

## CHAPTER FOURTEEN

### The Normal and the Pathological

#### Introduction to the Problem

[126] To act, it is necessary at least to localize. For example, how do we take action against an earthquake or hurricane? The impetus behind every ontological theory of disease undoubtedly derives from therapeutic need. When we see in every sick man someone whose being has been augmented or diminished, we are somewhat reassured, for what a man has lost can be restored to him, and what has entered him can also leave. We can hope to conquer disease even if doing so is the result of a spell, or magic, or possession; we have only to remember that disease happens to man in order not to lose all hope. Magic brings to drugs and incantation rites innumerable resources stemming from a profoundly intense desire for cure. Henry Ernst Sigerist has noted that Egyptian medicine probably universalized the Eastern experience of parasitic diseases by combining it with the idea of disease-possession: throwing up worms means being restored to health.<sup>23</sup> Disease enters and leaves man as through a door.

A vulgar hierarchy of diseases still exists today, based on the extent to which symptoms can – or cannot – be readily localized, hence Parkinson's disease is more of a disease than thoracic shingles, which is, in turn, more so than boils. Without wishing to detract from the grandeur of Louis Pasteur's tenets, we can say

without hesitation that the germ theory of contagious disease has certainly owed much of its success to the fact that it embodies an ontological representation of sickness. After all, a germ can be seen, even if this requires the complicated mediation of a microscope, stains and cultures, while we would never be able to see a miasma or an influence. To see an entity is already to foresee an action. No one will object to the optimistic character of the theories of infection insofar as their therapeutic application is concerned. But the discovery of toxins and the recognition of the specific and individual pathogenic role of *terrains* have destroyed the beautiful simplicity of a doctrine whose scientific veneer for a long time hid the persistence of a reaction to disease as old as man himself.

If we feel the need to reassure ourselves, it is because one anguish constantly haunts our thoughts; if we delegate the task of restoring the diseased organism to the desired norm to technical means, either magical or matter of fact [*positive*], it is because we expect nothing good from nature itself.

By contrast, Greek medicine, in the Hippocratic writings and practices, offers a conception of disease which is no longer ontological, but dynamic, no longer localizationist, but totalizing. Nature (*physis*), within man as well as without, is harmony and equilibrium. The disturbance of this harmony, of this equilibrium, is called "disease." In this case, disease is not somewhere in man, it is everywhere in him; it is the whole man. External circumstances are the occasion but not the causes. Man's equilibrium consists of four humors, whose fluidity is perfectly suited to sustain variations and oscillations and whose qualities are paired by opposites (hot/cold, wet/dry); the disturbance of these humors causes disease. But disease is not simply disequilibrium or discordance; it is, perhaps most important, an effort on the part of nature to effect a new equilibrium in man. Disease is a general-

ized reaction designed to bring about a cure; the organism develops a disease in order to get well. Therapy must first tolerate and, if necessary, reinforce these hedonic and spontaneously therapeutic reactions. Medical technique imitates natural medicinal action (*vis medicatrix naturae*). To imitate is not merely to copy an appearance but, also, to mimic a tendency and to extend an intimate movement. Of course, such a conception is also optimistic, but here the optimism concerns the way of nature and not the effect of human technique.

Medical thought has never stopped alternating between these two representations of disease, between these two kinds of optimism, always finding some good reason for one or the other attitude in a newly explained pathogenesis. Deficiency diseases and all infectious or parasitic diseases favor the ontological theory, while endocrine disturbances and all diseases beginning with *dis-* support the dynamic or functional theory. However, these two conceptions do have one point in common: in disease, or better, in the experience of being sick, both envision a polemical situation – either a battle between the organism and a foreign substance, or an internal struggle between opposing forces. Disease differs from a state of health, the pathological from the normal, as one quality differs from another, either by the presence or absence of a definite principle, or by an alteration of the total organism. This heterogeneity of normal and pathological states persists today in the naturalist conception, which expects little from human efforts to restore the norm, and in which nature will find the ways toward cure. But it proved difficult to maintain the qualitative modification separating the normal from the pathological in a conception that allows, indeed expects, man to be able to compel nature and bend it to his normative desires. Wasn't it said repeatedly after Bacon's time that one governs nature only by obeying it? To govern disease means to become acquainted

with its relations with the normal state, which the living man – loving life – wants to regain. Hence, the theoretical need, delayed by an absence of technology, to establish a scientific pathology by linking it to physiology. Thomas Sydenham (1624–1689) thought that in order to help a sick man, his sickness had to be delimited and determined. There are disease species just as there are animal or plant species. According to Sydenham, there is an order among diseases similar to the regularity Isidore Geoffroy Saint-Hilaire found among anomalies. Philippe Pinel justified all these attempts at classification of disease (nosology) by perfecting the genre in his *Nosographie philosophique* (1797), which Charles Victor Daremberg described as more the work of a naturalist than a clinician.

Meanwhile, Giovanni Battista Morgagni's (1682–1771) creation of a system of pathological anatomy made it possible to link the lesions of certain organs to groups of stable symptoms, such that nosographical classification found a substratum in anatomical analysis. But just as the followers of William Harvey and Albrecht von Haller "breathed life" into anatomy by turning it into physiology, so pathology became a natural extension of physiology. (Sigerist provides a masterful summary of this evolution of medical ideas.<sup>21</sup>) The end result of this evolutionary process is the formation of a theory of the relations between the normal and the pathological, according to which the pathological phenomena found in living organisms are nothing more than quantitative variations, greater or lesser according to corresponding physiological phenomena. Semantically, the pathological is designated as departing from the normal not so much by *a-* or *dys-* as by *hyper-* or *hypo-*. While retaining the ontological theory's soothing confidence in the possibility of technical conquest of disease, this approach is far from considering health and sickness as qualitatively opposed, or as forces joined in battle. The need to re-establish continuity in order to gain more knowledge for more

effective action is such that the concept of disease would finally vanish. The conviction that one can scientifically restore the norm is such that, in the end, it annuls the pathological. Disease is no longer the object of anguish for the healthy man; it has become instead the object of study for the theorist of health. It is in pathology, writ large, that we can unravel the teachings of health, rather as Plato sought in the institutions of the State the larger and more easily readable equivalent of the virtues and vices of the individual soul. [*The Normal and the Pathological* (NP), pp. 11–13]

## The Identity of the Two States

### *Auguste Comte and the "Broussais Principle"*

[127] It was in 1828 that Auguste Comte took notice of François-Joseph Victor Broussais's treatise *De l'irritation et de la folie* and adopted the principle for his own use. Comte credits Broussais, rather than Xavier Bichat, and before him, Philippe Pinel, with having declared that all diseases acknowledged as such are only symptoms and that disturbances of vital functions could not take place without lesions in organs, or rather, tissues. But above all, adds Comte, "never before had anyone conceived the fundamental relation between pathology and physiology in so direct and satisfying a manner." Broussais described all diseases as consisting essentially "in the excess or lack of excitation in the various tissues above or below the degree established as the norm." Thus, diseases are merely the effects of simple changes in intensity in the action of the stimulants which are indispensable for maintaining health. [NP, pp. 47-48]

[128] The fortieth lecture of the *Cours de philosophie positive* – philosophical reflections on the whole of biology – contains Comte's most complete text on the problem now before us. It is concerned with showing the difficulties inherent in the simple extension of experimental methods, which have proved their

usefulness in the physicochemical sphere, to the particular characteristics of the living:

Any experiment whatever is always designed to uncover the laws by which each determining or modifying influence of a phenomenon affects its performance, and it generally consists in introducing a clear-cut change into each designated condition in order to measure directly the corresponding variation of the phenomenon itself.<sup>24</sup>

Now, in biology the variation imposed on one or several of a phenomenon's conditions of existence cannot be random but must be contained within certain limits compatible with the phenomenon's existence. Furthermore, the fact of functional *consensus* proper to the organism precludes monitoring the relation, which links a determined disturbance to its supposedly exclusive effects, with sufficient analytical precision. But, thinks Comte, if we readily admit that the essence of experimentation lies not in the researcher's artificial intervention in the system of a phenomenon which he intentionally tends to disturb, but rather in the comparison between a control phenomenon and one altered with respect to any one of its conditions of existence, it follows that diseases must be able to function for the scientists as spontaneous experiments which allow a comparison to be made between an organism's various abnormal states and its normal state.

According to the eminently philosophical principle which will serve from now on as a direct, general basis for positive pathology and whose definitive establishment we owe to the bold and persevering genius of our famous fellow citizen, Broussais, the pathological state is not at all radically different from the physiological state, with regard to which – no matter how one looks at it – it can only constitute a simple extension going more or less beyond the higher or

lower limits of variation proper to each phenomenon of the normal organism, without ever being able to produce really new phenomena which would have to a certain degree any purely physiological analogues.<sup>25</sup>

Consequently every conception of pathology must be based on prior knowledge of the corresponding normal state, but conversely the scientific study of pathological cases becomes an indispensable phase in the overall search for the laws of the normal state. The observation of pathological cases offers numerous, genuine advantages for actual experimental investigation. The transition from the normal to the abnormal is slower and more natural in the case of illness, and the return to normal, when it takes place, spontaneously furnishes a verifying counterproof. In addition, as far as man is concerned, pathological investigation is more fruitful than the necessarily limited experimental exploration. The scientific study of morbid states is essentially valid for all organisms, even plant life, and is particularly suited to the most complex and therefore the most delicate and fragile phenomena which direct experimentation, being too brusque a disturbance, would tend to distort. Here Comte was thinking of vital phenomena related to the higher animals and man, of the nervous and psychic functions. Finally, the study of anomalies and monstrosities conceived as both older and less curable illnesses than the functional disturbances of various plant or neuromotor apparatuses completes the study of diseases: the "teratological approach" (the study of monsters) is added to the "pathological approach" in biological investigation.<sup>26</sup>

It is appropriate to note, first, the particularly abstract quality of this thesis and the absence throughout of any precise example of a medical nature to suitably illustrate his literal exposition. Since we cannot relate these general propositions to any example,

we do not know from what vantage point Comte states that the pathological phenomenon always has its analogue in a physiological phenomenon, and that it is nothing radically new. How is a sclerotic artery analogous to a normal one, or an asystolic heart identical to that of an athlete at the height of his powers? Undoubtedly, we are meant to understand that the laws of vital phenomena are the same for both disease and health. But then why not say so and give examples? And even then, does this not imply that analogous effects are determined in health and disease by analogous mechanisms? We should think about this example given by Sigerist: "During digestion the number of white blood cells increases. The same is true at the onset of infection. Consequently this phenomenon is sometimes physiological, sometimes pathological, depending on what causes it."<sup>27</sup>

Second, it should be pointed out that despite the reciprocal nature of the clarification achieved through the comparison of the normal with the pathological and the assimilation of the pathological and the normal, Comte insists repeatedly on the necessity of determining the normal and its true limits of variation first, before methodically investigating pathological cases. Strictly speaking, knowledge of normal phenomena, based solely on observation, is both possible and necessary without knowledge of disease, particularly based on experimentation. But we are presented with a serious gap in that Comte provides no criterion which would allow us to know what a normal phenomenon is. We are left to conclude that on this point he is referring to the usual corresponding concept, given the fact that he uses the notions of normal state, physiological state and natural state interchangeably.<sup>28</sup> Better still, when it comes to defining the limits of pathological or experimental disturbances compatible with the existence of organisms, Comte identifies these limits with those of a "harmony of distinct influences, those exterior

as well as interior"<sup>29</sup> – with the result that the concept of the normal or physiological, finally clarified by this concept of *harmony*, amounts to a qualitative and polyvalent concept, still more aesthetic and moral than scientific.

As far as the assertion of identity of the normal phenomenon and the corresponding pathological phenomenon is concerned, it is equally clear that Comte's intention is to deny the qualitative difference between these two admitted by the vitalists. Logically to deny a qualitative difference must lead to asserting a homogeneity capable of expression in quantitative terms. Comte is undoubtedly heading toward this when he defines pathology as a "simple extension going more or less beyond the higher or lower limits of variation proper to each phenomenon of the normal organism." But in the end it must be recognized that the terms used here, although only vaguely and loosely quantitative, still have a qualitative ring to them. [NP, pp. 19-21]

#### *Claude Bernard and Experimental Pathology*

[129] In Bernard's work, the real identity – should one say in mechanisms or symptoms or both? – and continuity of pathological phenomena and the corresponding physiological phenomena are more a monotonous repetition than a theme. This assertion is to be found in the *Leçons de physiologie expérimentale appliquée à la médecine* (1855), especially in the second and twenty-second lectures of Volume Two, and in the *Leçons sur la chaleur animale* (1876). We prefer to choose the *Leçons sur le diabète et la glycogénèse animale* (1877) as the basic text, which, of all Bernard's works, can be considered the one especially devoted to illustrating the theory, the one where clinical and experimental facts are presented at least as much for the "moral" of a methodological and philosophical order which can be drawn from it as for their intrinsic physiological meaning.

Bernard considered medicine as the science of diseases, physiology as the science of life. In the sciences it is theory which illuminates and dominates practice. Rational therapeutics can be sustained only by a scientific pathology, and a scientific pathology must be based on physiological science. Diabetes is one disease which poses problems whose solution proves the preceding thesis. "Common sense shows that if we are thoroughly acquainted with a physiological phenomenon, we should be in a position to account for all the disturbances to which it is susceptible in the pathological state: physiology and pathology are intermingled and are essentially one and the same thing."<sup>30</sup> Diabetes is a disease that consists solely and entirely in the disorder of a normal function. "Every disease has a corresponding normal function of which it is only the disturbed, exaggerated, diminished or obliterated expression. If we are unable to explain all manifestations of disease today, it is because physiology is not yet sufficiently advanced and there are still many normal functions unknown to us."<sup>31</sup> In this, Bernard was opposed to many physiologists of his day, according to whom disease was an extraphysiological entity, superimposed on the organism. The study of diabetes no longer allowed such an opinion.

In effect, diabetes is characterized by the following symptoms: polyuria, polydipsia, polyphagia, autophagia and glycosuria. Strictly speaking, none of these symptoms represents a new phenomenon, unknown to the normal state, nor is any a spontaneous production of nature. On the contrary, all of them preexist, save for their intensity, which varies in the normal state and in the diseased state.<sup>32</sup>

Briefly, we know that Bernard's genius lies in the fact that he showed that the sugar found in an animal organism is a product of this same organism and not just something introduced from the

plant world through its feeding; that blood normally contains sugar, and that urinary sugar is a product generally eliminated by the kidneys when the rate of glycemia reaches a certain threshold. In other words, glycemia is a constant phenomenon independent of food intake to such an extent that it is the absence of blood sugar that is abnormal, and glycosuria is the consequence of glycemia which has risen above a certain quantity, serving as a threshold. In a diabetic, glycemia is not in itself a pathological phenomenon – it is so only in terms of its quantity; in itself, glycemia is a "normal and constant phenomenon in a healthy organism."<sup>33</sup>

There is only one glycemia, it is constant, permanent, both during diabetes and outside that morbid state. Only it has degrees: glycemia below 3 to 4 percent does not lead to glycosuria; but above that level glycosuria results. . . . It is impossible to perceive the transition from the normal to the pathological state, and no problem shows better than diabetes the intimate fusion of physiology and pathology.<sup>34</sup>

[NP, pp. 30-32]

[130] Claude Bernard, unlike Broussais and Comte, supported his general principle of pathology with verifiable arguments, protocols of experiments and, above all, methods for quantifying physiological concepts. Glycogenesis, glycemia, glycosuria, combustion of food, heat from vasodilatation are not qualitative concepts but the summaries of results obtained in terms of measurement. From here on we know exactly what is meant when it is claimed that disease is the exaggerated or diminished expression of a normal function. Or at least we have the means to know it, for in spite of Bernard's undeniable progress in logical precision, his thought is not entirely free from ambiguity.

First of all, with Bernard as with Bichat, Broussais and Comte, there is a deceptive mingling of quantitative and qualitative con-

cepts in the given definition of pathological phenomena. Sometimes the pathological state is "the disturbance of a normal mechanism consisting in a quantitative variation, an exaggeration or attenuation of normal phenomena,"<sup>35</sup> sometimes the diseased state is made up of "the exaggeration, disproportion, discordance of normal phenomena."<sup>36</sup> Who doesn't see that the term "exaggeration" has a distinctly quantitative sense in the first definition and a rather qualitative one in the second. Did Bernard believe that he was eradicating the qualitative value of the term "pathological" by substituting for it the terms disturbance, disproportion, discordance?

This ambiguity is certainly instructive in that it reveals that the problem itself persists at the heart of the solution presumably given to it. And the problem is the following: Is the concept of disease a concept of an objective reality accessible to quantitative scientific knowledge? Is the difference in value, which the living being establishes between his normal life and his pathological life, an illusory appearance that the scientist has the legitimate obligation to deny? If this annulling of a qualitative contrast is theoretically possible, it is clear that it is legitimate; if it is not possible, the question of its legitimacy is superfluous. [NP, pp. 35-36]

[131] By way of summary, in the medical domain, Claude Bernard, with the authority of every innovator who proves movement by marching, formulated the profound need of an era that believed in the omnipotence of a technology founded on science, and which felt comfortable in life in spite, or perhaps because of, romantic lamentations. An art of living – as medicine is in the full sense of the word – implies a science of life. Efficient therapeutics assumes experimental pathology, which in turn cannot be separated from physiology. "Physiology and pathology are identical, one and the same thing." But must it be deduced from this, with brutal simplicity, that life is the same in health and disease,

that it learns nothing in disease and through it? The science of opposites is one, said Aristotle. Must it be concluded from this that opposites are not opposites? That the science of life should take so-called normal and so-called pathological phenomena as objects of the same theoretical importance, susceptible of reciprocal clarification in order to make itself fit to meet the totality of the vicissitudes of life in all its aspects, is more urgent than legitimate. This does not mean that pathology is nothing other than physiology, and still less that disease, as it relates to the normal state, represents only an increase or a reduction. It is understood that medicine needs an objective pathology, but research which causes its object to vanish is not objective. One can deny that disease is a kind of violation of the organism and consider it as an event that the organism creates through some trick of its permanent functions, without denying that the trick is new. An organism's behavior can be in continuity with previous behaviors and still be another behavior. The progressiveness of an advent does not exclude the originality of an event. The fact that a pathological symptom, considered by itself, expresses the hyperactivity of a function whose product is exactly identical with the product of the same function in so-called normal conditions, does not mean that an organic disturbance, conceived as another aspect of the whole of functional totality and not as a summary of symptoms, is not a new mode of behavior for the organism relative to its environment.

In the final analysis, would it not be appropriate to say that the pathological can be distinguished as such, that is, as an alteration of the normal state, only at the level of organic totality, and when it concerns man, at the level of conscious individual totality, where disease becomes a kind of evil? To be sick means that a man really lives another life, even in the biological sense of the word. [NP, pp. 86-88]



## Implications and Counterpositions

### *Life as a Normative Activity*

[132] First of all there emerges from this theory the conviction of rationalist optimism that evil has no reality. What distinguishes nineteenth-century medicine (particularly before the era of Louis Pasteur) in relation to the medicine of earlier centuries is its resolutely monist character. Eighteenth-century medicine, despite the efforts of the iatromechanists and iatrochemists, and under the influence of the animists and vitalists, remained a dualist medicine, a medical Manichaeism. Health and Disease fought over Man the way Good and Evil fought over the World. It is with a great deal of intellectual satisfaction that we take up the following passage in a history of medicine:

Paracelsus was a visionary, [Jean Baptiste] van Helmont, a mystic, [Georg Ernst] Stahl, a pietist. All three were innovative geniuses but were influenced by their environment and by inherited traditions. What makes appreciation of the reform doctrines of these three great men very hard is the extreme difficulty one experiences in trying to separate their scientific from their religious beliefs. . . . It is not at all certain that Paracelsus did not believe that he had found the elixir of life; it is certain that van Helmont identified health with

salvation and sickness with sin; and in his account of *Theoria medica vera* Stahl himself, despite his intellectual vigor, availed himself more than he needed to of the belief in original sin and the fall of man.<sup>37</sup>

More than he needed to! says the author, quite the admirer of Broussais, sworn enemy at the dawn of the nineteenth century of all medical ontology. The denial of an ontological conception of disease, a negative corollary of the assertion of a quantitative identity between the normal and the pathological, is first, perhaps, the deeper refusal to confirm evil. It certainly cannot be denied that a scientific therapeutics is superior to a magical or mystical one. It is certain that knowledge is better than ignorance when action is required, and in this sense the value of the philosophy of the Enlightenment and of positivism, even scientistic, is indisputable. It would not be a question of exempting doctors from the study of physiology and pharmacology. It is very important not to identify disease with either sin or the devil. But it does not follow from the fact that evil is not a being that it is a concept devoid of meaning; it does not follow that there are no negative values, even among vital values; it does not follow that the pathological state is essentially nothing other than the normal state. [NP, pp. 103-104]

[133] It is true that in medicine the normal state of the human body is the state one wants to reestablish. But is it because therapeutics aims at this state as a good goal to obtain that it is called normal, or is it because the interested party, that is, the sick man, considers it normal that therapeutics aims at it? We hold the second statement to be true. We think that medicine exists as the art of life because the living human being himself calls certain dreaded states or behaviors pathological (hence requiring avoidance or correction) relative to the dynamic polarity of life, in the form of a negative value. We think that in doing this the living

human being, in a more or less lucid way, extends a spontaneous effort, peculiar to life, to struggle against that which obstructs its preservation and development taken as norms. The entry in the *Vocabulaire philosophique* seems to assume that value can be attributed to a biological fact only by "him who speaks," obviously a man. We, on the other hand, think that the fact that a living man reacts to a lesion, infection, functional anarchy by means of a disease expresses the fundamental fact that life is not indifferent to the conditions in which it is possible, that life is polarity and thereby even an unconscious position of value; in short, life is in fact a normative activity. Normative, in philosophy, means every judgment which evaluates or qualifies a fact in relation to a norm, but this mode of judgment is essentially subordinate to that which establishes norms. Normative, in the fullest sense of the word, is that which establishes norms. And it is in this sense that we plan to talk about biological normativity. We think that we are as careful as anyone as far as the tendency to fall into anthropomorphism is concerned. We do not ascribe a human content to vital norms but we do ask ourselves how normativity essential to human consciousness would be explained if it did not in some way exist in embryo in life. We ask ourselves how a human need for therapeutics would have engendered a medicine which is increasingly clairvoyant with regard to the conditions of disease if life's struggle against the innumerable dangers threatening it were not a permanent and essential vital need. From the sociological point of view, it can be shown that therapeutics was first a religious, magical activity, but this does not negate the fact that therapeutic need is a vital need, which, even in lower living organisms (with respect to vertebrate structure) arouses reactions of hedonic value or self-healing or self-restoring behaviors. [NP, pp. 126-27]

### *Pathology as the Basis of Physiology*

[134] Conversely, the theory in question conveys the humanist conviction that man's action on his environment and on himself can and must become completely one with his knowledge of the environment and man; it must be normally only the application of a previously instituted science. Looking at the *Leçons sur le diabète* it is obvious that if one asserts the real homogeneity and continuity of the normal and the pathological it is in order to establish a physiological science that would govern therapeutic activity by means of the intermediary of pathology. Here the fact that human consciousness experiences occasions of new growth and theoretical progress in its domain of nontheoretical, pragmatic and technical activity is not appreciated. To deny technology a value all its own outside of the knowledge it succeeds in incorporating is to render unintelligible the irregular way of the progress of knowledge and to miss that overtaking of science by the power that the positivists have so often stated while they deplored it. If technology's rashness, unmindful of the obstacles to be encountered, did not constantly anticipate the prudence of codified knowledge, the number of scientific problems to resolve, which are surprises after having been setbacks, would be far fewer. Here is the truth that remains in empiricism, the philosophy of intellectual adventure, which an experimental method, rather too tempted (by reaction) to rationalize itself, failed to recognize. [...]

Here again, we owe to the chance of bibliographical research the intellectual pleasure of stating once more that the most apparently paradoxical theses also have their tradition which undoubtedly expresses their permanent logical necessity. Just when Broussais was lending his authority to the theory which established physiological medicine, this same theory was provoking the objections of an obscure physician, one Dr. Victor Prus, who was

rewarded by the Société de Médecine du Gard in 1821 for a report entered in a competition whose object was the precise definition of the terms "phlegmasia" and "irritation" and their importance for practical medicine. After having challenged the idea that physiology by itself forms the natural foundation of medicine; that it alone can ever establish the knowledge of symptoms, their relationships and their value; that pathological anatomy can ever be deduced from the knowledge of normal phenomena; that the prognosis of diseases derives from the knowledge of physiological laws, the author adds:

If we want to exhaust the question dealt with in this article we would have to show that *physiology, far from being the foundation of pathology, could only arise in opposition to it*. It is through the changes which the disease of an organ and sometimes the complete suspension of its activity transmit to its functions that we learn the organ's use and importance. . . . Hence an exostosis, by compressing and paralyzing the optic nerve, the brachial nerves, and the spinal cord, shows us their usual destination. Broussonnet lost his memory of substantive words; at his death an abscess was found in the anterior part of his brain and one was led to believe that that is the center for the memory of names. . . . Thus pathology, aided by pathological anatomy, has created physiology; every day pathology clears up physiology's former errors and aids its progress.<sup>38</sup>

[NP, pp. 104-107]

[135] There are some thinkers whose horror of finalism leads them to reject even the Darwinian idea of selection by the environment and struggle for existence because of both the term "selection," obviously of human and technological import, and the idea of advantage, which comes into the explanation of the mechanism of natural selection. They point out that most living

beings are killed by the environment long before the inequalities they can produce even have a chance to be of use to them because it kills above all sprouts, embryos or the young. But as Georges Teissier has observed, the fact that many organisms die before their inequalities serve them does not mean that the presentation of inequalities is biologically indifferent.<sup>39</sup> This is precisely the one fact we ask to be granted. There is no biological indifference, and consequently we can speak of biological normativity. There are healthy biological norms and there are pathological norms, and the second are not the same as the first.

We did not refer to the theory of natural selection unintentionally. We want to draw attention to the fact that what is true of the expression "natural selection" is also true of the old expression *vis medicatrix naturae*. Selection and medicine are biological techniques practiced deliberately and more or less rationally by man. When we speak of natural selection or natural medicinal activity we are victims of what Henri Bergson calls the "illusion of retroactivity" if we imagine that vital prehuman activity pursues goals and utilizes means comparable to those of men. But it is one thing to think that natural selection would utilize anything that resembles *pedigrees*, and *vis medicatrix*, cupping glasses and another to think that human technique extends vital impulses, at whose service it tries to place systematic knowledge which would deliver them from much of life's costly trial and error.

The expressions "natural selection" and "natural medicinal activity" have one drawback in that they seem to set vital techniques within the framework of human techniques when it is the opposite that seems true. All human technique, including that of life, is set within life, that is, within an activity of information and assimilation of material. It is not because human technique is normative that vital technique is judged such by comparison.

Because life is activity of information and assimilation, it is the root of all technical activity. In short, we speak of natural medicine in quite a retroactive and, in one sense, mistaken way, but even if we were to assume that we have no right to speak of it, we are still free to think that no living being would have ever developed medical technique if the life within him – as within every living thing – were indifferent to the conditions it met with, if life were not a form of reactivity polarized to the variations of the environment in which it develops. This was seen very well by Emile Guyénot:

It is a fact that the organism has an aggregate of properties which belong to it alone, thanks to which it withstands multiple destructive forces. Without these defensive reactions, life would be rapidly extinguished. . . . The living being is able to find instantaneously the reaction which is useful vis-à-vis substances with which neither it nor its kind has ever had contact. The organism is an incomparable chemist. It is the first among physicians. The fluctuations of the environment are almost always a menace to its existence. [...] The living being could not survive if it did not possess certain essential properties. Every injury would be fatal if tissues were incapable of forming scars and blood incapable of clotting.<sup>40</sup>

By way of summary, we think it very instructive to consider the meaning that the word "normal" assumes in medicine, and the fact that the concept's ambiguity, pointed out by André Lalande, is greatly clarified by this, with a quite general significance for the problem of the normal. It is life itself and not medical judgment that makes the biological normal a concept of value and not a concept of statistical reality. For the physician, life is not an object but, rather, a polarized activity whose spontaneous effort of defense and struggle against all that is of negative value is ex-

tended by medicine by bringing to bear the relative but indispensable light of human science. [NP, pp. 129-31]

### *Nature Is the End Point of a Teleological Process*

[136] In writing the *Introduction à l'étude de la médecine expérimentale*, Claude Bernard set out to assert not only that efficacious action is the same as science, but also, and analogously, that science is identical with the discovery of the laws of phenomena. On this point his agreement with Comte is total. What Comte in his philosophical biology calls the doctrine of the conditions of existence, Bernard calls "determinism." He flatters himself with having been the first to introduce that term into scientific French. "I believe I am the first to have introduced this word to science, but it has been used by philosophers in another sense. It will be useful to determine the meaning of this word in a book which I plan to write: *Du déterminisme dans les sciences*. This will amount to a second edition of my *Introduction à la médecine expérimentale*."<sup>41</sup> It is faith in the universal validity of the determinist postulate which is asserted by the principle "physiology and pathology are one and the same thing." At the very time that pathology was saddled with prescientific concepts, there was a physical chemical physiology which met the demands of scientific knowledge, that is, a physiology of quantitative laws verified by experimentation. Understandably, early-nineteenth-century physicians, justifiably eager for an effective, rational pathology, saw in physiology the prospective model which came closest to their ideal. "Science rejects the *indeterminate*, and in medicine, when opinions are based on medical palpation, inspiration, or a more or less vague intuition about things, we are outside of science and are given the example of this medicine of fantasy, capable of presenting the gravest perils as it delivers the health and lives of sick men to the whims of an inspired ignoramus."<sup>42</sup> But just because,

of the two – physiology and pathology – only the first involved laws and postulated the determinism of its object, it was not necessary to conclude that, given the legitimate desire for a rational pathology, the laws and determinism of pathological facts are the same laws and determinism of physiological facts. We know the antecedents of this point of doctrine from Bernard himself. In the lecture devoted to the life and works of François Magendie at the beginning of the *Leçons sur les substances toxiques et médicamenteuses* (1857), Bernard tells us that the teacher whose chair he occupies and whose teaching he continues "drew the feeling of real science" from the illustrious Pierre-Simon Laplace. We know that Laplace had been Antoine-Laurent Lavoisier's collaborator in the research on animal respiration and animal heat, the first brilliant success in research on the laws of biological phenomena following the experimental and measuring methods endorsed by physics and chemistry. As a result of this work, Laplace had retained a distinct taste for physiology and he supported Magendie. If Laplace never used the term "determinism," he is one of its spiritual fathers and, at least in France, an authoritative and authorized father of the doctrine designated by the term. For Laplace, determinism is not a methodological requirement, a normative research postulate sufficiently flexible to prejudice in any way the form of the results to which it leads: it is reality itself, complete, cast *ne varietur* in the framework of Newtonian and Laplacian mechanics. Determinism can be conceived as being *open* to incessant corrections of the formulae of laws and the concepts they link together, or as being *closed* on its own assumed definitive content. Laplace constructed the theory of closed determinism. Claude Bernard did not conceive of it in any other way, and this is undoubtedly why he did not believe that the collaboration of pathology and physiology could lead to a progressive rectification of physiological concepts. It is appropriate here to recall Alfred

North Whitehead's dictum: "Every special science has to assume results from other sciences. For example, biology presupposes physics. It will usually be the case that these loans really belong to the state of science thirty or forty years earlier. The presuppositions of the physics of my boyhood are today powerful influences in the mentality of physiologists."<sup>43</sup> [NP, pp. 107-109]

[137] The dynamic polarity of life and the normativity it expresses account for an epistemological fact of whose important significance Xavier Bichat was fully aware. Biological pathology exists but there is no physical or chemical or mechanical pathology:

There are two things in the phenomena of life: (1) the state of health; (2) the state of disease, and from these two distinct sciences derive: physiology, which concerns itself with the phenomena of the first state, pathology, with those of the second. The history of phenomena in which vital forces have their natural form leads us, consequently, to the history of phenomena where these forces are changed. Now, in the physical sciences only the first history exists, never the second. Physiology is to the movement of living bodies what astronomy, dynamics, hydraulics, hydrostatics and so forth are to inert ones: these last have no science at all that corresponds to them as pathology corresponds to the first. For the same reason, the whole idea of medication is distasteful to the physical sciences. Any medication aims at restoring certain properties to their natural type: as physical properties never lose this type, they do not need to be restored to it. Nothing in the physical sciences corresponds to what is therapeutics in the physiological sciences.<sup>44</sup>

It is clear from this text that natural type must be taken in the sense of normal type. For Bichat, the natural is not the effect of a determinism, but the term of a finality. And we know well everything that can be found wrong in such a text from the view-

point of a mechanist or materialist biology. One might say that long ago Aristotle believed in a pathological mechanics, since he admitted two kinds of movements: natural movements, through which a body regains its proper place where it thrives at rest, as a stone goes down to the ground, and fire, up to the sky; and violent movements, by which a body is pushed from its proper place, as when a stone is thrown in the air. It can be said that, with Galileo and Descartes, progress in knowledge of the physical world consisted in considering all movements as natural, that is, as conforming to the laws of nature, and that likewise progress in biological knowledge consisted in unifying the laws of natural life and pathological life. It is precisely this unification that Auguste Comte dreamed of and Claude Bernard flattered himself with having accomplished, as was seen above. To the reservations that I felt obliged to set forth at that time, let me add this. In establishing the science of movement on the principle of inertia, modern mechanics in effect made the distinction between natural and violent movements absurd, as inertia is precisely an indifference with respect to directions and variations in movement. Life is far removed from such an indifference to the conditions which are made for it; life is polarity. The simplest biological nutritive system of assimilation and excretion expresses a polarity. When the wastes of digestion are no longer excreted by the organism and congest or poison the internal environment, this is all indeed according to law (physical, chemical and so on), but none of this follows the norm, which is the activity of the organism itself. This is the simple fact that I want to point out when we speak of biological normativity. [NP, pp. 127-28]

*The Normal and the Pathological as Qualitative Contrast*

[138] Finally, as a result of the determinist postulate, it is the reduction of quality to quantity which is implied by the essential

identity of physiology and pathology. To reduce the difference between a healthy man and a diabetic to a quantitative difference of the amount of glucose within the body, to delegate the task of distinguishing one who is diabetic from one who is not to a renal threshold conceived simply as a quantitative difference of level, means obeying the spirit of the physical sciences which, in buttressing phenomena with laws, can explain them only in terms of their reduction to a common measure. In order to introduce terms into the relationships of composition and dependence, the homogeneity of these terms should be obtained first. As Emile Meyerson has shown, the human spirit attained knowledge by identifying reality and quantity. But it should be remembered that, though scientific knowledge invalidates qualities, which it makes appear illusory, for all that, it does not annul them. Quantity is quality denied, but not quality suppressed. The qualitative variety of simple lights, perceived as colors by the human eye, is reduced by science to the quantitative difference of wavelengths, but the qualitative variety still persists in the form of quantitative differences in the calculation of wavelengths. Hegel maintains that by its growth or diminution, quantity changes into quality. This would be perfectly inconceivable if a relation to quality did not still persist in the negated quality which is called quantity.<sup>45</sup>

From this point of view, it is completely illegitimate to maintain that the pathological state is really and simply a greater or lesser variation of the physiological state. Either this physiological state is conceived as having one quality and value for the living man, and so it is absurd to extend that value, identical to itself in its variations, to a state called pathological whose value and quantity are to be differentiated from and essentially contrasted with the first. Or what is understood as the physiological state is a simple summary of quantities, without biological value, a simple fact or system of physical and chemical facts, but as this state

has no vital quality, it cannot be called healthy or normal or physiological. Normal and pathological have no meaning on a scale where the biological object is reduced to colloidal equilibria and ionized solutions. In studying a state that he describes as physiological, the physiologist qualifies it as such, even unconsciously; he considers this state as positively qualified by and for the living being. Now this qualified physiological state is not, as such, what is extended, identically to itself, to another state capable of assuming, inexplicably, the quality of morbidity.

Of course, this is not to say that an analysis of the conditions or products of pathological functions will not give the chemist or physiologist numerical results comparable to those obtained in a way consistent with the terms of the same analyses concerning the corresponding, so-called physiological functions. But it is arguable whether the terms "more" and "less," once they enter the definition of the pathological as a quantitative variation of the normal, have a purely quantitative meaning. Also arguable is the logical coherence of Bernard's principle: "The disturbance of a normal mechanism, consisting in a quantitative variation, an exaggeration, or an attenuation, constitutes the pathological state." As has been pointed out in connection with François-Joseph Victor Broussais's ideas, in the order of physiological functions and needs, one speaks of more and less in relation to a norm. For example, the hydration of tissues is a fact that can be expressed in terms of more and less; so is the percentage of calcium in blood. These quantitatively different results would have no quality, no value in a laboratory, if the laboratory had no relationship with a hospital or clinic where the results take on the value or not of uremia, the value or not of tetanus. Because physiology stands at the crossroads of the laboratory and the clinic, two points of view about biological phenomena are adopted there, but this does not mean that they can be interchanged. The substitu-

tion of quantitative progression for qualitative contrast in no way annuls this opposition. It always remains at the back of the mind of those who have chosen to adopt the theoretical and metric point of view. When we say that health and disease are linked by all the intermediaries, and when this continuity is converted into homogeneity, we forget that the difference continues to manifest itself at the extreme, without which the intermediaries could in no way play their mediating role; no doubt unconsciously, but wrongly, we confuse the abstract calculation of identities and the concrete appreciation of differences. [NP, pp. 110-12]

## Normality and Normativity

### *The Value of Norms*

[139] The state of any living thing in a given situation is, in general, always normal. Henri Bergson says there is no such thing as disorder; rather, there are two orders, one of which is substituted for the other without our knowledge and to our dismay. Similarly, we ought to say that there is no such thing as *abnormal*, if by the term we mean merely the absence of a previous positive condition or state. From the biological, social and psychological points of view, a pathological state is never a state without norms – such a thing is impossible. Wherever there is *life* there are norms. Life is a polarized activity, a dynamic polarity, and that in itself is enough to establish norms. The normal is therefore a universal category of life. Hence, it is by no means nonsensical to call the pathological “normal.” But that is not grounds for denying the distinctiveness of the pathological, or for arguing that in biology the normal and the pathological are, but for minor quantitative differences, identical. The normal should not be opposed to the pathological, because under certain conditions and in its own way, the pathological is normal. There is a necessary contrast between health and disease. Health is more than normality; in simple terms, it is normativity. Behind all apparent normality,



one must look to see if it is capable of tolerating infractions of the norm, of overcoming contradictions, of dealing with conflicts. Any normality open to possible future correction is authentic normativity, or health. Any normality limited to maintaining itself, hostile to any variation in the themes that express it, and incapable of adapting to new situations is a normality devoid of normative intention. When confronted with any apparently normal situation, it is therefore important to ask whether the norms that it embodies are creative norms, norms with a forward thrust, or, on the contrary, conservative norms, norms whose thrust is toward the past. [MS *Normalité et normativité*, f. 1r]

### *Normality and Species*

[140] In the biology of species, the problem of the normal and the pathological arises in connection with the problem of variations. Is an anomalous individual, that is, an individual in some respect at variance with a defined statistical type, a sick individual or a biological innovation? Is a fruit fly with no wings, or vestigial wings, sick? Biologists hostile to evolution or skeptical of mutationist explanations insist that mutations are recessive, often subpathological, and sometimes lethal. If, however, one holds that biological normality is determined by the interaction between structures and behaviors, on the one hand, and environmental conditions, on the other, there are ways of distinguishing (if not instantaneously at least retroactively) between the pathological normal and the normative normal. Phillipe L'Héritier and Georges Teissier's experiments on wingless drosophila, for example, proved the superiority of that variety in a drafty environment. [MS *Normalité et normativité*, f. 2r]

[141] Teissier reports another fact which shows that life, perhaps without looking for it, by using the variation of living forms, obtains a kind of insurance against excessive specialization without

reversibility, hence without flexibility, which is essentially a successful adaptation. In certain industrial districts in Germany and England the gradual disappearance of gray butterflies and the appearance of black ones of the same species has been observed. It was possible to establish that in these butterflies the black coloration was accompanied by an unusual vigor. In captivity the blacks eliminate the grays. Why isn't the same true in nature? Because their color stands out more against the bark of the trees and attracts the attention of birds. When the number of birds diminishes in industrial regions, butterflies can be black with impunity.<sup>46</sup>

In short, this butterfly species, in the form of varieties, offers two combinations of opposing characteristics, and they balance each other: more vigor is balanced by less security and vice versa. In each of the variations, an obstacle has been circumvented, to use a Bergsonian expression, a powerlessness has been overcome. To the extent that circumstances allow one such morphological solution to operate in preference to another, the number of representatives of each variety varies, and a variety tends more and more toward a species. [...]

Hence, finally, we see how an anomaly, particularly a mutation, that is, a directly hereditary anomaly, is not *pathological* because it is an anomaly, that is, a divergence from a specific type, which is defined as a group of the most frequent characteristics in their average dimension. Otherwise, it would have to be said that a mutant individual, as the point of departure for a new species, is both pathological, because it is a divergence, and normal, because it maintains itself and reproduces. In biology, the normal is not so much the old as the new form, if it finds conditions of existence in which it will appear normative, that is, displacing all withered, obsolete and perhaps soon to be extinct forms.

No fact termed normal, because expressed as such, can usurp the prestige of the norm of which it is the expression, start-

ing from the moment when the conditions in which it has been referred to the norm are no longer given. There is no fact that is normal or pathological in itself. An anomaly or a mutation is not in itself pathological. These two express other possible norms of life. If these norms are inferior to specific earlier norms in terms of stability, fecundity, or variability of life, they will be called pathological. If these norms in the same environment should turn out to be equivalent, or in another environment, superior, they will be called normal. Their normality will come to them from their normativity. The pathological is not the absence of a biological norm; it is another norm, but one that is, comparatively speaking, pushed aside by life. [NP, pp. 81-82]

[142] No environment is *normal*. An environment is as it may be. No structure is normal in itself. It is the relation between the environment and the living thing that determines what is normal in both. A living thing is normal in the true sense when it reflects an effort on the part of life to maintain itself in forms and within norms that allow for a margin of variation, a latitude of deviation, such that as environmental conditions vary, one of those forms may prove to be more advantageous, hence more *viable*. An environment is normal when it allows a species to multiply and diversify in it in such a way as to tolerate, if necessary, changes in the environment.

If the relation between the environment and the living thing is such that neither can vary without compromising the viability of the living thing irreparably, the apparent normality of adaptation is in fact pathological. To be sick is to be unable to tolerate change. [MS *Normalité et normativité*, f. 2r]

#### ***Normality and Individuals***

[143] From the standpoint of the biology of individuals, the problem of the normal and the pathological comes down to what Kurt

Goldstein calls "preferred behavior" and "catastrophic reaction." In responding to stimuli from the environment, an organism does not use every form of behavior it is capable of using but only certain preferred behaviors – preferred because they most fully express the nature of the organism and afford it the maximum possible order and stability. A sick individual is an individual locked in a struggle with its environment to establish a new order or stability. Recovery establishes a new norm, different from the old. During the course of the illness, the sick individual does everything possible to avoid catastrophic reactions. A catastrophic reaction is one that prevents rapid adaptation to changing environmental conditions. The concern with avoiding catastrophic reactions therefore reflects the organism's instinct of self-preservation. Self-preservation is not the most general characteristic of life; it is, rather, a characteristic of a reduced, diminished life. A healthy person is a person capable of confronting risks. Health is creative – call it normative – in that it is capable of surviving catastrophe and establishing a new order.

Goldstein's views overlap neatly with René Leriche's views of conception. Health becomes perceptible only in relation to disease, which reveals its essence by suggesting a possible transition to new norms. A person who cannot survive at high altitudes because of hypotension may be able to live normally at altitudes up to fifteen hundred feet. No one is obliged to live at altitudes above three thousand feet, but anyone may someday be forced to do so. In that case, anyone who cannot is "inferior." Man is a creature capable of changing or adapting to ambient conditions in order to survive. [MS *Normalité et normativité*, f. 2r, 3r]

[144] Health is a margin of tolerance for the inconstancies of the environment. But isn't it absurd to speak of the inconstancy of the environment? This is true enough of the human social environment, where institutions are fundamentally precarious, con-

ventions revocable and fashions as fleeting as lightning. But isn't the cosmic environment, the animal environment in general, a system of mechanical, physical and chemical constants, made of invariants? Certainly this environment, which science defines, is made of laws, but these laws are theoretical abstractions. The living creature does not live among laws but among creatures and events that vary these laws. What holds up the bird is the branch and not the laws of elasticity. If we reduce the branch to the laws of elasticity, we must no longer speak of a bird, but of colloidal solutions. At such a level of analytical abstraction, it is no longer a question of environment for a living being, nor of health nor of disease. Similarly, what the fox eats is the hen's egg and not the chemistry of albuminoids or the laws of embryology. Because the qualified living being lives in a world of qualified objects, he lives in a world of possible accidents. Nothing happens by chance, everything happens in the form of events. Here is how the environment is inconstant. Its inconstancy is simply its becoming, its history.

For the living being, life is not a monotonous deduction, a rectilinear movement; it ignores geometrical rigidity, it is discussion or explanation (what Goldstein calls *Auseinandersetzung*) with an environment where there are leaks, holes, escapes and unexpected resistances. Let us say it once more. We do not profess indeterminism, a position very well supported today. We maintain that the life of the living being, were it that of an amoeba, recognizes the categories of health and disease only on the level of experience, which is primarily a test in the affective sense of the word, and not on the level of science. Science explains experience but it does not for all that annul it.

Health is a set of securities and assurances (what the Germans call *Sicherungen*), securities in the present, assurances for the future. As there is a psychological assurance which is not pre-

sumption, there is a biological assurance which is not excess, and which is health. Health is a regulatory flywheel of the possibilities of reaction. Life often falls short of its possibilities, but when necessary can surpass expectations. [NP, pp. 197-98]

### *The Problem of Psychological Norms*

#### *The Child and the adult*

[145] Childhood is a transitional state. It is normal for human beings to leave the state of childhood and abnormal to fall back into it. In childhood there is an intrinsic forward drive, a capacity for self-transcendence, that flourishes if the child is physically robust, intellectually perspicacious and allowed a certain freedom to pursue worthwhile goals. A child thinks constantly of imitating or rivaling what he sees adults doing; every day he thinks, "Tomorrow I will be a grown-up." Aristotle makes this magnificent observation: *anthropos anthropon genna*, man engenders man. This is true in terms of the material cause: it is man who supplies the seed from which the child is born. It is also true in terms of the formal cause: the embryo, the child and the adolescent develop toward adult human form. And it is true in terms of the final cause, an ideal of man and of the adult virtues that education instills in the child's mind. This last proposition should not be interpreted in too modern a sense, however. For the Ancients, and for Aristotle in particular, the essence of a thing was identical with its final form; the potential pointed toward the act, and movement ended in rest. The theory of forms telescoped the whole process of becoming into a typical privileged state. How a potential becomes an act, how a formal indeterminate becomes a form, would be unintelligible if form were not in every sense prior to potential and matter. Thus, humanity is transmitted from man to man, just as knowledge is transmitted from intelligence

to intelligence. Childhood, being a state of transition, is without human value. Greek pedagogy was therefore based on the identification of man with his typical finished form, his *acme*. In the child, the Greeks saw only the future soldier and future citizen. Plato shows no indulgence for the typical predilections and tendencies of childhood. Nothing was more alien to the ancient mind than the idea that childhood is, in each instance, a new beginning for mankind, a beginning whose innocence and enthusiasm are worthy of respect because of the implicit possibility of going further than man has ever gone before. Furthermore, the ancient family was based on strong paternal authority, and there was often violent conflict between fathers and sons owing to the father's domination of wife and children. Théodore de Saussure attached great importance to this fact in *Le Miracle grec*.<sup>47</sup> It can be argued, moreover, that the longer one remains ignorant of how children are made, the longer one remains a child; and one remains ignorant as long as one fails to contrast one's ideas with actual experience. At the root of the child's mentality is anxiety at not knowing why one is a child, that is, weak, powerless, dependent and attached to one's mother as a plant is attached to the nurturing soil. To remedy this anxiety the child dreams of vast magical powers, of a compensatory omnipotence. But contact with reality, which takes the form of conflict, cruelly demonstrates that such dreams are vain illusions. In other words, for political, philosophical and, in a more profound sense, religious reasons, the Ancients devalued childhood in a way that only accentuated those characteristics of childhood apt to provoke the contempt of adults. For the Ancients, the normal man was the normative man, and that meant quintessentially the adult. This is, moreover, a characteristic of all classical periods. The seventeenth-century French had basically the same idea. Descartes spoke of childish credulity and nursery tales in much the same

manner as Plato. Jean de la Fontaine is famous for having said that he took pleasure in fairy tales, but his fables are hard on children. A certain value attached to the childish taste for the marvelous and for fiction, but it was a relative value; judged by logical norms, such things were considered absurd.

Paradoxically, it was the nineteenth century, which is often wrongly maligned for its alleged blind faith in science, that once again ascribed value not only to poetry but to childhood fantasy as well: witness Victor Hugo and Charles Baudelaire. (Every child is a genius in its way, and every genius is a child. [...] Genius is a deliberate reversion to childhood.) It was poets, long before psychologists, who proposed looking at the child's mentality as normal and valid, however distinct from the positive and utilitarian mentality of the bourgeois adult (as Baudelaire remarked, "To be *useful* has always seemed to me a most hideous thing"). Charles Dickens did in England what Hugo and Baudelaire did in France, especially in *Hard Times*. Artists, whose function is to dream for mankind beyond what is known, to scorn the real, to make the need for change imperative, found a treasure trove in the thought of children. When Eugène Delacroix said, "What is most real for me are the illusions I create," he was formulating the idea of a child. Then, with respect to the rehabilitation of childhood and many other things as well, contemporary psychology and philosophy came to the rescue: they provided poetic intuition with a discourse.

The study of the mentality of children began at roughly the same time as the study of primitive mentality. In French-speaking countries, the former discipline is epitomized by the name of Jean Piaget, the latter by Lucien Lévy-Bruhl. There can be no doubt that the methodological implications of Piaget's research were initially the same as those of Lévy-Bruhl: Piaget compared the thought of the child to that of a contemporary cultivated adult,

an adult whose culture was of the sort that Piaget regarded as normative for his time, that is, for which scientific and rationalist values stood at the top of the hierarchy. Compared with the rational mentality, children's thinking could be characterized by adjectives beginning with the prefix *a-*, indicating some sort of lack or absence. Note, however, that Piaget's adult is what Max Weber and Karl Jaspers call an "ideal type." To be sure, it can be argued that this normal type is not only normative but average and characteristic of the majority. But the "mentality" of an age is a social fact, determined by education. If, in fact, in surveys, the ideal type turns out to reflect the average, it is because compulsory education has established certain norms. Here again, man engenders man, and if the norms imposed on many generations of children included a systematic devaluation of childhood, it should come as no surprise that, in comparing today's children to today's adults, it turns out that children lack many of the traits inculcated in adults. The problem of mentalities is inextricably intertwined with that of education, and the problem of education is inextricably intertwined with that of generations. At any given point in time, those who happen to be adults are former children who were raised by other adults. It takes a generation to test the validity of educational ideas. And it takes fifty to sixty years (two generations) for philosophical values to become rooted as habits. Piaget's adults more or less unwittingly betray superficial tokens of respect for the positivist values of the period 1860-90, which gained favor with the educational reformers of the late nineteenth and early twentieth centuries. [MS *Le Normal et le problème des mentalités*, II, f. 1r, 2r, 3r]

[146] There is a characteristic gap between a child's desires and his means of realizing those desires. The child therefore creates a world of representations in which desires have the ability immediately to create objects presumed capable of satisfying

them. The child can experience pleasure only with permission or by delegation. He is strictly dependent on adults to meet its vital needs. Thus, to obey is to live. At first, there is no difference between social obligation and physical necessity. Adults, then, are both compensation for and inescapable reminders of the child's helplessness. Freudian psychology had the great merit of revealing the true essence of the child's thought. The child lives in illusion because he lives in desire, and because he feels desire long before gratification is physically possible. So long as it is impossible to act on the world in certain ways, desire and reality fail to coincide. And so long as desire sees no possibility of satisfaction, there is also no possibility of expression. The child cannot admit that he wants to grow up in order to subject his father to paternal law and the world to the law of the world, that is, to dominate men and domesticate things. He cannot admit this as long as he does not know, beyond what he is told and what he is not told (which comes to the same thing), how to act on things and men. The content of the child's thought is his ignorance of the biological reality of childhood. That ignorance lasts as long as the child remains unaware of copulation as his inception and fate, and so long as he is forbidden, whether by organic immaturity or social taboo, to engage in copulation himself.

In fairy tales and fantasies, the child seeks to satisfy a need for pleasure and to assert a power for which he still lacks the means. The wealth of imagination compensates for the poverty of realization.

What we Moderns call "adult" in man is his awareness of the gap between desire and reality. The adult does not rely on myth for the gratification of desire. In the adult, responsibility for the gratification of desires that present-day reality places out of reach can be delegated instead to *play* or *art*, that is, to illusions conscious of their practical value as well as their theoretical irreality.

The adult does not necessarily believe in the inevitability of progress, of knowledge and industry. Adults know that there are epistemological obstacles to progress and areas over which theory is powerless, yet they do not feel compelled on that account to seek compensation by harking back to a mode of thought that believes totally in the realization of desire in a normative reality.

It is normal to believe that there are possibilities other than those contained in science and technology at a particular point in time. It is normal for the child's generosity to persist into adulthood. But it is abnormal, because historically regressive, to suggest that the puerility of myth is superior to science and technology. The modern adult has limits that must be overcome, but they *cannot be overcome by returning to a mode of thought which ignores precisely that there are limits to desire in reality and obstacles to value in existence.*

To be sure, childhood deserves to be treated as a norm by adults – or, rather, not as a norm, precisely, but as a normative requirement, something to be transcended. This normative superhumanity of childhood is not to be confused with the responses that a child itself may adopt to his temporary powerlessness, responses that the child wishes with all his might to replace with true solutions, that is, solutions that are both verifiable and effective. [...]

In short, because the child is not a complete being, he exhibits a generosity that compensates for his avidity: this generosity can be proposed as normal because it is *normative*, that is, an affirmation of value.

Because the child is a helpless creature, however, he is credulous. *Credulity* is not normal in humans because it is not normative; it consists in taking for granted what has yet to be constructed.

In the end, the most perceptive rehabilitation of childhood is that of the poet. The poet is a visionary, a seer, but he sees

what does not exist. We see what is. The poet does not so much describe what exists as point to values. The *poetic* consciousness is a correlative of the scientific consciousness, but also its inverse. Poetry is a poetic function, not a noetic one.

To hold out childhood as an ideal to adult humankind is to demonstrate that childhood is a *promise* and not a fact. Man must remain a child in the sense that he deserves to become the complete man of which children dream. [MS *Le Normal et le problème des mentalités*, II, f. 5r, 6r]

#### *Primitive mentality*

[147] Théodule Armand Ribot, following Auguste Comte, criticized introspective psychology as the psychology of the *civilized, adult, healthy white male*. Psychology's contempt for modes of thought different from that of the respectable, cultivated male reflected a hidden assumption that the respectable, cultivated male's mode of thought was somehow valid and normal. Montaigne wondered on what basis we judged the natives of the countries we colonized to be savages, but his skepticism was widely dismissed. Erasmus wrote *In Praise of Folly*, but it was regarded as no less fantastic than the plays of Shakespeare in which madmen were portrayed as wise. And Rousseau taught in *Emile* that the child is a complete human being, different from the adult not only in possessing less knowledge and experience but also in having an entirely different attitude toward life. But since Rousseau was accused of having abandoned his own children, his teaching was deemed utopian.

The seventeenth century identified man with his *acme*, or maturity, and Descartes held that "the prejudices of our childhood are the first and principal cause of our errors." Since we were "children before becoming adults," our reason was not as pure as if we had never made use of our senses. Before Philippe

Pinel and Jean Etienne Dominique Esquirol, the insane were subjected to punishment in lieu of treatment. Asylums were still more terrifying than prisons. To be sure, the eighteenth century witnessed the first glimmerings of relativism. When Montesquieu asked "How can anyone be a Persian?" he encouraged his contemporaries to recognize that such a thing was indeed perfectly possible. It became possible to submit Western society to the judgment of an Oriental and human psychology to the judgment of a mythical superman. But Montesquieu's *Persian Letters* and Voltaire's *Micromégas* were mere philosophical entertainments. Strange as it may seem, the prejudice that established the civilized white man as the standard of reference for all mankind grew out of a philosophy famous for condemning all prejudice. But Enlightenment philosophy found fault more with the *pre-* of prejudice than with the illusory certainty of its *judgment*: a prejudice was the judgment of a previous age. Yesterday's judgment was declared to be error because it survived only as a weapon of combat against the new. Diderot's purpose in rehabilitating the primitive, in the *Supplement to Bougainville's Voyage*, was essentially to discredit Christianity. The Christian religion was hoist on its own petard: whatever preceded the advent of truth was doomed to disappear. Historical precedence established logical perspective. Tolerance raises a similar problem: tolerance is the recognition of a plurality of values, the refusal to erect any value as a norm; intolerance is normative imperialism. But try as one will, a plurality of norms is comprehensible only as a hierarchy. Norms can coexist on a footing of equality only if drained of the normative intention that called them into existence as codified, normative decisions embodied in institutions, customs, dogmas, rites and laws. A norm cannot be normative without being militant, that is, intolerant. In intolerance, in aggressive normativity, there is of course hatred, but in tolerance there is contempt. Values toler-

ate what they deem to be valueless. The relativism and tolerance of the eighteenth century were inseparable from the essentially normative idea of progress. But progress was not conceived in terms of a relation of values; it was identified with the final value in a series, the one that transcended the others and in terms of which they were judged. That is why tolerance was the value in the name of which one became intolerant, and relativity the value in the name of which one became absolute. [MS *Le Normal et le problème des mentalités*, I, f. 1r]

[148] Positivism took the theories of Baron Turgot and Marquis de Condorcet on the progress of the human spirit and recast them in the form of a law, the law of three stages (theological, metaphysical and positive). In other words, it tried to force psychological speculation into the Procrustean bed of natural science. In formulating a law of progress, Comte was treating mind as if it were a natural object. At the same time he was declaring that sociology (or, as he saw it, the science of mind) was independent of biology in terms of object and method. The positive spirit was declared to be the ultimate form of the human spirit; theology and metaphysics were devalued, the first as a primitive form of spirit, the second as a transitional form. These forms impeded the development of spirit's full potential, so spirit rejected them. Dissatisfied with fictions, spirit created science. Hence, scientific thought was the normal (that is, the normative or ideal) state of thought. Positivism portrayed itself as the normal culmination of an ever closer and more faithful approximation to the intellectual norm. For Comte, theological thinking was like the thinking of children. With this simile, Comte ascribed positive value to maturity: that of the individual as well as that of the human race. And the maturation of the race, he implied, was just as inevitable and necessary as the maturation of the child.

Meanwhile, in Germany, Hegel's dialectic encouraged students

of philosophy to see Hegelian philosophy as the culmination of the arduous advent of the Idea and the German bourgeois state as the normal form of all society. And in England, Spencer's evolutionism, taking up where Mill's positivism left off, further accentuated the philosophical belief that superiority and posteriority are one and the same. Anterior, less complex and inferior became synonymous.

Little by little a diffuse dogma took shape: namely, that the intellectually primitive and the intellectually puerile are two forms of a single infirmity. At around the same time, moreover, research in embryology showed that certain anatomical anomalies were the result of arrested development. A club foot, a harelip, a testicular ectopia – each of these conditions is the perpetuation after birth of a state through which every fetus or embryo passes while still in the uterus. What is abnormal is the halting of development at an intermediate stage. What is normal at one moment in time becomes abnormal later.

When Lucien Lévy-Bruhl published *Fonctions mentales dans les sociétés inférieures* in 1910, his initial use of the term "prelogical" to characterize the "primitive" mode of thought suggested an implicit depreciation. Philosophical opinion was divided. Some philosophers were delighted to discover that the theory of *mentalités* provided arguments to justify a normative conception of the history of thought. At last, there were criteria for choosing sides in philosophical combat, for distinguishing between fruitful new ideas and survivals of the past, for separating the backward-looking from the forward-looking. Léon Brunschvicg, for example, used both Lévy-Bruhl and Piaget to argue in favor of his own doctrine concerning the Ages of Intelligence and to disparage Aristotle's philosophy on the grounds that it remained confined within the mental framework of a primitive or a child of six.

Meanwhile, other philosophers, sensing that what Lévy-Bruhl

was really arguing was that primitive thought was not prelogical but heterogeneous, and sensing, too, that champions would soon come forward to defend the merits of forms of thought "different" from modern science, sought to restore continuity: the primitive, they argued, was not as alien to our logic as some claimed, nor was modern thought as fully logical as some believed. The transition from one form of mentality to another involved a certain loss of content (modern thought is not as rich as primitive thought) as well as the consolidation of a certain disposition (modern thought is more methodical). We can easily understand what the primitive is: it is what we become when we abandon the critical spirit, the precious prize of an always vulnerable conquest (thesis of Belot and Parodi, discussion at the Société Française de Philosophie after publication of Lévy-Bruhl's books).

Nevertheless, both groups of philosophers preserved the essential rationalist and positivist norms: reason is superior to mysticism; noncontradiction is superior to participation; science is superior to myth; industry is superior to magic; faith in progress is superior to the progress of faith. [MS *Le Normal et le problème des mentalités*, I, f. 2r, 3r]

[149] Rationalism and positivism thus depreciated mythical thinking. Despite the rationalist attitudes implicit in Christianity, moreover, the theologians recognized that this depreciation of myth was all-encompassing. Phenomenological theologians therefore decided that only one reaction was possible: all mythological and religious systems would have to be rescued *en bloc*.

Modern mythology portrays itself as restoring the value of myth in the face of rationalist depreciation. To grant recognition to other value systems is tantamount to restricting the value of rationalism. In the end, normative tolerance proves to be a depreciation of the positivist depreciation of myth. It is impossible to save the content of any religion without saving the content of all



religions.... In order to save a religion that had, admittedly, abandoned the Inquisition and the stake, it was necessary to save other religions with their whirling dervishes and human sacrifices: for if it is true that primitive mentality is a totalizing structure, the rehabilitation of the mythic mentality is also the rehabilitation of savagery in all its forms. The friend of primitive mentality will object that the modern mentality is not hostile to the bombing of civilian populations. But no one is saying that the modern mentality or, for that matter, any constituted norm must be preferred over primitive mentality. *The modern mentality is not a structure but a tendency.* To prefer it is simply to prefer a tendency, a normative intention. [...]

The primitive and modern mentalities are not coexisting absolutes but successive relatives. Technology is clearly progress when it demonstrates the failure of magic; science is clearly progress when it grows out of the inadequacy of technology. The modern mentality has certain advantages over previous norms, advantages from which it derives relative but not absolute value.

Modernity is not *normal* in the sense of having achieved a definitive superior state. It is *normative*, however, because it strives constantly to outdo itself. Henri Bergson got at least one thing right: a true mechanics may not exist, but a true mysticism is a contradiction in terms. Despite Bergson's objective sympathy for the primitive mentality, his philosophy is in no sense a reactionary revaluation of irrationality. [...]

Modern man is experiencing a crisis in the sense that domination and mastery of the environment elude his grasp. But the resolution of that crisis does not lie in the past. It does not exist in ready-made form but remains to be invented.

The modern is modern only because it has found solutions to problems that the primitive seldom posed. Modernity poses different problems. Modern values are provisional. But the changes

that have brought those values to consciousness are *normative*, and a normative direction is normally worth pursuing. [MS *Le Normal et le problème des mentalités*, I, f. 6r, 7r]

#### *Normative invention*

[150] In the evolution of the individual, the mentality of adulthood comes after the mentality of childhood; in the evolution of mankind, the modern mentality follows the primitive mentality. But when we refer to adulthood or modernity as normal, we do not mean simply that they succeed earlier stages of existence. Each of these states is normal in the sense that it effectively devalues another state hobbled by internal conflict: between desire and reality, or between power and science. To be sure, just because the modern recognizes these conflicts and to a limited degree resolves them, it does not thereby constitute the final stage of evolution. The expectation that today's understandings will be transcended is a normal feature of the modern mentality. Hence there is no remedy for modernity's ills in merely returning to old norms. The only true remedy lies in the invention of new norms. Generosity of spirit is to be imitated, but belief in the efficacy of immediate solutions must be rejected. Normativity is inherent in the kinds of change that brought modernity to consciousness. It is this normativity that must in the normal course of things be perpetuated.

To sum up, all normality must be judged with reference to the possibility of devaluation in a normative sense. Therein lies the only method for detecting *mystification*.

Pathology can sometimes mimic health. If sickness is often a refuge for an individual in conflict with himself, others or the environment, revolution is often a means of avoiding necessary innovation and reform. Time cannot settle the question of what a person's or a society's norms ought to be: neither yesterday nor

tomorrow is an infallible oracle. Norms and values are tested by situations calling for normative invention. One can respond to a challenge either by seeking refuge or exercising creative ingenuity; often the two responses seem deceptively similar. Yet there is one sure criterion for identifying creativity: a willingness to put norms to the test, to ascertain their value fairly and without trying to make them seem artificially normal. The normal is that which is normative under given conditions, but not everything that is normal under given conditions is normative. It must always be permissible to test the normal by varying the ambient conditions. It is in this sense that *the history of the world is the judgment of the world*. [MS *Normalité et normativité*, f. 4r]

### **The Problem of Social Norms**

[151] The Latin word *norma*, which, etymologically speaking, bears the weight of the initial meaning of the terms "norms" and "normal," is the equivalent of the Greek *νόμος*. Orthography [French, *orthographe*, but long ago *orthographie*], orthodoxy, orthopedics, are normative concepts prematurely. If the concept of orthology is less familiar, at least it is not altogether useless to know that Plato guaranteed it<sup>48</sup> and the word is found, without a reference citation, in Emile Littré's *Dictionnaire de la langue française*. Orthology is grammar in the sense given it by Latin and medieval writers, that is, the regulation of language usage.

If it is true that the experience of normalization is a specifically anthropological or cultural experience, it can seem normal that language has proposed one of its prime fields for this experience. Grammar furnishes prime material for reflection on norms. When Francis I in the edict of Villers-Cotterêt ordains that all judicial acts of the kingdom be drawn up in French, we are dealing with an imperative.<sup>49</sup> But a norm is not an imperative to do something under pain of juridical sanctions. When the grammari-

ans of the same era undertook to fix the usage of the French language, it was a question of norms, of determining the reference, and of defining mistakes in terms of divergence, difference. The reference is borrowed from usage. In the middle of the seventeenth century this is Claude Favre de Vaugelas's thesis: "Usage is that to which we must subject ourselves entirely in our language."<sup>50</sup> Vaugelas's works turn up in the wake of works of the Académie française, which was founded precisely to embellish the language. In fact in the seventeenth century the grammatical norm was the usage of cultured, bourgeois Parisians, so that this norm reflects a political norm: administrative centralization for the benefit of royal power. In terms of normalization there is no difference between the birth of grammar in France in the seventeenth century and the establishment of the metric system at the end of the eighteenth. Cardinal Richelieu, the members of the National Convention and Napoleon Bonaparte are the successive instruments of the same collective demand. It began with grammatical norms and ended with morphological norms of men and horses for national defense,<sup>51</sup> passing through industrial and sanitary norms.

Defining industrial norms assumes a unity of plan, direction of work, stated purpose of material constructed. The article on "Gun-carriage" in the *Encyclopédie* of Diderot and d'Alembert, revised by the Royal Artillery Corps, admirably sets forth the motifs of the normalization of work in arsenals. In it we see how the confusion of efforts, the detail of proportions, the difficulty and slowness of replacements, useless expense, are remedied. The standardization of designs of pieces and dimension tables, the imposition of patterns and models have as their consequence the precision of separate products and the regularity of assembly. The "Gun-carriage" article contains almost all the concepts used in a modern treatise on normalization except the term "norm." Here we have the thing without the word.

The definition of sanitary norms assumes that, from the political point of view, attention is paid to populations' health considered statistically, to the healthiness of conditions of existence and to the uniform dissemination of preventive and curative treatments perfected by medicine. In Austria Maria Theresa and Joseph II conferred legal status on public health institutions by creating an Imperial Health Commission (*Sanitäts-Hofdeputation*, 1753) and by promulgating a *Haupt Medizinal Ordnung*, replaced in 1770 by the *Sanitäts-normativ*, an act with forty regulations related to medicine, veterinary art, pharmacy, the training of surgeons, demographical and medical statistics. With respect to norm and normalization here, we have the word with the thing.

In both of these examples, the norm is what determines the normal starting from a normative decision. As we are going to see, such a decision regarding this or that norm is understood only within the context of other norms. At a given moment, the experience of normalization cannot be broken down, at least not into projects. Pierre Guiraud clearly perceived this in the case of grammar when he wrote: "Richelieu's founding of the Académie française in 1635 fit into a general policy of centralization of which the Revolution, the Empire, and the Republic are the heirs.... It would not be absurd to think that the bourgeoisie annexed the language at the same time that it seized the instruments of production."<sup>52</sup> It could be said in another way by trying to substitute an equivalent for the Marxist concept of the ascending class. Between 1759, when the word "normal" appeared, and 1834, when the word "normalized" appeared, a normative class had won the power to identify – a beautiful example of ideological illusion – the function of social norms, whose content it determined, with the use that that class made of them.

That the normative intention in a given society in a given era cannot be broken down is apparent when we examine the rela-

tions between technological and juridical norms. In the rigorous and present meaning of the term, technological normalization consists in the choice and determination of material, the form and dimensions of an object whose characteristics from then on become necessary for consistent manufacture. The division of labor constrains businessmen to a homogeneity of norms at the heart of a technical-economic complex whose dimensions are constantly evolving on a national or international scale. But technology develops within a society's economy. A demand to simplify can appear urgent from the technological point of view, but it can seem premature from the industrial and economic point of view as far as the possibilities of the moment and the immediate future are concerned. The logic of technology and the interests of the economy must come to terms. Moreover, in another respect, technological normalization must beware of an excess of rigidity. What is manufactured must finally be consumed. Certainly, the logic of normalization can be pushed as far as the normalization of needs by means of the persuasion of advertising. For all that, should the question be settled as to whether need is an object of possible normalization or the subject obliged to invent norms? Assuming that the first of these two propositions is true, normalization must provide for needs, as it does for objects characterized by norms, margins for divergence, but here without quantification. The relation of technology to consumption introduces into the unification of methods, models, procedures and proofs of qualification, a relative flexibility, evoked furthermore by the term "normalization," which was preferred in France in 1930 to "standardization," to designate the administrative organism responsible for enterprise on a national scale.<sup>53</sup> The concept of normalization excludes that of immutability, includes the anticipation of a possible flexibility. So we see how a technological norm gradually reflects an idea of society and its hierarchy of val-

ues, how a decision to normalize assumes the representation of a possible whole of correlative, complementary or compensatory decisions. This whole must be finished in advance, finished if not closed. The representation of this totality of reciprocally relative norms is planning. Strictly speaking, the unity of a Plan would be the unity of a unique thought. A bureaucratic and technocratic myth, the Plan is the modern dress of the idea of Providence. As it is very clear that a meeting of delegates and a gathering of machines are hard put to achieve a unity of thought, it must be admitted that we would hesitate to say of the Plan what La Fontaine said of Providence, that it knows what we need better than we do.<sup>54</sup> Nevertheless – and without ignoring the fact that it has been possible to present normalization and planning as closely connected to a war economy or the economy of totalitarian regimes – we must see above all in planning endeavors the attempts to constitute organs through which a society could estimate, foresee and assume its needs instead of being reduced to recording and stating them in terms of accounts and balance sheets. So that what is denounced, under the name of rationalization – the bogey complacently waved by the champions of liberalism, the economic variety of the cult of nature – as a mechanization of social life perhaps expresses, on the contrary, the need, obscurely felt by society, to become the organic subject of needs recognized as such.

It is easy to understand how technological activity and its normalization, in terms of their relation to the economy, are related to the juridical order. A law of industrial property, juridical protection of patents or registered patterns, exists. To normalize a registered pattern is to proceed to industrial expropriation. The requirement of national defense is the reason invoked by many states to introduce such provisions into legislation. The universe of technological norms opens onto the universe of juridical norms. An expropriation is carried out according to the norms

of law. The magistrates who decide, the bailiffs responsible for carrying out the sentence, are persons identified with their function by virtue of norms, installed in their function with the delegation of competence. Here, the normal descends from a higher norm through hierarchized delegation. In his *Reinen Rechtslehre*,<sup>55</sup> Hans Kelsen maintains that the validity of a juridical norm depends on its insertion in a coherent system, an order of hierarchized norms, drawing their binding power from their direct or indirect reference to a fundamental norm. But there are different juridical orders because there are several fundamental, irreducible norms. If it has been possible to contrast this philosophy of law with its powerlessness to absorb political fact into juridical fact, as it claims to do, at least its merit in having brought to light the relativity of juridical norms hierarchized in a coherent order has been generally recognized. So that one of Kelsen's most resolute critics can write: "The law is the system of conventions and norms destined to orient all behavior inside a group in a well-defined manner."<sup>56</sup> Even while recognizing that the law, private as well as public, has no source other than a political one, we can admit that the opportunity to legislate is given to the legislative power by a multiplicity of customs which must be institutionalized by that power into a virtual juridical whole. Even in the absence of the concept of juridical order, dear to Kelsen, the relativity of juridical norms can be justified. This relativity can be more or less strict. There exists a tolerance for nonrelativity which does not mean a gap in relativity. In fact the norm of norms remains convergence. How could it be otherwise if law "is only the regulation of social activity"?<sup>57</sup>[...]

The correlativity of social norms – technological, economic, juridical – tends to make their virtual unity an organization. It is not easy to say what the concept of organization is in relation to that of organism, whether we are dealing with a more general

structure than the organism, both more formal and richer; or whether we are dealing with a model which, relative to the organism held as a basic type of structure, has been singularized by so many restrictive conditions that it could have no more consistency than a metaphor.

Let us state first that in a social organization, the rules for adjusting the parts into a collective which is more or less clear as to its own final purpose – be the parts individuals, groups or enterprises with a limited objective – are external to the adjusted multiple. Rules must be represented, learned, remembered, applied, while in a living organism the rules for adjusting the parts among themselves are immanent, presented without being represented, acting with neither deliberation nor calculation. Here there is no divergence, no distance, no delay between rule and regulation. The social order is a set of rules with which the servants or beneficiaries, in any case, the leaders, must be concerned. The order of life is made of a set of rules lived without problems.<sup>58</sup> [NP, pp. 248–50]

[152] We shall say otherwise – certainly not better, probably less well – namely that a society is both machine and organism. It would be only a machine if the collective's ends could not only be strictly planned but also executed in conformity with a program. In this respect, certain contemporary societies with a socialist form of economy tend perhaps toward an automatic mode of functioning. But it must be acknowledged that this tendency still encounters obstacles in facts, and not just in the ill-will of skeptical performers, which oblige the organizers to summon up their resources for improvisation. It can even be asked whether any society whatsoever is capable of both clearheadedness in determining its purposes and efficiency in utilizing its means. In any case, the fact that one of the tasks of the entire social organization consists in its informing itself as to its possible purposes –

with the exception of archaic and so-called primitive societies where purpose is furnished in rite and tradition just as the behavior of the animal organism is provided by an innate model – seems to show clearly that, strictly speaking, it has no intrinsic finality. In the case of society, regulation is a need in search of its organ and its norms of exercise.

On the other hand, in the case of the organism the fact of need expresses the existence of a regulatory apparatus. The need for food, energy, movement and rest requires, as a condition of its appearance in the form of anxiety and the act of searching, the reference of the organism, in a state of given fact, to an optimum state of functioning, determined in the form of a constant. An organic regulation or a homeostasis assures first of all the return to the constant when, because of variations in its relation to the environment, the organism diverges from it. Just as need has as its center the organism taken in its entirety, even though it manifests itself and is satisfied by means of one apparatus, so its regulation expresses the integration of parts within the whole though it operates by means of one nervous and endocrine system. This is the reason why, strictly speaking, there is no distance between organs within the organism, no externality of parts. The knowledge the anatomist gains from an organism is a kind of display in extensiveness. But the organism itself does not live in the spatial mode by which it is perceived. The life of a living being is, for each of its elements, the immediacy of the copresence of all. [NP, pp. 252–53]

[153] Social regulation tends toward organic regulation and mimics it without ceasing for all that to be composed mechanically. In order to identify the social composition with the social organism in the strict sense of the term, we should be able to speak of a society's needs and norms as one speaks of an organism's vital needs and norms, that is, unambiguously. The vital

needs and norms of a lizard or a stickleback in their natural habitat are expressed in the very fact that these animals are very natural living beings in this habitat. But it is enough that one individual in any society question the needs and norms of this society and challenge them – a sign that these needs and norms are not those of the whole society – in order for us to understand to what extent social need is not immanent, to what extent the social norm is not internal, and, finally, to what extent the society, seat of restrained dissent or latent antagonisms, is far from setting itself up as a whole. If the individual poses a question about the finality of the society, is this not the sign that the society is a poorly unified set of means, precisely lacking an end with which the collective activity permitted by the structure would identify? To support this we could invoke the analyses of ethnographers who are sensitive to the diversity of systems of cultural norms. Claude Lévi-Strauss says: "We then discover that no society is fundamentally good, but that none is absolutely bad; they all offer their members certain advantages, with the proviso that there is invariably a residue of evil, the amount of which seems to remain more or less constant and perhaps corresponds to a specific inertia in social life resistant to all attempts at organization."<sup>59</sup> [NP, pp. 255–56]

*On the Normative Character of Philosophical Thought*

[154] Philosophy is the love of Wisdom. One sees immediately that wisdom is for philosophy an Ideal, since love is desire for something that it is possible to possess. Thus, at the origin of the philosophical quest is the confession of a lack, the recognition of a gap between an existence and a need.

Wisdom is more than science in the strict and contemporary sense of the word, for science is a contemplative possession of reality through exclusion of all illusion, error and ignorance,

whereas Wisdom is the use of principles of appreciation provided by science for the purpose of bringing human life into a state of practical and affective perfection, or happiness.

Wisdom is therefore the realization of a state of human fulfillment and excellence, a realization immediately derived from knowledge of an order of perfection. Wisdom is thus clearly a practical form of consciousness.

Now let us compare the etymological definition and ancient conception of philosophy with our commonsense image. In common parlance, philosophy is a certain disposition to accept events deemed necessary and inevitable, to subject prejudices and phantoms of the imagination to cold scrutiny and criticism, and to regulate one's conduct in accordance with firm personal principles of judgment and evaluation. It seems probable, moreover, that insofar as those principles are remote from everyday life, people are inclined to think of philosophy as utopian and idle speculation of no immediate use and therefore of no value. Common sense, then, seems to lead to two contradictory judgments concerning philosophy. On the one hand, it sees philosophy as a rare and therefore prestigious discipline and, if it lives up to its promises, as an important spiritual exercise. On the other hand, it deduces from the variety of competing philosophical doctrines that philosophy is inconsistent and fickle, hence a mere intellectual game. Yet this judgment, which tends to discredit philosophical speculation, is contradicted by the fact that philosophers throughout history have been the object of hostility and even persecution, sometimes by political leaders and sometimes by the masses themselves. If the teachings and examples of the philosophers are so widely feared, then the activity must not be entirely futile.

Now let us bring these scattered observations together. To deny that philosophy has any "utility" is to recognize that it reflects a

concern with the ultimate meaning of life rather than with immediate expedients, with life's ends rather than its means. Just as we cannot focus simultaneously on objects close to us and objects far away, we also cannot interest ourselves simultaneously in ends and means. Now, it is usual – not to say normal – for people to interest themselves primarily in means, or what they take to be means, without noticing that means exist only in relation to ends and that, in accepting certain means, they unconsciously accept the ends that make them so. *In other words, they accept whatever philosophy happens to be embodied in the values and institutions of a particular civilization.* To accept, for example, that saving is a means to a better life is implicitly to accept a bourgeois system of values, a value system totally different from that of feudal times. This perversion of our attention is what caused Blaise Pascal to say, "It is a deplorable thing to see men deliberating always on means and never on ends," and further, "Man's sensitivity to small things and insensitivity to large ones [are] signs of a peculiar inversion of values." Philosophy is a corrective to this inversion, and if the commonsense criticism that philosophy is not useful, which is strictly accurate, is intended to suggest that it is therefore absolutely valueless, it errs only in its identification of value with utility. It is true that philosophy is justified only if it has value or is a value, but it is not true that utility is the only value: utility is valuable only in something that is a means to an end.

Insofar as philosophy is the search for a meaning of life (a justification of life that is neither pure living nor even the will to live but *savoir-vivre*, knowledge of what it is to live), it enters into competition and occasionally into conflict with political and religious institutions, which are collective systems for organizing human interests. Every social institution embodies a human interest; an institution is the codification of a value, the embodiment of value as a set of rules. The military, for example, is a social insti-

tution that fulfills a collective need for security or aggression.

Philosophy is an individual quest, however. In the *History of Philosophy* Hegel says, "Philosophy begins only where the individual knows itself as individual, for itself, as universal, as essential, as having infinite value qua individual." The individual can participate directly in the Idea (or, as we would say, in value) without the mediation of any institution. Philosophy is an asocial activity. There are no philosophical institutions. Schools are associations, not societies.

Philosophical judgment therefore cannot avoid casting itself as a competitor of both political judgment and religious judgment, which in any case are closely related. It is not unusual, moreover, for competition to turn into rivalry. Either philosophy reinforces communal beliefs, in which case it is pointless, or else it is at odds with those beliefs, in which case it is dangerous. "Philosophy," Aristotle said, "must not take orders, it must give them."

The upshot of this discussion is that the essence of philosophical speculation is to apply a normative corrective to human experience – but that is not all. Any technique is basically normative, because it sets forth or applies rules in the form of formulas, procedures, models and so on. But this normative character of technique is secondary and abstract: secondary because it has to do with means, and abstract because it is limited to searching for one kind of satisfaction. The multiplicity of techniques assumes a plurality of distinct needs. If philosophy is a normative discipline, moreover, it is primordially and concretely so. The best-known definitions of philosophy tend to stress one of these aspects over the other: either normative or concrete. Nevertheless, both adjectives figure in all the definitions. The Stoics emphasize the normative: in defining philosophy as *spiritual medicine*, they assume that passion and disease are one and the same.

Novalis says something slightly different when he calls philosophy a "higher pathology." [...]

Although it is true that ancient philosophy postulates the unity of value, it does so, I think, in an ontological sense, for the Ancients also held that the value of action is inferior to that of knowledge. Ancient philosophy was intellectualist. Knowledge of the universal order is enough to establish it. Virgil's line "*Felix qui potuit rerum cognoscere causas*" (Happy is the man who knows the causes of things) might serve as an epigraph to all ancient philosophies. No anti-intellectualist has been as clear on this point as Nietzsche: "A metamorphosis of being by knowledge: therein lies the common error of rationalists, Socrates foremost among them."<sup>60</sup> In *The Birth of Tragedy*, he calls Socrates the "father of theoretical optimism" and holds him responsible for the illusory belief that "thought, following the Ariadne's thread of causality, can penetrate the deepest abysses of being, that it has the power not only to know but to reform existence."<sup>61</sup> (Note, in passing, that Pascal and Schopenhauer showed Nietzsche the way to the path of theoretical pessimism.)

Given that modern philosophy cannot use ancient wisdom as a *model*, can it perhaps better serve the *intention* that animated the ancient lovers of wisdom? The connection between ancient and modern philosophy is deeper than a shared ideal; it is a shared need. The need that gave rise to ancient philosophy was for a mental organizing structure, a structure at once normative and concrete and thus capable of defining what the "normal" form of consciousness was. This need manifested itself in the troubling, unstable, painful and therefore abnormal character of ordinary experience. [...]

The ancient mind nevertheless lacked the notion of a *spiritual subject*, that is, an infinitely generous and creative power. Ancient philosophy treated the soul as subordinate to the idea

and creation as subordinate to contemplation. It comprised a physics, a logic, an ethics, but no aesthetics. Ancient thought was spontaneously naturalistic. It had no notion of values that might not exist or that ought not to exist. It sought value in being, virtue in strength, soul in breath. Modern philosophy is conscious of the powers of mind. Even the knowledge of impotence has, since Kant, often been interpreted as a power of mind. Hence, there is no obstacle to modern philosophy's being a search for a concrete unity of values. Summarizing the foregoing analysis, then, I offer this definition: modern philosophy is primordial, concrete, normative judgment.

What is true of norms in general is therefore true of philosophy. The abnormal, being the a-normal, logically follows the definition of the normal. It is a logical negation. But it is the priority of the abnormal that attracts the attention of the normative, that calls forth a normative decision and provides an opportunity to establish normality through the application of a norm. A norm that has nothing to regulate is nothing because it regulates nothing. The essence of a norm is its role. Thus practically and functionally the normal is the operational negation of a state which thereby becomes the logical negation of that state; the abnormal, though logically posterior to the normal, is functionally first. Hence philosophy is inevitably a second stage or moment. It does not create values because it is called into being by differences among values. Historically, philosophy can be seen as an effort of mind to give value to human experience through critical examination and systematic appreciation of the values spontaneously embodied in civilizations and cultures. The sciences little by little create truth for humankind. Political and religious institutions little by little turn human actions into good works. The arts, by representing man's dreams, little by little reveal the extent of his ambitions. In the primitive mind these functions are intertwined,



so that myth imperiously defines what is real, what powers men have, and how they relate to one another, and that is why philosophy takes myth as its first object of reflection. In the past, philosophy grew out of conflict among myths; today it grows out of the conflict among the various functions of mind.

Philosophy can succeed in its intention – to recover the unity of effort behind disparate acts of spontaneous creation – only by relating the various elements of culture and civilization: science, ethics, religion, technology, fine arts. To establish such relations is to choose among values. Criticism and hierarchy are therefore essential. Philosophy cannot adopt anything but a critical attitude toward the various human functions that it proposes to judge. Its goal is to discover the meaning of those functions by determining how they fit together, by restoring the unity of consciousness. The business of philosophy is therefore not so much to solve problems as to create them. In Léon Brunschvicg's words, philosophy is the "science of solved problems," that is, the questioning of received solutions. Now we can understand why philosophy has attracted hostile reactions through the ages: philosophy is a questioning of life and therefore a threat to the idea that everything necessary to life is already in our possession. The goal of philosophy is to search for reasons to live by seeking the end for which life is supposed to be the means. But to pursue such a goal is also to discover reasons not to live. Nothing is more at odds with life than the idea that an end to life may be a value and not simply an accident. Therein lies one source of philosophy's unpopularity. [MS *Du Caractère normatif de la pensée philosophique*, f. 1r, 2r, 3r, 4r, 5r, 6r]

## Critical Bibliography

Camille Limoges

This bibliography is divided into two parts. Part One includes the titles of Georges Canguilhem's published works. Part Two is a selection of the most significant published reviews of and commentaries on these works. This bibliography is intended primarily as a working tool. It includes a substantial number of titles, published mainly before 1943, that are not found in the only other available bibliography (see below, Part Two, the penultimate entry under 1985).

Succinct biographical and contextual information, whenever relevant and available, is given under an entry. Each entry appears under the year of its publication, in many cases with the circumstances surrounding the origin of the text – for example, a public lecture or paper presented at a scholarly conference. Those books consisting of a collection of lectures and/or previously published papers are identified as such. When applicable, various editions are noted at the first mention of a title. Only new editions involving a different publisher or translation, and/or revisions or additions to the texts, are cited under the year of the new publication.

No doubt, had Georges Canguilhem been asked to provide his own bibliography, he would not have included a good number of