Paradox and Tragedy in Human Morality

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ABSTRACT. Traditional ethics has established itself as an independent discipline by postulating a "good" independent of all particular desires. It has been assumed that this "good" was something beyond nature, and that man had the capacity to reach out for it by transcending his natural inclinations. In this article, the traditional picture of morality is confronted with modern evolutionary biology. It is shown that goal-directedness, choice, and social behavior can be accounted for in a naturalistic framework. The purport of concepts like free will, good, and the meaning of life, however, changes dramatically. Specifically, our tendency to objectify values, to postulate an absolute good and an ultimate meaning of life, is unmasked as a strategy of mental territoriality which reveals us as typical participators in the struggle for existence.

Introduction

For a long time, concepts like justice, virtue, and good have been claimed to be beyond the scope of science and to fall within the responsibility of the special philosophical discipline known as ethics. In this article, I will try to show that there is no longer any justification for ethics to develop autonomously and independently of science. The attempt to establish ethics as an independent discipline dealing with the normative dimension of human life was based on assumptions about morality which are no longer compatible with science, especially a great deal of modern biology. Therefore, it might be useful to reassess and rethink the picture traditional ethics has drawn about morality and moral beings within the framework of the still-emerging paradigm of modern biology. I will try to show that from the perspective of modern evolutionary biology, a radically new picture of morality arises which also has at least some normative implications.

First, I will review the history of philosophy to find the roots of traditional normative ethics. Then, I will try to uncover its basic assumptions by presenting the "ideal moral being" as proposed by normative ethics. Then, I will investigate the possibility of such a moral being within the framework of modern evolutionary biology.

Finally, I will draw some conclusions and try to summarize the impact of evolutionary theory on ethics.

Critical Ethics, Hypocritical Morality, and the Birth of Imperatives without Motives

Looking back on the history of Western philosophy, we can discern two fundamentally different projects concerning ethics. First is the dominant tradition of what I would like to call normative or foundational ethics. This kind of ethics tries to build a foundation for our moral judgments and tries to improve and systematize our factual morality in this way. Philosophers in this tradition often try to find the "principle" of morality, the rational cornerstone of all our moral judgments. Their different views on the principle of morality include different ideals, described as the ultimate "goal" of morality: happiness, pleasure, harmony with God, the rational nature of man as a goal in itself, and the greatest happiness for the greatest number of people. Philosophers engaged in this project often try to formulate solutions for factual moral dilemmas which occur in their society. They not only are contemplative outsiders but also are fully engaged in the problems and hopes of the society in which they live. "Ethics" is often associated exclusively with this kind of approach.

The second approach is less common and less prevalent among students of ethics because it is often thought to deny the essence of the entire discipline. This approach is more contemplative and may even appear slightly cynical, since it does not start from an idealistic commitment to discover a special set of values or a special morality. Philosophers who are involved in this project try to understand why there is morality in the first place, and what morality really is in contrast to what it claims to be, that is, what most people, including philosophers engaged in the first project outlined above, think it is. The assumption that underlies this project is the firm belief, then, that morality is not what it appears; moral language is deceptive and there may be a difference between the goals which moral language claims to be the ultimate "good" and the real function of morality. I will call this project "critical" ethics, because it takes on a critical attitude toward normative ethics.[1]

Both these projects of ethical philosophy have roots in the history of Western philosophy. It would be unfair, however, not to admit that the first project, normative or foundationalist ethics, has by far been the most popular and the most dominant in our tradition, at least among philosophers. It can even be said that after a short period of initial success during the fifth and fourth centuries BC, the second approach, "critical ethics," was defeated by the first one. The reasons for this defeat are that it lacked a proper framework, and, consequently, it was too radical and simplistic. Moreover, it was associated with a cynical and antisocial attitude too early, that is, it was not clearly distinguished from the normative project and was taken to be a rational justification of *im*morality. Normative ethics, however, flourished because it succeeded in appealing to the idealism of its students who were interested not only in the nature of morality, but also in becoming virtuous or "good" themselves.[2] Still, normative ethics remained a rather confusing set of divergent approaches, none of which was able to prove its most basic assumptions. This fact alone would suffice to justify another attempt to revitalize critical ethics, and it certainly was one of the factors involved in the recent revival of critical ethics which has been inspired by evolutionary biology.

In the works of Plato, we can see something of the philosophical "titanic" strug-
gle between these two different projects of ethical philosophy. Although in this case
at least it seems true that "it is the winners who write history," Plato portrays the
positions held by critical philosophers in a colorful and convincing way. In the first
book of the *Politeia*, Thrasymachus defends a theory of morality in which morality
is a social instrument of the ruling class. In the second book, Glaucon and
Adeimantus admit that they cannot refute a theory of morality in which morality
is only a strategy of compromise, a game in which everyone is involved because
everybody is afraid to suffer disadvantages because of the natural (immoral)
attitude of his neighbor. Plato tells the story of the invisible Gyges to show that
each man only plays the "moral game" because it is worth a lot to have a good
name. The implication is that moral behavior is not a goal in itself but is only
pursued because the risks of being "caught in the act" are greater than the benefits
of immorality. Finally, in the *Gorgias*, Plato portrays the philosophy of Callicles, who
defends the view that morality is a means of the weak masses to tie the hands of
the man who is superior by nature, the Übermensch.

Although these explanations of morality, especially those by Thrasymachus and
Callicles, are somewhat different, their common message is clear: morality is a play
in which all the actors are hypocrites whose real motives are just as immoral as the
motives of every proclaimed "immoral" person. These explanations of morality all
rely on a fundamental distinction between nature and convention: human nature is
supposed to be innately egoistic, and conventions are only used to hide this egois-
tic nature. The simplicity with which this opposition was made proved to be fatal
to this first phase of critical ethics, because the only thing Socrates and/or Plato
needed to do to refute it was to appeal to the common feeling that human nature
is not always that bad, that even a wicked person can feel repentance for his deeds,
and that people in a healthy society are at least partially driven by a common goal.
In both the *Gorgias* and the *Politeia*, Plato portrays the Sophists not only as philoso-
phers with a critical point of view, but also as potentially dangerous imposters who,
with their relativistic attitudes, have a bad influence on society. So, the victory of
normative ethics was not only a theoretical one, but also at least partially a rhetor-
ical one, though that surely was not what Plato intended.[3]

But what was the alternative the victorious normative ethics had to offer? As is
so often the case in the history of philosophy, the remedy was worse than the origi-
nal disease, and the alternative to a simple negative position was a simple positive
one. In order to show that the distinction made by the Sophists between naughty
"nature" and hypocritical "convention" was not accurate, nature was defined as
totally different, as fundamentally good, and evil was explained as a sickness and a
consequence of ignorance. Socrates referred to the rational soul of each person
which can only do wicked things when it does not know itself and its true purpose.
In Plato's metaphysics, there was no place for a positive evil, because nature was
fundamentally rational and good: evil could only be a consequence of the imper-
fection of material things, faint reproductions of the true world of Ideas. So, the
artifice of a complicated metaphysics was used to give an intellectually satisfying
support for Socrates' belief that nobody can choose evil voluntarily and knowingly.

Decisive for the whole history of philosophy was the equalization of *rationality* and
morality (Taylor, 1984) and the introduction of a "good" that transcended all partic-
ular desires. Thus, all different normative systems of ethics had the belief in
common that all moral judgments could be deduced from a rational principle: an
insight into the goal of a morality shared by all rational beings, be it happiness,

pleasure, harmony with God, the rational nature of man himself, or the greatest happiness for the greatest numbers of people. Normative ethics concentrated on elaborate discussions about this principle and on the way it could be applied to the concrete dilemmas of human life. A gap could arise between the theories of ethics and other theories. Since the Enlightenment, there has been a gap between ethics and the emerging scientific world-view. Science was concerned with the factual, while ethics was concerned with the normative. And this normative discussion was taken to be absolute, that is, not a product of particular contingent desires. Free will offered a bridge between man as a natural being, part of nature, and man as a moral being, pursuing some rational good.

The philosophy of Kant marks a stage in the history of philosophy of dramatic tension between this belief in a possible rational but at least *free* human being, who pursues some absolute "good," and the growing scientific world-view. Kant only succeeds in "saving" free will by what he explicitly calls "making room for belief" by relativizing the scientific world-view, which only gives us the world of the *Erscheinung*, not *das Ding an sich*. In his ethics, the gap between the virtual goal of our desires and the "good" is exaggerated to such a degree that Schiller could complain that helping his friends could no longer be judged as moral because he enjoyed it. According to Kant, "duty" is nothing less than "practical reason," so he envisioned reason as something without need of motives or underlying passions. Duty is not obligation to somebody or something and it is not the sum of one's obligations, but the voice or imperative of Reason itself. The good or the duty is defined, according to the so-called Categorical Imperative, not in relation to some goal beyond itself, which would make it only a *hypothetical* imperative, but by its own ultimate justification. For Kant, an act can only be judged to be moral when the only reason for doing it is Reason itself.

Of course, Kant encounters all kinds of problems. For example, in his *Grundlegung zur Metaphysik der Sitten* he refers to a man who has lost all his pleasure in life and is considering suicide. What should hold him back? Kant's answer is characteristically severe and uncompromising: the man should ask himself whether it would be possible that the maxim by which he acts should become a law of nature, that is, in his conception, whether it is according to rationality and thus to Duty (Kant, 1903: 398; 421–422). Kant is obviously not interested in our *factual* reasons to cling to life, in some basic satisfaction of happiness, but only in the reasons we *ought* to have: our Duty to stay alive. Thus, according to him, staying alive is ultimately rational. It should not depend on some sort of feeling, because those feelings could subside and thus fail to give a foundation for the prohibition of suicide. So, the ban on suicide is taken to be absolute, independent of our desires and hopes. The same goes for other prohibitions and duties: helping one's friends, etc. The only concession Kant is prepared to make is that acting according to duty is sometimes easier if it goes hand in hand with some sort of satisfaction and that it is, therefore, "at least indirectly a Duty" to secure one's own happiness (Kant, 1903: 399).[4]

Of course, Kant is a very extreme example and is not characteristic of the whole tradition of normative ethics. Within this tradition, his program is often criticized or reformed (Scheler, 1954).[5] But his radical ideas can also be interpreted as only being the ultimate consequence of normative foundationalist ethics. In the above case he might be wrong, but he is at least consistent (Taylor, 1984: 114). He shows what a morality with an absolute foundation which is beyond the arbitration of desires and hopes would look like: it would have to be a rigid, "empirically empty" principle, not influenced by capricious emotions or changing circumstances. Perhaps

he is right in his criticism of other systems of normative ethics, which look for guidance in human feelings (Kant, 1903: 411)[6]: the human heart is too capricious to be a source of principles that have to apply everywhere and always. Such principles have to be *a priori*, independent of experience. Only then is ethics independent of anthropology and theology (Kant, 1903: 30).[7]

Thus, we witness the birth of the idea of a good that is independent of anybody's desires. It all began with Socrates' criticism of Euthyphro in the dialogue of the same name. When Euthyphro justified his behavior by claiming that it was pious, Socrates asked how Euthyphro was so sure of this. Then Euthyphro defined piety as everything agreeable to the gods. Socrates referred to the many disagreements between the gods and asks: Is something pious because the gods love it, or do the gods love the pious because it is pious? Kant repeats this criticism against theological authoritarianism by stating that we cannot judge what a good life is simply by looking to some example, even when it is Jesus Christ, because we ourselves have to judge what a good example would look like, we ourselves have to choose our examples. But Kant goes far beyond this: not only can we not rely on Jesus Christ to show us the way to virtue, but we cannot even trust our own sentiments. When somebody judges something to be good, because her or she *feels* this way, we cannot give this judgment any moral authority. One person feels this way, the other another way, and moral principles have to apply everywhere and always. So the only way there can be an independent ethics, "eine völlig isolierte Metaphysik der Sitten," is when a "moral law" exists behond all capriciousness of desires and inclinations.

A System of Assumptions, Leading toward a Dualistic Metaphysics

If a non-relative good exists, a good that is independent of anyone's desires, and if man has the capacity to act according to this good, this moral law, man must be different from other animals. Man must have goals beyond those of animals and must need the capacity to pursue these goals. When the "good" is not linked with any particular desires, it has no special link with life. It is easily concluded that this absolute good must be something completely distinct from the basic necessities of life like food and shelter. For example, Kant stressed that the moral law applies to all rational beings and he certainly did not exclude the possibility of supernatural beings such as angels.

Inevitably, the idea of an absolute good leads to a dualistic world-view. On the one hand, there is the realm of nature, with its natural necessities and natural desires; on the other, there is the realm of the "ought," of Moral Law and of rational beings pursuing this law. Man with his free will is a citizen of both worlds and in his soul he experiences a struggle between them.

In the philosophy of Kant, this struggle is made very lively: Kant himself confesses that he is sometimes "doubtful whether true virtue can really be found anywhere in the world" (Kant, 1903: 407). With regard to the difference between imperatives which are "only" hypothetical (serve some nonmoral good) and imperatives which are categorical (which are really moral), he remarks that it is often not possible to decide whether the will in a particular case was really determined by the categorical imperative only or was in fact also driven by some hidden fear (Kant, 1903: 419).[8]

So, he needs a very complicated metaphysics in which two different kinds of causality exist—"downward" natural causality versus "upward" goal-directed

causality (Kant, 1911: 290)[9]—which can influence the human will in order to defend his "true morality" against those people "die alle Sittlichkeit als bloßes Hirngespinst einer durch Eigendünkel sich selbst übersteigenden menschlichen Einbildung verlachen" [who ridicule all morality as a mere phantom of human imagination over-reaching itself through self-conceit] (Kant, 1903: 407).

Kant's philosophy is by no means the only system of metaphysics devised to give a metaphysical foundation to some sort of absolute morality in which man alone with his free will can pursue some absolute good. In fact, as we would expect, we already find metaphysical dualism in Plato's works, in which we can observe the first attempts to place man outside the realm of natural necessity, the world of matter. Socrates explains in the *Phaedo* that the old philosophers of nature were all wrong because they were not interested in reasons, only in causes, and that one will never understand the real world and man in this way. Awaiting his death and refusing to escape, he reflects upon the real cause of his not fleeing: is it that his muscles and his knees are not moving, or is it some idea of what is good and what is evil? So, goal-directedness is placed in opposition to *material* (physical) causality. Plato also tried to introduce an element of free will into the framework of his doctrine of metempsychosis, in which he says that "not a daimon will cause your destiny, but you yourself will choose your daimon."[10]

The theory of free will becomes crucial with the emergence of the Christian faith, since only the combined effect of free will and (supernatural) divine grace can bring about a radical change in the world. Free will could meet divine grace halfway (consider Michelangelo's *Creation* with Adam and God) and together they could constitute a syphon to transcend, redeem, and convert this vale of dross and tears. Free will as the possibility to choose your own nature was contrasted with some sort of predestined human nature that could only serve as an excuse for a denial of responsibility. From Origen via Pico della Mirandola to Sartre, this paradigm was used by a whole range of moralists to protest against every justification of actions referring to a predestined human nature. Kant's *Metaphysik der Sitten* tries to give a foundation for this moral paradigm which forces him in his *Kritik der Urteilskraft* to postulate two different kinds of causality: one of them, mechanistic and "downward," is posited according to the laws of nature as shown in the world as appearance; the other, goal-directed and "upward," is posited according to the laws of reason.

The moral paradigm, in which morality is absolute and free will is not restricted by nature, constituted a radical departure from archaic thinking. In most ancient civilizations, man was thought to be part of the cosmos, an intermediary between the animals and the gods. In the archaic world-view, which we find from the epic of Gilgamesh to the tragedies of Sophocles, man risked the revenge of the gods when he forgot his modest place in the scheme of things. For archaic thinkers, the idea of a free will with which you can choose your own nature would be pure *hubris*. In the world of the ancient Hindu, each man has his own *dharma*, his own vocation based on his place in the world. So, the Christian and the Western paradigm of free will, with its ensuing radical dualism, might be the exception rather than the rule. Yet for us it often looks so self-evident that we need a lot of reflection to free ourself from it.

The consequences of this shift of paradigm go far beyond our thinking about man alone. It is not a coincidence that the gap between animals and man was reemphasized within the Christian period. In the militant anti-pagan tractate *Contra Celsum*, written by Origen in the second century, we observe the typical differences between the emerging Christian world-view and the attitude of a typical representative of antiquity. Celsus had no trouble with placing the

elephants above man, in honoring the foresight of birds, and in believing that ants communicate with concepts. Origen ridiculed this view and went on to claim that rational creatures were the real goal of creation, comparing the animal world with a placenta which makes the birth of rational creatures possible.

This ideological view of nature and animals eventually found its way into natural science. One reason was the superiority of physics and the lack of a true biological science, a biology organized according to the principles of evolution. This led to the identification of science with physicalism. Philosophers such as Kant came to believe that a science of "man as natural being" was impossible. Kant even thought that a scientific biology would be impossible because biological creatures are goal-directed and the realm of goal-directedness extends beyond the physical laws of nature. The suspicion arises, then, that the emergence of a scientific biology based on Darwin's discovery of the mechanics of evolution could deal a deathblow to the dualistic metaphysics of our culture.

The New Naturalistic Framework

So far, we have encountered some incompatible models of man as a moral being. Now we have to look for a means to choose between them. Can we find a platform from which we can evaluate both archaic and Christian thinking about the place of man? Is there a framework which makes a reasonable choice possible between normative and critical ethics? From the impossibility of transcending all the particular paradigms it is often concluded that it is not possible to judge them all. According to some modern thinkers, we are locked in our interpretation of the world and the pretense that we are in a superior position to ancient paradigms is unfounded and arrogant or naive. However, those thinkers forget that in the past paradigms also have changed by criticizing other paradigms, and that it is rather arbitrary to preach relativistic or hermeneutical philosophies using a modern computer instead of clay tablets and refuse to accept any progress in the sphere of ideas.

Of course, this is not the place to justify naturalism. I will only delineate the naturalistic approach as I understand it and contrast it with other approaches. First, naturalism is founded on a belief in scientific progress. Second, naturalism (at least in my opinion) implies realism, because progress in science is made possible by the slow discovery of a "reality" through the collective puzzle-solving activity of scientists. Third, naturalistic philosophers do not believe in separate realms of reality which can be studied independently. So, physics and the humanities may study different aspects of the same reality, but those aspects are not isolated because there is only one reality and one causal chain binding it all together.

Fourth, the theory of evolution has a special meaning for naturalistic philosophy because this theory links the humanities and the social sciences with the natural sciences through the "mechanistic" principle of natural selection. However, this does not necessarily imply that naturalism is a reductionistic physicalism. I will try to show that the concept of adaptation introduces a teleological element in the natural sciences which can give an ultimate foundation for the teleological interpretations of the social sciences.

Finally, from this it follows that the naturalistic program does not depend on the assumption of a totally independent primary philosophy to provide other disciplines with an absolute, rational, and ultimate foundation. Rather, the naturalistic philosopher sees the different philosophical disciplines as emerging from different questions that arise as a consequence of the human condition. None of these disciplines refers

to a special realm of reality, and its questions have to be answered in concert with the investigative activities of scientists from other disciplines.

Therefore, in this scientific age, philosophy is understood as an essentially inter-disciplinary enterprise which is totally dependent on the philosopher's ability to cooperate with other scientists. The philosopher links scientific knowledge with the fundamental questions which arise from the human condition and with the differ-ent answers that have been given during the history of philosophy. It should be admitted that the interpretation of the task of philosophy does not demonstrate less modesty than the interpretation of foundationalist philosophers like Descartes and Kant. When all our theories of the world are seen as a "web of belief," the philosopher should try nothing less than to be a big spider in the midst of this web.

So let us evaluate traditional normative ethics from the viewpoint of naturalism. We have seen that according to traditional normative ethics the good is something beyond all particular desires and thus exists independently from particular conative beings like us. To reverse the words of Spinoza, we do not call something good because we want it, but we want something because it is called "good."[11] A picture of an ideal moral being who has the ability to pursue this absolute good, possibly in spite of some of his own motives, emerges from this moral absolutism. Therefore, this moral being needs free will to transcend his natural desires. This ideal moral being belongs not only to the world of causes, but also to a world of reasons, of goals. Ultimately, this must be a world with meaning because otherwise the absolute good would make no sense.

Of course, the ideal moral being must also be a social creature because other-wise the concept of responsibility would not make such sense. It is the face of the Other which incites true moral behavior.[12] Plus, as several philosophers stress, there is no way of escaping our responsibility.

So, we end up with a profile of (a) a being with a purpose, (b) who can and must live making choices, (c) in social surroundings, (d) its decisions somehow "free" and (e) its purpose—the "good"—not arbitrary or subjective but somehow referring to the "meaning of life" and of the world in general.

It is now our task to find room for such a creature in the naturalistic world-view. So, in the true spirit of naturalism, the Kantian question "How is morality possi-ble?" which led Kant to a metaphysics of ethics stretching far beyond science, is now reformulated as "Can a moral creature, with the profile presented by tradi-tional normative ethics, exist in the scientific world-view and, if so, how could such a being arise?"

The differences between the latter question and the Kantian question are twofold. First, we make no claims about any *a priori* concept about morality. We just use a powerful traditional conceptualization of morality to avoid confusing a transcendental (or "phenomenological") intuition or analysis with our personal idiosyncrasies. It is possible that tradition has misunderstood and misrepresented morality, so that traditional ethical notions not only can be justified but also must be criticized within the naturalistic framework (Slurink, 1989). Our concept of morality has the possibility for change without becoming totally incommensurable with its traditional meaning.

Second, we do not believe in a transcendental research into the foundations of possibility. So, our procedure is only to look for the compatibility or matching of different concepts. In our view, one of the most important tasks of philosophy is to observe the consistency of the emerging scientific world-view and its compatibility with the way we understand our own behavior and aspirations.

The Origin of Goal-directedness

Our first challenge is to discover whether the goal-directedness which has been ascribed to a moral being in the traditional *Metaphysik der Sitten* has a place within a naturalistic, non-dualistic framework. We have seen that in the *Phaedo* Socrates claimed that purpose has no place in the world of the natural philosophers and that consequently their philosophies are extremely unsatisfactory. In a famous passage of his *Kritik der Urteilskraft*, Kant claimed that a Newton who could explain even the growth of a blade of grass according to laws of nature which have not been designed with a purpose will never arise. So, despite their totally different philosophies, Socrates, Plato, and Kant thought it necessary to explain purpose in nature dualistically, referring to a special kind of cause. In both philosophies, these special causes are linked to morality and to an ultimate goal of the world, which gives meaning to all life. Goal-directedness in nature is taken by both as an indication that there is a Spirit which has designed nature. Although Kant does not want to use it as *proof* of the existence of God, he claims that it is just a fact that our mind cannot conceive the cause of goals as a part of nature and so we are forced *den obersten Grund dazu in einem ursprünglichen Verstande als Weltursache zu suchen*; there is just no alternative (Kant, 1911).

In his day, Kant may have been right in thinking there was no alternative to finalism (which is the belief that all goals point to an ultimate universal goal of nature). At the time, physics was the most successful science and its success was based on a ban on all teleological thinking. An object does not strive for its natural place, but it is subject to the law of gravitation. To think in terms of goals is to interpret the world in an anthropomorphic way. Science is exactly the opposite: a break with anthropomorphic thinking. Thus, Kant's conclusion was consistent: science only offered a mechanistic, clockwork-like universe without any goals, so the phenomenon of goal-directedness cannot be addressed *within* science.

About fifty years after Kant wrote the passage referred to above, there *was* a serious alternative to metaphysical finalism *within* science: Darwin's theory of natural selection. Darwin's universe is essentially the same mechanistic universe of Newtonian physics which Kant identified with the scientific world-view.[13] But the principle of natural selection makes one essential difference: it explains the existence of purpose *within* nature without the need for goals *beyond* nature.

To clarify the last point, let us consider the origin of life, not a particular model, but the principle that made the origin of life possible. There is no doubt that this principle is self-replication (Dawkins, 1976; Cairns-Smith, 1985). To find a bridge between lifeless matter and life, we must think of a molecule which has the ability to make a copy of itself under the right circumstances (e.g., crystals). Once such molecules appear as a product of chance and time, the process of natural selection starts: the self-replicating molecules which replicate or reproduce themselves fastest increase relatively quickly in number and eventually become the most numerous in the population of self-replicating molecules.

Purpose is only a product of this process. When the molecules that replicate themselves quickly and efficiently are copied most often, there will emerge molecules optimally built for this task. Their design reflects their naturally selected "purpose" to replicate themselves; their structure behaves as a *program* for self-replication. It channels the causal process toward this goal.

It was Ernst Mayr who linked the notion of biological goal-directedness with the notion of a program (Mayr, 1974). His starting point was the notion of teleonomy,

which Pittendrigh had developed to distinguish between the spiritualistically inter-preted "teleology" of Kantian philosophy (Pittendrigh, 1958)[14] and the mechanistic goal-directedness compatible with Darwinian evolutionary biology. Mayr defined a teleonomic process (or teleonomic behavior) as "one which owes its goal-directed-ness to the operation of a program" and defined a program as "coded or prear-ranged information that controls a process (or behavior) leading it toward a given end."

With Mayr's idea of a natural selection of program-like molecules, we not only are more able to imagine the origin of life and goal-directedness, but also can imbed the special object of research of scientific biology under the research of the natural sciences in general. Mayr mentions an "emancipation of biology," meaning that physics no longer can be interpreted as the ultimate science of which all other sciences are imperfect imitations. Biological knowledge cannot be summarized in a few general laws as in classical physics because all the individual objects studied by biology differ in their specialized programs. These objects are the product of a series of historical accidents which probably can never be imitated in a repeatable exper-iment (until our first encounters with extraterrestrial life and intelligence, we do not even have other examples of complete evolutionary processes). The objects studied by biology are therefore only predictable from a knowledge of their partic-ular history, and, in that, biology is similar to the humanities.

However, this is not a justification for assuming either that the objects of the social sciences escape the laws of the natural sciences or that a fundamental gap exists between the natural and the social sciences. Biological "teleonomy" fills this gap and is no longer a complete mystery. Perhaps we cannot be sure of the consciousness of animals, but at least can now range their *purposefulness* under a scientific account of the world. It seems obvious that consciousness has developed as an effective instrument in the function of this purposefulness. So, the subject that is often claimed to be a privilege of the humanities is linked to the rest of the natural sciences through natural selection.

Methodologically translated, this means that there is also no fundamental gap between *explaining* using the concept of natural laws and *understanding* them using an extensive knowledge of an unrepeatable situation and assuming that the object in question is designed to reach particular goals (taking an "intentional stance" in the words of Dennett, 1984). Natural selection is the mother of all goals. The moment we are dealing with naturally selected entities we encounter objects in which causal paths are channeled in a way in which they show purposefulness, but these causal paths are so complex that it is easier to understand them from their naturally selected purposes than from an analysis of the workings of their individual cells. To understand, for example, the behavior of a song thrush that calls nervously at the approach of a cat, we need both a law ("naturally selected entities will behave so as to defend the copies of their genetic program") and the intentional stance (" the behavior of this particular thrush is understandable in relation to the goal of preserv-ing its eggs"). There is no reason to believe that understanding song thrushes is fundamentally different in this respect from understanding people.

This leads us to a picture of a snowball of purposefulness, beginning with an archaic replicator which then developed into a fast and efficient self-replicator. Competition with similar "replicators" may have led to the evolution of cell walls, cooperation between different cells (some developing into specialized cell bodies), multicellular organisms, specialized cell-types, mobility, central nervous systems, behavior, and cooperation between individuals. Complex organisms like human

beings are the temporary end results of such competition. Our bodies are "survival machines" for the "replicators" still replicating themselves in all our individual cells, and our mind is a biological control center ultimately designed to preserve and propagate the sophisticated genetic program that has built it up.

All in all, there is no reason to believe in purpose *preceding* evolution, or in an ultimate or universal goal of evolution. Goals are products of evolution themselves, and they are embodied in the growth, the endeavors, and the desires of organisms. Since organisms are engaged in a continual struggle for life, their goals are conflicting and often incompatible (like those of sparrows and sparrow-hawks). Thus, there are as many goals as there are individual organisms and those goals only concur with each other sometimes. Ultimately, all goal-directedness rests upon the channeling of chemical processes within cells by the "program" of DNA, the direct descendent of the replicator that once started the snowball of life without any premeditation.

The Emergence of Choice, Values, and Consciousness

By thus showing that there is no need to postulate a separate realm of goals or an ultimate goal preceding evolution, we have dealt a serious blow to the dualism of the traditional metaphysics of ethics. Let us move on to meet the next challenge posed by the traditional profile of a moral being, the explanation of choice. Given the existence of genetic programs for building up "survival machines" evolved by natural selection (or differential replication success), why should some of those survival machines evolve into vehicles with the power to choose between alternative courses of action?

Let us start with the simple observation that not all living beings make choices. Nowadays, a naive observer of living things on the surface of this planet (someone like Aristotle) is primarily struck by the essential difference between plants and animals, the former mostly immobile, the latter mostly mobile. Recent reconstructions of the evolution of life, based on comparisons of RNA, show that both modern plants and animals are relatively recent and related branches of the tree of life. Hence, we should avoid both exaggerating the differences between them and interpreting them as the only two possible strategies of life, while forgetting about all the other life-forms (bacteria, fungi, flagellates, microspores, etc.).[15] But it seems that in the modern biosphere and among multicellular forms, plants and animals represent two dominant and fundamentally different strategies of life between which not many intermediates exist. We can confidently assume that there has to be a fundamental cause for their striking differences.

The cause is their different energy supplies. Only plants can use solar energy directly for their growth and reproduction. Animals are essentially parasites to different degrees, mostly on each other, and ultimately on plants. Whereas living by solar energy is easily combined with an immobile style of life, the parasitic lifestyle is not. To collect enough fuel to grow and reproduce, it may be necessary to move and look around. But moving and looking around pose new energy problems, for which the most natural solution may be to steal the energy which another parasite has collected. But other parasites may have found that solution as well. So, there is an extra reason to be mobile: to prevent other parasites from using your valuable life as fuel. Animal mobility, therefore, can be interpreted as an optimal strategy that allows individual survival machines to collect fuel without being collected *as* fuel themselves.

But, mobility itself poses another fundamental problem: that of orientation. When you build a mobile robot, you must instruct the robot what to do. But what a living being must do depends on the situation. A mobile organism needs information about its surroundings. Different physical properties of its environment can be used to supply this vital information: for example, the abundance of particular kinds of molecules, the motion of water, the amount of light, the reflection properties of different materials, patterns in shock waves of air caused by potential sources of danger. Sensors that could use this kind of information developed as parts of the energy supply and alarm systems of survival machines, they were not originally designed to unveil the real properties of the world. The same goes for the evolution of the brain as the biological information center in which all those different kinds of information could be combined: it did not evolve because it provided such an excellent overview or such deep insights into the structures of the world, but because it made optimal decisions possible.

Thus, the brain is primarily a biological decision system and only secondarily a center for information processing. As a product of chance and of natural selection, it has been assembled out of a collection of originally isolated sensors and motor control centers to coordinate teleonomic actions. The picture it makes of the world only has to be "adequate for survival" (*überlebungsadaquat*, Vollmer, 1983: 137) from the perspective of the survival interests of the animal in question. This helps us to understand why all knowledge arises from evaluative perspectives, or from subjects that select world signals like sieves and transform them according to the meaning they have in the light of their interests. The animal only needs to know its own part in the universe, and this knowledge must direct its behavior. So, everything the animal encounters must be *valued* from the viewpoint of its survival interests.

This may also explain the evolution of emotions and of consciousness. Pugh claims that emotions can be compared to the values that govern decisions in the so-called "value driven decision system" (Pugh, 1978). In the late 1950s and the early 1960s, Pugh participated in the development of a computer program for the automatic planning of bomber flight plans under the authority of the US Defense Department. It proved to be difficult to find a set of decision-rules which was complete and internally consistent, and which could be used as a set of preplanned responses under the whole range of totally unpredictable situations that could occur. A set of standard rules, even a large one, could easily result in wrong decisions, or even in no decisions at all, when situations emerged which had not been foreseen by the planners. Computer experts had to find a computational equivalent of the common sense which human beings use to *apply* rules. This proved to be possible only by generating a large number of feasible alternatives and scoring each one in terms of its contribution to two objectives, (a) the successful recovery of aircraft and crew, and (b) the destruction of targets. The alternative showing the highest score was then chosen for implementation. The resulting decision system "provided a natural method for resolving conflicts between objectives and for deciding which of many alternatives provided the best compromise." In addition, it proved to be capable of inventing original solutions to unforeseen situations.

Pugh proposes that a key problem for an imaginary "evolutionary designer" is that one cannot predict the situations that an animal will encounter. The program of a survival machine with only a fixed set of responses will result in a high number of wrong decisions. Thus, the evolution of a more flexible decision system in which alternatives can be weighed in relation to their contribution to evolutionary goals

and subgoals becomes understandable. Pugh proposes that the brain can be compared to such an evolved value-driven decision system and that emotions can be compared to the numerical scores or values in an artificial value-driven decision system. He even gives us an explanation of the different ways that values are represented in biological decision systems, in which they are typically presented to the mind in qualitatively different forms such as thirst, hunger, and pain. First, values developed out of independent drives coupled to different responses, so there was no reason to use one universal symbol system to represent them all; second, the use of distinguishably different values makes it easier to associate specific value components with specific causal factors and to learn to predict the value consequences of particular alternative courses of action (Pugh, 1978: 109–110).

Of course, we cannot have a biological system with a fuel indicator instead of hunger: fuel indicators tend to be read by biological decision systems, whereas hunger is a private experience within a decision system itself. Fuel indicators just give information, while emotions create a field of tension in which decisions are already prepared. It might be a property of biological fuel indicators that their values are weighed by their own decision system. The values could still be numerical then. What such a system cannot afford under the penalty of extinction is indifference: the values have to *compel* a response. They not only represent objective information about fuel or water reserves, about the condition of the body or of particular tissues and their injuries, but also have to represent perspectivistic and subjective survival interest. Maybe this factor explains the compelling and penetrating character of emotions, which form a private cage out of which we can never escape, not even those stoic philosophers dreaming about their favorite *apatheia*.[16] Maybe consciousness is just this compelling and penetrating representation of the world from the perspective of our biological interests (see below for more about *self-consciousness*). The world we know is "subjectivized" by emotions into something which *forces* us to behave in some particular way.

The idea that consciousness would not have evolved were it not functional is as old as Darwin and William James, but nevertheless has been neglected by a great deal of psychology in the twentieth century. Yet, it makes possible a new analysis of the structure of our psyche in which the correspondence between what we like or dislike and the evolutionary (teleonomic) goals we embody becomes understandable. In this approach, consciousness is more likely to be linked with emotions than with pure informational content;[17] consciousness has evolved as a guide to adapted behavior. In this way, emotions can be interpreted as the "innate structures of experiencing," which are responsible for the stable mediation between information and teleonomic decisions. Emotions define a framework in which the survival machine weighs its options.

Conscious deliberation has to be understood as a means to reach decisions which optimally correspond to the survival interests of the deliberating organism. Consciousness, at least in humans, seems to be expanded enormously by the imagination. But even the imagination is dominated by emotions. Our awareness of different "possible worlds" often seems to be restricted and seems to attract our attention especially to "possible worlds" which are particularly relevant for the survival of our genes.

To sum up: our genes are gambling via our emotion-guided choices to ensure their immortality. A living being certainly makes choices, but its choices are essentially moves in the survival game of evolution, in which good and bad choices are weighed by their survival consequences.

Thus, we see values like good and evil emerge as part of biological evolution. In their most primitive appearance, good and evil do nothing but point at the interests of the individual survival machine. "Good" is what it likes, because it serves its survival, "evil" is what it dislikes, because it leads to death and the extinction of its genes (Dennett, 1984: 23). Of course, at this stage it is too early to talk about morality. But against a tradition that linked good with reason and put it in opposition to nature, the discovery that values have evolved is important. Let us look now at what happens when individual survival machines meet companions of some sort. Will something like traditional morality then arise?

Natural Selection, Social Behavior, and Kantian Duty

In the traditional picture of morality, especially in the Christian period, love for one's neighbor was emphasized so much that at last morality became identified with altruism. One does not have to agree with this identification to realize the importance of the social component to morality. Morality is essentially a characteristic of social beings. Even in Kant's metaphysics of ethics in which Duty constitutes an independent motivation of individual rational creatures, that is, in which Duty is not essentially duty *to* someone else, the ultimate goal of all morality is "einer reinen Verstandeswelt als eines Ganzen aller Intelligenzen." So, let us explore whether our naturalistic approach helps us here.

Sociobiology has especially clarified the origins and evolution of social behavior. It has focused its attention on the important paradox of altruism of egoistic survival machines as a product of the struggle for existence. Considered in this way, V.C. Wynne-Edward's book *Animal Dispersion in Relation to Social Behaviour*, although it has been criticized by almost all subsequent writers on the subject, might be viewed as an important starting point of sociobiology (if we disregard Darwin himself for a moment).[18] This book tried to offer a consistent explanation of all kinds of social behavior by calling upon a particular model of the *mechanism* of evolution. Like all subsequent sociobiological tractates, it offered a synthesis of ethology and social theory on the one hand, and models about evolutionary mechanisms on the other.

Wynne-Edwards succeeded in focusing attention on this problem by offering a radical counter-intuitive solution in which some naive presuppositions of the biology of his time were not only frankly admitted but also exaggerated to the extreme. Altruism, he observed, served the survival of the group; so, why not try to account for it by interpreting this benefit for the group not only as a consequence, but also as a *cause*. When a group of animals contains altruistic members and another group does not, the first group clearly has an advantage in the struggle for existence. When one group's individuals reproduce unrestrainedly, the area they inhabit becomes overpopulated and food supplies are exhausted, so the whole group will become extinct. When another group's individuals restrain themselves, the whole group might survive. So, differential survival of groups with altruistic tendencies could explain the evolution of altruistic traits and inhibitions regarding reproduction.

Wynne-Edwards tried to use this "intergroup selection" model of social behavior to explain not only clear examples of reproductive self-restraint or altruistic investment in congeners, but also hierarchies, courtship displays, and even large groups of individuals. Dominance hierarchies and courtship displays serve the interest of the group because they guarantee that only the strongest and

healthiest individuals reproduce themselves. Territoriality was clearly advanta-
geous because it guaranteed an optimal partition of the available space. Large
gatherings or other epideictic displays made an assessment of the population
density possible, which could serve as a feedback to the reproductive drive. In
sum, Wynne-Edwards' model was able to explain why animals do not over-exploit
their environment as humans do.

The intergroup selection theory of Wynne-Edwards provoked a discussion about
the "level"of natural selection (gene, individual, group, species) around which the
new discipline of sociobiology crystallized. From the beginning, Wynne-Edwards'
explanation was said to be extremely improbable because his model presupposed
that migration rates between groups were low and that whole groups became
extinct. Group selection can only work when all members of a group share exactly
the same fate; otherwise parasitic mutants could first exploit the altruism of their
companions and then, when as a consequence of their behavior the group was
becoming extinct, break away from it, and infect another group with their parasitic
genes (Maynard Smith, 1976). So group selection was not impossible but extremely
unlikely. Instead, critics tried to explain the same behaviors on the individual level.
Dominance hierarchies, for example, can be better explained by the benefits they
confer on dominant individuals, while subdominant individuals gain most by making
the best of a given situation. Territoriality does not develop because everyone agrees
(on a certain division) but because everyone fights for his own territory. Large
groups can be explained as the result of a sum of individual optimal strategies to
evade predators. The behavior of groups of unrelated animals can be understood
best as the sum of individual behaviors.

The tendency to explain behavior by referring to the lowest levels of selection
soon proved to be extremely fruitful. One result, for example, was the explanation
of the independent evolution (at least eleven times) of hyper-social structures in
different groups of hymenoptera. Hamilton noted that of all hymenoptera, males
are haploid and, as a consequence, sisters share *all* their father's genes; they are in
fact more closely related to each other than to their own daughters. This extreme
degree of kinship could explain hymenoptera female dedication to the common goal
of helping their mother in begetting more sisters instead of all getting daughters
themselves. Individual hymenoptera search, according to Hamilton (1963), not only
to maximize their individual fitness, but also to maximize their "inclusive fitness,"
that means the fitness of their kin is included in proportion to their degree of relat-
edness. To contrast the mechanism behind this altruism with Wynne-Edwards'
model of group selection, the mechanism was called "kin-selection" (Maynard
Smith, 1964). Kin-selection proved to be the best explanation of the widespread
nepotism in animals, varying from parental behavior of earwigs and burying beetles
to complex inheritance rules in human beings.

Thus, attention was focused on lower levels of selection. While Wynne-Edwards
had declared local populations to be "largely of common descent, self-perpetuating
and potentially immortal" (Wynne-Edwards, 1963: 144), Williams, in his book
Adaptation and Natural Selection (1966), claimed that the only entity with those
properties was the individual gene or "that which segregates and recombines with
appreciable frequency." Longer pieces of the genetic material just could not serve
as entities because they were broken up each generation by meiotic (reduction)
division. Naturally, individuals were not suitable because they did not replicate
themselves and contributed only half their genes to their progeny. The phenotypic
appearance of Socrates, including the unique combination of genes expressed in

him, died in the fourth century BC, but individual genes of Socrates could still be among us (Williams, 1966: 24).

A view emerged about evolution in which "selfish genes" ("replicators") migrate through a succession of "survival machines" ("vehicles") and are selected on their ability to cooperate with other genes in the same or in related bodies (Dawkins, 1976, 1982). An interesting consequence of this idea was that it helped to explain the presence of "junk DNA," genetic material without a particular protein translation that joins the functional DNA responsible for the construction of the body. There is even evidence of true parasitism among genes, because some genes, and even whole chromosomes, bias the process of meiosis (reduction division) in their own favor, sometimes with a harmful effect on the bodies in which they live (Crow, 1979; Trivers, 1985). Of course, parasitic genes or chromosomes that kill their host will die out soon, so it is no wonder that mostly they have no effect on the bodies in which they live. They are replicated each generation not because they serve the interests of their host, but only because they are the fastest and smartest in the race for self-replication.

The lesson in all this is that we can no longer view individuals or societies as independent ontological levels.[19] Individuals are more stable evolutionary levels of organization than societies. Genes cannot reproduce themselves without individuals any longer, but individuals are not ends in themselves. Altruism between individuals sharing genes is no longer incomprehensible because a collection of genes inducing this altruism could spread themselves by reciprocal aid. However, a few problems remain, because not all societies of animals and men are built on the basis of kinship alone. At least in human societies, kinship is only partly responsible for cooperation.

According to Trivers, "reciprocal altruism" can evolve between non-relatives when they are intelligent enough to recognize each other personally and live long enough together to profit from an exchange of benefits (Trivers, 1971, 1985). Of course, this type of cooperation is especially vulnerable to abuse and deceit. There is never absolute certainty whether a particular altruistic investment will be reciprocated. However, analyses based on the so-called "repeated prisoner's dilemma" show that it is the best strategy to react immediately when the other party stops or restarts cooperation by doing exactly the same (tit for tat) and, thus, to be severe and forgiving at the same time (Axelrod, 1984). Of course, the best way of starting cooperation based on reciprocal altruism would be on the basis of some kinship and strong mutual interdependence.

A good example of this mutual interdependence is the dependence of dominant male chimpanzees on the support of other strong males and females. The extensive studies of Frans de Waal (1982, 1988) show that the power politics of chimpanzees is indeed dictated by rules of reciprocal altruism. Coalitions bind engaged individuals to cooperate. An individual who does not fulfill his "obligation" can arouse aggression in the "partners." Several reports of moralistic aggression in the books of De Waal suggest a notion of "guilt" or "responsibility" in chimpanzees in the form of holding one individual responsible for something. It could be argued that chimpanzees have a primitive form of group morality founded both on kinship links (males are often closely related) and on reciprocity. In describing their behavior, it is difficult to avoid attributing to them emotions like trust and friendship, indignation and gratitude, obligation and guilt, which seem to have evolved in the context of systems based on reciprocal altruism.

But what about human morality? Can this also be explained by the same mix of kin-selection and reciprocity? Being a blood donor and giving to charity are often

shown as examples of altruism which go beyond kinship and reciprocity, and these are supposed to be dictated either by culture or by reason (Singer, 1983: 133). Of course, no one denies the role of learned habits or rational foresight in human behavior, but it is inconceivable that they are an independent motive counteracting or transcending other motives. If reason and culture really stimulated individuals to neglect their biological cost-benefit balance, it is difficult to imagine how they could ever have evolved. It is best to see reason and culture as extra tools for survival, not as forces carrying us beyond our survival interests.

Intergroup selection can be invoked to account for the special intensity of human intragroup altruism (Mellotti, 1987; Rushton, 1989). It has often been noted that primitive man evolved in almost optimal conditions for group selection (see Alexander, 1971): first, individuals are not easily exchanged because of acquired habits and language; second, groups of primitive man may have forced other groups to leave fruitful areas and may even have committed genocide. Darwin himself attributed the growth of human intelligence and morality to a process of struggle between primitive human groups in which those with the best and most intelligent cooperators survived. Indeed, imperialism, invasions, and genocide seem to be the chorus of world history, but they are often accompanied by slavery, rape, and hybridization, processes through which genes of defeated groups can still live on in the winners (Trivers, 1985: 313). It is best not to overestimate the role of group selection.

But the link between warfare and the evolution of intelligence and morality is not completely dependent on group selection. Alexander and Bigelow have developed theories in which competition among primitive peoples is a driving force in the evolution of intelligence and cooperation, but do not necessarily presuppose group selection (Bigelow, 1969; Alexander, 1979, 1987). They emphasize the fundamental force which binds individuals together within groups—the threat of neighboring groups—and thus emphasize reciprocal altruism in a situation in which the dependence on a particular group is complete.

Even among chimpanzees the dependence of the individual on the group is enormous. De Waal (1988) documents the horrible story of the death of Luit, a powerful member of the Amhem group of chimpanzees, who, even after he was literally beaten to death by his two competitors, used some of the time left before his death to try to regain their friendship. This story illustrates the price chimpanzees are willing to pay to remain a member of the group. But hunting and cooperation in intergroup conflict pay a relatively small role in chimpanzee life, although they are certainly not absent (Goodall, 1986).[20] Because of these factors, the mutual interdependence of individuals was probably greater still in primitive human societies. In them, exile was essentially a death sentence; it was extremely dangerous to leave the group, partly because of the difficulties posed by the environment, partly because of the dangers posed by other human groups. In this situation, cooperation with members of your own group was a matter of life and death, and the evolution of an ability to cooperate can be explained without resort to group selection.

In such a situation, reciprocal altruistic relations tend to grow beyond their original simple bilateral structure. Relations are so intense that third parties continually observe and judge how two individuals deal with each other. In this way they obtain valuable information about potential cooperators. In this situation (called "indirect reciprocal altruism" by Alexander, 1979; 1987: 85) concern for a good reputation could be rewarding. The least you can do is to give the other members

of your group the *impression* that they can always rely on you. Self-consciousness could have evolved, particularly in this situation, as the ability to imagine the way others judge you. This could also explain why we internalize so fast the way others judge us.

Self-consciousness could have its dangerous side. When other group members are observing you nearly continually, self-knowledge can betray motives that would be better kept in the dark. The best place to deal with egoistic cost-benefit calculations is in an unconscious corner of the mind. The best way to convince everyone of your sincerity is to believe in it yourself and to hide some of your real interests. The evolution of the unconscious could be an effect of the arms-race between morality and hypocrisy, which started with direct and indirect reciprocal altruism. As Trivers hypothesizes, the complexity of the human mind, with its mixture of virtue and hypocrisy, could derive from the complexities posed by reciprocal altruism, which stimulate the evolution of concealed, that is unconscious, motivations and self-deceit (Trivers, 1971; 1985: 387, 419).

This does not imply that all human altruism is hypocritical. An urge to help spontaneously, especially when it does not cost too much, could be rewarding. In this context, it may be possible to explain, for example, disinterested charity and the behavior of blood donors. Impulses towards such behavior need not cost too much biologically and can yield a lot in terms of good name and reputation. Once one individual has done such a deed, it is easy to see why many other individuals will point to such an altruistic act as an example to stimulate their neighbors to imitate it. Therefore, it is always useful to exaggerate the original deed a little. We cannot, of course, explain the wonders of Jesus Christ in this way, but we may be able to explain why people need strong stories about saints and holy men. Morality is a group process, and preaching and storytelling is a relatively cheap way to heighten the collective moral pressure on other individuals.

Dominant individuals will succeed in impressing their set of values and rules on others. But their power is not unlimited and they need to prove that everyone gains from their leadership. So, the dominant subgroup is forced into a position of legitimating its power by continually proving that it serves the group's well being. The division of labor makes this situation still more complex. Individuals who develop certain abilities or skills can literally trade their indispensability for sharing power.[21] Thus the emerging culture began to be built around different guilds and classes, each with its own hierarchy, all mutually dependent but continually engaged in a tug of war. Of course, throughout history, a procession of religions has been invoked to justify certain distributions of power and food which were in fact results of trials of strength between different subgroups. The typical dynamic of cultural evolution is the result of the continually changing relations between different subgroups, emancipating themselves via new techniques or specialities with which they can prove themselves to be indispensable and for which they can claim certain rewards. If Bigelow and Alexander are right, the ultimate force behind this process is the arms race between different societies which forces each society to adapt itself continually to new situations.

Even the idea of justice based on equality can be viewed not only as the logical outcome of a struggle between equal partners in a complex and very indirect reciprocal altruistic system, but also as an epiphenomenon of the emancipation of certain groups. Justice according to Rawls, is a virtual division of power and food to which everyone can agree, independent of their situation. But, in reality, interests are often mutually incompatible, and only a veritable struggle can decide who gets

what. Alas, even in our "democratic" societies, parties without voice or power actually have limited rights; few people speak about the rights of animals and future generations, and still fewer behave as though these really exist. The problem is not that those ideas have no logical force—they do have for everyone committed to the idea of an equal sharing of this world—but we are complex moral negotiators who are more committed to a biological cost-benefit calculation than to an abstract idea of justice as fairness.

To develop the idea of justice, philosophers needed many centuries, and they still have not reached a consensus. Sometimes their axiomatic reasoning is based on individual merit, sometimes on equality. The message of sociobiology is not that philosophers' activities are without merit, but that they could gain by knowing what they are doing. They are not discovering the Essence or the Idea of an Ideal State, as in Plato's thought, but axiomatically *constructing* one on the basis of something arbitrarily chosen. Somewhere in their axiomatic thinking they have to take human nature into account, and against that they have to trade some of their towering impartiality for arbitrariness. What groups will they exclude from their *contrat social?* To what degree will they reward individual merit, ultimately based on the arbitrariness of processes like meiosis? How far will they go in condemning competition as unjust? What collection of wants will they define as rights? Et cetera. Of course, from a perspective of absolute impartiality, a concept such as justice would not even exist: why should it? How do human beings have more right to live than dinosaurs or bacteria? Thus, the concept of justice is an interesting mixture of pragmatic peace-making by means of fairness, negotiating toward a consensus with all strong parties concerned, guiding the group by the setting of shared aims, and finally, by some hypocrisy.

The same goes for all morality and ethics. As we have seen, moral rules could have arisen as unspoken expectations in the reciprocal altruistic relationships of chimpanzees. With the emergence of more intense cooperation and language, such implied agreements could be supported and enforced with words. But, probably even before the emergence of language, the whole "parliament of social emotions," including trust and friendship, indignation and gratitude, obligation and guilt, had already created a framework which determined a great deal of the relations between our ancestors. Language and convention did not create morality, but they extended the range and subtlety of it. With the explicit formulation of moral rules, experience could be passed on concerning the best way to solve conflicts between different guilds and interest groups concerning relevant aspects of human nature and optimal division of rights and duties (usually from the perspective of one group). Because each human culture arose in a different environment with different threats and enemies, moral rules could be adjusted to the challenge posed by the particular situation in which each had to struggle for existence. Each culture created its own corpus of moral rules adjusted to its unique situation. Sociobiology and ecological anthropology (Harris, 1979), instead of fighting each other, will have to cooperate to explain the different moral beliefs of all cultures. Learning from them, political scientists and sociologists could develop a new sensibility to the boundary conditions of the culture which they investigate or which constitutes the context of their investigations.

To make themselves indispensable, philosophers could go on defining the Good or Duty independent of the complex and very indirect reciprocal altruistic structures out of which these concepts emerged. They could pretend that evolution did not occur and that the history of normative ethics is an ongoing story of success.

They could still go on looking for an axiomatic system from which all of their favorite preferences could be deduced. However, with the cumulation of different axiomatic systems, their power of persuasion has diminished and, with it, the persuasiveness of traditional foundationalist normative ethics. Maybe it is time to reassess critical ethics and to recover an impartial perspective from which the old philosophical questions can be posed, questions arising out of the human situation and making philosophy indispensable in its own way.

Three Philosophical Questions

Let us evaluate the results so far. We were looking for a being with a purpose, that can and must live making choices in social surroundings. Indeed, we encountered beings with a purpose, but this purpose did not point to one universal goal for all life. We met organisms which make choices, but their choices did not transcend their biological missions, and these organisms remained chained in the cages of their emotions, unable to break loose from their survival interests. We encountered social and altruistic beings, but their gregariousness and altruism was only one strategy of their selfish genes, aiming them toward a next generation. When we encountered angels, they were, at least, paradoxical ones.

So, let us move on to the next stage in our quest for the Holy Grail of normative ethics and look at the second part of our "profit of a moral being": the moral being we are looking for can make decisions which are "free" somehow and its purpose—the "good"—must not be arbitrary and subjective, but must somehow depend on the "meaning" of its life, and of life and the world in general. With that, we encounter three key philosophical questions: Does real freedom exist? Does the good, or real virtue, exist? and, Does life have a meaning?

Does Real Freedom Exist?

As mentioned above, it is one of the chief challenges of naturalistic philosophy to offer solutions to philosophical problems which are compatible with scientific models. In a long tradition of "metaphysics of ethics," from Plato and Origen to Kant, freedom was placed outside the realm of natural necessity, because this necessity was viewed as coercion and thus incompatible with "real" freedom. Hume was one of the first philosophers who did not want to compare natural necessity with coercion and who thus replaced the opposition between freedom and natural necessity with that between freedom and coercion. But his definition of freedom remained rather empty; according to him, everyone who is not in prison is free (Hume, 1975). According to this definition, there is not much uniqueness in human freedom, because all animals in the forest are free as well.

Is it possible to find a more positive content to the concept of freedom? To do so we need to explore human evolution again. Three related elements are important: the development of an increasingly complex system of indirectly reciprocal altruistic relationships into a society with division of labor and, as a result, into a society of roles and tasks; the necessity of rules and agreements imposed on individual members to make everything go smoothly in such a society; the tension between the interests of the individual and those of the group in such a society.

In a certain phase of human evolution, individuals no longer ate the food they collected themselves, but rather ate the food they earned for their labor in the service of the group. Individuals became specialized in different trades and entered

into complex trading systems with the group in general. This transition involved at least one important psychological consequence: at the onset of their maturity, individuals had to specialize and choose a trade. Their behavior could no longer be a product of the sum of their instincts (Kornhuber, 1978: 1127). They had to discover their own set of individual talents and capacities and to search for a role in their society which would fit those qualities. To live increasingly meant to discover your own talents and to translate them into tasks, jobs, and vocations in the surrounding culture. In short, to live increasingly meant to discover and create your own identity. This required much self-reflection and looking ahead, experimentation, and creativity. The "creative explosion" of about 35 000 years ago, characterized by the appearance of a new array of artifacts and body ornaments like beads and earrings (which probably reflect a heightened level of self-consciousness), may be identified as this transition (White, 1989: 81).

However, societies, in which different tasks are divided and in which not everyone produces his or her own food, need rules and agreements. Dominant groups will use these rules to enforce a division of the fruits of labor which is favorable to them, so they will try to impose this system with a certain inflexibility and even with violence and threats. The result could be a strait jacket of rights and duties, a continual cold war of incompatible interests. In such a system, individuals must be continually reminded of their own teleonomic mission and must be anxious not to be exploited in the name of rules they themselves did not create. Individuals should have the ability to resist in a situation where rules and agreements are unfavorable to them. There should always be a tension between the "official" social division of tasks and the desires of individual members of the society. Civil disobedience should be the rule which transgresses all social divisions and rules.

But this means nothing less than that individuals ought to stay "free": they need the capacity to guard their own interests in situations of potential exploitation and indoctrination. Despite the attempts of society to mold them into being cogs in a machine, they should have the courage and originality to resist and create their own compromise in which their teleonomic mission is not forgotten. Continually, they should be able to correct their course and reassess their choices within the framework of their teleonomic structures of experience. Thus, they again need self-consciousness to make complex social maneuvers possible and to disguise their teleonomic intentions in a series of social roles.

In this situation, the human "self," or identity within the context of the surrounding culture, can be expected to be neither the sum of his/her instincts and motives nor an entity which floats above them, but rather a process in which the individual is constantly seeking an identity which adapts the different teleonomic "drives" to the surrounding culture. Free will is the capacity to unify contradictory impulses in an *Entwurf*, or life program, and to correct this self-created identity continuously.[22] People appear to be adapted to culture, and their renowned "free will" translates their individual teleonomic missions into tasks, jobs, and vocations in the surrounding culture. Freedom mediates between culture and individual teleonomy and between insight and a collection of "open" instincts. It is a highly functional capacity, because each individual has a unique set of genes and therefore a unique teleonomic mission to carry out in a unique succession of surroundings (Alexander, 1985: 799).

In traditional philosophical discussions, mysterious links are made between freedom and responsibility. What has our framework to offer here? I have already stressed the importance of the difference between the interests of the group and

those of the individual. These differences are reflected in different moral languages. The language in which collective group moralism is formulated needs a term to remind all individuals of two things: first, that they are free; second, that their participation in the group entitles them to do certain things and to abstain from other things. The term for this is "responsibility"; it refers to nothing less than the freedom of the individual from the point of view of cooperation and its demands.

If there were not tension between the interests of the group and the interests of the individual, a term like "responsibility" perhaps would be unnecessary. At least it would not have the gravity found in related words like "guilt" and "repentance." When one part of the machine fails to function, there is no reason to be angry. That part must simply be replaced. Notions like "responsibility," "guilt," and "repentance" express the awareness that individuals can deliberately fail to do what they are expected to do, that they can have private interests which diverge from group interests. Such notions are necessary to monitor individual freedom from the point of view of cooperation, and they therefore reflect a certain amount of potential moralistic aggression from the group.

From the perspective of cooperation, the freedom of individuals is always somewhat suspect and dangerous. They can take subtle advantage of cooperation and thus become parasites on the good intentions of others; indeed, the behavior of individuals never exactly matches the desires of group morality. The notion of responsibility reminds individuals that they will be held responsible for any abuse, disobedience, or deviant behavior, and that eventually they may be punished with righteous indignation, be forced to correct themselves, or even be expelled from society.

Within this interpretation, the attempt of philosophers to give the notion of guilt an ultimately metaphysical justification as "could-have-done-otherwise" is nothing less than an attempt to deny the causal power of the teleonomy of the individual. From the viewpoint of group moralism, those reasons are illegitimate; the only legitimate reasons are those related to the group's well-being. But how should those reasons be imposed on individuals who may also have reasons themselves? The answer is to tell them not only that they *should* behave this way or that way, but also that they have been given the freedom to do so. Tell them that there are no reasons to behave otherwise, that temptation to behave otherwise is caused by mysterious, unnatural, and evil forces which can be and must be always resisted.[23]

Thus, the indeterministic theory of free will (free will in opposition to causality instead of compulsion) is a product of the rhetoric of group moralism which tries to deny the reality of different types of reasons, that is, of different moral perspectives. A morality which claims to be the only possible one needs this free will to explain "bad" behavior and to justify its moralistic aggression toward individuals who may view things from a different teleonomic perspective.

Of course, when morality is no longer viewed as absolute, there is no longer reason to believe in this type of free will. If the concept of causality is to make any sense, the criminal cannot act morally. His deeds are determined by reasons which are harmful to the group in general. If there is reason to assume that the criminal might act morally in future, there is reason enough to try to influence him and thus to reform his will. When the criminal repents his deeds, this does not imply that his past deeds have no explanation, only that he can now judge his past deeds from the viewpoint of the interests of the group. With this correction of the past, which is only virtual, the criminal can show that his behavior will now be determined by intentions which incline more toward cooperation.

Does the Good, or Real Virtue, Exist?

At last we come close to our Holy Grail of normative ethics. We are now in a position to answer the second philosophical question, "Does the good, or real virtue, exist?" We can borrow the first part of our answer from Hamlet, according to whom "Nothing is good nor bad, but thinking makes it so." We have seen that conative beings emerge because mobile parasites on plants not only need orientation but guidance as well; values are programmed into the biological decision centers of those beings to enable them to evaluate situations in terms of their survival interests. Ultimately, the vector of their will is pointed toward the survival of their genes. In the original position (always cherished by social philosophers), "good" and "bad" are entirely related to individual survival.

With the origin of cooperation in groups, a new dimension arises. In such cooperation, individuals try to influence the behavior of others to bring them into harmony with mutual interests. In primate societies, it is in the interest of dominant individuals that conflicts within the group do not get out of hand. These individuals emerge as peacemakers and guardians of group interests. An example is the behavior of a dominant male silverback gorilla: with his legs wide apart, he watches his subjects, sometimes interfering to impose order, sometimes calling attention to his power by drumming on his chest. What we observe here is not capriciousness of power, but a primitive sense of responsibility and of "law and order." No doubt, this dominant male's sense of responsibility and his commitment to the good of the group derives from the need to guard the genes which he has propagated throughout the group.

In human societies, cooperation based on kinship was complemented by cooperation based on direct and indirect reciprocal altruism. Responsibilities were more evenly divided among the adult members of a society and, even in our complex societies, spread out among a multitude of local trade hierarchies. With the emergence of language, rules and agreements could be made explicit and become the objects of negotiations and justifications. In essence, those justifications would refer to mutual interests, but there is no reason to believe that once upon a time our ancestors agreed upon some original *contrat social*, as if "rational" justification *preceded* cooperation instead of the other way around.

Originally, religions probably offered the framework for the justification and reinforcement of moral rules. Religious leaders could present their intuitive sense of the interests of the group as a privileged knowledge of the demands of the gods. However, religions tended to crack, break, and pulverize the moment they met other religions in a larger, more "open" society (Ortega y Gasset, 1973: 183). Religious justifications and legitimations began to sound arbitrary, as the interests of newly emerging societies became more complex and divided than ever before. At a certain stage of human history, societies tended to become so big that the interests of the group and those of the individual diverged enough to foster cynical individual attitudes toward group life, as evidenced by the Sophists. It was in this situation that philosophical ethics began its quest for an ultimate foundation for morality.

In my opinion, such a quest can only be understood as the result of a lack of a universal religious foundation. What alternatives did the philosophers have to offer? A justification with reference to the gods was no longer satisfactory, at least if you spoke with one of the Sophists or with Socrates, as Euthyphro did. On what other principles could justifications be based? The only thing left was the principle of

justification itself: Reason, the cornerstone of all impartiality, the source of the "eternal laws" of mathematics. If moral behavior was essentially rational behavior, all problems would be solved.

For twenty-five centuries philosophers have tried to link morality and rationality in this way. Sometimes, they redefined human nature in order to make it seem essentially rational. Within this approach, bad behavior was simply a mistake arising out of a lack of self-knowledge. At other times they developed systems of ethics which were purely individualistic, like hedonism, in which rationality and enlightened selfishness were identified. Each time, a new generation of philosophers judged the results of their predecessors unsatisfactory and suggested amendments. Each time, they thought that they themselves had approached the real nature of the "ought," the ultimate justification of all morality, the Holy Grail of normative ethics.

However, one possibility was considered only rarely: that there is no such thing as an ultimate justification of morality. The "good," the "ought," is nothing less than a reification of shared dreams, hopes, and goals, of words we need to guide the group. Only as participators in group life, as cooperators, do we need words such as "good" and "bad" to express a consensus about a desirable course, or about desirable rules of life. Only because we use words to pass on our practical knowledge of life to conative beings with the same structure do we need those words. "Good" and "bad," therefore, are essentially words for steering and advising.

But why do they sound so absolute? Why do they sound as if they were really inscribed on stone tablets, like the Ten Commandments (Mackie, 1977: 42; Ruse, 1986: 253)? Remember what I said about consciousness: our innate set of value-judgments *have* to be absolutely compelling to steer us through life. If we could ignore our pain, we would soon lose some of our limbs; if we could rationalize our fears about death, we would soon die. In the same fashion, our dependence on group life is represented in a compelling way by the reification of duty in the "ought."

On top of that, it is even more in the interest of the individual to make *others* cooperate. Therefore, most individuals are best served on the one hand by clearly exposing common goals and preferably reifying them, and on the other hand by hiding selfish interests and condemning selfish motives in others. This probably explains the popularity of religious cults in which one set of values and rules (of course the one best adapted to the particular ecological context of a society) is made absolute, totally unquestionable, and self-evident.

Thus an absolute "ought" is created by the collective pressure of many individual "cooperators," who are all dependent on cooperation and who therefore must all ensure that others remain faithful to it. In this way, the mutual dependence of cooperators creates the possibility of a "good" which not only is subjective but also approaches a true "good of the group," or cooperation as the shared teleonomy of the whole group. The "rationality" of moral language is thus founded on the shared desires of the individual and the group. Because actual moralizing organisms never share all their purposes with the group and the many individual teleonomies often exclude one another, the organisms always remain, in part, hypocrites; they have to compare their investment in cooperation with the profit they gain. They will often have to stimulate the cooperation of others by giving the impression that they themselves cooperate (remember tit for tat).

At last, we are able to understand why Plato developed his transcendental "Idea of the Good" and why Kant put so much effort into making Duty something beyond

all particular inclinations, dictated by impartial Reason itself. In his philosophy, Kant, more than anyone else, realized what would happen when we admitted that something is called good only because we want it or because it is in our common interest: a rational, scientific reconstruction of morality from *a priori* principles would become impossible.

With that, many dichotomies of the traditional "metaphysics of ethics" are invalidated or have to be reinterpreted. For example, the Kantian conflict between "duty" and "inclination" can no longer be analyzed as a conflict between "reason" and "nature." It has to be interpreted instead as the conflict between two types of interest and, thus, two possible strategies for the individual. The individual can behave in his own short-term interests or he can conform to the interests of the group, which will probably coincide partly with his own long-term interests (Ruse and Wilson, 1985; Slurink, 1989). Evolution has programmed us to experience a tense struggle between these kinds of possible strategies and to force us to consider both our egoistic short-term interests and the long-term interests which we share with the group. Only through this tension are we able to reach sensible and reasonable decisions (something like the Golden Mean of Confucius, Ecclesiastes, and Aristotle).

Does Life Have a Meaning?

The traditional account of morality has been seriously invalidated above, and we return rather empty-handed from our quest for the Holy Grail. When freedom is no longer connected with some absolute Good beyond nature, when it seems to be connected more with a specialized and enlightened economy of gene investment, and when the Ultimate Good is only a pointer to gene survival, certainly not much will be left of what traditional philosophy has taught us about the meaning of life. Indeed, traditional philosophy has often tried to offer substitutes for the religious sanctification of particular sets of values, and it tries to keep its foothold through dizzy and dazzling phenomenological and hermeneutical maneuvering (Spaemann and Löw, 1981). Let us try to answer the question, then, not *if* the meaning of life exists, but why people, including philosophers, are so obstinate in their search for *the* meaning of life.

Of course, here we encounter another example of what might be called the paradoxical nature of values: values must have a forcefully compelling character to do their job, so the subject which projects them upon the world must believe them to be valuable not only from the subject's perspective, but also from any other possible perspective. At the same time, however, values remain essentially subjective (Mackie, 1977), and the product of the projection from a particular perspective. Again, we are reminded that natural selection did not design our minds to unmask the real world behind the world of our experience, but only to use information to reach optimal decisions. Because our mind has to guide our genes into the next generation it sees the world necessarily through a veil of evaluations.

From this we can explain the function of religion. Religion often presents a very idiosyncratic set of beliefs and values as a privileged revelation, which makes these beliefs and values seemingly inevitable and self-evident (Murphy, 1982). In this way, religion offers a way to impress us with a particular moral tradition which is best adapted to a particular ecological situation (Harris, 1974). Rules can be imprinted on the mind without the need to justify them. Often they are given special authority as divine laws or commandments. Of course, this strategy of

transmitting experience has serious disadvantages, but in many situations it is relatively safe. It is better to believe that snakes are poisonous because God said so, than to die as a result of your critical attitude toward such wisdom.

Thus, we can interpret religion as a substitute for instinct in a species with so much behavioral flexibility that it risks disorder. The advantage of religion above instinct is, of course, that it makes relatively fast adaptation to the environment possible via the inheritability of acquired characteristics. Shamans and holy people can get access to the latest news from above via their privileged relations with the world of the gods and thus adapt the set of rules and beliefs to new ecological and social situations. They are also the people who deal with all kinds of psychological disorders and who thus bring people back to the path of virtue (one of the most common Hebrew words for "to sin" means something like "going astray") and often the path of virtue helps to transport genes into the next generation.

From this perspective, the conflict between science and religion becomes understandable. Roughly defined, science is justified knowledge, knowledge to which in principle everybody has access and which in principle everybody can check. Religion is approved practical wisdom in an authoritative shape. Often it is the result of an accumulation of the practical wisdom of many generations. The advantage of religion is that it informs the believers about possible and well-tried modes of life; it tells them what to do. Science has only recently begun to develop some alternatives for that. In its first phase, it primarily offered objectivity, and objectivity could very well result in self-alienation and disorientation (Barash, 1986: 275).

Of course, religious resistance to scientific progress has other aspects as well. In religion, the interests of the shamans are particularly well promoted because they are in a position which gives them the opportunity to manipulate believers. They may have extra reasons to fear the openness of science. But the popularity of religion in an age of science gives rise to the suspicion that this does not explain everything; people themselves seriously want a "meaning of life" and only religion has something like that to offer. Only religion can give subjective evaluations of the world an objective flavor. Only religion can combat the self-alienating potential of reflection, which could show us the arbitrariness of our subjective experience and demoralize our teleonomic endeavors.

With that we come close to an answer as to why people are so obstinately searching for *the* meaning of life. The answer is twofold: first, man is a goal-directed being; second, man is an ecologically flexible species. As a result of these two factors, the human brain is designed to continually adjust to new situations. Despair and disorientation drive man to search for new solutions and new ways of life. However, enthusiasm and satisfaction make him recognize "the meaning of life," and make him find a particular life program that is optimally adjusted to a given situation. The process of discovering such a "meaning of life" is a process of trial and error, a gradual increase in practical self-knowledge through a series of negative and positive experiences. The process is directed by the innate "primary" value structure (Pugh, 1978), the *innate structures of experiencing*: the emotions, which will protest against any actions that seriously neglect basic desires and wants and in this way force us to search for a life program in which all basic wants and desires are met.

Meaningful experience, then, is an experience that leads us, via our life program, to adjust to and merge with our surroundings so that we do "right" things (in terms of fitness). This experience, however, is completely tied to our teleonomic perspective of experience and can claim no objectivity. The inclination to objectify this

meaning of life is a product of our natural tendency to conceive the values which we project upon the world as part of that world. In Kantian terms, we could call the objectification of the meaning of life a "transcendental veil" which we cast upon the world.

This objectification should be taken in context with the struggle for existence on the level of ideas, which is a consequence of the natural intolerance of value systems (Slurink, 1989). Only when I am totally convinced that my solution to life's problems is the best there is will I be able to convince others. Only when I am totally convinced that my "good" is *the* good and my "evil" is *the* evil can I seriously condemn and eventually punish others. As predicted by the "balance of power" theories of Alexander and Bigelow, religions also define the identity of a culture in contrast to other cultures. It can be extremely useful to be able to condemn the citizens of that "other" city as heathens or barbarians. Written history attests to the willingness of people to believe in their own superiority and in their own holy missions against other people. Everyone seems to be prepared to convert the world into believing his or her construct of the meaning of life.

Conclusions

Even in our religious and philosophical search for the Holy Grail of ethics, for a meaning of life, we find ourselves participating in the life struggle. Even in our private reflections and endeavors we cannot escape the laws of life. Even our deepest convictions enable us to claim our share of scarce resources, just as the beautiful colors of a butterfly or the fascinating song of the nightingale make for their success. Different life programs and projections of "meaning" come necessarily into conflict because they inevitably claim the same objects, the same resources, partners, jobs, and so on. The objectification of our values and of our morality is a necessity of life, comparable to the territorial instincts of other animals. The "good" and the "meaning of life" are products of the natural intolerance and territoriality of our minds. We are constructed to believe in our own objectifications only because we are natural warriors in the struggle for existence, always prepared to fight our private (or collective) holy wars against the rest of the world.

The "paradox of values" about which I have spoken has a tragic aspect which can be seen in the history of Western philosophy. Since Plato, philosophers have done their best to remove paradoxes and tragedy from life (Oudemans and Lardinois, 1987) and to find an ultimate meaning of life beyond all conflicts and ambiguities. But, in spite of their noble aspirations, these philosophers themselves remained part of the paradoxical and tragic life struggle. Sometimes, their personal position in the life game brought them to "rational" justifications of the morality of their groups, sometimes they fled into justifications of their own hedonism. Each one may have found his own holy grail, but nobody found *the* Holy Grail. They were more like Oedipus, looking for his own identity. The moment has come, then, to confront that identity.

From our modern knowledge of evolution, the hypothesis arises that morality is a product of the necessity to cooperate within groups and to defend them against other groups. The *moral faculties* of man (Darwin, 1871) have evolved as a set of emotions which enable him to cooperate and also to profit by cooperation. The language of morality can be understood as the product of a group moralism, in which all parties concerned try to promote cooperation, which is "good," and try to destroy parasitic tendencies (particularly in others), which are stigmatized as "bad."

Thus, morality is a conspiracy of intelligent "culture cooperators" against the virus of abuse (Slurink, 1989).

Inherent in each system of morality is the tendency to objectify values. These values are conceived as absolute, that is, as properties of the objects which are evaluated, not as results of the conative structures of the subjects which project them upon the world. This objectification seems to give those values much of their force and to lead individuals or groups to hold them dear and be prepared to fight for them. A great deal of Western philosophy seems to be a product of this natural tendency to objectify values. It has built a framework around the objectivity of morality. An absolute dimension of "good" was placed *beyond* nature to stress the independence of the normative from the factual, especially the independence of "duty" from our desires. The message was that we *ought* to use our *free will* to *transcend* our natural inclinations to found a better society for *rational creatures*, like man. In more recent debates the importance of an *impartiality* in ethics was stressed (Hare, 1963; Rawls, 1972; Singer, 1983).

But nobody has proved that it is possible to transcend the natural perspective of our teleonomy, without which we would not have a sense of morality. And even in the noblest of human moral systems, real impartiality has never been achieved. The very thought of absolute impartiality leads to absurdities. For example, from the viewpoint of absolute impartiality, it might be better for whales, elephants, and future generations of humans if we were all to commit collective suicide now. How many ethicists are prepared to defend this point of view (or to make an example)?

On top of that, it can be no coincidence that in those same absolutist systems of normative ethics of Western philosophy, man was often placed high above other species and "nature" became identified with extrahuman nature. So, the same moral systems which Western philosophers were eager to justify could easily be used to bring down other civilizations and to plunder whole ecosystems. The suspicion then arises that the objectification of morality was part of man's naturally belligerent attitude toward other human groups and extrahuman nature. The realm of the "supernatural" was invoked perhaps to derive extra force from fictional allies from above in man's fight against the rest of the world.[24]

Real impartiality would require not only that no single species is more important than another, but also that life is no more important than non-life. To me, values seem to be products of the partiality of individuals or groups. Different ethical codes are products of the different concerns of different teleonomic viewpoints. Different projections of morality and meaning necessarily conflict when the underlying teleonomic purposes meet in opposition. To defend themselves, they will all claim superiority and objectivity. There seems to be no moral system, then, which in principle could not be judged immoral from the point of view of at least one other moral system. From the point of view of some criminals, rich people are all thieves. From the point of view of an extraterrestrial exobiologist, a lover of birds, beetles and butterflies (*Micromegas* as a traveling naturalist), man in spite of all his morality could be the most immoral species ever encountered in the universe because of his talent for extermination.

After centuries of Western philosophy, morality is discovered to be a part of nature, ultimately designed to serve the cause of the moralist's genes. Ethical systems, despite their seemingly coherent appearance, have to mediate between genes and environment, and are, if necessary, opportunistically used as pleasant masks to hide real motives. Each *ethos* which is not at the same time an *evolutionary stable strategy* will cause its own extinction. Evolution judges the success of our moral

endeavors only by our reproductive success. Man cannot transcend his teleonomy, which demands that his morality always be a limited one, a "field" of concern.

Many ideals proclaimed by traditional ethics are revealed, therefore, to be only reified *fata morganas*—at best, they give direction, but there are no termini, they just play their role in the game of life like all other pieces. Like the hero of a tragedy, man has to discover what he truly is and what purposes his endeavors really serve. All his projections of meaning are ultimately idiosyncratic and teleonomic, and tied to a limited viewpoint. Because the biosphere of this planet is the object of many different competitive projections of meaning, every choice remains a choice between at least two different kinds of evil.

Notes

1. The term "naturalistic ethics" and the term "meta-ethics" would both be misleading: naturalistic ethics, because it is often interpreted as a special form of normative ethics (hence, the "naturalistic fallacy"); meta-ethics, because it is associated with a purely analytical approach. A better analogue is provided by Richards (1987: 607), who distinguishes between ethics as a descriptive discipline and as an imperative discipline.
2. For an example from the twentieth century, see Lillie (1964: 19).
3. It should not be forgotten, however, that in his *Laws*, Plato proposes the death penalty for atheism, so it cannot be said that he was a champion of a free society with the possibility of a free discussion on every point of view.
4. Kant (1903: 399): "Seine eigene Glückseligkeit Sichern, ist Pflicht (wenigstens indirekt); denn der Mangel der Zufriedenheit mit seinem Zustande in einem Gedränge von vielen Sorgen und mitten unter unbefriedigten Bedürfnissen könnte leicht eine große *Versuchung zu Übertretung der Pfichten* werden."
5. M. Scheler in his *Der Formalismus in der Ethik und die materiale Wertethik* [1916], (1954), criticizes Kant's formalism, but tries to save a transcendental realm of values that can be discovered *a priori*.
6. Kant refers to "eine vermischte Sittenlehre, die aus Triebfedern von Gefühlen und Neigungen und zugleich aus Vernunftbegriffen zusammengesetzt ist" (Kant, 1903: 411).
7. Kant speaks there about "eine völlig isolierte Metaphysik der Sitten" (Kant, 1903: 30). Of course, in our century, we would speak of the mutual independence of ethics and psychology.
8. "Es ist immer möglich, daß insgeheim Furcht vor Beschämung, vielleicht auch dunkle Besorgnis anderer Gefahren Einfluß auf den Willen haben möge" (ibid, 419).
9. *Nexus effectivus* and *nexus finalis*, see Kant (1911: 290).
10. In Plato, as later in Origen and Augustine, the context of the development of an indeterministic theory of free will is the justification of a benevolent deity. In the translation by D. Lee, the passage from the *Politeia* reads: "Excellence knows no master; a man shall have more or less of her according to the value he sets on her. The fault lies not with God, but with the soul that makes the choice" (*Politeia*, 617e; see *the Republic*, trans. D. Lee, 1979: 452).
11. *Ethica*, Part 3, proposition 9, comment.
12. E. Levinas, *Totalité et Infini: Essai sur l'extériorité*, 1961.
13. See the famous end of *The Origin of Species*, in which Darwin refers to the "fixed law of gravity."
14. In fact, Pittendrigh really wrote about "Aristotelean" teleology, but the question is whether his interpretation of Aristotle is right. Mayr claims that the concept of "teleonomy" coincides fairly well with the original Aristotelean teleology.
15. See Lynn Margulis and Ricardo Guerrero, "Kingdoms in Turmoil," *New Scientist*.
16. Pugh stresses that it is important that we cannot alter our basic ("primary") values consciously, because this "could destroy the entire intent of the system design" (Pugh, 1978: 60).

17. Lorenz has remarked that consciousness appears to be seated in relatively old and "primitive" parts of the brain (Lorenz, 1973).
18. To prove this statement, you have only to refer to the history of sociobiology, which started as a reaction to the theory of Wynne-Edwards. For example see Williams, 1966; Wilson, 1975; Dawkins, 1976; Trivers, 1985: chapter 3.
19. This is not reductionism, because the existence of "higher" levels of organization is not denied. The claim is only that they arise because of their role as vehicles for the replicators that have constructed them.
20. Groups of chimpanzees only occasionally clash with each other, and it seems not to be an accident. They seem to have just started the cycle of warfare and the ensuing arms races and growth of their intelligence. See Goodall (1986: 533, 531), who writes: "The chimpanzee, as a result of a unique combination of strong affiliative bonds between adult males on the one hand and an unusually hostile and violently aggressive attitude toward nongroup individuals on the other, has clearly reached a stage where he stands at the very threshold of human achievement in destruction, cruelty, and planned intergroup conflict."
21. Trivers mentions two factors contributing to an equalizing in human dominance relationships: intraspecific combat and tool use (Trivers, 1985: 387).
22. *Entwurf* is a term from Heidegger; "life program" is used by Ortega y Gasset. For more on self-control and self-made selfs, see Dennett (1984: 72), who claims that our evolutionary heritage "has tended to set us up as *self*-controllers," but who seems to forget the aspect of self-discovery and the teleonomic limits to self-control.
23. See, for example, Augustine in his *City of God*, Book XII.
24. Thinking in terms of hierarchy and superiority is so deeply ingrained in our minds that it sometimes even creeps into evolutionary theory (Ruse, 1986).

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