except for the intervention of man.

Reckoned by our customary standards of duration, the native vegetation, like the "everlasting hills" which it clothes, seems a type of permanence. The little Amarella Gentians, which abound in some places to-day, are the descendants of those that were trodden underfoot by the prehistoric savages who have left their flint tools about, here and there; and they followed ancestors which, in the climate of the glacial epoch, probably flourished better than they do now. Compared with the long past of this humble plant, all the history of civilized men is but an episode.

Yet nothing is more certain than that, measured by the liberal scale of time—keeping of the universe, this present state of nature, however it may seem to have gone and to go on for ever, is but a fleeting phase of her infinite variety; merely the last of the series of changes which the earth's surface has undergone in the course of the millions of years of its existence. Turn back a square foot of the thin turf, and the solid foundation of the land, exposed in cliffs of chalk five hundred feet high on the adjacent shore, yields full assurance of a time when the sea covered the site of the "everlasting hills"; and when the vegetation of what land lay nearest, was as different from the present Flora of the Sussex Downs, as that of Central Africa now is. No less certain is it that, between the time during which the chalk was formed and that at which the original turf came into existence, thousands of centuries elapsed, in the course of which, the state of nature of the ages during which the chalk was deposited, passed into that which now is, by changes so slow that, in the coming and going of the generations of men, had such witnessed them, the contemporary conditions would have seemed to be unchanging and unchangeable.

But it is also certain that, before the deposition of the chalk, a vastly longer period had elapsed, throughout which it is easy to follow the traces of the same process of ceaseless modification and of the internecine struggle for existence of living things; and that even when we can get no further back, it is not because there is any reason to think we have reached the beginning, but because the trail of the most ancient life remains hidden, or has become obliterated.

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Thus that state of nature of the world of plants, which we began by considering, is far from possessing the attribute of permanence. Rather its very essence is impermanence. It may have lasted twenty or thirty thousand years, it may last for twenty or thirty thousand years more, without obvious change; but, as surely as it has followed upon a very different state, so it will be followed by an equally different condition. That which endures is not one or another association of living forms, but the process of which the cosmos is the product, and of which these are among the transitory expressions. And in the living world, one of the most characteristic features of this cosmic process is the struggle for existence, the competition of each with all, the result of which is the selection, that is to say, the survival of those forms which, on the whole, are best adapted to the conditions which at any period obtain; and which are, therefore, in that respect, and only in that respect, the fittest. The acme reached by the cosmic process in the vegetation of the downs is seen in the turf, with its weeds and gorse. Under the conditions, they have come out of the struggle victorious; and, by surviving, have proved that they are the fittest to survive.

That the state of nature, at any time, is a temporary phase of a process of incessant change, which has been going on for innumerable ages, appears to me to be a proposition as well established as any in modern history. Paleontology assures us, in addition, that the ancient philosophers who, with less reason, held the same doctrine, erred in supposing that the phases formed a cycle, exactly repeating the past, exactly foreshadowing the future, in their rotations. On the contrary, it furnishes us with conclusive reasons for thinking that, if every link in the ancestry of these humble indigenous plants had been preserved and were accessible to us, the whole would present a converging series of forms of gradually diminishing complexity, until, at some period in the history of the earth, far more remote than any of which organic remains have yet been discovered, they would merge in those low groups among which the boundaries between animal and vegetable life become effaced.

The word "evolution", now generally applied to the cosmic process, has had a singular history, and is used in various senses. Taken in its popular signification it means progressive development, that is, gradual change from a condition of relative uniformity to one of relative complexity; but its connotation has been widened to include the phenomena of retrogressive metamorphosis, that is, of progress from a condition of relative complexity to one of relative uniformity.

As a natural process, of the same character as the development of a tree from its seed, or of a fowl from its egg, evolution excludes creation and all other kinds of supernatural intervention. As the expression of a fixed order, every stage of which is the effect of causes operating according to definite rules, the conception of evolution no less excludes that of chance. It is very desirable to remember that evolution is not an explanation of the cosmic process, but merely a generalized statement of the method and results of that process. And, further, that, if there is proof that the cosmic process was set going by any agent, then that agent will be the creator of it and of all its products, although supernatural intervention may remain strictly excluded from its further course.

So far as that limited revelation of the nature of things, which we call scientific knowledge, has yet gone, it tends, with constantly increasing emphasis, to the belief that, not merely the world of plants, but that of animals; not merely living things, but the whole fabric of the earth; not merely our planet, but the whole solar system; not merely our star and its satellites, but the millions of similar bodies which bear witness to the order which pervades boundless space, and has endured through boundless times; are all working out their predestined courses of evolution.

With none of these have I anything to do, at present, except with that exhibited by the forms of life which tenant the earth. All plants and animals exhibit the tendency to vary, the causes of which have yet to be ascertained; it is the tendency of the conditions of life, at any given time, while favouring the existence of the variations best adapted to them, to oppose that of the rest and thus to exercise selection; and all living things tend to multiply without limit, while the means of support are limited; the obvious cause of which is the production of offspring more numerous than their progenitors, but with equal expectation of life in the actuarial sense. Without the first tendency there could be no evolution. Without the second, there would be no good reason why one variation

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should disappear and another take its place; that is to say, there would be no selection. Without the third, the struggle for existence, the agent of the selective process in the state of nature, would vanish.

Granting the existence of these tendencies, all the known facts of the history of plants and of animals may be brought into rational correlation. And this is more than can be said for any other hypothesis that I know of. Such hypotheses, for example, as that of the existence of a primitive, orderless chaos; of a passive and sluggish eternal matter moulded, with but partial success, by archetypal ideas; of a brand-new world— stuff suddenly created and swiftly shaped by a supernatural power; receive no encouragement, but the contrary, from our present knowledge. That our earth may once have formed part of a nebulous cosmic magma is certainly possible, indeed seems highly probable; but there is no reason to doubt that order reigned there, as completely as amidst what we regard as the most finished works of nature or of man. The faith which is born of knowledge, finds its object in an eternal order, bringing forth ceaseless change, through endless time, in endless space; the manifestations of the cosmic energy alternating between phases of potentiality and phases of explication. It may be that, as Kant suggests, every cosmic magma predestined to evolve into a new world, has been the no less predestined end of a vanished predecessor.

II

Three or four years have elapsed since the state of nature, to which I have referred, was brought to an end, so far as a small patch of the soil is concerned, by the intervention of man. The patch was cut off from the rest by a wall; within the area thus protected, the native vegetation was, as far as possible, extirpated; while a colony of strange plants was imported and set down in its place. In short, it was made into a garden. At the present time, this artificially treated area presents an aspect extraordinarily different from that of so much of the land as remains in the state of nature, outside the wall. Trees, shrubs, and herbs, many of them appertaining to the state of nature of remote parts of the globe, abound and flourish. Moreover, considerable quantities of vegetables, fruits, and flowers are produced, of kinds which neither now exist, nor have ever existed, except under conditions such as obtain in the garden; and which, therefore, are as much works of the art of man as the frames and glass-houses in which some of them are raised. That the "state of Art", thus created in the state of nature by man, is sustained by and dependent on him, would at once become apparent, if the watchful supervision of the gardener were withdrawn, and the antagonistic influences of the general cosmic process were no longer sedulously warded off, or counteracted. The walls and gates would decay; quadrupedal and bipedal intruders would devour and tread down the useful and beautiful plants; birds, insects, blight, and mildew would work their will; the seeds of the native plants, carried by winds or other agencies, would immigrate, and in virtue of their long-earned special adaptation to the local conditions, these despised native weeds would soon choke their choice exotic rivals. A century or two hence, little beyond the foundations of the wall and of the houses and frames would be left, in evidence of the victory of the cosmic powers at work in the state of nature, over the temporary obstacles to their supremacy, set up by the art of the horticulturist.

It will be admitted that the garden is as much a work of art, or artifice, as anything that can be mentioned. The energy localized in certain human bodies, directed by similarly localized intellects, has produced a collocation of other material bodies which could not be brought about in the state of nature. The same proposition is true of all the works of man's hands, from a flint implement to a cathedral or a chronometer; and it is because it is true, that we call these things artificial, term them works of art, or artifice, by way of distinguishing them from the products of the cosmic process, working outside man, which we call natural, or works of nature. The distinction thus drawn between the works of nature and those of man, is universally recognized; and it is, as I conceive, both useful and justifiable.

III

No doubt, it may be properly urged that the operation of human energy and intelligence, which has brought into existence and maintains the garden, by what I have called "the horticultural process", is, strictly speaking, part and parcel of the cosmic process. And no one could more readily agree to that proposition than I. In fact, I do not know that any one has taken more pains than I have, during the last thirty years, to insist upon the doctrine, so much reviled in the early part of that period, that man, physical, intellectual, and moral, is as much a part of nature, as purely a product of the cosmic process, as the humblest weed.

But if, following up this admission, it is urged that, such being the case, the cosmic process cannot be in antagonism with that horticultural process which is part of itself—I can only reply, that if the conclusion that the two are antagonistic is logically absurd, I am sorry for logic, because, as we have seen, the fact is so. The garden is in the same position as every other work of man's art; it is a result of the cosmic process working through and by human energy and intelligence; and, as is the case with every other artificial thing set up in the state of nature, the influences of the latter are constantly tending to break it down and destroy it. No doubt, the Forth bridge and an ironclad in the offing, are, in ultimate resort, products of the cosmic process; as much so as the river which flows under the one, or the sea—water on which the other floats. Nevertheless, every breeze strains the bridge a little, every tide does something to weaken its foundations; every change of temperature alters the adjustment of its parts, produces friction and consequent wear and tear. From time to time, the bridge must be repaired, just as the ironclad must go into dock; simply because nature is always tending to reclaim that which her child, man, has borrowed from her and has arranged in combinations which are not those favoured by the general cosmic process.

Thus, it is not only true that the cosmic energy, working through man upon a portion of the plant world, opposes the same energy as it works through the state of nature, but a similar antagonism is everywhere manifest between the artificial and the natural. Even in the state of nature itself, what is the struggle for existence but the antagonism of the results of the cosmic process in the region of life, one to another?

IV

Not only is the state of nature hostile to the state of art of the garden; but the principle of the horticultural process, by which the latter is created and maintained, is antithetic to that of the cosmic process. The characteristic feature of the latter is the intense and unceasing competition of the struggle for existence. The characteristic of the former is the elimination of that struggle, by the removal of the conditions which give rise to it. The tendency of the cosmic process is to bring about the adjustment of the forms of plant life to the current conditions; the tendency of the horticultural process is the adjustment of the conditions to the needs of the forms of plant life which the gardener desires to raise.

The cosmic process uses unrestricted multiplication as the means whereby hundreds compete for the place and nourishment adequate for one; it employs frost and drought to cut off the weak and unfortunate; to survive, there is need not only of strength, but of flexibility and of good fortune.

The gardener, on the other hand, restricts multiplication; provides that each plant shall have sufficient space and nourishment; protects from frost and drought; and, in every other way, attempts to modify the conditions, in such a manner as to bring about the survival of those forms which most nearly approach the standard of the useful, or the beautiful, which he has in his mind.

If the fruits and the tubers, the foliage and the flowers thus obtained, reach, or sufficiently approach, that ideal, there is no reason why the status quo attained should not be indefinitely prolonged. So long as the state of nature remains approximately the same, so long will the energy and intelligence which created the garden suffice to maintain it. However, the limits within which this mastery of man over nature can be maintained are narrow. If

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the conditions of the cretaceous epoch returned, I fear the most skilful of gardeners would have to give up the cultivation of apples and gooseberries; while, if those of the glacial period once again obtained, open asparagus beds would be superfluous, and the training of fruit trees against the most favourable of south walls, a waste of time and trouble.

But it is extremely important to note that, the state of nature remaining the same, if the produce does not satisfy the gardener, it may be made to approach his ideal more closely. Although the struggle for existence may be at end, the possibility of progress remains. In discussions on these topics, it is often strangely forgotten that the essential conditions of the modification, or evolution, of living things are variation and hereditary transmission. Selection is the means by which certain variations are favoured and their progeny preserved. But the struggle for existence is only one of the means by which selection may be effected. The endless varieties of cultivated flowers, fruits, roots, tubers, and bulbs are not products of selection by means of the struggle for existence, but of direct selection, in view of an ideal of utility or beauty. Amidst a multitude of plants, occupying the same station and subjected to the same conditions, in the garden, varieties arise. The varieties tending in a given direction are preserved, and the rest are destroyed. And the same process takes place among the varieties until, for example, the wild kale becomes a cabbage, or the wild *Viola tricolor* a prize pansy.

V

The process of colonization presents analogies to the formation of a garden which are highly instructive. Suppose a shipload of English colonists sent to form a settlement, in such a country as Tasmania was in the middle of the last century. On landing, they find themselves in the midst of a state of nature, widely different from that left behind them in everything but the most general physical conditions. The common plants, the common birds and quadrupeds, are as totally distinct as the men from anything to be seen on the side of the globe from which they come. The colonists proceed to put an end to this state of things over as large an area as they desire to occupy. They clear away the native vegetation, extirpate or drive out the animal population, so far as may be necessary, and take measures to defend themselves from the re-immigration of either. In their place, they introduce English grain and fruit trees; English dogs, sheep, cattle, horses; and English men; in fact, they set up a new Flora and Fauna and a new variety of mankind, within the old state of nature. Their farms and pastures represent a garden on a great scale, and themselves the gardeners who have to keep it up, in watchful antagonism to the old regime. Considered as a whole, the colony is a composite unit introduced into the old state of nature; and, thenceforward, a competitor in the struggle for existence, to conquer or be vanquished.

Under the conditions supposed, there is no doubt of the result, if the work of the colonists be carried out energetically and with intelligent combination of all their forces. On the other hand, if they are slothful, stupid, and careless; or if they waste their energies in contests with one another, the chances are that the old state of nature will have the best of it. The native savage will destroy the immigrant civilized man; of the English animals and plants some will be extirpated by their indigenous rivals, others will pass into the feral state and themselves become components of the state of nature. In a few decades, all other traces of the settlement will have vanished.

VI

Let us now imagine that some administrative authority, as far superior in power and intelligence to men, as men are to their cattle, is set over the colony, charged to deal with its human elements in such a manner as to assure the victory of the settlement over the antagonistic influences of the state of nature in which it is set down. He would proceed in the same fashion as that in which the gardener dealt with his garden. In the first place, he would, as far as possible, put a stop to the influence of external competition by thoroughly extirpating and excluding the native rivals, whether men, beasts, or plants. And our administrator would select his human agents, with a view to his ideal of a successful colony, just as the gardener selects his plants with a view to his ideal of useful or beautiful products.

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In the second place, in order that no struggle for the means of existence between these human agents should weaken the efficiency of the corporate whole in the battle with the state of nature, he would make arrangements by which each would be provided with those means; and would be relieved from the fear of being deprived of them by his stronger or more cunning fellows. Laws, sanctioned by the combined force of the colony, would restrain the self-assertion of each man within the limits required for the maintenance of peace. In other words, the cosmic struggle for existence, as between man and man, would be rigorously suppressed; and selection, by its means, would be as completely excluded as it is from the garden.

At the same time, the obstacles to the full development of the capacities of the colonists by other conditions of the state of nature than those already mentioned, would be removed by the creation of artificial conditions of existence of a more favourable character. Protection against extremes of heat and cold would be afforded by houses and clothing; drainage and irrigation works would antagonize the effects of excessive rain and excessive drought; roads, bridges, canals, carriages, and ships would overcome the natural obstacles to locomotion and transport; mechanical engines would supplement the natural strength of men and of their draught animals; hygienic precautions would check, or remove, the natural causes of disease. With every step of this progress in civilization, the colonists would become more and more independent of the state of nature; more and more, their lives would be conditioned by a state of art. In order to attain his ends, the administrator would have to avail himself of the courage, industry, and co-operative intelligence of the settlers; and it is plain that the interest of the community would be best served by increasing the proportion of persons who possess such qualities, and diminishing that of persons devoid of them. In other words, by selection directed towards an ideal.

Thus the administrator might look to the establishment of an earthly paradise, a true garden of Eden, in which all things should work together towards the well-being of the gardeners: within which the cosmic process, the coarse struggle for existence of the state of nature, should be abolished; in which that state should be replaced by a state of art; where every plant and every lower animal should be adapted to human wants, and would perish if human supervision and protection were withdrawn; where men themselves should have been selected, with a view to their efficiency as organs for the performance of the functions of a perfected society. And this ideal policy would have been brought about, not by gradually adjusting the men to the conditions around them, but by creating artificial conditions for them; not by allowing the free play of the struggle for existence, but by excluding that struggle; and by substituting selection directed towards the administrator's ideal for the selection it exercises.

VII

But the Eden would have its serpent, and a very subtle beast too. Man shares with the rest of the living world the mighty instinct of reproduction and its consequence, the tendency to multiply with great rapidity. The better the measures of the administrator achieved their object, the more completely the destructive agencies of the state of nature were defeated, the less would that multiplication be checked.

On the other hand, within the colony, the enforcement of peace, which deprives every man of the power to take away the means of existence from another, simply because he is the stronger, would have put an end to the struggle for existence between the colonists, and the competition for the commodities of existence, which would alone remain, is no check upon population.

Thus, as soon as the colonists began to multiply, the administrator would have to face the tendency to the reintroduction of the cosmic struggle into his artificial fabric, in consequence of the competition, not merely for the commodities, but for the means of existence. When the colony reached the limit of possible expansion, the surplus population must be disposed of somehow; or the fierce struggle for existence must recommence and destroy that peace, which is the fundamental condition of the maintenance of the state of art against the state of nature.

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Supposing the administrator to be guided by purely scientific considerations, he would, like the gardener, meet this most serious difficulty by systematic extirpation, or exclusion, of the superfluous. The hopelessly diseased, the infirm, aged, the weak or deformed in body or in mind, the excess of infants born, would be put away, as the gardener pulls up defective and superfluous plants, or the breeder destroys undesirable cattle. Only the strong and the healthy, carefully matched, with a view to the progeny best adapted to the purposes of the administrator, would be permitted to perpetuate their kind.

VIII

Of the more thoroughgoing of the multitudinous attempts to apply the principles of cosmic evolution, or what are supposed to be such, to social and political problems, which have appeared of late years, a considerable proportion appear to me to be based upon the notion that human society is competent to furnish, from its own resources, an administrator of the kind I have imagined. The pigeons, in short, are to be their own Sir John Sebright. A despotic government, whether individual or collective, is to be endowed with the preternatural intelligence, and with what, I am afraid, many will consider the preternatural ruthlessness, required for the purpose of carrying out the principle of improvement by selection, with the somewhat drastic thoroughness upon which the success of the method depends. Experience certainly does not justify us in limiting the ruthlessness of individual "saviours of society"; and, on the well-known grounds of the aphorism which denies both body and soul to corporations, it seems probable (indeed the belief is not without support in history) that a collective despotism, a mob got to believe in its own divine right by demagogic missionaries, would be capable of more thorough work in this direction than any single tyrant, puffed up with the same illusion, has ever achieved. But intelligence is another affair. The fact that "saviours of society" take to that trade is evidence enough that they have none to spare. And such as they possess is generally sold to the capitalists of physical force on whose resources they depend. However, I doubt whether even the keenest judge of character, if he had before him a hundred boys and girls under fourteen, could pick out, with the least chance of success, those who should be kept, as certain to be serviceable members of the polity, and those who should be chloroformed, as equally sure to be stupid, idle, or vicious. The "points" of a good or of a bad citizen are really far harder to discern than those of a puppy or a short-horn calf; many do not show themselves before the practical difficulties of life stimulate manhood to full exertion. And by that time the mischief is done. The evil stock, if it be one, has had time to multiply, and selection is nullified.

IX

I have other reasons for fearing that this logical ideal of evolutionary regimentation—this pigeon-fanciers' polity—is unattainable. In the absence of any such a severely scientific administrator as we have been dreaming of, human society is kept together by bonds of such a singular character, that the attempt to perfect society after his fashion would run serious risk of loosening them.

Social organization is not peculiar to men. Other societies, such as those constituted by bees and ants, have also arisen out of the advantage of co-operation in the struggle for existence; and their resemblances to, and their differences from, human society are alike instructive. The society formed by the hive bee fulfils the ideal of the communistic aphorism "to each according to his needs, from each according to his capacity." Within it, the struggle for existence is strictly limited. Queen, drones, and workers have each their allotted sufficiency of food; each performs the function assigned to it in the economy of the hive, and all contribute to the success of the whole co-operative society in its competition with rival collectors of nectar and pollen and with other enemies, in the state of nature without. In the same sense as the garden, or the colony, is a work of human art, the bee polity is a work of apiarian art, brought about by the cosmic process, working through the organization of the hymenopterous type.

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Now this society is the direct product of an organic necessity, impelling every member of it to a course of action which tends to the good of the whole. Each bee has its duty and none has any rights. Whether bees are susceptible of feeling and capable of thought is a question which cannot be dogmatically answered. As a pious opinion, I am disposed to deny them more than the merest rudiments of consciousness. But it is curious to reflect that a thoughtful drone (workers and queens would have no leisure for speculation) with a turn for ethical philosophy, must needs profess himself an intuitive moralist of the purest water. He would point out, with perfect justice, that the devotion of the workers to a life of ceaseless toil for a mere subsistence wage, cannot be accounted for either by enlightened selfishness, or by any other sort of utilitarian motives; since these bees begin to work, without experience or reflection, as they emerge from the cell in which they are hatched. Plainly, an eternal and immutable principle, innate in each bee, can alone account for the phenomena. On the other hand, the biologist, who traces out all the extant stages of gradation between solitary and hive bees, as clearly sees in the latter, simply the perfection of an automatic mechanism, hammered out by the blows of the struggle for existence upon the progeny of the former, during long ages of constant variation.

X

I see no reason to doubt that, at its origin, human society was as much a product of organic necessity as that of the bees. The human family, to begin with, rested upon exactly the same conditions as those which gave rise to similar associations among animals lower in the scale. Further, it is easy to see that every increase in the duration of the family ties, with the resulting co-operation of a larger and larger number of descendants for protection and defence, would give the families in which such modification took place a distinct advantage over the others. And, as in the hive, the progressive limitation of the struggle for existence between the members of the family would involve increasing efficiency as regards outside competition.

But there is this vast and fundamental difference between bee society and human society. In the former, the members of the society are each organically predestined to the performance of one particular class of functions only. If they were endowed with desires, each could desire to perform none but those offices for which its organization specially fits it; and which, in view of the good of the whole, it is proper it should do. So long as a new queen does not make her appearance, rivalries and competition are absent from the bee polity.

Among mankind, on the contrary, there is no such predestination to a sharply defined place in the social organism. However much men may differ in the quality of their intellects, the intensity of their passions, and the delicacy of their sensations, it cannot be said that one is fitted by his organization to be an agricultural labourer and nothing else, and another to be a landowner and nothing else. Moreover, with all their enormous differences in natural endowment, men agree in one thing, and that is their innate desire to enjoy the pleasures and to escape the pains of life; and, in short, to do nothing but that which it pleases them to do, without the least reference to the welfare of the society into which they are born. That is their inheritance (the reality at the bottom of the doctrine of original sin) from the long series of ancestors, human and semi-human and brutal, in whom the strength of this innate tendency to self-assertion was the condition of victory in the struggle for existence. That is the reason of the *aviditas vitæ*—the insatiable hunger for enjoyment—of all mankind, which is one of the essential conditions of success in the war with the state of nature outside; and yet the sure agent of the destruction of society if allowed free play within.

The check upon this free play of self-assertion, or natural liberty, which is the necessary condition for the origin of human society, is the product of organic necessities of a different kind from those upon which the constitution of the hive depends. One of these is the mutual affection of parent and offspring, intensified by the long infancy of the human species. But the most important is the tendency, so strongly developed in man, to reproduce in himself actions and feelings similar to, or correlated with, those of other men. Man is the most consummate of all mimics in the animal world; none but himself can draw or model; none comes near him in the scope, variety, and exactness of vocal imitation; none is such a master of gesture; while he seems to be impelled thus to imitate for

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the pure pleasure of it. And there is no such another emotional chameleon. By a purely reflex operation of the mind, we take the hue of passion of those who are about us, or, it may be, the complementary colour. It is not by any conscious "putting one's self in the place" of a joyful or a suffering person that the state of mind we call sympathy usually arises; indeed, it is often contrary to one's sense of right, and in spite of one's will, that "fellow-feeling makes us wondrous kind", or the reverse. However complete may be the indifference to public opinion, in a cool, intellectual view, of the traditional sage, it has not yet been my fortune to meet with any actual sage who took its hostile manifestations with entire equanimity. Indeed, I doubt if the philosopher lives, or ever has lived, who could know himself to be heartily despised by a street boy without some irritation. And, though one cannot justify Haman for wishing to hang Mordecai on such a very high gibbet, yet, really, the consciousness of the Vizier of Ahasuerus, as he went in and out of the gate, that this obscure Jew had no respect for him, must have been very annoying.

It is needful only to look around us, to see that the greatest restrainer of the anti-social tendencies of men is fear, not of the law, but of the opinion of their fellows. The conventions of honour bind men who break legal, moral, and religious bonds; and, while people endure the extremity of physical pain rather than part with life, shame drives the weakest to suicide.

Every forward step of social progress brings men into closer relations with their fellows, and increases the importance of the pleasures and pains derived from sympathy. We judge the acts of others by our own sympathies, and we judge our own acts by the sympathies of others, every day and all day long, from childhood upwards, until associations, as indissoluble as those of language, are formed between certain acts and the feelings of approbation or disapprobation. It becomes impossible to imagine some acts without disapprobation, or others without approbation of the actor, whether he be one's self, or any one else. We come to think in the acquired dialect of morals. An artificial personality, the "man within", as Adam Smith calls conscience, is built up beside the natural personality. He is the watchman of society, charged to restrain the anti-social tendencies of the natural man within the limits required by social welfare.

XI

I have termed this evolution of the feelings out of which the primitive bonds of human society are so largely forged, into the organized and personified sympathy we call conscience, the ethical process. So far as it tends to make any human society more efficient in the struggle for existence with the state of nature, or with other societies, it works in harmonious contrast with the cosmic process. But it is none the less true that, since law and morals are restraints upon the struggle for existence between men in society, the ethical process is in opposition to the principle of the cosmic process, and tends to the suppression of the qualities best fitted for success in that struggle.

It is further to be observed that, just as the self-assertion, necessary to the maintenance of society against the state of nature, will destroy that society if it is allowed free operation within; so the self-restraint, the essence of the ethical process, which is no less an essential condition of the existence of every polity, may, by excess, become ruinous to it.

Moralists of all ages and of all faiths, attending only to the relations of men towards one another in an ideal society, have agreed upon the "golden rule", "Do as you would be done by." In other words, let sympathy be your guide; put yourself in the place of the man towards whom your action is directed; and do to him what you would like to have done to yourself under the circumstances. However much one may admire the generosity of such a rule of conduct; however confident one may be that average men may be thoroughly depended upon not to carry it out to its full logical consequences; it is nevertheless desirable to recognize the fact that these consequences are incompatible with the existence of a civil state, under any circumstances of this world which have obtained, or, so far as one can see, are likely to come to pass.

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For I imagine there can be no doubt that the great desire of every wrongdoer is to escape from the painful consequences of his actions. If I put myself in the place of the man who has robbed me, I find that I am possessed by an exceeding desire not to be fined or imprisoned; if in that of the man who has smitten me on one cheek, I contemplate with satisfaction the absence of any worse result than the turning of the other cheek for like treatment. Strictly observed, the "golden rule" involves the negation of law by the refusal to put it in motion against law-breakers; and, as regards the external relations of a polity, it is the refusal to continue the struggle for existence. It can be obeyed, even partially, only under the protection of a society which repudiates it. Without such shelter, the followers of the "golden rule" may indulge in hopes of heaven, but they must reckon with the certainty that other people will be masters of the earth.

What would become of the garden if the gardener treated all the weeds and slugs and birds and trespassers as he would like to be treated, if he were in their place?

XII

Under the preceding heads, I have endeavoured to represent in broad, but I hope faithful, outlines the essential features of the state of nature and of that cosmic process of which it is the outcome, so far as was needful for my argument; I have contrasted with the state of nature the state of art, produced by human intelligence and energy, as it is exemplified by a garden; and I have shown that the state of art, here and elsewhere, can be maintained only by the constant counteraction of the hostile influences of the state of nature. Further, I have pointed out that the "horticultural process" which thus sets itself against the "cosmic process" is opposed to the latter in principle, in so far as it tends to arrest the struggle for existence, by restraining the multiplication which is one of the chief causes of that struggle, and by creating artificial conditions of life, better adapted to the cultivated plants than are the conditions of the state of nature. And I have dwelt upon the fact that, though the progressive modification, which is the consequence of the struggle for existence in the state of nature, is at an end, such modification may still be effected by that selection, in view of an ideal of usefulness, or of pleasantness, to man, of which the state of nature knows nothing.

I have proceeded to show that a colony, set down in a country in the state of nature, presents close analogies with a garden; and I have indicated the course of action which an administrator, able and willing to carry out horticultural principles, would adopt, in order to secure the success of such a newly formed polity, supposing it to be capable of indefinite expansion. In the contrary case, I have shown that difficulties must arise; that the unlimited increase of the population over a limited area must, sooner or later, reintroduce into the colony that struggle for the means of existence between the colonists, which it was the primary object of the administrator to exclude, insomuch as it is fatal to the mutual peace which is the prime condition of the union of men in society.

I have briefly described the nature of the only radical cure, known to me, for the disease which would thus threaten the existence of the colony; and, however regretfully, I have been obliged to admit that this rigorously scientific method of applying the principles of evolution to human society hardly comes within the region of practical politics; not for want of will on the part of a great many people; but because, for one reason, there is no hope that mere human beings will ever possess enough intelligence to select the fittest. And I have adduced other grounds for arriving at the same conclusion.

I have pointed out that human society took its rise in the organic necessities expressed by imitation and by the sympathetic emotions; and that, in the struggle for existence with the state of nature and with other societies, as part of it, those in which men were thus led to close co-operation had a great advantage. But, since each man retained more or less of the faculties common to all the rest, and especially a full share of the desire for unlimited self-gratification, the struggle for existence within society could only be gradually eliminated. So long as any of it remained, society continued to be an imperfect instrument of the struggle for existence and, consequently, was improvable by the selective influence of that struggle. Other things being alike, the tribe of savages in which order

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was best maintained; in which there was most security within the tribe and the most loyal mutual support outside it, would be the survivors.

I have termed this gradual strengthening of the social bond, which, though it arrests the struggle for existence inside society, up to a certain point improves the chances of society, as a corporate whole, in the cosmic struggle—the ethical process. I have endeavoured to show that, when the ethical process has advanced so far as to secure every member of the society in the possession of the means of existence, the struggle for existence, as between man and man, within that society is, ipso facto, at an end. And, as it is undeniable that the most highly civilized societies have substantially reached this position, it follows that, so far as they are concerned, the struggle for existence can play no important part within them. In other words, the kind of evolution which is brought about in the state of nature cannot take place.

I have further shown cause for the belief that direct selection, after the fashion of the horticulturist and the breeder, neither has played, nor can play, any important part in the evolution of society; apart from other reasons, because I do not see how such selection could be practised without a serious weakening, it may be the destruction, of the bonds which hold society together. It strikes me that men who are accustomed to contemplate the active or passive extirpation of the weak, the unfortunate, and the superfluous; who justify that conduct on the ground that it has the sanction of the cosmic process, and is the only way of ensuring the progress of the race; who, if they are consistent, must rank medicine among the black arts and count the physician a mischievous preserver of the unfit; on whose matrimonial undertakings the principles of the stud have the chief influence; whose whole lives, therefore, are an education in the noble art of suppressing natural affection and sympathy, are not likely to have any large stock of these commodities left. But, without them, there is no conscience, nor any restraint on the conduct of men, except the calculation of self-interest, the balancing of certain present gratifications against doubtful future pains; and experience tells us how much that is worth. Every day, we see firm believers in the hell of the theologians commit acts by which, as they believe when cool, they risk eternal punishment; while they hold back from those which are opposed to the sympathies of their associates.

XIII

That progressive modification of civilization which passes by the name of the "evolution of society", is, in fact, a process of an essentially different character, both from that which brings about the evolution of species, in the state of nature, and from that which gives rise to the evolution of varieties, in the state of art.

There can be no doubt that vast changes have taken place in English civilization since the reign of the Tudors. But I am not aware of a particle of evidence in favour of the conclusion that this evolutionary process has been accompanied by any modification of the physical, or the mental, characters of the men who have been the subjects of it. I have not met with any grounds for suspecting that the average Englishmen of to-day are sensibly different from those that Shakespeare knew and drew. We look into his magic mirror of the Elizabethan age, and behold, nowise darkly, the presentment of ourselves.

During these three centuries, from the reign of Elizabeth to that of Victoria, the struggle for existence between man and man has been so largely restrained among the great mass of the population (except for one or two short intervals of civil war), that it can have had little, or no, selective operation. As to anything comparable to direct selection, it has been practised on so small a scale that it may also be neglected. The criminal law, in so far as by putting to death, or by subjecting to long periods of imprisonment, those who infringe its provisions, it prevents the propagation of hereditary criminal tendencies; and the poor-law, in so far as it separates married couples, whose destitution arises from hereditary defects of character, are doubtless selective agents operating in favour of the non-criminal and the more effective members of society. But the proportion of the population which they influence is very small; and, generally, the hereditary criminal and the hereditary pauper have propagated their kind before the law affects them. In a large proportion of cases, crime and pauperism have nothing to do with

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heredity; but are the consequence, partly, of circumstances and, partly, of the possession of qualities, which, under different conditions of life, might have excited esteem and even admiration. It was a shrewd man of the world who, in discussing sewage problems, remarked that dirt is riches in the wrong place; and that sound aphorism has moral applications. The benevolence and open-handed generosity which adorn a rich man, may make a pauper of a poor one; the energy and courage to which the successful soldier owes his rise, the cool and daring subtlety to which the great financier owes his fortune, may very easily, under unfavourable conditions, lead their possessors to the gallows, or to the hulks. Moreover, it is fairly probable that the children of a "failure" will receive from their other parent just that little modification of character which makes all the difference. I sometimes wonder whether people, who talk so freely about extirpating the unfit, ever dispassionately consider their own history. Surely, one must be very "fit", indeed, not to know of an occasion, or perhaps two, in one's life, when it would have been only too easy to qualify for a place among the "unfit".

In my belief the innate qualities, physical, intellectual, and moral, of our nation have remained substantially the same for the last four or five centuries. If the struggle for existence has affected us to any serious extent (and I doubt it) it has been, indirectly, through our military and industrial wars with other nations.

XIV

What is often called the struggle for existence in society (I plead guilty of having used the term too loosely myself), is a contest, not for the means of existence, but for the means of enjoyment. Those who occupy the first places in this practical competitive examination are the rich and the influential; those who fail, more or less, occupy the lower places, down to the squalid obscurity of the pauper and the criminal. Upon the most liberal estimate, I suppose the former group will not amount to two per cent. of the population. I doubt if the latter exceeds another two per cent.; but let it be supposed, for the sake of argument, that it is as great as five per cent.

As it is only in the latter group that anything comparable to the struggle for existence in the state of nature can take place; as it is only among this twentieth of the whole people that numerous men, women, and children die of rapid or slow starvation, or of the diseases incidental to permanently bad conditions of life; and as there is nothing to prevent their multiplication before they are killed off, while, in spite of greater infant mortality, they increase faster than the rich; it seems clear that the struggle for existence in this class can have no appreciable selective influence upon the other 95 per cent. of the population.

What sort of a sheep breeder would he be who should content himself with picking out the worst fifty out of a thousand, leaving them on a barren common till the weakest starved, and then letting the survivors go back to mix with the rest? And the parallel is too favourable; since in a large number of cases, the actual poor and the convicted criminals are neither the weakest nor the worst.

In the struggle for the means of enjoyment, the qualities which ensure success are energy, industry, intellectual capacity, tenacity of purpose, and, at least as much sympathy as is necessary to make a man understand the feelings of his fellows. Were there none of those artificial arrangements by which fools and knaves are kept at the top of society instead of sinking to their natural place at the bottom, the struggle for the means of enjoyment would ensure a constant circulation of the human units of the social compound, from the bottom to the top and from the top to the bottom. The survivors of the contest, those who continued to form the great bulk of the polity, would not be those "fittest" who got to the very top, but the great body of the moderately "fit", whose numbers and superior propagative power, enable them always to swamp the exceptionally endowed minority.

I think it must be obvious to every one, that, whether we consider the internal or the external interests of society, it is desirable they should be in the hands of those who are endowed with the largest share of energy, of industry, of intellectual capacity, of tenacity of purpose, while they are not devoid of sympathetic humanity; and, in so far as the struggle for the means of enjoyment tends to place such men in possession of wealth and influence, it is a

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process which tends to the good of society. But the process, as we have seen, has no real resemblance to that which adapts living beings to current conditions in the state of nature; nor any to the artificial selection of the horticulturist.

XV

To return, once more, to the parallel of horticulture. In the modern world, the gardening of men by themselves is practically restricted to the performance, not of selection, but of that other function of the gardener, the creation of conditions more favourable than those of the state of nature; to the end of facilitating the free expansion of the innate faculties of the citizen, so far as it is consistent with the general good. And the business of the moral and political philosopher appears to me to be the ascertainment, by the same method of observation, experiment, and ratiocination, as is practised in other kinds of scientific work, of the course of conduct which will best conduce to that end.

But, supposing this course of conduct to be scientifically determined and carefully followed out, it cannot put an end to the struggle for existence in the state of nature; and it will not so much as tend, in any way, to the adaptation of man to that state. Even should the whole human race be absorbed in one vast polity, within which "absolute political justice" reigns, the struggle for existence with the state of nature outside it, and the tendency to the return of the struggle within, in consequence of over-multiplication, will remain; and, unless men's inheritance from the ancestors who fought a good fight in the state of nature, their dose of original sin, is rooted out by some method at present unrevealed, at any rate to disbelievers in supernaturalism, every child born into the world will still bring with him the instinct of unlimited self-assertion. He will have to learn the lesson of self-restraint and renunciation. But the practice of self-restraint and renunciation is not happiness, though it may be something much better.

That man, as a "political animal", is susceptible of a vast amount of improvement, by education, by instruction, and by the application of his intelligence to the adaptation of the conditions of life to his higher needs, I entertain not the slightest doubt. But, so long as he remains liable to error, intellectual or moral; so long as he is compelled to be perpetually on guard against the cosmic forces, whose ends are not his ends, without and within himself; so long as he is haunted by inexpugnable memories and hopeless aspirations; so long as the recognition of his intellectual limitations forces him to acknowledge his incapacity to penetrate the mystery of existence; the prospect of attaining untroubled happiness, or of a state which can, even remotely, deserve the title of perfection, appears to me to be as misleading an illusion as ever was dangled before the eyes of poor humanity. And there have been many of them.

That which lies before the human race is a constant struggle to maintain and improve, in opposition to the State of Nature, the State of Art of an organized polity; in which, and by which, man may develop a worthy civilization, capable of maintaining and constantly improving itself, until the evolution of our globe shall have entered so far upon its downward course that the cosmic process resumes its sway; and, once more, the State of Nature prevails over the surface of our planet.

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The Romanes Lecture, 1893

Soleo enim et in aliena castra transire, non tanquam transfuga sed tanquam explorator. (L. Annæi Senecæ Epist. II, 4.)

THERE IS a delightful child's story, known by the title of "Jack and the Bean-stalk", with which my contemporaries who are present will be familiar. But so many of our grave and reverend juniors have been brought up on severer intellectual diet, and, perhaps, have become acquainted with fairyland only through primers

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of comparative mythology, that it may be needful to give an outline of the tale. It is a legend of a bean-plant, which grows and grows until it reaches the high heavens and there spreads out into a vast canopy of foliage. The hero, being moved to climb the stalk, discovers that the leafy expanse supports a world composed of the same elements as that below, but yet strangely new; and his adventures there, on which I may not dwell, must have completely changed his views of the nature of things; though the story, not having been composed by, or for, philosophers, has nothing to say about views.

My present enterprise has a certain analogy to that of the daring adventurer. I beg you to accompany me in an attempt to reach a world which, to many, is probably strange, by the help of a bean. It is, as you know, a simple, inert-looking thing. Yet, if planted under proper conditions, of which sufficient warmth is one of the most important, it manifests active powers of a very remarkable kind. A small green seedling emerges, rises to the surface of the soil, rapidly increases in size and, at the same time, undergoes a series of metamorphoses which do not excite our wonder as much as those which meet us in legendary history, merely because they are to be seen every day and all day long.

By insensible steps, the plant builds itself up into a large and various fabric of root, stem, leaves, flowers, and fruit, every one moulded within and without in accordance with an extremely complex but, at the same time, minutely defined pattern. In each of these complicated structures, as in their smallest constituents, there is an immanent energy which, in harmony with that resident in all the others, incessantly works towards the maintenance of the whole and the efficient performance of the part which it has to play in the economy of nature. But no sooner has the edifice, reared with such exact elaboration, attained completeness, than it begins to crumble. By degrees, the plant withers and disappears from view, leaving behind more or fewer apparently inert and simple bodies, just like the bean from which it sprang; and, like it, endowed with the potentiality of giving rise to a similar cycle of manifestations.

Neither the poetic nor the scientific imagination is put to much strain in the search after analogies with this process of going forth and, as it were, returning to the starting-point. It may be likened to the ascent and descent of a slung stone, or the course of an arrow along its trajectory. Or we may say that the living energy takes first an upward and then a downward road. Or it may seem preferable to compare the expansion of the germ into the full-grown plant, to the unfolding of a fan, or to the rolling forth and widening of a stream; and thus to arrive at the conception of "development", or "evolution". Here as elsewhere, names are "noise and smoke"; the important point is to have a clear and adequate conception of the fact signified by a name. And, in this case, the fact is the Sisyphean process, in the course of which, the living and growing plant passes from the relative simplicity and latent potentiality of the seed to the full epiphany of a highly differentiated type, thence to fall back to simplicity and potentiality.

The value of a strong intellectual grasp of the nature of this process lies in the circumstance that what is true of the bean is true of living things in general. From very low forms up to the highest—in the animal no less than in the vegetable kingdom—the process of life presents the same appearance of cyclical evolution. Nay, we have but to cast our eyes over the rest of the world and cyclical change presents itself on all sides. It meets us in the water that flows to the sea and returns to the springs; in the heavenly bodies that wax and wane, go and return to their places; in the inexorable sequence of the ages of man's life; in that successive rise, apogee, and fall of dynasties and of states which is the most prominent topic of civil history.

As no man fording a swift stream can dip his foot twice into the same water, so no man can, with exactness, affirm of anything in the sensible world that it is. As he utters the words, nay, as he thinks them, the predicate ceases to be applicable; the present has become the past; the "is" should be "was". And the more we learn of the nature of things, the more evident is it that what we call rest is only unperceived activity; that seeming peace is silent but strenuous battle. In every part, at every moment, the state of the cosmos is the expression of a transitory adjustment of contending forces; a scene of strife, in which all the combatants fall in turn. What is true of each part, is true of the whole. Natural knowledge tends more and more to the conclusion that "all the choir of heaven

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and furniture of the earth" are the transitory forms of parcels of cosmic substance wending along the road of evolution, from nebulous potentiality, through endless growths of sun and planet and satellite; through all varieties of matter; through infinite diversities of life and thought; possibly, through modes of being of which we neither have a conception, nor are competent to form any, back to the indefinable latency from which they arose. Thus the most obvious attribute of the cosmos is its impermanence. It assumes the aspect not so much of a permanent entity as of a changeful process, in which naught endures save the flow of energy and the rational order which pervades it. -----

We have climbed our bean-stalk and have reached a wonderland in which the common and the familiar become things new and strange. In the exploration of the cosmic process thus typified, the highest intelligence of man finds inexhaustible employment; giants are subdued to our service; and the spiritual affections of the contemplative philosopher are engaged by beauties worthy of eternal constancy.

But there is another aspect of the cosmic process, so perfect as a mechanism, so beautiful as a work of art. Where the cosmopoietic energy works through sentient beings, there arises, among its other manifestations, that which we call pain or suffering. This baleful product of evolution increases in quantity, and in intensity, with advancing grades of animal organization, until it attains its highest level in man. Further, the consummation is not reached in man, the mere animal; nor in man, the whole or half savage; but only in man, the member of an organized polity. And it is a necessary consequence of his attempt to live in this way; that is, under those conditions which are essential to the full development of his noblest powers.

Man, the animal, in fact, has worked his way to the headship of the sentient world, and has become the superb animal which he is, in virtue of his success in the struggle for existence. The conditions having been of a certain order, man's organization has adjusted itself to them better than that of his competitors in the cosmic strife. In the case of mankind, the self-assertion, the unscrupulous seizing upon all that can be grasped, the tenacious holding of all that can be kept, which constitute the essence of the struggle for existence, have answered. For his successful progress, throughout the savage state, man has been largely indebted to those qualities which he shares with the ape and the tiger; his exceptional physical organization; his cunning, his sociability, his curiosity, and his imitativeness; his ruthless and ferocious destructiveness when his anger is roused by opposition.

But, in proportion as men have passed from anarchy to social organization, and in proportion as civilization has grown in worth, these deeply ingrained serviceable qualities have become defects. After the manner of successful persons, civilized man would gladly kick down the ladder by which he has climbed. He would be only too pleased to see "the ape and tiger die". But they decline to suit his convenience; and the unwelcome intrusion of these boon companions of his hot youth into the ranged existence of civil life adds pains and griefs, innumerable and immeasurably great, to those which the cosmic process necessarily brings on the mere animal. In fact, civilized man brands all these ape and tiger promptings with the name of sins; he punishes many of the acts which flow from them as crimes; and, in extreme cases, he does his best to put an end to the survival of the fittest of former days by axe and rope.

I have said that civilized man has reached this point; the assertion is perhaps too broad and general; I had better put it that ethical man has attained thereto. The science of ethics professes to furnish us with a reasoned rule of life; to tell us what is right action and why it is so. Whatever differences of opinion may exist among the experts, there is a general consensus that the ape and tiger methods of the struggle for existence are not reconcilable with sound ethical principles. -----

The hero of our story descended the bean-stalk, and came back to the common world, where fare and work were alike hard; where ugly competitors were much commoner than beautiful princesses; and where the everlasting battle with self was much less sure to be crowned with victory than a turn-to with a giant. We have done the like. Thousands upon thousands of our fellows, thousands of years ago, have preceded us in finding themselves face to face with the same dread problem of evil. They also have seen that the cosmic process is evolution; that it is full

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of wonder, full of beauty, and, at the same time, full of pain. They have sought to discover the bearing of these great facts on ethics; to find out whether there is, or is not, a sanction for morality in the ways of the cosmos.

Theories of the universe, in which the conception of evolution plays a leading part, were extant at least six centuries before our era. Certain knowledge of them, in the fifth century, reaches us from localities as distant as the valley of the Ganges and the Asiatic coasts of the AEgean. To the early philosophers of Hindostan, no less than to those of Ionia, the salient and characteristic feature of the phenomenal world was its changefulness; the unrelenting flow of all things, through birth to visible being and thence to not being, in which they could discern no sign of a beginning and for which they saw no prospect of an ending. It was no less plain to some of these antique forerunners of modern philosophy that suffering is the badge of all the tribe of sentient things; that it is no accidental accompaniment, but an essential constituent of the cosmic process. The energetic Greek might find fierce joys in a world in which "strife is father and king"; but the old Aryan spirit was subdued to quietism in the Indian sage; the mist of suffering which spread over humanity hid everything else from his view; to him life was one with suffering and suffering with life.

In Hindostan, as in Ionia, a period of relatively high and tolerably stable civilization had succeeded long ages of semi-barbarism and struggle. Out of wealth and security had come leisure and refinement, and, close at their heels, had followed the malady of thought. To the struggle for bare existence, which never ends, though it may be alleviated and partially disguised for a fortunate few, succeeded the struggle to make existence intelligible and to bring the order of things into harmony with the moral sense of man, which also never ends, but, for the thinking few, becomes keener with every increase of knowledge and with every step towards the realization of a worthy ideal of life.

Two thousand five hundred years ago, the value of civilization was as apparent as it is now; then, as now, it was obvious that only in the garden of an orderly polity can the finest fruits humanity is capable of bearing be produced. But it had also become evident that the blessings of culture were not unmixed. The garden was apt to turn into a hothouse. The stimulation of the senses, the pampering of the emotions, endlessly multiplied the sources of pleasure. The constant widening of the intellectual field indefinitely extended the range of that especially human faculty of looking before and after, which adds to the fleeting present those old and new worlds of the past and the future, wherein men dwell the more the higher their culture. But that very sharpening of the sense and that subtle refinement of emotion, which brought such a wealth of pleasures, were fatally attended by a proportional enlargement of the capacity for suffering; and the divine faculty of imagination, while it created new heavens and new earths, provided them with the corresponding hells of futile regret for the past and morbid anxiety for the future. Finally, the inevitable penalty of over-stimulation, exhaustion, opened the gates of civilization to its great enemy, ennui; the stale and flat weariness when man delights not, nor woman neither; when all things are vanity and vexation; and life seems not worth living except to escape the bore of dying.

Even purely intellectual progress brings about its revenges. Problems settled in a rough and ready way by rude men, absorbed in action, demand renewed attention and show themselves to be still unread riddles when men have time to think. The beneficent demon, doubt, whose name is Legion and who dwells amongst the tombs of old faiths, enters into mankind and thenceforth refuses to be cast out. Sacred customs, venerable dooms of ancestral wisdom, hallowed by tradition and professing to hold good for all time, are put to the question. Cultured reflection asks for their credentials; judges them by its own standards; finally, gathers those of which it approves into ethical systems, in which the reasoning is rarely much more than a decent pretext for the adoption of foregone conclusions.

One of the oldest and most important elements in such systems is the conception of justice. Society is impossible unless those who are associated agree to observe certain rules of conduct towards one another; its stability depends on the steadiness with which they abide by that agreement; and, so far as they waver, that mutual trust which is the bond of society is weakened or destroyed. Wolves could not hunt in packs except for the real, though

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unexpressed, understanding that they should not attack one another during the chase. The most rudimentary polity is a pack of men living under the like tacit, or expressed, understanding; and having made the very important advance upon wolf society, that they agree to use the force of the whole body against individuals who violate it and in favour of those who observe it. This observance of a common understanding, with the consequent distribution of punishments and rewards according to accepted rules, received the name of justice, while the contrary was called injustice. Early ethics did not take much note of the animus of the violator of the rules. But civilization could not advance far, without the establishment of a capital distinction between the case of involuntary and that of wilful misdeed; between a merely wrong action and a guilty one. And, with increasing refinement of moral appreciation, the problem of desert, which arises out of this distinction, acquired more and more theoretical and practical importance. If life must be given for life, yet it was recognized that the unintentional slayer did not altogether deserve death; and, by a sort of compromise between the public and the private conception of justice, a sanctuary was provided in which he might take refuge from the avenger of blood.

The idea of justice thus underwent a gradual sublimation from punishment and reward according to acts, to punishment and reward according to desert; or, in other words, according to motive. Righteousness, that is, action from right motive, not only became synonymous with justice, but the positive constituent of innocence and the very heart of goodness. -----

Now when the ancient sage, whether Indian or Greek, who had attained to this conception of goodness, looked the world, and especially human life, in the face, he found it as hard as we do to bring the course of evolution into harmony with even the elementary requirements of the ethical ideal of the just and the good.

If there is one thing plainer than another, it is that neither the pleasures nor the pains of life, in the merely animal world, are distributed according to desert; for it is admittedly impossible for the lower orders of sentient beings to deserve either the one or the other. If there is a generalization from the facts of human life which has the assent of thoughtful men in every age and country, it is that the violator of ethical rules constantly escapes the punishment which he deserves; that the wicked flourishes like a green bay tree, while the righteous begs his bread; that the sins of the fathers are visited upon the children; that, in the realm of nature, ignorance is punished just as severely as wilful wrong; and that thousands upon thousands of innocent beings suffer for the crime, or the unintentional trespass, of one.

Greek and Semite and Indian are agreed upon this subject. The book of Job is at one with the "Works and Days" and the Buddhist Sutras; the Psalmist and the Preacher of Israel, with the Tragic Poets of Greece. What is a more common motive of the ancient tragedy in fact, than the unfathomable injustice of the nature of things; what is more deeply felt to be true than its presentation of the destruction of the blameless by the work of his own hands, or by the fatal operation of the sins of others? Surely OEdipus was pure of heart; it was the natural sequence of events—the cosmic process—which drove him, in all innocence, to slay his father and become the husband of his mother, to the desolation of his people and his own headlong ruin. Or to step, for a moment, beyond the chronological limits I have set myself, what constitutes the sempiternal attraction of Hamlet but the appeal to deepest experience of that history of a no less blameless dreamer, dragged, in spite of himself, into a world out of joint; involved in a tangle of crime and misery, created by one of the prime agents of the cosmic process as it works in and through man?

Thus, brought before the tribunal of ethics, the cosmos might well seem to stand condemned. The conscience of man revolted against the moral indifference of nature, and the microcosmic atom should have found the illimitable macrocosm guilty. But few, or none, ventured to record that verdict.

In the great Semitic trial of this issue, Job takes refuge in silence and submission; the Indian and the Greek, less wise perhaps, attempt to reconcile the irreconcilable and plead for the defendant. To this end, the Greeks invented Theodicies; while the Indians devised what, in its ultimate form, must rather be termed a Cosmodicy. For, though Buddhism recognizes gods many and lords many, they are products of the cosmic process; and transitory,

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however long enduring, manifestations of its eternal activity. In the doctrine of transmigration, whatever its origin, Brahminical and Buddhist speculation found, ready to hand, the means of constructing a plausible vindication of the ways of the cosmos to man. If this world is full of pain and sorrow; if grief and evil fall, like the rain, upon both the just and the unjust; it is because, like the rain, they are links in the endless chain of natural causation by which past, present, and future are indissolubly connected; and there is no more injustice in the one case than in the other. Every sentient being is reaping as it has sown; if not in this life, then in one or other of the infinite series of antecedent existences of which it is the latest term. The present distribution of good and evil is, therefore, the algebraical sum of accumulated positive and negative deserts; or, rather, it depends on the floating balance of the account. For it was not thought necessary that a complete settlement should ever take place. Arrears might stand over as a sort of "hanging gale"; a period of celestial happiness just earned might be succeeded by ages of torment in a hideous nether world, the balance still overdue for some remote ancestral error.

Whether the cosmic process looks any more moral than at first, after such a vindication, may perhaps be questioned. Yet this plea of justification is not less plausible than others; and none but very hasty thinkers will reject it on the ground of inherent absurdity. Like the doctrine of evolution itself, that of transmigration has its roots in the world of reality; and it may claim such support as the great argument from analogy is capable of supplying.

Everyday experience familiarizes us with the facts which are grouped under the name of heredity. Every one of us bears upon him obvious marks of his parentage, perhaps of remoter relationships. More particularly, the sum of tendencies to act in a certain way, which we call "character", is often to be traced through a long series of progenitors and collaterals. So we may justly say that this "character"—this moral and intellectual essence of a man—does veritably pass over from one fleshly tabernacle to another, and does really transmigrate from generation to generation. In the new-born infant, the character of the stock lies latent, and the Ego is little more than a bundle of potentialities. But, very early, these become actualities; from childhood to age they manifest themselves in dullness or brightness, weakness or strength, viciousness or uprightness; and with each feature modified by confluence with another character, if by nothing else, the character passes on to its incarnation in new bodies.

The Indian philosophers called character, as thus defined, "karma". It is this karma which passed from life to life and linked them in the chain of transmigrations; and they held that it is modified in each life, not merely by confluence of parentage, but by its own acts. They were, in fact, strong believers in the theory, so much disputed just at present, of the hereditary transmission of acquired characters. That the manifestation of the tendencies of a character may be greatly facilitated, or impeded, by conditions, of which self-discipline, or the absence of it, are among the most important, is indubitable; but that the character itself is modified in this way is by no means so certain; it is not so sure that the transmitted character of an evil liver is worse, or that of a righteous man better, than that which he received. Indian philosophy, however, did not admit of any doubt on this subject; the belief in the influence of conditions, notably of self-discipline, on the karma was not merely a necessary postulate of its theory of retribution, but it presented the only way of escape from the endless round of transmigrations.

The earlier forms of Indian philosophy agreed with those prevalent in our own times, in supposing the existence of a permanent reality, or "substance", beneath the shifting series of phenomena, whether of matter or of mind. The substance of the cosmos was "Brahma", that of the individual man "Atman"; and the latter was separated from the former only, if I may so speak, by its phenomenal envelope, by the casing of sensations, thoughts and desires, pleasures and pains, which make up the illusive phantasmagoria of life. This the ignorant take for reality; their "Atman" therefore remains eternally imprisoned in delusions, bound by the fetters of desire and scourged by the whip of misery. But the man who has attained enlightenment sees that the apparent reality is mere illusion, or, as was said a couple of thousand years later, that there is nothing good nor bad but thinking makes it so. If the cosmos "is just and of our pleasant vices makes instruments to scourge us", it would seem that the only way to escape from our heritage of evil is to destroy that fountain of desire whence our vices flow; to refuse any longer to be the instruments of the evolutionary process, and withdraw from the struggle for existence. If the karma is

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modifiable by self-discipline, if its coarser desires, one after another, can be extinguished, the ultimate fundamental desire of self-assertion, or the desire to be, may also be destroyed. Then the bubble of illusion will burst, and the freed individual "Atman" will lose itself in the universal "Brahma".

Such seems to have been the pre-Buddhistic conception of salvation, and of the way to be followed by those who would attain thereto. No more thorough mortification of the flesh has ever been attempted than that achieved by the Indian ascetic anchorite; no later monachism has so nearly succeeded in reducing the human mind to that condition of impassive quasi-somnambulism, which, but for its acknowledged holiness, might run the risk of being confounded with idiocy.

And this salvation, it will be observed, was to be attained through knowledge, and by action based on that knowledge; just as the experimenter, who would obtain a certain physical or chemical result, must have a knowledge of the natural laws involved and the persistent disciplined will adequate to carry out all the various operations required. The supernatural, in our sense of the term, was entirely excluded. There was no external power which could affect the sequence of cause and effect which gives rise to karma; none but the will of the subject of the karma which could put an end to it.

Only one rule of conduct could be based upon the remarkable theory of which I have endeavoured to give a reasoned outline. It was folly to continue to exist when an overplus of pain was certain; and the probabilities in favour of the increase of misery with the prolongation of existence, were so overwhelming. Slaying the body only made matters worse; there was nothing for it but to slay the soul by the voluntary arrest of all its activities. Property, social ties, family affections, common companionship, must be abandoned; the most natural appetites, even that for food, must be suppressed, or at least minimized; until all that remained of a man was the impassive, extenuated, mendicant monk, self-hypnotized into cataleptic trances, which the deluded mystic took for foretastes of the final union with Brahma.

The founder of Buddhism accepted the chief postulates demanded by his predecessors. But he was not satisfied with the practical annihilation involved in merging the individual existence in the unconditioned—the Atman in Brahma. It would seem that the admission of the existence of any substance whatever—even of the tenuity of that which has neither quality nor energy and of which no predicate whatever can be asserted—appeared to him to be a danger and a snare. Though reduced to a hypostatized negation, Brahma was not to be trusted; so long as entity was there, it might conceivably resume the weary round of evolution, with all its train of immeasurable miseries. Gautama got rid of even that shade of a shadow of permanent existence by a metaphysical tour de force of great interest to the student of philosophy, seeing that it supplies the wanting half of Bishop Berkeley's well-known idealistic argument.

Granting the premises, I am not aware of any escape from Berkeley's conclusion, that the "substance" of matter is a metaphysical unknown quantity, of the existence of which there is no proof. What Berkeley does not seem to have so clearly perceived is that the non-existence of a substance of mind is equally arguable; and that the result of the impartial applications of his reasonings is the reduction of the All to co-existences and sequences of phenomena, beneath and beyond which there is nothing cognoscible. It is a remarkable indication of the subtlety of Indian speculation that Gautama should have seen deeper than the greatest of modern idealists; though it must be admitted that, if some of Berkeley's reasonings respecting the nature of spirit are pushed home, they reach pretty much the same conclusion.

Accepting the prevalent Brahminical doctrine that the whole cosmos, celestial, terrestrial, and infernal, with its population of gods and other celestial beings, of sentient animals, of Mara and his devils, is incessantly shifting through recurring cycles of production and destruction, in each of which every human being has his transmigratory representative, Gautama proceeded to eliminate substance altogether; and to reduce the cosmos to a mere flow of sensations, emotions, volitions, and thoughts, devoid of any substratum. As, on the surface of a stream of water, we see ripples and whirlpools, which last for a while and then vanish with the causes that gave

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rise to them, so what seem individual existences are mere temporary associations of phenomena circling round a centre, "like a dog tied to a post". In the whole universe there is nothing permanent, no eternal substance either of mind or of matter. Personality is a metaphysical fancy; and in very truth, not only we, but all things, in the worlds without end of the cosmic phantasmagoria, are such stuff as dreams are made of.

What then becomes of karma? Karma remains untouched. As the peculiar form of energy we call magnetism may be transmitted from a lodestone to a piece of steel, from the steel to a piece of nickel, as it may be strengthened or weakened by the conditions to which it is subjected while resident in each piece, so it seems to have been conceived that karma might be transmitted from one phenomenal association to another by a sort of induction. However this may be, Gautama doubtless had a better guarantee for the abolition of transmigration, when no wrack of substance, either of Atman or of Brahma, was left behind; when, in short, a man had but to dream that he willed not to dream, to put an end to all dreaming.

This end of life's dream is Nirvana. What Nirvana is the learned do not agree. But, since the best original authorities tell us there is neither desire nor activity, nor any possibility of phenomenal reappearance for the sage who has entered Nirvana, it may be safely said of this acme of Buddhistic philosophy—"the rest is silence".

Thus there is no very great practical disagreement between Gautama and his predecessors with respect to the end of action; but it is otherwise as regards the means to that end. With just insight into human nature, Gautama declared extreme ascetic practices to be useless and indeed harmful. The appetites and the passions are not to be abolished by mere mortification of the body; they must, in addition, be attacked on their own ground and conquered by steady cultivation of the mental habits which oppose them; by universal benevolence; by the return of good for evil; by humility; by abstinence from evil thought; in short, by total renunciation of that self-assertion which is the essence of the cosmic process.

Doubtless, it is to these ethical qualities that Buddhism owes its marvellous success. A system which knows no God in the western sense; which denies a soul to man; which counts the belief in immortality a blunder and the hope of it a sin; which refuses any efficacy to prayer and sacrifice; which bids men look to nothing but their own efforts for salvation; which, in its original purity, knew nothing of vows of obedience, abhorred intolerance, and never sought the aid of the secular arm; yet spread over a considerable moiety of the Old World with marvellous rapidity, and is still, with whatever base admixture of foreign superstitions, the dominant creed of a large fraction of mankind. -----

Let us now set our faces westwards, towards Asia Minor and Greece and Italy, to view the rise and progress of another philosophy, apparently independent, but no less pervaded by the conception of evolution.

The sages of Miletus were pronounced evolutionists; and however dark may be some of the sayings of Heracleitus of Ephesus, who was probably a contemporary of Gautama, no better expressions of the essence of the modern doctrine of evolution can be found than are presented by some of his pithy aphorisms and striking metaphors. Indeed, many of my present auditors must have observed that, more than once, I have borrowed from him in the brief exposition of the theory of evolution with which this discourse commenced.

But when the focus of Greek intellectual activity shifted to Athens, the leading minds concentrated their attention upon ethical problems. Forsaking the study of the macrocosm for that of the microcosm, they lost the key to the thought of the great Ephesian, which, I imagine, is more intelligible to us than it was to Socrates, or to Plato. Socrates, more especially, set the fashion of a kind of inverse agnosticism, by teaching that the problems of physics lie beyond the reach of the human intellect; that the attempt to solve them is essentially vain; that the one worthy object of investigation is the problem of ethical life; and his example was followed by the Cynics and the later Stoics. Even the comprehensive knowledge and the penetrating intellect of Aristotle failed to suggest to him that in holding the eternity of the world, within its present range of mutation, he was making a retrogressive step. The scientific heritage of Heracleitus passed into the hands neither of Plato nor of Aristotle, but into those of

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Democritus. But the world was not yet ready to receive the great conceptions of the philosopher of Abdera. It was reserved for the Stoics to return to the track marked out by the earlier philosophers; and, professing themselves disciples of Heraclitus, to develop the idea of evolution systematically. In doing this, they not only omitted some characteristic features of their master's teaching but they made additions altogether foreign to it. One of the most influential of these importations was the transcendental theism which had come into vogue. The restless, fiery energy, operating according to law, out of which all things emerge and into which they return, in the endless successive cycles of the great year; which creates and destroys worlds as a wanton child builds up, and anon levels, sand castles on the seashore; was metamorphosed into a material world—soul and decked out with all the attributes of ideal Divinity; not merely with infinite power and transcendent wisdom, but with absolute goodness.

The consequences of this step were momentous. For if the cosmos is the effect of an immanent, omnipotent, and infinitely beneficent cause, the existence in it of real evil, still less of necessarily inherent evil, is plainly inadmissible. Yet the universal experience of mankind testified then, as now, that, whether we look within us or without us, evil stares us in the face on all sides; that if anything is real, pain and sorrow and wrong are realities.

It would be a new thing in history if a priori philosophers were daunted by the factious opposition of experience; and the Stoics were the last men to allow themselves to be beaten by mere facts. "Give me a doctrine and I will find the reasons for it", said Chrysippus. So they perfected, if they did not invent, that ingenious and plausible form of pleading, the Theodicy; for the purpose of showing firstly, that there is no such thing as evil; secondly, that if there is, it is the necessary correlate of good; and, moreover, that it is either due to our own fault, or inflicted for our benefit. Theodicies have been very popular in their time, and I believe that a numerous, though somewhat dwarfed, progeny of them still survives. So far as I know, they are all variations of the theme set forth in those famous six lines of the "Essay on Man", in which Pope sums up Bolingbroke's reminiscences of stoical and other speculations of this kind—

"All nature is but art, unknown to thee;
All chance, direction which thou canst not see;
All discord, harmony not understood;
All partial evil, universal good;
And spite of pride, in erring reason's spite
One truth is clear: whatever is is right."

Yet, surely, if there are few more important truths than those enunciated in the first triad, the second is open to very grave objections. That there is a "soul of good in things evil" is unquestionable; nor will any wise man deny the disciplinary value of pain and sorrow. But these considerations do not help us to see why the immense multitude of irresponsible sentient beings, which cannot profit by such discipline, should suffer; nor why, among the endless possibilities open to omnipotence— that of sinless, happy existence among the rest—the actuality in which sin and misery abound should be that selected. Surely it is mere cheap rhetoric to call arguments which have never yet been answered by even the meekest and the least rational of Optimists, suggestions of the pride of reason. As to the concluding aphorism, its fittest place would be as an inscription in letters of mud over the portal of some "stye of Epicurus"; for that is where the logical application of it to practice would land men, with every aspiration stifled and every effort paralyzed. Why try to set right what is right already? Why strive to improve the best of all possible worlds? Let us eat and drink for as to-day all is right, so to-morrow all will be.

But the attempt of the Stoics to blind themselves to the reality of evil, as a necessary concomitant of the cosmic process, had less success than that of the Indian philosophers to exclude the reality of good from their purview. Unfortunately, it is much easier to shut one's eyes to good than to evil. Pain and sorrow knock at our doors more loudly than pleasure and happiness; and the prints of their heavy footsteps are less easily effaced. Before the grim realities of practical life the pleasant fictions of optimism vanished. If this were the best of all possible worlds, it nevertheless proved itself a very inconvenient habitation for the ideal sage.

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The stoical summary of the whole duty of man, "Live according to nature", would seem to imply that the cosmic process is an exemplar for human conduct. Ethics would thus become applied Natural History. In fact, a confused employment of the maxim, in this sense, has done immeasurable mischief in later times. It has furnished an axiomatic foundation for the philosophy of philosophasters and for the moralizing of sentimentalists. But the Stoics were, at bottom, not merely noble, but sane, men; and if we look closely into what they really meant by this ill-used phrase, it will be found to present no justification for the mischievous conclusions that have been deduced from it.

In the language of the Stoa, "Nature" was a word of many meanings. There was the "Nature" of the cosmos and the "Nature" of man. In the latter, the animal "nature", which man shares with a moiety of the living part of the cosmos, was distinguished from a higher "nature". Even in this higher nature there were grades of rank. The logical faculty is an instrument which may be turned to account for any purpose. The passions and the emotions are so closely tied to the lower nature that they may be considered to be pathological, rather than normal, phenomena. The one supreme, hegemonic, faculty, which constitutes the essential "nature" of man, is most nearly represented by that which, in the language of a later philosophy, has been called the pure reason. It is this "nature" which holds up the ideal of the supreme good and demands absolute submission of the will to its behests. It is this which commands all men to love one another, to return good for evil, to regard one another as fellow-citizens of one great state. Indeed, seeing that the progress towards perfection of a civilized state, or polity, depends on the obedience of its members to these commands, the Stoics sometimes termed the pure reason the "political" nature. Unfortunately, the sense of the adjective has undergone so much modification, that the application of it to that which commands the sacrifice of self to the common good would now sound almost grotesque. -----

But what part is played by the theory of evolution in this view of ethics? So far as I can discern, the ethical system of the Stoics, which is essentially intuitive, and reverences the categorical imperative as strongly as that of any later moralists, might have been just what it was if they had held any other theory; whether that of special creation, on the one side, or that of the eternal existence of the present order, on the other. To the Stoic, the cosmos had no importance for the conscience, except in so far as he chose to think it a pedagogue to virtue. The pertinacious optimism of our philosophers hid from them the actual state of the case. It prevented them from seeing that cosmic nature is no school of virtue, but the headquarters of the enemy of ethical nature. The logic of facts was necessary to convince them that the cosmos works through the lower nature of man, not for righteousness, but against it. And it finally drove them to confess that the existence of their ideal "wise man" was incompatible with the nature of things; that even a passable approximation to that ideal was to be attained only at the cost of renunciation of the world and mortification, not merely of the flesh, but of all human affections. The state of perfection was that "apatheia" in which desire, though it may still be felt, is powerless to move the will, reduced to the sole function of executing the commands of pure reason. Even this residuum of activity was to be regarded as a temporary loan, as an efflux of the divine world-pervading spirit, chafing at its imprisonment in the flesh, until such time as death enabled it to return to its source in the all-pervading logos.

I find it difficult to discover any very great difference between Apatheia and Nirvana, except that stoical speculation agrees with pre-Buddhistic philosophy, rather than with the teachings of Gautama, in so far as it postulates a permanent substance equivalent to "Brahma" and "Atman"; and that, in stoical practice, the adoption of the life of the mendicant cynic was held to be more a counsel of perfection than an indispensable condition of the higher life.

Thus the extremes touch. Greek thought and Indian thought set out from ground common to both, diverge widely, develop under very different physical and moral conditions, and finally converge to practically the same end.

The Vedas and the Homeric epos set before us a world of rich and vigorous life, full of joyous fighting men

That ever with a frolic welcome took
The thunder and the sunshine . . .

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and who were ready to brave the very Gods themselves when their blood was up. A few centuries pass away, and under the influence of civilization the descendants of these men are "sicklied o'er with the pale cast of thought"—frank pessimists, or, at best, make-believe optimists. The courage of the warlike stock may be as hardly tried as before, perhaps more hardly, but the enemy is self. The hero has become a monk. The man of action is replaced by the quietist, whose highest aspiration is to be the passive instrument of the divine Reason. By the Tiber, as by the Ganges, ethical man admits that the cosmos is too strong for him; and, destroying every bond which ties him to it by ascetic discipline, he seeks salvation in absolute renunciation. -----

Modern thought is making a fresh start from the base whence Indian and Greek philosophy set out; and, the human mind being very much what it was six-and-twenty centuries ago, there is no ground for wonder if it presents indications of a tendency to move along the old lines to the same results.

We are more than sufficiently familiar with modern pessimism, at least as a speculation; for I cannot call to mind that any of its present votaries have sealed their faith by assuming the rags and the bowl of the mendicant Bhikku, or the cloak and the wallet of the Cynic. The obstacles placed in the way of sturdy vagrancy by an unphilosophical police have, perhaps, proved, too formidable for philosophical consistency. We also know modern speculative optimism, with its perfectibility of the species, reign of peace, and lion and lamb transformation scenes; but one does not hear so much of it as one did forty years ago; indeed, I imagine it is to be met with more commonly at the tables of the healthy and wealthy, than in the congregations of the wise. The majority of us, I apprehend, profess neither pessimism nor optimism. We hold that the world is neither so good, nor so bad, as it conceivably might be; and, as most of us have reason, now and again, to discover that it can be. Those who have failed to experience the joys that make life worth living are, probably, in as small a minority as those who have never known the griefs that rob existence of its savour and turn its richest fruits into mere dust and ashes.

Further, I think I do not err in assuming that, however diverse their views on philosophical and religious matters, most men are agreed that the proportion of good and evil in life may be very sensibly affected by human action. I never heard anybody doubt that the evil may be thus increased, or diminished; and it would seem to follow that good must be similarly susceptible of addition or subtraction. Finally, to my knowledge, nobody professes to doubt that, so far forth as we possess a power of bettering things, it is our paramount duty to use it and to train all our intellect and energy to this supreme service of our kind.

Hence the pressing interest of the question, to what extent modern progress in natural knowledge, and, more especially, the general outcome of that progress in the doctrine of evolution, is competent to help us in the great work of helping one another?

The propounders of what are called the "ethics of evolution", when the "evolution of ethics" would usually better express the object of their speculations, adduce a number of more or less interesting facts and more or less sound arguments, in favour of the origin of the moral sentiments, in the same way as other natural phenomena, by a process of evolution. I have little doubt, for my own part, that they are on the right track; but as the immoral sentiments have no less been evolved, there is, so far, as much natural sanction for the one as the other. The thief and the murderer follow nature just as much as the philanthropist. Cosmic evolution may teach us how the good and the evil tendencies of man may have come about; but, in itself, it is incompetent to furnish any better reason why what we call good is preferable to what we call evil than we had before. Some day, I doubt not, we shall arrive at an understanding of the evolution of the æsthetic faculty; but all the understanding in the world will neither increase nor diminish the force of the intuition that this is beautiful and that is ugly.

There is another fallacy which appears to me to pervade the so-called "ethics of evolution". It is the notion that because, on the whole, animals and plants have advanced in perfection of organization by means of the struggle for existence and the consequent "survival of the fittest"; therefore men in society, men as ethical beings, must look to the same process to help them towards perfection. I suspect that this fallacy has arisen out of the

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unfortunate ambiguity of the phrase "survival of the fittest". "Fittest" has a connotation of "best"; and about "best" there hangs a moral flavour. In cosmic nature, however, what is "fittest" depends upon the conditions. Long since, I ventured to point out that if our hemisphere were to cool again, the survival of the fittest might bring about, in the vegetable kingdom, a population of more and more stunted and humbler and humbler organisms, until the "fittest" that survived might be nothing but lichens, diatoms, and such microscopic organisms as those which give red snow its colour; while, if it became hotter, the pleasant valleys of the Thames and Isis might be uninhabitable by any animated beings save those that flourish in a tropical jungle. They, as the fittest, the best adapted to the changed conditions, would survive.

Men in society are undoubtedly subject to the cosmic process. As among other animals, multiplication goes on without cessation, and involves severe competition for the means of support. The struggle for existence tends to eliminate those less fitted to adapt themselves to the circumstances of their existence. The strongest, the most self-assertive, tend to tread down the weaker. But the influence of the cosmic process on the evolution of society is the greater the more rudimentary its civilization. Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process; the end of which is not the survival of those who may happen to be the fittest, in respect of the whole of the conditions which obtain, but of those who are ethically the best.

As I have already urged, the practice of that which is ethically best—what we call goodness or virtue—involves a course of conduct which, in all respects, is opposed to that which leads to success in the cosmic struggle for existence. In place of ruthless self-assertion it demands self-restraint; in place of thrusting aside, or treading down, all competitors, it requires that the individual shall not merely respect, but shall help his fellows; its influence is directed, not so much to the survival of the fittest, as to the fitting of as many as possible to survive. It repudiates the gladiatorial theory of existence. It demands that each man who enters into the enjoyment of the advantages of a polity shall be mindful of his debt to those who have laboriously constructed it; and shall take heed that no act of his weakens the fabric in which he has been permitted to live. Laws and moral precepts are directed to the end of curbing the cosmic process and reminding the individual of his duty to the community, to the protection and influence of which he owes, if not existence itself, at least the life of something better than a brutal savage.

It is from neglect of these plain considerations that the fanatical individualism of our time attempts to apply the analogy of cosmic nature to society. Once more we have a misapplication of the stoical injunction to follow nature; the duties of the individual to the State are forgotten, and his tendencies to self-assertion are dignified by the name of rights. It is seriously debated whether the members of a community are justified in using their combined strength to constrain one of their number to contribute his share to the maintenance of it; or even to prevent him from doing his best to destroy it. The struggle for existence, which has done such admirable work in cosmic nature, must, it appears, be equally beneficent in the ethical sphere. Yet if that which I have insisted upon is true; if the cosmic process has no sort of relation to moral ends; if the imitation of it by man is inconsistent with the first principles of ethics; what becomes of this surprising theory?

Let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it. It may seem an audacious proposal thus to pit the microcosm against the macrocosm and to set man to subdue nature to his higher ends; but I venture to think that the great intellectual difference between the ancient times with which we have been occupied and our day, lies in the solid foundation we have acquired for the hope that such an enterprise may meet with a certain measure of success.

The history of civilization details the steps by which men have succeeded in building up an artificial world within the cosmos. Fragile reed as he may be, man, as Pascal says, is a thinking reed: there lies within him a fund of energy, operating intelligently and so far akin to that which pervades the universe, that it is competent to influence and modify the cosmic process. In virtue of his intelligence, the dwarf bends the Titan to his will. In every family,

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in every polity that has been established, the cosmic process in man has been restrained and otherwise modified by law and custom; in surrounding nature, it has been similarly influenced by the art of the shepherd, the agriculturist, the artisan. As civilization has advanced, so has the extent of this interference increased; until the organized and highly developed sciences and arts of the present day have endowed man with a command over the course of non-human nature greater than that once attributed to the magicians. The most impressive, I might say startling, of these changes have been brought about in the course of the last two centuries; while a right comprehension of the process of life and of the means of influencing its manifestations is only just dawning upon us. We do not yet see our way beyond generalities; and we are befogged by the obtrusion of false analogies and crude anticipations. But Astronomy, Physics, Chemistry, have all had to pass through similar phrases, before they reached the stage at which their influence became an important factor in human affairs. Physiology, Psychology, Ethics, Political Science, must submit to the same ordeal. Yet it seems to me irrational to doubt that, at no distant period, they will work as great a revolution in the sphere of practice.

The theory of evolution encourages no millennial anticipations. If, for millions of years, our globe has taken the upward road, yet, some time, the summit will be reached and the downward route will be commenced. The most daring imagination will hardly venture upon the suggestion that the power and the intelligence of man can ever arrest the procession of the great year.

Moreover, the cosmic nature born with us and, to a large extent, necessary for our maintenance, is the outcome of millions of years of severe training, and it would be folly to imagine that a few centuries will suffice to subdue its masterfulness to purely ethical ends. Ethical nature may count upon having to reckon with a tenacious and powerful enemy as long as the world lasts. But, on the other hand, I see no limit to the extent to which intelligence and will, guided by sound principles of investigation, and organized in common effort, may modify the conditions of existence, for a period longer than that now covered by history. And much may be done to change the nature of man himself. The intelligence which has converted the brother of the wolf into the faithful guardian of the flock ought to be able to do something towards curbing the instincts of savagery in civilized men.

But if we may permit ourselves a larger hope of abatement of the essential evil of the world than was possible to those who, in the infancy of exact knowledge, faced the problem of existence more than a score of centuries ago, I deem it as essential condition of the realization of that hope that we should cast aside the notion that the escape from pain and sorrow is the proper object of life.

We have long since emerged from the heroic childhood of our race, when good and evil could be met with the same "frolic welcome"; the attempts to escape from evil, whether Indian or Greek, have ended in flight from the battle-field; it remains to us to throw aside the youthful over-confidence and the no less youthful discouragement of nonage. We are grown men, and must play the man

strong in will
To strive, to seek to find, and not to yield,

cherishing the good that falls in our way, and bearing the evil, in and around us, with stout hearts set on diminishing it. So far, we all may strive in one faith towards one hope:

It may be that the gulfs will wash us down,
It may be we shall touch the Happy Isles,
. . . but something ere the end,
Some work of noble note may yet be done.