

AN ANALYSIS OF EVOLUTIONARY ETHICS

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ABSTRACT

One of the main claims of evolutionary ethics is that the theory of evolution can provide us with an ethical criterion. The present thesis investigates this claim. The thesis examines some of the important theories of evolutionary ethics and also reviews the up-to-date philosophical evaluation of evolutionary ethics.

Chapter I, begins with a brief discussion of Darwin's theory of natural selection. It is shown that the theory does not imply, as it is usually thought, a law of progress. It is also shown that the theory is not entirely compatible with Darwin's theory of conscience. The account of Spencer's evolutionary ethics is divided into two versions: social Darwinism and non-social Darwinism. The former version is dismissed as a misapplication of some of the biological terms to ethics. The latter is considered to be more complex. Spencer's ethical criterion, i.e. 'the conduciveness to life is good' is discussed and his argument for the 'inevitable progress' implied by the process of evolution is shown to be invalid. The chapter ends with a brief account of T. H. Huxley's refutation of what he calls 'the fallacy of perfection' related to the evolutionary process.

Chapter II, examines in detail the theories of evolutionary ethics put forth by Julian Huxley, C. H. Waddington, T. Dobzhansky, G. G. Simpson and C. D. Leake. The concept of the general direction of evolution is examined. It is shown that this concept neither implies Julian Huxley's theory of the morality of open development nor does it imply C. H. Waddington's ethical criterion

of 'biological wisdom.' Dobzhansky's concepts of freedom, genetic indeterminism, choice and Simpson's concepts of knowledge and responsibility are examined in the context of ethics. Similarly C. D. Leake's moral criterion i.e., "the probability of survival of a relationship between individual humans or groups of humans increases with the extent to which that relationship is mutually satisfying" is shown to be untenable.

Chapter III deals with Henry Sidgwick's and G. E. Moore's criticism of Herbert Spencer's evolutionary ethics. It is argued that although their criticism is correct, it nevertheless seems to be misdirected.

Chapter IV reviews contemporary philosophers' criticism of Julian Huxley's and C. H. Waddington's theories of evolutionary ethics. The philosophers reviewed are C. D. Broad, Stephen Toulmin, D. D. Raphael, Anthony Quinton and A. G. N. Flew.

Finally it is concluded in Chapter V that although the theory of evolution does not imply an ethical criterion it nevertheless can be considerably helpful in solving the practical moral issues of our age.

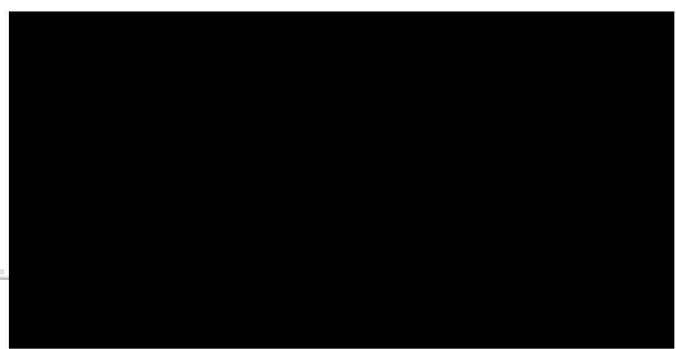


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## 1. EARLY EVOLUTIONARY ETHICS

The term 'evolutionary ethics' presupposes a theory of evolution for which Darwin's theory is often taken for granted. Although 'Darwinism' and 'evolution' are not synonymous, the latter being much broader than the former, they do often evoke each other when used in ordinary discourse. "For everyone except perhaps a few pedantic historians," remarks Waddington, "the 'Theory of Evolution' means 'Darwin' as unmistakably as 'Relativity' means 'Einstein.'"<sup>1</sup> This is, perhaps, due to two main reasons: First, Darwin was able to produce an enormous mass of evidence concerning certain biological facts such as multiplicity, variations and heredity among living beings from which he supposedly derived his doctrine called 'Natural Selection.' He was thus able to show, as many biologists believe, not only how 'evolution' had occurred but also how, given those facts, it must occur; secondly, and more importantly, the social and intellectual climate in England, at the time Darwin wrote, was receptive to, and expectant of, such a theory as his. "How very silly we were," remarked T. H. Huxley, "not to have thought of that ourselves."<sup>2</sup>

This is a partial justification for beginning our study of evolutionary ethics with Darwin's theory of evolution. The justification is further strengthened by the fact that most of the arguments which we will analyze in this thesis, are either based on, or stimulated by his theory. This, however, neither shows, nor does it comit us to showing, the validity of Darwin's theory. To undertake such a study is the job of the philosopher of biology. Our task, here, is confined to investigating whether or not the theory of evolution can be applied to

ethics. It is necessary, then to grasp the main points of Darwin's theory, before their application to ethics is examined.

Darwin's argument, to begin with, is considered to consist of a deductive core. "The old arguments for evolution," writes C. F. Pantin, "were only based on circumstantial evidence... But the core of Darwin's argument was of a different kind. It did not make it more probable--it made it a certainty. Given his facts his conclusions must follow: like a proposition in geometry... Darwin's argument was a deductive one--whereas an argument based on circumstantial evidence is inductive."<sup>3</sup> (We shall use the term 'deduction' in a similar manner--for convenience--without investigating further whether or not, strictly speaking, the term has been properly employed)

It is considered that Darwin's theory of evolution involves two main deductions which deal with the concept of the survival of the fittest and the concept of the struggle for existence. The latter concept, according to Darwin, is an application of the Malthusian doctrine to the whole living world. He writes:

A struggle for existence inevitably follows from the high rate at which all organic beings tend to increase...as more individuals are produced than can possibly survive, there must in every case be a struggle for existence, either one individual with another of the same species, or with the individuals of a different species, or with the physical conditions of life. It is the doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms, for in this case there can be no artificial increase of food and no prudential restraints from marriage.<sup>4</sup>

The second concept, that of the 'Survival of the fittest', is derived from the conjunction of the notion of 'variation' and the notion of 'the struggle for existence':

If organic beings present individual differences in almost every part of their structure, and this cannot be disputed; if there be, owing to their geometrical rate of increase, a severe struggle for existence at some age, season, or year, and this certainly cannot be disputed; then...it would be a most extraordinary fact if no variations had ever occurred useful to each being's welfare, in the same manner as variations have occurred useful to man. But if variations useful to any organic being do occur, as assuredly individuals thus characterised will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they will tend to produce offspring similarly characterised. This principle of preservation, or the survival of the fittest, I have called "natural selection."<sup>5</sup>

A difficulty arises when we examine the first alleged deduction. Darwin argues, as quoted above, that if there are more living beings than can possibly survive, the struggle for existence 'inevitably follows.' But, this, strictly speaking, is not the case. What actually follows is that not all the living beings in question can possibly survive. And this is neither equivalent to, nor does it further imply, the 'inevitable' struggle for existence. To do this, the argument needs an additional premise which seems somewhat difficult to word; but for the sake of argument 'all living beings strive to survive' may serve this purpose. In a Darwinian sense, this would mean that all living beings strive both to live and to produce offspring. Now, this may be true in the case of non-human living beings, but it seems questionable in the case of human beings. A man may well decide not to have a child, or, he may even decide not to go on living, for he may find that life is not worth living. In either case he is not striving for survival. Hence, the struggle for existence does not 'inevitably' follow in the human case.

The struggle for existence is also not 'inevitable' in the case of human beings, as Darwin himself acknowledges, if an 'artificial increase in food' and 'prudential restraints' from marriage are possible.

It is sometimes argued that Darwin's second deduction, which deals with the concept of the survival of the fittest, is circular. William Dampier, for instance, writes: "What is the fittest? the answer is: that which best fits the existing environment...that which is fit survives and that which survives is fit."<sup>6</sup> It seems, however, that this sort of criticism is based on Darwin's use of Herbert Spencer's phrase "the survival of the fittest." For Darwin's own concept of "Natural Selection" defines fitness in terms of an individual's ability to produce offspring; and thus, prima facie does not involve any circularity.

Darwin argues that all living beings are subject to variations--some of which are useful and others which are injurious--in the struggle for existence. Naturally, if any individual has a useful variation he will have a better chance of survival in this struggle.

We are again, however, seemingly facing a circular argument. It is claimed that an individual has a better chance for survival if he has some useful variations. But how do we know that he has such variations? The conclusive answer rests on the fact that it is ultimately his survival that determines that he has useful variations. And again we have travelled a full circle. Nevertheless, this objection does not invalidate Darwin's notion of Natural Selection.

What is of more immediate interest here is, that Darwin's doctrine, even if valid, does not prove what he wants it to prove, namely: (a) "that species have not been separately created"; and (b) "that natural selection has been the chief agent of change." What it actually asserts is that, in the struggle for existence, only those survive who are fit to survive.

To reach the conclusions indicated by (a) and (b) Darwin attempts to combine the doctrine of natural selection with what he calls "the strong principle of inheritance." But this combination, as we shall see, leads Darwin's argument of evolution into serious difficulty.

Although Darwin admits that "our ignorance of the laws of variations is profound," he assumes that a great many variations are inheritable. "Any variation," he writes, "which is not inherited is unimportant for us."<sup>7</sup> Next, he claims that Natural selection works on two types of variations--useful and injurious. The former are preserved, whereas the latter are 'rigidly destroyed' in the struggle. "Variations neither useful nor injurious would not be affected by natural selection,"<sup>8</sup>

Darwin then claims that, not only are useful variations preserved, but they are accumulated by means of inheritance. "The net result," Darwin remarks, "is that each creature tends to become more and more improved in relation to its conditions. This improvement inevitably leads to the gradual advancement of the organization of the greatest number of living beings throughout the world,"<sup>9</sup>

There are two questionable principles involved here: the principle of the accumulation of useful variations; and the principle of inheritance.

First, let us look at the accumulation principle. Inheritance in a Darwinian account, produces variations and whether they are useful or injurious is ultimately decided in the struggle for existence. If those beings with injurious variations are rigidly destroyed, as Darwin claims, then those that are preserved are thereby shown to have useful variations. Now, Darwin claims that 'preserved' or useful variations are accumulated by means of inheritance. The 'net result' of this, as he tells us, "is that each creature tends to become more and more improved in relation to

its conditions." This, simply, is not so. Natural selection does not guarantee that if a variation survives in a particular condition it will thereby survive in future, or in different, conditions. In other words, a variation which was useful before, may be injurious now. If so, it will not survive and hence, it will not be accumulated with other useful variations,

Now, if we assume that the conditions of life are static, and thus, allow the accumulation of useful variations it would lead to another difficulty. The successive process of decreasing the injurious while accumulating the useful variations would eventually come to a point where the former would disappear while the latter would be optimum. In such a case, there would be nothing for natural selection to select. Consequently, the evolutionary process would come to an end.

Darwin, utilizing his principle of inheritance, reaches the same conclusion. C. H. Waddington explains it as follows:

In the main, he adopted the theory of heredity...that both mother and father contribute hereditary qualities to their offspring, which appears as a...blend of its two parents... Again, there is a point which particularly troubled Darwin: If variations blend in inheritance, then crossing between the variant types in a population will produce later generations which come closer and closer to a uniform intermediate averageness. On a system of blending inheritance, in fact, variations will gradually disappear and evolution will come to a standstill for lack of anything for natural selection to work on...<sup>10</sup>

It has been sidely claimed by contemporary biologists that modern genetics, based on Mendel's work, has solved Darwin's difficulty. It shows, as Waddington points out, that, "biological inheritance does not involve any true blending of the qualities of the two parents, and there is no tendency for variations to be diminished by cross breeding...thus Darwin's problem does not arise."<sup>11</sup>

But modern genetics has not confirmed Darwin's principle of accumulation of useful variations by means of inheritance. Nor is this principle implied, as pointed out earlier, by the theory of natural selection. The reason Darwin has argued for this principle seems to be that it is related to the concept of progressive development. Since, according to Darwin's theory, whatever survives, is thereby proved to be useful (or good, as Darwin is sometimes tempted to say); and, since the useful variations tend to accumulate, progressive development follows from it.

But Darwin is not always consistent on this point. At one place he says: "Natural selection, or the survival of the fittest, does not necessarily include progressive development." But later in the chapter on "Objections to the Theory", he seems to be taking the opposite position. He remarks, "Although we have no good evidence of the existence in organic beings of an innate tendency toward progressive development, yet this necessarily follows, through the continued growth of natural selection"<sup>12</sup>

Darwin is mistaken in believing that the theory of natural selection implies a law of progress. He expresses this belief in many places in both The Origin of Species and Descent of Man. The following is one of the clearest expressions of this view:

Finally, it may not be a logical deduction, but to my imagination it is far more satisfactory to look at such instincts as a young cuckoo ejecting its foster brothers--ants making slaves--not as specially endowed or created instincts, but as small consequences of one general law leading to the advancement of all organic beings--namely multiply, vary, let the strongest live and the weakest die.<sup>13</sup>

The concept of progress is extremely important in the whole argument for evolutionary ethics. It will, therefore, be one of our main

points of discussion throughout this thesis. For the present, it is sufficient to note that, although Darwin thinks that the theory of natural selection implies a law of progress, it does not, in fact, imply such a law.

We shall now briefly discuss Darwin's own attempt to apply Natural Selection to, what he calls 'conscience' or 'moral sense'. It is not sufficiently clear what Darwin means by these terms. "The 'moral sense' or 'conscience', we are told in the beginning of chapter IV of The Descent of Man, "is summed in that short but imperious word 'ought', so full of significance." In a later passage we hear of "Moral sense which tells us what we ought to do, and of the conscience which reproves if we disobey it."<sup>14</sup> Sometimes Darwin equates 'conscience' or 'moral sense' with repentance, regret, or remorse, etc. In general, as we shall later see, by 'conscience' Darwin means a feeling of regret which results from man's violation of social instinct which he ought not to violate.

Darwin argues: "that any animal, whatever, endowed with well marked social instincts, the parental and filial affections being here included, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well or nearly as well developed as in man."<sup>15</sup>

Among social instincts, sympathy, according to Darwin, is the most important, and among intellectual powers, the power of reflection and the power of languages are the most significant. The power of reflection enables man to recall his past actions and motives; and the power of language enables him to recognize the approbation or disapprobation of his fellow beings.

It is quite possible that both these factors of Darwinian

conscience--social instincts and intellect--are produced or developed through Natural Selection. Darwin produces an enormous mass of evidence to support this claim. Furthermore, he argues that the conjunction of the social instincts and of the intellect produces 'conscience' or 'moral sense.'

Darwin's argument is that when a man violates a social instinct (for instance sympathy) and yields to a selfish instinct (for instance hunger or lust), he afterwards regrets it. Why does he yield to a selfish impulse? Darwin's answer is: Because selfish impulses are stronger than social impulses. But why does man regret? Darwin answers:

At the moment of action man will no doubt be apt to follow the stronger impulse,..it will more commonly lead him to gratify his own desires at the expense of other men. But after their gratification, when past and weaker impressions are judged by the ever enduring social instinct and by this deep regard for the good opinion of his fellows, retribution will surely come. He will then feel remorse, repentance, regret or shame;...He will consequently resolve, more or less, firmly to act differently for the future; and this is conscience; for conscience looks backwards, and serves as a guide for the future.<sup>16</sup>

This answer is not satisfactory, for it is based on two assumptions, one of which seems inconsistent with Darwin's basic assumptions, the other of which is questionable. The first assumption--an inconsistent one--is that the "social instincts are ever present and persistent," while hunger, lust, vengeance, etc., are not. The second assumption is that regret is the concomitant of a violation of the social instinct on the part of the selfish instincts. Considering his first assumption, we see that, according to the theory of natural selection, the instinct of self-preservation is the basic instinct and is the earliest of all. Social instincts are later developed by natural selection, for they were of help in the struggle for existence--had they not have been helpful,

they would not have developed under natural selection. Thus, there is a ground for claiming that self-preservation is more persistent and present than social instincts.

Moreover, if non-social impulses are stronger than the social ones, and if man "will no doubt be apt to follow the stronger impulses" then conscience serving him as a guide for the future does not make sense. He may regret his nonsocial impulses, but if they are stronger, he will no doubt follow them. It is highly questionable whether conscience can prevent a starving man from stealing food. Perhaps Darwin would concede this. But his main question still remains: "Why does he regret having stolen food from hunger?" or, "Why is he bitterly regretful, if he has yielded to a strong sense of self-preservation, and has not risked his life to save that of a fellow creature?" These questions presuppose Darwin's second assumption, i.e., regret is the concomitant of a violation of the social instincts on the part of the selfish instincts. But, this again is not always the case. It is very doubtful whether a starving man will regret having stolen food, or a professional robber will regret having robbed someone.

But what if such a robber does feel regret? This would show that the robber feels that he has violated social instinct which he ought not to violate. However, this, in itself, is a moral judgment. It follows then, that: first, regret is not a concomitant of a violation of the social instinct; second, even if it were a concomitant, it is nevertheless, preceded by a moral judgment.

Moreover, Darwin's theory of conscience may not always be compatible with the natural selection theory. For instance, the stealing of food (if no other option is available) will increase the

chances of survival of a starving man; and this act would be compatible with the natural selection theory. But, being a violation of social instinct, stealing could be incompatible with his conscience doctrine. Darwin himself seems to recognize this incompatibility. At one point he writes:

Important as the struggle for existence has been and even still is, yet as far as the highest part of man's nature is concerned there are other agencies more important. For the moral qualities are advanced, either directly or indirectly much more through the habit, the reasoning powers, instruction, religion, etc., than through natural selection; though to this latter agency may be safely attributed the social instincts which afforded the basis for the development of the moral sense.<sup>17</sup>

#### HERBERT SPENCER

We shall now discuss Herbert Spencer's evolutionary ethics. He is a more significant figure, in this respect, than Darwin: Darwin is mainly concerned with the origin of morality, while Spencer's main attempt consists in "establishing moral rules on a scientific basis."

Spencer's ethical system can be divided into two parts: social Darwinism and non-social Darwinism. Spencer is considered to be one of the main exponents of thought called 'Social Darwinism' which remained quite influential until the end of the last century. Social Darwinism was a bad combination of biology and sociology. Biological terms such as 'struggle,' 'survival,' 'fitness,' etc., were simplified and then applied to social relations without any qualifications. Social progress was considered to result from severe competition between the fittest and the relatively unfit. Consequently, Spencer writes:

The poverty of the incapable, the distress that comes upon the imprudent, the starvation of the idle, and those

shoulderings aside of the weak by the strong, which leave many in "shallows and miseries" are the decrees of a large far seeing benevolence...The process must be understood, and the sufferings must be endured. No power on earth, no cunningly devised laws of statesmen, no world rectifying schemes of humane, no communist panaceas,...can diminish them one job.<sup>18</sup>

Spencer is clearly mistaken in this passage. It is only biological fitness that counts in the struggle for existence; and biological fitness is measured by the success of an individual in producing children. Thus, it is only the reproductive unfitness' against which the so-called decrees of a large far seeing benevolence must be passed. 'Poverty,' 'misery,' or 'weakness' cannot be such decrees unless they affect the reproductive capability of an individual. And they do not necessarily do so. Rather, it is possible that the reproductive fertility may affect the reverse.

Moreover, competition is not the only way to survival. Co-operation has played a significant part in the process of evolution. Spencer himself recognizes this fact. He says:

We have also concluded that these last stages in the evolution of conduct are those displayed by the highest type of being when he is forced, by increase of numbers, to live more and more in the presence of his fellows. And there has followed the corollary that conduct gains ethical sanction in proportion as the activities, becoming less and less militant and more and more industrial, are such as do not necessitate mutual injury or hindrance but consist with and are furthered by, co-operation and mutual aid.<sup>19</sup>

Spencer believes that the process of evolution is leading to an inevitable progress--toward the creation of an ideal man. His argument is worth considering. He argues:

1. "All imperfection is unfitness to the conditions of existence."<sup>20</sup>
2. "This unfitness must consist either in having a faculty or

faculties excess; or, in having a faculty or faculties deficient; or both,"

3. "A faculty in excess, is one which the conditions of existence do not afford full exercise to; and a faculty that is deficient, is one form which the conditions of existence demand more than it can perform,"
4. "But it is an essential principle of life that a faculty, to which circumstances do not allow full exercise, diminishes; and that a faculty on which circumstances make excessive demands increases,"
5. "And so long as this excess and this deficiency continues, there must continue decrease on the onehand, and growth on the other,"
6. "Finally, all excess and all deficiency must disappear; that is, all imperfection must disappear,"

Thus, the ultimate development of the ideal man is logically certain. Progress, therefore, is not an accident, but a necessity."<sup>20</sup>

Spencer claims that the concept of progress argued above is due to the working of a universal law. "If anyone demures to this," he says, "let him point out the error."<sup>21</sup> The error, of course, can be detected by analysing the premise (#4) of this argument. The so-called essential principle of life mentioned therein, has now been disapproved by the majority of the biologists.

This discredited principle is a version of Lamarck's notion of the use and disuse principle of inheritance. Darwin's concept of the accumulation of the useful variation by inheritance, is also essentially the same as Lamarck's notion. Hence, our criticism of Darwin's principle

also applies to Spencer's so-called law of progress. We should, however point out that a faculty needed in one circumstance may not be required in another--and vice versa. Thus, unless the circumstances are static, the 'unfitness' cannot disappear. Since there is no guarantee that circumstances will never change, Spencer's essential principle cannot hold. And progress, contrary to Spencer's claim, remains 'an accident' and not 'a necessity.'

We shall now turn to Spencer's second type of evolutionary ethics. This is more important than his Social Darwinistic theory.

Spencer, as he himself remarks in the preface to Data of Ethics was primarily concerned to find 'for the principles of right and wrong conduct at large a scientific basis.'<sup>22</sup> He may, in this respect, be called a successor of Bentham. He was not, however, satisfied with the greatest happiness principle of utilitarianism. Spencer claims that, happiness, or the feelings of pleasure and pain, cannot be measured with any degree of objective precision. Consequently, he proposed the phenomenon of physical life as a reference to moral values.

This phenomenon, Spencer tells us, can be understood through the study of evolution. He suggests that one of the fundamental features of living beings is that their acts are adjusted to ends. Spencer defines conduct as the adjustment of acts, acts being more precisely defined as external motions of animate beings. The basic ends of these acts, according to Spencer, is the preservation of life. This is the supreme end of the universal conduct exhibited by all living beings.

Life, for Spencer, must be measured by its length and breadth. While it is not altogether clear, it seems that by the term 'breadth' he means the quantity of change which a living being undergoes in his

lifespan. He attempts to explain the importance of the concept of breadth as follows:

An oyster, adapted by its structure, to the diffused food contained in the water it draws in, and shielded by its shell from nearly all dangers, may live longer than a cuttle-fish, which has such superior powers of dealing with numerous contingencies; but then, the sum of vital activities during any given interval is far less in the oyster than in the cuttle-fish. So a worm, ordinarily sheltered from most enemies by the earth it burrows through, which also supplies a sufficiency of its poor food, may have greater longevity than many of its annulose relatives, the insects; but one of these during its existence as larva and imago, may experience a greater quantity of the changes which constitute life. Nor is it otherwise when we compare the more evolved with the less evolved among mankind. The difference between the average lengths of the lives of savages and civilized is no true measure of the difference between the totality of their two lives, considered as aggregates of thought, feeling, and action. Hence, estimating life by multiplying its length into its breadth, we must say that the augmentation of it which accompanies evolution of conduct, results from increase of both factors.<sup>23</sup>

Mr. Spencer then tries to show that the direction of evolution has been from less to more complex; and from less to more elaborate adjustments of acts so that they may more readily accomplish their ends. "In the lowest forms of life," he remarks, "the conduct is constituted of actions so little adjusted to ends, that life continues only as long as the accidents of the environment are favorable."<sup>24</sup> Again, he claims that the conduct of lower animals, as compared with the conduct of the higher, including man, "mainly differs in that the adjustments of acts to ends are relatively simple and relatively incomplete."<sup>25</sup> Elsewhere, he characterises the evolution of conduct as stretching from 'indefinite incoherent homogeneity' to 'definite coherent heterogeneity.' Since, according to him, the evolution of conduct leads to the increasing of the length or breadth of quantity of life, the conduct so

understood is good. "The conduct called good," he says, "rises to the conduct conceived as best when it simultaneously achieves the greatest totality of life in itself, in offspring and in fellow men."<sup>26</sup>

Spencer observes that his criterion, which equates conduciveness to life as good, involves an important assumption. The assumption is that life is worth living. Spencer is aware that "before entering on any ethical discussion" he must refute the irreconcilable pessimist opinion that life is not worth living. First, he asks: Have these irreconcilable opinions (pessimist and optimist) any thing in common?" "Yes, there is one postulate," he answers, "in which pessimists and optimists agree. Both their arguments assume it to be self-evident that life is good or bad, according as it does or does not bring a surplus of agreeable feeling."<sup>27</sup> Mr. Spencer claims that since life brings a surplus of agreeable feeling it is, therefore, worth living. He writes:

This law is alike inferable a priori and proved a posteriori, and yields a qualified optimism as its corollary--an optimism qualified by the conclusion that the life of every species of creature is happy or miserable according to the degree of congruity or incongruity between its nature and its environment; but that everywhere decrease of the misery or increase of the happiness accompanies the inevitable progress towards congruity. Whence it follows that in the case of mankind, pessimism may be locally true under certain conditions (as those who have fostered the creed which makes pessimism a blessing), while optimism may be locally true under conditions of a more favourable kind; but that with the increasing adaptation of humanity to social life, the excess of pleasures over pains which warrants optimism, must become ever greater.<sup>28</sup>

The agreeable feelings or pleasure, according to Spencer, are the ultimate aim of good conduct. "No school can avoid," he contends, "taking for the ultimate moral aim a desirable state of feeling called by whatever name, gratification, enjoyment, happiness. Pleasure, somewhere, at some time, to some beings is an inexpugnable element at the

conception."<sup>29</sup>

The inevitable progress towards congruity, according to Spencer, will establish the coincidence between life and pleasure so that either concept can be used for ethical purposes.

Mr. Spencer, however, points out that the concept of complete coincidence applies only to Absolute Ethics. He makes the distinction between Absolute Ethics and Relative Ethics. The former deals with the conduct of ideal men in an ideal society, the latter deals with the conduct of actual men in actual society. Mr. Spencer argues that Absolute Ethics must precede Relative Ethics just as 'ideal mechanical science' must precede mechanical science fitted for dealing with the real world. We shall discuss this point somewhat further in chapter III.

T. H. Huxley

We shall end this chapter with a brief discussion of T. H. Huxley's views on Evolution and Ethics which he put forward in his famous Romanes Lecture, delivered in 1893. We are particularly interested in his clear refutation, of what he calls, the fallacy of perfection. Huxley tells us that, "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."<sup>30</sup>

Huxley brings up two objections to this argument, called the fallacy of perfection: First he contends, that the present advancement in the perfection of organization in plants and animals and the consequent survival of the fittest is not a result of any law of

perfection, rather, such advancement is merely accidental. Fitness depends upon the conditions of life. Huxley writes: "If our hemisphere were to cool again, the survival of the fittest might bring about, in the vegetable kingdom, a population of more stunted 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..."<sup>31</sup> It follows, then, that what is fit under one set of environmental conditions may not be so under a different set of conditions. Thus, the present advancement in perfection, and fitness, may not hold tomorrow. Therefore, it is false to argue that we must look to the evolutionary process for perfection, on the grounds that it has resulted in an advancement of perfection in organization in plants and animals.

Second, Huxley believes that the analogy of cosmic nature to society does not apply. Consequently, even if the evolutionary process is considered to lead to progress or perfection (though it does not) it would only apply to plants and animals and not to human beings. "Social progress," he remarks, "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 be the fittest, in respect of the whole of the conditions which obtain, but of those who are ethically the best."<sup>32</sup> Furthermore, he states that, "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."

It is worth pointing out that Huxley's first objection to the

fallacy of perfection seems sufficient to show the weakness of the argument concerned. But Huxley's second criticism is objectionable because it involves a pseudo-contradiction between ethics and the Theory of Evolution. The latter being a scientific theory can neither confirm, nor can it contradict, any ethical judgments.

T. H. Huxley criticizes the propounders of 'ethics and evolution' for committing the fallacy of associating the fittest with 'ethically the best.' "I suspect," he writes, "that this fallacy has arisen out of the unfortunate ambiguity of the phrase 'the survival of the fittest.' Fittest has a connotation of 'best', and about 'best' there hangs a 'moral flavour.'"<sup>33</sup> But in opposing evolutionary process, 'in all respects', Huxley is negatively doing the same thing. Why is his ethical process anti-evolutionary? Simply because he believes that the evolutionary process is not ethically justifiable. But it cannot be ethically unjustifiable if it has no moral implications or 'moral flavour.' A formula of Algebra cannot be regarded as ethically justifiable or not justifiable; nor can a scientific theory be so regarded.

Lastly, T. H. Huxley adopts what is called the 'gladitorial theory of existence.' But this theory, as Dobzhansky says "is not only, not a necessary part of the theory of natural selection, let alone a part of the theory of evolution, but is, in fact, invalid on purely biological grounds."<sup>34</sup>

## II. LATER EVOLUTIONARY ETHICS

This account of later evolutionary ethics must be prefaced by two observations: First, this view has been argued for by biologists, whereas philosophers have mainly ignored it; second, it involves two different theories of evolution.

The first of these observations may raise a question about the biologist's justification for attempting to do (a) what most philosophers have ignored and (b) what lies outside their professional competence. To justify this attempt one must show that the philosopher's reason(s) for ignoring evolutionary ethics is(are) not conclusive. Now the philosopher's main reason in this regard is, that he thinks that evolutionary ethics must involve the so-called naturalistic fallacy. But this seems to be inconclusive because philosophers have not completely explored whether or not the fallacy is actually involved in evolutionary ethics. The assumption that it does involve this fallacy seems to be taken for granted by most philosophers because of G. E. Moore's account of Herbert Spencer's ethics. Now, even supposing that Spencer's ethics involves the fallacy, it does not follow that evolutionary ethics, in general, does. Moreover--as Moore himself says--"Mr. Spencer's doctrine, it must be owned, does not offer the clearest example of the naturalistic fallacy as used in support of Evolutionistic Ethics."<sup>1</sup> It seems to follow that the reason for rejecting evolutionary ethics remains open for reconsideration.

Moreover, even if it is granted that evolutionary ethics, being a type of naturalistic ethics, does involve the fallacy, it still remains questionable whether the fallacy itself is a conclusive reason for

rejecting evolutionary ethics. Anthony Quinton, for instance, holds that the doctrine of antinaturalism, with which this fallacy is related, "is not even plausible, let alone convincing." This is one reason why he thinks "that evolutionary ethics should be considered afresh."<sup>2</sup>

Part (b) of the question about the biologist's justification for attempting to do evolutionary ethics is, in fact, part of a general question: Is it justifiable for anyone to attempt to do what is beyond his professional competence? The answer is a qualified yes. It is justifiable if it contributes to the solution of the problem concerned. Now, it is not necessarily the case that only professional attempts satisfy this criterion. Darwin's attempt was not, in itself, professional. But a professional attempt may differ from a non-professional one--apart from other things--because the former gives a sort of reliability which the latter does not. But this does not imply that the latter is always inadequate or futile. Sometimes, as protested by C. H. Waddington, professional philosophers prejudge the philosophical attempts made by scientists as inadequate. "A newcomer has scarcely opened his mouth," remarks Waddington, "to proffer a few comments or ideas before the experts have labelled and dismissed him as an adherent of one or other of the recognized schools, whose weaknesses have long been exposed."<sup>3</sup> Thus, Waddington quotes C. D. Broad as saying:

"We can contemplate with a smile or a sigh," writes Dr. C. D. Broad, "the waxing and waning of each cheap and easy solution which is propounded for our admiration as the last word of "science". We know beforehand that it will be inadequate; and that it will try to disguise its inadequacy by ignoring some of the facts, by distorting others, and by that curious inability to distinguish between ingenious fancies and demonstrated

truths which seems to be the besetting weakness of the man of purely scientific training when he steps outside his laboratory. And we can amuse ourselves, if our tastes lie in that direction, by noticing which well-worn fallacy or old familiar inadequacy is characteristic of the latest gospel, and whether it is well or ill-disguised in its new dress."<sup>4</sup>

This seems to be a sweeping generalization. We shall see in chapters III and IV whether or not philosophers have treated biologists' attempts to formulate an evolutionary ethic seriously and sympathetically.

As mentioned earlier, later evolutionary ethics involves two different concepts of evolution. We have already discussed the first of these--the natural selection theory--in chapter I. The other theory, which may be called the general or extended theory of evolution, is claimed to be an extended version of the natural selection theory. The natural selection theory, as we know, applies to living phenomena. But the so-called extended theory of evolution is intended to apply to the whole universe: both living and non-living.

This raises the question: Is this a possible extension of the term 'evolution'? We shall argue that it is not, unless the established meaning of 'evolution' is changed. This amounts to saying that the general theory of evolution uses the term 'evolution' in a different sense from the one used in the natural selection theory.

It is generally agreed by biologists that the theory of natural selection is a scientific theory of evolution. This does not imply that the general theory of evolution, being different from the theory of natural selection, is not scientific. But it remains to be shown that it is scientific; and there are difficulties involved in doing this. We shall come to some of these in chapter IV.

Here is a brief account of the theory of natural selection. This theory, as has already been mentioned, intends to show that species

have not been separately created. They have descended from one or a few simple ancestors through a process of change, the chief agent of which is natural selection. It may be pointed out that the term 'change' is not used here as a synonym of 'evolution'. But the general theory seems to be using it as synonymous with 'evolution'. The argument seems to be that the process of change is a process of evolution. Since the process of change is universal, it follows that the process of evolution is universal. Evolution, in this sense, as Julian Huxley puts it, "is a comprehensive and continuous process from cosmic stardust to human society."<sup>5</sup> The whole phenomenon is divided into three distinct spheres--cosmic, biological and human. Evolution in each of these is brought about by a different mechanism of change. In the cosmic sphere it is brought about by chemical actions; in the biological, by natural selection; and, in the human, by culture. It is further claimed that although the process of change is gradual, it now and then reaches a 'critical point' or 'transcendental point', to use Dobzhansky's terms. At such points the process assumes quite new properties and mechanisms of change. Julian Huxley illustrates this claim by means of an analogy. "When we boil water," he says, "there is a continuity of substance between water as a liquid and water as steam, but there is a critical point at which the substance  $H_2O$  changes its properties."<sup>6</sup> According to Huxley the change from inorganic (cosmic) to living matter and the change from prehuman to human life are the two known critical points in the history of evolution.

It may be pointed out that this account describes, but does not define the assumed process of universal change. Dobzhansky admits: "There is no satisfactory general definition of evolution. 'Sustained change' comes probably as close as possible at present. In the special

case of biological evolution this may be amended to become 'sustained change over a succession of generations' to differentiate the evolutionary development (phylogeny) from the development of the individual (ontogeny)."<sup>7</sup>

It is obvious that Dobzhansky's "sustained change" is more a qualification than an explanation of the process of change.

Huxley, according to Dobzhansky, has proposed a "much more elaborate" definition of general evolution. "Evolution," according to this definition "is a self-maintaining, self-transforming and self-transcending process, directional in time and therefore irreversible, which in its course generates ever fresh novelty, greater variety, more complex organization, higher levels of awareness, and increasingly conscious mental activity."<sup>8</sup>

This definition, according to Dobzhansky, "will not do even for biological evolution alone. Instances of evolutionary stagnation show that evolution is not self-maintaining, evolution is primarily a groping and only secondarily a directional process; evolution is not infrequently regressive rather than progressive; cladogenesis (increasing variety) is as frequent as anagenesis (change within a single evolutionary unity); consciousness or self-awareness have arisen as far as we know, in only a single line, that leading to man."<sup>9</sup>

The basic difficulty involved in the theory is to show that the process of evolution is continuous from the cosmic to the human sphere. This is what the concept of extension of the evolutionary process amounts to. There are two gaps in the process that must be explained in order to make the continuity claim. These gaps are: (1) that between living and non-living phenomena; and, (2) between mind and matter. The second gap is more important than the first, for any explanation of it must

somehow apply to the first.

Two arguments have been put forth to explain this gap. According to one "mind is universally present not only in all organisms and their cells but in molecules, atoms and elementary particles."<sup>10</sup> Similarly, B. Rensch remarks that "all phenomena are psychic."<sup>11</sup> If so, there cannot be any gap between matter and mind. Dobzhansky points out two difficulties in this argument. First, the hypothesis of panpsychism, as it is called by Rensch, does not seem to be falsifiable by evidence. If all phenomena are psychic, we cannot have evidence that is nonpsychic, and thus, we cannot falsify it. "An assumption," says Dobzhansky, "which is not falsified [sic] by evidence has no standing in science."<sup>12</sup> Second, according to Dobzhansky, "although no satisfactory formal definition of life has been proposed, we do know some characteristic phenomena which occur in all living beings. One of them is self-replication, talk about...atoms or electrons being somehow living may be a poetical metaphor, but it is empty of meaning as a biological hypothesis."<sup>13</sup>

This difficulty is avoided by the hypothesis that mind is not present in matter but the potentialities of mind are present or inherent therein. The "World Stuff" of Julian Huxley contains both matter and the potentiality of mind. "The process of evolution," he remarks, "in all its phases can be envisaged as a trend toward the actualization of potentiality, the realization or fulfilment of inherent possibility."<sup>14</sup>

Similarly, C. H. Waddington claims that "since we know that consciousness does occur in certain parts of the world, namely in some of our own mental operations, it seems to follow that at least the

potentiality of the consciousness must be present throughout the entire material universe. An atom or a molecule cannot be just a lump of matter or a collection of electrical charges. A full description of it must include the statement that inherent in it is potentiality for awareness."<sup>15</sup>

I must confess that I do not understand the logic of inherent potentiality or possibility. Perhaps Julian Huxley is right in saying that "we need a science of possibilities. Such a science will take account of the limitations of reality as well as of its immense potentialities."<sup>16</sup> In the absence of such a science it would seem as though the argument for inherent potentiality begs the question. The fallacy is exposed when the question of evidence for inherent potentiality is raised. "The evidence of this [mind and life]," answers Dobzhansky, "is simply that we know that in fact life eventually did appear. Similarly the potentiality of mind must have been present in the protoplasm since we the rational beings did eventually arise."<sup>17</sup> As has already been quoted, C. H. Waddington also offers similar evidence: "Since we know that consciousness does occur in certain parts of the world, namely in some of our own mental operations, it seems to follow that at least the potentiality of the consciousness must be present throughout the entire material universe."<sup>18</sup>

Clearly, the potentiality conclusion cannot be drawn from the above argument unless the following assumption is made: Everything that appears in the universe has inherent potentialities for it present in the material universe. But this assumption includes the conclusion of the argument. The argument from potentiality cannot, therefore, be held.

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Since both arguments--derived from inherent potentiality and from panpsychism--do not hold, the general theory of evolution, and therefore, the comprehensive and continuous process it describes, cannot be maintained. The important gaps between mind and matter and life and not-life are still, in light of this theory, unbridged.

Let us now examine the important attempts to connect ethics with evolution. We shall begin by considering the work of Julian Huxley.

### Julian Huxley

Julian Huxley's fundamental ethical principle, in his own words, is "it is ethically right to aim at whatever will promote the increasingly full realization of increasingly higher values."<sup>19</sup> Huxley claims that he has derived this principle from what he calls the general direction of evolution.

Huxley's whole argument for evolutionary ethics depends upon his assumption of the general direction of evolution. Falsification of the assumption will, of course, collapse the argument. And the assumption, unfortunately, is, as we shall see, not unquestionable. It has already been pointed out that Julian Huxley is one of the foremost exponents of the so-called extended theory of evolution. His concept of the general direction of evolution applies, therefore, to the extended theory--and not only to the natural selection theory--of evolution.

Huxley admits that evolution as a whole has taken many directions, but most of them have reached an evolutionary dead end. "insects," he says, "appear to have reached an evolutionary dead end over 30 million years ago; birds a little later; and all the main lines of higher mammals except the primates--carnivores, ungulates, whales, bats,

rodents, and so forth—at least no later than the early Pliocene. Most evolutionary lines or trends are specializations which either thus come to a stop or are extinguished; true progress or the unlimited capacity for advance is rare."<sup>20</sup>

But there is one direction, Huxley tells us, "within the multifariousness of evolution which we can legitimately call progress."<sup>21</sup> This direction, according to him, has two characteristics: (a) It is toward a higher degree of organization or complexity; and, (b) it is open to further progress. Huxley particularly stresses the second characteristic, for it saves the general direction from coming to a dead end.

It is important to note that Huxley gives an other criterion for the general direction at the human level. "This direction has culminated in the attainment of a state where the world-stuff (now moulded into human shape) finds that it experiences some of the new possibilities as having value in or for themselves; and further that among these it assigns higher and lower degrees of value, the higher values being those which are more intrinsically or more permanently satisfying, or involve a greater degree of perfection,

"The teleologically-minded would say that this trend embodies evolution's purpose. I do not feel that we should use the word purpose save where we know that a conscious aim is involved; but we can say that this is the most desirable direction of evolution, and accordingly that our ethical standards must fit into its dynamic framework. In other words, it is ethically right to aim at whatever will promote the increasingly full realization of increasingly higher values."<sup>22</sup>

It may be remarked here that among such higher values, Huxley

includes enjoyment of natural beauty, aesthetic experience, acquisition of knowledge and understanding, personal love, devotion to an active cause, etc.,

Before we discuss Huxley's concept of the general direction of evolution, we must mention some of the main principles of his evolutionary ethics. "In the broadest possible terms," he says, "evolutionary ethics must be based on a combination of a few main principles: that it is right to realize ever new possibilities in evolution, notably those which are valued for their own sake; that it is right both to respect human individuality and to encourage its fullest development; that it is right to construct a mechanism for further social development which shall satisfy these prior conditions as fully, efficiently, and rapidly as possible."<sup>23</sup>

Why is it right both to respect human individuality and to encourage its fullest development? Huxley's answer is: because "it is clear on evolutionary grounds that the individual is in a real sense higher than the state or the social organism."<sup>24</sup> The grounds (which he thinks are evolutionary) for this are that "the possibilities which are valued for their own sake are not experienced by society as a unit" but by some or all of the human beings which compose it.

Huxley further claims that the 'right' development of an individual is an evolutionary end in itself. From this he claims to have derived the principle that "it is right that there should be universal equality of opportunity for development of each individual."<sup>25</sup>

Another principle stresses the importance of the rate of change. It states that there must be an optimum rate of change above which stability is endangered and the sacrifices of the present are excessive,

below which advance is so slow that the welfare of future generations is needlessly impaired.

Huxley's ethics includes a few other principles which are of little significance for the purposes of this presentation. Consequently, we will not include a discussion of them.

It must be pointed out that Huxley's argument has been discussed carefully and from a number of perspectives by philosophers such as C. D. Broad, D. D. Raphael, Stephen Toulmin, Anthony Quinton and A. G. N. Flew. We shall present their analyses in chapter IV. These philosophers have, however, failed to examine Huxley's concept of the general direction of evolution. Although Toulmin does criticise this concept, his criticism is insufficient and casual. Since this concept is the nerve of Huxley's argument and also of Waddington's argument we will examine it briefly.

The assumption that there is a general direction of evolution raises two main questions: (1) Is it possible? and, (2) is it desirable, or progressive?

Huxley gives two types of reasons why he thinks that the general direction is desirable. One is that the direction has produced, in its last stage, the things we value for their own sake. This reason has been examined adequately by philosophers. D. D. Raphael has shown that the intrinsic value criterion of the general direction involves circularity. Besides circularity Huxley's argument suffers from another weakness. Even supposing that circularity is not involved in the argument, the conclusion about the desirability of general direction still does not follow. From the fact that the general direction has produced, in its last phase, certain intrinsic values, it does not

follow that producing intrinsic values is the nature or property of the direction. Huxley himself does not claim that the intrinsic values are the only values that have been produced by the general direction. Moreover, from the fact that the general direction has produced good, it does not follow that it will produce it in the future. Huxley's conclusion, that the general direction is the most desirable is, therefore, hardly justifiable.

It should also be noted that Huxley's general direction (in this respect) is not in fact a general direction. "Among all the millions of living beings," as G. G. Simpson points out, "it is fully relevant to only one. It is not a general tendency in evolution but a tendency limited to a very small minority of evolving organisms and fairly continual in late phases of the ancestry of a single one only.

An ethic so derived is not based on the nature of evolution but on the nature of man."<sup>26</sup>

Let us then examine Huxley's other characterization of the general direction which he claims to have derived from the study of evolution as a whole. As mentioned earlier, Huxley gives two features of the direction: (1) It is toward a higher degree of organization or complexity; and, (2) it is open to further progress. It is the second feature, as we have already seen, that Huxley particularly emphasizes-- an emphasis which includes the ethical sense of the concept. "Anything," he remarks, "which permits or promotes open development is right. Anything which restricts or frustrates development is wrong. It is a morality of evolutionary direction."<sup>27</sup> And "in this light the highest duty of man is seen as the proper utilization of the untapped resources of human beings."<sup>28</sup>

It may be pointed out here, that unless the word 'proper' in this quote is synonymous with 'right' the claim concerning the highest duty cannot be made. Moreover, the concept of 'open development' must imply the notion of full realization of increasingly higher values. Otherwise Huxley's open development principle of ethics would be inconsistent with his fundamental principle of the intrinsic value of ethics.

But Huxley's fundamental difficulty lies in proving his claim that the so-called open development morality is 'a morality of evolutionary direction.' To do this he must show (a) that openness to development is a property of the nature of evolutionary direction; and (b) that this property is desirable or good. For the present purpose we can disregard (b). Now it is highly doubtful whether Huxley can show (a). If openness to development would be a property of evolutionary direction no evolutionary direction would have come to what Huxley calls an evolutionary dead-end. But Huxley himself maintains that all the main lines--except one--in evolution have come to a dead-end and that "the true progress or the unlimited capacity for advance is rare." This claim is also supported by G. G. Simpson when he says that "by far the commonest trends in evolution are those that lead to extinction."<sup>29</sup>

It seems to follow then that the history of evolution trends or directions does not support Huxley's claim that openness to development is the property of evolutionary direction.

In spite of this apparent contradiction, Huxley is claiming that not only has the general direction always been open to further advance but that it will remain so in the future. His reason for this claim is that the direction at the present level works through culture. "Purely biological progress," he remarks, "in fact has come to an end, but

human progress is just beginning. There is a radical difference between them."<sup>30</sup> The radical difference, according to him, is that man has acquired the use of verbal concepts and can organize his experience in a common pool. "We can now begin to grasp," he says, "the nature and profundity of the difference. The development of animals is always closed; their evolution is always sooner or later restricted. Man's individual development, on the other hand, is potentially open... Animal types have limited possibilities and sooner or later exhaust them; man has an unlimited field of possibilities, and he can never realize all of them."<sup>31</sup>

Huxley further emphasizes that this type of cultural evolution "opens a new and apparently indefinite range of possibilities to the evolving world stuff [man] and there is every reason to believe that through the attainment of this new level of consciousness and social organization the evolutionary process has taken on a new and apparently indefinite lease on life."<sup>32</sup>

In short, what Huxley is claiming is this. All directions of biological evolution must come, or probably have come to a dead end but human evolution is 'potentially' and 'indefinitely' open to further development.

Huxley defines the concept of the openness of evolutionary direction in terms of natural selection. A direction remains open, according to him, as long as natural selection favours it, but comes to an end when natural selection cannot push it any further.

But since Huxley claims that human evolution does not work through natural selection--it neither pushes it, nor is human evolution pushed any further by natural selection--the natural selection criterion for the openness of evolutionary direction cannot be applied to human

evolution.

Now if human evolution, as Huxley claims, is potentially open, and if it is not in the natural selection sense of the term, it must then be open in some non-natural selection sense. But Huxley simply asserts that human evolution is potentially open to further progress; he does not explain in what sense it is open. His argument, therefore, helps little in this regard.

It is interesting to note that many biologists do not agree with Julian Huxley on his claim that biological evolution has come to an end. But quite a few among them think that the natural selection does not favour homo sapiens and thus man, biologically speaking, has come to a dead end. Some even suspect that human intelligence is likely to decline in the future. For instance, B. Rensch remarks, "We do not know what direction the future evolution of homo sapiens will take. It is not to be expected that his brain will improve structurally, since natural selection has ceased to favour further progress of this kind. It seems more likely that there may be a decline, brought about by continuous undirected mutations in the absence of natural selection toward mental advance. And even if mankind takes eugenic measures to maintain progressive development, the significance of such action could only be temporary; it could constitute an ultimate aim."<sup>33</sup>

This claim, if true, certainly undermines Huxley's contention that "man has unlimited possibilities" and that human evolution is potentially and indefinitely open to further progress.

Furthermore, G. G. Simpson, another well-known biologist, questions Huxley's claim that there is a general direction of evolution which can provide us with an external standard for morality. Simpson

writes:

I have tended to stress what I have considered questionable or, at least, weak points in the search for naturalistic ethics in an evolutionary context. That seems most interesting and at this time probably most useful. However, I should also stress that as I believe, most evolutionists agree with Huxley as to what are desirable naturalistic ethics specifically for man and with Waddington as to the evolutionary origin and function of the moral senses. Disagreement is mainly as to whether those conclusions really arise from or are validated by any general tendency of the evolutionary process. Dobzhansky, another evolutionary biologist who has deeply studied the nature of man, biological and social, has pointed out that even trends that really did occur in the specific human ancestry are not necessarily good guides to evolutionary ethics. For example, in primitive man there were certainly the beginnings of splitting not only into races (which need not and should not be antagonistic) but also into distinct and inevitably antagonistic species. It is also clear that significant increase in average human intelligence stopped long ago--tens of thousands of years at least--and although not clear it is at least possible that an opposite trend is setting in. Few people would consider either of those developments ethically desirable, and their undesirability can be argued on biological as well as other grounds.<sup>34</sup>

Both B. Rensch and G. G. Simpson question Julian Huxley's concept of the general direction of evolution and his enormous confidence in man's unlimited future possibilities on the grounds of evolution. It is possible, therefore, that Huxley's concept of evolution is different from that of Rensch and Simpson. We shall see in chapter IV Toulmin's argument that brands Huxley's theory as a scientific myth. Huxley seems to be admitting that "I may have been oversweeping some of my conclusions; and, I shall probably be attacked for going beyond the boundaries of science. But I am sure that I have been right in formulating general conclusions of this sort."<sup>35</sup>

We shall come to this point in chapter IV.

C. H. Waddington

We shall now discuss C. H. Waddington's argument for evolutionary ethics. In brief, Waddington tries to support the following four points:

"Firstly, that the human system of social communication functions as such an efficient means of transmitting information from one generation to the next that it has become the mechanism on which human evolution mainly depends.

"Secondly, that this system of 'socio-genetic' transmission can operate only because the psychological development of man is such that the new born baby becomes moulded into a creature which is ready to accept transmitted information; and, I shall suggest, it is an empirically observed fact that this acceptance is founded on the formation of 'authority-bearing' systems within the mind which also result in the human individual becoming a creature which goes in for having beliefs of the particular tone that we call ethical.

"Thirdly, I argue that observation of the world of living things reveals a general evolutionary direction, which has a philosophical status similar to that of healthy growth, in that both are manifestations of the imminent properties of the objective world.

"Finally, I conclude that any particular set of ethical beliefs, which some individual man may advance, can be meaningfully judged according to their efficacy in furthering this general evolutionary direction."<sup>36</sup>

The second point, according to Waddington, is the most critical one in this argument. But he complains that both his critics and

supporters have failed to appreciate it. The reason for this, he thinks, is its comparative novelty and complexity.

The point is intended to establish that the function of ethics is "to make human evolution possible," or "to mediate human evolution."<sup>37</sup>

Waddington argues: "The human system of socio-genetic transmission of information from one generation to the next can...only operate successfully if the information is not only transmitted but is also received. The new born infant, has to be moulded into an information acceptor. It has to be ready to believe (in some general sense of that word) what it is told."<sup>38</sup>

Such reception, according to Waddington, must involve authority. And he points out that the human mind carries within it 'some authority bearing factors which are responsible for developing a new born baby into an entertainer of beliefs--someone who goes in for believing.'

These authority bearing factors, Waddington claims, also result in moulding the infant into "the sort of being who, we may say, goes in for having ethical beliefs. It becomes what one might call an 'ethic participant' or an ethicizing being."<sup>39</sup>

Waddington admits that one would like to see much more evidence, than we have been shown, on how the authority bearing systems convert "the new born infant into, on the one hand, an ethicizing being and, on the other hand, a belief entertaining type of being."<sup>40</sup>

But "if, in the meantime, the point is at least tentatively accepted," Waddington writes, "we find ourselves confronted with a quite clear cut relationship between the existence of ethical beliefs and the evolutionary processes in the human species. So far as man's evolution is carried on by his socio-genetic system--and, in effect, it

is so in major part--the fact that he is an ethicizing being is an essential cogwheel in the whole machine. Adopting the usual terminology of biology, we can say that the function of ethicizing is to make possible human evolution in the socio-genetic mode."<sup>41</sup>

Although Waddington's argument is somewhat unclear, it seems to show the following: The so-called authority-bearing factors in the human mind develop two types of capabilities in a new born baby: (1) The general capability of entertaining all sorts of beliefs. This makes a baby that Waddington calls a belief entertaining type of being; and, (2) the ethicizing capability--the capability of entertaining ethical beliefs--which makes him an 'ethicizing being.'

Now, Waddington claims that the capability of ethicizing is an "essential cogwheel in the whole machine." It makes evolution possible. But surely the ethicizing is a limited capability--it is limited to ethical beliefs only. Does this mean that only ethical beliefs are essential to mediate human evolution? What about non-ethical beliefs? Ethical beliefs are but a part of the whole of human beliefs (or ideas, or entire conceptual systems). One should, therefore, think that the general capability of having beliefs must be "an essential cogwheel in the whole machine,"

It may be mentioned, at this point, that Waddington's language here is extremely loose. Thus, one is not likely to reach a definite conclusion. He seems to be suggesting that the general activity of believing is not possible without ethicizing; for believing, according to him, involves authority, and authority is essentially connected with ethical beliefs. "We can see," he says, "that an essential part of this mechanism is that the human being must be brought into a

condition in which it will act as a receiver of the message transmitted. Such reception involves acceptance of authority. Ethical beliefs, which are essentially beliefs about the nature of the most authoritative demands, are a part of the human system for receiving transmitted information."<sup>42</sup> Further, "The functioning of our socio-genetic mechanisms demands that we should accept some sort of authority and ethical beliefs are one of the kind that in practice play this role."<sup>43</sup>

Without pursuing this point any further, we may nevertheless ask if ethical beliefs function as a sort of transmitter of socio-genetic information, how they themselves are transmitted.

Let us assume with Waddington that the function of ethicizing is to make human evolution possible. Where does this assumption lead? Waddington explains: "Once we have assigned the function to a general type of activity we have a rational criterion against which to judge any particular example of that activity. To say that something has a function is not merely to assign causal efficacy to it, but implies further that the causal network of which it is a part, has a wholesome general character. A particular example of the activity can then be judged by how well it brings about the realization of that character.

"It is a criterion of this kind which we can hope to apply to human ethical beliefs. We have first to try to ascertain the general character of human evolution or, indeed, of animal evolution as a whole. We have then to enquire of any particular ethical belief which comes to our attention, how effective it is in mediating this empirically ascertained course of evolutionary change."<sup>44</sup>

The upshot of this argument is that to mediate human evolution is the function of ethics and its functional efficacy in this regard is

its criterion, Waddington calls this criterion Biological Wisdom. This, according to Waddington, is an entirely new concept in evolutionary ethics. He claims that his criterion of Biological Wisdom does not involve the naturalistic fallacy nor does it involve the circularity which Huxley's argument does. Before we discuss these claims, we should see what is involved in this criterion. Waddington tries to explain it by the following example. 'Consider, for example, the activity of eating. The human new born infant has first to develop into the sort of creature that goes in for eating. In this development innate factors probably play a much greater role, and extrinsic factors a lesser one, than they do in the development of the infant into an ethicizing being, but this alteration in the relative importance of the two types of factors is of minor consequence in the present context. Next the child will acquire certain specific food habits, becoming accustomed to and accepting a particular diet. This is a process analogous to the development of specific formulated ethical beliefs.' In order to find a basis for criticizing these food habits we have first to enquire what is the function of eating. We find that it is to make possible the growth of the body. Inspecting the growth of human beings on a wide basis we discover that it manifests a general character which we describe as health. We can then ask of any particular food habit or diet how effective it is in bringing about healthy growth. The criterion we are applying here is one in general accordance with the nature of the world as we observe it. If any individual approaches a nutritionist and says that he prefers to grow in an abnormal and unhealthy manner, the nutritionist can do no more than tell him that if he does so he will be out of step with nature. The criteria, of

biological wisdom in the case of ethics, or healthy growth in the case of eating, which can be derived in this way, are immanent in nature as we find it, not superposed on it from outside."<sup>45</sup>

It is not certain whether this example explains Waddington's claim made in his second point of the argument. The claim is that the observation of the world of living things reveals a general evolutionary direction which has a philosophical status similar to that of healthy growth, in that both are manifestations of the immanent properties of the objective world.

There are two assumptions involved in this claim: (1) Evolution has a general direction. We shall discuss it later; And (2) the general direction has a philosophical status similar to that of healthy growth, in that both are manifestations of the immanent properties of the objective world. In other words, the general direction is progressive and its progress itself is a manifestation of the property of the objective world. The concept of progress, as has been discussed in detail in chapter 1, is very important in evolutionary ethics. But it is also difficult to define in terms of evolution for it involves values. J. B. S. Haldane has correctly said: "When we speak of progress in evolution we are already leaving the relatively firm ground of scientific objectivity for the shifting morass of human values."<sup>46</sup>

Waddington tries to define the concept of evolutionary progress in terms of what he calls physiological health. In the example quoted above he claims that healthy growth is a manifestation of the immanent property of nature. But he does not support this claim with evidence. G. G. Simpson tells us that "cancerous growth is as much a manifestation of nature as healthy growth and that by far the commonest trends in evolution are those that lead to extinction."<sup>47</sup>

Waddington, at this point, might say that cancerous growth is not in 'accordance with the nature of the world as we observe it,' or is 'out of step with nature,' or perhaps is 'abnormal.' Waddington does not explain what he means by 'the general accordance with nature' or by the phrase 'out of step with nature.' He seems to be implying that healthy growth goes along with nature which amounts to saying that what is 'natural' or 'normal' is healthy. We shall see in chapter IV that Anthony Quinton argues that the concepts of 'natural' and 'normal' in connection with health, involves extra-biological implications.

What is natural is healthy, in this context, is perhaps wrong. It is difficult to deny that decay and disease are natural phenomena. Thus Waddington's claim that healthy growth is a manifestation of the immanent property of nature is questionable.

As to the concept of evolutionary growth or progress Waddington says: "The general anagenesis (considered as progressive trend) of evolution is towards what may crudely be called richness of experience. In the human evolutionary system, progress in this direction demands the formation of mental systems having some degree of authority."<sup>48</sup>

Waddington's 'richness of experience' does seem to be not only a 'crudely' but also a vaguely defined concept of evolutionary progress. It is even vaguer than Herbert Spencer's length and breadth of life concept of evolutionary progress. Waddington does not explain how the general direction which is towards richness of experience 'has a philosophical status similar to that of healthy growth, in that both are manifestations of the immanent properties of the objective world.'

The concept of evolutionary progress presupposes the existence of

some general or over-all direction to which the concept of progress is to be applied. We have already pointed out that the concept of the existence of such a direction involves difficulties. Both G. G. Simpson and Dobzhansky have argued that the general direction is not possible.

C. H. Waddington thinks otherwise. And he is claiming more than other biologists who believe in the existence of some general direction of evolution. In his own words: "The existence of such direction has been asserted by many other authors, who have usually referred to it as the direction of evolutionary progress. This implies merely that a change in this direction has happened to occur, and that the direction is one which we are willing to recognize as progressive. I have, however, asserted, or at least implied, something rather more than this, namely, that the direction is one which in some ways arises as a result of the general structure of the universe, that is, it is not merely a direction in which progress happens to have occurred, but, in some of its aspects at least, it has the character of an inevitable consequence of the nature of the evolutionary process and the organisms involved in it."<sup>49</sup>

Waddington, again, is here merely asserting, but not supporting, the claim that the general direction of evolution "arises as a result of the general structure of the universe." Instead, he is saying, "The major point about opening anagenesis, which is important to the thesis I am advancing here, is that it has occurred. This I take to be established by the consensus of general biological opinion."<sup>50</sup>

There is something odd involved here. Earlier, Waddington told us that he is claiming more than many other biologists claim with respect to the concept of general direction of evolution. According to

him they take the occurrence of the general direction to be accidental, while he is taking it to be a result of the general structure of the universe. Now Waddington is saying that he takes the general direction to be established by the consensus of the general biological opinion. Waddington does not clarify whether the biological consensus supports the accidental theory or his own theory of the general direction. If it supports the latter, then Waddington cannot say that he is claiming more than the majority of biologists claim in this respect. But if it supports the former, and in fact it does do so--Waddington himself says that most of the biologists ascribe to it--then Waddington's claim does not hold. In other words, he can not claim that the general direction arises as a result of the general structure of the universe, and progress has occurred as an "inevitable consequence of the nature of the evolutionary process."

In fact Waddington does not have to seek support from the consensus of general biological opinion in this respect, if he can show that the general direction has occurred as a result of the general structure of the universe, and progress has occurred as an inevitable consequence of the nature of evolutionary process.

It may be pointed out that if Waddington cannot prove these claims the consensus of general biological opinion cannot be substituted as a proof in this regard.

If for the sake of argument Waddington's concept of general direction is accepted it can be used, so Waddington believes, as a criterion for ethics. Since the function of ethics, according to Waddington, is to mediate human evolution or the general direction of evolution, the direction can be used to determine which system of

ethical beliefs functions most efficiently. In Waddington's words: "Finally, I conclude that any particular set of ethical beliefs, which some individual man may advance, can be meaningfully judged according to their efficacy in furthering this general evolutionary direction."<sup>51</sup>

We shall come to the concept of efficacy of biological beliefs in chapter IV. However, we will conclude this discussion by presenting Waddington's claim that his theory does not involve the naturalistic fallacy.

The fallacy, as he observes, is that one cannot logically pass from 'is' to 'ought' or one cannot derive moral utterances from statements of fact. Waddington first makes a distinction between ethical rules and imperatives. "Shut the door," he remarks, "is an imperative, but not an ethical rule. Perhaps most such imperatives that occur to one at first thought are in some way, subordinate to ethical rules. But there is no logical contradiction in suggesting that there may be such imperatives or principles of policy which are of supra-ethical status... We can, with perfect logical consistency, conceive of an aim or principle of policy which, while not itself in its essence an ethical rule, would enable us to judge between different ethical rules. It is for such a principle that I am searching, and which I claim to be discoverable in the notion which I have referred to as 'biological wisdom.'<sup>52</sup>

The problem of naturalistic fallacy is carefully examined in chapter IV by Anthony Quinton and A. G. N. Flew. Therefore, I do not need to discuss it here.

### Theodosius Dobzhansky

The attempt to derive ethics from the so-called general direction of evolution is criticized by Theodosius Dobzhansky and George Gaylord Simpson, who, in Waddington's opinion, are "deeply learned biologists who have added greatly to our understanding of human evolution."<sup>53</sup>

Dobzhansky contends that "moral rightness and wrongness have meaning only in connection with persons who are free agents and who consequently are able to choose between different ideas and between possible course of action. Ethics presupposes freedom."<sup>54</sup>

Dobzhansky next claims that man is a free agent. "The ability of man," he says "to choose freely between ideas and acts is one of the fundamental characteristics of human evolution. Perhaps freedom is even the most important of all the specifically human attributes."<sup>55</sup> Dobzhansky does not, however, explain the concept of freedom. He simply points out that human freedom is wider than "necessity comprehended" which, he says, "is the only kind of freedom recognized by Marxists."<sup>56</sup> It is wider in the sense, he tells us, that man can defy necessity at least in his imagination.

It may be pointed out that human freedom is not the simple self-evident fact that Dobzhansky apparently takes it to be. For he produces no argument to support the statement. Freedom is a notoriously difficult concept. And I do not wish to be trapped by it. But since Dobzhansky's argument is based on this concept we must briefly discuss it in the context of evolution.

Dobzhansky seems to be putting, though not explicitly, the question of freedom in genetic terms. The question in these terms becomes whether or not human behaviour is determined by genes. Like other

protagonists of cultural evolution, Dobzhansky argues against what may be called genetic determinism and thinks that by showing genetic indeterminism he has shown human freedom. We shall argue that the so-called genetic determinism or indeterminism does not have any bearing on the question of freedom.

Dobzhansky argues: "It must now be emphasized that, although biological evolution has made cultural evolution possible, it has not determined what this cultural evolution should be. Cultural history is not biological history, in the sense that, given the genetic constitution which the human species actually has, human history could not [sic] have taken a variety of courses different from the course it actually took. The most important agents which propel human history are contained in that history itself, not in the stuff of which human genes are made. Historical events of the past could not be deduced, nor could future ones be predicted with any precision, only from a knowledge of the human genotype, no matter how complete," and, "Natural selection has not propagated genes for ethics, or genes for inventing Euclidean geometry, propounding evolutionary theories, composing musical symphonies, painting landscapes, making a million dollars on Wall Street, loving the soil, or becoming a military leader. Such genes simply do not exist. Genes do not transmit and do not determine specific components of our cultural heredity."<sup>57</sup>

All this may be true. Still, this does not solve the question of freedom. Dobzhansky's argument shows that certain aspects of human behaviour are not determined by genes, or in his own words, "that human behaviour, in the main is genetically unfixed."<sup>58</sup> But this does not show that the genetic indeterminism implies human freedom. In fact

the argument does more than this. It shows that the concept of genetic determinism does not apply to human freedom. Note the statement in the quotation: "The most important agents which propel human history are contained in the history itself, not in the stuff of which human genes are made"; and, "Such genes (genes for ethics, for inventing Euclidean geometry, composing musical symphonies... etc.) simply do not exist." If there exist no genes for certain types of human activities which, according to Dobzhansky, involve freedom and choice, then, that is that. The very question of human freedom in genetic terms becomes illegitimate.

But it becomes legitimate in a wider context of evolution. Human behavior, in this context, is considered to be determined either by genes, or by the environment, or by both. In none of these cases, however, can behavior be considered as free if we define free behavior as the kind of behavior which results from human will. We will not attempt to explain the concept of will. We can say, nonetheless, that free behavior is something more than that behavior which is determined by genes or the environment. For the sake of argument, we shall propose will as an alternative cause of human behavior which we call free.

Dobzhansky claims to have shown that human behavior is not entirely determined by genes. Yet he has not shown that it is not determined by environment. Rather he is claiming, and as an evolutionist he must claim it, that human behavior is determined by both genes and culture. In his own words: "human behavior is in the main genetically unfixed; it is acquired in the process of socialization, of training received from other individuals. Its base is set by the genes, but the direction and extent of its development are, for the

most part, culturally rather than biologically, determined."<sup>59</sup>

It is of course true that cultural determinism is quite different from genetic determinism. One can argue that culture itself can be determined, to some extent, by human desires and choices. In fact, the whole concept of cultural conditioning of human behavior is considerably ambiguous. For instance, Dobzhansky maintains that the laws of human evolution, i.e., cultural laws, "are not deducible from, although also not contrary to biological laws."<sup>60</sup> He does not explain why cultural laws, while not contrary to biological laws, are not deducible from them. Nor does he define in what sense he is using the term 'law' in this context. Since he claims that laws of human evolution are not contrary to biological laws, one can assume that he is taking laws of human evolution to be scientific laws. Now, he also claims that 'one of the fundamental characteristics of human evolution' is 'the ability of man to choose freely between ideas and acts.' Moreover, he contends that 'perhaps freedom is even the most important of all the specifically human attributes.' Is human freedom, thus, a scientific law of human evolution, or, is it implied by the laws of human evolution? Obviously an answer to the foregoing question is not altogether clear.

As mentioned earlier, the concept of cultural conditioning is quite ambiguous, whereas, the concept of freedom is rather complex. Furthermore, we stated that, in the context of cultural evolution, one can legitimately argue that culture itself can be influenced by human choices and desires. Let us, then, concede Dobzhansky's claim that freedom is one of the fundamental features of human evolution. We shall also agree that "ethics presupposes freedom."

Let us now examine Dobzhansky's views on evolutionary ethics. Any

theory of evolutionary ethics, according to him, must satisfy the following two conditions: (1) It must establish the general direction of evolution; and, (2) It must give reasons why this direction should be accepted as good. "No theory of evolutionary ethics," he remarks, "can be acceptable unless it gives a satisfactory explanation of just why the promotion of evolutionary development must be regarded as the *summum bonum*."<sup>61</sup>

Concerning the first condition Dobzhansky observes: "There is no single trend in evolution, but rather many different trends in different organisms. To be sure, some trends predominate in the evolution of some groups. Thus, the development of the cerebral functions, of intelligence, seems to have been the dominant trend in human evolution. Continuation of intellectual development becomes, then, a moral duty of mankind. But this is surely not the whole story. Human evolution has also involved many other trends, some of which were more constant than others, some which reversed themselves, and some which are of a degenerative character. Thus there was for some time in the history of mankind a trend towards the differentiation of the human species into races, and towards biological divergence of races. More recently, this was reversed because of the increasing mobility of human populations and of intermarriage between them, and human races began to converge."<sup>62</sup>

Dobzhansky then raises a question: Which of these trends should then be the basis of our ethics? The answer to this question involves a choice. It is necessary to decide which trend is good. The decision, cannot then be based on factual observation that a trend has occurred but must involve some other, and quite distinct, ethical criterion.

Dobzhansky further argues: "Suppose, however, that future studies

of human biology and evolution tell us exactly what the direction of evolution in general, and of human evolution in particular, has been." Here he poses another question: "Just why should we take for granted this direction is good?"<sup>63</sup>

Dobzhansky's answer to this question is not satisfactory. He gives the following reasons why he thinks we should not take the general direction of evolution as good: "The very fact that man knows he has evolved and is evolving means that he is able to contemplate speeding up his evolution, slowing it down, stopping it altogether, or changing its direction."<sup>64</sup>

Although Dobzhansky's 'very fact' is questionable--for having evolutionary knowledge does not mean having the ability to stop, slow down, or change the direction of evolution--if it were true it would show that no general direction of evolution is possible, because man has the ability to change or stop it. Dobzhansky originally intends to offer this fact as a reason against taking the evolutionary direction as good. But actually, it turns out to be a reason against the possibility or the establishment of the direction.

It appears as though Dobzhansky is obsessed with the idea of freedom. He uses this idea in two senses--though he does not distinguish them himself--in connection with the concept of the general direction of evolution. According to one, no direction of evolution is possible, for man is free; and he is able to slow down, stop, or change this direction. According to the other, no general direction can be taken for granted, as being good, for man is free to question the goodness or the wisdom of anything. The first claim may be questionable, but it does not involve, what may be called, an obsessive use of the concept

of freedom. We shall, therefore, examine the second sense of the concept. It presupposes the existence of the general direction of evolution. But the existence of the direction does not imply, as pointed out earlier, that the direction is good. Whether it is good or bad is an ethical evaluation. Ethical evaluation, according to Dobzhansky, presupposes freedom. To quote him again: "Moral rightness and wrongness have meaning only in connection with persons who are free agents, and who are consequently able to choose between different ideas and between possible courses of action. Ethics presupposes freedom."

It should be emphasized, that in the perspective of ethics, the role of freedom is mainly presuppositional. In a very loose sense, it means that we can choose from a certain range of ethical options. Now this supposed ability to choose cannot be a criterion for our choice. For, if it were, we would not need ethics at all. Now, when we say that Dobzhansky seems to be obsessed with the idea of freedom, what we mean is that he seems to be taking freedom as an ethical criterion. He writes: "Despite any exhortations to the contrary, man will not permanently deny himself the right to question the wisdom of anything, including the wisdom of his evolutionary direction. He may rebel against this direction, even though it may be shown to be beneficial one. Just such an 'unreasonable' rebellion was envisaged by Dostoevsky in his Letters from the Underworld. Man is likely to prefer to be free rather than to be reasonable."<sup>65</sup> Although he is not explicit, Dobzhansky seems to be implying here that anything that tinkers with freedom must be rebelled against even if the rebellion may be 'unreasonable'. In other words, freedom, is the ultimate criterion of choice for him. Furthermore, there is something odd in setting

'freedom' and 'reason' as alternatives. Why cannot a reasonable man be a free man?

As indicated earlier, freedom, is presupposed in an ethical perspective. Thus, it cannot be used as an ethical criterion. Ethical choice requires that one must be free to choose. It also requires that one should choose on some rational grounds. Now, one is entitled to say that he is free not to choose, or, free not to choose on rational grounds; but, he would no longer be doing ethics in such a case.

Dobzhansky says that ethics is "unthinkable without freedom." One is led to wonder if ethics is possible with Dobzhansky's unreasonable freedom.

#### George Gaylord Simpson

George Gaylord Simpson has long been involved in the search for an ethic based on evolution. But his main contribution in this regard lies in clarifying and often criticizing the attempts made by other biologists in this direction. His own attempt, as we shall see, is a failure and, surprisingly, not as clear as one would expect from him.

Simpson, like Dobzhansky, believes that freedom is necessary for making ethical choices; but unlike Dobzhansky, Simpson does not end with denying the possibility of evolutionary ethics. He goes on to seek a rational criterion of ethics in human evolution.

Simpson recognizes 'knowledge' and 'responsibility' as fundamental human characteristics without which human evolution is not possible. But, he does not attempt to define either, the concept of knowledge, or, the concept of responsibility.

"Responsibility," according to Simpson, "is rooted in the true

nature of man. It has arisen from and is inherent in his evolutionary history and status. Responsibility is something that he has just because he is human and not something that he can choose to accept or refuse."<sup>66</sup>

Simpson particularly stresses the non-delegatability of responsibility. It is, according to him, entirely personal. "It cannot be rejected or unconditionally handed over to others. The attempt to do this is ethically wrong, and the responsibility remains where it was... In the last analysis personal responsibility is non-delegatable. Not only is every individual personally responsible for any actions by delegates or representatives of his, but he cannot ethically, even in semblance, delegate any responsibility for his own actions and for all their results."<sup>67</sup>

From the concepts of knowledge and responsibility Simpson attempts to derive what he calls 'the basic material ethic.' In his own words: "As a first proposition of evolutionary ethics derived from specifically human evolution it is submitted that promotion of knowledge is essentially good."<sup>68</sup> "Promotion," according to him, involves "both the acquisition of new truths or of closer approximation to truth (metaphorically the mutations of the new evolution) and also its spread by communication to others and by their acceptance and learning of it (metaphorically its heredity)."<sup>69</sup>

Simpson reinforces his main principle, i.e., promotion of knowledge is essentially good, with another principle which is based on the concept of responsibility. "Human responsibility," he asserts, "requires, in each individual, as well as in society as a whole, that the search for knowledge be a search for truth, as unbiased as possible

to human beings; that probable truths, as discovered, be tested by every means that can be devised, that these truths be communicated in such a way as is most likely to ensure their right utilization and incorporation into the general body of human knowledge, and that those who should receive this knowledge seek it, share in its communication, and in their turn examine and test with as little prejudice as possible whatever is submitted as truth."<sup>70</sup>

The concept of personal responsibility, according to Simpson, is correlated with another human evolutionary characteristic, that of "high individualization." From this he derives that "it is good, right and moral to recognize the integrity and dignity of the individual and to promote the realization, or fulfillment, of individual capacities. It is bad, wrong and immoral to fail in such recognition or to impede such fulfillment. This ethic applies first of all to the individual himself and to the integration and development of his own personality. It extends farther to his social group and to all mankind. Negatively, it is wrong to develop one individual at the expense of any other. Positively, it is right to develop all in the greatest degree possible to each within the group as a whole. Individuals vary greatly in other capacities, but integrity and dignity are capable of equal development in all."<sup>71</sup>

Simpson claims that these principles have the widest applications to human conduct. He believes that these principles "lead to unequivocal decisions concerning the choice between conflicting ideologies which," he considers as "the broadest problem of mankind." The unequivocal decisions, according to him are as follows:

1. Authoritarianism is wrong, for it involves an attempt to delegate the non-delegatable responsibility and to evade responsibility for subsequent actions of the delegate. "This is an ethically wrong denial of the personal responsibility inherent in nature."<sup>72</sup>

2. Totalitarianism is wrong, for it cannot conceivably be reconciled with an ethical system that admits the goodness of knowledge, the ineradicable existence of personal responsibility and the value of individual integrity and dignity.

3. Democracy, with a few exceptions is right. In his own words: "Governments called democracies are by no means all ethically right by our standards and none is free of many ethically bad aspects. Yet an ethically good state, one based on the fact of personal responsibility by each of its members and organized to promote the acquisition, dissemination, and acceptance of truth in all fields, to maintain the integrity and dignity of every individual, and to enable maximum possible realization of personal capacities--such a government would necessarily be a democracy."<sup>73</sup>

While not examining Simpson's argument in detail, we should note, however, a basic weakness which consists in Simpson's identifying what is necessary with what is good, in human evolution.

Simpson, as has already been seen, takes knowledge and responsibility as necessary for human evolution. He bases his ethical principle on these essentials, taking them as good. And we shall see that he takes them as good because they are essentials.

Consider the following three cases:

1. "The most essential material factor in the new evolution seems to be just this: Knowledge, together, necessarily, with its

spread and inheritance. As a first proposition of evolutionary ethics derived from specifically human evolution, it is submitted that promotion of knowledge is essentially good."<sup>74</sup>

2. "Responsibility is something that he has just because he is human, and not something that he can choose to accept or to refuse. It cannot be rejected or unconditionally handed over to others. To do this is ethically wrong."<sup>75</sup>

3. "It is Personal responsibility--correlated with another human evolutionary characteristic, that of high individualization. From this relationship arises the ethical judgement that it is good, right, and moral to recognize the integrity and dignity of individual capacities. It is bad, wrong, and immoral to fail in such recognition or to impede such fulfillment."<sup>76</sup>

These examples clearly show the types of error pointed out earlier. Simpson here is not deducing the goodness of these suggested ethical principles from the facts of evolution: he is simply asserting their goodness.

This account of Simpson's ethics may be closed by an apologetic note by Simpson written in his later essay, 'Biology and Ethics.'

"Let us not be too dismayed if some attempts to set up naturalistic ethics turn out themselves to be fallacious, or if we cannot all agree as to either the origin or criteria for naturalistic ethics. It would be enough to go on with if we could conclude that naturalistic ethics are eventually possible. In fact, I believe we can do considerably better than that."<sup>77</sup>

C. D. Leake

We shall now examine another 'notable' attempt to base ethics on science, particularly on evolutionary biology. It is notable in the sense that it is a cooperative attempt by some of the 'distinguished American biologists.' This is reported in C. D. Leake's essay 'Ethicogenesis' published in *The Scientific Monthly*, April, 1945. Leake's main work, in this essay, lies in connecting what he calls "a naturally operative principle of ethics" with the biological argument. The principle itself, he says, is a joint 'discovery' of the scientists mentioned in the essay. It may be interesting though not strictly relevant, to read how this joint venture came about. It reads in the essay, like this:

The American Association for the Advancement of Science had met in Palo Alto in 1939. It was thought that some of the guests at the meeting might be interested in a picnic in the redwoods. The Pharmacology Laboratory of the University of California Medical Center in San Francisco had been accustomed to spend Sundays in seminar discussion in a redwood grove on the San Lorenzo River. To one of these meetings Edwin Grant Conklin, C. Judson Herrick, and Olaf Larsell were invited. In honor of our guests, the seminar discussion took the form of debate between Otto Guttentag and Charles Gurchot on the influence of German and French philosophers on the biological sciences. This discussion provided a springboard for those who were assembled together under the sheltering arms of the redwoods to discuss a biological basis for ethics.

The conversation developed as to whether or not it might be possible to discover a naturally operative principle that governs human conduct. It was appreciated that such a principle might be of the same character as the principle of the conservation of energy. To be naturally operative, the principle would have to function whether we are aware of it or not, or whether we like it or not. However, it was clear in the discussion that if we could recognize it, it might be helpful to us by indicating the manner in which we could take advantage of it to our benefit. Certainly it has been helpful since Helmholtz's brief formulation to appreciate the principle of the

conservation of energy!

As a tentative statement of such a principle, we induced from the plethora of examples in universal experience the following: "The probability of survival of a relationship between individual humans or groups of humans increases with the extent to which that relationship is mutually satisfying." This statement may be formulated in other ways, to emphasize different considerations: "The more a relationship between human individuals or groups is mutually satisfying, the longer it tends to last," or "Behaviour patterns between individual persons or groups of people, tend to become adjusted (by trial and miss) toward those which yield the greatest mutual satisfaction." It is implied that the concept of "good" develops in a manner which is dependent upon these more or less satisfying behavior patterns...

It was appreciated that the statement is a special case of the more general principle: "The probability of survival of individual, or groups of, living things increases with the degree with which they harmoniously adjust themselves to each other and their environment." As a corollary of the Darwinian principle of evolution, the formulation thus becomes a biological basis for ethics.<sup>78</sup>

I shall now examine the alleged derivation of the so-called 'naturally operated principle of ethics' from the biological argument. This argument is put forth by C. D. Leake. There are four steps in it:

1. "We are discovering that knowledge about ourselves and our environment makes it possible for us to add significantly to the broad and lasting satisfactions of us all. This suggests at once that scientific endeavor has moral value.

"With increasing knowledge derived from the various levels of scientific endeavor, it now appears that we have sufficient facts of a verifiable nature regarding ourselves and our environment to estimate the moral value of their implications; that is, to determine their ethical significance... When a fact is recognized, its conjugate, which is its value, at once becomes important."<sup>79</sup>

2. "From a consideration of our biological knowledge, the

implication is clear at once that survival for an individual living thing or for a particular living species, is "good" for that individual or that species. Survival is good in the very significant sense that if the species fails to survive, "goodness" has no further meaning for that species."<sup>80</sup>

3. Whatever is conducive to survival of an individual or a species, is therefore good. The general principle in this regard is: "The probability of survival of individual, or groups of, living things increases with the degree with which they harmoniously adjust themselves to each other and their environment."<sup>81</sup>

4. A naturally operative principle of ethics is a corollary of the general principle noted in 3. A naturally operative principle of ethics is this: "The probability of survival of a relationship between individual humans or groups of humans increases with the extent to which that relationship is mutually satisfying."<sup>82</sup>

I shall now attempt to examine these points.

First of all, C. D. Leake does not explain what he means by the concept of "broad and lasting satisfactions." This is a key concept in his argument and unless it is precisely defined, his argument tells us little. He employs this concept as an ethical criterion.

Leake believes, that the implications of scientific facts have moral values or 'ethical significance' which, he seems to be suggesting, may be determined by the 'satisfaction' criterion. This amounts to saying that a scientific implication is good if it gives 'broad and lasting satisfactions to all of us,' otherwise it is not good. I may point out again that unless the concept of satisfaction is clarified, this argument leads nowhere.

In the second step, Leake claims that the clear implication of biological knowledge is that "survival for an individual living thing or for a particular living species, is good for that individual or that species." Why is survival good? According to the satisfaction criterion, the answer to this question should be: because survival gives 'broad and lasting satisfactions to all of us.' But this is not the reason that is used by Leake. The reason why survival is good, according to him, is this: if the species fails to survive 'goodness has no meaning for that species.' Now, this is quite an absurd reason. The statement, "if the species fails to survive, goodness has no further meaning for that species" does not imply that survival is good. What it implies is that in order that goodness has further meaning for a species, the species must survive. In other words, survival of a species is necessary for its having further meaning of goodness. But if survival itself is good, the talk of further meaning of goodness is absurd.

This makes the conclusion in step 3, invalid. The conclusion that conduciveness to survival is good can not be drawn unless it is established that survival itself is good. Since this cannot be done meaningfully, as shown earlier, the conclusion that conduciveness to survival is good does not follow.

Now consider the so-called naturally operative principle of ethics. It states "The probability of survival of a relationship between individual humans or groups of humans increases with the extent to which that relationship is mutually satisfying." To be naturally operative, we are told, the principle would have to function whether we are aware of it or not whether we like it or not." Now this sort of

principle cannot simply be an ethical principle. An ethical principle may not necessarily involve human likes or dislikes but it must involve rationality. Therefore, it simply cannot function if we are not aware of it.

### III. EARLY PHILOSOPHERS ON EVOLUTIONARY ETHICS

This chapter discusses Henry Sidgwick's and G. E. Moore's examination of Herbert Spencer's evolutionary ethics.

Before I proceed, I must make an apologetic note. I have attempted to point out, in this chapter, that some of the criticism of Spencer's ethics, made by both Professors Sidgwick and G. E. Moore, seems to be misdirected. This does not imply that I support Spencer's position. I agree with them that Spencer's ethics is not sound. I believe, however, that their criticism in this regard, remains on the surface. But I am not fully confident in making this comment. The reason is this: Spencer's way of writing is such that it is excessively difficult to reach a definite conclusion about his position, "We cannot insist upon," as Moore remarks, "Mr. Spencer's words as a certain clue to any definite meaning, that is only because he generally expresses by them several inconsistent alternatives."<sup>1</sup>

Therefore, it is not unlikely that my criticism of Sidgwick and Moore in the following pages is based on my misreading of Spencer.

We shall commence with Henry Sidgwick. His main criticism of Herbert Spencer's ethics is contained in his book Lectures on Ethics, published after his death, in 1902. These lectures, which also examine the theories of T. H. Green and J. Martineau, were not prepared for publication by Professor Sidgwick, himself, and are "therefore unhappily without the modifications and improvements which they might have received at his hands."<sup>2</sup> Nevertheless, they present a careful and detailed exposition and criticism of Spencer's ethics. Professor Sidgwick has examined almost every important question raised by

Spencer in Data of Ethics. The examination, of course, is more suggestive than elaborate. To work out and discuss all his suggestions is beyond our present scope. Here we shall deal only with his criticism of Spencer's evolutionary criterion of ethics.

As mentioned in chapter 1, Spencer attempts to show that we call "good the acts conducive to life in itself or others and bad those which directly tend towards death special or general."<sup>3</sup> This criterion, according to Spencer, involves an assumption of 'extreme significance,' that is, that 'life is worth living.' Life is worth living, he tells us, because it "brings a surplus of agreeable feeling," or brings more pleasure than pain. Why does Spencer estimate life's worth in terms of pleasure? His answer is that it is one notion on which both pessimists and optimists agree. "Both their arguments," he remarks, "assume it to be self-evident that life is good or bad according as it does or does not bring a surplus of agreeable feelings."<sup>4</sup> He argues further that "since avowed or implied pessimists, and optimists of one or other shade, taken together constitute all men, it results that this postulate is universally accepted."<sup>5</sup> It may be pointed out here, that "being universally accepted" does not necessarily make a postulate true. And it is questionable whether the postulate in question is self-evident as claimed by Spencer. Spencer further claims that "no school can avoid taking for the ultimate moral aim a desirable state of feeling called by whatever name--gratification, enjoyment, happiness. Pleasure somewhere, at some time, to some beings, is an inexpugnable element of the conception."<sup>6</sup>

According to Sidgwick, conduciveness to life and conduciveness to pleasure are different ends of human conduct. But Spencer, Sidgwick

tells us, "often seems simply and as a matter of course to treat the two ends as coincident, and therefore convertible for purposes of ethical reasoning."<sup>7</sup>

But such coincidence between life and pleasure, according to Sidgwick is not possible unless Spencer proves optimism or refutes pessimism. "Pessimism, in fact," Sidgwick says, "stands in the way, declaring that life does not bring with it a surplus of agreeable feeling. Mr. Spencer seems to assume an optimistic view as to the coincidence of life and pleasure which needs more argument."<sup>8</sup>

It may be pointed out here, that to prove optimism is not to prove the so-called coincidence. To do the former, according to Sidgwick, is to show the proposition that life brings more pleasure than pain, or life brings a surplus of agreeable feelings. To prove the latter is to prove the general proposition that "maximum quantity of life is conducive to maximum quantity of pleasure."<sup>9</sup> In other words, what he is emphasizing here is that if life and pleasure are coincident, then life cannot contain pain. "For obviously," he says, "in proportion as life is shown to contain pain the ends diverge,"<sup>10</sup> and thus the coincidence is not possible. Sidgwick thinks this is what Spencer has to prove.

But Spencer's attempt to do this, according to Sidgwick, is not satisfactory. Sidgwick quotes Spencer's reply which he made to him in this regard in Mind, 1881. Sidgwick thinks that Spencer, in this reply, fails to see that the 'full burden of proof' still rests on him. The following is Spencer's reply to Sidgwick. Spencer, as quoted by Sidgwick, says:

But now, having pointed out that the conclusions contained in the Data of Ethics, in common with the

conclusions contained in ethical treatises at large, can reasonably be accepted only by those who hold that life in the aggregate brings more pleasure than pain, or at any rate is capable of bringing more pleasure than pain, I go on to show that the tacit optimism which pervades the work has a wider basis than Mr. Sidgwick recognises. He says that 'in Mr. Spencer's view, pessimism is indirectly confuted by the argument--given as an 'inevitable deduction from the hypothesis of Evolution'--which shows that 'necessarily throughout the animate world at large, pains are the correlatives of actions injurious to the organism, while pleasures are the correlatives of actions conducive to its welfare.' This is true as far as it goes; but, ignoring as he does all passages concerning the universal process of adaptation, Mr. Sidgwick omits a large part of the evidence favouring optimism. The chapter on the Relativity of Pains and Pleasures sets forth and illustrates the biological truth that everywhere faculties adjust themselves to the conditions of existence, in such wise that the activities those conditions require become pleasurable. The pains accompanying the inactions of faculties for which changed conditions have left no spheres, diminish as the faculties decrease; while the pains accompanying the actions of faculties overtaxed under the new conditions, diminish as the faculties grow, and become pleasures when those faculties have acquired the strength which fulfilment of the conditions requires. This law is alike inferable a priori and proved a posteriori, and yields a qualified optimism as its corollary--an optimism qualified by the conclusion that the life of every species of creature is happy or miserable according to the degree of congruity or incongruity between its nature and its environment; but that everywhere decrease of the misery or increase of the happiness accompanies the inevitable progress towards congruity. Whence it follows that in the case of mankind, pessimism may be locally true under certain conditions (as those which have fostered the creed which makes annihilation a blessing,) while optimism may be locally true under conditions of a more favourable kind; but that with the increasing adaptation of humanity to social life, the excess of pleasures over pains which warrants optimism, must become ever greater.<sup>11</sup>

This argument, according to Sidgwick, does not prove that maximum quantity of life is conducive to maximum quantity of pleasure. "All

this," comments Sidgwick, "might be true, yet so long as life is partially painful, it may still be true in any particular case that conduct conducive to maximum quantity of life is not conducive to maximum pleasure."<sup>12</sup>

Now, this appears to be an inappropriate comment by Sidgwick. If he commits himself to what is implied by his phrase "all this might be true," then his claim followed by the phrase cannot be true. For according to Spencer's arguments, which Sidgwick thinks "might be true," pains are 'necessarily' the correlatives of actions injurious to the organism. Thus, 'so long as life is partially painful' in any particular case, it is partially incongruent and injurious. Therefore, conduct in such a case cannot be taken as conducive to maximum quantity of life. Hence, Sidgwick's claim is not true "so long as life is partially painful, it may still be true in any particular case that conducive to maximum quantity of life is not conducive to maximum pleasure."

It appears as though Sidgwick has overlooked some of the points essential to Spencer's argument. These are: (1) pains are the correlatives of actions injurious to the organism while pleasures are the correlatives of actions conducive to its welfare; (2) the former actions are incongruent, or inadapative, while the latter actions are congruent or adapative; and, (3) at present the congruity between an individual and its conditions is partial and incomplete. But, according to the universal law of increasing congruity, the perfect congruity or equilibrium is inevitable.

Now, if all this is true, then both optimism and coincidence follow from Spencer's argument. The coincidence, according to the

argument, is realized in the so-called perfect equilibrium between individuals and society. In fact, Spencer seems to believe that the process of evolution itself leads toward the coincidence between life and pleasure. Spencer claims that the process inevitably leads to the creation of the ideal society in which all members produce "pleasure unalloyed by pain." It is to this sort of Utopia that Spencer applies his concept of coincidence between life and pleasure. His argument is not committed to show that this concept applies to present society in which there is partial congruity between itself and its members or, in other words, in which there is partial pain in life. If so, then Sidgwick's demand that Spencer's argument must show the coincidence, in present context, is mistaken. Equally mistaken, then, is his claim that so long as life is partially painful, Spencer's argument cannot prove the coincidence.

But Mr. Sidgwick raises an important point here. Supposing, he tells us, we imagine a Utopia in which all actions conducive to maximum life are also necessarily conducive to maximum pleasure, it would still remain true that at present there is a 'lamentable hiatus' between the two ends. "It would seem, therefore," he remarks, "that in establishing morality, for men living here and now, on a scientific basis, we must decide between the two."<sup>13</sup>

It may be pointed out that this question is related to Spencer's distinction between Absolute Ethics and Relative Ethics. The subject matter of the former, according to Spencer, is the conduct of ideal men in an ideal society, 'perfect conduct.' The subject matter of Relative Ethics is the 'imperfect conduct' of actual men in an actual society.

According to Sidgwick, Spencer argues that Absolute Ethics must precede Relative Ethics as 'ideal mechanical science' must precede the study of 'mechanical science fitted for dealing with the real.'

Sidgwick questions the possibility of the ideal society and Absolute Ethics. But supposing Absolute Ethics is possible, its relevance, to our present problems, according to Sidgwick, would still remain doubtful. He says:

Granting that we can conceive as possible a society in which the actions of all the members produce 'pleasure unalloyed by pain anywhere,' we certainly cannot conceive their relations or actions with definiteness and certainty. And, even if it were otherwise, even if we could construct scientifically Mr. Spencer's ideal morality, I do not think such a construction would be of much avail in solving the practical problems of actual humanity. For a society in which--to take one point only--there is no such thing as punishment, is necessarily a society with its essential structure so unlike our own, that it would be idle to attempt any close imitation of its rules of behavior. It might possibly be best for us to conform approximately to some of these rules; but this we could only know by examining each particular rule in detail; we could have no general grounds for concluding that it would be best for us to conform to them as far as possible. For even supposing that this ideal society is ultimately to be realized it must at any rate be separated from us by a considerable interval of evolution; hence, it is not unlikely that the best way of progressing towards it will be some other than the apparently direct way, and that we shall reach it easily if we begin by moving away from it. Whether this is so or not and to what extent, can only be known by carefully examining the effects of conduct on actual human beings, and inferring its probable effects on the human beings whom we may expect to exist in the proximate future.<sup>14</sup>

This criticism certainly undermines Spencer's basic position. Spencer believes that the creation of an ideal society and of Absolute Ethics is inevitable. Sidgwick, however, questions this supposed inevitability. Spencer attaches the supreme significance to Absolute Ethics; but Sidgwick points out that it, supposing it were

possible, has no value given the present conditions of society. But the supposed fact that Absolute Ethics has no value for the present society, does not invalidate Spencer's main argument. The argument remains valid, unless any, or all, of the following claims is, or are, refuted: (a) that pains and pleasures are the correlatives of actions injurious and beneficial, respectively, to the organism; (b) that the former are incongruent while the latter are congruent; and (c) that the process of evolution implies an inevitable law of progress towards congruity.

Now, Sidgwick has not clearly refuted any of these claims. But he has questioned Spencer's claims about optimism and the supposed coincidence. Since he has omitted the essential step in his argument, his criticism of these concepts though correct, remain incomplete.

We have shown in chapter I, that Spencer's law, of inevitable progress towards congruity, is not implied by the theory of evolution. We have also pointed out in chapter II, that even the existence of some general direction in evolution is questionable. This, therefore, makes Spencer's attempt, to derive the concepts of optimism and coincidence from the hypothesis of evolution, futile.

G. E. Moore

G. E. Moore raises the following questions concerning Herbert Spencer's ethical principles:

1. Does Spencer commit the naturalistic fallacy?
2. Is he fundamentally a Hedonist? And if so, is he a naturalistic Hedonist?

3. Does he hold that a tendency to increase the quantity of life is merely a criterion of good conduct?
4. Or does he hold that such an increase of life is marked out by nature, as an end at which we ought to aim?

Concerning the first question, Moore holds that "Mr. Spencer's doctrine does not offer the clearest example of the naturalistic fallacy as used in support of Evolutionistic Ethics."<sup>15</sup> This does not mean that Moore believes that Spencer does not commit the naturalistic fallacy. Instead he says that, "Spencer does, as I shall show, use the naturalistic fallacy in detail."<sup>16</sup> But Moore thinks that Spencer's ethics is not fundamentally purely Evolutionistic. Therefore, Moore believes that Spencer does not use the naturalistic fallacy as clearly as, for instance, Guyau uses it in support of his Evolutionistic Ethics.

Moore examines the following argument of Spencer in this regard. Spencer says: "I recur to the main proposition set forth in these two chapters, which has, I think, been fully justified. Guided by the truth that as the conduct with which Ethics deals is part of conduct at large, conduct at large must be generally understood; and guided by the further truth that to understand conduct at large we must understand the evolution of conduct; we have been led to see that Ethics has for its subject-matter, that form which universal conduct assumes during the last stages of its evolution. We have also concluded that these last stages in the evolution of conduct are those displayed by the highest type of being when he is forced, by increase of numbers, to live more and more in presence of his fellows. And there has followed the corollary that conduct gains

ethical sanction in proportion as the activities, becoming less and less militant and more and more industrial, are such as do not necessitate mutual injury or hindrance, but consist with and are furthered by, cooperation and mutual aid."<sup>17</sup>

According to Moore, Spencer thinks that one of the things he has proved, in this argument, is that conduct gains ethical sanction proportionately to its display of certain characteristics. But this is not, as Moore observes, what he actually has proved. He has attempted to show that, in proportion to the conduct displaying those characteristics, it is more evolved. Moore thinks that Spencer is here identifying the gaining of ethical sanction with the being more evolved. But he also observes that since Spencer's language, here, is extremely loose, we cannot, therefore, take it as Mr. Spencer's definite view that 'better' means nothing but more evolved; or, even that what is 'more evolved is therefore better'. "But we are entitled to urge," Moore further says, "that he is influenced by these views, and therefore by the naturalistic fallacy. It is only by the assumption of such influence that we can explain his confusion as to what he has really proved, and the absence of any attempt to prove, what he says he has proved, that conduct which is more evolved is better."<sup>18</sup>

As to the second question, Moore's answer is that Spencer is a naturalistic Hedonist. He is a Hedonist, according to Moore, because he maintains that we must mean by good conduct, what is productive of pleasure; and by bad conduct, what is productive of pain. Spencer is naturalistic because he is influenced by the naturalistic identification of 'good' with 'pleasant'.

We have already examined Spencer's concept of the relationship between evolution and pleasure. Moore, in this context, offers us no new insights. Rather we shall argue, his criticism of Spencer is misdirected.

Moore complains that Spencer does not clarify what he takes to be the relation of pleasure and evolution in ethical theory. He points out that Spencer, at many places, takes pleasure as the ultimate moral aim. If so, it would follow, according to Moore, that the more evolved conduct is better than the less evolved, only because it gives--and in proportion to its giving--more pleasure. But Moore says:

But Mr. Spencer tells us that two conditions are, taken together, sufficient to prove the more evolved conduct better: (1) That it should tend to produce more life; (2) That life should be worth living or contain a balance of pleasure. And the point I wish to emphasize is that if these conditions are sufficient, then pleasure cannot be the sole good. For though to produce more life is, if the second of Mr. Spencer's propositions be correct, one way of producing more pleasure, it is not the only way. It is quite possible that a small quantity of life, which was more intensely and uniformly pleasant, should give a greater quantity of pleasure than the greatest possible quantity of life that was only just 'worth living'. And in that case, on the hedonistic supposition that pleasure is the only thing worth having, we should have to prefer the smaller quantity of life and therefore, according to Mr. Spencer, the less evolved conduct. Accordingly, if Mr. Spencer is a true Hedonist, the fact that life gives a balance of pleasure is not, as he seems to think, sufficient to prove that the more evolved conduct is the better, if Mr. Spencer means us to understand that it is sufficient, then his view about pleasure can only be, not that it is the sole good or 'ultimately supreme end', but that a balance of it is a necessary constituent of the supreme end. In short, Mr. Spencer seems to maintain that more life is decidedly better than less, if only

it give a balance of pleasure; and that contention is inconsistent with the position that pleasure is 'the ultimate moral aim'. Mr. Spencer implies that of two quantities of life, which gave an equal amount of pleasure, the larger would nevertheless be preferable to the less. And if this be so, then he must maintain that quantity of life or degree of evolution is itself an ultimate condition of value. He leaves us, therefore, in doubt whether he is not still retaining the Evolutionistic proposition, that the more evolved is better, simply because it is more evolved, alongside of the Hedonistic proposition, that the more pleasant is better, simply because it is more pleasant.<sup>19</sup>

This piece of criticism seems to contain two inaccurate claims ascribed to Spencer. First, Mr. Spencer does not tell us, anywhere, as Moore claims, that the two conditions noted in this quote are sufficient to prove the more evolved conduct better. It is not Mr. Spencer's main aim to prove this identification. Moore, himself, seems to confirm this at some places. For instance:

(a) "But Mr. Spencer's language is extremely loose; and we shall presently see that he seems to regard the view it here implies as false. We cannot, therefore, take it as Mr. Spencer's definite view that 'better' means nothing but 'more evolved'; or even that what is 'more evolved' is therefore 'better'."<sup>20</sup> (b) "It is plain that Mr. Spencer here rejects the naturalistic identification of 'better' with 'more evolved'..."<sup>21</sup> (c) "The view, which, as I have said, seems to be Mr. Spencer's main view, may also be held without fallacy. It may be held that the more evolved, though not itself the better, is a criterion, because a concomitant, of the better."<sup>22</sup>

The second inaccurate claim attributed to Spencer concerns the two conditions noted above by Moore. Mr. Spencer, neither tells us, as Moore claims, nor does his argument imply, that the so-

called two conditions, if taken together, are sufficient to prove what Moore calls 'the more evolved conduct the better.' As indicated earlier, Spencer's main aim is not to prove that 'better' means the same as 'more evolved.' His is a more complex position than this. To begin with, he defines good conduct as the conduct that tends to produce more quantity of life. But he observes that this claim cannot be made unless it is shown that life is worth living. And he argues that since life brings more pleasure than pain, it is, therefore, worth living. We have already discussed Spencer's argument for the postulate that life brings more pleasure than pain. We also indicated that, supposing that this postulate is 'universally accepted,' as Spencer claims, the acceptance would not make it true. Furthermore, we questioned the claim that this postulate is self-evidently true.

But whether or not the postulate itself is tenable is beside the point. The relevant thing to note here is, that according to Spencer, the postulate 'life is worth living' is presupposed in the criterion that conduciveness to life is good. Spencer makes it clear in the words quoted by Moore: "He [Spencer] begins this third chapter," Moore says, "by an attempt to show that we call 'good the acts conducive to life, in self or others, and bad those which directly or indirectly tend towards death, special or general.' And then he asks: 'Is there any assumption made' in so calling them? 'Yes,' he answers, 'an assumption of extreme significance has been made, an assumption underlying all moral estimates. The question to be definitely raised and answered before entering on any ethical discussion, is the question of late much agitated--is life worth living?'"<sup>23</sup>

Now if this postulate is presupposed, or assumed, as Spencer claims in his criterion of conduciveness to life, then the second condition, noted above, attributed to Spencer by Moore, does not hold. For Spencer, here, does not claim, contrary to Moore's views, that conduct should tend to produce more life (Moore's condition 1) and that life should be worth living (condition 2). What he does claim is that conduct should tend to produce more life; for life is worth living. The latter, in other words, is a justification for doing the former.

This is not to say that Spencer's position does not involve difficulties--it does. Nevertheless, Moore's criticism must still be considered misdirected.

For instance, take Moore's following claim: "It is quite possible that a small quantity of life, which was more intensely and uniformly present, should give a greater quantity of pleasure than the greatest quantity of life that was only just 'worth living.' And in that case on the hedonistic supposition that pleasure is the only thing worth having, we should have to prefer the smaller quantity of life and, therefore, according to Mr. Spencer, the less evolved conduct."<sup>24</sup>

This shows that Moore has not followed Spencer's argument. According to Spencer, the quantity of life depends upon the degree of congruity between the individual and its environment or society in the case of human beings. Spencer says that congruity in the human stage of evolution requires that persons should act in such a way that does not necessitate mutual injury or hindrance, but is consistent with, and is furthered by, cooperation and mutual aid.

Now Spencer defines pains as the correlatives of actions injurious to an organism, while pleasures are the correlatives of actions benefi-

ial to the organism. Further, the former actions, according to him, are incongruent, while the latter are congruent between the nature of the organism and its environment. In his own words: "the life of every species of creatures is happy or miserable according to the degree of congruity or incongruity between its nature and its environment."<sup>25</sup>

If so, it follows that both the quantity of pleasure and the quantity of life depend on the degree of congruity between the individual and society--in the human case.

If this holds then Moore's claim, noted above, is simply false. With respect to the third and the fourth question about Spencer's ethics raised by Moore, there is nothing fresh in Moore's argument. We need not, therefore, discuss it here.

#### IV. LATER PHILOSOPHERS ON EVOLUTIONARY ETHICS

Chapter III shows that both Henry Sidgwick and G. E. Moore conclude that Spencer's evolutionary ethics is not valid. For Moore this conclusion reaches somewhat further than this: It supports his main thesis of anti-naturalism--a thesis which seems to imply that evolutionary ethics, in principle, is not possible.

We shall see in this chapter that Moore's conclusion has been confirmed by virtually every philosopher who has examined the subject of evolutionary ethics. These philosophers have not, however used Moore's argument to reach their conclusions. There is a lot of fresh reasoning concerning what is, and, what is not, involved in evolutionary ethics.

We shall begin our investigation with an examination of C. D. Broad's argument.

Dr. Broad considers Julian Huxley's theory to be a particular form of Utilitarianism. But, unlike Huxley, he does not think that it follows from the facts of evolution. "Utilitarianism," he says, "was put forward, elaborated, criticized, and defended long before the theory of evolution was thought of, and all the best arguments for it are quite independent of that theory and of the facts on which it is based."<sup>1</sup>

According to Broad, Huxley's Utilitarianism is mainly stated in the following three statements:

- (a) It is right to aim at whatever will promote the

Increasingly full realization of increasingly high values;

(b) It is right that there should be universal equality of opportunity for development;

(c) The right development of an individual is an evolutionary end in itself.

Broad considers (a) to be a general principle of Huxley's Utilitarianism, and (b) to be a principle of distribution. He also mentions that Huxley asserts that (b) follows from (c).

Dr. Broad argues that (b) does not support (a), and, that (b) does not follow, as Huxley claims, from (c). "It is plainly conceivable," he remarks, "that circumstances might exist in which, if equal opportunities were given to all members of a society, none of them could develop very far; whilst, if the opportunities given were distributed most bountifully among those who had the greatest innate capacity, much greater aggregate development would result. It is certainly not obvious to me that, in such circumstances, opportunities for development ought to be distributed equally. And I should like to see the steps by which it is supposed to follow from the premise that the right development of an individual is an end in itself, I suspect that some additional premisses would be needed, and that they would not be particularly plausible if they were brought into the light."<sup>2</sup>

Dr. Broad also points out that it is questionable whether one can support the principle of equality--i.e., principle (a) on Utilitarian grounds. Huxley's claim is that equality of

opportunity leads to maximum variety; and that in a group of interrelated individuals the maximum variety in unity is desirable, over and above some functional unity. According to Broad, it seems quite uncertain whether the equality of opportunities for development would necessarily lead to the maximum variety. "If the available resources were small," he says, "there could be only very slight development for anyone if the opportunities were equal, and this would seem to involve a fairly uniform low level of attainment. If the same resources were distributed unequally, e.g., if they were used to enrich a small class of aristocrats with a taste for being patrons of art and learning and sport, it is quite likely that far greater variety would result."<sup>3</sup>

From these considerations, Broad seems to conclude that Huxley's theory of ethics has small connection with the facts of evolution.

Broad thinks that the relevance of evolution to ethics should be approached through the following two questions: (1) What bearing, if any, has knowledge of the facts of evolution on the question of what is intrinsically good or bad? (2) What bearing, if any, has such knowledge on the question of what is right or wrong? Dr. Broad maintains that even if evolutionary knowledge has no bearing on the first question, it would certainly have on the second question. He argues that: "On any theory of right and wrong which is worth consideration one of our duties, and a very important one, is

to produce as much good and as little evil as we can... Now, in order to decide whether the effects of an action will be good or evil we must first know what these effects will be. This is a factual and not ethical question and the answer to it depends on the circumstances in which the action is done and the relevant laws of nature. It is plain that knowledge of the laws of evolution may be highly relevant in attempting to foresee the large-scale and long-term consequences of certain types of action. Such knowledge may also suggest possibilities which would not otherwise have been contemplated, and it may rule out causally impossible, certain results at which it might otherwise have seemed reasonable to aim. I do not think that any moralist would deny that evolution has this kind of relevance to the question of what is right or wrong."<sup>4</sup>

Dr. Broad then observes that Huxley thinks that evolutionary knowledge also has a bearing on the question which relates the facts of evolution with intrinsic goodness or badness. This amounts to saying that evolutionary knowledge would help us to tell not only what effects of certain actions have, but also whether such effects would be intrinsically good or bad. According to Broad, this claim does not hold. He argues that knowledge of the facts and laws of evolution is simply a knowledge of the de facto nature and order of the sequence of successive phases in various lines of development. The facts of evolution can tell us, for instance, what lines have stopped short, which have continued to

evolve; and by comparing them we can discover that certain features, such as complexity-in-unity, are necessary conditions for the continued growth of a line of development. "This much," Dr. Broad remarks, "could be discovered and understood by an intelligent being who had never the faintest notion of intrinsic value or disvalue; and this is all that a knowledge of the facts and laws of evolution, considered as a part of natural science, amounts to."<sup>5</sup>

Dr. Broad then tells us, that in order to answer the first of the two questions which he raises (i.e., what bearing, if any, has the knowledge of the facts of evolution on the question of what is intrinsically good or bad), Huxley must use some mixed premisses, connecting certain factual characteristics--which are all that a study of evolution can possibly reveal to us--with the value-characteristics of intrinsic goodness or badness. But, "whatever may be the evidence for such a mixed premise," Broad concludes, "it is quite plain that it must be something different from the evidence for the facts and laws of evolution. For the premise required asserts a connection between certain of those facts and laws and something else, viz., intrinsic value or disvalue, which forms no part of their subject-matter. Therefore, whilst I agree that knowledge of the facts and laws of evolution might have considerable and increasing relevance to the question whether certain acts would be right or wrong, since it might help us to foresee the large-scale and long-range consequences of such acts, I am unable to see that it has any

direct bearing on the question whether certain states of affairs or processes or experiences would be intrinsically good or bad."<sup>6</sup>

Stephen Toulmin

Stephen Toulmin believes that ethics cannot be based on science. To do this is to create, what he calls, a scientific myth. Evolutionary ethics, according to him, is such a myth.

Toulmin believes that a scientific myth is created when a scientific theory is used to solve a non-scientific problem, e.g., an ethical, philosophical, or theological problem, or the types of problems with which myths have long been concerned. "If we find," he remarks, "that the theories are regularly invoked in support of conclusions of a kind, which as scientific theories they have no relevance, further, if these conclusions are of a sort with which mythologies have from the earliest times been concerned, then we can say with some justice, not that the theories themselves are only myths, but rather that on these occasions their conceptions are being inflated into scientific myths."<sup>7</sup> Furthermore, "if a conception, however scientific its birth or ancestry, is used in practice only as a way of dealing with non-scientific questions--whether ethical, philosophical or theological--then it is no longer following the trade of its forefathers, and has ceased itself to be a scientific term at all."<sup>8</sup>

Toulmin observes that quite a lot of popular science books are inflating scientific concepts into scientific myths. He

gives two reasons for this: First, the existence of, what he calls, the motives for myth-making in the minds of scientists; and second, the tendency for laymen to ask too much of science--to ask questions which are, in fact, beyond its scope.

Toulmin distinguishes between scientific and non-scientific motives for myth-making in the past. The former, according to him are intended to explain natural phenomena through personification; the latter are due to a desire to seek assurance or a sense of security in the mythical gods. Modern science, Toulmin notes, has eliminated personification from explanations of natural phenomena. There is no need for invoking Zeus, for instance, to explain the occurrence of a thunderstorm. The notion of atmospheric electricity has replaced the supernatural image once relied on for an explanation of this phenomenon. Zeus, however, was not only the thundermaker, he was also the divine father. But the notion of atmospheric electricity displaced Zeus as the thundermaker yet it was never intended to displace him as divine father. Toulmin's point is that the motives that made Zeus the divine father were non-scientific; and, similar motives, he believes, are still alive in us.

Toulmin links the nature of evolutionary myths with the nature of those myths of the past in which explanation was always identified with justification. Such myths "set out to show people," he says, "not only how it is that Nature and Society and Man have come to be related as they are but also why these relations are rightly as they are... Ethical issues

were thereby given cosmological foundation, the nature of things being identified with the Right Order of Things."<sup>9</sup> For example, Aristotle's Scale of Nature was purely a biological concept; but, it was turned into a biological myth by identifying it with the Sovereign Order of Nature. "From being an account of the way things were in fact related, it became a specification of the hierarchy in which they ought to be related."<sup>10</sup> Toulmin observes that, although the biological theory of the scale of nature has been given up in the theory of evolution, the biological myth of the Sovereign Order of Nature is still alive. "It has survived (though transformed) the revolutions produced in biology produced by Cuvier, Darwin, and their successors."<sup>11</sup> Toulmin believes that the old myth is being revived in the new ethico-political myths of evolution.

One such myth, according to Toulmin, is created by Julian Huxley. Huxley, according to Toulmin, attempts to base ethics on the biologist's theory of evolution. "For him," remarks Toulmin, "the object of the biological study is not only an understanding of how things are; it is also a recognition of how they ought to be."<sup>12</sup>

In order to know how Huxley attempts to establish an ethical interpretation of biology, Toulmin urges us to keep in mind the following two questions: (1) "Does a proper understanding of the theory of evolution dictate to us what our ideals should be?" (2) "Or is the connection a more

tenuous one--does one have to tinker with the results of biological study before they will yield conclusions of this sort."<sup>13</sup> Moreover, Toulmin claims that "only in the first case can the biologist speak about ethics in a tone of authority," "Once he begins," he further explains, "to expand or extend biological concepts in ways which are not needed for purposes of explanation, the difficulties we have already encountered will begin to arise--there will no longer be any way of selecting from among all the views that might be put forward, one particular 'biologically correct' one."<sup>14</sup>

The essence of the difficulties referred to above, is illustrated earlier in a passage, as follows: "Technical scientific notions, taken by themselves, have, as we saw, about as much meaning as isolated pieces taken out of a jig-saw puzzle. If we try to do other things with them--for example, to build a comprehensive 'world-view' of a philosophical kind from them--we are forgetting this fact, and treating them as though they were pieces of a single, cosmic jig-saw. This has two unfortunate consequences. First, you cannot get pieces taken from different puzzles to fit together at all except by distorting them; and in the second place, if one man forces them together in one way, and one in another, nobody will be able to say that one or the other of the pictures so produced is, scientifically speaking, the 'right' one.

"These difficulties arise again when physical or biological theories are appealed to in an attempt to solve problems in, for

instance, ethics or political theory."<sup>15</sup> Let us now see, how, according to Toulmin, Huxley can speak about ethics 'in a tone of authority': or, 'how, for Julian Huxley, do the discoveries of biology support ethics'?

Toulmin suggests that the first possibility in this regard is to examine whether or not the scientific facts are "intended, in the ordinary way, as reasons for selecting certain policies, principles and practices and rejecting others."<sup>16</sup> It should be mentioned that this possibility is the only one suggested by Toulmin at this juncture; and, he does not explain how scientific facts can be intended as reasons.

At any rate, Toulmin examines Huxley's three passages quoted on pages 52-53 in Metaphysical Beliefs, and extracts from them Huxley's main principle of ethics, namely, that "it is ethically right to aim at whatever will promote the increasingly full realization of those values which are more intrinsically or more permanently satisfying, or involve a greater degree of perfection." Toulmin then argues that this principle is not supported by the facts of biology. "However the facts of organic evolution are intended by Dr. Huxley to support his ethical views, it is not by serving as 'reasons for them.'<sup>17</sup> Therefore, according to Toulmin, "our first hypothesis must...be dismissed."<sup>18</sup>

At this point, we should make note of the following two points:

First, Toulmin, up until now, seems to be suggesting that Julian Huxley is deriving ethics from the biological theory

of evolution. This suggestion is made clear by these sentences:

(a) "For him (Huxley) the object of biological study is not only an understanding of how things are; it is also a recognition of how they ought to be,"<sup>19</sup> (b) "Let us inquire what sort of connection he is asking us to recognize between the facts and theories of biology and our ethical and political ideals."<sup>20</sup> "How then, for Julian Huxley, do the discoveries of biology support ethics?"<sup>21</sup>

Yet it is clear that Huxley has not attempted to derive ethics from the biological theory of evolution. Rather, he has claimed that it was the emphasis on an entirely biological theory of evolution that led his grandfather, T. H. Huxley, to a 'fundamental contradiction' between ethics and evolution. In his own words: "For T. H. Huxley, fifty years ago, there was a fundamental contradiction between the ethical process and the cosmic process... The cosmic process, he restricted almost entirely to biological evolution and to the selective struggle for existence on which it depends..."<sup>22</sup> Julian Huxley then goes on to say: "Today, that contradiction can, I believe, be resolved--on the one hand by extending the concept of evolution both backward into the inorganic, and forward, into the human domain, and on the other by considering ethics not as body of fixed principles, but as a product of evolution, and itself evolving."<sup>23</sup>

Toulmin himself recognizes this last statement later in his essay, when he criticizes Huxley for extending the

notion of evolution for ethical purposes.

Our second point, is that Toulmin's first hypothesis or first case seems to be inconsistent with his general thesis of scientific myth. The thesis maintains, as we have already seen, that the non-scientific questions cannot be solved with scientific theories without creating scientific myths. But here Toulmin is setting up two non-scientific cases and claiming that "only in the first case can the biologist speak about ethics in a tone of authority." The first possibility, in this regard, he tells us, is the possibility of using scientific facts and theories as reasons for ethical options. This amounts to saying that at least a possibility does exist for doing ethics with evolutionary theory. And this appears to be inconsistent with Toulmin's thesis of scientific myth.

Let us now turn to Toulmin's argument dealing with the second case: The question here is, does Huxley tinker with a theory of biological evolution to derive his ethics? Toulmin's answer is yes. He argues:

For him (Huxley), 'evolution' means more than natural selection. It is a composite notion and a more grandiose one for which the biological term serves only as a starting point. Here is the recipe for producing it. First, select from the countless evolutionary processes that biologists study, the particular one which has led up to the appearance of man-- this puts man in a preferential position, whose justice the lion or ant might question, but the justification would be man's greater degree of 'evolutionary advance.' Then tack on the beginning of this historical sequence a series of physico-chemical events leading up to the appearance of the first living creatures, and at the latter end treat the development of civilization and technology

as a continuation of the biological trend 'by other means'--in this way, as Huxley puts it, we 'extend the concept of evolution both backward into the inorganic and forward into the human domain.' Finally, christen your conceptual artefact 'the cosmic process' and present it as a golden thread leading from the remotest past up to the present day and on into the future. This, not 'evolution' in the pure biologist's sense, is the touchstone Julian Huxley offers for solving our ethical problems.<sup>24</sup>

According to Toulmin, Huxley's extended notion of evolution is not a genuine scientific notion. It contains, as Toulmin tells us, both the features of a scientific myth:

(a) The key terms have to be understood, not in their straight scientific sense, but in an extended one; and, (b) this extension is made for other than scientific motives.

Toulmin points out that whatever ethical ideas Huxley may base on this myth, he cannot claim that biology is supporting him. Once we start changing the meaning of the term 'evolution' to perform non-scientific tasks, biology can no longer resolve any difficulties encountered when incompatible views are put forward. For instance, Toulmin points out that biology cannot resolve what he calls 'a flat contradiction' between T. H. Huxley and Julian Huxley concerning ethics and evolution.

Toulmin inquires into the probable motives behind the Evolution Myth. He tells us that in some ways the Evolution Myth is like the Atlas Myth. Both, according to him, stress the obvious--they 'proffer support in contexts in which no support is needed.' But he thinks that both also have

some deeper motives. Thus, Atlas is a creation of the ancients due to their ignorance of the solar system; for had they known of the system, they would not have needed to invent Atlas to provide for the support of the earth. But Toulmin suggests that ignorance is not the only factor contributing to the creation of the Atlas myth. Ancients, according to him, were ignorant of many things; "but very few of them gave rise to myths. Only where this ignorance was of importance, where it seemed to mean insecurity, was a myth born."<sup>25</sup>

Toulmin posits that similar motives are 'probably at work in producing Evolution myths. "The support given by Evolution to ethics," Toulmin says, "serves as a source of confidence in our moral ideas, rather than as an intellectual justification of them... If you can paint a picture of social and moral development as being all of a piece with biological development, this may help you to feel that morality is something long-standing and of proved worth, something with roots in the universe and no mere human makeshift. Then the next time you feel the fear that morality may, after all, not prove a paying proposition, you can at least (on this view) comfort yourself with the thought that such an ancient institution as the cosmic process is not likely to default."<sup>26</sup>

D. D. Raphael

Why should the direction of evolution be accepted as good? Professor D. D. Raphael examines two answers to this question. One, is an answer given by C. H. Waddington, the

other is offered by Julian Huxley. The first (Waddington's answer), according to Raphael, involves a logical confusion, the other (Huxley's answer) circularity.

We shall first examine Waddington's answer. Raphael quotes him as saying: "We must accept the direction of evolution as good simply because it is good according to any realist definition of that concept. We defined ethical principles as actual psychological compulsions derived from the experience of the nature of society; we stated that the nature of society is such that, in general, it develops in a certain direction; then the ethical principles which mediate the motion in that direction are, in fact, those adopted by that society."<sup>27</sup>

Raphael observes that Waddington's claim made in the first sentence of the forgoing quote, is not supported by the rest of the paragraph. The claim is, "We must accept the direction of evolution as good simply because it is good according to any realist definition of that concept." But what follows this sentence does not give us any definition of the concept of good. Instead, what Waddington says, according to Raphael, is that the ethical principles of people are derived from experience of their society and "express the direction in which that society is developing. That is to say, people think good by the way their society is going and judge other things to be good by reference to that standard."<sup>28</sup>

Waddington answers Raphael's criticism by claiming that he is not arguing that "people think good the way their society is going."<sup>29</sup> This is a thesis, Waddington tells us, that Raphael has invented 'out of the blue.' He points out that what he actually means to say is that "in order to obtain a definition of the 'real good' (i.e., the criterion,

'wisdom') we have to look at the experience of the human world as a whole during its evolution rather than at any particular society."<sup>30</sup> We shall come to this point later. Let us pick up Raphael's argument.

Raphael argues that Waddington has failed to distinguish two different kinds of questions and the two different kinds of answers they require. These questions are: (a) "When people commend things, do they use as their standard of commendation the direction of evolution, and if so why?" is different from question (b) "Am I to use the direction of evolution as my standard of commendation, and if so why?" Raphael suggests that Waddington answers question (a) and in so doing believes he has answered question (b). His answer to the first part of question (a) is yes; and he answers the second part of this question by giving us a causal account of the evolution of ethical judgement. But, as Raphael points out, to answer question (a) is not the same thing as to answer question (b). It is not an answer to question (b) to say, "Yes, you should, and the reason why you should is that you always have done it in the past, and so has everyone else."<sup>31</sup> Raphael illustrates this point by means of an analogy. "Suppose," he says, "a child says to me: 'I have always believed the earth is flat, but my friend says it is spherical. What am I to believe?' It would be absurd to answer: 'You should believe it is flat because you have done so in the past.' Nor would it be much better to answer: 'You should believe it is spherical because other people nowadays believe that.'"<sup>32</sup>

Raphael suggests that Waddington failed to distinguish between questions (a) and (b) because he did not see that, whereas question (a) seeks information, question (b) seeks advice. In other words, the 'why' of the first question searches for explaining causes, while the

'why' of the latter searches for justifying reasons.

Raphael concludes: "Waddington thinks the answer to the question, 'What am I to do, and for what reasons?' is the same as the answer to the question, 'What will I do, and from what causes'? This is why he thinks that a causal account of how ethical judgements have come to be what they are can supply a criterion, or rational ground for the ethical judgements we should make. But since the two questions, and the kinds of answers that they seek, are of different logical types, Waddington's argument for using the direction of evolution as the criterion of ethical judgement rests on a logical confusion."<sup>33</sup>

Waddington admits that this is a 'more fundamental criticism' of his position. However, he makes two points: First, he believes that although questions about reasons are logically different from questions about causes, the former being what he calls 'verbal arguments,' once the latter are answered, "the reply to the former may be deducible from" them.<sup>34</sup> Waddington does not, however, dwell on this point. The second--and more important--point, in his own words, is: "that Raphael phrases both questions with reference to an 'I', whereas my thesis would refer the second not to any particular individual, but to some much larger entity, such as the human species, or even the living world as a whole ... The difference between what he alleges I believe and what I was actually arguing may perhaps best be brought out if I rephrase his paragraph into a form in which I would accept it:" "Waddington thinks the answer to the question 'what would it be wise for me to do and for what reasons?' can be deduced from the answer to the question: 'what has the world at large been doing during its history and from what causes'? This is

why he thinks that a causal account of how individual ethical judgements have come to be what they are can supply a criterion or rational ground for the judgement between different ethical beliefs which it is wise for us to make. These are two questions and the kinds of answer they seek are different logical types. Waddington's argument for using the direction of evolution as the criterion for judgement between ethical beliefs rests on acceptance of this."<sup>35</sup>

This does not really answer Raphael's criticism. Raphael points out, as we have seen, that since Waddington has failed to recognize that questions about causes are logically different from the questions about reasons, he does not see that the kinds of answers they seek are different logical types. Waddington's argument is, therefore, based on a logical confusion.

Waddington now admits that there is a logical distinction between these questions and the kinds of answers they seek. But still he claims that we can deduce the answers to the reason-questions from the answers to the causal questions; but, he does not support this claim with any argument. Needless to say, it is difficult to see how this deduction is possible.

Raphael suggests that Huxley's answer to the question "Why should the direction of evolution be accepted as good?" involves two criteria of the concept of good. Raphael contends that one of these criteria is familiarly intuitive and the other one is evolutionary; but, the evolutionary criterion is secondary, for it depends, as we shall see, on the former.

The so-called evolutionary criterion, according to Raphael involves Huxley's recognition of certain human experiences as 'good

in themselves.' These include: 'enjoyment of natural beauty; aesthetic experience; the acquisition of knowledge and understanding; personal love; devotion to an active cause; and so on.' Huxley points out that to these experiences we assign higher and lower degrees of value --the higher values being those which are intrinsically or more permanently satisfying, or involve a greater degree of perfection. Raphael tells us that Huxley's point here is that using this criterion, we shall be able to judge other things good, if they help to produce these satisfying or perfect experiences. And since, according to Huxley, the direction of evolution does help to produce such experiences, it should be accepted as good.

Raphael examines Huxley's argument for the evolutionary criterion as follows. If we consider the process of evolution as a whole, we may observe two things: (a) the general direction of evolution is from the less, to the more complex, and in consequence it is continually producing new forms of existence. In short, the general direction is toward increasing complexity with scope for novelty; and, (b) since this direction of evolution includes, in its latest phase, the things we value highly--namely certain experiences-- we may say that the direction of the process is from what has little or no value, to what has great value. "The point of Huxley's argument is," as Raphael says, "that once we have, by use of the non-evolutionary criterion, judged the process of change to be good because it leads to good end products, we can then use a further property of the process (namely, increasing complexity with continuing scope for future novelty) as a second criterion for valuing other things than those experiences which we already know to be good and the process of change which

lead to such experience. By the use of the second criterion we may judge to be good other changes which have the property of increasing complexity with scope for continuing novelty."<sup>36</sup>

Raphael then observes that Huxley appears to be claiming that not only the evolutionary, but also the non-evolutionary criteria can be deduced from the facts of evolution. He quotes Huxley as saying: "The facts of nature, as demonstrated in evolution, give us assurance that knowledge, love, beauty, selfless morality and firm purpose are ethically good."<sup>37</sup> Raphael remarks that although Huxley does not explicitly make this point, he does "give the impression of thinking that the goodness of these states of mind can be derived from the fact that they are late products of a progressive process."<sup>38</sup> But this, according to Raphael, is arguing in a circle, for Huxley has already judged the general direction of evolution as progressive because it has produced, in its latest phase, certain experiences which are good in themselves. Now Huxley is saying that these experiences are good because they are produced by the direction of evolution. In Raphael's words: "he judges the process to be progressive because he has already judged good some of the experiences that it produces. He cannot, therefore, use the progressiveness, which depends on the goodness of the end-products, to confirm his evaluation of the end-product."<sup>39</sup>

Julian Huxley, in his introduction to The Phenomenon of Man (by Pierre Teilhard de Chardin) admits that his attempt on evolutionary ethics is 'inadequate.' But, he considers it to be 'at least a step in the right direction.' If by the phrase 'a step in the right direction' he suggests that ethics can be deduced from the theory of

evolution, then he has taken no other step in this 'right direction' in his later works. He does attempt to connect ethics with evolution in some of his writings, but this connection does not seek any deduction of ethics from evolution. What he suggests in these works is that an evolutionary way of thinking can help us solve our practical moral problems. We shall examine this suggestion in our final chapter.

#### Anthony Quinton

Anthony Quinton writes: "One reason why I believe that evolutionary ethics should be considered afresh is that I do not find the doctrine of anti-naturalism, in any of its forms, to be even plausible, let alone convincing."<sup>40</sup>

This doctrine, Quinton feels, makes a distinction between two broad classes of concepts. There are theoretical concepts which describe, and the practical concepts which prescribe and evaluate. Since the functions of the two are quite different there can be no logical connection between them. Quinton points out that the distinction is made in such a way that their uniqueness logically follows. For instance, it is claimed that moral statements are not really statements, or that moral statements are imperative while scientific statements are indicative. Quinton tells us that practical statements do not behave like imperatives--for example, practical statements can be expressed in the past tense, while imperatives cannot be.

Quinton, however, considers Hare's account of practicality to be promising. According to Quinton, Hare's account of practicality, "in general, brings together all those utterances which are direct

responses, making no presumptions about the wishes of the inquirer, to request for advice, to the question, 'what shall I do?'<sup>41</sup> Although, on this criterion, Quinton points out, "both imperatives and judgements of value--such as 'shut the door!' and 'you ought to shut the door'--are practical utterances, this does not establish, though it may suggest, a comprehensive identity of logical character between them."<sup>42</sup> Quinton further argues, that since imperatives are practical, some practical utterances are not statements. But, it does not follow that moral utterances, being practical, are not statements either.

Quinton then draws our attention to a class of 'unquestionably descriptive moral statements,' which he calls 'appetitive utterances.' These "indicate the objects or states of affairs that the person addressed will most enjoy or will get most satisfaction from. 'You will most like or enjoy the Red Lion' is as good, sufficient and direct an answer to the question 'which hotel shall I stay at?' as 'stay at the Red Lion' or 'the Red Lion is the best hotel.' It is like them and different from 'the Red Lion is the smartest or largest or quietest hotel' in that no contingent presumption needs to be made about the special tastes or requirements of the questioner in order to predict the action that will follow on his sincere acceptance of the advice or, at any rate, to be assured of its relevance to his inquiry... There can be no serious question that appetitive utterances are both practical, in the way that judgements of value and imperatives are, and factual, capable of being established as true or false."<sup>43</sup>

Quinton's point here is that from such premisses, value judgements

can be deduced without any logical objection to the procedure.

But, Quinton observes that the statements of evolution are not prima facie, appetitive. "To describe some state of affairs or course of conduct as adaptive or biologically efficient, is not the same as to say that it will give enjoyment or satisfaction to the person addressed."<sup>44</sup>

Quinton then refers to another class of practical concepts which he calls 'technical evaluations' among which, he thinks the relevant evolutionary concepts can be found. These technical evaluations or prescriptions, he tells us, can be derived from most of the scientific theories which tell us what to do if we want to achieve certain results. For example, from the theories of the medical sciences of Anatomy, Physiology and Pathology, we can derive two branches of medical technology, i.e., Therapeutics, concerned with the cure of disease, and Hygiene, concerned with its prevention. According to Quinton, the concepts of technical evaluation in use here are the concepts of health and disease. "To characterize a condition of the human organism as diseased," he says, "is to make a practical statement. It is to recommend that the condition be removed or avoided."<sup>45</sup>

Quinton claims that the statements in which technical values are ascribed to objects or policies are, on the one hand, "unquestionably practical, in that they are good, sufficient and direct reasons for action ...; on the other hand, they are unquestionably statements of fact, capable of being empirically established as true or false and furthermore, in the most favoured way, namely by means of scientific investigation."<sup>46</sup>

In works of evolutionary biology, Quinton tells us, terms like 'adaptive,' 'progressive,' 'genetically or biologically efficient' and 'anagenetic' appear to stand for technical values. Quinton says that he is not sure whether these are synonymous terms. Yet, he nevertheless, claims that these terms are logically interconnected. A variation is adaptive, for example, "if it contributes to the biological efficiency of the organ or species involved--and the same ultimate evidence is appealed to for the ascription of any of them."<sup>47</sup>

Quinton further contends--and it is important to note--"species, organs and variations are not the only things that can be intelligibly evaluated in these terms. The ends which they serve can equally be served by modes of behavior, policies and social institutions which are the subject-matter, in a broad sense, of ethics. Waddington's notion of 'biological wisdom' is simply their application in this field as a criterion for the adequacy of received ethical ideas and practices."<sup>48</sup>

It would seem that the application of the concepts of 'genetic and biological efficiency' to evaluate social institutions and processes is somewhat questionable. Quinton maintains that the modes of behavior, policies, and social institutions can be intelligently evaluated in the technical terms noted above--especially with respect to the term biological efficiency--as species, organs and variations. Moreover, he refers to Waddington's notion of 'biological wisdom' as an example of this sort of evaluation in the ethical field. Now, Waddington's notion of 'biological wisdom' is restricted, only to be used in the context of human evolution; and human evolution is considered to be carried on by the socio-genetic transmission of information. He tells

us that:

The problems of the organization of the human species are sui generis, very little help concerning them can be found by looking either at evolving animal<sup>49</sup> species or developing animal individuals.

Furthermore, the term 'biological efficiency' seems neither to be synonymous with, nor is it logically interconnected with either the term 'progressive' or 'anagenetic.' Quinton himself seems to recognize the problem. "The point is," he says, "that it is conceivable that the most biologically efficient condition of the human species at a certain stage of its development might be an entirely non-progressive one."<sup>50</sup>

Quinton then makes two general remarks concerning the whole class of technical values. First of all, they are plural in the sense that they can come in competition with one-another. For instance, the most efficient way of doing something may not always be the most economical. Similarly, "economy and health may all come into conflict with morality." Therefore, Quinton maintains that when these values come into conflict they require us to adjudicate between them by referring to some overriding principle of value.

Second, these technical values have some 'implicit' appetitive element. "They are ascribed to things in virtue of the contribution of those things to some end, and those ends will be the ones that are generally desired by men and are generally satisfying."<sup>51</sup>

Quinton maintains, that "in the evolutionary case, the relevant, generally desired, end is the effective survival of the human species, its continuation despite the dangers of the physical environment, the hostility of other species and the increasingly perilous character

of its internal dissensions."<sup>52</sup>

It may be remarked here that the survival of the human species is not a generally desired end in the evolutionary case. It may be desired in the case of human evolution in particular, but not in the case of biological evolution in general. Indeed, the survival of other species may come into direct conflict with the survival of the human species. Quinton previously claimed that the technical terms 'adaptive,' 'progressive' and 'biologically efficient' apply to general evolution, that species, organs and variation can be evaluated in these terms. Now he is claiming that the overriding end of these terms is the survival of the human species.

Quinton then examines some of the theories of evolutionary ethics in light of his two remarks on technical valuations. He intends to inquire whether or not the case for the primacy of biological efficiency, with respect to the set of technical values, can be made.

Quinton then evaluates Julian Huxley's theory of evolutionary ethics as another teleological system. Huxley defines his criterion of desirable direction of evolution, referring to a 'higher value'-- a wholly extra-biological kind. "An ethical theory," he writes, "that requires this sort of reinforcement however much material it makes use of, is not really an evolutionary ethics at all."<sup>53</sup>

Since we have discussed Huxley's theory in some detail--and Quinton has nothing new to contribute on this subject--we shall now turn to an examination of Quinton's presentation of Waddington's work.

"Waddington," according to Quinton, "puts forward as the fundamental criterion of value what evolutionary biology shows to be most efficient."<sup>54</sup>

However, this criterion, Quinton tells us, is purely biological. Moreover, Quinton points out that this criterion involves one difficulty which results from Waddington's identification of biological efficiency with what is favoured by the discoverable general trend of the evolutionary process.

But Quinton suggests that the results of biological efficiency may not conform to the general trend of evolution; for, the former is a local or relative notion, whereas, the latter is not.

The general trend of evolution, Quinton tells us, occurs against the background of many more variables than a particular case of biological efficiency. So a change that increases adaptation, in a certain limited context, may be, in fact, a reduction in efficiency when viewed in relation to changes in the overall environment.

It is clear that the primacy of biological efficiency cannot be established, given the set of so-called technical values. Quinton is also correct in claiming that the concept of biological efficiency is ambiguous. One reason for its ambiguity is that it is not used, here, in the Darwinian sense. For Darwin, biological efficiency mainly means the reproductive capability of a given individual. Clearly, Waddington is not using this concept in this sense; and, if he is using it in some other sense, its meaning is not at all clear.

A. G. N. Flew

Of all the contemporary philosophers Flew's treatment of

evolutionary ethics is the most penetrating. He concentrates on two important issues--i.e., the naturalistic fallacy and the concept of progress. He argues that evolutionary ethics involves both the naturalistic fallacy and the concept of progress. Nevertheless, he strongly suggests that the present moral questions 'can and should be seen in an evolutionary perspective.'

We shall first consider the concept of progress. Flew shows that Darwin's natural selection theory of evolution does not imply a law of progress. He points out that the mistaken belief that it does, lies in "the fact that the core of Darwin's theory is a compulsive deductive argument which makes it possible to misplace the idea of necessity, and then perhaps to mistake its character. Where a conclusion follows necessarily, it can be all too easy to assume that, that conclusion must itself be logically or even morally necessary."<sup>55</sup>

Flew points out another source of this misinterpretation of Darwin's theory. This source lies in the misuse of Darwin's key terms, such as 'natural selection' and 'the survival of the fittest.'

We have already examined the meanings, not to mention the misapplications suffered by, these phrases. Moreover, we have also discussed the concept of progress in the Darwinian context. Since Flew's conclusion does not differ from the one we reached earlier, we will not review the argument used to reach it at this point.

We must, however, mention one of Flew's telling comments on the concept of a law of progress and its ethical application. He writes: "it is worth pointing out, parenthetically, that the spokesman for absolute laws of historical development must have difficulty in allowing room for effective human action; for, in so far as anything is absolutely inevitable it would seem that attempts to prevent it must be futile and efforts to bring it about redundant; and the consequence is fatalism."<sup>56</sup>

Flew maintains that, although Darwin's theory does not imply a law of progress, it does make it easy to pick out a trend "which we can scarcely regard as anything but progressive."<sup>57</sup> Flew offers three reasons for this claim: (a) In every epoch of the fossil record fresh possibilities of life have been realized; (b) the most complex of these in each epoch have been more elaborate than the most sophisticated achievements of the previous period; and, (c) we ourselves are among the latest products of development.

But a trend, according to Flew, is different from a law of tendency; and a law of tendency is further different from an absolute law of development. "There is a trend," he says, "if there has been a direction in the development so far, whether or not there is any reason to think that things will continue along this line. But to assert a law of tendency is to say that something, always has occurred and always will occur, except insofar as this tendency was or will be inhibited by some overriding force. Furthermore, a law of tendency

is a very different thing from an absolute law of development. The former may obtain even though the tendency in question is never in fact realized: the First Law of Motion and Malthus's Principle of Population are not disproved by the observations that, in fact, there always are 'impressed forces' and countervailing 'checks.' But an absolute law of development would state that some particular line of evolution is absolutely inevitable, that it neither will nor could be prevented by any counteracting causes.<sup>158</sup>

In the light of these distinctions, Flew examines Julian Huxley's position on the concept of progress. Flew maintains that Huxley usually claims to show 'an actual trend'; but if pressed Huxley would never claim to show more than a law tendency. Flew does not explain what this law of tendency or trend actually involves. (It may be mentioned here that we have discussed, in detail, Huxley's concept of the general direction of evolution in chapter II)

Apparently Flew is dealing with Huxley's later views on evolutionary ethics and humanism. One distinction between his former and his later views is that, in the later ones, he does not attempt to deduce ethics from the evolutionary theory, but, rather, he emphasizes that phenomena should be seen in an evolutionary perspective.

Nonetheless, Huxley still seems to be plagued by his former preoccupation: For example, he seeks in the direction of evolution, some sort of "intellectual prop which can support

the disturbing and questioning mind--something not ourselves that makes for righteousness."<sup>59</sup>

But, as Flew points out, a difficulty is involved in Huxley's search. Firstly, Huxley takes evolution as a trend, and a trend, as we saw in Flew's above mentioned distinction, carries no guarantee for its future continuation. Thus, an intellectual prop, based on a 'trend' would stand on very shaky ground. Secondly, the process of evolution, from which Huxley derives the trend which serves as his intellectual prop, itself depends on man. Huxley, himself, asserts this dependancy: "In the light of evolutionary biology man can now see himself as the sole agent of further evolutionary advance on this planet, and one of the few possible instruments of progress in the universe at large."<sup>60</sup> Clearly, if the evolutionary process itself depends upon man, Huxley's search for an outside intellectual prop, becomes questionable. Flew makes this point in the following:

the kind of reinforcement or guarantee sought by the author of Essays of a Biologist could be found only, either outside the universe in an old fashioned Divine Providence or "inside" the universe, in absolute laws of historical development. If the former could somehow be discovered then it would presumably follow that the course of biological evolution up to, and including the emergence of man must have been like everything else in the universe--a manifestation of that Divine Providence; and that, presumably, must imply that all manner of things are and were and will be well. Again, if there were absolute laws of historical development, and if the development which they determined could be rated as progressive, then Huxley might have found in

these laws that outside support which he craved...

But either recourse ought to be suspect in supposedly secular context. There is, surely something very odd, indeed pathetic, in Huxley's attempt to find in evolutionary biology "something, not ourselves, which makes for righteousness." For this quest is, for him, a search for something, not God, which does duty for Divine Providence. Yet, if there really is no Divine Providence operating in the universe, then indeed, there is none; and we cannot reasonably expect to find in the Godless workings of impersonal things those comfortable supports which--however mistakenly--believers usually think themselves entitled to derive from their theistic beliefs. Nor, insofar as we insist--as indeed we must--that men make history, can any laws of tendency, which we may be able to discover in history, fill Huxley's bill. For insofar as such laws either epitomise or presuppose our human tendencies, they very obviously cannot, whether or not they make for righteousness, constitute a "something not ourselves."<sup>61</sup>

We shall now briefly discuss Flew's claim that evolutionary ethics involves the naturalistic fallacy. He maintains that it is mainly due to the misunderstanding of both the deductive core of Darwin's argument and certain key terms related to this argument that the fallacy, in this context, is committed. "To say within the terms of Darwinian theory that in natural selection the fittest must survive is to utter only a tautology. But this can be mistaken to be an urgent practical imperative categorically demanding that we make every sacrifice to ensure that they in fact do."<sup>62</sup>

Social Darwinism, as mentioned in chapter 1, offers the best example of the misunderstanding referred to above. Thus, Flew quotes Adolf Hitler as saying "If we did not respect the law of nature imposing our will be the right of the stranger, a

day would come when the wild animals would again devour us...."<sup>63</sup>

Similarly it is sometimes argued that the Malthusian proposal of prudential restraints as well as the Engenic measures, are mistaken on the grounds that they violate the law of nature. Flew points out that this sort of reasoning is based on the confusion between the two senses of the law--the descriptive and the prescriptive. A law, in the former sense, "cannot have any genuine exceptions, since the occurrence of any event inconsistent with the truth of a proposed law constitutes a sufficient reason for failing the candidate,"<sup>64</sup> while this is not the case in the prescriptive sense of the term law.

Laws of nature, as Flew maintains, are descriptive laws. Now, if natural selection expresses a law of nature, and it is generally assumed that it does, then it is absurd to use natural selection both as a law of nature and a reason for acting in one way rather than the other.

It may be pointed out, that in evolutionary context, this confusion between the two senses of the term law is mainly found in social Darwinism. But, social Darwinism, as mentioned in chapter 1, is not an important part of evolutionary ethics. Thus, evolutionary ethics, as a whole, does not involve the naturalistic fallacy in the crude form as evidenced by social Darwinism.

Flew points out that in most of the theories of evolutionary ethics, we find an "indeterminacy about precisely what supposed

evolutionary facts are to be connected with the desired ethical directives."<sup>65</sup> Flew, then examines the ethical theories of Julian Huxley, Herbert Spencer and C. H. Waddington. He questions whether the ethical principles of Spencer, and Julian Huxley, as well as the premises from which they are derived, are in themselves, evolutionary. Flew mentions Huxley's three main 'ethical principles which have already been discussed on pp. 78-79 in this thesis. Flew, however, quotes Huxley as saying: "He [the evolutionary moralist] can tell us that the facts of nature, as demonstrated in evolution, give us the assurance that knowledge, love, beauty, selfless morality, and firm purpose are ethically good." Flew comments "well, no doubt he can tell us. But that, in default of any less elliptical exposition, is no sufficient reason for agreeing that what he tells us is true."<sup>66</sup>

Similarly, Flew argues, that Spencer's theory of ethics suffers from the indeterminacy about what supposed evolutionary facts are to be connected with the desired ethical directives. We have already argued in chapter I, and III that it is not clear whether Spencer is an evolutionist or a Hedonist. We also indicated that it is questionable whether his concept of 'the breadth of life' is a biological concept. Further, we have shown that his argument for the inevitable law of progress is neither valid, nor is it consistent with Darwin's theory of evolution. Since Flew's objections against Spencer's

ethics are not different from these, we do not need to discuss them.

Flew then examines C. H. Waddington's argument. Waddington, as mentioned in chapter 11, claims that his argument does not involve the naturalistic fallacy. This argument, in brief, is: "If we investigate by normal scientific methods the way in which the existence of ethical beliefs is involved in the causal nexus of the world's happenings, we shall be forced to conclude that the function of ethicizing is to mediate the progress of human evolution...we shall also find that this progress, in the world as a whole, exhibits a direction,... Putting these two points together we can define a criterion which does not depend for its validity on any pre-existing ethical beliefs." And Waddington, as Flew points out, is most insistent that what is distinctive about his view is that this criterion is "a criterion for deciding between alternative systems of belief,"<sup>67</sup>

Flew points out that Waddington thinks that by proposing an evolutionary criterion--not directly a criterion of what the right may be, but rather a criterion for judging which is the best among rival systems of belief about what is right--he escapes the objection concerning the naturalistic fallacy. But this is not the case. Flew argues:

"For what is a criterion for deciding which is best among rival systems of belief about what is right if it is not a means of deciding which set of beliefs is, on balance, the

most correct. If in reply it is suggested that Waddington's criterion is intended only as a criterion of the efficiency of different systems of ethicizing [sic] in their supposed biological function, 'mediate the progress of human evolution', then the further question arises, whether the putative direction of human evolution is being taken to be commendable as such, or only insofar as the actual direction satisfies some other standards. If the former, then--in a catch-phrase of the old pre-television era--This is where we came in. If the latter, then, as far as our present sort of evolutionary ethics is concerned, that is that."<sup>68</sup>

Thus Flew concludes that evolutionary ethics must involve the naturalistic fallacy.

## V. CONCLUSION

The obvious conclusion of this investigation is that the theories of evolutionary ethics, discussed in this thesis, do not hold. This conclusion, I believe is sufficiently supported by the reasons given in chapters III and IV. Some of the propounders of the theories themselves have admitted that their arguments for evolutionary ethics are inadequate. Herbert Spencer says "The doctrine of evolution has not furnished guidance to the extent I had hoped. Most of the conclusions, drawn empirically, are, ...enlightened by cultivated intelligence... Beyond certain general sanctions indirectly referred to in verification, there are only here and there...conclusions evolutionary in origin that are additional to, or different from, those which are current."<sup>1</sup> Similarly, Julian Huxley admits: "In my Romanes Lecture on Evolutionary Ethics, I made an attempt (which I now see was inadequate, but at least was a step in the right direction) to relate the development of moral codes and religions to the general trends of evolution..."<sup>2</sup> Finally, G. G. Simpson remarks: "Let us not be too dismayed if some attempts to set up naturalistic ethics turn out themselves to be fallacious, or if we cannot all agree as to either origin or criteria for naturalistic ethics. It would be enough to go on with if we could conclude that naturalistic ethics are eventually possible."<sup>3</sup>

But is evolutionary ethics really possible? We noted that such a possibility must face at least two main difficulties: first, evolutionary ethics seems to involve the naturalistic fallacy; and, second, since the process of evolution is a 'trend' not a 'law' it cannot provide what Julian Huxley calls a "natural foundation on which our human superstructure of right and wrong may safely rest."

In view of these and other difficulties considered in this presentation it may be concluded that evolutionary ethics is not possible. Nevertheless, as A. G. N. Flew remarks, "Attempts to bring ethics and politics into some sort of relation with the facts of evolutionary biology are perennial."<sup>4</sup> But, if evolutionary ethics is not sound, how are these 'perennial' attempts to be explained? Stephen Toulmin, as we saw, thinks that they are fundamentally mistaken. His argument is that no non-scientific question can be solved by a scientific theory without creating a scientific myth. Evolutionary ethics, according to Toulmin, is neither a genuine theory of science, nor of ethics; it is a scientific myth--an evolutionary myth.

But why, then, is the interest in connecting ethics with evolution 'perennial'? Why has this idea had a considerable hold among senior biologists? This question seems worthy of raising. Again, according to Toulmin, the desire to connect ethics with evolution is a remnant of past human motives for myth-making. It gives men, as he suggests, a sense of security and comfort to see that "morality is something long standing,

something with roots in the universe and no mere human makeshift."<sup>5</sup>

This answer, however, is somewhat overstated. Toulmin's whole thesis of the scientific myth, as discussed in chapter IV, leaves a strong impression that he thinks that the propounders of evolutionary ethics, especially Julian Huxley, are not genuinely motivated in their examination of ethical questions. This seems questionable.

A. G. N. Flew, on the other hand, believes that the desire to connect ethics with evolution, is a part of the general desire to "connect and to see microcosms in relation to the macrocosm."<sup>6</sup> He believes that this desire in itself is 'excellent' and quite certainly should be shared and not despised by anyone who aspires to the title of 'philosopher.' "It is, therefore," Flew remarks, "neither surprising nor discreditable that in every generation since Darwin some of the liveliest and least blinkered students of biology--Darwin himself included--should have wanted to explore the possibility of connections between evolution and ethics."<sup>7</sup>

Nonetheless, Flew observes that philosophers have done "far too little careful and sympathetic investigation" of such a possibility. One reason for this, Flew maintains, is that they have "an obsessively narrow conception of philosophy." Flew does not sufficiently explain what he precisely means by a "narrow conception of philosophy." He seems, however, to be referring to the type of philosophical investigation

influenced by the Tractatus. This sort of philosophical investigation, he points out, is concentrated on 'a very strict sense of implication.' ("A few paragraphs back we said," Flew writes, "that one reason for denying that Darwin's theory had any philosophical implications was a concentration on a very narrow sense of 'philosophy.' We can now add, and a very strict sense of 'implication,'" )<sup>8</sup>

Consequently, C. H. Waddington may not be entirely mistaken when he states: "Remarkably few professional philosophers of the present day so much as mention the fact that the human sensory and intellectual apparatus has been brought into being by an evolutionary process whose observed effects in all other instances are to produce operative systems comfortable to the situations with which they will have to deal. Take two examples, more or less at random: the word 'evolution' does not occur in the index of either Gilbert Ryles' The Concept of Mind or A. J. Ayer's The Problem of Knowledge. To the biologists, I think it is bound to remain almost inconceivable that one can talk much sense about the relation between man and the external world if one leaves out of account the fact that man has been brought into being by evolution in relation to the external world,"<sup>9</sup>

Waddington may be correct in saying that most professional philosophers have not acknowledged the facts of evolution when dealing with problems on the relation between man and the external world; but, it does not follow that they cannot

talk sensibly about the problems concerned--for one can talk sensibly even when one is questioning the facts and theories of evolution.

Flew's objection, on the other hand, is not that philosophers have not recognized the facts of evolution, but that they have not explored the philosophical significance thereof. He quotes Wittgenstein saying: "The Darwinian theory has no more to do with philosophy than any other hypothesis of the natural science."<sup>10</sup> Now, what sort of philosophical implications can a scientific theory like evolutionary biology, have? Obviously, it cannot solve philosophical problems as long as they are indeed philosophical and not scientific. Science cannot answer non-scientific questions. One common answer to this question is that scientific theories provide scientific world views or perspectives which may help us to see things properly.

Hence, Flew argues for an evolutionary perspective "...and that all human life--and questions of public and private conduct in particular--can be fruitfully seen in an evolutionary perspective."<sup>11</sup>

One difficulty here is, that a few other scientific perspectives are often claimed to be 'followed from' scientific theories. And some of them seemingly contradict each other. An optimistic perspective supposedly provided by evolutionary theory may contradict the supposedly pessimistic perspective of entropy.

Moreover, the same theory may provide different world views. For instance, the following passage contains a different evolutionary perspective from the one argued for by Flew:

The new world order of social justice and comradeship, the rational and classless world state, is no wild idealistic dream, but a logical extrapolation from the whole course of evolution, having no less authority than that behind it, and therefore of all faiths the most rational....Even so gigantic a setback as World War II cannot shake a faith which is based on the considerations which convinced Drummond and Spencer, Engels and Marx. The way may be long and we may not live to see, but the triumph of the rational spiritual man is sure.<sup>12</sup>

A more elaborate discussion of this argument is beyond the scope of this presentation. We shall now make a few remarks about the moral importance of evolutionary theory.

So far as the central problem of ethics is concerned, we argued that the theory of evolution is of little help. In other words, the theory does not logically imply an ethical criterion; but, it does not follow that the theory cannot contribute to the solutions of so-called practical moral problems.

Almost all the philosophers discussed in this thesis agree with biologists on the evolutionary origin and development of morality. Thus, if the investigation of the origin and development of moral ideas contributes at all to our understanding of the nature of morality, the theory of evolution can play a significant role.

Until now, moral philosophy has concerned itself with questions about the nature and criterion of moral values. Questions about the origin and development of moral values are

considered to be outside the scope of moral philosophy.

It would appear that a systematic philosophical investigation of the evolution of moral ideas may contribute to some extent to the solutions of the main ethical questions.

This suggestion would certainly have some of the orthodox objections raised against it. But then, what has orthodoxy in moral philosophy accomplished? "There seems to have occurred an extraordinary narrowing in the field. Moral philosophy has been made to look, if not simple, bald and jejune and in its fruits, unrewarding."<sup>13</sup>

If moral philosophy in English in the present century, has been, as G. Warnock points out, "remarkably barren," then it is partly justified to explore some other approaches--even if such approaches may not appear, at present, rewarding. Whether an approach is actually rewarding or not cannot really be known unless it is explored.

The suggestion that moral philosophy should include in its investigation the evolution of moral ideas, should not be construed as implying that the evolution or development of morality is itself its justification. [What is being suggested here is that it would be relevant to understand the ethical problems of our age.

Our age is a period in which we are experiencing a rapidly changing environment. Population is increasing and technology is changing at an ever increasing rate. This leads one to enquire what sorts of implications the increases in social and technological complexities have on man's practical

moral principles--if, indeed, they have any.

Morality as conventionally understood deals with the rather short-run effects of individual actions. "Most ethical philosophers," says Waddington, "when called upon to give an example of the type of problem with which their theory should deal, tend to cite some questions which might arise in connection with their own behavior--often, indeed, a question which could only be of much concern to middle class individuals living in a Western European culture."<sup>14</sup>

Moral philosophy is often criticized for being trivial. This criticism is not entirely unjustified. Waddington refers to C. D. Broad who cited 'the dilemma of the man who had to choose between providing an adequate education for his daughter, or a retirement pension for an old family retainer.' "The problem might be a difficult one," says Waddington, "but, I feel that one might legitimately doubt whether it is a matter of sufficient importance to serve as a typical example of the questions with which ethical theory is faced in the world today. We can easily see around us too many examples of lives being completely ruined, or even terminated prematurely, to feel that Broad's problem is other than a rather peripheral one."<sup>15</sup>

Waddington is no doubt correct. To be relevant to the modern human predicament, moral philosophy must enlarge its perspective and cope with the moral concerns posed by the problems of poverty, pollution, population growth, conservation of wildlife, apartheid, national liberation struggles, etc..

There is no doubt that the knowledge of evolution can contribute significantly to the solution of such problems.

FOOTNOTESCHAPTER I

1. C. H. Waddington, "Theories of Evolution," A Century of Darwin, ed., S. A. Barnett (Cambridge: Harvard University Press, 1958), p. 1.
2. Ibid., p. 2.
3. C. F. Pantin, "The Origin of Species," History of Science, ed., J. Lindsay (London: Cohn & West, 1953), p. 137.
4. C. Darwin, The Origin of Species (London: J. Murray, 1872), p. 50.
5. Ibid., pp. 102-3.
6. Quoted by J. M. Thoday, "Natural Selection and Biological Progress," A Century of Darwin, ed. Barnett, p. 315.
7. C. Darwin, op. cit., p. 131.
8. Ibid.
9. Ibid.
10. Waddington, op. cit., p. 6.
11. Ibid., p. 9.
12. Darwin, op. cit., p. 131.
13. Ibid., p. 234.
14. Darwin, The Descent of Man (New York: Collier & Son, nd), p. 134.
15. Ibid., p. 135.
16. Ibid., p. 155.
17. Ibid.
18. H. Spencer, Social Statistics (London: Williams & Norgate, 1868), pp. 353-354.
19. Ibid.
20. Ibid., p. 79.

21. Ibid.
22. Herbert Spencer, Data of Ethics (London: Williams & Norgate, 1907), p. v.
23. Ibid., p. 10.
24. Ibid.
25. Ibid.
26. Ibid., p. 20.
27. Ibid., p. 21.
28. Herbert Spencer, Mind, Volume VI (1881), pp. 85-86.
29. Quoted by G. E. Moore, Principia Ethica, p. 51.
30. T. H. Huxley, Evolution in Ethics (London: Pilot Press, 1947), p. 81.
31. Ibid.
32. Ibid.
33. Ibid.
34. T. Dobzhansky, The Biological Basis of Human Freedom (New York: Columbia University Press, 1965), p. 125.

FOOTNOTESCHAPTER 11

1. G. E. Moore, Principia Ethica (Cambridge: Cambridge University Press, 1960), p. 46.
2. A. H. Quinon, "Ethics and the Theory of Evolution," Biology and Personality (Oxford: Blackwell, 1966), p. 107.
3. C. H. Waddington, The Ethical Animal (New York: Atheneum, 1961), p. 34.
4. Ibid., p. 34.
5. T. H. Huxley and J. S. Huxley, Evolution and Ethics (London: Pilot Press, 1947), p. 120.
6. J. S. Huxley, Evolution in Action (New York: The New American Library, 1964), p. 115.
7. Theodosius Dobzhansky, The Biology of Ultimate Concern (New York: The New American Library, 1967), p. 36.
8. Ibid., p. 36.
9. Ibid.
10. Ibid., p. 28.
11. Ibid.
12. Ibid., p. 31.
13. Ibid.
14. J. S. Huxley, Knowledge, Morality and Destiny, original title: New Bottles For New Wine (New York: New American Library, 1960), p. 226.
15. C. H. Waddington, Biology, Purpose and Ethics (Clark University Press, 1971), p. 29.
16. J. S. Huxley, Knowledge, Morality and Destiny, p. 219.
17. Dobzhansky, op. cit., p. 28.
18. C. H. Waddington, op. cit., p. 29.
19. T. Huxley and J. Huxley, Evolution and Ethics, p. 125.

20. Ibid., p. 122.
21. Ibid., p. 121.
22. Ibid., p. 125.
23. Ibid., p. 124.
24. Ibid., p. 126.
25. Ibid., p. 130.
26. George Gaylord Simpson, Biology and Man (New York: Harcourt, Brace & World, 1969), p. 142.
27. Huxley, Evolution in Action, p. 19.
28. Ibid.
29. G. G. Simpson, op. cit., p. 144.
30. Huxley, Evolution in Action, p. 130.
31. Ibid., p. 116.
32. Huxley and Huxley, Evolution and Ethics, p. 124.
33. B. Rensch, Bio-philosophy, trans. C. A. M. Syn (New York: Columbia University Press, 1971), p. 313.
34. Simpson, op. cit., p. 145.
35. Huxley, Evolution in Action, p. vii.
36. Waddington, op. cit., p. 7.
37. Ibid.
38. Ibid., p. 28.
39. Ibid., p. 26.
40. Ibid., p. 29.
41. Ibid., p. 29.
42. Ibid., pp. 201-202.
43. Ibid.
44. Ibid., p. 30.

45. Ibid.
46. Quoted by J. M. Thoday, "Natural Selection and Biological Progress," (Cambridge: Harvard University Press, 1959), p. 315.
47. Simpson, op. cit., p. 29.
48. Waddington, op. cit., p. 204.
49. Ibid., p. 65.
50. Ibid., pp. 135-136.
51. Ibid., p. 7.
52. Ibid., p. 53.
53. Ibid., p. 181.
54. Dobzhansky, The Biological Basis of Human Freedom (New York: Columbia University Press, 1965), p. 134.
55. Ibid.
56. Ibid.
57. Ibid., p. 132.
58. Ibid., p. 130.
59. Ibid.
60. Ibid., p. 134.
61. Ibid., p. 128.
62. Ibid.
63. Ibid., p. 129.
64. Ibid.
65. Ibid.
66. Simpson, The Meaning of Evolution (New York: The New American Library, 1959), p. 161.
67. Ibid., pp. 161-162.
68. Ibid., p. 157.
69. Ibid.

70. Ibid., p. 158.
71. Ibid., p. 159.
72. Ibid., p. 163.
73. Simpson, The Meaning of Evolution, p. 164.
74. Ibid., p. 156.
75. Ibid., p. 161.
76. Ibid., p. 159.
77. Simpson, Biology and Man, p. 133.
78. C. D. Leake, "Ethicogenesis," Scientific Monthly, 60 (1945), pp. 251-252.
79. Ibid., p. 248.
80. Ibid.
81. Ibid., p. 252.
82. Ibid., p. 251.

1. G. E. Moore, Principia Ethica (Cambridge: The Cambridge University Press, 1950), p. 53.
2. Henry Sidgwick, The Lectures on The Ethics (New York: The Macmillan Co., 1902), p. v.
3. Quoted by G. E. Moore, op. cit., p. 51.
4. Herbert Spencer, The Data of Ethics (London: Williams and Morgate, 1907), p. 21.
5. Ibid.
6. Ibid., pp. 37-38.
7. Sidgwick, op. cit., p. 146.
8. Ibid., p. 146.
9. Ibid., p. 148.
10. Ibid., p. 147.
11. Ibid., pp. 147-148.
12. Ibid., p. 148.
13. Ibid., p. 155.
14. Ibid., p. 206.
15. G. E. Moore, op. cit., p. 46.
16. Ibid.
17. Ibid., p. 48.
18. Ibid., p. 49.
19. Ibid., p. 52.
20. Ibid., p. 49.
21. Ibid., p. 50.
22. Ibid., p. 55.

23. Ibid., p. 51.
24. Ibid., p. 52.
25. Herbert Spencer, Mind, vol. VI (1881), pp. 85-86.

FOOTNOTESCHAPTER IV

1. C. D. Broad, "Review of Huxley's *Evolutionary Ethics*," Readings in Philosophical Analysis, ed. Herbert Feigl and Wilfred Sellars (New York: Appleton-Century-Crofts, Inc., 1949), p. 580.
2. Ibid., p. 581.
3. Ibid., p. 582.
4. Ibid., p. 585.
5. Ibid., pp. 585-586.
6. Ibid., p. 586.
7. Stephen Toulmin, "Contemporary Scientific Mythology," Metaphysical Beliefs, eds. Alasdair MacIntyre and Ronald Corcoran Smith (London: Scry Press, 1957), p. 20.
8. Ibid., p. 17.
9. Ibid., p. 47.
10. Ibid., p. 48.
11. Ibid., p. 48.
12. Ibid., p. 50.
13. Ibid., p. 51.
14. Ibid., p. 51.
15. Ibid., p. 25.
16. Ibid., p. 51.
17. Ibid., pp. 53-54.
18. Ibid., pp. 52-53.
19. Ibid., p. 50.
20. Ibid., p. 5.
21. Ibid., p. 51.

22. Julian Huxley, Evolution And Ethics (London: The Pilot Press Ltd., 1947), p. 105.
23. Ibid., p. 105.
24. Stephen Toulmin, op. cit., p. 56.
25. Ibid., p. 64.
26. Ibid., p. 65.
27. D. D. Raphael, "Darwinism and Ethics," A Century of Darwin, ed. S. A. Barnett (Cambridge: Harvard University Press, 1959), p. 348.
28. Ibid., p. 348.
29. C. H. Waddington, The Ethical Animal (New York: Atheneum, 1961), p. 57.
30. Ibid., p. 57.
31. D. D. Raphael, op. cit., p. 349.
32. Ibid., p. 349.
33. Ibid., p. 351.
34. C. H. Waddington, op. cit., p. 58.
35. Ibid., p. 58.
36. D. D. Raphael, op. cit., p. 354.
37. Ibid., p. 355.
38. Ibid.
39. Ibid.
40. A. M. Quinon, "Ethics and the Theory of Evolution," Biology and Personality, ed. I. T. Ramsey (Oxford: Blackwell, 1966), p. 107.
41. Ibid., p. 110.
42. Ibid., p. 110.
43. Ibid., p. 111.
44. Ibid., p. 112.
45. Ibid., pp. 112-113.

46. Ibid., p. 113.
47. Ibid., p. 113.
48. Ibid., pp. 112-113.
49. Quoted by G. G. Simpson, Biology and Man (New York: Harcourt, Brace and World, 1965), p. 144.
50. A. H. Quinon, op. cit., p. 115.
51. Ibid., p. 114.
52. Ibid.
53. Ibid., p. 119.
54. Ibid., p. 118.
55. A. G. N. Flew, Evolutionary Ethics (London: Macmillan Co., Ltd., 1967), p. 13.
56. Ibid., p. 24.
57. Ibid., p. 20.
58. Ibid., pp. 20-21.
59. Ibid., p. 27.
60. Ibid., p. 28.
61. Ibid., pp. 29-30.
62. Ibid., p. 36.
63. Ibid., p. 36.
64. Ibid., p. 33.
65. Ibid., p. 43.
66. Ibid., pp. 42-43.
67. Ibid., p. 51.
68. Ibid., p. 51.

FOOTNOTESCHAPTER V

1. Herbert Spencer, The Principles of Ethics, Vol. II (London: Williams & Norgate, 1907), preface.
2. Julian Huxley, "Introduction," The Phenomenon of Man, author, Pierre Teilhard De Chardins (New York: Harper Torchbooks, 1959), p. 12.
3. G. G. Simpson, Biology and Man (New York: Harcourt, Brace & World, Inc., 1969), p. 133.
4. A. G. N. Flew, Evolutionary Ethics (London: Macmillan, 1967), p. 2.
5. Stephen Toulmin, Metaphysical Beliefs, eds. Alasdair Macintyre and Ronald Coregor Smith (London: Sery Press, 1957), p. 65.
6. Ibid., p. 2.
7. Ibid., pp. 2-3.
8. Ibid., p. 56.
9. C. H. Waddington, The Ethical Animal (New York: Atheneum, 1961), p.
10. Wittgenstein, Tractatus Logico-Philosophicus (New York: Harcourt, Brace & Co., 1922), 4,1122.
11. Flew, op. cit., p. 6.
12. J. Needham, Time: The Refreshing River (London: Allen & Unwin, 1943), p. 41.
13. G. Warnock, Contemporary Moral Philosophy (New York: St. Martin's Press, 1967), p. 2.
14. C. H. Waddington, op. cit., p. 205.
15. Ibid., p. 205.

## BIBLIOGRAPHY

- Ayer, A. J. Language, Truth and Logic. New York: Dover Publications, Inc., 1951.
- Bagehot, W. Physics and Politics, ed. J. Barzun. New York: Knopf, 1948.
- Broad, C. D. "Review of Huxley's 'Evolutionary Ethics,'" Readings in Philosophical Analysis, ed., Herbert Feigl and Wilfrid Sellars. New York: Appleton-Century-Crofts, Inc., 1949.
- Darwin, C. The Origin of the Species, 6th edition. London: J. Murray, 1872.
- Darwin, C. Descent of Man, New edition. London: J. Murray, 1901.
- De Chardin, P. Teilhard. The Phenomenon of Man. New York: Harper and Bros., 1959.
- Dobzhansky, T. The Biological Basis of Human Freedom. New York: Columbia University Press, 1965.
- Dobzhansky, T. The Biology of Ultimate Concern. New York: The New American Library, 1967.
- Flew, A. G. N. Evolutionary Ethics. London: Macmillan Co. Ltd., 1967.
- Fuller, Watson, ed. The Social Impact of Modern Biology. London: Routledge and Kegan Paul, 1971.
- Haldane, J. B. S. The Causes of Evolution. New York: Harper and Bros., 1932.
- Hoagland, Hudson and Ralph Burhoe, eds. Evolution and Man's Progress. New York: Columbia University Press, 1962.
- Hofstadter, R. Social Darwinism in American Thought, rev. ed. Boston: Beacon Press, 1955.
- Huxley, J. S. Evolution: The Modern Synthesis. New York: Harper & Bros., 1942.
- Huxley, J. S. Evolution in Action. New York: The New American Library, 1964.

- Huxley, J. S. Knowledge, Morality and Destiny. New York: The New American Library, 1960.
- Huxley, T. H. and J. S. Huxley. Evolution and Ethics. London: Pilot Press, 1947.
- Leake, C. D. "Ethicogenesis," Scientific Monthly, 60, 1945.
- MacIntyre, Alasdair. A Short History of Ethics. New York: The Macmillan Company, Inc., 1971.
- Moore, G. E. Principia Ethica. Cambridge: Cambridge University Press, 1960.
- Needham, J. Time: The Refreshing River. London: Allen & Unwin, 1943.
- Nowell-Smith, P. H. Ethics. London: Penguin Books, Ltd., 1945.
- Pantin, C. F. "The Origin of Species," The History of Science, ed. Jean Lindsay. London: Cohn & West, 1953.
- Popper, K. R. The Poverty of Historicism. Boston: Beacon Press, 1957.
- Quinton, A. M. "Ethics and The Theory of Evolution," Biology and Personality, ed. I. T. Ramsey. Oxford: Basil Blackwell, 1965.
- Raphael, D. D. "Darwinism and Ethics," A Century of Darwin, ed. S. A. Barnett. Cambridge: Harvard University Press, 1958.
- Rensch, Reinhard. Biophilosophy, trans. C. A. M. Sym. New York: Columbia University Press, 1971.
- Ritchie, D. G. Darwinism and Politics, 2nd ed. New York: Sonnenschein & Scribner, 1890.
- Russell, B. A. W. Philosophical Essays, Rev. ed. London: Allen & Unwin, 1966.
- Sidgwick, Henry. The Lectures on the Ethics. London: The Macmillan Company, Inc., 1902.
- Simpson, G. G. The Meaning of Evolution. New York: The New American Library, 1959.
- Simpson, G. G. Biology and Man. New York: Harcourt, Brace & World, Inc., 1969.

- Sinnott, E. W. "The Biological Basis of Democracy,"  
Yale Review, 1945.
- Sinnott, E. W. Matter, Mind and Man, New York: Harper  
& Bros., 1957.
- Spencer, H. The Principles of Ethics, London: Williams  
& Norgate, 1892-93.
- Spencer H. The Data of Ethics, London: Williams &  
Norgate, 1907.
- Toulmin, Stephen. "Contemporary Scientific Methodology,"  
Metaphysical Beliefs, ed. Stephen Toulmin, Ronald W,  
Hepburn & Alasdair Macintyre. London: SCM Press Ltd.,  
1957.
- Waddington, C. H. The Ethical Animal. New York: Atheneum, 1961.
- Waddington, C. H. Biology, Purpose and Ethics. Clark  
University Press, 1971.
- Warnock, G. J. The Object of Morality. London: Methuen &  
Co. Ltd., 1971.
- Warnock, G. J. Contemporary Moral Philosophy. New York:  
St. Martin's Press, 1967.
- Wittgenstein, L. V. Tractatus Logico-Philosophicus.  
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