SOCIOBIOLOGY[1]

Vittorio Hösle (University of Notre Dame)

The essay explores the development of sociobiology, its basic tenets, and its contributions to the study of human nature as well as ethics. It insists that Darwinism is more than a biological theory and presents a possibility of interpreting sociobiology as manifesting not the triumph of the selfish gene but, on the contrary, the only way in which the expansion of altruism was possible.

With the theory of special and general relativity, as well as quantum theory, the first three decades of the twentieth century brought forth scientific theories that undoubtedly count among the most significant accomplishments of the human spirit in beauty, simplicity and explanatory power, not to mention their impact on a philosophical interpretation of the world. Among scientific theories of the late twentieth century, sociobiology is presumably the first to be able to claim an analogous status. Sociobiology also couples surprising theoretic simplicity with enormous explanatory capacity, and it clearly has significant ideological consequences, even if the correct philosophical interpretation of it is heavily contested.

The Darwinian Background of Sociobiology and the Critique of Classic Ethology

Sociobiology, however, is certainly less original than the other aforementioned theories to the extent that it is grounded in a predecessor—namely, Darwin's doctrine of the evolution of the species through variation, selection and adaptation. Darwin's principal idea, inspired by Thomas Malthus, is the following: Population growth is potentially exponential, and resources are limited; the population equilibrium that we observe must

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[1] This article originally appeared in German as "*Soziobiologie*," in *Handbuch Anthropologie*, (ed.) Eike Bohlken and Christian Thies (Stuttgart/Weimar: Metzler, 2009), 242–49. The English translation is by Jason Miller. I thank Jessica Hellmann for helpful comments.

therefore be the result of a struggle for existence. The result of this struggle among individually distinct organisms which pass on their variations is that the better adapted variants will be more strongly represented in the subsequent generation. (Let us call the ratio of organisms with a specific, better adapted property to other organisms lacking this property in the i-th generation p_i, and the reproduction rate in both kinds of organism (assumed to be constant here for the sake of simplicity) k and l. It follows, then, since the number of both types of organism is evidently $m_i = m_0 \cdot k^i$ and $n_i = n_0 \cdot l^i$ respectively, that $p_i = m_i/n_i = p_0 \cdot (k/l)^i$, and if k is even marginally greater than l, p_i grows exponentially.) Such is essentially the selection process that can lead to the evolution of a species and, in connection with additional factors such as spatial and other forms of isolation, to the creation of several species, that is, to so-called "speciation." Already with Darwin, social relations among animals, including those of humans, are construed in terms of these basic principles, and thus we find numerous arguments, particularly in the *Descent of Man*,[2] that anticipate the fundamental ideas of sociobiology. Entirely absent from Darwin's view, however, is the above-noted mathematisation of his theory. This was developed specifically by the statistical research of the biologist Ronald Fisher, and the merging of modern genetics with Darwinian theory in what is called *synthetic* theory (for which we are substantially indebted to Theodosius Dobzhansky and Ernst Mayr) forms the theoretical background of sociobiology.

As the name implies, sociobiology is the biology of social behaviour in organisms (primarily animals, including humans). It is by no means the first discipline to undertake this study. Before its emergence in the 1960s, the behaviour of animals in general, and the *social* behaviour of animals in particular, belonged to the domain of ethology, another of the Darwinian-based biological sub-disciplines. However, the assumptions and research methods of classic ethology and sociobiology are so disparate from one another that one of the leading German-speaking figures in ethology, Konrad Lorenz, vigorously opposed sociobiology, and did so with such intensity that his pupil, Norbert Bischof, ascribed it to

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[2] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (1871; Princeton: Princeton University Press, 1981).

peculiar features of Lorenz's mind.[3] Thus Lorenz never had a handle on the mathematical tools that sociobiology required. Presumably, it also frustrated his desire to see something normatively acceptable in biological events. Again and again, in fact, we find in Konrad Lorenz the following argument: Behaviour such as the self-sacrifice of an organism will carry on in a species because it contributes to the preservation of the species as a whole.[4] It is precisely this line of thought that will be rejected by those sociobiologists who, quite in the manner of modern economists, adopt a methodological individualism and, by no mere coincidence, were initially based in the Anglo-American world. (Today, of course, sociobiology exists worldwide.[5])

Sociobiology's rejection of the traditional conception of group selection in ethology, such as the criticism of George Williams[6], is based on the following basic ideas: One group could certainly have some advantages over another group if its members were to sacrifice themselves for one another. But that does not change the fact that the organism that does not behave altruistically, but instead tends only to the maximisation of its own fitness and thus takes advantage of group protection while deferring if it is called upon to respond in kind, will have a greater advantage. In the game of evolution, the organism with the genes that cause it to behave in such a way that it maximises its own reproduction will leave behind more genes than the organism that behaves altruistically—and thus offers aid to others even when this limits its own reproduction. So, for example, the reduction in offspring, which occurs in many species, cannot be explained by group selection out of consideration for members of one's own species, but rather by individual selection—so that, on average, it achieves a personal optimum of reproductive success over the whole life span in the corresponding parent animals.[7]

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[3] Norbert Bischof, *Gescheiter als alle die Laffen: ein Psychogramm von Konrad Lorenz* (Hamburg: Rasch und Röhring, 1991), 25ff.

[4] Lorenz, *On Aggression* (New York: Bantam, 1966).

[5] For an excellent and up-to-date introduction in German, see Eckart Voland, *Grundriss der Soziobiologie*, 2nd ed. (1993; Berlin: Spektrum Akademischer Verlag, 2000).

[6] George C. Williams, *Adaptation and Natural Selection* (Princeton: Princeton University Press, 1966).

[7] See Darwin, *The Descent of Man*, vol. 1, 315ff. Darwin, however, defends group selection elsewhere.

Here we must draw attention to an important point, often lost amidst the understandable excitement for the explanatory power of Darwinism. Natural selection explains why organisms with greater fitness survive and reproduce; but it does not explain why such organisms originate. This task belongs to other biological disciplines. The phenomenon of natural selection would exist, for instance, in a world in which there were only prokaryotes. Rather, quite specific laws of nature are required to explain the existence of more complex organisms. In particular, the existence of psychophysical laws does not follow from Darwinism. It is therefore absurd to maintain that Darwinism explains the genesis of the conscious mind. This is all the more true if one denies interactionism, the view, that is, that there is a causal interaction between the physical and the mental. In that case, the mental has no function within the organic. Through psychophysical laws, however, the mental may be coupled with physical events that do have a function.

The Basic Ideas of Sociobiology

Sociobiologists fully recognise that there are numerous examples of self-sacrifice in the animal kingdom. Their concern, however, is to explain this behaviour on the basis of the assumption that it increases an organism's own fitness, i.e., the survival of one's own genes. Crucial in this regard is William D. Hamilton's concept of *inclusive fitness*.[8] This concept combines direct and indirect fitness, the latter not being based in the organism's own reproductive activities. The central category of Hamilton's groundbreaking work of 1964 was that of a *coefficient of relationship*. In the case of identical twins, it is 1, and ½ in the case of parents and children (in the case of diploidy, i.e., double chromosome sets, and without inbreeding). Accordingly, in grandparents and grandchildren, it is ¼, but it is also ½ in full siblings. Hamilton's inequation states: $C < r \cdot B$; that is, the costs of phenotypic altruistic behavior (C) must be less than the product of the coefficient of relationship (r) and the benefit for the corresponding relative (B), in order to keep the corresponding genes in the game of evolution. For example, a gene that so determines an or-

[8] William D. Hamilton, "The Genetical Evolution of Social Behaviour," *Journal of Theoretical Biology*, vol. 7, no. 1 (1964), 1–52.

ganism that it sacrifices itself in order to save its three offspring, or even three siblings, on average is preserved 1.5 times.

An important consequence of the theory of inclusive fitness is that it explains the phenomenon of eusociality prevalent mainly among insects (among vertebrates, only the Damaraland and the naked mole rat are eusocial). By "eusociality" is meant an intensely cooperative communal life within social groups wherein only a few individuals, sometimes only a single individual, reproduce—and this lack of reproduction among the others troubled Darwin, who could only explain this phenomenon in terms of group selection.[9] Most eusocial insects belong, interestingly enough, to the order of hymenoptera, in which the females are diploids, whereas the males are haploid and therefore possess only a single pair of chromosomes. This haplodiploidy entails that r is ¾ in full sisters, such that renouncing one's own reproduction and concentrating on the care of one's sisters contributes to the increase of one's own inclusive fitness. Indeed, the coefficient of relationship between the female workers and their brothers is only ¼, and so it is in their interest to produce more sisters than brothers. In fact, this does occur, so that it seems to be the female workers that instrumentalise the queen—unless she manages to mate with several males. Since this does happen, and since not all haploid hymenoptera are eusocial, and conversely, eusocial termites are not haplodiploid, we must allow that there must be further, as yet undiscovered causes for the phenomenon of eusociality. But that does not change the fact that haplodiploidy appears to be an important factor, and that Hamilton can claim to have been the first to give a scientific *explanation* for this rather peculiar phenomenon that traditional ethology only *describes*.

A development of this approach occurs in three important essays by Robert Trivers, of which the first deals with the evolution of mutual altruism, the second with the different sexual behaviours of both sexes, and the third with the competitive relation between parents and offspring.[10] Conceptually speaking, sociobiology owes a lot to John May-

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[9] Charles Darwin, *The Origin of Species by Means of Natural Selection* (1859; Harmondsworth: Penguin, 1968), 257ff.

[10] Robert L. Trivers, "The Evolution of Reciprocal Altruism," *Quarterly Review of Biology*, vol. 46, no. 4 (1971), 35–57; Robert L. Trivers, "Parental Investment and Sexual Selection," in *Sexual Selection and the Descent of Man 1871-1971*,

nard Smith, who, in numerous essays since 1972, has applied mathematical game theory to the social behaviours of animals with considerable success.[11] Particularly significant is his coining of the concept of the evolutionarily stable strategy. What does this mean? A strategy is a set of rules that determines which behaviour manifests itself under which conditions; among them, we distinguish between simple and stochastic strategies. The latter deploy a chance mechanism to determine which tactic will be followed. (It is not clear if they exist in non-human animals.) Particularly important among simple strategies are conditional strategies, which determine different tactics for different situations.[12] The selection of strategies is frequency-dependent, i.e., whether a particular strategy will be selected depends on the behaviour of others. A strategy is properly considered evolutionarily stable, then, if it cannot be replaced by any other strategy should it become shared by almost an entire population. (Even self-destructive strategies can, under certain conditions, be evolutionarily stable.) There can even be two or more evolutionarily stable strategies; in this case, an ethological polymorphism occurs with an evolutionarily stable equilibrium between the strategies. Natural selection exerts no influence one way or the other on the increase of either frequency.

Maynard Smith demonstrated his ideas in 1982 by making use of the following thought experiment. He assumed that, in a population, there are both fighters and scramblers, those who fight earnestly in intraspecific conflicts and give up only when seriously injured, and those who are all bark and no bite, so to speak. Clearly there are four possible situations, depending on whether a fighter—a "hawk"—encounters another hawk or a scrambler—a "dove," and conversely, whether a dove confronts a hawk or another dove. The cost-benefit matrix arises from the following attributions: The victor of the scuffle shall get 50 points, the loser 0; threats cost 10 points, and injuries 100. If the doves and hawks set on one another, it is immediately clear who the victor will be; however, if hawks take on hawks and doves take on doves, the average

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(ed.) Bernard Campbell (Chicago: Aldine, 1972), 136–79; Robert L. Trivers, "Parent-offspring Conflict," *American Zoologist*, vol. 14, no. 1 (1974), 249–64.

[11] John Maynard Smith, *Evolution and the Theory of Games* (Cambridge: Cambridge University Press, 1982).

[12] See Voland, *Grundriss der Soziobiologie*, 160ff.

score is the arithmetic mean of points for the victor and the loser. It is clear that the strategy of neither the hawk nor the dove is evolutionarily stable—in a population of only doves, the first hawks would be extremely successful because they would always earn 50 points, while the doves would have to settle for ½ ·(50-10-10)=15. Faced with a population of only hawks with a prize of ½ ·(50-100)=-25, the doves would have the same advantage with 0 points because they do not threaten at all but always take flight immediately. Both strategies will be evolutionarily stable, therefore, if the average benefits of each (D and H, respectively) are the same. In which portion p of the hawks in the total population would this be the case? According to the assumed, purely fictitious numbers, that would be: D=0· p + 15·(1-p)=H=-25·p + 50·(1-p); p would therefore be 7/12. The portion of doves would be 1-p, thus 5/12, and thus the proportion of hawks to doves 7:5.

Edward O. Wilson's outstanding 1975 synthesis, *Sociobiology*, sums up sociobiological theory formation.[13] In fact, Wilson, originally a population biologist and entomologist, deals in the third part of this work with various social species, from colonial microorganisms and invertebrates to social insects to vertebrates; the first part deals with social evolution, and the second part deals with social mechanisms such as communication, aggression, territorial behaviour, dominance systems, behaviour relating to sex and parental care, as well as social symbioses. Human beings are the focus of the 27th and final chapter, where he claims that sociobiology builds a bridge to sociology, and can even shed light on ethics and aesthetics. This claim—worked out more precisely in his *On Human Nature* in 1978[14]—was no doubt one of the reasons for the at times quite emotionally charged debate over sociobiology. Not only did the reputable anthropologist, Marshall D. Sahlins, attack sociobiology[15], notable biologists such as Stephen Jay Gould and Richard C. Lewontin were quite vocal in their criticism, pointing out, among other things, that the existence of non-functional, even dysteleological, organs and behav-

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[13] Edward O. Wilson, *Sociobiology: The New Synthesis* (1975; Cambridge, MA: Belknap Press of Harvard University Press, 2000).

[14] Edward O. Wilson, *On Human Nature* (Cambridge, MA: Harvard University Press, 1978).

[15] Marshall D. Sahlins, *The Use and Abuse of Biology: An Anthropological Critique of Sociobiology* (Ann Arbor, MI: University of Michigan Press, 1976).

ioural forms are compatible with Darwinism—that natural selection by no means always entails optimal adaptation. In the twenty-fifth anniversary edition of his 1975 book, Wilson wrote: "The brief segment of *Sociobiology* that addresses human behaviour...was less well received. It ignited the most tumultuous academic controversy of the 1970's, one that spilled out of biology into the social sciences and humanities."[16] Criticism was aimed, on the one hand, at biological reductionism toward human beings, and on the other, at genetic determinism, which seemed to be the basis of sociobiological arguments. The important questions—whether the primarily genetic starting point of sociobiology ignores crucial insights of cell biology and embryology, whether it is too atomistic, and whether it one-sidedly downplays the interaction between organism and environment—cannot be addressed here, since such questions belong more to the philosophy of biology than anthropology.

Widespread public antipathy toward sociobiology escalated with the publication of Richard Dawkins's 1976 *The Selfish Gene*.[17] Dawkins—who is no creative biologist himself —popularised the results of the biologists mentioned above and used them, on the one hand, to push a naturalist world view, and on the other, to prove that genetic egoism is the underlying reality behind phenotypic altruism. He argues that organisms are nothing but the marionettes of their genes, programmed to pursue their own replication. (Naturally this does not imply that genes behave consciously; the anthropomorphic language is just a shorthand way of talking about the effect of natural selection rewarding behaviours that increase the replication of the underlying genes.) Altruism—defined as a behaviour that increases the fitness of another organism even if it decreases one's own—must serve the genes' calculation for survival; that is, it must either increase inclusive fitness or be strictly reciprocal so as to serve one's own interest in the long term. It is hardly surprising that Marxist intellectuals in particular brought an ideological-critical analysis to sociobiology. Since sociobiology subjects biological relations to a strict cost-benefit analysis and emphasises the egoism of the genes, it appeared to offer a basis in the natural sciences for neo-liberal economic policies.

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[16] Wilson, *Sociobiology: The New Synthesis*, vi.

[17] Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976).

The Non-Biological Dimension of Darwinism

Certainly, one of the characteristics of biology's development in the last century is that it has increasingly converged with theories of economics. The well-known biologist and philosopher of biology, Michael Ghiselin, sees biology and economics as in fact two branches of a single, basic science.[18] There is good reason for this: Economic thought is relevant wherever the rational use of scarce resources occurs; and Darwin's conception of natural selection proceeds on the assumption of scarcity resulting from population growth. The mathematical apparatus of sociobiology may not appeal to those in the humanities, but precision in explanation and prediction of complex behaviours is difficult to achieve without mathematics. Moreover, sociobiology's fundamental principle—the critique of traditional ethology—is thoroughly convincing. A behaviour that contributes to the preservation of the species but does not guarantee the replication of the corresponding genes will be lost in the game of evolution. It is a mere tautology to say that those genes that successfully strive to maximise their presence in the next generation will, on account of natural selection, replace the genes that do not. This, of course, has two consequences. First, as we will see, no non-trivial claims, such as, for example, the claim that egoism enjoys priority over altruism, can be grounded in tautologies. Second, however, the crucial principle of Darwinism is not restricted to biological entities, but, rather, includes all entities that reproduce and compete for limited resources. The concept of a *meme*, which Dawkins employs in the eleventh chapter of his book[19], and which Susan Blackmore develops as a monograph[20], clearly suggests this; and indeed, Darwin's contemporaries, such as the notable Indo-European linguist, August Schleicher, had already carried over the basic ideas of Darwin to the evolution of languages. Even theories struggle for the attention of a potential audience. We must therefore sharply distinguish biological from metaphysical Darwinism, the latter being a theory that

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[18] Michael Ghiselin, *The Economy of Nature and the Evolution of Sex* (Berkeley: University of California Press, 1974).

[19] Dawkins, *The Selfish Gene*, ch. 11.

[20] Susan Blackmore, *The Meme Machine* (Oxford: Oxford University Press, 1999).

holds for nearly all beings.[21] Many of the allegedly sociobiological accounts of human behaviour are thus also valid if we translate them from the biological to the cultural dimension—they are then still Darwinian, but no longer specifically biological accounts (and much of the mathematics won't apply).

Sociobiology has certainly drawn a plausible connection between the different reproductive systems of the animal kingdom and general ecological conditions. Monogamy, for example, is found much more frequently in birds than in mammals because in the former, bi-parental care is possible; indeed, in certain species with nidicolous chicks, it is necessary for survival. However, the polygyny threshold model shows that, given a varying quality of territory, a female bird that comes later is better off, i.e., increases its fitness, if it settles as a second female in a better territory than as the only one in a worse territory. Analogical explanations can be applied to the behaviour of human pairing. Polyandry, on the other hand, is much less common than polygyny on account of the difference between male and female gametes in animals and humans. In animal species in which it is practiced—e.g., in Tasmanian native-hens or brown-mantled tamarins—the males with which the female is paired are often related to each other. Among humans we find polyandry particularly in extreme environmental conditions such as the high valleys of the Himalayas; significantly, it is found in the form of fraternal polyandry: several brothers marry one woman, and thus the offspring they raise are, if not their own children, at least their nieces or nephews. But it is not difficult to see that the analogy between animal and human behaviour does not prove that the corresponding human behaviour is genetically guided. It may be the result of rational calculus that poor brothers would rather share a wife in common than go entirely without marrying. And if it is shown that such a calculus no longer deliberately occurs today, it may have happened in earlier times; out of respect for tradition—that is, for cultural reasons—the once-established custom may have continued. And it is cultural reasons that explain why, in other impoverished societies (e.g., Christian societies), celibacy was preferred over polyandry.

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[21] See Vittorio Hösle and Christian Illies, "*Der Darwinismus als Metaphysik*," in *Die Philosophie und die Wissenschaften* , by Vittorio Hösle (München: C. H. Beck, 1999), 46–73, 209–21.

It is also true of human societies that a pure dove strategy or an altruism that doesn't shield itself from exploitation or restrict its altruistic actions to those that reciprocate in kind is not evolutionarily stable. But it is the research of game theory, not specifically of biology, which demonstrates this. That game theory has been usefully applied to biology should not lead us to the false conclusion that biology has explained human behaviour if the same game-theoretical models apply to human behaviour as well. This also does not mean, of course, that a homology of behaviour is not a possibility. But without further arguments it is nothing more than a possibility.

Nature and Culture

Specifying the exact boundaries of genetic and cultural determination—of *nature* and *nurture*—is notoriously difficult, and the game-theoretical modelling of sociobiology does not contribute to the solution of this problem. However, we already find cogent arguments in Darwin and in classic ethologists such as Konrad Lorenz and Irenäus Eibl-Eibesfeldt that explain why much of human behaviour is innate—consider the research on infants (particularly those born deaf-blind) as well as the comparison of expressive behaviour in different cultures, or the behavioural comparison between humans and other primates. Also apparently innate in humans are inherited coordinations, triggers and trigger mechanisms, inner drive mechanisms and learning dispositions. Without these, culture could not have developed at all—thus, for example, individual languages, which are obviously not innate, presuppose a biologically given capacity for language. Moreover, it is quite plausible that much of human behaviour has a genetic basis, particularly if it does not harmonise with humans' rational nature and its cultural transformation proves to be very difficult. The practice of nepotism, which is incompatible with meritocratic universalism but exists in many advanced cultures, is an excellent example of this.

Anthropologists are certainly right to point out that kinship is always culturally defined. It is no less than absurd to deny that this cultural concept is based on biological facts, but it is true that behavioural norms toward illegitimate children are, in most cultures, of a different kind than those toward legitimate children, and that in some cultures (that may require exogamy), cross and parallel cousins are treated much

differently, regardless of the fact that their coefficient of relationship is the same. Another example is the double standard by which male and female sexual morals are evaluated, which contradict justice but which the general public only began to question in the 20th century. Male gametes are, unlike eggs, small, numerous and mobile; mating therefore entails considerably less effort for the male than for the female, who, for that reason, is far more selective than the male and has a greater interest in a long-term relationship. Furthermore, since males can seldom be certain about their fatherhood, sociobiology can easily explain the male partner's desire to control female sexual behaviour, for whoever failed to control it ran the risk of raising someone else's children, and his "benevolent genes" may thus have disappeared from the gene pool. Since such behaviour is widespread among humans, it probably has a biological basis. But in no way does this mean that the corresponding human behaviour is not encouraged by cultural factors and conscious calculation; even less does it imply that humans cannot overcome it. Indeed, statistics show that stepchildren normally do not elicit the same investment from parents as their own children do: "Data from the town of Ditfurt on the northern edge of the Harz mountains and from the East Frisian *Krummhörn* show...that the risk of mortality of illegitimate children is crucially contingent upon whether the single mother stays consistently single or whether she marries the supposed father of the child or another man than the publicly recognized father. In the latter case the rate of infant mortality increased approximately up to sixfold."[22]

But this data pertains only to the 18th and 19th centuries and the beginning of the 20th century. Moral, economic and legal advances can contribute to changing a behaviour for which a genetically conditioned tendency might exist. It is plausible to suppose that such tendencies are much easier to resist when they involve actions rather than omissions. Human stepchildren, unlike in many species of animals, were killed only in rare cases, but were clearly neglected on a regular basis. It is presumably easier to resist genetic tendencies than to motivate energy for a behaviour that has no biological basis.

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[22] Voland, *Grundriss der Soziobiologie*, 237.

The Ethical Consequences of Sociobiology

Sociobiology is a descriptive theory; as such, if we accept Hume's and Moore's proscription of the naturalistic fallacy as a rational meta-ethical principle, it seems to have no relevance for ethics. In fact, it goes without saying that tendencies that are the result of evolution can, and often enough should, be fought against. Intelligent evolutionary biologists, such as Darwin's friend, Thomas H. Huxley, emphasise this again and again. In his famous lecture from 1893, "Evolution and Ethics,"[23] Huxley clearly saw that biological evolution leads to both moral as well as immoral sentiments, and thus that the "naturalness" of a sentiment is no guarantee of its morality.[24] On the other hand, those who see no alternative to a naturalistic basis for ethics because they reject a transcendent or transcendental foundation and at the same time want to advance altruistic, e.g., *socialist*, ideals will favour a romantic conception of nature.[25] Sociobiology ruthlessly tears this image of nature to pieces, and it is therefore little wonder that Marxists rejected it altogether, often without any attempt to examine the substance of its argument. Their fear that sociobiology might lead to a new version of social Darwinism presupposes, of course, that sociobiologists accept the same naturalistic meta-ethic that they themselves endorse.

Also, those who agree with sociobiology that only an altruism limited to relatives or a mutual altruism can have a genetic basis may very well defend the thesis that there is a moral duty to disinterested altruism even beyond that shown toward one's own relatives. Since an "ought" can only be effective if it corresponds with something in the social world, they will maintain that such an altruism can be culturally grounded—for example, through religion or rational ethics. That human culture can elevate itself to such a level of altruism certainly outstrips its biological basis, but it can nonetheless build on behavioural forms that

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[23] Thomas H. Huxley, *Evolution and Ethics and Other Essays* (1896; New York: D. Appleton, 1986).

[24] See Peter Singer, *The Expanding Circle: Ethics and Sociobiology* (New York: Farrar Straus and Giroux, 1981), 60ff.; and Bernd Gräfrath, *Evolutionäre Ethik? Philosophische Programme, Probleme und Perspektiven der Soziobiologie* (Berlin: Walter de Gruyter, 1997), 88ff.

[25] A classic example is Peter Kropotkin, *Mutual Aid: A Factor of Evolution* (London: William Heinemann, 1902).

are genetically programmed, even if these are limited to only a few beneficiaries. As in many other fields, such as those of cognitive or emotional behaviour, the essence of culture consists in the expansion, indeed the universalisation, of what is genetically given. Moreover, it is worth recalling that sociobiology defines altruism by the decrease of one's own fitness. Actions that compromise neither one's own survival nor that of one's own relatives are not excluded by genetic programs; indeed, the most complex mammals know empathy.[26]

On the whole, we can maintain that biological facts do not underwrite norms. Preferential treatment toward one's own offspring (as, for example, in filling offices) is therefore neither justifiable nor excusable on the grounds that a disposition toward nepotism is genetically determined. Ethics, however, cannot rest content with an account of abstract norms; it must try to let them get a foothold in human nature. Of course it can only do so if it is familiar with human nature. Sociobiology can help in this regard. The political philosopher should therefore be aware that nepotism is a clear temptation, and for that reason should, for instance, devise mechanisms to restrict it—establishing norms which state, for example, that no one may, as a teacher, evaluate his or her own children, or, as judge, rule on their behalf. Indeed, one must admit that humanity did not have to wait for sociobiology to develop such norms; preferential treatment for one's own relatives is a self-evident fact that sociobiology was, perhaps, the first to explain causally, but it certainly did not discover it. However, the explanatory power of sociobiology might lead to a more realistic picture of humans, and that is certainly a merit.

And still, the ethical implications of sociobiology have yet to be fully appreciated. We have already seen that Darwinism is more than a biological theory, and that Maynard Smith's important concept of the evolutionarily stable strategy, for example, is by no means restricted to biological evolution. Such strategies also play a role in cultural evolution. Consider religions, for which a biological basis may exist (as with language), but which in their concrete substance undoubtedly belong to cultural evolution. Religions, too, want to survive in the course of history, and in order to achieve this, they are well advised to follow certain strategies—such as, for example, converting new members, raising chil-

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[26] See Frans de Waal, *The Age of Empathy* (New York: Random House, 2009).

dren in the religion, and organising institutions that slowly develop the central dogmas of a religion further. Precisely if the Ought has to become a part of *being*, there is a moral duty to pursue an evolutionarily stable strategy in realising it. Consider a community that teaches a form of altruism that extends beyond relatives and mere reciprocity. Should it give up striving to be evolutionarily stable? Hardly. A person who must choose between two people in need does well to offer help to the one in whom that person more readily discovers an altruistic disposition. And indeed, that person should not do this with the expectation of profiting from her good deed at some point, but, rather, because she increases the chances that the principle of disinterested altruism will have further effect in the history of culture. The individual who behaves amiably toward those who fail to return a good deed, and the individual who turns the cheek to aggressors, sacrifices evolutionary stability and in doing so undermines the principle that the individual actually ought to implement. Naturally, evolutionary stability is never a sufficient condition for morality, but it is always a necessary condition.

This ethical insight has an important consequence for the philosophy of nature, and indeed, for metaphysics as well.[27] Even if one rejects the naturalistic fallacy, one succumbs to a deep pessimism, particularly in reading Dawkins, since the moral law seems so alien to organic processes. One inevitably asks oneself how disinterested altruism can take root in in a world that is so clearly determined by genetic egoism. Nevertheless, even sociobiology does not want to deny a phenomenon such as self-sacrifice; it claims only that it is an epiphenomenon of egoistic genes. One can reply, however, that this changes nothing about that phenomenon, and that the organism is an ontological unity in an entirely different way than the gene is—particularly if it has subjectivity to which an important tradition, beginning no later than Leibniz, attaches substantiality. However, this reductionist perspective seems to be the superior one, insofar as the view into this dimension of genes alone seems to allow an understanding of the inner boundaries of that altruism. Yet, if one takes the foregoing considerations seriously, the perspective suddenly changes. The only way in which altruism could get an initial foothold in the organic world was in fact to limit it to relatives. Why is that? Cer-

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[27] Vittorio Hösle, *Morals and Politics* (Notre Dame: University of Notre Dame Press, 2004), 197–210.

tainly the genes that program phenotypic altruism aim at their *own* replication—but the decisive point is that they are genes that program an *altruistic* behaviour. Through self-sacrifice for relatives with similar genes, the probability that the behaviour of self-sacrifice will remain in the evolutionary game is increased. On a second level, those organisms that will reciprocate become the object of altruistic behaviour; here, the hope does not rest on kinship that is, with only a certain probability, connected with the behaviour to be propagated, but rather the behaviour of the other organism is individually perceived and evaluated. That presupposes conditional strategies and, as the condition for this, more complex cognitive activities. Finally, on a third level, which only humans can attain, there is a form of altruism that is not connected with reciprocity: consider charitable monastic orders whose members even forego reproduction. But the orders themselves, as we saw above, cannot forego their own reproduction if they want to have a historical impact. That is not the regrettably irreversible leftover from the dead hand of egoism, but has rather to do with the nature of the thing itself. It is the fascinating nature of life that, in reproducing itself, it simultaneously thinks of itself and transcends itself.

The suggested interpretation of sociobiology is just as compatible with the facts and concepts of the theory as that which sees only the triumph of egoism in the event of life. Those who think that ethics cannot be reduced to a balance of rational egoism, and who do not at the same time endorse an unbridgeable dualism between Is and Ought, are well advised to see in the egoism of the genes the necessary path that the principle of altruism must take in the world; this is the metaphysical kernel behind the apparent triumph of egoism. Of course, this view affords us no foundation of a moral principle beyond that of enlightened self-interest. If, however, such a foundation is possible, the results of sociobiology would be no argument against it. Sociobiology, like evolutionary epistemology and the doctrine of sexual selection, is compatible with an objective idealism that defends the view that transcendentals such as the Good, the True and the Beautiful are irreducible to natural phenomena,

but which recognises in the history of organisms, and then, of humans, attempts to approximate these within the real world.[28] Such an objective idealism can serve as the basis for a "convergence anthropology," which "mediates...an evolutionary genesis...with the demanding concept of a morality grounded in reason."[29]

vhosle@nd.edu

[28] Vittorio Hösle, "Objective Idealism and Darwinism," in *Darwinism and Philosophy*, (ed.) Vittorio Hösle and Christian Illies (Notre Dame: University of Notre Dame Press, 2005), 216–42.

[29] Christian Illies, *Philosophische Anthropologie im biologischen Zeitalter* (Frankfurt: Suhrkamp Verlag, 2006), 13.