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Ideas for a Philosophy of Nature

as
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Introduction

What philosophy is as such cannot just be answered immediately. If it were so easy to agree about a definite concept of philosophy, one would only need to analyse this concept to see oneself at once in possession of a philosophy of universal validity. The point is this: Philosophy is not something with which our mind, without its own agency, is originally and by nature imbued. It is throughout a work of freedom. It is for each only what he has himself made it; and therefore the idea of philosophy is also only the result of philosophy itself, which, as an infinite science, is at the same time the science of itself.[1]

Instead, therefore, of prescribing an arbitrary concept of philosophy in general or of the Philosophy of Nature in particular, in order thereafter to resolve it into its parts, I shall endeavor to let such a concept itself first *come into being* before the eyes of the reader.

Meanwhile, as one must, after all, have some starting point, I shall provisionally presuppose that a Philosophy of Nature *ought* to deduce the possibility of Nature, that is of the all-inclusive world of experience, from first principles. But I shall not deal with this concept analytically, or presuppose that it is correct and derive consequences from it, but before all else I shall investigate whether reality belongs to it as such, and whether it expresses anything that admits of *development.*

ON THE PROBLEMS WHICH A PHILOSOPHY OF NATURE HAS TO SOLVE

Whoever is absorbed in research into Nature, and in the sheer enjoyment of her abundance, does not ask whether Nature and experience be possible. It is enough that she is there for him; he has made her real by his very *act,* and the question of what is possible is raised only by one who believes that he does not hold the reality in his *hand.*

[1] [First edition]: the idea of philosophy [is] only the result of philosophy itself, a universally valid philosophy, however, [is] an inglorious fantasy.

Whole epochs have been spent in research into Nature, and yet one does not weary of it. Some have devoted their entire lives to this avocation and have not ceased to pray to the veiled goddess. Great spirits have lived in their own world, untroubled about the principles of their discoveries; and what is the whole reputation of the shrewdest doubter against the life of a man who has carried a world in his head and the whole of Nature in his imagination?

How a world outside us, how a Nature and with it experience, is possible – these are questions for which we have *philosophy* to thank; or rather, *with* these questions philosophy came to be. Prior to them mankind had lived in a (philosophical) state of nature. At that time man was still at one with himself and the world about him. In obscure recollection this condition still floats before even the most wayward thinker. Many never lose it and would be happy in themselves, if the fateful example did not lead them astray; for Nature releases nobody willingly from her tutelage, and there are no *native* sons of freedom.[2] Nor would it be conceivable how man should ever have forsaken that condition, if we did not know that his spirit, whose element is *freedom,* strives to make *itself* free, to disentangle itself from the fetters of Nature and her guardianship, and must abandon itself to the uncertain fate of its own powers, in order one day to return, as victor and by its own merit, to that position in which, unaware of itself, it spent the childhood of its reason.

As soon as man sets himself in opposition to the external world (how he does so we shall consider later), the first step to philosophy has been taken. With that separation, reflection[3] first begins; he separates from now on what Nature had always united, separates the object from the intuition, the concept from the image, finally (in that he becomes his own *object*) himself from himself.

But this separation is only *means,* not *end.* For the essence of man is action. But the less he reflects upon himself, the more active he is. His noblest activity is that which is not aware of itself. As soon as he makes himself object, the *whole* man no longer acts; he has suspended one part of his activity so as to be able to reflect upon the other. Man is not born to waste his mental power in conflict against the fantasy of an imaginary world, but to exert all his powers upon a world which has influence upon him, lets him feel its forces, and upon which he can react. Between him and the world, therefore, no rift must be established; contact and reciprocal action must be possible between the two, for only so does man become man. Originally in man there is an absolute equilibrium of forces and of consciousness. But he can upset this equilibrium through freedom, in order to reestablish it through freedom. But only in equilibrium of forces is there health.

[2] The greatest philosophers were always the first to return to it, and Socrates (as Plato relates), after he had stood throughout the night sunk in contemplation, prayed in the early morning to the rising sun. [Note to the first edition.]

[3] [Here and on the following pages, as well as later on, "speculation" occurred in the first edition, instead of "reflection," and "to speculate" instead of "to reflect."]

Mere reflection, therefore, is a spiritual sickness in mankind, the more so where it imposes itself in domination over the whole man, and kills at the root what in germ is his highest being, his spiritual life, which issues only from Identity. It is an evil which accompanies man into life itself, and distorts all his intuition even for the more familiar objects of consideration. But its preoccupation with dissection does not extend only to the phenomenal world; so far as it separates the spiritual principle from this, it fills the intellectual world with chimeras, against which, because they lie beyond all reason, it is not even possible to fight. It makes that separation between man and the world permanent, because it treats the latter as a thing in itself, which neither intuition nor imagination, neither understanding nor reason, can reach.[4]

In contrast to this stands the true philosophy, which regards reflection as such merely as a means. Philosophy *must* presuppose that original divorce, because without it we should have no need to philosophize.

Therefore it assigns to reflection only *negative* value. It proceeds from that original divorce to unite once more, through freedom, what was originally and *necessarily* united in the human mind, i.e., forever to cancel out that separation. And so far as philosophy itself was made necessary only by that separation – was itself only a necessary evil, a discipline of errant reason – so it works in this respect for its own destruction. That philosopher who might employ his life, or a part of it, in pursuing the philosophy of reflection in its endless dichotomizing, in order to eliminate it in its ultimate ramifications, would earn

[4] [The last passage reads in the first edition]: *Mere* speculation, therefore, is a spiritual sickness of mankind, and moreover the most dangerous of all, which kills the germ of man's existence and uproots his being. It is a tribulation, which, where it has once become dominant, cannot be dispelled – not by the stimulation of Nature (for what can that do to a dead soul?), nor by the bustle of life.

> Scandit aeratas vitiosa naves
> Cura nec turmas equitum relinquit.

Every weapon is justifiable against a philosophy which makes speculation not a *means* but an *end.* For it torments human reason with chimeras which, because they lie beyond all reason, it is not even possible to combat. It makes that separation between man and the world *permanent,* because it treats the latter as a *thing-in-itself,* which neither intuition nor imagination, neither understanding nor reason, can reach.

for himself the most worthy place by this service, which, although it remains negative, may be respected equally with the highest, even if he were not himself to have the satisfaction of seeing philosophy in its absolute form resurrect itself self-consciously out of the dismembering activities of reflection.[5] The simplest expression of complicated problems is always the best. He who first attended to the fact that he could distinguish himself from external things, and therewith his ideas from the objects, and conversely, the latter from the former, was the first philosopher. He first interrupted the mechanics of his thinking, upset the equilibrium of consciousness, in which subject and object are most intimately united.

In that I envisage the object, object and idea are one and the same. And only in this inability to distinguish the object from the idea during the envisaging itself lies the conviction, for the ordinary understanding, of the reality of external things, which become known to it, after all, only through ideas.

This identity of object and idea the philosopher now does away with, by asking: How do ideas of external things arise in us? By this question we displace the things *outside* of ourselves, suppose them to be independent of our ideas. At the same time there ought to be connection between them and our ideas. But we are acquainted with no *real* connection between *different* things other than that of *cause* and *effect*. So the first endeavor of philosophy is to put object and idea into the relationship of cause and effect.

But now we have expressly posited things as *independent of ourselves*. On the other hand, we feel *ourselves* to be dependent upon the objects. For our idea is itself only *real* insofar as we are compelled to assume agreement between it and the things. So we cannot make the things the effects of our ideas. Nothing remains, therefore, but to make the ideas dependent upon the things and to regard the latter as causes, the former as effects.

Now, however, one can see at first glance that by this move we essentially cannot achieve what we wanted. We wanted to explain how it comes about that in us the object and the idea are inseparably united. For only in this union lies the reality of our knowledge of external things. And it is just this reality that the philosopher is sup-

[5] The philosopher who spends his life, or part of it, pursuing speculative philosophy into its bottomless abysses, in order there to dig out its deepest foundation, brings to humanity an offering which, because it is the sacrifice of the noblest that he has, may perhaps be respected as much as most others. It is fortunate enough if he brings philosophy to the point at which even the ultimate necessity for it as a special science, and therewith his own name, vanishes forever from the memory of mankind. [First edition.]

posed to establish. But if the things are *causes* of ideas, then they *precede* the ideas. Consequently the separation between the two becomes permanent. But we wanted, after we had separated object and idea through freedom, to unite them again through freedom, we wanted to know that, and why, there is *originally* no separation between them.

Further, we know the things only through and in our ideas. Therefore, what they are, insofar as they precede our ideas, and so are not presented – of that we have no conception whatever.

Again, in asking: How does it come about that I have ideas? I raise myself *above* the idea and become, *through* this very question, a being that feels itself to be *free ab origine* with respect to all ideation, who surveys the ideation itself and the whole fabric of his ideas *beneath* him. Through this question itself I become an entity which, independent of external things, has *being in itself*.

Thus, with this question itself, I step out of the series of my ideas, release myself from connection with the things, adopt a position where no external force can reach me any longer; now, for the first time, the two hostile beings *mind* and *matter* separate. I place each of them in different worlds, between which no further connection is possible. In that I step out of the series of my ideas, even *cause* and *effect* are concepts which I survey from above. For they both arise only in the necessary succession of my ideas, from which I have released myself. How, then, can I subordinate myself again to these concepts, and allow things external to me to affect me?[6]

Or let us make the attempt the other way round, allow external things to affect us, and now explain how, despite this, we come to the question how ideas are possible in us.

Indeed, how things affect *me* (a free being) is not at all conceivable. I conceive only how things affect things. So far as I am *free*, however (and I *am* free, in that I raise myself above the interconnection of things and ask how this interconnection itself has become possible), I am not a *thing* at all, not an *object*. I live in a world entirely my own; I am a being that exists, not for other beings, but *for itself*. There can be only deed and act in me; from me effects can only *proceed;* there can be no *passivity* in me, for there is passivity only where there is effect and countereffect, and this is only in the interconnection of things, above which I have raised myself. But let it be the case that I am a

[6] Some ingenious members of the Kantian school have opposed this from the start. This philosophy allows all concepts of cause and effect to arise only in our minds, in our ideas, and yet the ideas themselves again, to be *caused* in me, according to the law of causality, by external things. Nobody wanted to hear of it at the time; but now surely it must be heard.

thing, which is itself caught up in the series of causes and effects, and is itself, together with the entire system of ideas, a mere result of the manifold effects which impinge upon me from without; in short, suppose I am myself a mere piece of mechanism. But what is caught up in mere mechanism cannot step out of the mechanism and ask: How has all this become possible? *Here*, in the midst of the series of phenomena, absolute necessity has assigned to it its place; if it leaves this place, it is no longer this thing. It is inconceivable how any external cause whatsoever could affect this self-dependent being, whole and complete in itself.

In order to be able to philosophize, therefore, one must be capable of asking that very question with which all philosophy begins. This question is not such as one can, without further ado, address to others. It is one brought forth freely, a problem self-given. *That* I am capable of posing this question is proof enough that I am, as such, independent of external things; for how otherwise could I have asked how these things themselves are possible *for me*, in my consciousness? One would therefore have to think that anyone who so much as raises this question is by that very fact refusing to explain his ideas as effects of external things. But this question has fallen among those who were completely incapable of devoting themselves to it. As it passed into their mouths, it also took on another sense, or rather, it lost all sense and meaning. *They* are beings who know themselves in no other way than so far as laws of cause and effect have power and dominion over them. *I*, in that I raise this question, have exalted myself above these laws. *They* are caught up in the mechanism of their thinking and representing; *I* have broken through this mechanism. How would they wish to understand me?

One who for himself is nothing other than what things and circumstances have made him, who, without dominion over his own ideas, is seized by, and dragged along with, the stream of causes and effects—how will he wish to know whence he comes, or whither he goes, or how he has become what he is? Does the wave know this, that drives hence in the stream? He has not even the right to say that he is a result of the collective effect of external things; for in order to be able to say this, he must presuppose that he knows *himself*, that he is therefore also something *for himself*. But this he is not. He exists only for other rational beings—not for himself—is a mere *object* in the world; and it is advantageous for him and for science that he should never hear of anything else or imagine anything other.

From time immemorial the most ordinary people have refuted the greatest philosophers with things understandable even to children and striplings. One hears, reads, and marvels that such common things

were unknown to such great men and that people admittedly so insignificant could master them. It does not occur to anybody that perhaps the philosophers were also aware of all that; for how else could they have swum against the stream of evidence? Many are convinced that Plato, if he could only have read Locke, would have gone off ashamed; many a one believes that even Leibniz, if he arose from the dead to go to school for an hour with him, would be converted, and how many greenhorns have not sung triumphal songs over Spinoza's grave?

What was it, then, you ask, that drove all these men to forsake the common ways of thinking of their age and to invent systems opposed to everything that the great mass of people have always believed and imagined? It was a free inspiration, which elevated them into a sphere where *you* no longer even understand their task, while on the other hand many things became inconceivable to them, which seem very simple and understandable to you.[7]

It was impossible, for them, to join and bring into contact things which, in you, Nature and mechanism have always united. They were also unable to deny the world outside them, or that there was a mind within them, and yet there appeared to be no possible connection between the two. To you, if you ever think about these problems, there can be no question of converting the world into a play of concepts, or the mind within you into a dead mirror of things.[8]

Long since, the human spirit (still youthful, vigorous and fresh from the gods) had lost itself in mythology and poetic fictions about the origin of the world. The religions of entire peoples were founded on that conflict between spirit and matter, before a happy genius—the first philosopher—discovered the concepts in which all succeeding ages grasped and held firm both ends of our knowledge. The greatest thinkers among the ancients did not venture beyond this contradiction. Plato still sets matter, as an other, over against God.[9] The *first* who, with complete clarity, saw mind and matter as one, thought and extension simply as modifications of the same principle, was *Spinoza*. His system was the first bold outline of a creative imagination, which conceived the finite immediately in the idea of the infinite, purely as such, and recognized the former only in the latter.[10] *Leibniz* came, and

[7] It was a free inspiration which they gave *themselves*, and which raised them to where the leaden wings of your imagination are unable to carry you. After they had raised themselves thus above the course of Nature, much became inconceivable to them, which to you is all too intelligible. [First edition.]

[8] to transform mind into matter [First edition.]

[9] as a self-subsistent being [First edition.]

[10] of a creative imagination, which went over from the infinite in idea to the finite in intuition. [First edition.]

went the opposite way. The time has come when his philosophy can be re-established. His mind despised the fetters of the schools; small wonder that he has survived amongst us only in a few kindred spirits and among the rest has long become a stranger. He belonged to the few who also treat science as a free activity.[11] He had in himself the universal *spirit of the world,* which reveals itself in the most manifold forms; and where it enters, life expands. It is therefore doubly insufferable that only now are the right words for his philosophy supposed to have been found, and that the Kantian school should force its inventions upon him—alleging that he says things the precise opposite of everything he taught. There is nothing from which Leibniz could have been more remote than the speculative chimera of a world of *things-in-themselves,* which, known and intuited by no mind, yet affects us and produces all our ideas. The first thought from which he set out was: "that the ideas of external things would have arisen in the soul by virtue of her own laws *as in a particular world,* even though nothing were present but God (the infinite) and the soul (the intuition of the infinite)." He still asserted in his latest writings the absolute impossibility that an external cause should produce an effect upon the inwardness of a mind; he asserted, accordingly, that all alterations, all change of perceptions and presentations in a mind, could proceed only from an inner principle. When Leibniz said this, he spoke to philosophers. Today some people have intruded into philosophizing, who have a feeling for all else, but not for philosophy. Accordingly, if among ourselves it is said that no ideas could arise in us through external causes, there is no end of astonishment. Nowadays it is valid in philosophy to believe that the monads have windows, through which things climb in and out.[12]

It is quite possible to drive even the most convinced adherent of things-in-themselves as the causes of our ideas into a corner by all sorts of questions. One can say to him, I understand how matter affects matter, but neither how one in-itself affects another, since there can be no cause and no effect in the realm of the intelligible, nor how this law of one world extends into another altogether different from it, in fact completely opposed to it.[13] You would then have to admit, if I am dependent on external impressions, that I myself am nothing more than matter—as it were, an optical glass, in which the light-ray of the world refracts. But the optical glass does not itself see; it is merely an instrument in the hand of a rational being. And what is that in me which judges it to be an impression that has impinged upon

[11] who see everything, and even the truth *beneath* them [First edition.]

[12] Leibnitii Princip. Philosoph. #7.

[13] ["but neither how an in-itself. . . . opposed to it" is lacking in the first edition.]

me? Again, my own self, which surely, insofar as it judges, is not passive, but active—and thus something in me which feels itself free from the impression, and which nevertheless knows about the impression, apprehends it, raises it to consciousness.

Further, during the intuiting, no doubt arises concerning the reality of the external perception. But now comes the understanding and begins to divide and divides endlessly. Is matter outside you real? If so, it must *consist* of infinite parts. If it consists of infinitely many parts, it must have been put together out of these parts. But for this assembling our imagination has only a finite measure. Therefore an endless putting together must have occurred in finite time. Or the putting together must have begun somewhere, which means there are ultimate parts of matter, so I must (in the dividing) encounter such ultimate parts; but I only ever find bodies of the same kind and never penetrate beyond the surface; the real seems to flee before me, or to vanish under my hand, and matter, the first foundation of all experience, becomes the most insubstantial thing we know.

Or does this conflict exist simply to enlighten us about ourselves? Is perception, as it were, only a dream, which mirrors reality in front of all rational beings, and is understanding given to them only in order to awaken them from time to time—to remind them what they are, so that their existence (for obviously enough we are intermediate beings) may thereby be divided between sleeping and waking? But I cannot understand any such primordial dream. All dreams are but shadows of reality, "recollections from a world, which previously was actual." If one wished to assume that a higher Being was causing these shadow-images of actuality in us, even here the question would recur as to the real possibility of the concept of such a relationship (since I know of simply nothing in this sphere, which would follow according to cause and effect); and since that Being surely produced what it imparted to me out of itself, then presuming, as is necessary, that it can have no transitive effect on me, there would be no other possibility than that I had received that shadow-show merely as a limitation, or modification, of its absolute productivity, and thus again, within these limits, always through production.[14]

Matter is not insubstantial, you say, for it has original *forces,* which cannot be annihilated by any subdivision. "Matter has forces." I know that this expression is very common. But how? "Matter has"—here

[14] Even on the assumption that a higher Being mocked us with such shadow-images, yet I cannot conceive how it could awaken even a mere image of reality in me, without my having been acquainted with reality itself beforehand—the whole system is too fantastical for it to have been maintained in earnest by anybody. [First edition.]

then it is presupposed as something that exists for itself and independently of its forces. So would these forces be merely accidental to it? Because matter is at hand *outside you*, so also it must owe its forces to an external cause. Are they, as it were, as some Newtonians say, implanted in it by a higher hand? But you have no conception of influences by which forces are *implanted*. You know only how matter, i.e., force itself, works against force; and how effects can be produced on something which originally is not *force*, we have no conception at all. One may say something of the sort; it can pass from mouth to mouth; but never yet has it actually entered any human head, because no human head can think any such thing. Therefore, you cannot conceive matter at all without force.

Further: Those forces are forces of attraction and repulsion. "Attraction and repulsion"—do these, then, take place in empty space? Do they not themselves already presuppose occupied space, that is, matter? So you must admit that neither forces without matter nor matter without forces can be conceived. But now matter is the final substratum of your knowledge, beyond which you cannot go; and as you cannot explain those forces *from* the matter, so you cannot explain them at all empirically, that is, by something *outside yourself*, as surely you must do according to your system.

Irrespective of this it is asked in philosophy how matter *is possible* external to us, thus also, how those forces are possible outside us. One can abjure all philosophizing (would to God those who do not understand it would be pleased to do so), but if you do wish to philosophize, you cannot neglect those questions. Now, however, you can in no way make intelligible what a force might be independent of you. For force as such makes itself known only to your *feeling*. Yet feeling alone gives you no objective concepts. At the same time you make objective use of those forces. For you explain the movement of celestial bodies—universal gravitation—by forces of attraction and maintain that in this explanation you have an absolute principle of these phenomena. In your system, however, the force of attraction ranks as nothing more or less than a *physical* cause. For as matter independent of you exists outside you, so likewise you can only know what forces belong to it through experience. As physical ground of explanation, however, the force of attraction is nothing more and nothing less than an occult quality. All the same, let us first see whether empirical principles can be adequate at all to explain the possibility of a world system. The question answers itself in the negative; for the ultimate knowledge from experience is this, that a universe exists; this proposition is the limit of experience itself. Or rather, that a universe exists is itself only an *idea*. Even less, therefore, can the

universal equilibrium of world forces be anything that you could have concocted from experience. For you could not even extract this idea from experience for the individual system if it is everywhere idea; but it is transferred to the whole only by analogical inferences; such inferences, however, give no more than probability. Whereas ideas like that of a universal equilibrium, true in themselves, must for that reason be products of something, or must be grounded in something, which is itself absolute and independent of experience.[15]

Accordingly, you would have to admit that this idea itself reaches over into a higher region than that of mere natural science. Newton, who never wholly abandoned himself to that, and himself still sought after the *effective cause of attraction*, saw only too well that he stood at the frontier of Nature and that here two worlds diverge. Seldom have great minds lived at the same time without working from altogether different angles towards the same objective. Whereas Leibniz based the system of the spiritual world on the pre-established harmony, Newton found the system of a material world in the equilibrium of world forces. But if, after all, there is unity in the system of our knowledge, and if we ever succeed in uniting the very last extremes of that system, we must hope that even here, where Leibniz and Newton diverged, an all-embracing mind will at some time find the midpoint round which the *universe of our knowledge* moves—the two worlds between which our knowledge is at present still divided; and Leibniz's pre-established harmony and Newton's system of gravitation still appear as one and the same, or merely as different aspects of one and the same totality.[16]

I go farther. Raw matter, that is, matter insofar as it is thought of as merely filling space, is only the firm ground and basis on which the edifice of Nature is first constructed. Matter has to be something real. But what is real only permits of being sensed. How then is sensation possible in me? As you say, it is not enough that I should be affected from without. There must be something in me which *senses*, and between this and what you assume to be outside me no contact is possible. Or, if this external thing works on me as matter on matter, then I can only react upon this externality (as it were, by repulsive force), but not *upon myself*. And yet this has to occur, for I have to *sense*, have to raise the sensation to consciousness.

What you sense of matter you call *quality*, and only insofar as it has a determinate quality is it said to be real for you. That it has quality *at all* is *necessary*, but that it has this *determinate* quality appears to you as

[15] Ideas, like that of a universal equilibrium, are only products of a creative faculty in us. [First edition.]

[16] ["and Leibniz's . . . one and the same totality" is lacking in the first edition.]

contingent. If so, then matter as such cannot have one and the same quality: There must, therefore, be a multiplicity of *determinations* with all of which you are nevertheless acquainted through mere sensation. What then is it that causes sensation? "Something *internal,* an inner constitution of matter." These are words, not facts. For where then is the inside of this matter? You can divide endlessly and yet come no farther than to the surfaces of bodies. All this has long been obvious to you; so you have long since explained what is merely sensed as something which has its basis only in the manner of your sensing. But this is the very least. For it does not make sensation any more intelligible that nothing which exists outside of you should be in itself sweet or sour; in any case, you always assume a *cause* actually outside you, which produces these sensations in you. But suppose we allow you the inner effects of outer causation, what then have colours, scents, and the like, or the causes external to you of these sensations, in common with your mind? You investigate very meticulously how light reflected from bodies affects your optical nerves, also indeed how the inverted image on the retina is not inverted in your soul, but appears upright. But then again what is that in you which sees this image on the retina itself, and investigates how indeed it can have come into the soul? Obviously it is something which to this extent is completely independent of the external impression, and to which nevertheless this impression is not unknown. How then did the impression reach *this* region of your soul in which you feel wholly free and independent of impressions? However many intervening factors you insert between the effects on your nerves, brain, etc., and the idea of an external thing, you only deceive yourself; for the transition from the body to the soul, according to your own submissions, cannot occur continuously, but only by a leap, which you profess you would rather avoid.

Moreover, that one mass works upon another by virtue of its mere motion (by impenetrability) is what you call impact or *mechanical* movement.

Or else, one material thing works on another without the condition of a previously received motion, so that movement proceeds from rest[17] through attraction, and this is your *gravity.*

You conceive of matter as *inert,* that is, as something which does not move self-actively, but can only be moved by external causes.

Again, the gravity which you ascribe to bodies, you set equal to the quantity of matter (irrespective of its volume) as specific weight.[18]

[17] ["without the condition . . . proceeds from rest" is lacking in the first edition.]

[18] Again, specific gravity belongs to bodies, that is, the quantity of attraction is equal to the quantity of matter (irrespective of their volume). [First edition.]

Now you find, however, that one body can impart motion to another without being moved itself, that is, *without* acting upon it by *impact.*

You observe, further, that two bodies can mutually attract one another altogether independent of the relation of their masses, that is to say, *independent* of the laws of *gravity.*

You therefore assume that the ground of this attraction can be sought neither in the weight nor on the surface of the body so moved; the ground must be something internal and must depend on the *quality* of the body. Only you have never yet explained what you understand by the *inner nature* of a body. Moreover, it has been demonstrated that quality has legitimate sense only in relation to your sensation. But here we are speaking, not of your sensation, but of an objective fact, which occurs outside you, which you apprehend with your senses, and which your understanding seeks to translate into intelligible concepts. Now, assume that we admit quality to be something which has a ground, not merely in your sensation, but in the body outside you; what then do the words mean: One body attracts another by virtue of its qualities? For what is *real* in this attraction, that is, what enables you to perceive it, is merely—the motion of the body. Motion, however, is a pure mathematical magnitude, and can be defined purely phoronomically. How then does this external movement combine with an inner quality? You are borrowing pictorial expressions, which are taken from living natures, for example, family relationship. But you would be very hard put to convert this image into an intelligible concept. Further, you heap elementary stuff on elementary stuff, but these are nothing else than just so many refuges of your ignorance. For what do you think of under these terms? Not matter itself, e.g., carbon, but something that is contained in this matter, as if hidden, and first imparts these qualities to it. But where then is this elementary stuff in the body? Has anyone ever found it by division or separation? As yet there is not one of these stuffs which you could present to the senses. But even if we presume their existence, what do we gain? Is the quality of matter somehow explained thereby? I conclude thus: Either the quality which they impart to the body belongs to the elementary stuffs themselves, or it does not. In the first case, you have explained nothing, for the question was just that, how do qualities arise? In the other case, again nothing is explained, for I understand how one body could (mechanically) strike the other and so impart motion to it; but how a body completely devoid of qualities could impart quality to another, this nobody understands, and nobody can make it intelligible. For quality as such is something of which so far

you have been in no position to give any objective conception, and yet of which you make objective use (in chemistry, at least).

These are the elements of our empirical knowledge. For if we may once presuppose matter and with it forces of attraction and repulsion, besides an endless multiplicity of kinds of matter, which are all distinguished from another by qualities, we have, according to the guidance of the table of categories:

1. *Quantitative* motion, which is proportional only to the quantity of matter – *gravity;*
2. *Qualitative* motion, which is appropriate to the inner constitution of matter – *chemical* motion;
3. *Relative* motion, which is transmitted to bodies by influence from without (by impact) – *mechanical* motion.

It is these three possible motions from which natural science engenders and develops its entire system.

The part of physics which is concerned with the *first* is called *statics.* That which is concerned with the *third* is called *mechanics.* This is the main part of physics; for basically the whole of physics is nothing but applied mechanics.[19] That part, which is concerned with the *second* kind of motion, serves in physics only as ancillary, namely *chemistry,* whose object is essentially to trace the specific difference of matter; it is the science which first creates for mechanics (in itself a wholly formal science) content and diverse application. It requires, that is to say, very little trouble to derive from the principles of chemistry the main objects which physics (with respect to its mechanical and dynamical motions)[20] investigates; for example, for chemical attraction between bodies to take place, one may say, there must be a matter which extends them, which works against inertia – light and heat – also substances which mutually attract one another and, so that there may be the greatest simplicity, *one* fundamental substance, which all others attract. And, as Nature itself requires many chemical processes for its continuance, these conditions of chemical processes, and so vital air, as the product of light and that fundamental stuff, must be present everywhere. And as this air would promote the violence of combustion all too readily and exhaust the strength of our organs excessively,

[19] In mechanics the universal properties of bodies, like elasticity, solidity, density, etc., insofar as they have influence on *mechanical* movement, can likewise be included. However, *universal* kinematics does not at all belong among the empirical sciences – I believe that, according to this division, physics acquires a far simpler and more natural coherence than it has hitherto received in most textbooks.

[20] ["and dynamical" is added in the second edition.]

a mixture of it with another kind of air directly opposed to it is needed – atmospheric air, and so forth.

This is more or less the way in which the theory of Nature attains completeness. But our present concern is not how we might present such a system, once it exists, but how in general such a system could exist. The question is not whether and how that assemblage of phenomena and the series of causes and effects, which we call the course of Nature, has become actual *outside us,* but how they have become actual *for us,* how that system and that assemblage of phenomena have found their way to our minds, and how they have attained the necessity in our conception with which we are absolutely compelled to think of them. For it is presupposed, as undeniable fact, that the representation of a succession of causes and effects external to us is as necessary for our mind as if they belonged to its very being and essence. To explain this necessity is a major problem of all philosophy. The question is not whether this problem as such ought to exist, but how, once it exists, it must be solved.

First of all, what does it mean to say: We must think of a succession of phenomena, which is absolutely *necessary?* Obviously this: These phenomena could follow one another only in this *particular* succession, and *vice versa,* only in these *particular* phenomena can this succession proceed.

For that our ideas follow one another in this precise order, that for example the lightning precedes the thunder, does not follow it, and so on, for this we do not seek the reason *in us;* it does not matter *to us* how we let the ideas follow one another; the reason must, therefore, lie in *the things,* and we declare that this particular succession is a succession of the *things themselves,* not merely of our ideas of them. Only insofar as the phenomena *themselves* follow one another thus and not otherwise are we compelled to represent them in this order; only because and insofar as this succession is *objectively* necessary is it also *subjectively* necessary.

Now from this it follows further that this particular succession cannot be divorced from these particular phenomena; the succession must thus come to be and arise together with the phenomena, and conversely the phenomena must come about and arise together with the succession; therefore, both succession and phenomenon are in mutual relation, both are mutually necessary in regard to each other.

One has only to analyse the commonest judgments that we pass at every moment about the connection of phenomena, in order to discover that the above presuppositions are contained in them.

Now, if neither the phenomena can be separated from their succession nor the succession from its phenomena, only the two following cases are possible:

Either succession and phenomena both arise together and inseparably *outside* us.

Or succession and phenomena both arise together and inseparably *within* us.

Only in these two cases is the succession, which we represent to ourselves, an actual succession of things, not merely an ideal sequence of our presentations one after another.

The first assertion is that of the common human understanding, and even of philosophers formally opposed to Hume's scepticism, Reid and Beattie, among others. In this system the things in themselves follow one another; we have only to look at them; but how the representation of them got into us is a question pitched much too high for this system. But we do not want to know how the succession is possible outside us, but how this particular succession, since it proceeds quite independently of us, yet is represented *as* such by us, and insofar as it is so, with absolute necessity. Now of this question that system takes no account. It is therefore not susceptible of any philosophical critique; it has not one point in common with philosophy, from which one could proceed to investigate, test or contest it, for it is altogether oblivious of the question which it is the essential business of philosophy to solve.

That system should first be made philosophical before one could even test it. But then one runs the risk of fighting against a mere fabrication, for the common understanding is not so consistent, and such a system as that consistent with common sense has in fact never yet existed in any human head; for as soon as one seeks to give it philosophical expression, it becomes wholly unintelligible. It speaks of a succession, which, *independently* of me, is supposed to take place *outside* me. I understand how a succession (of ideas) takes place *within* me; but a succession which goes on in the things themselves, independent of the finite ideas, is wholly unintelligible to me. For if we were to posit a Being who was not finite, and accordingly not bound to the succession of presentations, but who grasped everything, present and future, together in one intuition, for such a Being there would be no succession in the things external to him: It is therefore a succession as such, only under the condition of the finitude of the representation. But if the succession were also grounded in the things-in-themselves, independently of all presentation, there would have to be a succession for such a Being as we have assumed as well, which is self-contradictory.

For this reason, all philosophers up to the present have unanimously declared that succession is something which cannot be conceived at all apart from the presentations of a finite mind. Now we have established that, if the presentation of a succession is to be necessary, it must arise together with the things, and *vice versa;* the succession must be as little possible without the things as the things without the succession. If, therefore, succession is something possible only in our ideas, there is a choice between only two alternatives.

Either one insists that things exist outside us independently of our ideas. Then, by so doing, the objective necessity, with which we represent to ourselves a particular succession of *things,* is explained away as mere illusion, inasmuch as one denies that the succession takes place in the things themselves.

Or one adheres to the assertion that the very phenomena themselves, together with the succession, come to be and arise only in our ideas, and that only to that extent is the order in which they follow one another a genuinely objective order.

Now the first assertion obviously leads to the most fantastical system that has ever existed, and which even today would be maintained only by a handful, without their even knowing it. *Here* now is the place to dispose completely of the axiom that things affect us from without. For let us just ask what things outside us and independent of these ideas might be. First we must divest them of everything that belongs only to the peculiarities of our faculty of representation. To that belongs, not only succession, but also all conception of cause and effect and, if we wish to be consistent, also all representation of space and extension, both of which are utterly inconceivable without time, from which we have removed the things-in-themselves. Nevertheless these things-in-themselves, although altogether inaccessible to our faculty of intuition, must still be actually present—one knows not how or where—probably in the *twilight worlds* of Epicurus—and these things have to *affect* me in order to occasion my ideas. True it is that nobody has ever yet entered into the question what idea we actually frame of such things. To say that they are not conceivable is one way out, but that is soon cut off. If we speak of them, we must have an idea of them, or else we speak as we should not. One has, indeed, an idea even of nothing; one thinks of it at least as the absolute void, as something purely formal, and so on. One might think that the idea of things-in-themselves were a similar notion. But the idea of nothing can, after all, still be made palpable through the schema of empty space. Things-in-themselves, however, are expressly excluded from space and time, for the latter belong, of course, only to the peculiar form of representation of finite beings. So nothing is left but an idea which floats midway between something and nothing, i.e., which does not even have the virtue of being absolutely nothing. It is, in fact, scarcely credible that such a nonsensical conglomeration of things, which, bereft of all sensible characteristics, are nevertheless supposed

to function as sensible things, should ever have come into anybody's head.[21]

Indeed, if everything that belongs to the presentation of an objective world is eliminated beforehand, what is there left for me to understand? Clearly, only *myself*. So all ideas of an external world would have to develop out of *me*, myself. For if succession, cause, effect, and the rest, first attach to things in my representation of them, one can as little conceive what those concepts could be without the things, as what the things could be without the concepts. Hence the venturesome explanation which this system is constrained to give of the origin of representation. In opposition to things-in-themselves it sets up a mind, and this mind contains in itself certain *a priori* forms, which have only this advantage over things-in-themselves, that one can at least represent them as something absolutely empty. In representing the things, we apprehend them in these forms. Thereby the formless objects acquire structure; the empty forms, content. How it happens that things come to be represented at all, about that there is the deepest silence. It is enough that we represent things as external to us. Only in the representation, however, do we first carry space and time over to them, and further, the concepts of substance and accident, cause and effect, and so on. Thus the succession of our ideas arises in us, and indeed a necessary succession; and this self-made succession, first brought forth in consciousness, is called the course of Nature.

This system requires no refutation. To propound it is to overturn it from the bottom up. In fact, the *Humean* scepticism is vastly superior and not at all comparable to it. Hume (faithful to his principles) leaves it altogether undecided whether our ideas correspond to things outside us or not. In every case, however, he has to assume that the *succession* of appearances takes place only in our ideas; but that we take just this *particular* succession as *necessary* he declares to be pure illusion. But what one can justly demand of Hume is that he at least explain the source of this *illusion*. For that we do actually think of a sequence of causes and effects as necessary—that thereon rest all our empirical sciences, theory of Nature and history (in which he was himself so great a master), he cannot deny. But whence this illusion itself? Hume answers: "From custom; *because hitherto the appearances have followed one another in this order*, the imagination has accustomed itself to expect the same order also in the future, and this expectation has, like every long habituation, ultimately become for us a *second*

[21] The truth is that the idea of things-in-themselves had come down to Kant through the tradition and had lost all meaning in the course of inheritance. [This note is lacking in the first edition.]

nature." But this explanation turns in a circle, for the very thing that had to be explained was *why things have hitherto followed one another in this order* (which Hume does not deny). Was this sequence perhaps something in the things outside us? But apart from our ideas there is no succession. Or, if it was merely the succession of our ideas, then a reason for the persistence of this succession must also be given. What exists independent of me I am unable to explain; but for what goes on only *in me* the reason must be found also in me. Hume can say: It is so, and that satisfies me. But this is not to philosophize. I do not say that a Hume *ought* to philosophize, but once a man *proclaims* that he wants to philosophize, he can no longer dismiss the question, Why?

So nothing remains but the attempt to derive the necessity of a succession of presentations from the *nature* of our mind, and so of the finite mind as such, and, in order that this succession may be genuinely *objective*, to have the things themselves, together with this sequence, arise and come into being in it.

Among all previous systems I know only two—the Spinozistic and the Leibnizian—which not only undertook this attempt, but whose entire philosophy is nothing else but this attempt. Now because there is still at present much doubt and discussion about the relation of these two systems—whether they contradict each other, or how they cohere—it seems useful to say something about them at the outset.

Spinoza, as it seems, was worried at a very early stage about the connection of our ideas with things outside us, and could not tolerate the separation which had been set up between them. He saw that ideal and real (thought and object) are most intimately united in our nature. That we have ideas of things outside us, that our ideas even reach out *beyond* the things, he could explain to himself only in terms of our *ideal nature;* but that these ideas correspond to actual *things*, he had to explain in terms of the *affections* and *determinations* of the ideal in us. Therefore we could not become aware of the real, save in contrast to the ideal, or of the ideal, save in contrast to the real. Accordingly, no separation could occur between the actual things and our ideas of them. Concepts and things, thought and extension, were, for this reason, one and the same for him, both only modifications of one and the same ideal nature.

However, instead of descending into the depths of his self-consciousness and descrying the emergence thence of the two worlds in us—the ideal and the real—he passed himself by; instead of explaining from our nature how finite and infinite, originally united in us, proceed reciprocally from each other, he lost himself forthwith in the idea of an infinite outside us. In this infinity there arose, or rather originally were—one knows not whence—affections and modifications, and with

these an endless series of finite things. For, because there was no transition in his system from infinite to finite, a beginning of *becoming* was for him as inconceivable as a beginning of *being*. Yet that this endless succession is envisaged by me, and is envisaged with *necessity*, followed from the fact that the things and my ideas were originally one and the same. I myself was only one of the Infinite's thoughts, or rather just a constant succession of presentations. But Spinoza was unable to make it intelligible how I myself in turn become aware of this succession.

For, generally speaking, as it came from his hand, his system is the most unintelligible that ever existed. One must have taken this system up into oneself, have put oneself in the place of his infinite Substance, in order to know that infinite and finite—do not *arise*, but—*exist* originally together and inseparably, not *outside us*, but *in us*, and that the nature of our mind and of our whole mental existence rests on just this original union. For we know immediately only our own essence, and only ourselves are intelligible to us. How affections and determinations are and can exist in an Absolute external to me, I do not understand. But I do understand that even within me there could be nothing *infinite* unless there were at the same time a *finite*. For that necessary union of ideal and real, of the absolutely active and absolutely passive (which Spinoza displaced into an infinite Substance outside me) exists ***within me*** originally without my co-operation, and that is just what ***my*** nature consists in.[**]

Leibniz followed this route, and here is the point where he diverges from Spinoza and connects with him. It is impossible to understand Leibniz without having stationed oneself at this point. *Jacobi* has shown that his whole system sets out from the concept of *individuality* and reverts to it. In the concept of individuality alone, there is an original union of what all other philosophy separates, the positive and the negative, the active and the passive in our nature. How there can be *determinations* in an infinite external to us, Spinoza knew no way of making intelligible, and he sought in vain to avoid a transition from the infinite to the finite. This transition is absent only where finite and infinite are *originally* united, and this *original* union exists nowhere except in the essence of an individual nature. Leibniz, therefore, went over neither from the infinite to the finite nor from the latter to the former, but both were made actual for him at the same time—as if through one and the same unfolding of our nature—through one and the same operation of the mind.

[**] But closer consideration will at once teach anyone that every positing-in-me of the absolute identity of finite and infinite, like the positing-outside-me, is again only *my* positing, so that the former *in itself* is neither an in-me nor an outside-me. [This note is added in the second edition.]

That ideas in us *follow* one another is the necessary consequence of our finitude, but that this series is *endless* proves that they proceed from a being in whose nature finitude and infinity are united.

That this succession is *necessary* follows, in Leibniz's philosophy, from the fact that the things together with the ideas arise by virtue of the mere laws of our nature, according to an inner principle in us, as in a world of its own. What alone Leibniz held to be originally real and actual *in themselves* were *perceptual beings;* for in these alone was that *unification* original, out of which everything else that is called actual *develops* and *goes forth*. For everything which is actual outside us is finite, and so not conceivable without a positive, which gives it reality, and a negative, which sets its limit. This unification of positive and negative activity, however, is nowhere *original* except in the nature of an individual. External things *were* not actual *in themselves*, but have only *become* actual through the mode of presentation of spiritual natures; but that from whose nature all existence first *emerges*, that is, the ideating being alone, would have had to be something which bears the source and origin of its existence in itself.

If now the whole succession of ideas springs from the *nature* of the finite mind, so likewise the whole series of our experiences must be derivable from it. For that all beings like ourselves perceive the phenomena of the world in the same necessary serial order is conceivable only and solely from our common nature. To explain this agreement of our nature, however, by a pre-established harmony is actually not to explain it. Because this word only says *that* such agreement occurs, but not how and why. It is, however, implicit in Leibniz's system itself that this agreement should follow from the *essence* of finite natures as such. Because if this were not so, the mind would cease to be absolutely *self-explanatory* of its knowledge and cognition. Nevertheless it would still have to seek the ground of its ideas *outside itself*. We should have reverted once again to the same point from which we began; the world and its order would be *contingent* for us, and the representation thereof would come to us only from without. But with that we are inevitably swept beyond the limits within which alone we understand ourselves. For if a superior hand had so contrived us in the first place that we were compelled to envisage such a world and such an order of phenomena, then, discounting the fact that this hypothesis is wholly unintelligible to us, this whole world is once again an illusion: One thrust of that hand is able to wrest it from us, or to translate us into an entirely different order of things; it is then wholly doubtful even that beings of our own kind (with similar ideas to ours) exist outside us. Leibniz, therefore, could not have associated with the pre-established harmony the idea that one usually couples with it. For he explicitly

asserts that no mind could have *come to be;* that is, the concepts of cause and effect are altogether inapplicable to a mind. It is, therefore, absolutely self-explanatory of its being and knowing, and just because it exists at all, is also *what it is,* i.e., a being to whose *nature* this particular system of ideas of external things also belongs.

Philosophy, accordingly, is nothing other than a *natural history of our mind.* From now on all dogmatism is overturned from its foundations. We consider the system of our ideas, not in its *being,* but in its *becoming.* Philosophy becomes *genetic;* that is, it allows the whole necessary series of our ideas to arise and take its course, as it were, before our eyes. From now on there is no longer any separation between experience and speculation. The system of Nature is at the same time the system of our mind, and only now, once the great synthesis has been accomplished, does our knowledge return to analysis (to *research* and *experiment*). But this system does not yet exist. Many faint-hearted spirits have misgivings at the outset, for they speak of a system of *our nature* (the magnitude of which they do not know), no otherwise than as if they were speaking about a *syllabus*[33] of our *concepts.*

The dogmatist, who assumes everything to be originally *present* outside us (not as *coming to be* and *springing forth from* us) must surely commit himself at least *to this:* that what is *external* to us is also to be explained by *external* causes. He succeeds in doing this, as long as he remains within the nexus of cause and effect, despite the fact that he can never make it intelligible how this nexus of causes and effects has *itself* arisen. As soon as he raises himself above the individual phenomenon, his whole philosophy is at an end; the limits of mechanism are also the limits of his system.

But now mechanism alone is far from being what constitutes Nature. For as soon as we enter the realm of *organic nature,* all mechanical linkage of cause and effect ceases for us. Every organic product exists *for itself;* its being is dependent on no other being. But now the cause is never the *same as* the effect; only between quite *different* things is a relation of cause and effect possible. The organic, however, produces *itself,* arises *out of itself;* every single plant is the product only of an individual *of its own kind,* and so every single organism endlessly produces and reproduces only *its own species.* Hence no organization progresses *forward,* but is forever turning back always into *itself.* Accordingly, an organization as such is neither *cause* nor *effect* of anything outside it, and so is nothing that intrudes into the nexus of mechanism.

[33] In the writings and translations from the earliest times of German purism one finds the expressions: *Syllabus of essences, Syllabus of Nature.* It is a shame that our modern philosophers have allowed this expression to go out of use.

Every organic product carries the reason of its existence in *itself,* for it is cause and effect of itself. No single part could *arise* except in this whole, and this whole itself consists only in the *interaction* of the parts. In every other object the parts are *arbitrary;* they exist only insofar as I *divide.* Only in organized beings are they *real;* they exist without my participation, because there is an *objective* relationship between them and the whole. Thus a *concept* lies at the base of every organization, for where there is a necessary relation of the whole to the part and of the part to the whole, there is *concept.* But this concept dwells in the *organization itself,* and can by no means be separated from it; it *organizes itself,* and is not simply, say, a work of art whose concept is to be found *outside* it in the understanding of the artist. Not only its form but its *existence* is purposive. It could not organize itself without already being organized. The plant nourishes itself and subsists through assimilation of external matter, but it can assimilate nothing to itself unless it is already organized. The maintenance of the living body depends on respiration. The vital air it inhales is decomposed by its organs in order to flow through the nerves as electric fluid. But to make this process possible, organization must already have been present, which yet, on the other hand, does not survive without this process. Thus organization constructs itself only out of organization. In the organic product, for this very reason, form and matter are inseparable; this particular matter could only arise and come to be along with this particular form, and *vice versa.* Every organization is therefore a *whole; its unity lies in itself;* it does not depend on our choice whether we think of it as one or as many. Cause and effect is something evanescent, transitory, mere *appearance* (in the usual sense of the word). The organism, however, is not mere appearance, but is *itself* object, and indeed an object subsisting through itself, in itself whole and indivisible, and because in it the form is inseparable from the matter, the *origin* of an organism, as such, can no more be explained mechanically than the origin of matter itself.

So if the purposiveness of the organic product is to be explained, the dogmatist finds himself completely deserted by his system. Here it no longer avails to separate concept and object, form and matter, as it pleases us. For *here,* at least, both are originally and necessarily united, not in our idea, but in the *object* itself. I should like one of those who take playing with concepts for philosophy, and fantasies of things for real things, to venture with us into *this* field.

First of all you must concede that here the talk is of a *unity,* which is absolutely inexplicable in terms of *matter,* as such. For it is a unity of the *concept,* a unity that exists only in relation to an intuiting and reflecting being. For that there is absolute individuality in an organism, that its parts are possible only through the whole, and the whole

is possible, not through assembling, but through interaction, of the parts, is a *judgement* and cannot be judged at all save only by a mind, which relates whole and part, form and matter, reciprocally one to another, and only through and in this relation does all purposiveness and attunement to the whole arise and come to be in the first place. What indeed have these parts, which are but matter, in common with an *Idea,* which is originally alien to matter, and to which they are nevertheless attuned? Here no relation is possible except through a third thing, to whose ideas both, matter and concept, belong. Such a third thing, however, is only an intuiting and reflecting mind. So you have to admit that organization as such is conceivable only in relation to a *mind.*

Even those who will have it that the organic product itself arises from a wonderful collision of atoms admit this. For in that they derive the origin of these things from blind chance, they also promptly abolish all purposiveness in them and with it all conception of organization itself—that is to say, if consistently thought out. For since purposiveness is conceivable only in relation to a judging intellect, the question must be answered how the organic products arise independently *of me,* as if there were no relation at all between them and a judging intelligence, that is, as if there were no purpose in them anywhere.

Hence the first thing that you grant is this: Any conception of purpose can arise only in an intelligence, and only in relation to such an intelligence can anything be called purposive.

At the same time, you are no less compelled to concede that the purposiveness of natural products dwells in *themselves,* that it is *objective* and *real,* hence that it belongs, not to your *arbitrary,* but to your *necessary* representations. For you can very easily distinguish what is arbitrary and what is necessary in the conjunction of your concepts. Whenever you conjoin things which are separated in space in *a single* aggregate, you act quite freely; the unity which you bestow on them you transfer to them simply from your thoughts; there is no reason residing in the *things themselves* which required you to think of them as one. But when you think of each plant as an individual, in which everything concurs together for one purpose, you must seek the reason for that in the *thing outside you:* you feel yourself constrained in your judgement; you must therefore confess that the unity with which you think it is not merely *logical* (in your thoughts), but *real* (actually outside you).

It is now incumbent upon you to answer the question, how it happens that an idea, which obviously exists merely in you, and can have reality only in relation to yourself, must yet be actually intuited and represented by you, as itself outside you.

Certainly there are philosophers who have *one* universal answer to all these questions, which they repeat at every opportunity and cannot repeat enough. That which is form in the things, they say, we initially impose on the things. But I have long sought to know just how you could be acquainted with what the things are, without the form which you first impose on them, or what the form is, without the things on which you impose it. You would have to concede that, *here* at least, the form is absolutely inseparable from the matter, and the concept from the object. Or, if it rests with your choice whether or not to impose the idea of purposiveness on things outside you, how does it come about that you impose this idea only on *certain* things, and not on *all,* that further, in this representing of purposeful products, you feel yourself in no way *free,* but absolutely constrained? You could give no other reason for either than that this purposive form just belongs to certain *things* outside you, originally and without assistance from your choice.

This granted, what was valid before is also valid here: The form and matter of these things could never be separated; both could come into being only together and reciprocally, each through the other. The concept which lies at the base of this organization has no reality *in itself,* and, conversely, this particular matter is not *organized matter, qua* matter, but only because of the indwelling *concept.* This particular object, therefore, could arise only together with this concept; and this particular concept, only together with this particular object.

All previous systems must be judged according to this principle.

In order to comprehend this union of concept and matter, you assume a higher divine intelligence, who designed his creations in ideal forms and brought forth Nature in accordance with these ideals. But a being in whom the concept *precedes* the act, the design the execution, cannot *produce,* but can only form or model, matter already there, can only stamp the impress of the understanding and of purposiveness upon the matter from without. What he produces is purposive, not *in itself,* but only in relation to the understanding of the artificer, not *originally* and *necessarily,* but only contingently. Is not the understanding a dead faculty? And has it any other use than to grasp and apprehend the actual when it is present? And, instead of creating the actual, does it not borrow its own reality from actuality itself? And is it not merely the slavishness of this faculty, its capacity for describing the *outlines* of the real, which sets up an accommodation between itself and the reality? But here the question is how the *actual* arises, and with it the ideal (the purposive), which is simply inseparable from it. Not that the things of Nature, as such, are purposive, as every work of art is also purposive, but that this purposiveness is something which could not be imparted to them at all from without, that they are

purposive originally *through themselves*—this is what we want to see explained.

You therefore take refuge in the *creative* power of a divinity, from which the actual things together with their ideas proceeded and sprang forth. You realized that you had to allow the actual to arise together with the purposive, the purposive together with the actual, if you wished to assume something outside you that is purposive in and through itself.

But let us assume for a moment what you allege (although you yourself are in no position to make it intelligible); let us assume it is through the creative power of a divinity that the whole system of Nature arose and with it all the diversity of purposive products external to us. Have we in fact advanced even a single step farther than before, and do we not find ourselves once again at the same point from which we set out at the beginning? How organic products external to, and independent of, me have actually come to be was not at all what I required to know; for how could I even form a clear idea of that for myself? The question was: how the *representation* of purposive products outside me has got *into me*, and how, *although it pertains to things only in relation to my understanding*, I am nevertheless compelled to think of this purposiveness as *actually outside me* and necessary. This question you have not answered.

For as soon as you regard the things of Nature as actual outside you and hence as the work of a creator, no purposiveness can inhere in them, because this is of course valid only in relation to *your* understanding. Or do you also wish to presuppose concepts of purpose and the like in the creator of the things? But as soon as you do this, he ceases to be a creator and becomes merely an artificer, he is at most the architect of Nature. However, you *destroy* all idea of *Nature* from the very bottom, as soon as you allow the purposiveness to enter her from without, through a transfer from the intelligence of any being whatever. As soon as you make the idea of the creator *finite*, therefore, he ceases to be creator; extend it to *infinity*, and you then lose all conception of purposiveness and understanding, and only the idea of an absolute power remains. From now on everything finite is merely a modification of the infinite. But you no more comprehend how a modification may be possible in the infinite as such, than you comprehend how this modification of the infinite, that is, how the whole system of finite things, could have got into your consciousness, or how the unity of things, which can only be *ontological* in the Infinite Being, can have become *teleological* in your understanding.

You could, of course, seek to explain this by the peculiar nature of a finite mind. But if you do that, you no longer need the infinite as

something external to you. You could, from now on, allow everything to arise and come to be simply in your mind. For if you also presuppose things *outside* and independent of you, which *in themselves* are purposive, you must nevertheless still explain how your *ideas* agree with these external things. You would have to take refuge in a preestablished harmony, would have to assume that a mind, analogous to your own, reigns in the very things outside you. For only in a mind able to create can concept and actuality, ideal and real, so interpenetrate and unite that no separation is possible between them. I cannot think otherwise than that Leibniz understood by substantial form a mind *inhering in* and regulating the organized being.

This philosophy must accept, therefore, that there is a hierarchy of life in Nature. Even in mere organized matter there is *life*, but a life of a more restricted kind. This idea is so old, and has hitherto persisted so constantly in the most varied forms, right up to the present day—(already in the most ancient times it was believed that the whole world was pervaded by an animating principle, called the world-soul, and the later period of Leibniz gave every plant its soul)—that one may very well surmise from the beginning that there must be some reason latent in the human mind itself for this natural belief. And so it is. The sheer wonder which surrounds the problem of the origin of organic bodies, therefore, is due to the fact that in these things necessity and contingency are most intimately united. *Necessity*, because their very *existence* is *purposive*, not only their form (as in the work of art), *contingency*, because this purposiveness is nevertheless actual only for an intuiting and reflecting being. For that reason, the human mind was early led to the idea of a *self*-organizing matter, and because organization is conceivable only in relation to a mind, to an original union of mind and matter in these things. It saw itself compelled to seek the reason for these things, on the one hand, in Nature herself, and on the other, in a principle exalted above Nature; and hence it very soon fell into thinking of mind and Nature as one. Here for the first time there emerged from its sacred obscurity that ideal being in which the mind supposes concept and deed, design and execution, to be one. Here first a premonition came over man of his own nature, in which intuition and concept, form and object, ideal and real, are originally one and the same. Hence the peculiar aura which surrounds this problem, an aura which the philosophy of mere reflection, which sets out only to *separate*, can never develop, whereas the pure intuition, or rather, the creative imagination, long since discovered the symbolic language, which one has only to construe in order to discover that Nature speaks to us the more intelligibly the less we think of her in a merely reflective way.

No wonder that language, used dogmatically,[*1] soon lost sense and meaning. So long as I myself am *identical* with Nature, I understand what a living nature is as well as I understand my own life; I apprehend how this universal life of Nature reveals itself in manifold forms, in progressive developments, in gradual approximations to freedom. As soon, however, as I separate myself, and with me everything ideal, from Nature, nothing remains to me but a dead object, and I cease to comprehend how a *life outside* me can be possible.

If I question the common understanding, it believes that *life* is to be seen only where there is *free movement.* For the capacities of animal organs–sensibility, irritability, and the like–themselves presuppose an impulsive principle, without which the animal would be incapable of reacting to external stimulation, and only through this free reactivity of the organs does the stimulus from without become excitation and impression. Here the most complete reciprocity prevails: Only through excitation from without is the animal determined to movement, and conversely, only through this capacity to produce movement in itself does external impression become a stimulus. (Hence there can be neither irritability without sensibility nor sensibility without irritability.)

But all these functions of the organs, purely as such, are insufficient to explain *life.* For we could very well imagine an arrangement of fibres, nerves, and so on, in which (as, for example, in the nerves of a dissected organic body, by electricity, metallic stimulation, etc.) free movements could be produced by external stimuli, without our being able to attribute *life* to this composite thing. One might perhaps retort that nevertheless the coordination of *all* these movements would bring about life; but that involves a higher principle, which we can no longer explain in terms of matter alone, a principle that orders all individual movements, holds them together, and so first creates and brings forth a whole out of a multiplicity of motions which agree with one another, and mutually produce and reproduce themselves. So here again, we meet that absolute unification of Nature and Freedom in one and the same being. The living organism is to be a product of *Nature:* but in this natural product an ordering and coordinating *mind* is to rule. These two principles shall in no way be separated in it, but most intimately united. In intuition the two are not to be distinguishable at all; there must be neither *before* nor *after,* but absolute simultaneity and reciprocity between them.

As soon as philosophy removes this internal conjunction, two systems arise directly opposed to each other, of which neither can refute

[*1] scientifically and dogmatically used [First edition.]

the other, because both entirely destroy all idea of life, which flees all the farther from them the nearer they think to approach it.

I am not speaking of that so-called philosophy of those who would hold that even thought, imagery and will spring up in us, now from a chance collision of already organized particles, now through an actually artificial conjunction of muscles, fibres, membranes and ligaments which hold the body together, and fluid substances which flow through it, and so on. I maintain, however, that we as little understand empirically a life *outside us* as we do a consciousness *outside us,* that neither the one nor the other is explicable from physical causes, that in this respect it is completely indifferent whether the body is regarded as an accidental aggregate of organized particles, or as a hydraulic machine, or as a chemical laboratory. Assume, for instance, that all the movements of a living body were explicable by changes in the composition of its nerves, its sinews, or the fluid that is taken to circulate in them; then not only is it a question of how those changes are caused, but also of what principle holds all these changes harmoniously together.

Or if at last a philosophical purview of Nature as a system, which nowhere stands still but progresses, discovers that with living matter Nature oversteps the limits of inorganic chemistry, so that (because otherwise chemical processes in the body would be unavoidable and because the dead body is destroyed by genuine chemical dissolution) there must be in the living body a principle which exempts it from chemical laws, and if this principle is now called *Life-force,* then I maintain on the contrary that Life-force, taken in this sense (and however prevalent this expression may be), is a completely self-contradictory concept. For we can think of force only as something finite. But no force is finite by *nature* except insofar as it is limited by one opposing it. Where we think of force (as in matter), therefore, we must also presume a force *opposed* to it. Between opposing forces, however, we can only conceive a double relationship. Either they are in *relative* equilibrium (in absolute equilibrium they would both be completely eliminated); then they are thought of as at *rest,* as in matter which is therefore said to be inert. Or one thinks of them as in perpetual, never-settled conflict, where each in turn prevails and submits; but then, again, a third must be present which keeps this conflict going and maintains the work of Nature in this conflict of alternately prevailing and submissive forces. Now this third cannot itself be a force, for otherwise we should return to the previous alternative. So it must be something that is higher than just *force;* yet *force* is the ultimate (as I shall prove) to which all our physical explanations must return; so that third would have to be something which lies right outside the limits of empirical research into Nature.

But now beyond and above Nature, in the ordinary notion of it, nothing higher is acknowledged than mind.[25] However, if we now want to conceive the Life-force as a spiritual principle, then we totally abolish that concept in so doing. For *force* means what, at least as a *principle*, we can put at the apex of natural science, and what, although not itself presentable, yet, in the *way it works*, is definable by physical laws. But how a mind can act physically we have not the slightest idea; for that reason also, a mental principle cannot be called *Life-force*, an expression by which one always at least suggests the hope of allowing that principle to work according to physical laws.[26]

But if we forgo, as we are then compelled to do, this concept (of a Life-force), we are now obliged to take refuge in a completely antithetical system, in which at once mind and matter stand opposed to each other, regardless of the fact that we now understand how mind affects matter as little as we could previously understand how matter affects mind.

Mind, considered as the principle of life, is called *soul*. I shall not repeat the objections that have long since been brought against the philosophy of the dualists. It has hitherto been contested for the most part from principles which had as little content as the contested system itself. We do not ask how in general a connection is possible between soul and body (a question to which one is not entitled, because the questioner himself does not understand it) but rather—what one can understand and must answer—how the idea of such a connection has arisen *in us*. That I think, imagine, will, and that this thinking, etc., can so little be a result of my body, that on the contrary the latter only becomes *my* body through these capacities to think and to will, I know full well. Let it meanwhile be permitted, moreover, for the sake of speculation, to distinguish the principle of motion from the moved, the soul from the body, despite the fact that as soon as the talk is of action we completely forget this distinction. Now with all these assumptions, at least this much is obvious, that if there is in me life and soul, the last as something distinct from the body, I can become aware of either only through *immediate* experience. That I *am* (think, will, etc.) is something that I must know, if I know anything at all. Thus I

[25] Now we know nothing higher, for which forces as such could exist, than Spirit; for only Spirit can represent to itself forces and equilibrium or conflict of forces. [First edition.]

[26] This one sees very clearly from the utterances of many defenders of the *Life-force*. Herr Brandis, for example (in his *Experiments on the Life-force*, #81), asks, "Should electricity (which seems to cooperate in phlogistical processes generally) also participate in the phlogistical life-processes (which the author assumes), or *might electricity be the life-force itself*? I consider it *more than likely*."

understand how an idea of my own being and life arises in me, because if I understand anything whatsoever, I must understand this. Also, because I am immediately aware of my own being, the inference to a soul in me, even if the conclusion should be false, at least rests on *one* indubitable premise, that I *am, live, imagine, will*.

But how do I now come to transfer *being, life*, etc., to things *outside* me? For just as soon as this happens, my immediate knowledge is converted into *mediate*. But now I maintain that there can be only an *immediate* knowledge of being and life, and that what *is* and *lives* only is and lives insofar as it first and foremost exists *for itself*, is aware of its life through being alive. Suppose, then, that there appears to me in my perception an organic being, freely self-moving, then I certainly know that this being *exists*, that it is *for me*, but not that it *exists for itself* and *in itself*. For life can as little be represented outside life as consciousness outside consciousness.[27] So even an empirical conviction[28] that something lives outside me is absolutely impossible. For the Idealist can say that your representing to yourself organized, free, self-moving bodies can just as well belong simply to the necessary peculiarities of your faculty of representation; and even the philosophy which bestows life on everything external to me does not permit the idea of this life outside me to come into me from *outside*.

But if this idea arises only *in me*, how can I be persuaded that anything corresponds to it outside me? It is also obvious that I am persuaded of a life and self-existence outside me only *practically*. I must in practice be *compelled* to acknowledge beings outside me, who are like me. If I were not compelled to enter into the company of people outside me and into all the practical relationships associated with that; if I did not know that beings, who resemble me in external shape and appearance, have no *more* reason to acknowledge freedom and mentality in me than I have to acknowledge the same in them; in fine, if I were not aware that my moral existence only acquires purpose and direction through the existence of other moral beings outside me, then left to mere speculation, I could of course doubt whether humanity dwelt behind each face and freedom within each breast. All this is confirmed by our commonest judgements. Only of beings external to me, who put themselves on an equal footing with me in life, between whom and myself giving and receiving, doing and suffering, are fully reciprocal, do I acknowledge that they are spiritual in character. On the other hand, if the rather curious question is brought up, whether animals also have souls, a person of common

[27] Jacobi's *David Hume* [Breslau, 1787], p. 140.

[28] theoretical [First edition.]

sense is at once taken aback, because, with the affirmation of that, he would consider himself committed to something he cannot immediately know.[29]

If in the end we go back to the original source of the dualistic belief, that a soul distinct from the body dwells at least in *me*, then what is it in me which itself in turn judges that I consist of body and soul, and what is this *I* which is supposed to consist of body and soul? Here, clearly, there is something still higher, which, freely and independently of the body, gives the body a soul, conceives body and soul together, and does not itself enter into this union – a higher principle, as it seems, in which body and soul are themselves again identical.

Finally, if we persist in this dualism, we now have close at hand the antithesis from which we began: mind and matter. For the same incomprehensibility, as to how connection is possible between matter and mind, continues to oppress us. One can conceal from oneself the finality of this antithesis by deceptions of all kinds, can insert between mind and matter any number of physical intermediaries, which come to be ever more and more tenuous. But sometime, somewhere, a point must surely come where mind and matter are one, or where the great leap we have so long sought to avoid becomes inevitable; and in this all theories are alike.

Whether I allow animal spirits, electrical fluids, or types of gas to suffuse or fill the nerves, and thereby to propagate impressions from outside into the sensorium, or whether I pursue the soul into the uttermost (and still more problematical) humours of the brain (a project which at least has the merit of having done the *uttermost*) is, with respect to the *matter in hand*, altogether indifferent. It is clear that our critique has come full circle, but not that we have become in any degree wiser than we were to begin with, about that antithesis from which we started. We leave behind man, as evidently the most devious problem of all philosophy, and our critique ends here in the same extremity with which it began.

If, finally, we gather up Nature into a single Whole, *mechanism*, that is, a regressive series of causes and effects, and *purposiveness*, that is, independence of mechanism, simultaneity of causes and effects, stand confronting each other. If we unite these two extremes, the idea arises in us of a purposiveness of the whole; Nature becomes a circle which returns into itself, a self-enclosed system. The series of causes and effects ceases entirely, and there arises a reciprocal connection of

[29] which he has the right and authority to assert only of himself and those like him. [First edition.]

means and *end;* neither could the individual become *real* without the whole, nor the whole without the individual.

Now this absolute purposiveness of the whole of Nature is an Idea, which we do not think arbitrarily, but *necessarily*. We feel ourselves forced to relate every individual to such a purposiveness of the whole; where we find something in Nature that seems purposeless or quite contrary to purpose, we believe the whole scheme of things to be torn apart, or do not rest until the apparent refractoriness to purpose is converted to purposiveness from another viewpoint. It is therefore a necessary maxim of the reflective reason, to presuppose everywhere in Nature a connection by end and means. And although we do not transform this maxim into a constitutive law, we still follow it so steadfastly and so naïvely that we openly assume that Nature will, as it were, voluntarily come to meet our endeavour to discover absolute purposiveness in her. Similarly, we proceed with complete confidence in the agreement of Nature with the maxims of our reflective reason, from special subordinate laws to general higher laws; nor do we cease to assume *a priori*, even of phenomena which still stand isolated in the series of our perceptions, that *they* too are interconnected through some common principle. And we only believe in a Nature external to us where we discern multiplicity of effects and unity of means.[30]

What then is that secret bond which couples our mind to Nature, or that hidden organ through which Nature speaks to our mind or our mind to Nature? We grant you in advance all your explanations of how such a purposive Nature has come to be actual *outside us*. For to explain this purposiveness by the fact that a divine intelligence is its author is not to philosophize, but to propound pious opinions. By that you have explained to us virtually nothing; for we require to know, not how such a Nature arose outside us, but how even the very *idea* of such a Nature has got *into us;* not merely how we have, say, arbitrarily generated it, but how and why it originally and *necessarily* underlies everything that our race has ever thought about Nature. For the existence of such a Nature *outside me* is still far from explaining the existence of such a Nature *in me;* for if you assume that a predetermined harmony occurs between the two, indeed that is just the object of our question. Or if you maintain that we simply *impose* such an idea on Nature, then no inkling of what Nature is and ought to be for us has ever entered your soul. For what we want is not that Nature should coincide with the laws of our mind *by chance* (as if through some *third* intermediary), but that *she herself*, necessarily and originally, should

[30] where we discern an *infinity* of effects and a *finitude* of means. [First edition.]

not only *express*, but *even realize*, the laws of our mind, and that she is, and is called, Nature only insofar as she does so.

Nature should be Mind made visible, Mind the invisible Nature. Here then, in the absolute identity of Mind *in us* and Nature *outside us*, the problem of the possibility of a Nature external to us must be resolved. The final goal of our further research is, therefore, this idea of Nature; if we succeed in attaining this, we can also be certain to have dealt satisfactorily with that problem.

* * *

These are the main problems, whose solution is to be the purpose of this essay.

But this essay does not begin *from above* (with the establishment of principles), but *from below* (with experimental findings and the testing of previous systems).

Only when I have reached the goal which I have set myself will it be permissible for me to retrace in reverse the course which has been run.