No. 24

Physical reality and morphological reality. Physics and morphology of nature, especially descriptive natural science[[1]](#footnote-2)

<a) The realities in the world and their sorts of change in contrast to the preservation of the morphological shape in the stuff-material change>

In the realm of sensuous experience realities present themselves. A reality <is> a spatio temporal causal unity, changing itself (with the border case of the unchange) through its There (through which it endures as the same). The fullness of the duration: Shape belongs to every phase of the duration, qualified. This content <is> such a unity of the continuity in the consequence, verifying <itself> in the duration. This <is> the precondition for the possibility of the real thing‘s identity as the same, changing according to shape and quality. The real is related to „real circumstances“, to actual ones remaining open (or possible) through real causality. It is, as it is by its properties, dependent on its circumstances.   
  
Possible occurrences:

1. Mere collective, sets of realities without real connection and relation apart from that, which is given through the unity of universal time and universal space; spatiotemporal relation of the layers, in rest and change.
2. Real complexes, united by causality, while each real thing remains independently something real. <There are> transitions <towards> collective things, in which a single thing, e.g. a pair, is subject to causal dependence. Subjective sums, merely taking together without <the> question, whether a real unity exists or not, have to be distinguished from sets that are thought of as being without any context (objectively do not have any <context>). We can subjectively „form“ a sum and then determine more closely that these and those special unities are included. A real complex shall indeed be really united [279]; that is, at first we consider the kind of the complex‘s formation, according to which each is causally interwoven with some other of the same sum. <There are> different possibilities: special ones, e.g. circular and otherwise figured concatenation or causal concatenation on every side.
3. The change of a real thing <is> a process with him. A change, causally taking place, - this leads to processes other realities are taking part in as well. A process <presents itself> as a becoming in the widest sense, in which one or more realities are taking part through their changes (rests). The unity of the process can be merely subjective, like in mere sums, it can also be real, a real process, that is, mostly defined as such a one that many realities are taking part in, in such a way that they constitute <the> unity of a complex or a whole. Special case: It seems conceivable in the intuition that a change is contingent and not causally determined. Distinction: Every change <is> causal. In complexes: In the case <that> all elements are causally connected at least mediately, and all change of the single ones is causally determined, every change of a member will „affect“ all others.
4. The real <is> to be considered as separable: at first as implying parts that are within it as parts, i.e. not separated, not being realities in themselves. Inner causality in a whole: changes at one place result in changes at another, etc. Separation as a real process: The breaking (ideally to be considered without a cause, although not in a world) into realities. The separated realities are a mere sum now or a causal complex, separated in a completely real way, that is, causally separated as well, or only causally connected.

Conversely <it is accepted>: Realities can combine with realities into a whole, they are then connected in it, have become dependent in it. Their special shapes have united into a total shape, their special qualities into a total quality (stretching over the total shape). How can parts as such be different in the whole - a spatial whole -, if partiality is accepted as a real option after the extension? Anyway, „the same“ reality corresponds to every separate reality in the extensive whole, „merely“ having become an inserted „part“. And how about [280] the causalities of the priorily separated realities <and the> unifying of the single realities with regard to their causalities towards a reality, uniting within itself those of the single realities, in the unifying - the proper extensive one? What are the options here in the sense of the thing apperception?

1. Unifying of realities into one reality through melting, chemism. The intuitive new real thing is not a connected unity that has become as a whole one, in which parts are distinguishable as the same only inserted ones according to the single realities. The new whole is „quite different“ in all parts, characterized by essentially different features than the elements of the chemical melting have been. Likewise <there is> conversely the chemical analysis of a whole into chemical content pieces. These do not have a real „identity“ with actual parts of the whole that have to be assigned to them, [the whole] that is simply not a whole in the actual sense, but only in the sense that the multiplicity can possibly emerge in chemical causality from the One and from the multiplicity again the same unity any time.
2. Complexes, as real separated realities unified through causality, can behave like a real thing. Complexes have a location, a total shape, a total “size“, a total motion or rest as configurative moments of intuition, thus in qualitative regard as well. But also real complexes can have a „shape“ with regard to their complex objectivity pertaining to the senses, but also with regard to their totally causal behavior, can be experiencable in the change of their total objectivity pertaining to the senses in the unity of a total causality, their typical real total circumstances, their rule of behavior.
3. Since the real thing is extensively separable and all parts separable therein behave like parts of realities that have become, thus the continuously emerging kind of change of the extension and contraction does not gain the sense of the loss of parts, or rather, of the gain, only because relatively distinguished parts and the whole of the parts can be recognized on both sides in the experience of the extension as really the same in correspondence. The same real thing can extend towards all parts that are to be inserted into it without the gain <of parts>, and conversely <it is accepted>: A real thing can contract without the loss of parts.
4. [281] An extensive real is totally identical, if it does not gain and loose any part in its changes: it is identical as a *totum* of its parts, and it keeps all its parts therein as identical partial realities. The question here is: What is able to motivate to grasp a change of reality now as a division and then as a keeping of the real thing‘s identity, as its change with regard to one part, „loss of one part“, and again: one time as a connection of single realities into a real whole, and the other time as a mere enlargement of the same by new parts? What is able to motivate to speak of the same real in the „metabolism“ [German: change of the stuff material]? The unity of a sensuous total shape, still keeping itself as the same in its change, typically changing, belongs to the unity of a real thing, in which no division and breaking off has [sic!] been experienced, in the sensuous sphere, in the abstractive direction towards the mere *res extensa.* A typical, experiential unity goes through the changes - the well-known thing pertaining to the senses or that, which, according to the known <things pertaining to the senses>, still has to be apprehended as such a one, which we may get to know in its peculiarity as a thing pertaining to the senses, and <which is> entwined in it in causalities and implies something real. Insofar as it is something new, we may err insofar as we consider a piece of a thing that is singled out to be a proper thing, and only cognize in the allsided experience and the cognition of its special causality that it is merely a piece.

If now a piece detaches, then we certainly have two independent things. But if in that the one goes over into a duality, then possibly a special and pre-eminent relation of unity between the unbroken whole and the one part that has become independent is present via the unity between the unbroken and the broken, with the help of the identity‘s coincidence of the inserted [parts] and the parts that have become independent in the break, namely by the total shape objectively pertaining to the senses, the sensuous totally property character, going over into the one member alone as continuously, thus coinciding thereby in an unbroken way, whereas this is not the case with regard to the other one. If we have a visually-sensuous Datum in our vision (not in the apprehension of something as a reality), for example a red, somehow limited piece of a field, then the sensuous „size“, the form, filled with red, may play an essential role already in contrast to the „small“ of the detaching thing. The separation of the small thing still [282] continuously allows for the big one to go over into the big one and the total figure into the new one; in final regard the change of the figure may not be unnoticeable (as neither the diminuition). But the total similarity is still that big, the coincidence of size and the red-filled, shaped size of the whole and the part still that far-reaching that the difference does not prevent it: the trait of unity of the apprehension of something as a reality in the continuity of perception transcends the time phase of the break, and as in an actual continuity the coincidence and the experience of unity goes on.

Thus possibly the unity of a real thing keeps itself in the „metabolism“ through the quasi-continuity of the keeping of the total shape bridging all breaks of strict continuity, of a common thing of a property total determination always keeping itself. This now does not only concern the ways of subjective apprehension, but it grounds a peculiar and objectively to be legitimated reality, already verifying itself in a purely experiential way in manifoldnesses of the experience. A reality‘s formation of unity corresponds to that [formation of unity] that is a thing pertaining to the senses (thus we have here a „phantom“, persisting in the metabolism), presupposed that <there is> a causal relation to real circumstances corresponding to this type in relation to other realities that are apprehended in a totally identical way or morphologically identical.

Under the title of a morphological real thing we thus have a proper type of reality within the world of the sensuously real experience. The real thing has a unitary spatial shape (bridging discretions) in the „metabolism“, the loss and gain of „material“, likewise a unitary quality, a unitary causal category of properties. Nay, even new concepts of unchange and change and special causal concepts relative to it become possible here. Thus some organic thing is the same and unchanged essence in the natural normal progress of its functions, with the corresponding metabolism, as long as it remains unchanged in its developmental stage. This universal style of changes, among them the metabolism, first of all belongs to these moments determing the property total What, its morphé. In its changes as an organism, its changes of development and changes under the title illness it stands in a proper causality in relation to its milieu, in relation to other organic essences, but also <to> an unorganic nature. But it shall not, if we [283] have consulted organisms here as examples, be said that they are sufficiently characterized by the type metabolism-reality, but only, that they belong to this type.

The whole is of course enlarged and enriched and it keeps its essential right in that, if we let fall the abstractive attitude towards the mere *res extensa* and take the concrete surrounding world of the experience, the way it is is in its whole fullness, if we thus heed that all worldly being has a lower layer „nature“ indeed, but is more than that and gains peculiarities of wholeness in this More that may play an essential role for the self-sustainment of a real thing in its identity in the change of parts. <It happens> in this way if we, instead of (biophysically) considering organisms in a merely physical attitude, add the „animation“ of the same, the psychic „animating“ them, if we, rather, experience an animal, a man not abstractively, but <in> concrete experience. The unity of the soul remains in the metabolism, it does not fragmentarily accompany that which is being withdrawn, unitarily it belongs to the physical metabolism-real and as such. Certainly, although a total determination of this real animal, it is still not a proper character of wholeness of the physical, not <a> character giving a unity of wholeness to this as a physical whole.

1. A special theme: the differentiation of organic and unorganic realities, whereby the latter themselves may be realities of the metabolism.
2. Every metabolism-reality is based, so to say, on totally identical realities. It is their task to single out some content from every phase that may be traced under the aspect of totally identical reality in its being and becoming.
3. Complexes may act like realities as well, by their keeping their unitary total shape, their whole unitary peculiarity: they can have their real circumstances with their kind of total causality. Realities, single realities and complex realities of the kind of the morphological one are also to be grasped as past ones of totally identical realities, manifold totally identical realities participate in responsively, and in such a way that in that which is past some morphologically identical thing simply keeps itself in the shape of a morphological real thing. Yet, the [284] alternating participants, in which <the> unity of a formation is quasi presented, may again themselves be morphological realities; but at last we arrive at non-morphological ones.
4. This concept of morphological reality coincides with the concept of the real that is apprehended in the type. Or: Morphological concepts are not the same as concepts of types. A typical apprehension is an apprehension under an aspect (then guiding the theoretical or practical interest), and the manifoldness of the thus apprehended objectivities <is> grouped around an idea as point of converging that may sensuously be represented as the pure type (e.g. carminered or fir tree, etc.). The taking part in this idea is not a subsumption under a strict concept, the extent <is> vague, etc. Neither is this point of converging an exact idea in the sense of a mathematical limit lying within infinity. These ideas of the „vague“ sensuousness determine the apprehension of the natural life of experience prior to the exactly idealizing sciences, and they also determine the description of the descriptive sciences, keeping itself in the sphere of the actual apprehension of experience. The realities given in the experience, whether we are <now> interested in totally identical or morphologically identical ones, become typical, individually typical and apprehended and described under concepts of types. In the stream of the experiential givennesses we may only form concepts implying the stream at all - if we wish to describe the intuitive. Only when the „idealizing thinking“ starts, we gain some exact thing and concepts of the exact that are „exact“ themselves.
5. The world is, dissoluble into absolute realities (totally identical ones), to be considered as such and under the aspect of absolute reality. Then we find an absolute reality, now disintegrating after some duration of the unitary real being, now combining with others into a new one. We try to go back to „atoms“, to final elementary realities. The world is based on a universal structure that we call physical nature. We do not arrive in the idealization, supposed to enable some strict objectivation, at any final elements in physical nature that are *a priori* predelineated. Everything can be separated *in infinitum*. The science indeed leads to „atoms“ as to molecules on the basis of the empirical, on the other hand to electrons, etc. But these are no actual final [285] unities and show themselves to be morphological ones then certainly pointing back to absolute sub-unities. The progress of science is itself a unity of theoretical experience with horizons of experience for the style of the in future to be expected substructions of realities. The presumption there leads to some infinity, corresponding to the ideal option of infinite separability and only differing from this whole formal idea by a certain style of morphological and as such integral structure of the world, being predelineated in the separation through the former experience and experience of the shapes of theories adjusted to it. But the world presents itself in advance and everywhere in morphological structure.

It would be conceivable that all its structures let themselves be dissolved in the sense of the serious atomism into final, absolutely inseparable absolute realities that are only changeable in their properties, even if the experience contradicts this insofar as we have repeatedly progressed in the dissolution of supposedly final unities; and if we are inclined to consider the dissolution as proceeding at pleasure in the science of the future epochs, then this is indeed not a sufficiently strong presumption to seriously ground some *In Infinitum*. Both options thus have to remain open, unless any apriori reasons enabled a decision on the basis of the mere presumption of a world being in itself.

What can now be performed if we <begin> with the necessary disclosure of absolute realities and the separate elements‘ corresponding laws of the causality, the causality of their combination into wholes (or rather, the separation), and the chemical blending and dissolution? Do we then try to exert some atomistic apprehension or one of continuity? Anyway, some universal morphology of the world must then be the result, and the concept of reality with the at least relative and still essential difference between absolute and morphological reality must then keep its legitimacy. The difference between some ideally exact natural order (physical-chemical) and the regulation in the concrete morphological buildup of the world will then always remain, on the other hand, every shape will let itself be regarded in a physically chemical way, and be explained according to its single processes, whereas in so doing [286] the determinate morphological structure of the world can never be derived from merely natural laws, since the same physically chemical order leaves open endlessly many other possible ones.

<b)> The idealizing, mathematizing (geometrizing) natural science <and> the natural consideration of the sensuous experience. <The *a priori* compossible laws of possible worlds and their limitation on our concrete actual world>

The natural consideration of the sensuous experience. The real being of this experience is demonstrable in the finite, achievable - as a real being in the sense of the practical interest and the actually performable human differentiation of experience. The classificatory set of types of the things of the normal intersubjective experience <is> historically changeable, comporting itself in a relatively stabile way, the speed of the stability, or rather, change [is] adjusted to the speed of the human and animal life and the option of their practice, their „self-sustainment“, in every historical time. But this is a part of the world‘s set of types as well, in particular of the animal one. Thus the classification <is> a temporary one. But a formal set of types of universal shapes reaches beyond the historical change in the assessable stages, thus the set of types of the organisms as such, and their development in relation to an organic and unorganic surrounding world. The universal shape „unorganic real thing“ and its most universal type in being and becoming <matters> there as well. The <set of types> of the world‘s form is above all special sets of types, the apriori one of the *mundus formaliter spectatus*, that is, the apriori system of possible temporal objects with regard to the temporal shapes, of the possible spatial objects with regard to the spatial shapes, but then of the materiality as materiality, of the causal form, eventually the apriori construction of the *a priori* possible forms of worlds, of the categories and regions, necessary for the unity of a world as such, or rather possible with the help of their form, of realities, of natural laws, and systems of laws. Possible physics belongs to every possible world and the possible nature belonging to it, the universal option of physics is above all options, [287] the form of physics as such, correlatively the form of physics as such, and thus for every possible concrete world. A systematic, an infinite, but systematically-mathematical structure belongs to the essence of a world as such.

But now the physical objectivity shall be defined to the effect that it shall be the one accepted for all absolute realities of nature, how ever these may be composed. It is *a priori* that such a universal conformity to the law of the *res extensa* and *materialis* must exist, as a de facto rule of all causalities transcending apriori mathematics of spatial time. The choice among the options, left open in the apriori mathematics, with regard to the form of the spatial time as an Euclidean one, etc., would belong there as well.

The mathematical form of the spatial time, according to its choice, also prescribes all options of a physical conformity to the law, of mechanics, etc. One of those may be chosen, and is distinguished for our <form of the spatial time> as a fact through the experience and its idealizing theorization as the most suitable and most probable at the time. This choice for its part now determines a universe of options of a concrete set of types of the world. There are endlessly many of those options, neither is given with the physical determination of the world yet that there is a world as such - such an ordered manifoldness of realities that is reduced to types, as it is needed for a human surrounding world.

The formal apriori, predelineated for a personal surrounding world, prescribes a nature, but does not only prescribe a nature as such, the way it has to be constructed from free mathematical consideration in free option, but makes special demands. The surrounding world has a natural structure, shows the fact. I see in the eidos that it is necessary, in an apriori form that may be idealized and has to be idealized presupposing a world being *in infinitum* with the structure „we and the surrounding world“. The surrounding world and especially its nature is *a priori* an intuitional nature for the subjects, and it has its necessary subjective apriori in the intuitional way of possible givenness. The structure of orientation in closeness and distance belongs there, simply that one, which is the basis of idealization to be performed. But <it is> not only accepted that things pertaining to the senses [288] can only be „objectively“ recognizable for the subjects if they do not have a recognizable causal structure beyond the current experience as a phantom perception, <but> they must also have a morphological set of types according to the close field and the distant field and in every field, [a type], which, adjusted to the cognizing and acting ones and their practical horizons, has a relative stability and a corresponding morphological causality, enabling that we direct ourselves according to them, that we practically count on them, that we have a field of practical work as such, a possible culture, nay, even a possible understanding, a possible interpersonal community.

If we *a priori* consider the world, and reduce it at first to its lowest structure nature, and [if we reduce] this again to the structure of the phantoms, and thereby to the formal necessary options, enclosed in the apriori forms space <and> time, then we gain a realm of free and theoretically constructable options and corresponding essential laws. But the sense content of these evidences may not be misinterpreted, as it happens unpreventably, if we do not perform the essential supplementation of the abstracts exclusively isolated here, [if we] do not heed that these abstracts, the spatiotemporal shapes may only be concrete if they have a certain supplementing fullness of the essence. But we may not overlook there that the determination for example of the form of Euclidean spatiotemporality leaves open an infinity of possible natures of possible worlds, and that a completely free variation, performable here evidentially, and then a free variation of possible forms of natural conformities to the law, and even through them (i.e. through the freely fantasized natural laws) of concrete shapes of reality constructable in a purely mathematical way possibly, creates a total system of options that are only compossible under the idea of possible worlds as such insofar as we thereby go through an infinity of different possible worlds, but incompossible if we demand that one of the possible worlds <be> constructed and be preserved in firm identity.

The way some universal causality predelineates a rule of choice according to universal laws of nature with regard to the in a possible nature compossible phantoms in their possible changes, the demand that a possible nature be the structure [289] of a world, that was an objective world for men (who then have to also appear in it itself as morphological realities), prescribes a physical apriori to nature, that is, a morphological one, and thereby a natural historical one, something at hand within the intuition of descriptives in ideally typical concepts of the sort, and in firm sensuous concepts of the genre, but in mathematically ideal concepts within the idealization (the essential opennnesses of which are a [topic for] research themselves). But we need to heed that morphological realities and causal relations, options in abstract apriori consideration, existing within an infinity of open different options, in the more concrete mundane-apriori consideration that are impossibilities <for> us, being fixated on a possible world. A world, this does indeed not yet prescribe quite distinct shapes together with this indeterminately particular One, but still [it prescribes] that certain determinate morphological unities have to be there, that is, in a way pertaining to the law, that they must have a morphological universal style, namely in adaptation to the options of experience, of the cognition and the practical acting of a subjectivity intentionally related to the world.

As long as we presuppose Ego subjects, psychically living ones, as concsiously living into a world in their lives, experiencing into it in a cognizing way, and theorizing into it, practically having an impact into it - as we do if we emerge as natural scientists and thus as researchers of the world as such, strive in a cognizing way, experiment, perform archaeological excavations, palaeographical actings -, we have to necessarily posit this as well, without which human subjects and thus „reasonably“ proceeding ones as such are not conceivable at all. We cannot exhibit natural science and theoretically true nature, and forget ourselves with our acting, from which all such „exhibitions“ or „findings“ emerge, and without which they do not make any sense. And there it is some first and presupposed thing as well that we have a recognizable world of experience prior to all „thinking“, in mere experience intuitive as existing, persisting in the whole, which implies: a world having its empirically-intuitive shape, a connected style of shape.

As the physical nature, that is, the intuitive one of the mere objects, of the mere *res extensae* and *materialis*, [290] immediately presents itself as condition of the possibility of an „objective“, namely intersubjective surrounding world that is commonly experiencable, and of the possibility of Ego subjects living in community - this of course, that this sub structure nature first of all always has a morphological style, in every subjectively practical „present“, in every practically to be overviewed past and future, in short: accessible in the practical time horizon, ascertainable according to real being and changing oneself. If this world shall „be“ „*in infinitum*“ in the progressing from <a> practical time horizon towards new and ever new <time horizons>, and be as an identical world going through the times, if this fundamental Idealization of the worldly being shall now unfold its consequence in „the“ endless time (certainly presupposing the infinity of human generations as this world‘s subjects of consciousness), that we perform without much ado without considering it, then the system of this consequences is the ontology of nature with all further idealizations it is based upon, encompassed in the title mathematics of nature. Certainly, an exact, mathematical sense is then „behind“ all intuitive reality, that is, [behind] the morphological set of reality types as well. And however the present mathematics that is to be admired so much still may fail in the construction of mathematical, physical characteristics for morphological types, and even of the exhibited <types> as the organisms are, demanded for the essential content of every possible surrounding world with such a firm apriori, thus it has to be taken for sure that its service will also succeed in that. But biology, anthropology, zoology <and> botanics would never be reduced to physics by that.

That we describe the <realities> present in our surrounding world with sensuous concepts due to the lack of some mathematics of the concrete morphological realities, and use physics on them (use practical physics and chemistry) so to say only at their surface, that even in chemistry we have to do this, this is a matter of necessity. Physics as well has to use in a describing way intuitive concepts as a prestep in its proper sphere of reign, just that it does well with primitive concepts of sensuousness in its circle of problems, whereas the morphological description, at least in the biological sphere (this concept taken quite widely, thus [291] encompassing zoology, botanics, somatological anthropology, etc.), does not well with primitive intuitional concepts, because the morphé, the experiential shape for example of a man or even only of some organ, in order to become certain as a shape at all, as a unit of some characteristics grasping and deducing the whole, demands most complex analyses that the centuries work at. This whole work is indispensable here - even if mathematical physics could perform that which it cannot perform - as a precondition for the „mathematical“, for the exact information.

But this does not suffice in order to ground the independence of biology itself *sub specie aet<ernitatis>*. Because without any doubt it is its task as a science of facts, to bring to cognition the de facto biological world with its de facto morphén, the de facto lines of development. Until now it is bound thereby and for the time being to our closest surrounding world, our own earth. But does it not want any more? Does it not want, always only interested in the organisms, to cognize the organic „world“, and to cognize, if possible, that law of the organic essence, apart from the task, to simply perform a piece of history with the de facto shapes of organisms in the overviewable history of the earth (without asking as a „special science“, what this shall be useful for at all for the cognition and human existence), which makes presume that it is the universal, systematically and through developmental laws intertwined set of types necessarily belonging to the organic being and life as such, wherever it may emerge in the world? But this may have a double meaning, depending on <how> we understand the necessity and universality of the law.

First of all the temporal being can and the temporal being has to single out a universal biological apriori. What may be meant by that? That the world has to be considered anthropocentrically is an absolute necessity in a certain sense that is only overlooked through the self-forgetfulness of the researchers, or rather, the community of researchers presupposing themselves everywhere. But this does not mean geocentrical by that and does not designate man‘s precondition on earth as a necessary point of reference instead of a merely de facto one. Certainly, it is a [292] comprehension that needs to be first considered and grounded itself that the earth as a dwelling place of rational beings is only preferred for us, because we are simply earthly „men“. But there is at least the open possibility, and perhaps <there are> apriori reasons as well from a universal consideration of the world, that „men“ otherwise live in the world as well, what ever their special organization may be like. Thereby the concept of man is universalized.

The <second> question is, whether a world, that shall be able to be the human world of effect, must have a morphological and in particular an organic structure and thereby a universal structure of the world of a new kind in contrast to the physique of physics. It is certain, according to what we already said that an as-such, a morphological apriori exists, grounded in a most universal cognition that cognizing subjects must have some bodiliness in which their psychic life must be able to „express“ itself. Does it have to be an organic bodiliness? And what kind of apriori do we have to demand from there? What kind of regional concept of something organic?

With regard to such questions and investigations aiming at an apriori, we need to remark though that basic assertions as such need an apriori (that is, everything prior to the deductions that become possible afterwards) of an explicit, exemplary intuition (self-givenness). But this is originally only possible through experience. It is basically wrong to misunderstand an apriori science, or rather, the procedure of ascertaining an apriori in such a way, as if it might be its kind, to wish to extract sentences with the claim of unconditional necessity and universality from „concepts“ foreign to experience, i.e. from vague meanings of a word. If we make them plain, we may gain „analytical“ cognition, sentences of merely „formal“ acceptance, but never a „material“, an objective apriori. The „apriori“, the being-accepted-prior-to-all-experience does not at all designate some being-able-to-be-accepted-prior-to-all-experience in every sense; it only designates that, subjectively turned, the belief in being, encompassed in the experience, or rather, the evidence of being, the possible conviction of the de facto being of the experienced single cases, could not make any motif of cognition for the evidence of the apriori that the evident decision for the apriori fact is not grounded on the [293] decision for single cases (in contrast of course to the kind of grounding of inductive universalities) that is to be justified in advance and then to be grounded through the evidence of the experience.

But there is still another kind of dependence of the cognition of concepts and sentences on the experience than the <kind> of dependence of its grounding the truth on corresponding single cases of experience. „Pure“ concepts (apriori ones) and purely apodictic sentences of concepts can only be gained in accordance with the acceptance (in apodictic acceptance), this is demanded by its apodictic evidence, from the „exemplary“ intuition, thus <e.g.> the geometrical from geometrical intuition of single figures. Certainly this exemplary intuition now, as grounding evidence, does not function as positing the existence of the object functioning in an exemplary way, if the single intuition functioning here has been an experience at all. Because it is simply connected with the lack of functionality of the belief in experience that a corresponding free fantasy could as well function as a grounding intuition, like the freely chosen is here, in the sense of the exemplary, to choose in a freely varying way some „chosen“ different thing without any care for the actual existence. Afterwards the fact is expressed in the equal acceptance of experience and corresponding quasi-experience of free fantasy or the treating the experience as some fantasy, that the grounding thing is simply the freedom of fantasy here (in a somewhat enlarged and good sense).

Still there is some dependence on experiences. Fantasy is a genetic product of change of experiences, and the richer the formation of original experience in a field of experience, the more complete the corresponding fantasy - an experience-as-if - in its free formations. Without the richly built prescientific life‘s experience concerning things pertaining to the senses, whose thorough formation fills the whole period of childhood, and most of all the experience of spatial shapes concerning the things pertaining to the senses a geometric intuition, as one freely shaping in a fantasylike way, would not have been possible. Neither would have been possible the geometrical idealization with its free and thereby completely clear disposal of the open lines of near and distant shapes concerning things pertaining to the senses, in which the same object, the same objective shape of a thing is experienced. The higher levelled intuition, the one forming geometrical ideas of a limit in an idealizing way (those of the „pure“ [294] figures) originally performed and trained of course at a fact, is a higher performance of experience (experience in a higher, already categorical sense). And for its part it now becomes an enabling basic for the conception of „purely“ geometrical ideal concepts and apriori axioms. The experience of a higher step is the basic for a fantasy of a higher step, that is, a „clear and concise“ fantasy that alone can lead to a generalization in apodictic evidence, in a generally viewing grasping and demonstrating. Thus a Greek mathematics, still depending on the empirics, the mathematics of ideas, the Platonic one, as we could say, does not precede the „pure“ geometry without any reason.

Such a historically de facto dependence of the development of de facto apriori sciences on corresponding sciences of facts is naturally a lot stronger, where it is only the science that may create some rich material of intuition at all. The world intuitional in everyday experience and a superficial set of types, adjusted to the rougher needs of everyday life. Only the so-called descriptive sciences create an ever richer experience, intruding into the conspicuous implications of the at first hidden „finer“ structures of the realities that are concrete in the surrounding world and <into> their5 morphological set of types; and counted among this the experience of the morphological causality, of the dependence of the becoming of the shape and of the changing-oneself under morphologically concrete circumstances.

This holds true to a special degree for the morphology of the organisms, the formation of which is the task or main task of many scientific groups. Obviously every attempt to form „pure“ concepts in this sphere, presupposes an experience that is richly shaped, formed by descriptive science. From manifold shapes, having arrived at an actually experiencing intuition, in their experientially analytic articulation, from the differentiated experience of shapes of the context, of the causal dependence, of the becoming, of the developing the freely varying fantasy gains clear options of the morphological being and changing; and the ideative thinking, striving for the pure, the ideas and ideal universalities, may then possibly establish itself.

[295] Not without any reason has this not become an apriori science yet, and the aim of morphological research at first exclusively resided in the factual scientific. In the factual scientific working through and [in the] describing specification, strict concepts are gradually distinguished that do not give any more reason to expect some closer determination in their wide but firm universality and their conceptual structure (the buildup of determining concepts) in the progress of the empirics, and <the> empiric concepts, having always, like the concepts of animal „species“, an open empirical horizon. The former are designated to be brought into some apriori specification that gives them the character of the field‘s most universal, limiting concepts of shape. But the latter, freed from their content of de facto empirical presumptions, provide, while being determined by pure concepts of „form“, representants of pure single possibilities.

But, the question is, in how far the physical with its idealizations of the limit has to intervene in this course towards purety, and in how far an apriori, for example of biological morphology, still is left, can still be formulated, and [still be] discernible in the sphere of the sensuously descriptive experience. Of course, physical occurrences indicate themselves in the sensuous givennesses, also in the morphological ones, whether we might be able to exactly calculate and determine them or not. Because this is itself an apriori context. If we had the free force in the shaping of a pure mathematical physical morphology, in the pure apriori of possible nature with possible conformity to the natural law, then we would be able to construct under that in a purely formal way and *a priori* the idea of an apriori biology, possibly differentiating itself in special types. We could only use it naturally for a zoology that is built in an intuitionally descriptive way, etc., like a mechanics, that is *a priori* constructed from geomtery and with the use of a formal concept of causality, could only be empirically used for experimental research of mechanical phenomena, performed at the fact. Without experience we would have no principle of choice, which of the infinities of *a priori* possible constructions of apriori mechanics etc. we would have to perform. Only top concepts <like> „apriori mechanics“, apriori biology, etc., could be guiding from the apriori.

[296] The question is, whether it does not suffice to have cognized the style of an objectivation of sensuous qualities in a physics and with relation to the style of a sensuousness experiencing it in an objective way at the given physics and phenomenology of the sensuousness, in order to give a formal interpretation to the intuitionally studied organic, animal shapes, <in order> to give most universal possibilities from the intuition for an apriori <re>search of the zoological.

The ideal of a physics actualizes a mathematically experimental physics, i.e., a physics on the basis of a mathematics of the physical nature, just like a physics of the space (the spatial form of the physical nature) already has a pure geometry of the space in front of it, which, as we know today, does not mean as much as Euclidean geometry, but: apriori science of the possible spatial forms as such in their systematic unity and necessity. The lack of the Euclidean geometry consisted in having taken for granted here some most obvious idealization as the one and only possible idealization from intuition. And thereby the task of considering the systematically set apart possibilities interlinked in the system, did not exist.

If physics has become the model for all natural sciences and all sciences as such from the 17th century on, then this implied the presumption that nature has a „geometry“ so to say through and through. This means that the de facto nature is a specialization of a system of pure possible natures beyond the spatiotemporal as well, that is, also according to its materiality and then further on according to its set of types, [natures] that can be systematically constructed in „exactness“, in pure concepts, so to say as pure form of possible nature as such, but now full of content, differentiating itself in apriori special forms. Thus all [science] „mathematized“ itself, the biological natural science as well, although the natural history shapes are of course no quantitative singularities, whereas they, as concrete things, <are> on the other hand complex shapes of some material that is physical-chemical, that is, of some material, everywhere in the quantitative interlinked in quantifiable causalities.

1. June 1926. [↑](#footnote-ref-2)