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Health

A Tattered Absolute



Philosophy's interest in health has been tied to its interest in teleological explanation. For Plato and Aristotle, health was an important topic because it presented the clearest possible example of fulfilled natural purpose. Even so, it was not systematically explored by them, and in modern philosophy it was essentially a non-topic. Until quite recently, it was discussed only as a side issue in the controversy about purpose and function in biology.

The theory of natural selection drove teleological explanation out of biology and toward psychology. Behaviorism meant to drive it out from there as well. The philosophical question concerned the role left for function in the explanation of biological activity. Could one have function without purpose? Only Skinner went so far as to deny the usefulness of function altogether. Nagel was more typical in *The Structure of Science* when he argued that there were natural functions in biological phenomena, but that they did not entail any special type of causality since they could be fully accounted for in nonteleological language.¹ At the other end of the spectrum were traditionalists like Hans Jonas and Teilhard de Chardin who sought to maintain biology as a special field of teleological explanation.

Function, not health, was at the center of these debates. Health proper was not an issue until the seventies. At that time the tremendous increase in biomedical technology (birth control; genetic engineering, etc.) combined with the legalization of abortion and the rapid expansion of the mental-health movement combined to stretch the logical limits of medical practice as it had been understood, thereby prompting a crisis in its basic concepts. The philosophical discipline of medical ethics was born, and part of its discussions concerned the very meaning of health. The idea was then submitted to more intense philosophical scrutiny than it had ever received before.

Health care rests on a plethora of assumptions hardly ever brought to the surface. Today, perhaps because we live in an age that tries to question everything, these assumptions are challenged, and justifications are demanded.²

The aura of unquestioned naturalness that had supported the concept of health was comforting, but conservatives were alarmed at the powerful new techniques that were exercised in the name of health, and progressives wanted to be free of the limits imposed by a nonhumanistic, allegedly naturalistic outlook. The debate came down to two fundamental questions. The first was the inevitable argument over whether there really is some one thing called "health." The second was whether or not health, however defined, was a natural norm or a value more or less created by human desire and/or social forces. The conservatives, Kass (1975) and Boorse (1975), took proper function as the meaning of health and argued for the traditional point of view—that the functions are defined by nature and are more or less simply read off from it by an unbiased use of human intelligence. Kass's Aristoteleanism was unabashed.

Health is a natural standard or norm—not a moral norm, not a 'value' as opposed to a fact, . . . , but a state of being that reveals itself in activity as a standard of bodily excellence or fitness, relative to each species and to some extent individuals, recognizable if not definable, and to some extent attainable. If you prefer a more simple formulation, I would say that health is "the well-working of the organism as a whole," or again, "an activity of the living body in accordance with its specific excellence."³

Englehard (1974, 1976) and Margolis (1966, 1976) took the alternative view. First, Englehardt tried to loosen the connection between disease and function by claiming that "there is not one single set of criteria for calling something an illness."⁴ Then, he attacked the naturalness of natural function, arguing that functions are environmentally relative. He concludes:

Our ideologies and expectations about the world move us to select certain states as illnesses because of our judgement as to what is dysfunctional or a deformity and to select certain causal sequences . . . as being of interest to us because they are bound to groups of phenomena we identify as illnesses. Although there is a stark reality, it has significance for us only through our own value judgement, in particular through our social values. Through these we construct a world of communal action and reaction . . . including the arts and sciences of medicine.⁵

Margolis reached a somewhat less relativistic conclusion by a slightly different route. He granted that the notion of function is primary for the understanding of health and disease.

A diseased state, on any plausible theory whatsoever, is . . . defective or deranged with respect to some condition of healthy functioning, . . . or suitably related to such a state even if there is no complaint.⁶

The problem concerned the way functions are assigned.

The ascription of "natural functions" to human persons cannot possibly be provided in the context of psychiatry in a way that ignores the culturally prepared goals of human societies. And if the functioning of the human animal . . . [physical health] may be fairly said to be inseparable from the functioning of the human person [mental health], and if, natural norms are not simply straightforwardly discovered, then we need to provide a rather different rationale for the ascription of functions from what has so far been sketched.⁷

He goes on to recommend that we view medicine as

ideology restricted by our minimal requirements of the functional integrity of the body and mind.⁸

"Minimal" is the key word here. It would seem to render the notion of natural function irrelevant to all controversial questions. As soon as the matter becomes interesting, ideology (and politics) would presumably rule supreme.

Margolis and Englehardt were hardly alone in deconstructing the naturalness of natural functions. The debate took place in what was essentially still the sixties, and many others, from Foucault to Laing and Szasz, announced similar views, although with far less care.⁹ In general, all the old arguments that had been used against objective values and objective truth were now aimed at health. Sedgewick put the matter in its bluntest form.

All departments of nature below the level of mankind are exempt both from disease and from treatment until man intervenes with his own human classifications. . . . The blight that strikes at corn or potatoes is a *human invention* for if man wished to cultivate parasites (rather than potatoes or corn) there would be no 'blight', but simply the necessary foddering of the parasite crop.¹⁰

The times were extremely anti-authoritarian, and the privileged, natural status of the idea of health seemed to many just one more tool with which a repressive society beat its nonconforming members into shape.

The theme was even a part of the popular movie *One Flew over the Cuckoo's Nest*.

The basic questions remain the same. To deal with the problems set before us, we need a definition of health; that decided, we must then ask whether health is determined by natural or social forces. The first of these questions inevitably boils down to understanding the relation between biological function and the other criteria of health—normal structure and painlessness or lack of discomfort.¹¹ And since the meaning of health, like so many things, is revealed best by its absence, and since so much medical practice proceeds in this negative way, it is easier to get at it indirectly, through illness and disease.¹²

Consider a hand that cannot grasp things—a hand that is twisted, bent, or painful. In one way or another, the entwining of these three criteria (dysfunctionality, deviant structure, and pain) constitute the meaning of illness. The first two claim to represent objective fact; the third at first presents itself as pure subjectivity. Their interrelations are complex, and each is quite properly taken as an index of illness in day-to-day medical practice. Traditionally, however, dysfunctionality has been assumed primary. With what justification?

Linguistic analysis alone leads to this conclusion (Margolis 1976: 241). We are committed, however, to working within the naturalizing brackets, and this gives us something more to work with. Within the brackets, all things are shaped solely by the laws of nature, and for organic beings the relevant laws comprise the theories of evolution and natural selection. We assume then that the body is a kind of organic clay, entirely molded by evolutionary pressures. Consequently, we assume, with certain qualifications, that the body's details are as they are because of some direct or indirect contribution they make to the survival of the species. We assume no purpose in nature, no mind behind the operation of diffusion, mutation, variation, and selection. We may assume that nature is ultimately determined or we can allow for randomness. It makes no difference. Still the body evolves as if it were designed for life and reproduction.

This is the minimal order that structures organic nature, and on this "as if" teleology hangs the priority of function. It is tempting to conceive this "as if" teleology very simply—to imagine that each detail of bodily structure is what it is because of a certain well-defined role it plays in the reproduction of the species. This role is then understood to be its function, and the body is understood as a system of such functions, each related to life and reproduction as means to ends. Eating would be for the sake of living; grasping things would be for eating them; the hand would be for grasping, and so on.

This picture is not wrong; it is merely oversimple. The rough idea of an “as if” teleology simply has to be correct if the theory of natural selection means anything at all, but the order it gives rise to is imperfect for several reasons:

1. An organ may have more than one function. Consider, for example, all the things done by the hand besides grasping (Wright 1973: 141).
2. Because a single genotype can have multiple phenotypical effects (pleiotropism), not all of which need be functional, a physiological structure may be selected without its making any direct contribution to life or reproduction (or even if it is in one respect dysfunctional) simply because it is genetically linked with another organ that makes a contribution significantly greater than any burden imposed by the first. For example, the genotype that gives rise to sickle-cell anemia also confers resistance to malaria (Lewontin 1984: 262).
3. Genetic drift (the isolation of eccentric breeding populations) occasionally allows less functional or even dysfunctional elements to become generalized within a limited sphere for a limited time (Simpson 1958: 15; Lewontin 1984: 263; Gajdusek 1964: 356).
4. The level of selection (DNA molecule, individual, family, or tribe) is not always clear, and so it is not always clear whose survival serves as the ultimate “as if” end (Lewontin, 1970).
5. Selection can operate only relative to a given environment. Consequently, environmental changes confuse the issue of what is to count as an organ’s proper function. In Africa, protection from malaria is much more important than in North America. What then is health for Americans whose blood cells are adapted to an African environment?

The sum total of these considerations complicates the picture significantly, but only by making it harder to discern exactly what an organ’s natural functions are, and by allowing some (presumably minor) structures to arise for which there may be no function. This does not invalidate the basic primacy of function. Structure arises, to be sure, without regard to function, and in that sense function follows form. But a structure remains because of (almost) nothing but its function or its linkage to a function. In the end, normal structure is still almost always derived from normal functioning, and normal functioning is still almost always a means to the supreme function—the life and reproduction of some molecule, individual, group, or species in the appropriate environment. To understand, as best we can, the detailed working out of these matters is to understand, as best we

can, the health of any species. That the matter is complicated and uncertain should not be allowed to obscure the basic primacy of function that is vouchsafed by the naturalistic brackets.

It is worth noting here that while the "as if" teleology is ruthlessly mundane vis-à-vis the goal of reproduction, this need not be discouraging to those with higher aspirations for human physiology. Function need not be narrowly interpreted. Play, for example, obviously makes an indirect contribution to survival and reproduction, but this does not mean that in play one must be thinking about these things. In fact, the more one thinks about them, the less one is playing. One plays for its own sake, and the reproductive benefit just happens somewhere down the line. Because of complex genetic linkages in an individual, and because of the division of labor (function) in social life, even celibacy and homosexuality can (and in some cases probably do) have roles to play in relation to reproduction.¹³ Certainly reason, and probably art and religion, while pursued for their own sakes by some, nevertheless contribute to DNA's hunger for reproduction. In this regard they are no different from sex itself, which, while generally and properly pursued as an end in itself, a form of play, nevertheless admirably serves the goals of nature.¹⁴

From within the naturalizing brackets, life is for the sake of reproduction, but this does not mean that the connection to reproduction of every bodily organ is univocal, direct, universal, or that the activity must have that functional meaning for the consciousness that engages in it. Nevertheless, the relationship to reproduction remains decisive. A healthy organ is still one that does the thing(s) it has been genetically "designed" to do.

What then is the relation of normal structure to normal functioning? Normal structure is selected and maintained by virtue of its close causal connection to normal functioning. Since organic forms are extremely complex and took a great deal of time to evolve, it is unlikely that structural novelties will enhance function. Deviation from the structural norm is thus an excellent indicator of illness, and that presumably is why the bulk of medical practice proceeds by structural comparison. Swellings, bruises, lesions, breaks, gaps, discolorations, and a nearly infinite number of structural deviations constitute the workaday criteria for disease identification. But the same argument shows that structural deviation is not identical to illness. If no functional impairment came from the fat within the arteries, arterial sclerosis would not be an illness but merely a deviant arterial lifestyle. It is an illness *because* the flow of blood is impaired and because this flow is the presumed function of the artery.

To rule all deviation unhealthy would be to commit an act of medical bigotry. When even a novel deviation is fully functional, it is healthy, and

when a deviation has been subjected to evolutionary pressures for a long period of time, it is likely to be functional. Peg teeth among Eskimos, for example, or enlarged lungs among Peruvian Indians constitute such functional adaptations of structure to a specific environment. They are merely new kinds of functionality, not dysfunctionality.

This applies also to the deviations within a breeding population as well as deviations of one population from another. If structural variations within the population correspond to a division of labor that makes the group as a whole more likely to survive, and if the variations are ancient, they are most probably alternative versions of health. Consider, for example, the structural differences by gender in every species, and the differences between the "castes" of bees. There is no reason in principle why such a division of labor might not extend to still smaller groups (groups defined by left-handedness, for example, or variations in size and musculature). But in general, only those deviations that have been selected over a long period of time have much chance of being part of an alternative version of health.

Decisions of this kind should be made solely on grounds of the variation's functionality, with appropriate allowance made for the legitimate possibility of divergent healths. Health is not a mere average physiological condition. But neither should these decisions be made by an equally mechanical toleration of everything. Only a worked out functional hermeneutic of the body as a whole made up of parts and as a part within a social whole can make the appropriate detailed determinations.¹⁵

Pain is the other criterion of illness, and it is certainly our most immediate and pressing awareness of it. A child who breaks his arm is not primarily aware of its dysfunctionality. What he knows is his pain. His tears are a demand for pain relief, and not, at first, a plea for the restoration of function. But he is in pain because he is ill, not ill because he is in pain.

There are no illnesses that do not normally cause some kind of pain (or at least discomfort or excessive effort), and there is almost no bodily pain that does not indicate some kind of illness. This happy correlation of pain and illness has long been noted,¹⁶ and its evolutionary explanation is obvious—were dysfunctionality generally pleasant or normal function painful, the survival potential of the species would be significantly reduced. The painfulness of dysfunctionality is a great motivator towards health, even if, all things considered, one should not care to live or reproduce.

Even this correlation is not perfect, however. Childbirth, which is clearly functional and healthy, is painful, and some illnesses bring with them certain short-term pleasures (delusions of luxury in a man dying of thirst, for example). These (rare) exceptions are important, because they

prevent us from defining health through the simple subjectivity of pleasure and pain. A large, functional and (to some people) unattractive nose is not unhealthy, even if it does cause a certain kind of discomfort. And if someone were painlessly dying we would not think him healthy, even though we might admire his tranquility. In those rare cases where we must define health *either* through function *or* painlessness, as in childbirth, we unhesitatingly choose function. Painlessness is our most immediate and untutored criterion of health, but the two are not identical.

Pain and structure have evolved with function to be the most reliable imaginable symptoms of illness. In practice, it is essential to use them as indices of illness, and these correlations constitute excellent rules of thumb. But still they are only rules of thumb. Within the naturalistic assumption there can be no doubt that function is the lead element—the core meaning of health and illness.

This leaves us with the question of the role of ideology and social needs in the specification of functions. Some functions seem straightforward and utterly uncontroversial—for example, the grasping of the hand—but even here the matter is complicated by the fact that the hand is also for the perception of texture, for caressing, for hitting, for molding, and for many other things, including waving goodbye. Do social values decide which function is most determinative of health? Further, there are organs of which we do not yet know the function, and those about which we have made mistakes. The heart was once considered the seat of thought. Its true function was not understood until the circulation of the blood through the capillary system was accepted. Functions, as previously explained, have to be discovered by complex empirical reasoning that needs to take into account not only all that is known at the time about the interrelations of the organs within the bodily ecology, but also the possibilities of group variation and of a physiological division of labor within groups. Mistakes, sometimes politically or morally motivated, are as possible here as they are in any other matter. But does this mean that social needs can really determine the very meaning of health?

None of these points entails the conclusion that functions are not natural, that they are subject to relatively ephemeral social needs or that they are determinable by mere ideology. It follows only that functions are not always easily known, that many are not known, and that some may never be known. But within the limits of empirical fallibility our mistakes are, in principle, correctable, and where they are not *de facto* correctable, we can still know enough to be aware of our ignorance. That we blunder does not show that health is socially constructed in any important sense of those words. To the contrary, that we sometimes recognize our errors suggests

that a trans-cultural knowledge of controversial bodily functions is a very real possibility.

After the 18th century, masturbation was often held to be a disease, and in the prewar South there was the putative disease of drapetomania that caused slaves to run away from their owners.¹⁷ Without a doubt, social values influenced the "discovery" of these "diseases," but it does not follow from this that they were real diseases.

Masturbation is presumably not an illness, but the fact is that it was not for purely moral reasons that this error was made to begin with. There were crude, nonmoral, mistaken biological reasons for it. It all depends on what one takes the function of the sex organs to be. If it is reproduction, then *prima facie* masturbation seems dysfunctional (as does celibacy). Combine this crude functionalism with a prudish mentality, and you get a ready acceptance of the alleged disease of masturbation. But there is a non-moral, nonpolitical, nonphilosophical reason for the wrongness of this conclusion.

That the sex organs are "for" reproduction does not mean that their proper functioning must always result in reproduction or that they might not have other functions too. Sex organs are also presumably "for" elimination and "for" creating certain kinds of interpersonal bonding.¹⁸ Although masturbation does not fulfill any of those other purposes, neither does it significantly hinder them (contrary to what was once thought). It is not even remotely dysfunctional, and therefore it is not an illness.

In the case of drapetomania, the slaveowner's viewpoint is plausible only if the tendency for slaves to run away is dysfunctional, and that, in turn, is possible only if it were the natural function of the black population to be the slaves of whites. And although racist theories have frequently said such things, there is simply no empirical evidence to back it up. From the cold, morally indifferent viewpoint of natural selection, the enslavement of one race to another could even possibly create a natural function only if the races had evolved together (and not just coexisted) over a very long period of time in a community in which the one was almost invariably the slave of the other. As a matter of historical fact this simply did not happen in the American South (or anywhere else, for that matter, although the caste system of India probably comes the closest). Slavery was forced on African blacks in spite of their natural tendency to take perfectly good care of themselves in their customary environment, and it did not last long enough and was not systematically selective enough to effect a significant genetic change in the population.

We are disposed towards these conclusions by moral considerations, but they are really based on matters of relatively simple fact, interpreted through nothing more than the theory of natural selection. This is not ideal-

ogy. Although one can say that there was a social need in the South for docility as the natural function of blacks, that need did not create a true health function. Natural function and social function are simply not the same thing.

Or consider the even clearer case of the Chinese men who bound and thereby crippled the feet of their women as a sort of sexual ornamentation. If the people of this culture were to claim that the function of a woman's foot was not to run or walk but to please the male sense of domination, can we really say, quite apart from aesthetics and morality, that their judgement was as correct as ours? Obviously there are good reasons for believing that the function of a woman's foot is walking rather than hobbling, reasons that are entirely independent of any moral conception of the equality of the sexes.

A large part of the basic rationale behind these conclusions was made clear by Larry Wright in his 1973 article "Functions." He distinguished between the function of something and "other things that it does which are not its function" (e.g. rapid communication in the case of a telephone vs. its taking up space on the desk, disturbing one at night, etc.; or, the heart's pumping blood vs. its production of a thumping noise or making wiggly lines on electrocardiograms). Wright notes correctly that it is part of the meaning of "function" that in order to call *Y* the function of *X*, we have to believe that "*X* is there because it does *Y*" (Wright 1973, p. 157). This serves neatly to distinguish functions from other things that the object can accidentally do or might be good for. The foot "is there" because it enables locomotion, not because it provides gainful employment for shoemakers. *A fortiori* it distinguishes functions from accidents that are actually dysfunctional, like foot-binding.

But one might pursue the matter further. How do we know that locomotion is the reason for the foot's being there? Might not Chinese men legitimately project their desire onto the universe and claim that women's feet are there because they can be so delightfully bound and thus give pleasure to men? Might not they even appeal to the arguments above and claim that this is a natural division of labor between men and women? This is an empirical question. Again, the answer comes through the theory of natural selection regardless of moral or political considerations. While it is not impossible that a function that aids the survival of the individual (walking, running) could be selected against in order to promote the reproductive good of the species (attracting male suitors by appearing weak and non-threatening), it is not plausible to think so in this case since: (1) the walking function of the foot is older than the entire mammalian order, while the binding custom is a recent, easily eliminated overlay that was confined to certain classes in certain parts of China; and (2) the social group in general would be far less able to survive if half its members make this rather great

sacrifice in mobility merely to attract the same men who would have had to come their way in any case. If the foot grew of itself into the crippled shape, if the custom were spread across all those with a genetic heritage similar to the Chinese, or if the sacrifice of mobility were, all things considered, a more plausibly successful reproductive strategy, then the possibility would be worth thinking about. But as it is, it is interesting only as an extreme-case philosophical example.

More generally put, the recognition in biology that a certain organ "is there because it does *Y*" depends on various factors having to do with the details of evolutionary theory. In addition to those already mentioned, we must list also the appropriateness of the structural details of the organ in relation to its alleged function. One wants as many as possible of its parts to have a clear role to play in relation to the alleged function without useless redundancy.

Given this criterion alone, no neutral observer familiar with even the grosser details of the foot's structure—the multitude of muscles and bones all apparently designed to move in just such a way, to support just such a kind of weight, to bear up under just these conditions and so poorly under others, and familiar also with the utter absence of a single structural detail that makes the foot especially suitable for crippling (a structural weakness that collapses at just about puberty, for example)—no one familiar with all this can be brought to believe that the foot's natural function is to make a woman appear attractive by manifesting her weak, halting, feeble, crippled gait. Of course the feet of women can be used that way, just as watches can be used for target practice and nails can be hammered with a screwdriver, but there is nothing in the internal structure of the foot, the watch, or the screwdriver that makes them especially suitable for these purposes. Thus, these are seen as acts of violence—assaults on the integrity of the functional unit—and they are recognizable as such regardless of our moral predispositions.

For the body, the theory of natural selection is the essential etiological presupposition for the assignment of functions, and it is applied to specifics largely through a physiological/functionalistic study of the relationships of parts to wholes. It is not that we merely see that grasping is a thing the hand factually does. If the assignment of function were crudely empirical in this way, it would be relative to current usage. Factually, the hand also waves goodbye; factually, the foot is bound. But the degree of adaptation of the parts to the socially constructed functions is very low compared to their adaption to grasping and walking, and so, all else being equal, that is their natural function.¹⁹ In problem cases one just keeps on adjusting the interpretation of the parts to the interpretation of the wholes, of the wholes to the parts, and of those wholes to still larger wholes until one comes up with

an explanation that harmonizes everything with everything. By definition, that is truth in matters of this sort. Obviously, it is an ideal we work towards, not a fact that we possess.

This is the hermeneutic of the body, and its working out is the business of biology, at least so far as biology is the ground of medicine. The theory of natural selection is what anchors the entire process. It is the guiding assumption that gives sense and direction to more concrete work. And this of course, is precisely the thing we accept when we agree to work within the naturalizing brackets.

Physical health is thus a natural value. It is given to us, and not in any important sense created by us. In general, it is the same for all people, but there are some differences between groups and some variations within groups. At whatever level we conceive it to operate—species, group, or individual—it is a given. We conform to it or we deviate from it, but we do not make it what we wish it to be. Thus, though it is not timeless, though we are never sure of it, and though we may be quite ignorant of certain specifics, health has some of the characteristics of what gets called an “absolute.”

This is the essential truth of the matter, but it ignores a complicating factor—that all evolution (and, therefore, all right-functioning) is relative to its environment. Once the earth’s atmosphere had no oxygen but consisted of a poisonous (to us) mix of gases. Certain species of life thrived in this primitive atmosphere. For them, oxygen was poisonous. When the atmosphere changed, they were forced either to adapt or die. For creatures in such a shifting environment, real health is impossible. They are simply caught between one adaptation and another—a period of adjustment, as it were, fish out of water. For them, it is a question of doing the best they can.

In such transition periods it is impossible to tell a priori what course of action would be most conducive to health values. There are always two possibilities. The organism can alter itself in order to better fit the new circumstances, or it can alter the circumstances so that doing the things it was “designed” to do will continue to be functional.

When a coal miner refuses to work on the grounds that air saturated with carbon dust makes him ill, or when he insists on making the new environment more like the old (better ventilation), he chooses to change his environment. If he undertakes breathing exercises, diet, or medication as a way of coping, then he opts for altering himself. In this case it is clear enough that it would be best to find another line of work. Doing so returns him to the original environment, and only in that environment is real health possible. But if such a return is out of the question, the decision can be reached only by a cost-benefit analysis in which the total health gain (all

things considered) is weighed against the total health cost. There are no precise rules for making such calculations, and in many cases the relevant medical knowledge simply does not exist. In transition periods, it is simply not clear what health requires.

True health thus presupposes a relatively stable environmental background against which there has been ongoing evolution for many thousands of years. Different natural environments, if they remain stable for a given population for a long enough time, will produce different meanings of physical health for different human groups. These differences are just as natural and just as independent of human will as any other assignment of function by natural selection. They are relative, but to the environment, not to our wishes or conventions. Also, it must be said, the differences are very small compared to what is common. It may be healthy for Eskimos in the arctic to have a somewhat lower body temperature, or for Peruvian Indians to have somewhat larger lungs. But for all of us, the heart pumps blood, the lungs transfer oxygen, the brain thinks and the feet get us from one place to another.

There is a further sort of relativity within the naturalizing assumptions. The natural environment is only part of the background against which human evolution has occurred. We are social animals. Without social life there would be no language, no education, no transfer of technical achievement from one generation to another, and no extensive cooperative activity. Clearly social life is as important to the survival of the human species as are fins to a fish or claws to a lion. Since we survive by intelligence, language and the transfer of knowledge from one generation to the next, and since these are thoroughly social activities, it is clear that sociality is our greatest tool in the effort to survive. Socially, we are the dominant species; as individuals, we are the weakest—naked, defenseless, ignorant—lacking even the instinctive wisdom of animals.

This means that wherever there are human beings there is society. Consequently society must be part of the background against which evolution occurred. If ever there were unsocial creatures that one might want to call "human," we have for so long lived socially and our success as a species is so dependent on society that we must be as adapted to it as is a turtle to its shell (indeed, society *is* our shell). We have lived in some primitive form of it for at least 1.5 million years. We have lived in social forms complex enough to support religion and the transmission of medical knowledge for at least 60,000 years.²⁰ In some stretched sense of the word, we may have once "created" society, but by now society has created us as much as has the natural environment itself. The adaptation to society need not be perfect, but it has most certainly occurred.

Health then is relative to those social structures *that have been stable enough to allow natural selection to work in a single direction over a very long period of time*. From this it follows that the only specific form of social organization to which we are biologically adapted is that of the hunter-gatherer society, the only social form that existed until the invention of agriculture some 12,000 years ago. More or less human hunter-gatherer societies existed for at least 1.5 million years before that, and it was obviously against that primitive social background that the human body evolved and to which it is adapted. All other specific socio-economic and/or political forms (from agriculture to urban life, from feudalism to modern technical industrialism) are newcomers that have arrived too late and (in some cases) departed too soon to make a real change in the definition of health (Farb 1978: 89).

Whenever urban, industrial, capitalist, socialist, or (for that matter) feudal or agrarian society makes demands on us to which we are not adapted, we are caught in the fish-out-of-water syndrome, and in many cases it is simply not clear what health requires. One ought not make too much of this. It *does* mean (again) that we do not always know what health is, and it *does* mean that our adaption is (partly) relative to the social environment. The critical point, however, is to understand that this does not make it relative to whatever social form we happen to find ourselves in. The coal miner, for example, is not a person who would be adapted to breathing clean air if he were born into a hunter-gatherer society or dirty air in an industrial society. The environment against which evolution has occurred for a very, very long time is normative. The newcomers are just problems to be dealt with as best we can.

Whenever therefore questions about the definition of health require for their solution an understanding of social structure, it is not to our own society that we ought to look, but to those of hunter-gatherers. The muscles of men's legs and their general physical structures are adaptations for the purpose (among others) of running down animals. If then one asks how much ability to run is required of us by health, the answer is a great deal more than urban people have any clear use for (which is why running is such a good exercise). The answer to the question of how much meat is healthy to eat is not found by taking an average of contemporary eating styles. In all probability we are adapted to eat about as much meat as hunter-gatherers did. While there is much variation on this matter, the bottom line is that they ate a great deal less meat than we do—not enough less to satisfy vegetarians, but enough to help explain why our diet causes so much illness.²¹

The specific forms of social life change quickly, but evolution is slow, rooted in millions of years of the distant past. It is traditional, and in this sense conservative and inherently nostalgic. The meaning of bodily health

changes very little over vast periods of time. This is often frustrating to progressives who for moral or technical reasons might like to see rapid change. Nonetheless, it seems clearly to be so, and we can expect constant friction between progressives (of the left or right), who take their point of reference from the present, and health values that must inevitably be rooted in the past.

In the end all this means that given the naturalizing assumptions, the body has a functional integrity that is not to be dealt with lightly. Its health is not an absolute in the true sense of that word—a value known for certain and valid for all individuals at all times and places. Health is certainly not a Platonic ideal. It is uncertain, conditioned, and subject to a degree of variation from group to group and individual to individual. Further, in its purest form it can exist only in the original environment and so must be adapted in messy ways to current circumstances. But just as the naturalistic brackets give us an “as if” teleology, so they may be said to give health as a messy sort of “as if” absolute. Despite the element of relativity and uncertainty, within any practically usable time period the meaning of health is still something given, unalterable, more or less knowable, and pretty much the same for all. It is subject to ancient social needs, but not to those of the moment. It is a tattered, empirical ideal, but it is autonomous and natural. It is a reality that simply has to be recognized by our moral, political, and economic agendas.