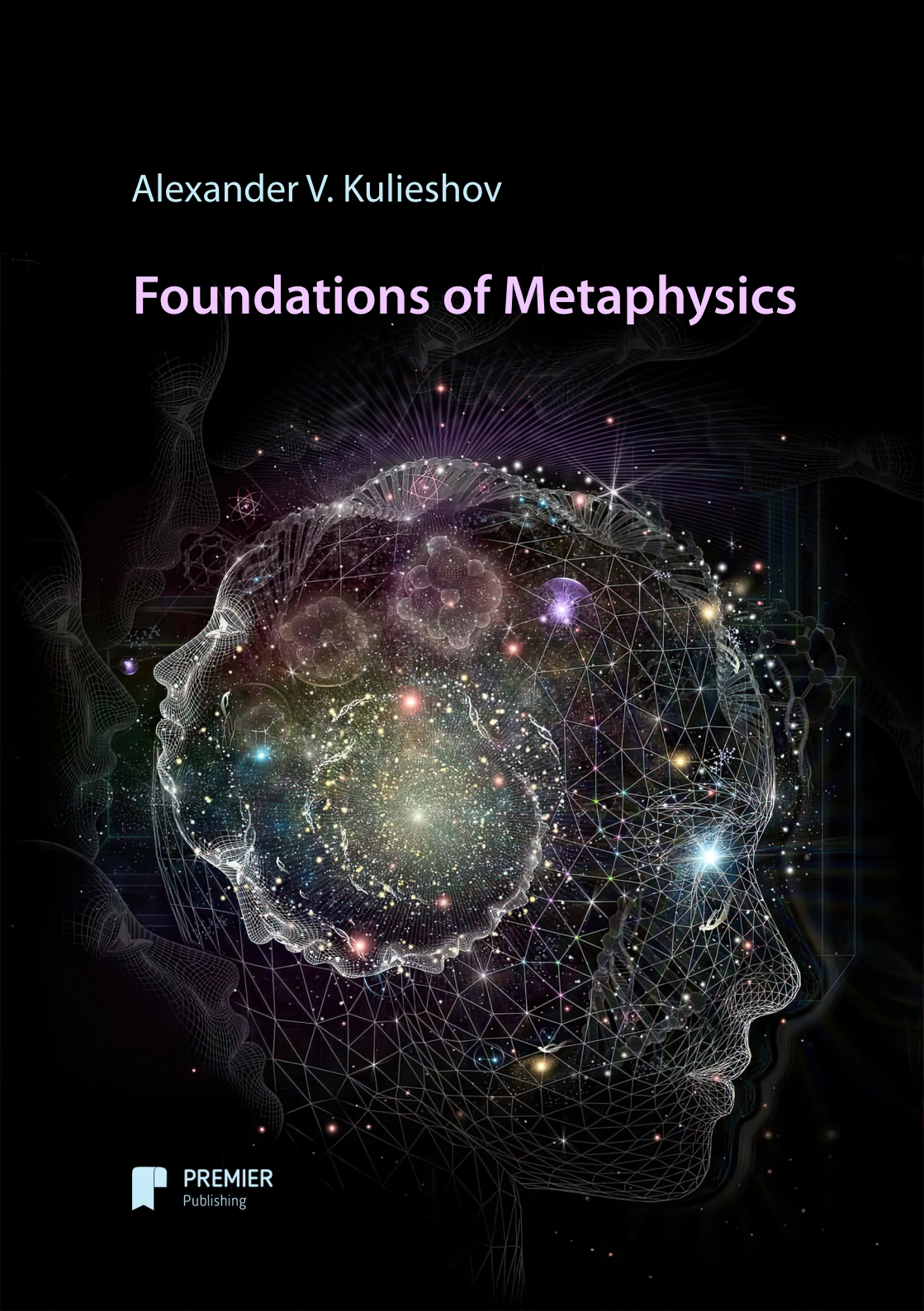
Alexander V. Kulieshov

Foundations of Metaphysics



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Metaphysics is the branch of philosophy that investigates the Universe from the most general and abstract point of view. Such a perspective supports a systematic vision of the subject under investigation. The book provides an account of the system of world's realities in metaphysical terms, which may serve as the foundations of metaphysics. The specificity of the presented metaphysical system arises from its method of representation. All the elements of this system are produced by applying just one basic metaphysical formula. Its reiteration reveals the full spectrum of existence, beginning with the most abstract entities and culminating in the most concrete objects. The book can be useful to both students of metaphysics and experts, as well as anyone interested in the problems concerning the Universe in which we exist.

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INTRODUCTION

The word "metaphysics" has diverse meanings in our culture. Therefore, a book on metaphysics can vary significantly in content and style. What is then the metaphysics presented here? Is it a state of mind? Philosophizing detached from the trivialities of everyday life? A breakthrough into transcendental reality? A description of the language we use to express our perception of the world?

The book presents the foundations of metaphysics as a science, that is, a field of knowledge rather than opinion or faith. This science is as rigorous as any science can be. As such, the metaphysics presented here: 1) employs a conceptual framework with terms that have a fixed meaning; 2) makes use of procedures for verifying and establishing the true meaning of statements; 3) aims to construct the most complete and comprehensive system of knowledge about the subject of research. Many readers may reject the idea of metaphysics as a science. Well, one cannot help but admit that there are reasons to doubt the scientific nature of metaphysics. While this can be debated *ad infinitum,* the best way to test something (although not always safe, unfortunately) is to try it.

The proposed book aims to systematically present the principles of metaphysics as a science. Due to the general nature of this field of knowledge, such a presentation is nothing more than a theoretical model of the world as a whole. This task is considered to be achievable and organic for metaphysics. Furthermore, as will be demonstrated, only tools developed within the framework of metaphysics are suitable for solving this problem.

However, it is important to note that a systematic presentation does not entail a comprehensive description of all that exists. The scope of the material is limited to the specified topic, which is the description of the metaphysical system foundations. It is by no means the knowledge of everything. Rather, the problem being addressed is much more specific. It is merely a brief outline of such a comprehensive system of knowledge. As a result, there may be gaps, overlooked objects, and superficial descriptions within the text. The aim of the work is not to overcome these shortcomings but to create a functional system of metaphysics that can be further developed, clarified, and applied to empirical reality. While the principles of metaphys-

ics may not provide answers to all questions of interest, they do offer a key to answering them, provided the enterprise is successful.

The presentation of the book's material may appear simplified, but this is not the author's flaw; it is a deliberate choice. The question of the complexity or simplicity of the world is fundamental to metaphysics. Nowadays, we observe that the description of reality by special sciences is becoming increasingly complex. Yet, one must understand that sciences, primarily natural sciences, deal with the world as a collection of parts rather than as a whole. On the other hand, viewing the world as a whole reveals both its incredible complexity and its ultimate simplicity. One of the principles inherent in the metaphysical system being presented is the recognition of the world's complexity, as well as the simplicity of its foundation. As a result, one seeks to discover some elementary realities from which the entire edifice of the world is built.

An advantage of the metaphysical worldview probably lies in affording oneself the ability to see the simple in the complex. The primary stance of the represented metaphysical system is to reduce the description of all that exists to a single and simplest formula. From this formula, increasingly complex constructs that approximate empirical reality are derived. The book observes the iteration of the same scheme applied to different existing elements of the system, enabling the gradual discovery of new entities and advancing towards a more comprehensive understanding of reality. The objective of the book is to demonstrate *how the repetition of a simple element within a system leads to the formation of the entire picture of the Universe*.

The text of the book falls short of fully implementing this principle, as it exceeds the author's capabilities and the acceptable length of the text. The expected result is modest: to demonstrate that the principle works and that it is possible to build a recognizable model of reality based on it. Any ambitious goals that can be achieved using the cognitive tools created in the book are left to the reader's judgment.

The book's depiction of the world is based on the scientific knowledge available in the 2020s. It is possible that some of nowadays scientific ideas will turn out to be erroneous or superficial. However, the author believes that this does not in any way undermine the effectiveness of the presented metaphysical system. The book can be considered a general overview from the author's perspective of what is known. It is worth noting that the subjects discussed in the book have been extensively covered in scientific literature. This gives the author an excuse not to resort to citations and references,

which can overly complicate the text, but hardly provide significant information that a curious reader could not find, for example, on the Internet.

This edition is a revised version of previously published works (in Russian) – "Начала метафизики" (Кулешов, А. В. (2019). Начала метафизики: монография. Ставрополь: Логос), as well as (to a lesser extent) "Лекции по метафизике общественного развития" (Кулешов, А. В. (2023). Лекции по метафизике общественного развития: учебное пособие. Praha: Premier Publishing. http://dx.doi.org/10.5281/zenodo.8097283). The book "Foundations of Metaphysics" has been significantly updated and shortened. The concept of human subjectivity and personality as a subject of subject-subject relations has been derived and utilized from the book "Lectures".

Part 1. SOME PRINCIPLES OF METAPHYSICAL INQUIRY

§ 1. Subject Matter of Metaphysics

Anyone familiar with contemporary metaphysics knows that there is no standard definition of this intellectual enterprise. Attempted definitions based on their subject matter are judged to be either too broad, too narrow, or too vague. The modern trend in defining metaphysics is to avoid describing its subject matter and, instead, to enumerate metaphysical problems. In place of the subject matter, we have a widening circle of problems. Among them are initially stated *primary causes, being as such, universals and particulars*; and more recent: *reality and appearance, objective and subjective realities, mind and body, substance, causation, laws of nature, free will, identity, time and space, necessity and possibility*. The list of metaphysical topics seems open-ended.

Its boundaries lie beyond any specific domain of knowledge represented by the natural sciences, social sciences, and humanities. Even if the domain of specialized knowledge is extensionally equivalent to the whole of reality, metaphysical objects, in some sense, go beyond it. For example, if there is nothing to talk about except the physical universe, it is still clear that the objects of metaphysical interest are not of a physical nature. It is not within the scope of physics to explain, for example, the existence of universals and particulars. The name "meta-physics" happily corresponds to this situation (metaphysics can be explained as something that describes physical things in a meta-language). Metaphysics appears to be a domain of knowledge that extends beyond the special sciences domains. Obviously, special scientific fields do not completely limit metaphysical knowledge, but only partially determine it. The only complete limit to metaphysical knowledge is set by knowledge itself. One may argue that metaphysical knowledge extends as far as any human knowledge can go. Therefore, it is correct to qualify metaphysics as *the ultimate knowledge*, with no further knowledge possible (whether there can be such knowledge at all – it doesn't matter; metaphysics is an attempt to acquire it regardless of the available chances).

The question that immediately comes to mind is: what sense should one make of the term? There are three aspects of ultimacy that are crucial for metaphysics. 1) Ultimate knowledge (at least at its elementary level) is discursively ungrounded, i.e., it is not based on other knowledge. It arises directly from existential experience and intuition. 2) Ultimate knowledge, at least partially, is comprehensive, operating with concepts of absolute generality. 3) Ultimate knowledge (at least partially) reaches the limits of abstraction; it contains elements of unsurpassed abstraction.

Metaphysics, then, is the most general and abstract knowledge of all. What must be the subject of this knowledge? It is better to turn the question around: what is not the subject of ultimate knowledge? The answer to the second question is "nothing". Accordingly, the answer to the first question is "everything".

Metaphysics may thus be defined as *the science of everything*. Understood as absolute totality, everything is necessarily equal to everything that exists. Here, too, the term "existence" is taken in its maximally broad sense. But is that enough? Isn't it plausible that the term "everything" goes beyond existence? One has to consider whether non-existent things can be a part of everything.

It is necessary to distinguish between things that are truly non-existent and those that are considered non-existent. Truly non-existent things, which do not exist in any sense, cannot be a part of everything as they are absent anywhere. Imaginary things that exist in at least one form, such as images, should be included in the list of everything. They do not fall outside the scope of everything that exists. The same applies to possibilities that exist in some way, such as a special kind of potential existence or within actuality. Therefore, by "everything," it is meant "everything that exists."

Note that *everything existing* should not be identified with everything thinkable. The totality of everything includes unthinkable objects that are somewhat connected to thinkable ones, regardless of the manner of connection. It is also important to regard everything as a whole, as a totality, because if it is not a whole, then there is nothing that can be said about everything; there are only different somethings.

The all-encompassing universality of metaphysical subject matter may create a false impression of its identity with the sum of all specialized knowledge. Metaphysics then begins to look like a super science, including all specialized sciences as its components. However, metaphysics is actually a specialized knowledge on par with natural or social sciences, rather than a super science. Everything is within the sphere of interest for metaphysicians, but from

a narrow perspective. Metaphysics applies a universalist stance to all that it studies, viewing anything as part of a whole rather than as a separate item. This distinguishes metaphysics from special sciences.

§ 2. The Universe

Let's now substitute the rather awkward term "the totality of everything that exists" with the coreferential and besides – strict and elegant term "the Universe". "The Universe" will be used in this text exactly in the specified meaning. On the grounds stated here, the term "Universe" looks like the best choice for denoting the subject matter of metaphysics. The work being done in the field of metaphysics consists in representing a theoretical model of the Universe. The term *Universe* should be restricted to its metaphysical viewpoint, meaning everything that exists and nothing less. This speculative vision of the concept opposes reducing the Universe solely to the space-time continuum and all physical objects within it. In other words, it is not the physical Universe that is meant here.

The denotatum of the metaphysical term also includes non-physical objects that are not directly located in physical space and time. Additionally, physical but non-individual material objects, such as laws of nature and physical kinds, can be considered as parts of the universal whole. Thus, the Universe referred to here encompasses everything that exists, whether known or unknown, covering the entire domain of existence or being. Accordingly, one should treat its conceptualization not as a cosmological term, but as a term of metaphysics. In other words, the metaphysical Universe is not the physical world; it is the world of existence. The difference is of prime significance for metaphysical inquiry.

Using the term "Universe," we focus on the totality, completeness, and wholeness of everything that exists. However, it may be unclear whether there is a complete whole of everything or just an endless something. The all-embracing character of the Universe may raise profound doubts as to the mere possibility of such an object. It can be argued that an all-embracing object is logically impossible because it lacks external boundaries and cannot be considered a singular entity. Rather, it is an infinitely complex system for which no general constructive principle can be found. There is nothing to make it one object. This statement should be rejected, because everything that exists is not only everything but also exists. Existence is the means and the decisive mark of the unity and wholeness of the Universe.

To exist means to be connected in some manner with other existing objects. Supposed absolute disconnection (direct or indirect) between any objects leaves no doubt that at least one of them does not exist. As we can clearly distinguish between existence and non-existence, it is evident that the former unites and sets limits to everything that belongs to the Universe, which thus appears to be a unique whole. (It is assumed that the term "existence" has an extensional meaning and is not just a grammatical unit linking words).

If the Universe contains everything, then there is nothing outside of it – absolutely nothing to think of. To be precise, there is no "outside of the Universe" in any possible way. The Universe, thus understood, is the ultimate object of thought. The supernatural, if anything of this sort exists, is a part of the Universe. "Nothing beyond" implies that there are no boundaries between the Universe and anything else. The only conceivable boundary lies between existing and (relatively) non-existing objects. This boundary exists within every part of the existing world, and therefore, the Universe itself serves as its own boundary. Note that the lack of external boundaries does not relate to the issue of space-time infinity. Even if space or time is infinite, it does not preclude the possibility of it being bounded.

The description implies that the Universe is a singular object, which equals denying the concept of a Multiverse, or the existence of multiple universes. The completeness of the Universe necessitates the impossibility of more than one Universe. Different (existentially) universes require distinct types of existence, that is why they do not coexist. Still, the oneness of the Universe does not exclude the existence of parallel worlds – either physical or non-physical. They may have nothing in common in their governing physical (or non-physical) laws or principles of existence; they may also have no direct impact on each other. However, their coexistence is due to the fact that there is some (possibly indirect) interconnection between them. At least, they exist in some way in relation to one another. Therefore, the same concept of existence applies to all of them. Based on this, it is reasonable to conclude that the objective coexistence of parallel worlds forms the unique whole of everything that exists – commonly referred to as "the Universe".

Metaphysics is not solely concerned with the Universe as a whole. We can say nothing about the Universe without knowing the composition of everything within it. Everything presupposes something as its constituents. It follows that a comprehensive understanding of the constituents of everything is required for metaphysics. This includes all parts of the

Universe, which may exist on different levels of complexity. Metaphysics can be thought of as *the study of everything and its parts*. Its universalist stance concerns both the Universe as a whole and its parts, as parts of the Universe and not taken independently of others. Something is of interest to a metaphysician only from a universal point of view. Every particular becomes a metaphysical object only in correlation with everything. This viewpoint is purely metaphysical and is principally important for metaphysics. To inquire into anything specific only as a part of everything is far from being the same as studying something independently of everything.

§ 3. Existence and Existent

The Universe and its parts (as just parts of the Universe) are characterized solely by their existence. Existence is what constitutes the Universe and unites all its parts and the whole. In fact, it is the only attribute of the Universe. Consequently, the Universe does not *have* it, but it *is* its own attribute. It means that the term "existence" is extensionally identical to the term "Universe". Existence should therefore be positioned as the next substitute for the subject matter of metaphysics. However, there is a subtle difference between the two terms. "The Universe" refers to the totality of what exists, while "existence" refers to that which unites the totality into a single object.

Some additional aspects of existence need to be clarified for a better understanding of the term, it is crucial for any further advance in metaphysics. The term "existence" is understood here not in any specific way but as an extremely abstract notion. It covers not just physical existence; similarly, it refers to psychic phenomena or any other non-physical ones. It embraces not just actual existence. Possibilities, if they are to be acknowledged as existing in some manner, may also be accepted as parts of the Universe. The same concerns seemingly unreal things or virtual realities. It is not the point whether these modes of existence are real or not; we are not discussing their detectability so far. For the time being, it's unimportant. When discussing existence at this stage of inquiry, we do not take into consideration its complexity; we must temporarily set aside the various types of existence. The principal stance is that "existence" is considered not as a general term but as the most primitive notion, leaving aside any complexities that may arise in different contexts. It is sufficient to consider an object as existing in any sense in order to enroll it in the universal whole.

Is it possible to disregard various forms of existence? Is there an existence that is purely and solely existence? This is the well-known problem of *the univocality of existence*, which has been extensively discussed in scholastic philosophy in times long past. It is evident that the term 'existence' is often used to refer to the same object in a general and abstract sense. However, it is possible that this term is only a metanotion that encompasses a group of first-order notions. It may not refer directly to reality but to other notions.

One apparent solution to this issue may be to adopt a scheme of multiple existences rather than a singular one. However, it is important to consider the uniqueness of the universe and recognize that the diversity of existences alone cannot fully answer the questions posed. There can only be *one existence* as different existences are logically and metaphysically impossible. If there are variants of existence being referred to, it implies that the others, apart from one, are not real but merely subjective images, phantoms, or illusory ideas.

The only characteristic of the Universe – the existence of everything in it – is the ground for another term that is relatively equivalent to, or synonymous with, 'the Universe' – 'the existent', meaning precisely that which exists. The term appears as a result of the direct distinction between that which exists and existence. Here, existence becomes an attribute that requires a subject. So, the "existent" is functionally different from "existence," but it is extensionally equal to the latter. Similarly to the case of the Universe, *existence* is the only characteristic of *the existent*. This indicates that both terms ("the existent" and "the Universe") are coreferential. However, in other aspects, they differ. "Existent" has a broader meaning, potentially encompassing various quantifications. It may denote the same as "the Universe" – all existing objects. In other circumstances, it may denote a part or parts of the Universe – i.e. *something that exists*.

These various meanings merge into a general (more general than "the Universe," which refers exclusively to all that exists) and rather indefinite meaning of *the existent as such* (neither all nor something particular) – a more abstract (and therefore more fundamental) meaning than "the Universe". "The existent" thus diversely defines the content of the term "the Universe" being both identical and not identical to it. As a substitute for the latter, it also plays the role of the subject matter of metaphysics. Metaphysics viewed from this perspective is *the science of the existent*.

It is important to note that the terms being discussed are semantically ultimate in two ways. Firstly, they have the most general reference that covers

everything that can be known and said without exception, thus indicating the limit of generalization that a researcher's mind can reach. Secondly, these terms are evidently the most abstract, having the absolute minimum of defining traits. In other words, they represent the limit of abstraction that a metaphysician can achieve.

§ 4. Metaphysical Realism

One more term to be used in the text is 'reality'. The term 'reality' refers to both the existent and its existence, without distinguishing between them; this is the specificity of the term. When there is no need to limit our attention to one of the two sides of the coin (the existent – existence), we may speak of reality. One could argue that the term "reality" is the most general and least precise among existential terms. It may be used in situations where semantic precision is not required. However, for this very reason, the term should not be considered a systemic metaphysical notion.

The term "reality" nevertheless is crucially important for metaphysics in another aspect. Reality should be interpreted as that which does not depend on our cognitive activity. In other words, it remains the same within and beyond cognitive activity. Anything that differs within our cognitive process and beyond it is an illusion or mere appearance. Therefore, reality always correlates with cognition, which distinguishes it from mere existence. Unreal things must be represented in some way to be recognized as such. The reality of something unknown arises from its independent existence in relation to cognition, not just existence itself. The term "appearance" may also be applied to something whose reality is unknown, and so it may hide an identifiable reality.

Do we have tools to compare what is going on within and outside of a cognitive process? The answer depends on the acknowledged relationship between cognition and reality. Over the last three or four centuries, philosophy has been preoccupied with problems of the subject-object relationship. The false identification of the relationship between cognition and reality with the subject-object relationship has largely contributed to the decline and fall of metaphysics during that period. The question to answer has been so far: whether metaphysicians study something real or not. If reality is an object opposed to a cognitive subject, then such a question is natural and legitimate. The danger to metaphysics as the knowledge about the real Universe arises with cognitive forms which are

illusory in themselves. Our knowledge may be inaccurate not due to our fallacies (which can be overcome) but due to the nature of knowledge itself. This Kantian stance dominated philosophy for a long time, although not entirely. Metaphysics was limited to knowledge about knowledge or to some conceptual scheme.

According to this state of mind, it is natural to think that knowledge is one thing and outer reality is another. A metaphysician's interest lies in reality, but the knowledge may not correspond to it. This may be plausible in some specific cognitive domains but not in metaphysics. Metaphysics deals with a reality that transcends the subject-object distinction and holds a superior position over it. What do I mean by saying this?

The term "reality", remember, refers to that which is independent of our cognitive activity and does not vary within or beyond it. The cognitive activity itself is real as long as it produces the same result within self-reflection and beyond. Hence, reality is something that remains constant throughout the process of cognition and beyond. A metaphysician studies reality as it is, not the reality of an object or subject of cognition separately. Reality qua reality has nothing to do with the subject-object distinction. On the contrary, it is what is indistinct within both a subject and an object.

Is there a need to distinguish between what is real and what is not? If we talk about reality qua reality, one does not need to think about it. The view that we live in a world of illusions and this is not the real world is false because all illusions are real in a sense. Obviously, there is something real, starting with the Universe itself. The existence of something – whatever it turns out to be – is self-evident. There is a compelling reason to believe that the actual Universe is metaphysically investigable. Metaphysics must, therefore, establish an absolute cognitive position (but without resorting to Hegelian absolute idealism or Schellingian absolute unity of object and subject; it goes about eliminating these terms altogether). This position assumes that it doesn't matter whether we think about inner reality or outer reality, as long as we think about reality itself. Preceeding from this fact, we can make an inquiry of the real Universe. This absolute (or pure) reality is knowable. Moreover, it is empirically given because it is ubiquitous.

What has been described should be called ***the principle of metaphysical realism***. Metaphysics, according to it, is the study of everything really existing or the really existing Universe. The objective is to build a comprehensive picture of all kinds of reality on the basis of reality itself.

§ 5. Abstract and Concrete Realities

Metaphysical realism posits that everything detectable exists in some way. The prime metaphysical interest is not to find out how something is detectable or in what manner something exists, but rather to delineate the boundaries of the existent, filling them with everything that exists in the most general and abstract sense. It follows that what we call *abstract objects* exist alongside individuals and specific substances. This is a controversial topic taking into account modern (as well as historical) philosophical context. The problem of abstract objects' real existence causes heated debates. No doubt, it is the most principal point in doing metaphysics.

The realistic position is to include both immaterial and material objects, or non-physical and physical entities, in the picture of the Universe. These types of objects exist separately in some sense, rather than within one another, and exist as they are, not as phantoms. The ground for this position lies in the univocality of existence. If the term "existence" refers to any kind of existence, then there is little doubt that abstract objects exist no less than specific ones. There are, of course, different ways of existence, but they are not existence as such; they are something more specific than mere existence. Specifications (or *concretizations*) of existence emerge when additional attributes are added to pure existence.

Procedures of abstraction and concretization are familiar to us. Abstraction deals with the complexity of the referents of terms. An object referred to is identical to some other objects, which can be called properties, structural elements, states, processes, relations, or even external conditions (they all will be further referred to as parts). Extracting any part from an object referred to creates a new object that is simpler and more abstract. Conversely, adding a part to an object creates a more concrete or more specific term. Within absolute reality (reality qua reality with no specification) there is no distinction between objects and terms; everything is to be regarded as reality or a component of reality. Therefore, we can only speak about abstract and specific objects. To indicate changes in the level of abstractness, the terms "abstraction" and "concretization" will be used.

Are there such objects in reality (that is to say, the objects with comparatively more or less properties, relations, structural elements etc.)? Strong arguments against it are being sought. There are hardly many supporters now of the reist position of not accepting the existence of properties. It is

far more plausible that properties do not exist independently of substantial objects. So, they have no independent existence, which leads to the conclusion that they do not exist as specific entities.

This argument is fallacious if we acknowledge the reality of the existential Universe. Such an admission requires distinguishing between existential and physical independence. Mixing them together leads to misunderstandings and the accumulation of errors. Existence is not identical to complete (including physical) independence of objects, although to exist means to be distinct from others and, in this sense, to be independent from them (let's call it *existential independence*). The arguments against abstract objects focus on their physical independence, which has nothing to do with existence.

The abstract and the concrete are only unified in terms of physical existence. Physically, they are always present together. But what is meant here is not physical existence but existence as such (existence in any sense). To exist in the most general and abstract sense means to differ. Properties and relations differ from substances; consequently, they exist apart from substances. In other words, abstract objects exist independently of specific ones (and other abstract objects).

This concerns the objects that have been discussed – existence, the existent, reality. Represented by highly abstract terms, they follow the same rule: they exist as abstract objects. One may say that pure reality, reality qua reality (as well as pure existence, the pure existent, and so on), is real (or exists in reality) and not just a term's meaning.

Thus, abstract and concrete objects exist independently in a sense, simply because they are different. Let's emphasize once again – it is a matter of existential independence. Abstract and concrete exist together physically (and are mutually dependent) but existentially exist separately. This means they have different grounds for their existence in the long run and ground other objects differently.

The essence of the above may be summarized as follows: reality comprises more abstract and more concrete objects. Metaphysics must take into account the reality of abstract objects. The existential Universe is a complex combination of abstract and concrete realities.

PART 2. PRIMARY REALITY

§ 1. The Chain of Abstraction. Ultimately Abstract Reality. Foundationalism

It is empirically evident that our world, both physical and mental, is full of specific objects. There are also abstract objects (this fact has been established here) of varying degrees of abstraction. One can assume that all abstract objects are abstractions of some specific objects. Contrariwise, all specific objects have some abstractions within the Universe. We have also learned that abstract objects do not exist as separate physical entities but exist in some other way. In any case, they exist somehow.

Let us consider the following statement as a postulate: an abstraction of any specific object can be further abstracted (due to the transitive nature of the abstract/concrete relationship). So, there is a chain of abstractions starting from a specific object, perhaps many chains. Each chain consists of links that are more or less abstracted specific objects, with a clear direction from more specific to more abstract links and vice versa.

We will not discuss at this time whether this chain is infinite in the direction of concretization. It may be, or it may end in some ultimately concrete objects. In the direction of abstraction, the chain is not endless. If you subtract properties one by one, you end up with only one of them. The situation does not change even if the initial concrete objects have an infinite number of properties; one can subtract both finite and infinite parts of them to make a finite set.

This brings us to the ultimately abstract reality. Such a reality exists provided that all the above principles are valid. Of course, it cannot be singled out in any physical observation or experiment, but it exists and is real. The main characteristic of the ultimately abstract reality is this: it is the object that completely coincides with its property. We may call it "an object-property", more precisely, it is neither one nor the other. It is just reality. What is important for metaphysical inquiry is that it is ultimately simple.

The ultimately abstract reality is one. There cannot be many such realities. This inference is based on the following consideration: suppose there

are many ultimately abstract realities. They must have something in common; otherwise, they wouldn't coexist. Then that something in common is ultimately abstract, but many supposedly ultimate realities are not.

The uniqueness of the ultimately abstract reality means that: 1) all other realities are more specific, and 2) all other realities contain this as their abstract component. In other words, the ultimately abstract reality serves as the ground of all others. Or it may be called the Universe Foundation. This brings us to *the principle of foundationalism*. The term "foundationalism" here means acknowledging that the Universe has its foundation. The system of metaphysics starts from the fact that everything is based on a universal foundation.

§ 2. The Multiplicity of the Ultimately Abstract Reality

To describe ultimate reality, we must abstract something to the limit of abstraction. The limit of abstraction, as we already know, is the state in which an abstracted object has lost all its attributes but one. In fact, it completely coincides with its unique attribute. We also know that there is the Universe as everything that exists, and therefore, existence is the attribute of everything. There is reason to conclude that everything is nothing but existence. Existence is the ultimate abstract reality.

Does existence exist? Does it exist apart from everything to which it is attributed? It is possible to separate existence from existing objects. To do this, we need to put existence in a position of an attribute. There is a clear difference between existing objects and objects that are relatively or somehow non-existing. Objects can acquire existence (a kind of existence and thus also pure existence), so it is an attribute and can be separated from objects (not physically, of course, but existentially).

In order to be the ultimately abstract reality, existence meets the necessary requirements. It fully coincides with its only property – to exist. There is nothing in existence apart from existence; otherwise, it would be something other than mere existence. In this sense, it is monolithic, similar to Parmenides of Elea's Being. As the ultimately abstract reality, existence is fundamental. It can be said that it grounds everything, is found in everything, which is equivalent to saying that everything exists.

Existence has been defined as an ultimately abstract reality. Does this mean that every ultimate reality is existence? In other words, is that ultimate reality only existence? Or is existence the only ultimate reality? Let

us pay attention to the fact that existence has appeared to us as the limit of abstraction. The question to ask is: what is to be abstracted? Obviously, we are discussing the abstraction of specific modes or types of existence.

Philosophers have worked hard enough to highlight extremely concrete existence, the existence here and now. (It is appropriate here to recall the concept of *Dasein* (not quite according to Heidegger, but rather according to Nikolai Hartmann)). From here, we move on to more abstract types or ways of existence. Having reached the final point of this movement, we arrive at existence in general, pure existence, only existence. And it is the ultimate reality and the foundation of everything that exists.

But one can start from other concrete realities and, having travelled a different path, perhaps also arrive at an extremely abstract object. The question, however, is whether this ultimate object is nothing more than existence.

First of all, it is permissible to begin with the existent (and not existence). In this context, concrete realities are things, states of things, properties, relations, states of affairs, etc. We abstract certain properties of things, elements of properties, aspects of relations, and other parts of the existent. Such actions lead us to the types of things, their properties, states of affairs, etc. The most general types are things, properties, and relationships themselves.

But this is not the limit of abstraction. Let us take into account that things, properties, relationships, etc. are something. Something is the ultimate abstraction. One could define 'something' as simply that which exists (and this is true), but something not only exists; it is not identical with existence. It is a kind of limited existence, that is, *something*. (Existence is also not quite something, although it is the existence of something).

Something, without any doubt, is *the ultimately abstract reality*. First, it comes down to one attribute – being something. It is this attribute that is a whole reality (and therefore is no longer an attribute). Secondly, something is extremely simple, it does not have any different aspects to it. Thirdly, it is fundamental, we can say that *everything is something*, or that *there is something in everything*. Finally, it is real because every existing object is, on the one hand, something concrete, and on the other hand, just something. There are situations in which the specificity of the object is not important; it is enough that there is at least something.

There are many specific objects (this is empirically evident). And this is equivalent to saying that all objects are different in some way. The diversity of everything comes down to existing differences. We can also talk about

the variety of concrete distinctions among things, properties, relationships, etc. Naturally, concrete differences can be abstracted. In the process of abstraction, types of differences are identified, and then one can proceed to more general types.

Ultimately, all specific differences are differences in general (otherwise it would be incorrect to label them as such). This means that in all concrete differences, there is difference as such, simply difference, pure difference. Such pure difference is also not identical to existence. In a sense, it can be argued that existence is difference – to exist is to be different. However, it is evident that difference and existence do not coincide in all contexts.

Difference can reasonably be seen as *the ultimate abstract reality*. Firstly, it is the same as its attribute – the property of distinguishing. It equals this attribute; the difference differentiates. Secondly, the difference is extremely simple; it is just a difference and nothing more. Thirdly, it is fundamental, we can say that *everything is a difference*, that *the world is a difference*. Pure difference is simultaneously present in all the specific characteristics of all entities. Finally, it's real. In certain situations, this is demonstrated by the fact that it is not a particular difference between things or facts that matters, but rather difference in general, just difference.

The opposite of difference is identity. When abstracting, we can start from a very concrete identity. Each object is identical to itself (albeit relatively), and this is a specific identity, an individualized identity. By abstracting certain elements of a specific identity, we can arrive at certain types of identity. Next – to the most general types. And finally, we arrive at identity in itself, identity as such. It can be described as the most abstract identity of something with itself. Similar to difference, identity is not fully identical to existence, although to exist means to be identical to oneself (and only oneself).

Like difference, ***identity*** can be understood as an extremely abstract reality. Firstly, in identity, there is nothing but identity. It is identical with its only attribute – to be identical with itself, which is not an attribute but is this reality itself (indistinguishable from this reality itself). Secondly, identity is the simplest reality; it is indivisible and indistinguishable in itself. Thirdly, identity is fundamental; *everything is identity with itself* (and difference from something else). Without identity as such, nothing exists (since it cannot be itself). Finally, pure identity is real, just as pure difference is real. There are situations where, similar to pure difference, pure identity is revealed.

§ 3. Direct Identification and Differentiation

The content of the last paragraph clearly contradicts the earlier argument. It was established that there is one and only one ultimately abstract reality. It later turned out that there are at least four – *existence, something, difference, and identity*. Each of these is undoubtedly the ultimate reality. Moreover, each of these realities is the ultimate reality in full, that is, the sole ultimate reality. From the perspective of natural logic, this is an impossible situation. There is an obvious contradiction in these two statements: "the ultimate reality is one" and "there are several ultimate realities."

But let's think about this. We are dealing with extreme abstractions. Should we be guided by natural logic? For this to happen, natural logic must exist prior to and independently of ultimate abstractions. In other words, it must exist before any reality. But this is impossible, since the laws and forms of logic are themselves a part of reality. So, ultimate reality does not obey any logic. It is its own logic.

Now, one should try to understand this logic by analyzing the relationships between the ultimate realities identified. All four are one, and there is no contradiction in this. For this aspect of absolute reality, we must follow not Hegel but Francis Bradley.

The realities under consideration are mutually identical. Existence is identical with something (existent), difference, and identity. These terms are coreferential when it comes to maximum abstractions. Is that not so? It is quite obvious that existence is something (not nothing); it is difference (something cannot exist that does not differ and, moreover, to differ is nothing other than to exist); it is identity (to exist is to be identical with itself, as there is no existence without identity, and vice versa).

Something (existent) is identical with existence, difference, and identity. Something is all that exists; it is in the long run the same as existence. Or, to put it another way, something cannot be distinguished from existence when completely abstracted. The same applies to difference and identity. Something is the difference from everything else that is not it; something is, on the other hand, the identity to itself.

By analogy, we find that difference is identical with existence; in the long run, to be different is to exist. Difference can be abstracted to that which exists (something) or to become indistinguishable from identity. These

considerations also apply to identity. In its full abstraction, identity becomes the same as existence, existent (something), difference.

One gets the impression that all ultimate realities merge into one (approaching their limit of abstraction) or they are indiscernible (losing all discernibility from our point of view – the point of view of concrete creatures). We can imagine a reality that is not defined by its specificity but can be perceived as existence, or as difference, or as identity, or as something existent. Thus, ultimate reality is one, but it is different. It can be imagined as one reality and in the same way, as some realities. Their differences are real, just like their identities. In this context, existence, for example, is not difference but is exactly existence (we can't in all cases change existence for difference and vice versa). Something is something, not identity. And so on. There may be some confusion in naming ultimate reality (ultimate realities), but both forms – singular and plural – are acceptable.

Being different from others, every ultimate reality is identical only to itself. Identity with itself makes it itself, identity with others makes it different. In addition to being different from others, these realities are identical to themselves. It may be said that their difference (not their identity with themselves) makes them different, and their self-identity (not their difference) makes them self-identical.

Differences and identities are not alternatives here; they are simply the difference and identity of differences and identities. Realities, whether different or the same, are distinct ultimate realities. But they are the same reality. Moreover, differences do not determine the specificity of ultimate realities; they are not specific in any sense because each of them is the same as any other reality.

Being something else is something else and yet it is not something else but this very reality that is something else. Identity with itself is also identity with something else, yet it remains identity with itself. Everything is other and everything is itself. Ultimately, identity is difference, and difference is identity. Different realities are not united into one but are each other. Any reality is something else. (This is reminiscent of Hegelian dialectics, but without its movement of concepts and without the impulse to reconcile contradictions in a new concept).

There is no new concept or new reality (in our terminology) emerging from contradictory previous ones. This is due to direct differences and identities of ultimately abstract realities. These realities are different and identical not because of some factors or characteristics, but directly, without

any mediation. Say, existence is identical to difference not because it shares the same properties as difference, but because it is difference directly (in the same way that it is directly not difference). There is nothing but the ultimately abstract realities themselves that makes them different and identical. They simply exist, and this is sufficient for them to be realities, to be one reality, to be one as another.

One more point needs clarification. So far, we have identified four ultimate realities. Should there be more? It seems implausible because they must be directly related to existence. An additional ultimate reality must be equivalent to existence. I can see no such realities. Existence is directly only difference and identity. Something existent has to be added here, of course, since it is no more than different existences as well as difference and identity themselves, which, of course, exist.

§ 4. Pre-logical Reality

Ultimately abstract reality (we can perceive it as a single reality, bearing in mind that it is not only one) is far from what we find around. But what we find out about it fully corresponds to the conditions of ultimate abstraction. These conditions are so primitive that they disrupt the intricate order of the world to which we are accustomed. Ultimately abstract reality lacks much of what organizes our empirical world. It lacks not only natural laws but even logical norms that are usual and intelligible to us. It violates the basic principles of both traditional and modern formal logic. Things that go without saying are excluded – such as the prohibition of contradictions, exclusive identity of a concept with itself, and modal relationships.

There are no substances and their attributes within this strange reality. We should admit that something in its final abstract state is not that which has existence as its attribute, but is directly existence, being at the same time something connected with existence and differing from it. Peering into ultimate reality from our concrete reality, one can regard everything there as either a subject or an attribute, as one prefers. Strictly speaking, it is a *pre-logical reality*.

One cannot find any natural laws there, no time, space, no qualitative and quantitative relations. There are no dependencies – causal or other (structural, etc.). All the regularities of the empirical world are replaced by presented realities. These realities are self-ordering; they realize everything

at this level of the Universe. They connect everything. There are no other ways of realizing and connecting anything real within ultimate reality.

The order of pre-logical reality boils down to the fact that reality exists, is something, differs, and is self-identical. Note that we can observe no rules here regarding how this order is implemented. Nothing has influence except realities themselves. There is no choice or limitation in the realization of anything – all realities are ways of all realities existing. They are identical because there is identity, they are different because there is difference, they exist because there is existence, they are something because there is something existent.

From the point of view of logic, there are no contradictions in pre-logical reality (as we already know). What appear to us as contradictory aspects of pre-logical reality can be seen as coexisting or existing side by side. It is difficult for human beings to abstract their thoughts from space-like representations. The result is some false presuppositions that pre-logical realities: a) can interact or have relations; b) occupy their places where they exclude other realities; c) are connected into a common reality, parts of which are occupied by others.

Actually: a) pre-logical realities do not interact and have no relations; they simply differ and are identical; b) they are all different and identical with others (and with themselves) directly; there are no special zones for this; c) every reality is both partial and common. Pre-logical reality as such is existence, it is difference, it is identity, it is something. And it is one reality, not different realities. Although, of course, there are some different realities. All the pre-logical complexity of reality can be encompassed by the term "coexistence" (existence but not only existence).

§ 5. Self-groundedness. Being and Nothingness

Pre-logical reality can also be characterized as primary, that is, fundamental reality. "Primary" does not mean "first in time". Nor is it the first cause (there are no causal relations in pre-logical reality). Yet it is the ground of everything. The ultimate ground should be treated as the simplest, most elementary reality, which enters into all more complex realities as their structural basis. Only in this sense is it fundamental.

Since the Universe is a whole, it seems obvious that primary reality does not exist without all the other, less abstract realities. Should we say that it depends on the latter? Is the most abstract reality grounded by less abstract

ones (and so there is no foundation for the Universe)? In answering these questions, it is necessary to proceed from the fact that the relationship between the primary reality and the rest of the Universe is not symmetrical.

As has been said, primary reality is present in all others, but all others are not present in primary reality. It makes sense to repeat once again how abstract objects exist. They exist in the absence of certain elements that constitute more specific objects. It is important to note that this is not the result of the loss of specific elements. If this were the case, specific objects would exist before abstract ones. But they coexist; that is, they exist simultaneously. Abstraction is a mental process, but in reality, there is no physical process of abstraction. Abstract objects are already there – within specific ones. But not vice versa. For example, everything is different and is something, but difference and something are not concrete differences and concrete objects – they are abstract realities. The reason why such realities exist has been explained. Primary reality is therefore the ground for everything else; however, the reverse is not true.

The next question is: Does primary reality have another ground apart from the more concrete realities of the Universe? In other words, is the most abstract reality grounded or ungrounded? If the latter is true, how can it be? How can something exist without a foundation?

It can be argued that primary reality is ungrounded simply because it is absolutely abstract. Every grounded object has its ground (or the representation of the ground within the grounded object) as part of it, and therefore cannot be absolutely simple and abstract. Primary reality is absolutely simple and abstract, and therefore cannot be grounded. This consideration justifies the logical necessity of ungroundedness, but not its reality.

How does ungrounded reality come into being? The answer is quite simple. The primary reality exists because it is existence. Can existence not exist? And where does the existence of existence come from? These questions are meaningless. Existence is what exists – it is what is called a "brute fact". That's all. Ultimate reality is existence, and it is self-grounding; it cannot but exist. It doesn't come into existence; it is existence. It is that simple.

The problem of self-grounding is related to the problem of being and nothing. If there can be absolutely nothing instead of something, then there must be some agent that makes the choice in favour of being. So, we have to decide: could the primary reality (let's name it *pure being*) not exist. There is a question often posed by modern philosophers: Why is there something instead of nothing?

Note that "nothing" is meant to be "absolute nothing". Absolute Nothing (or just Nothing) should be contrasted with relative non-being. The latter concerns the non-existence of specific objects in particular environments, places, and times. Absolute Nothing is the absence of everything, including existence itself. It's not difficult to understand that absolute nothing does not exist. There is simply no such thing as absolute nothing. Moreover, we have nothing to talk about. "Nothing" is an empty concept, it has no denotation. Absolute nothing is a purely mental construct. It only has the pragmatic sense of failing to find anything someone is searching for.

Therefore, the choice between Being and Nothing is nonexistent. To ground the Universe on the negation of Nothing is to indulge in the elaboration of a false idea. Absolute Nothing is just nothing and cannot ground anything. There is only Being, and this fact does not require any grounding or explanation.

PART 3. SUPERVENING REALITY. THE BASIC FORMULA OF METAPHYSICS

§ 1. The Foundation and the Universe

Why is ultimately abstract reality not all that exists? This is one of the principal questions in metaphysics. Ultimate reality is existentially complete. Being groundless, it requires nothing but itself. Something beyond primary reality should not be seen as the outcome of pure being transcending its own boundaries. Pure being doesn't move and doesn't go anywhere. Pure being is not an overflowing reality. It is not the productive foundation of everything. Nor is it the first cause or the initial state of the Universe.

The problem is aggravated by the contingency of our Universe. The Universe we happen to inhabit is obviously one of many possible variants. If it is unique in its existential scope, then it is unclear why exactly this variant exists and how it supervenes on the ultimate reality, which does not prohibit any variant of the Universe.

The solution is to be found in the constructive principles of pre-logical reality. Everything concerning pre-logical reality is identical both with itself and with something else, is different both from something else and from itself. This is the case with *existence, something, difference, identity*, and also with ultimate reality as such. Pre-logical reality, as it is, identifies itself with and differs from both itself and something else, i.e., a kind of non-pre-logical reality. This alternate reality is, on one hand, the ultimate reality itself, and on the other hand, non-ultimate reality. Non-ultimate reality is thus principally different from ultimate reality, and only different from it (in other words, directly is only different and indirectly is identical).

Differing from pre-logical reality, another reality must be purely logical. This means that it falls within the scope of the logical laws of identity and contradiction. Consequently, this reality is solely identical with itself (not different from itself) and is solely different from the primary reality (is not identical with it).

One has to conclude that the coexistence of primary and supervening realities (or the transition from the first to the second in terms of our inquiry)

is due to the incompleteness of primary reality. As a pure difference, primary reality turns out to be something different from itself. This other reality is nothing more than the world we empirically comprehend. The impact of primary reality lies in its simplicity and abstractness, which opens up room for complexity and concreteness. That is, the first reality is the simple and abstract beginning of all that is complex and concrete.

Thus, the structure of the Universe is formed. The first ground and its derivative part can be discerned in it. The first ground does not yield the derivative part. Neither does the first ground create an alternate reality, nor does it precede it in time. The first ground coexists asymmetrically with the derivative reality. Such coexistence is nothing more than an ontological connection or dependence that conditions the existence of everything.

The most substantial objection to this is that there is no difference between an observed existing thing and the existence of that thing. The existence of a thing without a thing seems to be nothing. It concerns not only existence, but all previously described hypostases of primary reality. This is the fact which is experienced with no exclusions in all scientific or common sense cognitive activities. But in metaphysical terms, it means only that pure existence cannot be extracted from particular things. It also means that pure existence cannot be detected by any physical devices. Nor can it be perceived by our sense organs. Although it doesn't mean that pure existence does not exist at all. The metaphysical criterion of existence is maximally broad and abstract. From a metaphysical point of view, everything that is different from the other exists. There are no more criteria. We're able to distinguish *the existence of something* from *existing something*. This is not an illusion because something can exist or not exist. The non-existence of a particular thing serves as verifiable proof of the non-coincidence between something and its existence.

From a metaphysical perspective, *existence, existent, difference*, and *identity* are realities that exist separately from all concrete realities en masse and in particular. If the existence of abstract realities is not visibly distinct in the case of physical individuals, it can be distinguished in the case of all individuals forming the physical Universe. Ultimately, abstract reality differs from all concrete realities in that it is timeless and unchanging. Everything is constantly changing, but the existence of something is not. If we consider all endless particulars, they are not the infinite sum of particulars, but *abstract something* that both differs and does not differ from *existence, difference*, and *identity*. Pure existence differs and does not differ from all existing specific

things. All existing things are nothing but *the existent* which is the same and not the same as *existence*, the same way it applies to *difference* and *identity*. Thus, primary reality coincides with the whole mass of concrete objects but plays the role of an outer, independent reality that lies over them in relation to each particular object.

Our sober rejection of such a reality as pure existence is due to our habit of seeking the abstract in the concrete, and nowhere else. We are comfortable with the idea that abstract objects can only exist separately in the mind. The picture of pre-logical reality presented here has apparently aroused a flavour of absurdity in many readers. This is because a common mind contains an extremely narrow idea of separate existence. Such an existence is represented as being located in time and space, having a definite place in a causal chain, like something acting and being subjected to an activity, having a position in a taxonomic structure, like being a substance with generic and individual attributes. If a detached existence were such a thing, the idea of primary reality would be false.

Primary reality, however, exists separately from the more concrete layers of reality, not in the sense of being physically, causally, spatially, or even formally separated. It is a separate reality in the sense of clear and complete difference from others. It is a special kind of existence, and its peculiarity is not determined by what it is the ground of (it is determined exclusively by itself). Its independence is purely ontological, which means that no concrete object is necessary for the existence of primary reality. There is a necessity for concrete objects in their totality to be another side of primary reality. However, the totality of objects is identical to the existent, i.e. to primary reality in one of its modes of being. It is the existent (everything) that is necessary, not these or those particular objects.

To summarize. The primary reality is the ground of the Universe. This ground is neither causal nor genetic. It is a structural ground with three main characteristics: 1) it is the simplest part of the Universe; 2) it is present in all realities; 3) it is a self-grounded reality, unlike any other. Primary Reality is inherently present in every specific object; without it, nothing exists, and everything is determined by it, albeit indirectly. In contrast, no specific object is necessary for primary reality to exist. In this sense, the latter is independent of the former. Certainly – not independent of the totality of concrete objects, but of each of them. As has already been said, all of them taken as a whole are not concrete objects; in their extreme generality, they become *something existent*, identical with primary reality itself. The univer-

sal ground represented is not productive, but the structural beginning of everything. It does not create everything, but defines it by coexisting with it. The mode of defining is the concretization of primary reality, in which it is transformed into all more specific realities.

§ 2. Supervening Reality

By separating ultimately abstract objects from all more concrete objects, we obtain two realities. One is primary, existing independently of everything else. The other, existing on the basis of the first, can be called the next to the first or ***supervening reality***. So, there is a supervening reality based on the primary one, and the two are connected by coexistence.

The supervening reality contains the primary, but not in a spatial sense. The first is identical to the second as a whole and differs from it as an aggregate of specific objects. The second is also not completely identical to the first – either as a whole or as an aggregate; that is, both realities are not symmetrical. The fact is that the supervening reality is more complex than the primary one. In this sense, one contains another.

Supervening reality differs from primary reality primarily in the relationship between difference and identity. Within primary reality, everything different is identical, and everything identical is different. In contrast to this, in an alternate reality from the primary one, everything that is different is different from what is identical, and everything that is identical is different from what is different. That is to say, what is different here is only and exclusively different, and what is identical is exclusively identical. If the unification of identity and difference is the principle of pre-logical reality, their separation is the ground for the laws of logic in an alternate reality. The supervening reality thus is principally logical.

Each object here is identical to itself and different from all others. These two positions fully define an object. An object can be different from itself in some way (in the process of change) or identical to another object in some other way. But this difference and identity are partial, not complete. In essence, an object is exclusively identical with itself and exclusively different from something else. Within logical reality, primary realities also look different: difference here is solely difference, identity is solely identity, existence is solely existence, and existent something is solely something that exists. On the other hand, the objects of logical reality are partially identical insofar as they are the concretization of pure being (or primary reality). It

should be added that incomplete identity makes objects essentially different, but incomplete difference does not make objects essentially identical.

Both primary and secondary realities are characterized by the term "coexistence". But the character of coexistence is principally different in each of them. In primary reality, there is a direct coexistence of what is there. Constituents of pure being do not exist alongside others; they are their own others, which are one. This is how their coexistence is realized.

As far as supervening reality is concerned, there is the coexistence of different and only different objects, i.e. their coexistence acquires the character of separation. To put it another way, extensionality is a defining feature of supervening reality. It means that one object exists outside of others. The term "outside" here has no physical spatial reference. "Outside" may not necessarily refer to outer physical space, but it is still considered "outside" in some sense. By separating different objects from one another, we can place them in a row without mixing them. It is therefore possible to see the objects of non-primary reality existing next to one another (in different senses of proximity), more or less close to each other. This varying proximity corresponds to what we should call *ultimately abstract space* (abstracting from multiple senses of the term).

What implications arise from the fact that the objects in empirical reality coexist extensionally? In a sense, it is full coexistence. It has a variety of specific characteristics. It is divided into direct and indirect coexistence. Different kinds of coexistence emerge. These different kinds are realized in what we call *relations* or *connections*. We call those relationships that define or alter their relata "dependencies" or "coherences". In addition, objects that exist separately can be combined into aggregates, associations, or sets from a mathematical perspective.

The supervening reality differs from the primary reality as something concrete (or specific) from something abstract. Concreteness (or specificity) means that the realities within this secondary part of the Universe become complex. They are the unities of various other realities. Every object here is a combination of other objects. First of all, it is the primary reality that constitutes an object. Primary reality is the basis of everything more specific, without which none of it would exist. Then, of course, there is something else that shapes or constitutes an object. Thus, every object in supervening reality is complex and more concrete than primary reality. Complexity means that attributes (or properties, qualities) of an object dissociate from an object in an existential sense and have a relatively independent existence.

This relative independence is what conditions the division of everything into substances and properties.

The following statement is extremely important for the entire metaphysical model of the Universe. ***Everything within concrete (supervening, empirical) reality is nothing but a concretization of primary reality***. Pure being is the limit of abstraction, universality, and simplicity for supervening reality. The latter turns out to be the concretization, particularization, and complication of pure being.

It is obvious that the degree of concretization is far from being the same for all parts of supervening reality. Since every concrete object is constructed by adding something to basic reality, this building process is transitive and can be repeated. In supervening reality, there are objects that vary in specificity. It is reasonable to conclude that objects of relatively similar degrees of concreteness form distinct layers of empirical reality. There are, one might imagine, the most abstract layers of supervening reality, close to pure being, and the more concrete, descending to the level of ultimate concreteness, which is supposed to be sensually fixed physical reality. From a metaphysical perspective, this is the structure of our world, which contains different structural layers of reality.

Another point concerns the modal aspects of the Universe. Primary reality is amodal; it is neither necessary nor contingent. It just is. Secondary (supervening) reality does not exist directly; it is there because of the existence of primary reality. Secondary reality, we might say, is indirect in its existence as it exists under certain conditions. Therefore, supervening reality is modal – it is either necessary or contingent, either only possible or actual. Taken as a whole, supervening reality is both amodal (it just is), being a part (or a side) of primary reality, and necessary (or absolutely necessary – only necessary). All the more concrete objects combine necessity and contingency in their existence. The most abstract of them are obviously necessary. The more concrete they are, the more contingent they turn out to be.

The presence of contingent objects makes the entire Universe contingent as a concrete collection of objects. This fact raises the question of a determining factor that decides between different choices (not excluding as a supposed factor the world-subject known as God in religious mentality). The presence of contingency also makes the ground/grounded relation rather loose (unlike the strict one-to-one relation in the case of necessity). Different ways of connecting these relata are what we refer to as possibilities. Possibilities exist only within grounded objects; they have a kind of

existence but are not complete in a sense (this will be discussed later). The completeness of existence in particular objects is to be called their actuality (or actual existence). The Universe contains all its possibilities, but obviously has a much smaller range of actually existing objects.

§ 3. The Way of Shaping Specific Realities. The Basic Formula of Metaphysics

Supervening reality, as we have learned, consists of specific entities (at least exceeding primary reality in specificity), which will henceforth be called *objects*. There are only two ultimate conditions for their existence: 1) to be identical with itself and 2) to be different from anything else. Identity concerns exclusively an object that is nothing other than itself. Identity as an ultimate reality is unique and unchangeable; it is the same for all objects. The self-identity of an object does not depend on the peculiarities of that object, nor on the peculiarities of other objects. It only makes any given object nothing but this object. Therefore, it does not define the specifics of an object; it defines all objects in the same way. Accordingly, identity does not require anything beyond a given object; in this sense, it is not productive.

On the contrary, the second condition for the existence of objects – to be different from everything else – is productive and non-trivial. Difference itself, as an ultimately abstract reality, is one and the same in all specific realities. But the difference in specific realities is not merely difference, but the difference of one reality from the others. Not the difference itself, but the differing objects are not the same. The diversity of objects that differ makes their differences specific (and themselves diverse). Specific difference is specific not as a difference but as a difference from specific objects. Such a difference brings into existence specific objects insofar as objects are what differ. *The unique set of differing objects completely determines the specifics of each object in the supervening reality.* Thus, difference is what one should look for in order to reveal all new objects within the structure of the Universe (if the Universe is observed from the ground).

Like all objects, differences in supervening reality can be more or less abstract. Let's call the ultimately abstract difference represented in concrete objects "metaphysical". Metaphysical difference is pure difference, without any additional features. It is just a difference, nothing more than difference itself. Its absolute homogeneity is not disrupted by the fact that, within primary reality, difference is identical with existence and even with identity

itself. Pure ("metaphysical") difference appears in the reality of specific objects (in accordance with the logical laws of that reality) simply as difference and nothing more than that.

Of course, we can find more and more specific features in the differences among objects as these objects become increasingly concrete. That is why the differences in specific objects can be seen as specific differences. But there is a fundamental, unchangeable metaphysical difference that remains consistent regardless of the objects it separates. Being always self-identical, metaphysical difference gives rise to a variety of objects and their specific differences. This is what should be of primary interest to a metaphysician.

Metaphysical difference is productive in the sense that the difference from one object is identical to the existence (at least potentially) of another object. On this ground, it should be argued that *applying metaphysical difference to a given object results in the creation of another object*. The term "difference" here means both "the state of being different from a given object" and "something different from a given object". Difference as a relation, a property, and a substance with a relation and a property are not distinguished. Difference is something (by and large – anything) that is different from a given object.

Not all specific differences are metaphysically productive. Only *direct differences* are productive. "Direct" here means "without mediation between an object and a difference". The condition of "no mediation" means that the difference is identical with an object (with something differentiating other objects). That is, the realized difference is a new object, or in other words, ***the direct difference between some objects is a new object***. It follows that a direct difference suggests the non-existence of an object beyond the difference between other objects. If this condition is not fulfilled (i.e., if there are objects beyond direct difference), then we observe *indirect difference*. Everything in the Universe is indirectly different from everything else, yet these distinctions are predominantly non-productive, non-metaphysical, empty differences.

It follows from the above direct difference conditions that the difference of some objects does not produce these objects (all or any of them). Objects do not exist before their differentiation, according to the assumption about the production of these objects by difference. Their difference does not exist before them, which is obvious. So they don't produce each other through their differences. Different objects exist independently of their difference. In this sense, they exist (structurally, not temporally) before their difference.

Yet, this does not mean that their difference is an "external relation" (recalling the term used in the Russell-Bradley dispute about internal and external relations). The metaphysical structure of the Universe is existentially unified, and there is nothing in the Universe that exists without a connection to the whole and every part of it. Every direct difference between objects is productive and is realized as a new object. This productive difference is inherent to the objects that form a ground for it. Then a new object must be produced by a difference that arises independently of that object. The only possible conclusion is that a new object finds the ground for its existence in other objects, and their difference is what happens to be a new object.

The identification of productive differences with various objects may seem to contradict the principles of concrete (or supervening) reality. In the empirical world, everything that is different is only different (identical only to itself). The difference as reality is certainly not the same as an object with which it is identified (if it is not the difference itself) or different objects (as opposed to pure difference identical with the existent as such). One can distinguish here between objects and their differences.

In specific reality, the pure (metaphysical) difference separating specific objects is solely and exclusively pure difference. As such, it is identical to something that exists (not specific objects). But an object produced by the difference of other objects is not identical to this pure difference. Differing objects are something existent in their ground, but this something is specified by the specific properties of the objects. So does difference; it must become identical with something specific. We know that in concrete (supervening) reality difference is not identical to anything except itself. Different objects are not identical to each other. However, this condition does not apply to the identity between some objects or a complex of something and a single object. There is no prohibition by logical laws on the identity of different objects and an object.

Though something cannot be identical with difference taken apart from what is different, it is identical with *the difference of specific objects*, that is, with *difference **and** differing objects*. What is identical with specific difference is not the differing objects (all or any of them), since they are a part of what is identified and cannot be the whole. It can only be *a new object* (new in relation to the given differing objects).

Specific differences can be complex (like all specific objects), i.e., composed of other differences, or non-complex, elementary. It is the latter that must be of interest to metaphysicians. An elementary difference unites a minimal set

of objects, namely two of them (the number two as well as sets does not exist at this level of reality; there is only an elementary difference without further specification, which has two sides only to a sophisticated observer).

Another important aspect of an elementary difference is whether it is correct to speak about a difference between objects A and B, or if the difference of A from B is not the same as the difference of B from A. This is a question about symmetry. Primary metaphysical difference, which is ultimately primitive, is neither symmetrical nor asymmetrical. It is, in fact, pre-symmetrical. It means that in every difference, one is able to distinguish the difference of each side separately. There is the difference of A from B and the difference of B from A, which may be the same (symmetrical) or not the same (asymmetrical). In both cases, we can simplify the analysis by focusing solely on the difference of A from B and, apart from that, about the difference of B from A. Let's assume that the difference is generally not symmetrical.

If a specific difference is identical to something, then we can say that there is something that distinguishes A from B and there is something that distinguishes B from A. There is little doubt that every new object is not in the same position with respect to the opposite sides of the difference that produces this new object. It is closely (directly) connected with one side and indirectly with the other. The direct connection here can be seen as an attachment or belonging to the structure of another object (each object can be considered a part of another object or a condition of its existence). We may speak of the belonging of one object to another by using the term in its maximally broad and vague sense. In this sense, there is something in A that distinguishes it from B. Similarly, there is something in B that distinguishes it from A. So, the difference of A from B is an object (let it be C) by which A differs from B. Analogously, the difference of B from A is D, which identifies that which distinguishes B from A.

Let's postulate the total presence of difference as a general principle of specific reality. Put more simply, we postulate that *everything in the empirical world is different from everything else*. It follows from this postulate that everything that exists in the empirical world is directly different from at least some other objects. There is also reason to believe that each difference is different from other differences, and that each particular difference is represented by a particular object. If this is the case, then it would be correct to infer that every particular object in the Universe is the difference of another object from yet another object.

Now we can establish *the general formula of existence* for all objects in the Universe. It is expressed in metaphysical terms and from a metaphysical perspective. Let us call it ***the basic formula of metaphysics***. Let's continue using the previous symbols (A, B, C) to represent the elements of productive difference. Let's also retain the terms "difference" and "identity" in the formula. With this in mind, the formula should be expressed as follows: **[the difference of A from B is identical to C]**.

§ 4. The Basic Metaphysical Formula Analysis

The basic formula of metaphysics refers to objects of supervening reality. But it also deals with primary realities, since they are included in supervening reality as its ultimate objects. By A, B, and C, we mean any metaphysical objects that can be substituted into the formula. It should be borne in mind that A, B, C are variables in the meta-language of metaphysics. In the language of metaphysics itself, there are no variables. This means that constants, but not other variables, are substituted for the variables of the basic formula. The terms of *difference* and *identity* are constants that connect the terms of objects in the formula. Square brackets indicate that the expression within them belongs to the language of metaphysics. This is necessary to distinguish metaphysical formulas from expressions of a meta-language as well as an empirical language.

The terms "difference" and "identity" are treated in the ultimate metaphysical sense. They impart a metaphysical meaning to the entire formula. These terms function as connectives. But they are connectives that indicate the connection of supervening reality objects with the level of primary reality. *Difference* is identical to coexistence, to identity with itself. *Identity* is the same as existence, is directly – difference, etc.

A and B are the minimal set of differing objects. They provide the elementary difference. Everything that exists satisfies this condition (including difference itself). No matter what empirical category it falls into – substances, properties, relations, processes, states, etc., A and B are not countable (as has been noted). In other words, there are no two differing objects at this level of abstraction; there is only the elementary difference of objects. We will assume that all non-elementary differences (differences of differences) are reducible to elementary ones.

Within the formula, one can distinguish the difference denoted by the corresponding term when taken alone, and the difference as the referent

of the whole combination of terms (*difference, A, B*). The difference itself is a metaphysical difference, i.e., an elementary, ultimately simple and abstract, pure difference. The difference in a more complex sense (*the difference of A from B*) is a specific difference. It differs from each of the concepts (including difference itself), but not from the whole. The specific difference is not *A and B* (A and B taken together). Nor is it *A, B, and their difference taken together*. One might argue that A and B are inherently different without the need to introduce another term to distinguish between them. But *difference* is a more fundamental concept than A and B; therefore, there is no A and B before difference. In the long run, A and B differ because they are concretizations of the metaphysical difference. That is, pure difference is the ground of all differences. Moreover, A and B exist as particular objects beyond their specific difference. There is A and there is B as such in the Universe. Therefore, the different objects A and B are not the same as their difference.

Then we have the concept of "identity." *Identity* is the connector of the whole formula, linking its left side with its right side. It is also, first of all, metaphysical identity (like correspondingly – *difference*) – pure and ultimately abstract. But there is no *specific identity* in the formula; identity is not specified by the terms, although it connects specific terms. It means that the left side of the formula and the right side are only one and the same. But in terms they are different, how can this be explained? The full explanation of how the One is the Many is a matter for the entire metaphysical system. We can only postulate this identity condition here. A preliminary and formal explanation may be as follows. Both sides of the formula contain partial terms that reveal only one aspect of a self-identical object. The left part should be extended to "the difference of A from B, which is C", the right part to "C, which is the difference of A from B". Then both are obviously terminally (not only referentially) identical.

A is not the difference itself; it is what differs. So it is more than just a difference. It is an object including its difference from another object. On the other hand, it is less than a specific difference. It is only one side that does not differ without the other side. So, it is a part of a specific difference. But this side is not the same as the other side. It is A that differs from B (not vice versa – in the latter case, there would be another difference). What makes it special in this sense? It is immediately clear that the terms *A* and *difference* are directly related, whereas *B* and *difference* are not. *The difference* is directly *the difference from A* and more remotely *the difference from B*. This is, of course, a conceptual distinction, but it corresponds to an ontological one.

In the ontological sense, something we call "difference" is directly related to object A and not directly related to object B. Consequently, we should look for the source of difference by concentrating on object A.

The difference represented by the third object lies within object A. It is permissible to say that it is something belonging to A. The term "belonging" here has the widest and somewhat vague meaning. It can mean "to be a structural part of A," "to be a condition of A's existence," "to be a property of A," or "to be an object necessarily related to A." All these semantic nuances are mixed and not yet distinguished in the meaning of the term (at this level of abstraction that we are talking about). In all cases, the third object in the formula does not exist without object A. It is what distinguishes A from B. Put another way, it is something in A (or more broadly, in the existence of A) that is different from B. It is something that is present in A (or with A) and is not present in B. From this, we can conclude that the rest of A is identical to B. Is that so? We have all the reasons to think this way.

B is what A is different from. So, B must be different from A; only then is A different from B. But it is not something completely different; as has been said, B is in some aspect identical to A. One can observe variants of this identity. B can be completely identical to some part of A (or completely related to A). B can have a proper part that is identical to a part of A (or a proper part that is connected to A). But no part of B can be completely identical to A (nor can it be the whole of B). That is, B makes A metaphysically different from it if it is somehow connected to A. This is the necessary condition for the metaphysical difference to occur. Not every object can be placed in position B. Nevertheless, as we shall see, object B can be found among more abstract objects than A, or at the same level of abstraction, or even among less abstract objects.

The meaning and function of the term C is evident from the preceding discussion. It is what distinguishes A from B; it is precisely an objectified difference, in other words. First of all, it is something, an object, the same kind of reality as A and B, but a different object. Secondly, it plays a role of difference. It is directly different from B, and indirectly (differing from B) it is different from A. Through difference it is connected with A and B. C is such A that it is not A, but something else; it coexists directly with A. One can say that C may be represented as "in some sense A", as a specification of A. This may also be represented (in empirical vision) as "something in A", or as something directly different from A and only from A, and therefore including A. All such representations are approximate, and perhaps even

metaphorical, but acceptable because they bring us closer to an accurate understanding of metaphysical reality. One can also try to define C as not quite A. Perhaps such a definition is closest to reality, assuming that we have something related to A and only to A. C is also related to B and is defined by it in some way, but negatively. C is what B is not. Being non-B, C seems to be a sui generis addition to B. Moreover, it has something in common with B, as everything in supervening reality has something in common with everything else; its difference is essential but not absolute.

In addition to separating the formula from the rest of the text, the square brackets used in the formula also have a semantic role of their own. They delimit the part of reality that is affected by the formula. The difference presented here is limited to the included objects (A, B, C); it does not extend beyond them. No other objects are represented. The difference is exclusive. Exclusivity is a principle of the basic metaphysical formula. Within this formula, A is different from B and only from B. B is what A, and only A, is different from. C refers to A and negatively – to B and does nothing more than that. Certainly, all objects coexist and correlate with many others, but within the difference shown in the formula, there are no other objects or differences that affect the elements of the formula.

Thus, the basic formula of metaphysics fixes the difference between an object (A) and another object (B), representing something in A that is not identical with B, and which, moreover, is associated with B in difference (includes B as its external condition of existence). This difference takes the form of a special object, expressed by the term C. It should be added that A is uniquely distinguished from B by its exclusive association with B. If this were not so, there would be other parts in A and B that are different. But these would be differences between other objects.

§ 5. Application and Limitations of the Basic Formula

The basic formula of metaphysics is comprehensive because it encompasses all distinct coexisting entities that are metaphysically identified. All objects to which the formula applies are different. All differences have a metaphysical ground – a pure difference that binds entities together as their ontological dependence. The whole system is governed by the rule that each instance of metaphysical difference generates a new object. More precisely, every metaphysical difference exists as a new object. It is only relatively new, of course, because in every object there is a partial identity

with the objects that serve as its grounding. And it should be remembered that this is a structural novelty, not a chronological one, since time does not yet exist at this level of abstraction.

The above concerns abstract objects, which is obvious. Let's take as an example the objects known in philosophy and logic as *substance* and *quality*. Let us substitute the terms expressing these objects into the basic formula of metaphysics. Let the term A represent substance, and let the term B represent quality. We obtain the following formula: [*The difference of substance from quality is identical to* ***the quality bearer***]. The resulting object is undoubtedly empirically identified with the object on which *the difference* of the formula is defined. Any substance can be identified as a quality bearer. Or vice versa, a quality bearer is, of course, a substance. At the same time, it is not the substance itself, but a certain concretization of the substance; no longer the substance in its purity. The substance itself does not possess the characteristics of the quality bearer. Such specifics only arise when a substance is somehow distinguished from its quality. The bearer of quality is obviously not the quality itself. In a sense, it is the substance rather than the quality, but the substance in its exclusive association with the quality. At the same time, it is no longer just the substance; in a metaphysical sense, it is not the substance at all.

Let's invert the formula we discussed earlier. We get a new formula: [*The difference of the quality from the substance is identical to* ***the quality of the substance***]. The quality differs from the substance in that it is not just the quality, but it is the quality of the substance. Moreover, *the quality of the substance* also differs from *the quality* as from a special entity in itself. It is assumed that quality as such can be isolated and exists as an abstract object separate from the substance. Note that the reality of abstract objects is asserted by the metaphysics being described. The quality of the substance is therefore neither the substance nor the quality in itself. It is a special reality in the metaphysical sense. In its peculiarities and differences, it is independent of the realities with which it directly coexists and by which it is produced. On the other hand, the quality of the substance does not exist without the quality and without the substance; it represents the coexistence of both quality and substance. Simply put, *the quality of the substance* is exclusively metaphysically the quality of the substance.

Is metaphysical difference productive in the case of concrete (specific, non-abstract, individual) objects? This is less obvious. It seems absurd to believe that two specific objects that are not directly related to each other,

especially those of different natures (e.g., physical and non-physical objects), can create a new object through their difference. Yet it is true. Let's consider two objects for example – a physical one (let's say a piece of rock, a mineral) and a non-physical one (a scientific theory proposed by a group of scientists). They are certainly different, but at the same time, they don't seem to be connected in any way, least of all – productively. And yet, the difference between a mineral and a scientific theory gives rise to a new object – a mineral as an element of the physical environment within which the scientific theory exists (this new object is different from the mineral itself). Similarly, the difference between a theory and a mineral creates a theory as a non-physical component of the environment in which the mineral exists. These new objects are quite real. They undoubtedly enter into the comprehensive metaphysical picture of the world.

In the Universe created by metaphysical difference, there are two ways of forming its structure. The first is *the concretization of objects*. An object produced by difference differs directly (i.e., metaphysically) not from anything, but from an already existing object, which serves as its ground. In this sense, the new object is related to the old one, that is, to the one the difference of which (from something else) is identical to the new object. Being related to a particular old object and being precisely its difference, the new object is, in a sense, a repetition of the old. It is necessarily distinct from all objects that are not related to the old object in the same way. Simultaneously, the new object is not the same as the old one; more precisely, it is not identical to it in the full sense of identity. It would be even more accurate to say that the new object is only partially identical to the old one, and therefore constitutes a different object. Empirically, this can be expressed (not quite accurately) by saying that the new object combines something of both the old and the new.

That which contains additional components compared to something else should be regarded as a concretization of the latter, if both objects are of the same class. A ten-storey building is not a concretization of a five-storey building because a ten-storey building is not in the class of five-storey buildings. Conversely, a washing machine with an ironing device is a concretization of a washing machine without such a device, since both belong to the class of washing machines. That's why it wouldn't be unreasonable to say that the metaphysical difference leads to the concretization of what differs (that is, the first object in the basic formula of metaphysics). It is also logically permissible to talk about successive differentiations-concretizations

that have one initial object. Consequently, it would be correct to speak of concretizations as a specific direction in which metaphysical difference and its objects unfold. The products of differentiation will also be called concretizations in the context of their coexistence with their shared origin. That which has concretizations is usually called an abstraction of a specific entity. It is also possible to speak of a series of increasingly abstract objects linked by ontological abstraction. Concretization structures what exists, dividing it into the levels of the concrete/abstract continuum.

Another tendency in the construction of the Universe's structure is observed within one level of concretization. The object that serves as the abstract source of concretization may differ not only from one but from many metaphysically adjacent objects. In particular, it may differ from various products of its own concretization. Such differences, being linked to the same relatively abstract object, produce a number of objects that directly specify it. All these more specific objects exist at the same level of concretization. Such a distinction of objects can be called horizontal or it can be called *branching of entities*. It creates a series of objects at the same level of concretization.

Thus, we have both vertical and horizontal structures in the world. In fact, it is plausible that there are an unlimited number of horizontal and vertical structures; the structure of the world is, of course, not limited to two dimensions. In any case, we are not discussing a single line of concretization in the structure of the Universe. The situation appears to be much more complicated.

It seems natural to ask a question here: Are there limits to the concretization and branching of entities? Or they are infinite. We do not yet have a 100% convincing answer (perhaps we never will). But there are grounds for a hypothesis that seems plausible. The core idea is that the structure of the real world we live in is finite. At the same time, it is unlimited. It can change indefinitely.

The use of metaphysical difference to construct the structure of the world makes it possible to think about the unlimited repetition of the same difference applied to objects and their distinctions. Metaphysical difference is thus iterative. It can be used repeatedly in a metaphysical description with an ever-increasing sequence of new objects. The iteration of difference obviously reveals the structure of reality. Beginning with pure existence and ending with ultimate concretizations (if there are any), difference pervades everything that exists and gives rise to its structure. The iteration of meta-

physical difference can serve as a principle for constructing a comprehensive metaphysical model of the Universe. By applying it consistently, starting from primary reality and ending with empirically specific individuals, it is theoretically possible to obtain a complete description of everything that exists in the Universe. Without claiming to be such a description, but by applying the stated principle, the rest of this book will be presented.

PART 4. PURE OBJECTS

§ 1. Object and Objects

So far, certain realities have been identified as the ground for the metaphysical system encompassing all that exists in the Universe. For further progress, we need to start with existence, being, difference, and identity. Let's take a closer look at them. As primary reality, they are immediately identical. They are also immediately different. This state of affairs is transformed into its opposite in a reality that is different from the primary reality and identical to it – in the supervening reality, the mentioned realities are different yet identical mediatively. They are only identical with themselves by means of other realities (which are not identical) and different from others through something that distinguishes one from another (a medium or mediator). The presence of a mediator is what goes beyond primary reality.

But not all differences between primary realities require mediators. Remember that each of the primary realities is both itself and something else. When difference and identity enter the basic formula of metaphysics, what is different in object A is just this object. *The difference of difference from another primary reality* is something different from something else in the difference. This is obviously nothing other than the difference itself (the difference is what is different in the difference). Therefore, *the difference of difference from existence, existent, identity is identical to difference itself*.

Similarly, the difference of identity from something can be reduced to identity itself, provided that identity is the opposite of difference (it is something different from difference). The difference of identity is equal to *the difference of the different from difference*. It can be reduced to the difference from the difference, i.e., identity (the difference of the different is nothing but difference). So, *the difference of identity from existence, existent, identity is identical to identity itself*.

The difference of *another primary reality* from *difference* can be seen symmetrically. It should be noted that the difference from difference is identity. So the difference described is an identity of a primary reality with itself. To

sum up, *the difference of existence, existent or identity from the difference is identical to identity*.

The difference of *another primary reality* from *identity* yields the same outcome. It can be expressed as the difference of a primary reality from the difference from difference. It is nothing but the identity of a primary reality with difference. In other words, *the difference of existence, existent or identity from identity is identical to differenc*e.

The situation is different when considering *existence* and *existent*. They do not differ by themselves, but through an external mediator. In order for existence (existent) to differ by itself, it must be identical with *difference*. Then the difference of existence (existent) will be the same as existence (existent). But the difference of existence is not existence itself, as the situation described belongs to a sort of mirrored reflection of primary reality, where existence is not directly another reality.

Nor is the difference of *existence* (*existent*) identical with that from which the latter is different (namely *existent* (*existence*)). The reason is analogous: existent (existence) is not completely identical to something else when it comes to supervening reality. It is reasonable to conclude that *the difference of existence from existent* (and vice versa – *existent from existence*) is something that is not identical to either side of the difference, nor to the difference itself. It is something else.

The difference of existent from existence is a concretization of existent. One should say it is a kind of existent. But it is not existent as such; it has an additional characteristic. Where does this characteristic come from? It must be somehow related to existence because it goes about the difference from existence and not from something else.

The difference we have in mind does not mean that existent does not exist. It exists by being existent. It differs from existence in that it lacks some of the traits of existence. Existence, remember, has been defined as difference; to exist, it has been said, is to be different. So, the difference of existent from existence consists in existent which exists but does not differ in itself. It is evidently not the lack of difference from other realities; it is the inner indistinctness of existent. It is something one and only one – not many (if we try to make this more demonstrative for the mind). This something that exists undivided as a whole we shall call – *pure object* (or - *object*, to simplify the matter).

Now we are ready to implement our first metaphysical formula.

(1) [*The difference of existent from existence is identical to* ***pure object***].

Let's shift our focus to differentiating the described realities in reverse. The difference of *existence* from *existent* is a concretization of existence. It is a kind of existence. But it is not existence as such; it has an additional characteristic. Where does this characteristic come from? It is somehow related to existent as it is the difference from existent and not something else. The difference we have in mind does not imply that existence is not an existent. It is an existent by being existence. It differs from existent in that it possesses certain traits that the most abstract existent lacks. Existence, remember, has been defined as difference. To exist, it has been said, is to be different. Therefore the difference of existence from existent consists in existent having a trait of existence, namely being different in itself. Consequently, *existence* is opposed to *existent* as difference, and, moreover, being associated with existent, this difference is realized in the existence of different existent or *pure objects*.

This is such an existent which is similar to existence in that it is the difference of realities. It is something that is many and only many – not one (if we try to make this more illustrative for the mind). This something that exists as discernible realities we shall refer to as *pure objects* (or simply *objects*).

Now we are ready to implement our second metaphysical formula.

(2) [*The difference of existence from existent is identical to* ***pure objects***].

In relation to primary realities, a pure object and pure objects are specific entities. They have properties that are distinct from their essence. To be more precise, there are two properties in them: a) *pure object* exists and is indiscernible in itself; b) *pure objects* are a reality that exists and is divided in itself. Given that existence is a primary reality, all properties can be reduced to divisibility. And, of course, these are extremely abstract entities with no clear separation of substance from its qualities.

They are not countable and are not related as one object belonging to many or many including one. Pure objects do not contain unified entities. There is no common set of a pure object and pure objects (there are no sets yet). Moreover, they are not a specific single object and some specific objects at all. They are pure abstractions of one and many. They can also be characterized as *unique objectivity* and *distinct objectivity*. It is in this shape that they coexist.

These are not two entities either (for instance, the first – object and the second – objects). There is no way of counting them. We do not have quantity and quantitative relationships. These realities are only discernible, not countable. Their discernibility already exists, but countability does not

yet. One cannot trace boundaries within or between them (we cannot help but imagine boundaries – but this is a habit instilled by long contact with empirical reality). They are just very abstract (and, in this sense, incomplete, partial, primitive) realities.

How can such abstract and incomplete entities (from the standpoint of empirical reality) really exist? Structural apartness is what one might call their mode of existence. It can be seen as a structural level of the Universe; it is not the same as other levels. Therefore, it exists in reality.

Unlike Plato's forms, these abstract entities are incomplete; they cannot exist on their own. Still, they have something Platonic about them. They function as models for everything more specific. *Object* and *objects* define all further, more specific objects. They impart to everything the features of oneness and plurality. Everything else differs from this structural level of reality as something unique or something multiple. The rest differs, that is, not as unique or multiple, but as unique or multiple *something*. Thus, *object* and *objects* happen to be the ground of unity and multiplicity in the Universe.

§ 2. Concretization of the Object / Objects Reality

We proceed with a unique formula in which object and objects differ from themselves.

(3) [*The difference of pure object from pure object is identical to* ***absolute zero***].

(4) [*The difference of pure objects from pure objects is identical to* ***absolute zero***].

Identity with absolute zero means that there is no difference between object and object, objects and objects. The uniqueness of the formula lies in the fact that it is the only one that does not specify the difference but annihilates it. Yet, absolute zero is not nothing. After annihilating the difference, what is left is something existent, though not in a specific way. What we call absolute zero is nothing only in relation to a specific object or objects. The conclusion is that any specific reality that differs from itself results in absolute zero. Keeping this in mind, we will not reproduce other variants of this formula here.

(5) [*The difference of pure objects from pure object is identical to* ***every pure object***].

This formula requires an explanation. Objects do not differ from an object as something specific and existent; in that state, they are the same as

something objective. They differ only as various objects, not one. But these various objects retain the unity of a single object; that is, they do not exist as a whole but separately.

This is what should be called *every object* (all of them but in their singularity); their singularity is what distinguishes them from *objects* themselves.

(6) [*The difference of pure object from pure objects is identical to* ***one of pure objects (or an object)***].

An object does not differ from *objects* as something having the nature of objectivity. In this, they are not distinguishable (object is the same as objects). An object differs only as one, not as many. But in differing from objects, an object is not already a pure object; it is added to objects as being the same in nature. This specificity in *an object* being added to *objects* should be called *one of objects*. It is what distinguishes a pure object from pure objects.

(7) [*The difference of every object from absolute zero is identical to* ***all pure objects***].

The reality of *every object* is totally different from absolute zero because absolute zero has nothing to compare with objects. The former and the latter are clearly distinguishable. But *every object* exclusively represents objects (since every is not one). Both objects and an object have this specification of *every object*, no other object or objects are left. So it goes about *all objects*.

(8) [*The difference of pure objects from all pure objects is identical to* ***some pure objects***].

Pure objects and all pure objects are the realities of objects. The first differs from the second only if it is not all objects. Objects that are not all are naturally called *some objects*. How many – it is not yet defined; they are just not all. The same difference applied to an object makes a specific object as well.

(9) [*The difference of a pure object from all pure objects is identical to* ***one of all pure objects***].

(10) [*The difference of all (some) pure objects from one of all (one of some) pure objects is identical to* ***all (some) pure objects including one of them***].

All or some objects do not differ from one object as objects, but they do differ from one object being the totality of objects. Note that within this difference (or within the scope of this formula, if you prefer), there are no objects other than those shown here. Therefore, the totality of objects is complete; it covers every object represented. So *one object* is also meant by *all* or *some objects*. The concretization (the difference of all or some objects

as opposed to all or some objects without difference) here lies precisely in the inclusion of an object.

(11) [*The difference of all pure objects from some pure objects is identical to* ***all pure objects including some of them***].

The explanation is the same as in the previous formula. Both sides do not differ as objects; however, all objects represent the totality of them, while some objects do not. The difference of all objects is exactly their totality, which includes some objects indicated (or denoted) in the right part of the formula.

(12) [*The difference of pure object from one of pure objects (some pure objects) is identical to* ***another object relative to one of pure objects (relative to some pure objects)***].

In this formula, similarly, both sides do not differ as objects. The case is that pure object is not identical to one of objects or some objects; it is different as an object that is not the same or as another object. Another object also differs from pure object itself. It is pure object's concretization, and yet it is what distinguishes pure object from a distinct object or objects.

(13) [*The difference of pure objects from one of pure objects (some pure objects) is identical to* ***other objects relative to one of pure objects (relative to some objects)***].

The same reasoning applies here: pure objects differ from one or some objects in that they are not the same, but different. Other objects belong to pure objects as such, but they do not coincide with them as their concretization. What distinguishes them from one or some objects is only that they are other than one or some of objects.

The line of pure objects concretizations can be extended by differentiating the previously obtained objects. New objects appear, such as ***one of some objects, all of some objects, some of other objects, one of other objects, some of some objects***, etc. We will not delve further into this line of objects as it would make the presentation of this metaphysical system too cumbersome. It is sufficient to demonstrate the principle of creating new items and how it functions.

Besides, there is also the task of dispelling doubts about the validity of the entire picture. It must be admitted that for some people, the picture may look like a mockery of scientifically oriented common sense. It is extremely difficult for us to imagine entities existing separately, such as *some objects, all objects, one of the objects, each object*, etc., without being tied to specific sets of observable things. Our mind is a spontaneous nominalist. We are

convinced of the absurdity of identifying abstract objects not on the basis of individuals (usually or exclusively physical ones). How can an abstract object exist if there are no pre-existing concrete aggregates, where each component can be identified separately?

This perplexity has an explanation: we experience the Universe from one edge, which is not the beginning but the end of the universal structure. Material individuals are the objects of our direct experience, while abstract objects are not (or so it seems to us). The latter then becomes present in our mind, seemingly being the result of operating with individuals. All of this appears quite natural. But what if this is just the consequence of our way of cognition? What if we perceive the order of our cognitive actions as the order of reality itself? In reality itself, although, there is no prohibition against another way of being.

Now we can say that the existence of abstract realities has been proven to have a ground. Two points are of major significance here.

1) What we call abstractions – it seems plausible – exist in some sense independently of individuals. Their independence is structural; they have no particular location in physical space and time but hold independent structural positions in universal reality.

2) They are the ground for all more specific objects. All other objects depend on abstract ones, respectively. This is also structural dependence, not causal or temporal. It is important to note that structural dependence can also be called ontological dependence. It involves the asymmetrical coexistence of realities, which is the most fundamental fact about the Universe.

Our mental transition from the most abstract objects to relatively specific ones corresponds to the coexistence of the former and the latter in reality itself. It can be seen as the gradual addition of new features to the most abstract objects. The closest of the new objects are still abstract and incomplete realities from an empirical point of view. They only have more specific traits, which are not sufficient to become the individuals we experience. But they exist in full sense – quite independently of all other objects in the Universe and are the grounds for further concretization.

It means that such entities as *each object* or *some objects* exist not on the basis of specific collections of things, their properties, and relationships. They exist as abstract entities because they are formed by characteristics that correlate not with more concrete entities, but with more abstract entities. Now I will try to explain more clearly what has been said.

If *something* exists (not a specific something, but something as existent in general), then *something one* and *something many* differ from it. One should not imagine a single specific object or multiple specific objects. Imagine (this has already been said) objectified singularity and objectified multiplicity in the form of corresponding objects (*object-one* and *object-many*). *The one* has the property of indiscernibility within itself, while *the many* has the property of discernibility. They don't have any other properties. It is not a single something (which requires further definition – what exactly is it?) and not many things (which require a similar definition). It is simply an object with the only sign of singularity and an object with the sign of multiplicity. It is in this form that they exist, neither more nor less. But then there is an object with the sign of totality, uniting both the one and the many – the object that is equal to the property of being all objects. On this basis, there is also an object with the attribute of many things that are different from totality – *some objects*. And also with the sign of an individual, different from the totality – *one of objects*. Now it becomes clear how this series can be continued and how entities such as *each object* or *each of some objects* appear in it without separating them from specific sets of (usually physical) things, properties, and relationships.

So, we have "oneness" and "multiplicity" as a pure object/objects. They are built on primary realities but are different from them. Naturally, they exist in all more specific realities and are the ground for the latter. Then we have "everyness" and "one-of-objectsness," which are also to be regarded as special objects. They are built on the oneness and multiplicity of pure objects and are, of course, separated in their existence. They likewise exist in all more specific realities and are the ground for them.

The same can be said of such abstract objects as "allness" and "someness." They too should be regarded as objects. One can see that they fulfil all conditions for independent existence, differing from both more abstract and more specific objects. They seem incomplete and actually exist within more specific objects. Or, one can say that all more specific objects exist within them. The state of *inclusion to some (or all) objects* is an object as well. We can successfully apply the conditions of existence to it. Everything said about the previous abstract objects is valid in relation to the state of inclusion. It is present in specific objects, including individuals; therefore, we do not experience it without them. Finally, otherness is one more independently existing object. Similar to all aforementioned objects, there is an object that differs from the abstract objects mentioned earlier. It is based

on some objects' existence, so someness (in a sense) generates otherness. In turn, otherness generates other more specific but still abstract objects.

§ 3. The Sequence of Objects. Sequences of Sequences

(14) [*The difference of a pure object from absolute zero is identical to* ***a mediated pure object***].

In the same way, ***mediated pure objects*** are obtained. The state of being mediated implies that an object coexists with absolute zero (at least), it includes absolute zero in its existence as an immediate condition of existence (without which it would be something else, i.e. it wouldn't be itself or exist as such). It can also coexist with other objects; it is neither directly included in its existence nor excluded from it. It is a matter of further concretization.

(15) [*The difference of another object from a mediated pure object is identical to* ***a succeeding object***].

A succeeding object is directly different from a mediated object and indirectly from absolute zero. Both a mediated object and absolute zero are components of the succeeding object's existence. This establishes a new object as succeeding because it does not simply differ from another (mediated) object, but succeeds the object succeeding absolute zero. The mediator (mediated object) of a succeeding object is quite abstract. We may well say that a given object succeeds something. This something can be concretized as *many objects, some objects, every object, all objects, one specific object* etc. Such a concretization is not yet realized in a succeeding object, but it is expected.

(16) [*The difference of a mediated pure object from another object is identical to* ***a preceding object***].

It is obvious that a mediated object precedes another object in succeeding absolute zero. Without the former object, the latter doesn't differ from absolute zero. It is the role played by a preceding object (as a concretization of a mediated object) within a given fragment of reality. Note that a mediated object and a preceding object are not completely identical. They are two distinct abstract objects, although closely linked. They have much in common, but they are situated at different levels of abstraction. A preceding object is the concretization of a mediated object; it is a particular aspect or "side" of the latter, that is, its difference (differing aspect).

Similar formulas define *succeeding* and *preceding objects*. These become concretizations of some pure objects (not an object).

(17) [*The difference of other objects from a mediated pure object is identical to* ***succeeding objects***].

(18) [*The difference of mediated pure objects from another object is identical to* ***preceding objects***].

We have so far obtained a diverse and rich complex of entities produced from a minimal variety of primary realities, including *all objects, every object, some objects, one of objects, other, succeeding, preceding objects*. Mutual differentiation evidently produces many new objects. The scope of the book does not permit a formal presentation of these through the basic formula of metaphysics. The presentation is to be restricted to just listing some new objects: ***all succeeding / preceding objects, every succeeding / preceding object, some succeeding / preceding objects, one of some (or all) succeeding / preceding objects, succeeding / preceding objects that include one (or some) objects, other succeeding / preceding objects (or object)***, etc.

(19) [*The difference of all succeeding pure objects from all preceding pure objects is identical to* ***the sequence of objects (or the pure sequence of objects)***].

It is clear that "all objects" refers to all objects to which the formula is applied. It is an indefinite totality. It can, of course, be concretized (all objects of a specific group of objects – whatever it happens to be). It is also clear that the sequence is formed only by succeeding and preceding objects – no others are involved. It is not yet established that each succeeding object is identical to a preceding one; that should be the next step of concretization. On the other hand, the sequence is inherently asymmetric. This is due to the presence of absolute zero in this reality. Zero is not included in the sequence itself but is its precondition – a sort of an external component. Therefore, there are immediately two opposite sequences – the direct one (or simply *the sequence*) and the reverse one.

(20) [*The difference of all preceding pure objects from all succeeding pure objects is identical to* ***the reverse sequence of objects (or the pure reverse sequence of objects)***].

(21) [*The difference of one of objects from the sequence of objects is identical to* ***an object included in the sequence (or an element of the sequence)***].

The same is true for ***objects included in the sequence (or elements of the sequence)***.

The objects referred to are pure objects without further specifications (they are ontologically all objects within the real difference embraced by the formula). Hence, the objects one of which is referred to and the objects

forming the sequence are objects as such, since they are the same and one of them cannot but be among all objects forming its sequence.

(22) [*The difference of the sequence of objects from all objects, including one of them, is identical to* ***the sequence that includes an object***].

The same is true for ***the sequence that includes some objects***. Inclusion does not mean that the sequence is composed solely of the elements described (one or some). But this is not excluded either.

(23) [*The difference of a succeeding object from absolute zero is identical to* ***the first object (or element) of the sequence***].

The next object is defined as ***the second***, etc. Here we come to the sequence of ordinal numbers without any quantitative aspect.

The numbers known to us as natural numbers are not used here as quantities, but only as names of numerical objects – elements of the sequence. Sequence numbers are not directly related to quantity. It would be possible, if desired, to replace the numbers of the natural series with proper names; in fact, the numbers play the role of proper names. Thus, for example, the number 87 does not indicate the quantitative determination of an object any more than, say, the name John, which can be assigned to it.

We could use mathematical symbols to express that the difference of the element *n* from *n-1*, *n-2* is equal to the element *n* succeeding elements *n-1, n-2*. Similarly, the difference of the element *n* from *n+1, n+2* equals the element preceding elements *n+1, n+2*. In metaphysics, the names of abstract objects replace variables, but they are obviously not variables themselves. We can use variables only for the names of objects (not for objects themselves). It is stated that all series of ordinal numbers "n" can be used as names of elements of the pure sequence. Let's take into account that it would be adequate to metaphysical reality to write down a separate formula for each element, the next element and the preceding element of the sequence.

Note that the element *n* that follows the element *n-1* and the element *n* that precedes the element *n+1* (like all other similar ones) are not identical to the element *n*. Here metaphysics diverges from mathematics. However, the elements described form a unity: "n as following (something)" and "n as preceding (something)" are concretizations of "n." The latter, in turn, represents their abstraction or their abstract ground (belonging, of course, to their existence). Therefore, we can say that *n- succeeding* and *n-preceding* objects are identical to the object *n* within the limits of their abstract ground. Within the same limits, a sequence of pure objects consists only of objects of type *n* (but not *n-m* or *n+m*).

(24) [*The difference of another pure object from all elements of the sequence is identical to* ***an external object***].

(25) [*The difference of other pure objects from all elements of the sequence is identical to* ***external objects***].

The sequence is a more specific pure object than pure object or objects, another pure object or other objects. It follows that another object or other objects of the formula (and only within the scope of the formula) are not included in the sequence. So, their difference from the sequence produces something that does not belong to the sequence of objects.

(26) [*The difference of external objects from absolute zero is identical to* ***the external sequence of pure objects***].

Remember that absolute zero is the same for all pure objects. Then, as we know, all pure objects correlating with absolute zero form the sequence of objects. The external objects (they are *all* external objects within the range of this formula) naturally make a sequence of their own. Now, neither the external sequence nor the basic one, or even both of them, cover pure objects as such. There are external objects beyond any sequence. But they all belong to a further sequence, so there is a new pure object.

(27) [*The difference of pure objects from the sequence of pure objects is identical to* ***the sequences of pure objects]***.

Of course, there are ***the sequences of all objects, the sequences of external objects (or external sequences), the sequences of some objects***, and so on.

Thus, we have various sequences, one of which has been simply called "the sequence," while others are referred to as external sequences. All of them, or some of them, are considered the sequences. This variation of names does not concern only names but also refers to metaphysical reality. All differently named sequences are not quite the same.

(28) [*The difference of the sequence of pure objects from external sequences is identical to* ***the axial sequence***].

(29) [*The difference of a sequence of pure objects from the axial sequence is identical to* ***the opposite sequence***].

If reality is confined to a single external sequence, it is the opposite of the axial one. (If there are some within a sphere of reality – one of them is the opposite).

The existence of *the axial sequence* may raise doubts due to the fact that in empirical reality, any sequence (direction, vector) can be considered axial, i.e., initial. There is no distinct, "natural" axial sequence in empirical reality. However, it should be taken into account that we are dealing

with metaphysical reality. Objects of metaphysical reality do not differ as instances of some kind, but as entities (concretizations of entities) being distinct only in their properties, which are identical with their differences and relative identities. The axial sequence differs from other sequences in its properties. That is why it exists.

The question does not make sense: which of the sequences is axial? The axial sequence in the metaphysical sense does not exist as one of the sequences. It distinguishes itself as the axial sequence traits existing in unity and differing from the traits of non-axial sequences. It is clear that such an entity is unique, and it is clear that it makes no sense to ask which of the sequences is the axial one. The very possibility of accepting any sequence as axial at the empirical level of inquiry indicates that the prototype of an empirical axial sequence exists metaphysically separately.

(30) [*The difference of sequences of pure objects from the axial sequence is identical to* ***the sequence of sequences***].

Sequences do not differ from the axial sequence as the sequence of objects. They differ as many distinct sequences. So, they form the sequence of sequences, including the axial sequence. The axial sequence plays the role of the first element in the sequence of sequences.

Using the same reasoning as before, one may argue that the sequence of sequences does not encompass all the sequences of pure objects. There are external sequences beyond the sequence of sequences. In fact, we do not have just one sequence of sequences.

(31) [*The difference of the sequences of pure objects from the sequence of sequences is identical to* ***the sequences of sequences***].

There are, of course, ***the sequences of all sequences, the sequences of external sequences, the sequences of some sequences***, etc. It is evident that sequences of sequences form a sequence as well. There is no need to repeat the arguments, since they are analogous to those previously stated. Naturally, there is ***the axial sequence of sequences*** as the first element in the sequence of sequences of sequences. There is no doubt about the existence of ***another sequence (other sequences) of sequences, one (all, some) of the sequences of sequences***, etc. Applying logical technique, one may speak of *the higher-order sequences of pure objects*. The common expression for this would be as follows:

(32) [*The difference of the sequences of pure objects from the sequence of the n-th order is identical to* ***the sequence of the n-th order sequences (or the n+1 order sequence)***].

Note that it is not a purely metaphysical formula, since it includes elements of a meta-language.

(33) [*The difference of the sequences of sequences from the sequences of every n-order is identical to* ***all sequences of sequences***].

(34) [*The difference of the sequences from absolute zero is identical to* ***the radial sequence of sequences***].

All sequences have the same starting point – absolute zero. But sequences themselves are distinct; they naturally form a sequence of sequences. We already know the first element of this super-sequence – it is ***the axial radial sequence***; all the others are external radial sequences.

(35) [*The difference of a sequence from the radial sequence of sequences is identical to* ***one of the radial sequences***].

Other elements of the radial sequence of sequences can be obtained in a similar manner. These are ***all radial sequences, some radial sequences, every radial sequence***, etc.

The radial sequences, it is clear, are of different orders. We can talk about ***the sequence of radial sequences, the sequences of radial sequences, the sequence of sequences of radial sequences***, and so on. All of them are radial sequences because they all have one initial point – absolute zero.

Absolute zero, as it has been described, is nothing within supervening reality and something within primary one, so it is an element of primary reality (something absolute). As such, it is identical with itself and also different from itself. In its first hypostasis, it produces radial sequences of pure objects. The second hypostasis realizes itself otherwise.

(36) [*The difference of absolute zero of a pure object (objects) from absolute zero of another pure object (objects) is identical to* ***a relative zero***].

Absolute zero, being absolute, is self-identical. In this sense, there are no relative zeros other than absolute zero. At the same time, due to its absoluteness, absolute zero is present everywhere and is in the closest proximity to every pure object. These locations of absolute zero are, of course, different. They are the ones designated by the term "relative zero."

Note that a relative zero is relative only compared to absolute zero. Only from the reference point of absolute zero does another point appear relative. Taken by itself, without reference to any other point, a reference point, or in other words, a relative zero, becomes absolute zero.

(37) [*The difference of a relative zero from some (all) relative zeroes is identical to* ***one of some (all) relative zeroes***].

In the same way, there appears ***another relative zero, all relative zeroes, some relative zeros, every relative zero***, etc.

(38) [*The difference of a relative zero from another relative zero is identical to* ***absolute zero***].

(39) [*The difference of a sequence of pure objects from a relative zero is identical to* ***a relative sequence of pure objects***].

This type of sequence is a concretization of the abstract sequence of pure objects. The means of concretization is a relative zero. The abstract sequence forms a unity with a relative zero that does not differ from this unity but differs from the zero as a sequence continuing it, that is, being the sequence attached to a relative zero.

(40) [*The difference of the sequences of pure objects from relative zeroes is identical to* ***the relative sequences of pure objects***].

The same way, there appears ***another relative sequence, other relative sequences, one of the relative sequences, all (some) relative sequences, every relative sequence,*** etc.

(41) [*The difference of (some) relative sequences from one of relative zeroes is identical to* ***relative radial sequences***].

It is easy to see that every relative sequence has elements, each of which is the first in the next relative sequence. These further sequences may be called derivative. Let's express it in metaphysical formulas, starting from the initial sequence (referred to as *basic*).

(42) [*The difference of a sequence of pure objects from absolute zero is identical to* ***the basic sequence****].

It follows from the above that each element "n" in a sequence has its own relative zero. Since, as has been stated, in metaphysics the names of abstract objects occupy the place of variables, the formula must be as follows:

(43) [*The difference of a relative zero from one of the sequential elements is identical to* ***the relative zero of an element n***].

Hence, every element *n* starts a relative sequence. Therefore, there are relative sequences which should be called "n-sequences" (analogous to naming a relative zero as n). (Any sequence starting from an object *n*).

(44) [*The difference of a relative sequence from the relative zero of element n is identical to* ***n-sequence****].

Like in the case of abstract sequences and radial sequences, the differentiation of derivative sequences leads to higher-order n-sequences. The basic sequence in this context turns out to be the first-order n-sequence.

(45) [*The difference of n-sequence from one of the elements of the basic sequence is identical to* ***the first order n-sequence***].

(46) [*The difference of a relative sequence from the elements of the mth order sequence is identical to* ***the n-sequence of m+1th order***].

Let's note again that this is not a purely metaphysical formula, since it contains elements of a meta-language. By introducing the concept of the mth and m+1st order, we are simply replacing these specific objects with their general designation. We introduce the element of meta-language into metaphysical language. Metaphysically, of course, one should speak of the existence of each *nth or mth* object separately, not of the existence of the *nth or mth* object in general.

The same ordering system applies to sequences of sequences. Relative sequences based on the relative zeroes of the basic sequence form the sequence of relative sequences (the first order sequence of relative sequences).

(47) [*The difference of relative sequences from relative zeroes of the basic sequence is identical to* ***the first-order sequence of relative sequences***].

(48) [*The difference of relative sequences from the mth order n-sequence is identical to* ***the (m+1)-order sequence of relative sequences***].

It is obvious that any pure object relative to a given one is an element of one of the relative sequences. It seems that by choosing another object as a reference point, all previously defined objects also change. In this case, one could speak of *metaphysical relativity*. But the point is that metaphysical objects are immutable. The terms "given" ("referent point") and "other" indicate essential properties of pure objects, but not their position for observation. In the metaphysical sense, these are the objects themselves (*other* and *given*). The essence of one is always to be "given," while the essence of another is to be only "different." One and the same essence cannot be both "different" and "given" here.

Therefore, in metaphysical reality, there is no infinite number of reference points or basic pure objects. When choosing another object as a reference point, we actually do not change anything. We select an object that serves as a reference point. But only one metaphysical object has this characteristic. It seems that we are choosing another object to serve as a reference point. In fact, we do not change the point of reference; we do not move it somewhere.

The concept of "somewhere" is rigidly connected to a reference point. By identifying the point of reference with another object, we identify another object with the reference point, making the other object the same as what we were dealing with previously. All other objects will also correlate not

with the new object (which has turned into the reference point) but with the one previously identified as the reference point.

Nothing will change; the entire structure of objects and their sequences will remain the same. It is as if we were looking at the same starry sky from any point in the physical Universe. There is one absolute zero, one basic sequence, and also unique relative sequences. This is one world (at least at the metaphysical level of reality) and not an infinite number of worlds depending on the reference points. Relativity is a feature of empirical reality. Metaphysical reality is absolute. It is also the only one. The formulated statements can be called ***the principle of the absoluteness of metaphysical reality***.

§ 4. The Structures of Sequences

According to our metaphysical principles, there is the most abstract *pure object* (the pure object as such) and there are its concretizations, which can also be called *pure objects* (specific pure objects) because they contain the ultimately abstracted pure object within them. Besides, one pure object (either the pure object as such or a specific pure object) can be identical with many, if they are its concretizations. All this applies to sequences. There is a rather abstract pure object – *all sequences*, and there are specific pure objects – all sequences or the totality of sequences. They differ as one (abstract object) and many (specific objects), yet they are the same.

Various sequences within the totality differ, and their differences are fixed as new objects. It would be correct to call these new objects "the structures of sequences," since they realize what we see as relations within the totality of pure objects (and their sequence). It is important to bear in mind that these structures do not grow out of specific objects, being immune to nominalistic practice, and are not sets as we commonly understand them. They are abstract entities – concretizations of entities that are ultimate in empirical reality – pure objects (or elements) and their sequences. As abstract entities, they can be further concretized in the form of sets of more specific objects.

Sequence structures can be expressed in mathematical terms. The difference between metaphysical descriptions of pure objects and corresponding mathematical structures is that we do not refer to variables in the former. All pure objects should be regarded as constants (more precisely, as abstract objects that truly exist and are concretized with the assistance of other, more specific objects). Among the vast variety of mathematical structures, we will

highlight several that seem to be the most significant. Namely, three types of structures (although more are possible).

Mereological/topological structure.

The differences between parts of sequences form ***the mereological/topological structure of pure objects***. Note that the topological structure is created by the differences between the parts, not by the differences between the elements of sequences. Elements of sequences, which, in mathematical terminology, form infinite or, from a metaphysical point of view, unlimited collections, by definition have no boundaries. Accordingly, they cannot be open sets (in the topological sense) that belong to a closed set (with boundaries). In this sense, they do not belong to any set at all. Another matter – the parts of sequences. Even an unlimited (infinite) set of parts belongs, by definition, to the whole.

(49) [*The difference of some sequential elements from all sequential elements is identical to* ***the part of a sequence***].

Since everything is a sequence of pure objects at one of the most abstract levels of their existence, we can equate this statement with the recognition of the universality of parts.

Empirically, we understand the part as something without which the whole does not exist, that is included in the whole, or that belongs to the whole. It is necessary to distinguish between *part* and *external conditions*. External conditions are necessary for the existence of something as well as its parts, but external conditions alone (in standard cases) are not sufficient. All external conditions may be present, but a specific entity does not exist. The presence of all parts, on the contrary, is equivalent to the existence of a specific entity. The latter means exactly that the part belongs to the whole.

The part (having in mind the proper part) is not identical to the whole; it does not constitute the entire whole. This is how a part can be distinguished from a whole. In a sense, the part is less than the whole. In practice, a part may be equal in size to a whole, but in some other sense, it must still be different from its whole. Otherwise, one simply cannot distinguish between the part and the whole.

(50) [*The difference of a sequential element from all sequential elements is identical to* ***the elementary part of a sequence***].

The elementary part is relatively identical to an element of a sequence. To some approximation, the difference between the elementary part and an element can be viewed as purely terminological. The elementary part is empirically represented as a part that is not divided into parts. In empirical

objects, these are their parts, the further division of which destroys an object as a whole, tearing apart what unites the parts into a single whole. It is clear that elementary parts in empirical reality are only relatively elementary (that is, indivisible). In some sense, they are perhaps divisible. However, the metaphysical distinction between the part and the elementary part is fundamentally important. It determines the presence of two sides of reality: its continuity and its discreteness.

(51) [*The difference of sequential elements from some sequential elements is identical to* ***the parts of a sequence***].

In favour of this formula, it should be said that *elements of a sequence* are distinguished from *some elements* as something more than a part, even though they possess the attribute of partiality. The nature of *elements* is more uncertain. That is why they go beyond *some elements* including the latter to the former. Since *some elements* form a part in relation to *all elements*, elements extending beyond them form (in relation to one part) different parts of a sequence. Moreover, this difference should not be understood as the difference between two parts. We abstract from their exact number. What is meant is only the difference between parts, specifically the difference between them as different parts only. In certain empirical contexts, we simply perceive parts of something as parts without counting the number of parts.

(52) [*The difference of sequential elements from one of sequential elements is identical to* ***the elementary parts of a sequence***].

There is no need to argue in favour of the existence of ***another part, other parts, every part, some parts, all parts, one of the part***s, etc., as it is obvious.

(53) [*The difference of some sequential elements from the part of a sequence is identical to* ***the elementary parts of a part***].

The same is true for ***the elementary part of a part***.

(54) [*The difference of some elements of a part from all elements of a part is identical to* ***the part of a part***].

Note that for the time being we are discussing the completely indefinite part of a part, not the part allocated at a particular level of structural division.

(55) [*The difference of the part of a part from a part is identical to* ***the part of the next order***].

We can concretize this partial object by assigning it an ordinal number. So we come to ***the nth order part of a part*** (accordingly – ***parts of a part, the part of parts, the parts of parts***).

(56) [*The difference of all sequential elements from some sequential elements is identical to* ***the whole of a sequence***].

(57) [*The difference of all sequential elements from one sequential element is identical to* ***the whole of elementary parts of a sequence***]

As we can see, the formulas introducing the whole (and wholes) and its concretizations are symmetrical to those introducing the part (and parts). So, it's enough just to provide these formulas.

(58) [*The difference of pure objects from the whole is identical to* ***the wholes***].

It should be kept in mind that the wholes are not identical to sequences. *The whole* is a special object distinct from the sequence. However, sequence is implied because objects (i.e. not just one object) are always a sequence. Since the whole is a sequence, then wholes are, in fact, equal to the sequence of sequences.

(59) [*The difference of a part (or parts) from the parts of a part (or parts) is identical to* ***the part (parts) as a whole (wholes)***].

(60) [*The difference of the whole from the parts as wholes is identical to* ***the whole of wholes***].

Similarly to *the part of a part* (*the parts of parts*), we can concretize *the whole of wholes* (*the wholes of wholes*) by introducing terms such as ***the nth order whole of wholes*** (accordingly – ***the wholes of a whole, the whole of wholes, the wholes of wholes of specific orders***).

(61) [*The difference of the whole (wholes) from the whole of wholes is identical to* ***the whole as a part (parts)***].

The highlighted formula is symmetrical to the formula of the part as a whole and is also justified and defined. It is empirically obvious that every whole is a part of some larger whole. The exception is probably the world at large, although in some ways this may not be the case.

So far, we have the part /the whole concretizations of the sequences of pure objects. There is a further concretization, which is to be called *topological*. Its essence lies in the mutual positioning of parts and wholes. When analyzing it, two aspects should be kept in mind:

a) What is meant here are both the parts in their abstract form and the elementary parts; when it goes about parts, one should read it like this: "the parts including elementary parts."

b) Secondly, the parts and wholes are immediately and most abstractly the parts and wholes of the sequences of pure objects. However, since the sequences are concretized in various sequences of sequences, the

same thing happens with topological concretization. Eventually, all pure objects (including a pure object / pure objects as such) undergo this type of concretization.

(62) [*The difference of a part (parts) from the whole of a sequence is identical to* ***the part (parts) of one and the same whole***].

(63) [*The difference of the whole of a sequence from a part (parts) is identical to* ***one and the same whole of a part (parts)***].

There is only one whole within the range of this formula, one and the same part or parts; therefore, the resultant object is evident.

(64) [*The difference of the wholes from the part (parts) is identical to* ***the various wholes of the part (parts)***].

It is about the part belonging to more than one whole.

(65) [*The difference of the part (parts) from the wholes is identical to* ***the part (parts) of various wholes***].

The scope of the formula covers one and the same part or parts and various wholes. The part or parts mentioned can be the part or parts only in relation to the wholes mentioned. The result is obvious.

(66) [*The difference of the part (parts) from the other whole (other wholes) is identical to* ***the part (parts) of the other whole (other wholes)***].

The other whole or wholes are deduced similarly to the earlier examples given, in relation to other pure objects.

(67) [*The difference of the other whole (other wholes) from the part (parts) is identical to* ***the other whole (other wholes) of the part (parts)***].

What has been said about succeeding and preceding object/objects can characterize the succeeding and preceding part/parts of a sequence.

(68) [*The difference of the succeeding parts from one of the parts (some of the parts) of a sequence is identical to* ***the parts succeeding one (some) of the parts of a sequence***].

(69) [*The difference of the preceding parts from one of the parts (some of the parts) of a sequence is identical to* ***the parts preceding one (some) of the parts of a sequence***].

(70) [*The difference of a succeeding part from a preceding part is identical to* ***the next (the directly succeeding) part***].

Since there are only two parts here – one succeeding and one preceding – the only relation between them is that of immediate succession.

(71) [*The difference of a preceding part (of a sequence) from a succeeding part is identical to* ***the directly preceding part***].

The same holds true in the latter case as well.

(72) [*The difference of a succeeding part (of a sequence) from the parts succeeding one (some) of the parts (of a sequence) is identical to* ***the indirectly succeeding part***].

(73) [*The difference of a preceding part from the parts preceding one (some) of the parts (of a sequence) is identical to* ***the indirectly preceding part***].

(74) [*The difference of the parts succeeding (preceding) one (some) of the parts from the indirectly succeeding (preceding) part is identical to* ***the sequence of parts mediating one (some) of the parts***].

It means that this sequence lies beyond one part (or some parts) of a whole. The mediating sequence of parts is the sequence in which one (or some) of parts of a whole are not included. As it may be clearly seen, this is a metaphysical description of what is called *the open set* in mathematics.

Within the sequence, we have defined the first object (one can add the last object or the first in reverse sequence), the external object and objects. Here, it is the place to speak also about extreme parts of the sequence.

(75) [*The difference of the directly preceding (succeeding) part (parts) of one whole from the part (parts) of another whole (or other wholes) is identical to* ***the bordering part (the bordering parts) of a whole***].

Thus, the bordering parts are characterized by the direct difference from external wholes (or external objects).

(76) [*The difference of the bordering parts from all parts of a whole is identical to* ***the border (or the border sequence) of a whole (or a whole sequence)***].

It is the case that the bordering part is the same as parts of a whole (no other being present in the formula's range), but differs from all parts as the bordering ones.

We can also distinguish between the inner and outer borders.

(77) [*The difference of the border from the directly preceding parts of a whole is identical to* ***the inner border***].

So, the inner border is connected to all other parts of the whole.

(78) [*The difference of the border from the indirectly preceding parts of a whole is identical to* ***the outer border***].

Accordingly, the outer boundary is separate from (or indirectly connected with) all parts of a whole.

The inference may be made that the whole can be divided into its inner parts and its border, with the possibility of uniting the former and the latter.

(79) [*The difference of all indirectly preceding (succeeding) parts of a whole from the outer border is identical to* ***the interior of a whole***].

(80) [*The difference of all parts of a whole from the inner border of a whole is identical to* ***the closed whole (of pure objects)***].

All parts of the whole include its inner border (as a part), and do not differ from the inner border as parts, but they do differ as all of them.

(81) [*The difference of all parts of a whole from the outer border is identical to* ***the open whole (of pure objects)***].

These are the metaphysical counterparts of mathematical objects: "closed set" and "open set."

Quantitative/numerical structure.

The further concretization of pure objects leads to quantifiability, making parts and wholes countable. Here we find objects such as quantities, complex objects including their numerical aspects, and numerical relations. Generally speaking, these are numerical structures which realize numerical relations. ***Quantitative/numerical structure*** emerges as a differentiation of mereological/topological structure. The differences within the latter turn out to be quantitative (although it is not inherently quantitative).

(82) [*The difference of all parts from a whole is identical to* ***the quantity of a whole***].

All parts and the whole do not differ, as both are the whole containing all its parts. On one hand, all parts are equal to the whole simply because they are all; on the other hand, the whole is only the whole containing all its parts. The difference lies in the fact that all parts are many, while the whole is one. The many that characterizes the one is quantity. It should be pointed out that within the whole, which contains no more than one part, the part still plays the role of a multitude (a variant of the multitude) that quantifies the whole.

Another aspect worth noting is that quantity may already seem definable via *all objects / the sequence of pure objects* difference. Yet the sequence is not definitely completed (it doesn't mean that it is infinite; the end of it is just out of sight). So, its quantity is not specifiable and therefore is not a quantity in the full sense. The whole is another matter.

Nevertheless, the quantity defined in (82) is still an indefinite quantity. So far, we cannot ask: how much? It needs concretization to become a specific quantity.

(83) [*The difference of all parts of a whole from every part of a whole is identical to* ***the quantitative value of a whole***].

All parts and every part are the same parts, but all parts represent their parthood differently from every part. All parts are the whole as a unity,

while every part represents the same through their repetition. Quantitative value is an object; it is not just a property (mere value), it is a whole (or a part – in the same manner) with quantity. In other words, a quantified whole (or part). But not a whole or a part as such.

(84) [*The difference of every part of a whole from all parts of a whole is identical to* ***the counting unit***].

At this level of abstraction, specific types of parts do not appear. In a more concrete reality they might be structural components (such as atoms in a molecule) or parts of an intensity continuum (like changes in temperature). None of these are present here. Parts are entirely abstract. They do not differ in anything but purely numerical distinctions; in all other respects they are absolutely similar. This allows us to identify the differentiating aspect of every part using the same counting unit. The quantitative value is determined by the repetition of a counting unit that equals every part and all parts of the whole.

Further differentiation makes it possible to discern various quantitative relations between wholes.

(85) [*The difference of all parts of a whole (wholes) from some parts of another whole (other wholes) is identical to* ***the smaller quantitative value of a whole than of another whole***].

The difference in this case refers to the correspondence between all parts of the first whole and some parts of the second. The other parts of the second whole, of course, differ from all parts within the first and some parts within the second whole, but they do so beyond the range of the formula, that is – indirectly.

(86) [*The difference of some parts of a whole from all parts of another whole is identical to* ***the bigger quantitative value of a whole than of another whole***].

(87) [*The difference of all parts of a whole from all parts of another whole is identical to* ***the equal quantitative value of one whole with another***].

Quantitative relations between parts and wholes represent the next step in the concretization of pure objects. They are realized in quantitative/numerical structures. The differences between the quantitative values of a whole and its parts are represented in *the additive structure*.

(88) [*The difference of the quantitative values of parts from the quantitative value of a whole is identical to* ***the addends***].

(The difference from other addends equals ***the addend***).

(89) [*The difference of the quantitative value of a whole from the quantitative values of all parts (addends) is identical to* ***the sum***].

(90) [*The difference of the quantitative value of one part from the quantitative value of a whole is identical to* ***the difference (in subtraction)***].

(91) [*The difference of the quantitative value of other parts (of a whole) from the difference (in subtraction) is identical to* ***the subtrahend***].

(92) [*The difference of the quantitative value of a whole from a subtrahend is identical to* ***the minuend***].

The differences between the quantitative values of a whole and its parts of parts are represented in *the multiplicative structure*. The essential role is played by quantitatively equal parts of parts (the 2nd-order parts).

(93) [*The difference of the parts of parts from equal quantitative values is identical to* ***the multiplicand (the equal parts of parts)***].

(94) [*The difference of the quantitative value of parts of a whole from the multiplicand is identical to* ***the multiplier***].

A multiplier is the parts of a whole, similar to a multiplicand, but they differ as the parts containing multiplicand.

(95) [*The difference of the quantitative value of a whole from the multiplier is identical to* ***the product of multiplication***].

The reverse mathematical operation of division is formulated symmetrically to the multiplication structure.

(96) [*The difference of the quantitative value of equal parts of parts from the quantitative value of parts of a whole is identical to* ***the quotient***]

(97) [*The difference of the quantitative value of parts (containing the quotient) from the quantitative value of a whole is identical to* ***the divisor***]

(98) [*The difference of the quantitative value of a whole (containing the divisor) from the quantitative value of the divisor is identical to* ***the dividend of the division***].

It is logically consistent that the more complex mathematical operations of exponentiation and root extraction are based on the metaphysical structures that differentiate between wholes and their 3d-order parts, as well as the parts of subsequent orders (such as parts of parts of parts, and so on).

(99) [*The difference of the parts of every order from the equal quantitative values is identical to* ***the base (of exponentiation)***].

The base is the quantity of parts in every structural layer. For example, in 4^3, in every layer of parts (the parts, the parts of parts, etc.), there are 4 elements.

(100) [*The difference of the quantitative value of orders of parts from the base is identical to* ***the exponent***].

(101) [*The difference of the quantitative value of a whole from the exponent is identical to* ***the power (the product of exponentiation)***].

(102) [*The difference of the quantitative value of equal parts of every order from the quantitative value of a whole is identical to* ***the root***].

(103) [*The difference of the quantitative value of orders of parts from the root is identical to* ***the degree (index)***].

(104) [*The difference of the quantitative value of a whole from the degree is identical to* ***the radicand***].

So far, we have quantitative values which are the values of some pure objects (are attached to them). But there are also quantitative values that exist on their own. They can be said to be the pure quantities, they are realized through the differentiation of quantity and pure objects.

(105) [*The difference of the pure object from the quantitative value is identical to* ***the object that is the pure quantitative value***].

(106) [*The difference of the quantitative value from the pure object is identical to* ***the quantitative value that is purely an object***].

The same is surely true of objects, quantitative values, and their multiple concretizations. Such objects-quantities have empirical representations as numbers.

(107) [*The difference of the pure quantitative value from the sum is identical to* ***the natural number***].

(108) [*The difference of the pure quantitative value from the difference (in subtraction) is identical to* ***the integer***].

(109) [*The difference of the pure quantitative value from the quotient is identical to* ***the rational number***].

(110) [*The difference of the pure quantitative value from the root is equal to* ***the (kind of) real number***].

This line of numbers can, of course, be extended to include complex numbers and even more intricate types recognized by mathematicians (and perhaps still unknown to them).

Metric structure.

One more type of pure object structures arises based on mereological/topological and quantitative/numerical structures. This can be called ***metric structure***. Pure objects are concretized as being located in numerical (pure) space. So, we come to localized objects (but still in a quite abstract space). They obtain size and distances between them. It enables us to specify objects as geometric figures.

We have at our disposal both directly and indirectly succeeding and preceding parts of a sequence, as well as parts mediating other parts. It is the ground for metric structure. Let's identify parts with pure objects (which they really are). So, we deal with ***mediating objects, succeeding and preceding objects in a sequence***.

(111) [*The difference of absolute zero from the mediating objects is identical to* ***the mediating zero***].

In order to be directly different from mediating objects, absolute zero must occupy the same mediating position. However, it is different not as an object but as zero.

(112) [*The difference of the pure objects in a sequence from mediating zero is identical to* ***the adjacent objects***].

We can also distinguish ***one and another (or others) of adjacent objects*** similarly to what we were accustomed to do earlier.

(113) [*The difference of the mediating zero from the adjacent objects is identical to* ***the zero distance***].

(114) [*The difference of the mediating pure objects from other objects is identical to* ***the non-zero distance between the objects in a sequence***].

The other (in their immediate difference from mediating objects) are meant to be directly preceding and directly succeeding objects.

(115) [*The difference of the objects (in a sequence) from the mediating objects is identical to* ***the distanced (or non-adjacent) objects***].

In the same way as before, ***one and another (or others) of non-adjacent objects*** are distinguished.

(116) [*The difference of the distance between objects from one of non-adjacent objects is identical to* ***the distance of one object from the other (others)***].

(117) [*The difference of the object from the mediating objects is identical to* ***the object distanced from the other object (objects)***].

(118) [*The difference of the quantitative value from the distance between objects is identical to* ***the distance quantity***].

(119) [*The difference of the distance from the quantitative value is identical to* ***the distance of some quantity***].

Quantity is comparable – it is either bigger or smaller or equal to other quantities, just like distances.

(120) [*The difference of the distance from the bigger quantitative value of a whole is identical to* ***the bigger distance than the other (others)***].

The same is true for ***the smaller distance***.

(121) [*The difference of the distance from the equal quantitative value of a whole is identical to* ***the equal distance as the other (others)***].

Distance is undoubtedly associated with distant objects. One distance may connect various objects. On the contrary, various distances may connect one object with others.

(122) [*The difference of the distance (distances) from objects (an object) is identical to* ***the distance (distances) from objects (an object)***].

The various distances connecting one object are called, in empirical term, directions.

(123) [*The difference of one of the distances from the object from its other distances is identical to* ***the direction***].

Directions, in their abstract essence, are nothing but radial sequences. Among them, of course, there is the axial direction.

Distances themselves are pure objects (not just distanced objects); therefore, they form sequences.

(124) [*The difference of all succeeding directions from all previous directions is identical to* ***the sequence of directions (or the pure sequence of directions)***].

(125) [*The difference of sequences of distances from the sequence of distances is identical to* ***the sequence of sequences of distances***]. And so on.

The concretization of objects' positioning is the relative positioning of sequences. It is also the concretization of metric structure.

(126) [*The difference of some elements of a sequence from the (different) sequences is identical to* ***the common part (parts) of sequences***].

(127) [*The difference of the (different) sequences from some elements of a sequence is identical to* ***the partially coinciding sequences***].

Completely coinciding sequences do not exist at this level of abstraction. All common parts relate to one and the same sequence. Note that there is a simple coincidence with one common part and a complex coincidence with some common (and some non-common) parts.

The reduction of a common part to one element opens up new pure objects – the intersections of sequences.

(128) [*The difference of the element of a sequence from some sequences is identical to* ***the common element***].

There is, of course, a variant of the existence of common elements alternating with uncommon parts (multiple intersections).

(129) [*The difference of some sequences from the element of a sequence is identical to* ***the intersecting sequences***].

Now there are completely non-coinciding sequences; they appear in metaphysical formulas like this.

(130) [*The difference of every element of a sequence from every element of another sequence (sequences) is identical to* ***the non-common elements of a sequence***].

(131) [*The difference of some sequences from the non-common elements of a sequence is identical to* ***the non-coinciding sequences***].

There is, of course, ***the distance or distances between non-coinciding sequences***. Their representation is similar to those that have been used previously.

The principal importance lies in the quantitative equality or inequality of distances. Depending on this, we have diverse specific metric structures.

(132) [*The difference of the non-coinciding sequences from the zero distance is identical to* ***the adjacent sequences***].

The reverse formula states ***the zero distance relative to non-coinciding (adjacent) sequences***. There are also ***the partially adjacent sequences***.

(133) [*The difference of every element of a sequence from the equal distance from every element of another sequence (other sequences) is identical to* ***the equidistant elements of sequences***].

(134) [*The difference of some sequences from the equidistant elements of sequences is identical to* ***the equidistant sequences***].

It also refers to ***the equal distance between equidistant sequences***.

There are also non-equidistant sequences with parts that are closer and farther from each other. They are constantly getting closer or further apart or forming more complex configurations.

(135) [*The difference of the bigger distance from the smaller distance is identical to* ***the increasing distance***].

The same is true for ***the decreasing distance***. It is of major importance to pay attention to the fact that "increasing" and "decreasing" here are not to be regarded as processes. It is correct to hold that they are structures. We are experiencing a structural transition from one part of the structure to another.

(136) [*The difference of some sequences from the decreasing distance is identical to* ***the convergent sequences***].

The reverse formula represents ***the decreasing distance between converging sequences***.

(137) [*The difference of some sequences from the increasing distance is identical to* ***the divergent sequences***].

One should mention ***the increasing distance between divergent sequences***, respectively.

We must naturally consider both convergent and divergent parts of sequences.

(138) [*The difference of the convergent parts of sequences from their divergent parts (and vice versa) is identical to* ***the complex heterodistant (converging and diverging) sequences***].

§ 5. Numerical Space and Its Positioning Within the Universe

The sequences described are further concretized in a manner we are already familiar with, as sequences of sequences of various orders. We could discuss in more detail sequences of coinciding and non-coinciding sequences or their multifarious combinations. The way they are produced by the basic metaphysical formula is provided. But let's not delve into it, as its detailed description is beyond the scope of this book.

Now, we focus our attention on the most important sequence – the sequence of adjacent sequences.

(139) [*The difference of the sequence of sequences from the adjacent sequences is identical to* ***the sequence of adjacent sequences***].

Such a sequence has an obvious geometrical representation on *the plane*. Let's call it ***the metaphysical plane*** (the reverse formula represents adjacent sequences as parts of the metaphysical plane). Note that adjacent sequences are only adjacent, i.e. they are adjacent relative to both succeeding and preceding sequences, and no others.

The sequence of adjacent sequences turns out to be a part of the more complicated sequence – the sequence of planes.

(140) [*The difference of the adjacent sequences from the planes is identical to* ***the adjacent planes***].

(141) [*The difference of the sequence of sequences from the adjacent planes is identical to* ***the sequence of adjacent planes***].

Such a sequence would correctly be called ***metaphysical three-dimensional space***. The same remark as before should be made regarding metaphysical three-dimensional space – adjacent planes in it are only adjacent.

One can continue building up sequences of adjacent sequences. The sequence of three-dimensional spaces is the next to follow. For each of the following spaces, an appropriate formula can be established, but we shall

not go that far. It is sufficient to formulate this meta-statement: ***there is the sequence of metaphysical spaces in which every n-dimensional space serves as the ground for n+1-dimensional space***.

Is this sequence of spaces the ground for a further sequence of sequences of metaphysical spaces? The answer is rather negative. The arguments are as follows: all previous sequences are formed from more abstract objects that do not differ in their antecedent relation to the sequence. They acquire a position in a sequence by being part of that sequence. Such are pure objects, their sequences, sequences of sequences and so on. For example, there are other pure objects beyond the established sequence. These objects are similar as objects to those in the established sequence but not the same, therefore they naturally form a new sequence.

The sequence of space sequences is quite another matter. Each n-dimensional space is already positioned by its specificity within the sequence of spaces; it does not acquire its position upon entering a sequence. The inference to be made is that a new sequence of n-dimensional spaces is as specific as an established one. It is formed by already existing elements. Other objects that differ from the elements of an established sequence should not form a sequence because they are already the sequence. This sequence is not different from the first one but is based on other specific objects. Yet, specific objects cannot exist before abstract ones. So, the same but different sequence does not exist. The assumption that this other sequence exists violates the principle of metaphysical differentiation.

For the same reason, there is only one sequence of natural numbers. There may be many sequences of countable objects corresponding to numbers, but not many of the same numbers themselves. The conclusion regarding metaphysical spaces is that ***there is only one superspace identifiable as the sequence of n-dimensional spaces***. Whether or not this sequence is infinite will be discussed later.

When we read about n-dimensional spaces, we usually imagine geometric objects. It is not a completely wrong idea, but it is not completely true either. Metaphysical spaces do not possess all the properties of empirical (geometric) spaces.

The sequence of pure objects is not a geometrical line in the full sense of this term. The term "plane" in our context refers exclusively to an unbounded sequence of adjacent sequences of pure objects. The metaphysical plane is completely determined by its explicitly shown properties. We cannot talk about the properties of the plane except for the properties indicated in

the formula. In particular, there can be no discussion about the curvature of the plane because curvature can only be detected in the presence of other planes, which are absent in the given difference. On the other hand, the metaphysical plane has greater generality and abstraction compared to the geometric plane. The metaphysical plane is concretized in various objects that are not directly related to geometry and, more generally, to empirical (mathematical and physical) space. For example, the existence of metaphysically flat laws of nature, emotions, or historical events can be assumed.

What has been said about the metaphysical plane can also be said about metaphysical spaces of large dimensions. Three-dimensional space is just a sequence of (unlimited) planes, which in itself has no other properties, including the properties of curvature. Metaphysical superspace can be described in the same way. This is merely a sequence of smaller dimension spaces, without any additional properties, such as curvature.

Let's call the unique sequence of n-dimensional metaphysical spaces "superspace." Its oneness implies that there are no other metaphysical spaces of the same dimension. It can be expressed by formulas.

(142) [*The difference of the metaphysical space from the n-dimensional metaphysical space is identical to* ***the metaphysical space***].

We are not advancing in this formula towards a more specified object, but returning to the initial abstract object of the formula (namely, the metaphysical space).

(143) [*The difference of the n-dimensional space from the metaphysical space is identical to* ***the n-dimensional space***].

Here we are making the reverse, but equally restricted, move.

The uniqueness of the sequence of n-dimensional spaces allows us to draw the most general conclusion that our world is unique. It should be argued that the Universe is unique (in the metaphysical sense) because the ultimate sequence of sequences of pure objects is unique. However, the metaphysical uniqueness of the Universe does not exclude the possibility of multiple physical universes.

Pure space (superspace) is the ultimate whole for pure objects. There is another whole of which pure space is a part, but this outer whole does not contain only pure objects; it is more general and more specific (less abstract than pure space). Pure space is composed of all pure objects. They (and their pure concretizations) are parts of pure space. Pure space is equal to all its parts; all the parts and the whole are one here. The same is true for the parts of pure space – every pure object as a whole is identical to all its parts, and

vice versa. Furthermore, the relationships between parts and wholes are transitive: the parts of parts of any order are the parts of pure space.

Pure space (superspace) is a pure object, namely a pure object that is identical to all pure objects. Every pure object (whether simple or complex, equivalent to other pure objects) is a part of superspace. There are no pure objects outside of it. It differs from the primary reality and also from more specific realities. It can be called the "sphere of pure objects" (one may also refer to them as *numerical objects* since they are countable, which is their essential property).

Pure space is also the whole composed of all sequences of pure objects. It is the sum of pure sequences. Every pure object is a part of a sequence, and every sequence is a part of pure space. Every sequence is a complex object in its essence. Every pure object is a sequence. It is natural to ask: Why is the superspace organized by sequences? Why is it not based on unordered sets? The latter seems simpler, more abstract, and, accordingly, more fundamental. In reality, the situation is quite the opposite: sequential ordering is the simplest and most basic, as it is grounded solely on numerical difference. Unordered sets, which may seem chaotic, are the result of objects differing in many parameters, so they are not simple but rather complex in comparison to sequences. Everything goes another way here than one might think. The most simple and abstract sequences evolve into more specific and complex mingling into unordered sets, chaos emerges from initial order.

The basic layer of pure space consists of the simplest abstract pure objects. They are themselves without any organization, whether chaotic or ordered; they just are. Then there are all concretizations of pure objects, starting with their immediate (1st order) sequences and encompassing all the more complex structures, which are also pure objects. Thus, pure space is structured by pure objects and all their concretizations, such as sequences, sequences of sequences of various kinds (radial, relative, partial, included in or excluded from others, etc.).

Pure space is not the only supervenient reality; there are more complex and specific realities. But all of them arise from pure space; they all have pure space as their basis, that is, all of them have numerical parameters. In more specific realities, everything is a pure object from a certain perspective. Everything is present in pure space as pure objects, which are components of more specific objects. In a way, all the concretizations transcending the sphere of pure objects are also parts of pure space.

Let's think now what implications arise from the fact that pure space is the sum of sequences, and every pure object is a sequence and a part of sequences (except for pure space itself, which is not part of any other sequence). The sequence can be represented geometrically as a line. So, there is a characteristic of pure space that can be called its ***linearity***.

Linearity grounded on sequences does not contradict the existence of continuums in empirical reality. Firstly, discreteness is primary in relation to continuity. This can be seen from the fact that we represent the continuum as the outcome of unlimited discretization, which is natural. The continuum itself, on the contrary, is not naturally divided into discrete parts; the 'cutting' of the continuum does not arise from the continuum itself, but is imposed by an external agent. So it is not primary. Secondly, different continuums are calculable, thus creating discrete wholes. The linearity of pure space follows from primary realities, first of all, from the existence of differences in our world. Thus, linearity is absolutely necessary for pure space and has no alternative. The linearity of pure space implies that any distinguishable objects in empirical reality can be represented as a sequence. Or, what is the same, they can be counted. It should be borne in mind that metaphysical counting finds the single ground in any distinction of any objects. For entities to be countable, they do not need to have common properties or coincide. In this sense, for example, an astronaut, an apple, and the musical note B form a sequence.

Another fundamental characteristic of pure space is its ***dimensionality***. A sequence of non-coinciding pure objects (elements, parts, sequences) can be called ***a dimension***. It is clear (from what has been stated) that there is more than one dimension in pure space. It is also clear that the dimensions do not coincide. The presence of sequences of nth-order sequences indicates, firstly, that the next-order dimension includes all dimensions of previous orders; secondly, that the number of dimensions of pure space is unlimited. Any pure object belongs to at least one dimension, as well as all subsequent dimensions. Pure space as a whole is the collection of dimensions (or is relatively identical to it). This should be called *the dimensionality of pure space*.

The dimensionality of physical space, or space-time, is evident to modern science. At the macro level, space is three-dimensional (or four-dimensional when considering time). At other levels, physical space may have a different number of dimensions. From a metaphysical perspective, physical dimensions represent a realization (more precisely, a physical manifestation) of the

dimensions of pure space. Pure space does not include a special dimension of time. At this level of abstract reality, time does not exist yet. However, the multidimensionality of pure space is the basis for the existence of time in more specific layers of reality.

One more characteristic of pure space is its unlimited ***density***. It has been observed that every part of a sequence (and therefore a part of pure space) is concretized into a collection of parts. This implies an unlimited division of pure space into parts. On the other hand, each sequence is included in another sequence, or, in a more abstract sense, each pure object is concretized as a part of another pure object. In other words, there is an unlimited inclusion of parts of pure space into more general parts of pure space. As a result, all objects in pure space are infinitely divisible. Simultaneously, due to unlimited division, they are part of indefinitely large aggregates. Thus, pure space as a whole is characterized as *unlimitedly dense*.

We do not yet know whether there is a final level of division within physical reality. It is possible, for example, that division at the micro level will turn out to be cyclical; it means that the divisible and the results of division mutually transform into each other. In any case, this is not decisive for the nature of pure space. On the contrary, it is the infinite density of pure space that determines the possibilities for various implementations in physical reality. However, it is evident that pure space is denser than empirical space identified by scientific observations. We can conclude that the unlimited density of pure space is the ground for the structural division of physical and any other empirical reality.

The assumption that pure space is infinitely dense brings us close to the extremely important *problem of infinity*. Is pure space or the domain of pure objects infinite? Is the infinity of the Universe real? What sense does the concept of real infinity make? To resolve the problem, let's try to define infinity in metaphysical terms. Infinity is associated with counting without end – it is something that can be counted endlessly. *Counting* metaphysically is the activity of differing, so infinity represents endless differentiation. In other words, metaphysical infinity is identical to infinite difference. What is the end of counting, then? It is identity (something opposite to difference). Finite difference is the difference that results in identity. Hence, infinite difference – the difference that does not end in identity. But according to the fundamental principles of primary reality, there is no difference without identity. So, there is no infinite difference within the Universe, and accordingly, there is no infinite Universe.

How could it be? How could pure space be dense without limit, and yet not infinite? It seems that infinity and limitlessness are two different concepts. Infinity refers to a quantitative value that transcends any quantitative value; limitlessness indicates the absence of the greatest (smallest) quantitative value of something. There is no exact value for pure space as a collection of pure objects. The metaphysical level does not imply an answer to the question of "how much" (even in the form of infinitely many). There is only uncertainty of quantitative value, indicating the inability to indicate how small or large something is.

In this sense, we can say that each pure object in pure space is indefinitely small (is a part of an indefinitely large aggregate) and at the same time indefinitely large (divided into an indefinitely large number of parts). Quantitative uncertainty can be understood as variability. We are discussing a specific quantity in relative terms, as being either more or less than something. When answering the question "how much?", one should say "it is some larger (smaller) amount." The concept of infinity is replaced here by the absolute indefiniteness of quantitative value.

It can be argued that what we have here is an incomplete quantity phenomenon. Its incompleteness lies in the fact that it can only be related to a certain measure, and in the fact that it transcends a certain measure. So we can say that a certain quantity is greater or less than a given quantity (for example, "a number greater than 10"). This is not an indication of the exact value and not an indication of its relation to infinity. This is uncertainty without limits.

To summarize the conversation about the reality of pure objects, we have to say again that this reality is absolute. Pure space is absolute in the sense that it is singular, unique, and cannot be different. Pure space is not a set of pure spaces, and the relative points of reference in it (relative zeros) are different only in relation to absolute zero. It follows that the structure of pure space is unique, just like pure space itself.

Each pure object occupies its own unique place in this structure, which completely defines it. Within pure space, the same object from different points of reference and different objects from the same point of reference are indistinguishable. Since objects are determined by nothing other than their direct differences, it can be inferred that there are only distinct objects in the absolute frame of reference, and not different hypostases of the same object. "Five" cannot be "three" in another frame of reference because there is only one absolute frame of reference. In empirical reality, the same object

can have different parameters relative to different reference systems. In the absolute reality of pure space, this is impossible. It is impossible because pure objects here only differ in their position within the general and unique system of entities.

PART 5. FORMS

§ 1. Forms as a Type of Reality. Modalities

We have analysed two basic levels of reality: primary reality and the reality of pure objects (pure space). This, of course, is not all that exists in the Universe. So, it is natural to ask: Why is there anything beyond pure space? We are dealing with the same problem as before: how to transcend one kind of reality and find oneself in another (this problem constantly comes to the fore when one is doing metaphysics). The principal point is how to ground the transition from pure objects to something else, ensuring that the existence of pure objects is not self-sufficient.

We must proceed from the fact that metaphysical difference has no limitations. Therefore, there is certainly a difference between the existent (that which exists) and the pure object. Is this difference productive? That is, whether the resultant entity is something significantly different from the existent as such? Otherwise the difference between the existent and the pure object is not productive, i.e. it is identical to the existent. The latter variant should be rejected because the existent and the pure object are directly partially identical and partially different. They, therefore, have non-identical aspects that are realized as specific entities (concretizations of the existent and the pure object).

(144) [*The difference of the existent from the pure object (pure objects) is identical to* ***the form***].

(145) [*The difference of the pure object (pure objects) from the existent is identical to* ***the numerical aspect of the existent (or the reality of pure objects as a numerical part of the existent)***].

So, forms are existent, but not as pure objects; they are object(s), but not pure. An object is called pure because, in a sense, there is nothing in it except its being an object. The differences of this object are conditioned by other objects. In other words, its specificity is determined solely by its position among other objects.

It can be said that a specific pure object is identical to the totality of its differences from other pure objects. On the one hand, a pure object is the differ-

ence between something and something according to the basic metaphysical formula; on the other hand, this difference is identical to all its differences (direct and indirect) from other differences (i.e., other objects). Let's consider that each difference can be viewed as a property of an object. In this context, a pure object is the sum of all its properties combined into one object.

The difference of the existent from such an object (i.e., the difference that is identical to the form) is the difference between an object and an object that is equal to the sum of its properties. Thus, a form is an object that is identical to a property (existing as an object) which differs from the totality of its properties. In other words, a form is an object that distinguishes itself from all its differences from other objects. All differences are not only presented in a form directly (as in a pure object), but make some general difference (a general property) that cannot be reduced to the sum of individual properties.

The differences or properties of an object (note that the object in this case is concretized as a substance, becoming something more specific than an object in general, because in the latter sense properties can also be considered objects) can be represented as its parts. Then it should be argued that the pure object is a whole equal to its parts. The form, on the contrary, is a whole that surpasses its parts. The form is a whole that is different from the simple aggregate of its parts. This, of course, in no way contradicts the definition of any specific form or forms as a difference between something and something else. The form, then, is that which is directly determined by itself. Since a form is usually a complex object, it is defined (constituted, identified) by its parts. Form can also be determined genetically by an original object or objects from which it is generated. Indirectly, it can be determined by something else that is not part or the genetic basis of a given object (we can call this "external conditions").

(146) [*The difference of the form from one of pure objects is identical to* ***the form of an object***].

(147) [*The difference of the form from some pure objects is identical to* ***the forms of objects***].

Why not "the form of objects"? At this level of metaphysical structure, there is no difference between simple form and complex form. There is only one form and many forms corresponding to one and many objects (the question "'how many?" has also no answer yet).

(148) [*The difference of all forms from pure space (all pure objects) is identical to* ***formal reality***].

Despite the difference between one form and many, the form, in contrast to pure objects, is essentially non-numerical in character (although this does not exclude numerical aspects, as will be shown later). Non-numerical character means that the form is self-determined, internally determined (and not externally, like a numerical pure object). This is the essence of the form. It would be correct to say that the form is an internally defined object. The non-numerical sign is the leading, essential aspect of the form (despite the fact that it may also possess numeric properties).

(149) [*The difference of the form from the forms is identical to* ***the quality (qualitative entity)***].

(150) [*The difference of the forms from the form is identical to* ***the qualities (qualitative entities)***].

The point of distinguishing qualitative entities from numerical ones is that quality cannot be quantified. At the most abstract level of their existence, when considering qualities, it makes no sense to ask: how many are there? In the same way, quality is not one quality – it is not a singular numerical entity. At the most abstract level of existence, the question of belonging to a qualitative entity or form also makes no sense. It is not correct to say that a form belongs to forms, or is one of the forms. It is also not stated that forms include other forms. The belonging and inclusion of some forms into others take place at a more specific level of formal reality.

On the other hand, the abstract level of existence of form and forms (quality and qualities) does not negate their countability or the relationship of belonging. At this level, form and forms are not uncountable either; it cannot be said that form does not belong to forms or that forms do not contain a form. Form and forms (quality and qualities) simply exist beyond these certainties; they exist as form and forms (quality and qualities) without quantifiability or ownership. The only thing that can be said about forms is that the form is self-identical, and the forms contain differences in addition to their self-identity; they are an existent that is inherently different.

(151) [*The difference of the form from pure space is identical to* ***the form***].

(152) [*The difference of pure space from the form is identical to* ***pure space***].

(153) [*The difference of the forms from pure space is identical to* ***the forms***].

(154) [*The difference of pure space from the forms is identical to* ***pure space***].

The formulas presented imply, firstly, that forms and pure space are mutually exclusive in everything except their existence (being entities). They are mutually complementary entities. Although the form and the pure object are identical as existent, the form as an entity that (relatively) distinguishes

other entities from itself and the pure object as an entity that distinguishes itself from other entities are alternative.

Secondly, it follows from the unproductiveness of the difference between forms and pure space that they exhaust abstract entities. Further differentiation between the reality of forms and pure space, i.e., their further concretizations, belongs either to formal reality or to pure space. Hence, no other equally abstract region of reality is formed.

The fundamental difference between a form and a pure object is that a pure (or numerical) object is identical to its position among other pure (numerical) objects. The form, on the other hand, is identical with its quality; that is, one might say, its internal self-determination. Forms are not only determined by their position among other forms. Forms have internal self-determination. If a pure object in a different position (or from a different point of reference) turns out to be a different pure object, then the form in a different position can remain itself, retaining its individuality which distinguishes it from all others. What follows from this are the various ways of concretizing pure objects and forms. Both are realized differently in their concretizations. It's important to pay attention to this because it has critical implications for the entire Universe.

Pure (numerical) objects are concretized as a whole or as a system; the concretization of one of them is also the concretization of all others. In these circumstances, a specific object with numerical properties is the concretization of the entire numerical (or pure objects') reality. However, these concretizations may vary from different points of reference. A plain example: the weight of a human being can be described by various numbers; it all depends on the unit of measurement used (for instance, the number 50000 may not characterize a human's weight in kilograms, but it does if we are talking about grams).

Forms concretize themselves in completely different manner. They have their own isolated concretizations that do not affect other forms; in other words, they concretize in a particular manner. Therefore, a specific object implementing a form does not implement other forms. The relationship between an implemented form and other forms (especially close to it by its character) is that of alternatives. Either one form or another is implemented in a specific object, or, in stricter terms, forms are alternatives in relation to their concretizations. Another simple example: modern physics finds among elementary particles those with mass and those without it. Mass is a form of particles, which are specific objects (instantiated particles, not particles

in the general sense, which are also forms). These specific objects are either massive or not; they cannot be both.

All forms are alternatives: implementing one form means not implementing others. The very fact of implementation belongs to the existence of every specific object, but a specific form may or may not be associated with an object. It is clear that forms play the role of possibilities, in fact they are the possibilities. Or, in strict metaphysical terms, forms are relatively identical to possibilities. Let's make two stronger statements: 1) *All forms, in their relation to more specific objects, are possibilities*; 2) *All possibilities, in their relation to more specific objects, are forms*.

Thus modal aspects of reality appear with forms. The existence of possibilities leads to a distinction between the possible and the actual, the necessary and the accidental. All this is rooted in the structural layer of formal reality. Should we regard possibilities (and other modalities) as the new objects from a metaphysical perspective? They exist and are different from everything else; they concretize forms at that. Nevertheless, one should say 'no' to the question posed. Modalities are grounded not only on forms. They also require a more specific reality for their existence. They are, one might say, the product of inter-layer relations; they characterize an already existing reality. If they are objects, then they are secondary objects characterizing the primary relations of objects. At least they are not the formal objects (possibilities, etc., are not the forms themselves).

Forms, as possibilities, may or may not have their concretizations. Forms can therefore be divided into two classes: a) realized forms; b) unrealized forms. The realized forms are defined as the forms that have their concretizations. Namely, they are the forms for which there are more specific (than formal) objects that have these forms. Since the status of a realized possibility depends not only on a form, but also on the further layers of the Universe's structure, it is clear that realized possibilities are not formal objects but rather inter-layer relations (like all modalities).

The second class of forms is that of unrealized possibilities. In contrast to the previous class, these forms lack further concretization beyond the reality of forms. It is reasonable to conclude that they exist only as forms. In other terminology, this can be expressed as the existence of mere possibilities. The doubt about the existence of mere possibilities is to be refuted by the general principle of this metaphysics, which posits the existence of abstract objects. Mere possibilities exist as forms that are related to and different from other forms (including those that have been realized).

Without going beyond the realm of forms, can we discern the above two classes of possibilities? Are there any specific features in the forms themselves that indicate whether they are realized (actualized) or not? One can imagine forms of impossible concretization, such as a form containing mutually exclusive parts or a form that does not correspond to numerical reality (e.g., the form of the infinite set). Another case involves objects with forms that cannot coexist. Only one of these forms can be realized. This is true of practically all empirical objects. If a ball is entirely green, it cannot be yellow; the form of a yellow ball does not exist here.

Modalities initiated by forms obviously include necessity and contingency. Both are grounded in possibility and actuality; both are essentially the way forms are concretized. Necessity is a concretization of forms that satisfies two conditions: a) it is realizable (it is not impossible); b) there is only one form that can be represented by specific objects. Put another way, there are no alternative forms in the process of concretization. Necessity can be absolute – it coincides with actuality (we can consider the Universe in its entirety or primary reality as absolutely necessary). And it may be relative, allowing concretization in only one direction, but only under certain conditions (which can be widely alternative or narrowed down to a minimal choice).

Accidentality is grounded in possibility and necessity, embracing the former and denying the latter. It is also the forms' way of concretization. There can be both an accidental form of a specific object and an accidental specific object carrying a form (accidental or necessary form). Accidentality is the implementation of a particular form in a specific object that is not the only or dominant alternative. Accidental forms are not necessarily connected with other forms, and accidental objects are not necessarily connected with forms. The term "accidentality" also refers to the possibility of alternative implementation (accidental conditions of a specific object's existence). The more unnecessary alternatives for choice there are, the more accidental the implementation of a form in a specific object becomes. Hence, the existence of greater or lesser accidentality and, accordingly, greater or lesser relative necessity.

§ 2. Forms and Pure Objects. Space of Forms

The reality of forms exists through their difference from pure space. Forms are, in the long run, the concretization of pure objects. No wonder they bear the imprint of this difference, in that they include pure objects. Pure (numerical) objects are part of every form. Accordingly, all forms

have numerical properties. Pure objects and their relations, which are the elements of pure space, characterize forms. Simply put, forms have a quantitative aspect.

(155) [*The difference of the form (forms) from the pure object (pure objects) is identical to* ***the quantitatively (numerically) defined form (forms)***].

(156) [*The difference of the pure object (pure objects) from the form (forms) is identical to* ***the quantitative (numerical) aspect of the form (forms)***].

(157) [*The difference of the form from one of the pure objects is identical to* ***the single form***].

(158) [*The difference of one of the pure objects from the form is identical to* ***the singularity of the form***].

(159) [*The difference of the forms from the single form is identical to* ***the single forms***].

Single forms are many forms, each of which is one. They may or may not be parts of more complicated forms. This is where they differ from pure objects. Unlike forms, pure objects are always parts of some complex units (the sequences).

All other pure objects also apply to forms, giving them numeric properties.

(160) [*The difference of the single forms from the single form is identical to* ***the aggregate of forms***].

(161) [*The difference of the aggregate of forms from the forms is identical to* ***the one aggregate of forms***].

(162) [*The difference of the quantitative value (or n-quantity) from the one aggregate of forms is identical to* ***the n-quantity aggregate of forms***].

(163) [*The difference of the numerical objects from the aggregate of forms is identical to* ***the aggregates of forms***].

(164) [*The difference of the aggregate of forms from the numerical objects is identical to* ***the one of aggregates of forms***].

(165) [*The difference of some pure objects from the forms is identical to* ***some forms***].

(166) [*The difference of the aggregate of forms from some forms (one of the forms) is identical to* ***the aggregate of forms including some forms (one of the forms)***].

(167) [*The difference of some forms (one of the forms) from the aggregate of forms is identical to* ***some forms (one of the forms) belonging to the aggregate of forms***].

The line of similarly defined forms can be continued. As a result, there are these entities: *the other form (the other aggregate of forms), the other forms,*

each form, all forms (all aggregates), as well as the aggregate of aggregates of forms of the n-th order and the aggregates belonging to the aggregates of forms of the n-th order. In general, attaching all pure objects to forms results in quantitatively defined forms of all types, corresponding to all pure objects present in pure space. We will refrain from further concretization of entities in this direction. Forms can also form sequences, but this is not an essential property of the forms themselves. It is brought into them so far (and only so far) as they are also numerical objects.

More essentially, the forms are represented by aggregates that share common traits.

(168) [*The difference of the single form from some pure objects is identical to* ***the form of some objects***].

Obviously, it pertains to the form represented by a certain number of (numerical) objects. In other words, the form is represented by a certain number of instances of this form. The form can thus be individualized by differing from numerical objects.

The opposite (objects having one form) is also true.

(169) [*The difference of the pure objects from the single form is identical to* ***some objects of one form***].

So, the form can have various quantitative definitions in general, and in particular break up into a different number of instances of the form, which are numerically distinct concretizations of the form. We can also incorporate the quantitative value (n-quantity) into the formulas, using the common form that links n-quantity with the forms (some forms).

(170) [*The difference of the form from the n-quantity of some objects of one form is identical to* ***the n-quantity common form of forms***].

(171) [*The difference of the n-quantity of some objects of one form from the form is identical to* ***the similarity of forms***].

Note that similar forms are not the same form; they only share a common form as part of their structure.

There is another manifestation of the effect that the reality of pure objects has on the reality of forms. All forms constitute the environment that can be referred to as formal space. Formal space is directly different from pure space; metaphorically, we can say that one is built on the other. Unlike pure space, which is based on homogeneous pure objects – elements of sequences, formal space is heterogeneous. It includes forms of varying levels of abstraction and concreteness. Close (in a sense) are abstractions (e.g., the form of a cubic body) and their concretizations (the forms of cubic bodies

of a certain size, mass, composition). Distances between physical bodies are also forms, and they coexist with the forms of bodies.

Forms are combined into a single space of forms, because they all possess the properties of a pure object, coexisting in a unified space as pure objects. But they are still forms – of different qualities and levels of abstraction. Like pure objects, they form sequences of forms, but these sequences are heterogeneous. For example, the sequence of forms of spatial (in the physical sense) objects is combined with the sequence of abstract forms and their concretizations, etc. Nevertheless, they all contribute to a single sequence of sequences – the space of forms.

(172) [*The difference of the sequence of pure objects from the forms is identical to* ***the sequence of forms***].

(173) [*The difference of the sequence of sequences of pure objects from the forms is identical to* ***the sequence of sequences of forms***].

Accordingly, we can speak of ***n-order sequences of forms***. In particular, ***radial and relative sequences of forms*** are similarly defined.

Qualitatively heterogeneous forms can be assembled in formal space only insofar as they bear some resemblance to pure objects. This resemblance is to be seen as a basic level of forms or as basic forms linked to qualitative ones. There are pure objects within forms that are specific non-qualitative forms (or rather forms whose quality is reduced to being a pure object within a form). One may also refer to them as *simple forms*. These are the elements of the space of forms; it is by them qualitative forms are connected in formal space.

(174) [*The difference of the pure objects from the other forms is identical to* ***the simple forms (the pure objects as forms)***].

(175) [*The difference of the other forms from the pure objects is identical to* ***the qualitative forms (the forms as non-pure objects)***].

(176) [*The difference of the simple forms from the qualitative forms is identical to* ***formal space (the space of forms)***].

Let us note that what stands out in absolutely simple forms, in addition to quantitative specificity, is their qualitative uncertainty. Simple forms are the forms that are distinguished as numerical entities, while at the same time possessing the quality of form in general (the form itself). The aggregate of such forms can be called formal space by analogy with pure space (of which they are an analogue in formal reality). So, we are discussing forms that turn into numerical entities. We focus on the aspect of the forms that does not differ qualitatively. It forms a special reality, associated with qualitative forms yet distinct from them.

(177) [*The difference of formal space from pure space is identical to* ***the space with forms***].

(178) [*The difference of pure space from formal space is identical to* ***the space without forms***].

The relative identity, and accordingly, the necessary coexistence of formal space and qualitative forms distinguish formal space from pure space. Formal space, unlike pure space, does not exist without forms.

(179) [*The difference of the simple form (forms) from formal space is identical to* ***the element (elements) of formal space***].

(180) [*The difference of some elements of formal space from formal space is identical to* ***the part of formal space***].

Similarly, we can identify ***the parts of formal space***.

(181) [*The difference of a qualitative form (some qualitative forms) from formal space is identical to* ***a qualitative form (some qualitative forms) in formal space***].

(182) [*The difference of formal space from a qualitative form (some qualitative forms) is identical to* ***the space of a form (some forms)***].

(183) [*The difference of the space of forms from the space of a form (some forms) is identical to* ***formal space***].

In other words, the space of forms and the space of a form do not differ as formal space. This follows from the fact that formal space is an aggregate of absolutely simple forms that do not differ from each other, but only differ in relation to qualitative forms. It follows that the space of forms and the space of a form do not differ in any way. This means that all spaces of individual forms are identified in a single space of forms. The space of forms is absolute. Forms are the absolute zero of this space, as well as its relative zeros.

The peculiarity of formal space is that it is relatively distinct from the forms themselves (pure space completely coincides with pure objects). Yet it is formed by forms, created by them (unlike, as we shall see, material space). In this sense, each form has its own formal space.

(184) [*The difference of a form (some forms) from the part (parts) of formal space is identical to* ***a localized form (some forms)***].

(185) [*The difference of the part (parts) of formal space from a form (some forms) is identical to* ***the internal space of a form (some forms) (or the space occupied by a form (some forms))***].

The emphasis on the spatial part of a form indicates the fact that the form is not a purely spatial entity (unlike a numerical entity). A qualitative

form possesses qualities that are not generally spatial in nature. The form is therefore partly non-spatial. However, each form is only partly non-spatial. Every form is associated with formal space. A part of the space of forms is included in the form, being the spatial part of the form. So, we can speak of the spatial and non-spatial parts of the form.

(186) [*The difference of the form (forms) from formal space is identical to* ***the non-spatial aspect of the form (forms)***].

The presence of the non-spatial aspect of the form obviously follows from its quality. The peculiarity of forms as non-numerical entities is that they partly exist non-spatially. This circumstance is easily revealed in empirical reality. Every empirical object has a form that is described in non-spatial terms. At the same time, non-spatial properties of an object are always indirectly connected to spatial ones (this includes not only physical space but also the space of forms).

(187) [*The difference of the space occupied by a form (forms) from the space occupied by other forms is identical to* ***the formal space location of a form (forms)***].

It is clear that if the space occupied by one form differs from the spaces occupied by other forms, then this space, in its difference from others, is defined as the position of the form among other forms in formal space. The spatial positions of the forms are determined similarly.

(188) [*The difference of formal space from the internal space of a form (some forms) is identical to* ***the external space of a form (some forms)***].

It is obvious that a space, which is not internal, turns out to be external. It is less obvious that such a space actually exists. For example, the external space may completely coincide with the internal space of other forms. Modern ideas about our world often suggest an incomplete coincidence between outer space and inner space, which explains the existence of empty space. This leads to the following non-absolutely necessary entity of our world.

(189) [*The difference of formal space from the internal space of the forms is identical to* ***the inter-forms (empty formal) space***].

The complete non-coincidence of the empty space and the space occupied by forms leaves only one possible position for the empty space: outside forms. One of the possible positions of the space outside forms, judging by empirical data, should be described as a position between forms. Proceeding from this formula, quantitative values of the space between forms are determined. The inter-form space attached to one form or several forms can also be determined (the inter-form space of the form (forms)).

(190) [*The difference of the inter-form space of a form from another form is identical to* ***the space between one form and another***].

In this way, all other inter-form spaces may be concretized. The possibility of attributing the space between forms to a specific set of forms is obvious. The quantitative value of this space is determined by analogy with the determination of quantitative values in general.

(191) [*The difference of the inter-form space from the external space of a form is identical to* ***the space between other forms***].

The space between forms here is defined by its difference from the external space of one form, which results in it becoming the space between other forms in relation to a given form.

(192) [*The difference of one of the forms from the relative zero of pure space is identical to* ***the relative zero of formal space***].

The rationale for this formula is based on the correspondence between forms and numerical entities. The numerical definiteness of forms makes them analogous to numerical entities. Naturally, formal entities can play the role of relative zeros. This means that when establishing the spatial position of a particular form, another form can serve as a reference point (that is, a relative zero). The impossibility of conducting empirical studies on spatial relationships without the use of reference points seems obvious. From a metaphysical perspective, however, all relative zeros are hypostases of absolute zero, and in this sense all reference points must be in some sense identical.

§ 3. The Structure of Forms. Kinds and Individuals

What is already known about the form allows us to state that every form is realized by other forms and pure objects. But unlike pure objects, forms do not coincide with other forms – their constituents. There are two types of forms that generate another form. One type is the direct constituents that define a form's quality, they can be called *the parts of a form*. Another type of constituents is the forms that do not directly define the quality but coexist with a given form as its environment; they define a form's position in formal space.

Thus, the structure of the form is realized through the relationship between its whole and its parts. The fundamental difference between the reality of forms and the reality of pure objects (pure space) is that a form, unlike a pure object, is not identical to its parts. The form does not consist of formal

parts but is produced by formal parts. Formal parts do not simply belong to the form but create it. Here we have a relationship between parts and the whole that goes beyond mere belonging. At the same time, the form does not exist without its formal parts. The absence of any part alters the form, disrupting its original structure.

(193) [*The difference of quality from some forms (the aggregate of forms) is identical to* ***the complex form***].

Quality has been defined in § 1 of this chapter. It is meant that forms produce a new, complex form when they generate a new quality. To have a common quality (which does not exist when forms are apart) is to be within a common (general) form.

(194) [*The difference of some forms (the aggregate of forms) from a quality is identical to* ***the parts of a complex form***].

The parts of a complex form do not necessarily belong to the form but create it by establishing a common quality. The qualitative specifics of the parts determine the quality of the form, but are not identical to it. In this sense, the parts of the form are not quite what we normally think of as parts.

In a way already familiar to us, we also obtain ***the complex forms, the parts of complex forms, the part of a complex form***.

The analogy with pure objects allows us to add new terms related to forms to our list. These are the part of the part of the complex form, ***the parts of the part, the part and the parts of nth order***. Symmetrically, there are ***the wholes that are parts of other wholes***, the wholes containing other wholes: ***the complex form (forms) as a part of another complex form, the complex form (forms) as an nth-order part, the complex form containing another complex form (forms), the complex form as an nth-order whole (containing forms)***. We proceed from the fact that forms produce another form. Hence, one can assign new specific names to formal wholes. One can speak of ***the form of forms*** (the form created by forms and shaping their aggregate), ***the forms of forms, the nth-order form (forms) of forms***.

(195) [*The difference of the form from all forms as parts of other forms is identical to* ***the Universal form (the form of the Universe)***].

The rationale and properties of this object follow from the rationale and properties of the complex form. The form of all forms exists because the complex of forms cannot be infinite. Infinite unification renders each form completely indeterminate, making it indistinguishable from everything else, and thus non-existent. The Universe, if it exists as a whole, must have a form. This seems empirically obvious, although it requires a more rigorous

justification. The shape of the world can be indefinitely complex, but it must have some specificity.

Further concretization of the forms' structure makes it possible to distinguish two types of parts in the complex form.

(196) [*The difference of the part (parts) of a form from the part of the part (parts of the parts) of a form is identical to* ***the structural part (structural parts) of a form***].

In empirical terms, structural parts are those parts of a form whose parts are also parts of the form itself.

(197) [*The difference of the part of the part (parts of the parts) of a form from the part (parts) of a form is identical to* ***the structural subpart (structural subparts) of a form***].

The structural subpart is the part of the form's part and at the same time has parts that are parts of the form itself.

(198) [*The difference of the form (forms) from the structural parts of a form (forms) is identical to* ***the structurally complex form (forms)***].

It is clear that a structurally complex form is a form with structural parts.

(199) [*The difference of the (n-order) structural parts of a form from the form is identical to* ***the complex structure of a form***].

The complex structure of a form refers to a collection of structural parts (of varying orders).

(200) [*The difference of the other form (other forms) from the part (parts) of a form is identical to* ***the external condition (external conditions) of the form's existence***].

The other form or forms and the part of a given form are relatively identical as forms and as conditions of a given form's existence (within the range of the formula, their coexistence with a given form is necessary). The other form differs as an external condition.

(201) [*The difference of the part (parts) of a form from the external condition of the form's existence is identical to* ***the part (parts) without parts (or the unstructured part (parts) of a form)***].

The part or parts differ within the range of the formula only from the external conditions and other parts of the form that are not their structural parts. Such a part or parts have no parts (that is why there are no further parts of a given form), but have external constituents of the form as their own conditions (and maybe as their parts). This is what has to be called the "unstructured part of the form".

(202) [*The difference of the form (forms) from the (aggregate of) non-structural parts of a form (forms) is identical to* ***the structurally simple form***].

This means that a form is structurally simple if its parts of parts are external conditions, that is, a form has parts that have no further structural parts.

(203) [*The difference of the part (parts) of a form (forms) from the unstructured parts of parts is identical to* ***the structurally simple part (parts) of a form (forms)***].

In other words, not only can the form itself be structurally simple, but it can also have structurally simple parts.

(204) [*The difference of the unstructured parts of a form (forms) from the form (forms) is identical to* ***the external qualities of a form (forms)***].

External qualities are determined not by the parts of a form, but by its position among other forms and its connections with them. There is, of course, a rather subtle difference between the concept of external quality and the concept of an unstructured part as the basis for the structure. Quality refers to the uniqueness of the form, its non-identity with other forms. Structurality realizes the inclusion of its parts and qualities in the form.

(205) [*The difference of the form from the external conditions is identical to* ***the absolutely simple form (the form as such)***].

The absolutely simple form has no structural parts and also does not have qualities that specify it. Its qualities are only the qualities of the form in general, that is, the abstraction of the object (entity) and its non-numerical character.

(206) [*The difference of one of the parts (some parts) from the structurally complex forms is identical to* ***the common part (common parts) of forms***].

(207) [*The difference of the structurally complex forms from the common part (parts) is identical to* ***the forms with a common part (parts) or similar forms (the forms of one kind)***].

There is also ***one of the forms belonging to a kind***.

(208) [*The difference of the form from the common parts of some forms is identical to* ***the form of a kind (of forms)***].

The common parts are meant to be the parts making up the form. This form is what makes different individual forms similar and enables them to be categorized into a kind of forms.

(209) [*The difference of the forms of one kind from the form of a kind is identical to* ***the kind of forms***].

It is obvious that all forms with the qualities of one kind constitute this kind. The kind is a twofold entity. It can be seen as a form of a kind and

simultaneously, it can be observed as some similar forms creating a unity. In both cases, it is a formal object with numerical properties. Therefore, we can add some new terms to the ones defined above: ***the kinds of forms, one of the kinds of forms, the other kind (kinds) of forms, some kinds of forms, every kind of forms, all kinds of forms,*** even ***the sequence of kinds of forms***, etc.

One can also speak of the kinds of kinds or the kinds of nth order. This is how it is expressed in formulas:

(210) [*The difference of the forms from (some, all) kinds of forms is identical to* ***the forms of (some, all) kinds***].

The forms and the kinds of forms are identical as forms; the distinction lies in the fact that the forms on the left side of the formula belong to different kinds.

(211) [*The difference of the common part of forms from the forms of kinds is identical to* ***the form of the kind of kinds***].

Hence, we come to ***the kind of kinds, the nth order kind, the kinds belonging to the kind of a higher order***, and corresponding forms of these kinds. Finally, there is ***the kind of all kinds***, the form of which is nothing but the Universal form.

(212) [*The difference of the parts of a form belonging to a kind of forms from all parts of other forms of the same kind is identical to* ***the individual complex of parts (of a form)***].

Notice that the term "all parts of other forms of the same kind" is obtained from the previously mentioned elements through operations that are familiar to us.

(213) [*The difference of the form from the individual complex of parts is identical to* ***the individual form of a kind***].

Of course, there are also ***individual forms***. The same principles that apply to kinds also apply to individuals. There are ***some individual forms, all individual forms, every individual form, another individual form, or other forms***, etc. On the other hand, there are no individuals of different orders; the individuation of individuals is supposed to be final.

It should be borne in mind that individual parts of the individual form may coincide with parts of other forms (although they may not), only the complete set of individual parts is unique. Let's assume that all common forms (parts of forms) are the forms of a kind (even if such a form unites only two individuals – this assumption may seem counter-intuitive, but it is logically consistent). Then there are three possible variants of individuals:

a) containing only parts that are forms of kinds (the combination of these kinds is, of course, unique); b) containing both the forms of kinds and individual (specific) forms; c) containing exclusively individual forms (this type of individuals can be called isolated, it is not known whether it really exists). The necessary condition for the existence of formal individuals is the unique combination of parts, including the parts of formal space.

Kinds and individuals as abstract objects are concretized in particular kinds and their individuals (physical and non-physical – we will discuss the latter later). They are still forms, but more specific. Particular kinds and individuals constitute the regular part of formal space. They coexist in a regular way within the structure of kinds/individuals. Proximity is realized here through shared parts in forms. It is something like the Platonic world of forms.

But are there only regular combinations of forms in the Universe? In empirical reality, it is the aggregates of individual forms, not defined by their kinds (and sometimes seemingly accidental), that dominate. Aggregates of particular individual forms and (indirectly) their kinds produce another part of formal space. It is the space of various combinations of forms (naturally – all possible combinations). It should be added that every aggregate is a form.

(214) [*The difference of the form from the aggregate of the parts of forms is identical to* ***the aggregate's form***].

The aggregate here consists of forms as parts of the aggregate. Forms, as parts define (according to the metaphysical difference) the whole as form. So, the aggregate form is composed of partial forms and the part of formal space.

What way of metaphysical concretization results in the aggregation of various forms? Remember that, unlike pure objects, forms are not solely defined by their spatial position. Forms have internal definiteness. If a numerical entity in a different position (or from a different point of reference) turns out to be a different numerical entity, then a form in a different position can retain its individuality, which is distinct from all others. It follows that the same form can exist in different locations within the structure of forms. Conversely, different forms can exist in the same location within a structure.

What stands behind the proximity of forms in their aggregates? Obviously, there is proximity through concretization (one could call it genetic positioning). As we know, concretization is realized through differentiation. But then we have to take into account that everything in this world differs

from everything. It turns out that all combinations of forms are possible, except for the directly exclusive ones, and all combinations are real.

It is not contrary to metaphysical principles to imagine such a picture of formal space. It contains all combinations of formal individuals. Every form is close (has direct proximity) to any other form. So every form is, therefore, located elsewhere in the space of forms. It means that every form is at any distance from every other form. Its locations are mediated by various groups of other forms, and this mediation includes all possible combinations of forms. In other words, any mediation and any distance are real.

§ 4. The Change in Forms. Formal Time

(215) [*The difference of all n-order parts of a form from the other all n-order parts of the (same) form is identical to* ***the change in form***].

Change is not the same as a simple difference, such as the distinction between numerical entities. The formal entity remains essentially identical to itself or, in extreme cases, transforms into a different entity (and not simply is different as another entity). This is because the form, unlike the numerical object, is not identical to its parts. The parts are not the form, but produce the form. Therefore, in general, the same form can be formed by different parts (of the same order). Of course, there is a distinction between the form as a whole, which remains the same, and the details or aspects of the form, which change. This is a change in form, not just a simple variation in the sequence of forms. For this reason, change is only possible for forms and their concretizations.

The change in (many) forms is similarly grounded and determined.

(216) [*The difference of all n-order parts of forms from the other all n-order parts of the (same) forms is identical to* ***the change in forms***].

(217) [*The difference of one of the forms from the change in form is identical to* ***a changing form***].

The same applies to forms and all their concretizations: *all forms, some forms, every form*, etc.

(218) [*The difference of all n-order parts of a complex form from the other all n-order parts of the (same) form is identical to* ***the change in a complex form***].

(219) [*The difference of one of the complex forms from the change in form is identical to* ***a changing complex form***].

The same applies to complex forms and all their concretizations.

Change is what can characterize and make more specific not only complex forms but also aggregates of forms. For the change in an aggregate of forms, it is important that the same forms are sometimes present in it and sometimes absent. It doesn't matter what comes before what. Change is equally the transition from absence to presence, and vice versa – the transition from presence to absence.

(220) [*The difference of all the forms of an aggregate from other forms of the (same) aggregate is identical to* ***the change in aggregate of forms***].

(221) [*The difference of an aggregate of forms from the change in aggregate of forms is identical to* ***a changing aggregate of forms***].

A changing aggregate differs from various coexisting aggregates not by the presence of a common part of forms (this can equally apply to a changing aggregate and to various aggregates), but by the absence of parts of a given aggregate that are present, or by the presence of parts of a given aggregate that are absent in other areas of reality. At the same time, it must be understood that unlike a complex form, which retains relative identity with itself up to a certain amount of change, an aggregate that changes immediately turns into another aggregate, retaining only a genetic link with the original aggregate. In this sense, it is the aggregate that changes (and not two initially different ones). The same applies to ***the change of form aggregates, changing form aggregates***, and their derivatives (***all aggregates, some aggregates, every aggregate***, etc.).

(222) [*The difference of all parts of a form (forms) from all parts of the changing complex form (or changing aggregate) is identical to* ***the state of a changing form (aggregate)***].

There is a principal difference between all parts of the form (forms) and all parts of the changing form (forms). All parts of the form (forms) produce the form, taken out of change; all parts of the changing form (forms) produce the change in form (forms). All parts of the changing form, of course, coexist; moreover, each part depends on the existence of other parts of the changing form. There is no such condition for the parts of the form in one state. The parts within a state exist outside other aggregates of parts in a changing form (one can say "by themselves"). This is the fundamental difference between their positions.

(223) [*The difference of the sequence of objects from the states of a changing form (aggregate) is identical to* ***the sequence of states of a changing form (aggregate)***].

In another way, this can be called ***the process of change***. The relationship between states is numerical. They do not differ as a collection of forms or as a form in a specific state, but they differ as a sequence of states.

(224) [*The difference of all parts of a form (forms) from the change in form (forms) is identical to* ***the initial state of the formal change***].

The initial part is the form (the aggregate of forms) out of change (it is in a sense unchanged). However, from the other side, this state is connected to change; it represents the first element of the sequence we refer to as 'change'. The numerical nature of formal change allows us to distinguish not only the initial but also the final element within it.

(225) [*The difference of the state of a changing form (aggregate) from all previous states is identical to* ***the final state of change***].

Unlike the initial state, the final state is always relative (hence – the difference in formulas between the first and second states). That is, the final state is principally open to further change, and it is only under special conditions that it becomes completely final.

The relations of precedence and succession in changing forms follow from the properties of the sequence itself, which are relatively identical to the properties of pure object sequences. It is obvious that, in relation to all previous states, one of the changing states turns out to be final. In general, the final state has a conditional status. This state is final only in relation to the previous ones. As a natural final state, one can regard the state that precedes the transition of a form into another form, i.e., the end of its existence as a given form, or coincides with such a transition. But this natural final state is just a concretization of a more abstract and general final state of change.

(226) [*The difference of one state of a changing form (forms) from the change of another form (others forms) is identical to* ***the state of stability (unchangeability) of a form (forms)***].

The fact that stability is defined as the difference between one object and another that is changing is obvious. The concept of stability applies equally to form and forms as well as their concretizations.

(227) [*The difference of the form (forms, parts of a form) from the state of stability is identical to* ***the stable (immutable) form (forms, parts of a form)***].

The same can be said of other concretizations of the form(s).

(228) [*The difference of a form from the final state of change of another form is identical to* ***the transformation of a form (the transition to another form)***].

So, the new object (the initial state of change of another form) arises from the difference between the final state of change and another form.

This needs to be explained. What stands out in a new form, in addition to its form, is its connection with the final state of another form. Such a connection within the range of this formula is exclusive and necessary. The final state of another form necessarily coexists with a given form; furthermore, in the sequence of states, a given form follows the final state of another form. Otherwise, the transformed form would be included in the sequence of states of the previous form.

It should be added that transformation can be understood as both a process and an outcome. The formula naturally points to the latter. Transformation as a process will obviously be the difference between a change in form and its result (transformation in the first sense). The same applies to forms, a part and parts of form(s).

(229) [*The difference of the final state of change of a form from the initial state of another form is identical to* ***the transforming form (the form in transition)***].

The same can be said of forms, a part and parts of form(s).

This is the place to define various types of formal change. Let's start with a quantitative one.

(230) [*The difference of the quantity from a form (a part or parts of a form) is identical to* ***the quantitative value of a form***].

Of course, there are also quantitative values to consider.

(231) [*The difference of the quantitative values of a form from the sequence of the states of a changing form is identical to* ***the quantitative change in a form***].

The content of both formulas is similar in the sense that quantity is linked to the form and its parts. However, in the second formula, quantity is tied to successive states of the changing form. The same can be said of forms, a part and parts of form(s). Quantitative change can also be understood as both a process and an outcome. The formula indicates a process because it includes all intermediate results. But it does not exclude the outcome as a quantitative indicator of the final state of change. Thus, quantitative change encompasses both aspects – the process and the outcome (or the process as a sequence of outcomes).

Note that we are discussing a quantitative change that does not alter the form as a whole (it does not transform it into another form). The latter may have its own formula, which will not be provided here.

(232) [*The difference of the sequence of states of a changing form from the quantitative values of the form is identical to* ***a quantitatively changing form***].

In the same way, forms, a part, and parts of form(s) are defined.

(233) [*The difference of the form's qualities from the sequence of states of a changing form is identical to* ***the qualitative change of a form***].

The forms and their parts are certainly also meant here, as in all similar cases that will follow.

The validity of this formula and the properties of the object derived from it are evident when two conditions are taken into account. Firstly, one should proceed from the qualities of the form as a whole. Secondly, a numerical specification of quality is assumed – the existence of one quality, all qualities, some qualities, one of the qualities, each quality, etc.

(234) [*The difference of the form from the qualitative change of a form is identical to* ***the qualitatively changing form***].

(235) [*The difference of the parts of a form from the final state of other forms is identical to* ***the synthesis (the appearance) of a form***].

(236) [*The difference of the form from the synthesis of a form is identical to* ***the form being synthesized (appearing)***].

(237) [*The difference of the initial state of change in some forms from the parts of a form is identical to* ***the decay (disappearance) of a form***].

(238) [*The difference of the form from the form's decay is identical to* ***the decaying (disappearing) form***].

The formal entities that have been defined allow us to draw an important conclusion. If there is an absolutely simple form, it does not change, it does not arise and does not disappear. The forms of kinds can change up to certain limits, beyond which they remain unchanged. Individuals certainly change, and their change is their way of existence.

(239) [*The difference of the change in forms from the changing aggregate of forms is identical to* ***the dependent change in forms***].

Dependence is empirically understood as a change in one object together (and only together) with a change in another object or objects. The changes may be different. However, this variety of changes is relative. If we talk about dependent changes, they must, in some sense, be identical, at least in the very fact of a change in one object and another. Therefore, dependent changes are partially or relatively identical; in other words, there is the same change in different objects.

(240) [*The difference of a changing aggregate of forms from the change in forms is identical to* ***dependently changing forms***].

(241) [*The difference of a changing form from a changing aggregate of forms is identical to* ***the dependently changing form***].

The dependent change in a form is grounded and determined in the same way.

(242) [*The difference of a form from the dependent change in forms is identical to* ***the determinant form***].

The determinant object is empirically represented as one on which the change of another object depends. The dependency arises from the first object changing independently, while the second object changes in response to a change in the first. Consequently, the first object is relatively independent of the change, but at the same time, it is included in the process of change. In the formula, this is expressed by the fact that the form is directly related to other forms (it is identical to them as a form) and is not directly related to their change (it is different from it). At the same time, other forms are bound to the form as changing ones; within the range of the formula, the change in forms coexists exclusively with the given form.

(243) [*The difference of a dependently changing form from the dependent change in forms is identical to* ***the determinable form***].

The form is defined as being completely dependent on change. Both sides of the difference represent dependent change only. This position characterizes the determinable form.

(244) [*The difference of a changing aggregate of forms from the determinable forms is identical to* ***the mutually dependent change of forms***].

(245) [*The difference of forms (a form) from the mutually dependent change of forms is identical to* ***the mutually dependent forms (one of the mutually dependent forms)***].

All the changes in forms described are realized within the space of forms. They turn out to be spatial relationships. This means that not only do the forms change in formal space. More importantly, the changes of forms themselves and the changing forms (which are ultimately the same thing) represent a part of the space of forms. Correlating states of forms, from initial to final, constitute the space of changes. But such a space, being a concretization of the abstract space of forms, acquires the features of time. Here we discover that the metaphysical structure of the Universe undergoes a transition from space to time. This time is still a formal reality, not fully established, concretized. The latter is a characteristic only of material (physical) time. What has been said can be articulated using the metaphysical formulas endorsed in this book.

(246) [*The difference of formal space from the state of a changing form (aggregate of forms) is identical to* ***the state of form's (aggregate of forms') space***].

Since formal space is a form, it is concretized through the state of the form and a sequence of states (the process of change). At the same time, since formal space is, in some sense, a numerical entity, it remains unchanged in this regard. Changes in formal space are introduced by the forms that exist within it. Being associated with different states of forms, formal space turns out to be different in itself. Each state of forms has its own state space.

(247) [*The difference of the part of formal space from the sequence of states of changing form (aggregate of forms) is identical to* ***the space of formal change***].

The space of change is actually a collection (more precisely, a sequence) of states of form's spaces. What was said about the sequences of pure objects can therefore also be said about the space of changes in forms.

(248) [*The difference of the space of formal change from the preceding states of a changing form (aggregate of forms) is identical to* ***the space of changes made***].

(249) [*The difference of the space of formal change from the succeeding states of a changing form (aggregate of forms) is identical to* ***the space of additional changes***].

The formula is symmetrically justified to the previous one. The new object is determined by two main factors. Firstly, the changes made do not cover the entire formal space. Secondly, the remaining part of space is associated with succeeding sequence in relation to the preceding states of forms. The reference point here is not arbitrary, since we are discussing a rather abstract reality. It is one and the same (although it can be concretized in various ways). What is to be identified with this reference point is the absolute zero of formal space. Since this part is distinct from the changes made, it is advisable to characterize it as the space of unaccomplished changes, but since changes occur within it, it should be defined as an additional part. The additional parts are defined in the same way.

(250) [*The difference of the pure objects sequence from additional parts of the space of formal change is identical to* ***the temporal sequence of the formal space parts***]

There is evidently a sequence of additional parts of the space of change. Such a sequence also includes all parts of the space of changes made (as they are also additional from a relative point of reference). This is what we will call the temporal sequence of parts of formal space. Such a sequence can be called temporal because it is directional, one-dimensional, and asymmetrical in nature and, therefore, it corresponds to our empirical concepts of time.

(251) [*The difference of the temporal sequence of the formal space parts from formal space is identical to* ***formal time***].

In other words, the sequence of additional parts differentiated from formal space can be referred to as *formal time*. Formal time has a spatial essence, but it can be distinguished from formal space itself. It can be called spatial-shaped pseudo-time. In particular, such time must allow a return to the starting point; that is, it must be returnable. For that layer of metaphysical reality which is made up of forms, the space-like time allocated to it is quite natural.

§ 5. Physical Forms

The further concretization of forms is achieved through the use of existing formal objects. One way of concretization is based on more specific relationships between forms and formal space. Another starting point for further advancement is the fact of formal change. The concretization of the change in forms leads to the existence of new objects. The general result of these modes of concretization is the emergence of specific kinds of form (physical and non-physical, as we shall see).

As we have come to know, there is space with forms and space without forms, localized forms, and the spatial locations of forms. Forms, as spatial objects, are differentiated from pure space and from other forms within formal space. Accordingly, their spatial location is something different, firstly, from pure space, and secondly, from the forms themselves. That is why the spatial location of the same form can vary, indicating that it can change. This is how the change in the spatial location of forms or their *movement* becomes real.

The change of spatial location is the alteration of a form, specifically the change of its spatial aspects and its relationships with other forms. As a result, the form changes as a whole. But the change of the form as a whole is relatively independent of its movement. Movement directly changes the form's position and indirectly affects the form as a whole. That is why the space of movement is only a part of the space of forms. In another part of formal space – the space of qualities – any change in a form as a whole alters its position in formal space, whereas in the space of movement, it does not. On the contrary, the change of a form does not precede movement; rather, movement is prior to the change of a form.

A more specific manifestation of the forms in relation to their movement is their impact on other forms. We know that there is a dependence between

forms, where a change in one form can necessarily coexist with a change in another. This dependent change is concretized through movement. The movement of one form coexists with the change in another form – either the change in its movement or the change in the form as a whole. So, there is a dependent change in forms based on their movement. Its association with movement makes this dependence specific.

Both entities – movement in formal space and dependent change based on movement – characterize specific forms. There are forms that move and change dependently. Such forms are clearly to be called physical. So, there is a special kind of form – *physical forms*. As we have seen, they have two defining features: movement and dependent change. They have other characteristics as well, but these are the two principal ones.

The question we need to answer now is: How does the movement become real? What is the metaphysical ground that enables its possibility and reality? Not long ago, we came to the conclusion that every form in formal space is directly connected with each other (refer to § 3 of this chapter). Let's proceed from this premise.

(252) [*The difference of one of the forms from every part of formal space is identical to* ***the presence of one of the forms in every part of formal space (the omnipresence of a form)***].

So, it is about the omnipresence of a physical form (moving in formal space). The presence of a form in each part of space does not contradict the connection of any form with only one of the parts of formal space, since in formal space all parts are distinguishable only numerically. One of the parts means any part. The omnipresence of a form is, however, difficult to imagine empirically. We can only point out that we are not talking here about an empirically given space, but about a specific formal area of reality.

(253) [*The difference of every part of formal space from every form is identical to* ***the presence of all forms in every part of formal space***].

Similar to the previous object, the presence of all forms in every part of formal space is logically justifiable, but empirically it is difficult to imagine. And here, the formal nature of a reality being analyzed should be taken into account.

(254) [*The difference of the omnipresence of a form from formal time (as a whole) is identical to* ***the omnipresence of a form in non-limited formal time***].

Just like space, form is relatively identified with formal time, which is inherently unlimited and can be considered infinite in a sense. This leads to

the conclusion about the unlimitedly changing form, that is, the potential identity of the form's location with all formal space and time. The omnipresence of some or all forms in infinite formal time is similarly defined.

(255) [*The difference of formal time from the omnipresence of a form is identical to* ***the unlimited formal time of omnipresence***].

The connection between time and omnipresence highlighted in the formula is symmetrical to the previous one.

(256) [*The difference of a form's location from other forms' locations is identical to* ***the presence of a form (only) in one part (some parts) of formal space***].

There is no contradiction with the previous points (with the omnipresence of forms), since at a certain level of abstraction (disregarding time as a sequence of spatial positions), there is no contradiction between one part of formal space and each part of formal space. If a contradiction arises between the presence of a form in each part of space and its presence in one part, it only emerges with further concretization of the entities under consideration.

(257) [*The difference of the external space of a form from the presence of a form in one part of formal space is identical to* ***the absence of a form in some parts of formal space***].

It is obvious that the external space of a form differs from the space of the presence of a form (it is also the internal space of a form) due to the absence of the form within it. The same is true about forms. The apparent contradiction between the absence of a form in some parts of formal space and the omnipresence of a form could only exist within the entirety of unlimited space and time. There is no contradiction at the level where spatial relations are not associated with infinite time. Formal time, when considered as a whole, integrates the internal space of the form with the external space. However, when only a part of time is considered, the internal and external spaces are not connected, and they can coexist consistently.

(258) [*The difference of formal time from the spatial location of a form is identical to* ***the formal time of spatial location***].

This formula expresses the fact that formal time is tied to formal space. The time of location is the time (and corresponding space) required to locate the form somewhere.

(259) [*The difference of the spatial location of a form from formal time is identical to* ***the location of a physical form in formal time***].

Since formal time has a spatial nature, it is relatively identical with location in formal space. A physical form is located in both formal space and

formal time. In other words, the form that is located both in formal space and formal time is referred to as *a physical form*. It means that location corresponds to the part of time and space that equals that location.

It is important to keep in mind that all formal time corresponds to the omnipresence of a physical form in formal space. However, not all formal time is actual, contrary to formal space. There are distinct parts of formal time (see § 4). The space of additional changes is divided into those that are in progress and those that are not yet in progress, i.e., actual and possible.

(260) [*The difference of the formal time of omnipresence from the formal time of spatial location (of a physical form) is identical to* ***the potential time of movement (of a physical form)***].

The time (and space) that is not the time (and space) of location is where the omnipresence of a form is to be realized. This is the reason why movement is unlimited.

(261) [*The difference of the formal time of space location from the formal time of omnipresence is identical to* ***the actual time of movement of a physical form***].

The division of physical forms' presence in formal space into potential and actual is realized through the concretization of such presence, with formal time serving as a mediator for concretization.

(262) [*The difference of the sequence of formal space parts from the actual time of movement is identical to* ***the change in the spatial position of the form (the movement of the form)***].

Let's remember that formal time is the sequence of parts of formal space. Hence, the sequence of formal space parts and the actual time of movement do not differ in this regard. The first is different from the second as the spatial (not temporal) change, which is the essence of movement.

The space of the form – both internal and external space – is concretized as more than one location (in general – all locations in their unlimited quantity). In other words, unlimited parts of space are identified with the form, but only partially within a part of formal time. These parts of space, being in some sense pure objects, generate a sequence. The sequence of locations is what is called movement.

(263) [*The difference of the sequence of formal time parts from the presence of a form in one part (or some parts) of formal space is identical to* ***the time of the form's change in spatial location***].

Since formal space is a form, it allows for quantitative change, which is identified with formal time. The specification of a quantitative change is an

increase (which corresponds to numerical entities). It can be said that spatial movement occurs when there is an increase in the portion of formal space and time in which a form is present. The absence of a symmetrical reverse movement (towards a decrease in the parts of formal space and time) is one of the possibilities that is obviously (judging by what we know empirically) realized in our material world.

These are the conditions that make movement an essential and incessant attribute of forms (on a certain level of concretization): a) the existence of additional space and time beyond the location of a form is nothing more than parts approaching the full space and time; b) the presence of a form in all space and time coexists with a form's location in a part of space and time; omnipresence is not a location itself, it is realized as essential and incessant movement (potency realized); c) this is fully realized within the whole time and space but is partially realized in parts of the whole formal time and space. Additional time and space add something to the presence of the form in full time and space, yet this presence always remains partial.

To summarize what has been said: each form is present everywhere in formal space, but not at the same time. The limitation of omnipresence in a limited time appears to be spatial movement.

(264) [*The difference of the form (forms) from the movement of a form (forms) is identical to* ***the moving form (forms)***].

(265) [*The difference of the part of formal space (time) from the moving form (forms) is identical to* ***the moving form (forms) location***].

(266) [*The difference of the moving form (forms) from the part of formal space (time) is identical to* ***the located moving form***].

(267) [*The difference of the part of formal space (time) from the movement of a form is identical to* ***the space (time) of the movement made***].

(268) [*The difference of formal space (time) from the space (time) of the movement made is identical to* ***the additional space (time) of movement***].

Since movement is a sequence of spatial positions of a form, this sequence has parts, and we can speak of parts of movement. The formulas relate the absence of localized form to certain parts of movement associated with certain parts of time. Absence is relative because it is linked to the part of space and time between the made and the additional movement in relation to which the spatio-temporal parts of absence are preceding or succeeding. But in this sense, all points of presence are the same – relatively "filled" with form and relatively "unfilled".

(269) [*The difference of the movement of a form from the omnipresence of a form is identical to* ***absolute movement***].

Absolute movement is the most abstract form of movement – movement as such. It is based solely on the reality of forms and formal space. Absolute movement does not have a specific direction; one might say it occurs in all directions, lacks quantitative indicators, and cannot be compared with the movement of other forms besides the very fact of movement.

(270) [*The difference of the moving form location from the locations of other moving forms is identical to* ***the relative location of a form***].

(271) [*The difference of the movement of a form from its relative locations is identical to* ***relational movement***].

Movement is relational when, besides absolute zero, there is a relative zero (or some) represented by another form as a reference point. Correspondingly, there is a combination of relational and absolute location of a form. Hence, we have two additional types of formal relocation (displacement).

(272) [*The difference of the relative locations of a form from its movement is identical to* ***the relative displacement of a form***].

(273) [*The difference of the absolute locations of a form from its movement is identical to* ***the absolute displacement of a form***].

Quantitatively, they can be equal. So we can speak of the form's displacement as such (meaning both of its types). Displacement should be understood here as the unity of the process and result of spatial movement. It is an ongoing movement and, at the same time, a movement completed relative to a certain part of time covering a limited part of space.

(274) [*The difference of the distance between forms from relational movement is identical to* ***the changing distance between moving forms***].

Distance is an aspect of forms that arises from the reality of pure objects.

(275) [*The difference of relational movement from the distance between forms is identical to* ***the change in distance***].

(276) [*The difference of the part of formal time from the movement of a form is identical to* ***the formal time of movement***].

(277) [*The difference of the preceding location of a form from the succeeding locations is identical to* ***the initial state of a moving form***].

It is obvious that the initial state is relative; it is only defined in relation to succeeding states. Any spatial position is relatively identical to the initial state of movement. In the language of numerical entities, this can be expressed as relative displacement zero.

(278) [*The difference of the moving form's locations from the initial state is identical to* ***the trajectory (path) of movement***].

Empirically, we imagine a trajectory as a line. In metaphysical terms, it can be expressed as a sequence of formal space parts.

(279) [*The difference of the succeeding location of a form from its preceding location is identical to* ***the direction of movement***].

Succeeding (or preceding) locations can be either direct or indirect. Accordingly, the direction is called absolute or relative. Of course, the actual instantaneous direction is the absolute one.

It should be taken into account that at this metaphysical level of reality, direction still exists in an extremely abstract form. The direction in this formula must be understood as a general direction, not as any specific direction of movement. The movement specified here by direction is movement somewhere. (This is a movement beyond its empirical representation, which is familiar to us). One should imagine an indefinite direction, which is concretized by any of all empirically perceived directions. The uncertainty of directions arises from the fact that a moving form is oriented relative to itself, while the determination of a specific direction is only possible by distinguishing between directions.

(280) [*The difference of the movement direction from the location of another form (forms) is identical to* ***the relative direction (directions) of movement***].

The movement of a form as a whole has been discussed, but the form is a composition of parts (which are also forms). It enables internal movement within the form. Correspondingly, there is a distinction between external and internal movement.

(281) [*The difference of internal formal space from the locations of parts of a form is identical to* ***the internal movement of a form***].

(282) [*The difference of the formal parts' locations from internal formal space is identical to* ***the internal displacement of the parts of a form***].

Thus, all changes in a formal object at a certain level of concretization are identical to changes in the spatial location of an object and its parts.

Movement is a change. Which change exactly? We deal with the movement in formal space, and we have to bear in mind that forms and formal space are in specific relations. Forms create space; space, being relatively independent of forms unlike pure objects and their numerical space which coincide, determines not only the position of forms but also (partially) the forms as they are. Formal space is created by forms; therefore, the movement

of forms also changes in accordance with space and with other forms. Space itself changes, and forms change depending on it, and vice versa.

Consequently, a change in one form may or may not lead to changes in other forms. Movement always changes both this form and others, since the position of a form among other forms changes. It should be noted that changes in forms are reciprocal. It is possible to identify dependent components of changes during the movement of forms: internal movement in a form – internal space of a form – a form as a whole – external movement of a form – space of a form – space of other forms – movement of other forms – other forms as wholes – internal space of other forms – internal movement in other forms. All these components of formal movement are forms and therefore undergo dependent changes.

(283) [*The difference of internal space from internal movement is identical to* ***the dependant (on internal movement) change in internal space***].

(284) [*The difference of the form from the change in internal space is identical to* ***the dependent change of a form***].

(285) [*The difference of external movement from the change of a form is identical to* ***the dependent change in external movement***].

(286) [*The difference of the space of a form from the change in external movement is identical to* ***the dependent change in the space of a form***].

(287) [*The difference of the space of other forms from the change in the space of a form is identical to* ***the dependent change in the space of other forms***].

(288) [*The difference of the external movement of other forms from the change in the space of other forms is identical to* ***the dependent change in the external movement of other forms***].

(289) [*The difference of the other forms from the change in the external movement of other forms is identical to* ***the change of other forms***].

(290) [*The difference of the internal space of other forms from the change of other forms is identical to* ***the change in the internal space of other forms***].

(291) [*The difference of the internal movement of other forms from the change in the internal space of other forms is identical to* ***the change in the internal movement of other forms***].

Dependence is transitive because differences differ – it is evident. In the world of physical forms all indirect dependent changes are represented: the internal movement of a form determines its external movement (its location), and the external movement of other forms (their locations), as well as their internal movements.

The reverse is also true. The movements of other forms, both internal and external, determine the movement of a given form, whether external or internal. The change in a form depends on the movements of other forms (and their changes). The dependence is mutual but not completely. All changes are interdependent, but movement (both external and internal) is not solely determined by other changes. It is inherent (immanent) in all physical forms in formal space. Therefore, internal and external movement as such (absolute movement) is the basis of all the changes that have been described. At the same time, movement changes under the influence of the mutual changes in the forms themselves.

There are, of course, further concretizations of mutually corresponding changes in moving forms and their movement. These concretizations include both new qualitative and quantitative elements. Qualitative concretizations include changes in form's structure, geometric shape, and physical qualities. Quantitative concretizations include numerical parameters of the localization of moving forms, as well as parameters related to the movement itself. There are more specific quantitative relationships with various reference points or parameters such as velocity, etc.

Thus, physical forms are those that: a) move in formal space and b) dependently change on the ground of their movement and localization. The features mentioned are sufficient to distinguish physical forms; however, more features define physical forms concretizations.

(292) [*The difference of the dependently changing form from the moving form is identical to* ***the physical form***].

These are, naturally, not all forms. Physical forms do not include more abstract forms; moreover, there are other forms at the same level of concretization that are not physical. The latter is a special kind of form.

Physical forms in the metaphysical sense coincide with the formal aspect of empirical physical reality, which we call Nature, but only with its formal side. All physical forms are (metaphysically) possible, but not all are real. Since they are localized, they create a specific part of formal space – ***formal physical space***. In general, physical formal reality can be referred to as "the form of the physical Universe" or "the form of Nature." It is reasonable to think that the form of the physical Universe represents the main, fundamental part of formal reality (the world of forms). But undoubtedly, this is not all of formal reality.

§ 6. The Structure of Physical Forms

The concretization of physical forms goes in different directions, but the actual physical world, our natural cosmos, realizes only some of these possibilities (we will not delve into the hypothesis of multiple physical worlds here). Moving on to these concretizations, we have to take into account our present knowledge of the real physical world. We will proceed from modern physical concepts, acknowledging that they may turn out to be incorrect. Let's consider as concretizations of original forms those physical objects that are recognized by science as existing in our world (although perhaps they are not exactly what they seem to be). Let's not ignore, however, a certain degree of hypotheticality and conventionality of the metaphysical picture presented.

The concretization of physical forms can be traced back to the fundamental attributes of these objects. Three such attributes have been identified so far: a) physical forms are located in formal space (of motion); b) physical forms move relative to this space (and other forms in it); c) physical forms undergo mutually dependent change (in their motion and other qualitative and quantitative parameters).

Thus, there is a concretization concerning physical forms' location, their position in space, and their spatial characteristics (including size, geometrical form, structure, etc.). There are also more specific forms of movement – not movement in the abstract but certain types of movement with further differentiation based on quantitative values and geometric shapes. Yet another line of concretization involves specific types of dependent changes in physical forms as well as specific capacities of forms to generate and undergo such changes. Let's take a closer look at these three directions of the physical forms' concretization.

First of all, one should pay attention to the peculiarity of the localization of physical forms.

(293) [*The difference of the single form from the physical form is identical to* ***the physical particle form***].

(294) [*The difference of the physical form from the single form is identical to* ***the physical form of the single form***].

The distinction between the physical particle form and the physical form of the single form may seem uncertain. But there it is. The first is a purely physical form. The second is the physical side of an object, which itself may or may not be physical.

(295) [*The difference of the physical particle form from the moving form location is identical to* ***the localized physical particle form***].

(296) [*The difference of the moving form location from the physical particle form is identical to* ***the location of the physical particle form***].

We identify a part of space (simple or complex) and an object or its parts. An object limited to a part of space is a physical particle. ***The forms of physical particles, one physical particle, another particle, each particle, some particles, other particles, all particles, the part of a particles, the part of a part of a particle***, etc., are similarly determined. All physical reality proves to be the world of particles.

(297) [*The difference of the physical particle form from the structurally simple physical form is identical to* ***the structureless particle form***].

A structureless particle has parts (in the broad, metaphysical sense of the term), which are the qualities of a particle that differ directly and only from the external conditions of its existence.

(298) [*The difference of the qualities from the structureless particle form is identical to* ***the qualities of the structureless particle***].

The qualities that can be assumed to be present in structureless particles according to modern physical concepts include position in formal space and time, forms of motion (speed, acceleration, spin), charge (electric, magnetic), etc.

Structureless particles can also be called elementary. The concept of *elementary particles* is technical and does not require justification. For historical reasons (considering the history of physics), particles with structurally simple parts can also be classified as elementary particles. So, we will designate as ***microparticles*** localized simple forms (e.g., electrons and photons) and complex forms composed of simple ones (e.g., atomic nuclei and atoms).

(299) [*The difference of the physical particle form from the structurally complex physical form is identical to* ***the structured particle form***].

The parts of a structural form exist as separate complex forms, not just as parts of a given form. These individual parts-forms, as a rule, also have a specific spatial position that is different from that of others.

(300) [*The difference of the structural parts (of the nth order) from the structured particle form is identical to* ***the structure of a particle***].

(301) [*The difference of the physical particle form from the structural part of the nth order is identical to* ***the structured particle (particle-form) part of the nth order***].

It is natural to refer to all forms more complex than the forms of elementary particles as ***macroparticles***. These are forms consisting of complex forms (according to modern physical concepts – molecules and larger forms). Macroparticles differ according to the size of the parts of space they occupy. This distinction is rather arbitrary. We can distinguish particles of the middle level – *physical bodies* (which are directly incommensurable with the Universe). There are also particles commensurate with the Universe – *cosmic bodies* (planets, stars, galaxies, meta-galaxies, and other cosmic objects).

A further concretization of the forms of physical particles involves assigning specific quantitative parameters to them, such as size, density (number of parts per unit of internal space), etc. We should also talk about the various configurations of parts within the structure of the particle. Then, of course, there are changes in forms, including dependent changes and interactions of particles (elementary particles and macroparticles).

Specific dependent changes in a particle include: ***the synthesis of a particle, the incorporation of parts of another particle into a particle, the integration of a part of a particle or parts of a particle into another particle, the disintegration of a particle, the exclusion of its parts by a particle, the exclusion of parts of a particle by another particle, a qualitative change in a particle, a qualitatively changing particle, induction of qualities of a particle into another particle, induced qualities, and the assimilation of qualities of another particle by a particle***. The same applies to particles.

Physical particle forms, which are numerically and qualitatively different, obviously produce such specific objects as aggregates of particles.

(302) [*The difference of the aggregate of forms from the physical particle forms is identical to* ***the form of the aggregate of particles***].

This difference presupposes the relative identity of forms and particles; therefore an aggregate differs from particles as an aggregate of particles (from just particles).

(303) [*The difference of the form of the aggregate of particles from the part of formal space (time) is identical to* ***the aggregate of particles' form localized in formal space (time)***].

(304) [*The difference of the aggregate of particles' form localized in formal space (time) from the mutually dependent change of forms is identical to* ***the form of the space-time system of particles***].

In other words, if we abstract particles into physical forms, we can speak of the space-time system of physical forms.

(305) [*The difference of all actual physical forms from the form of the space-time system of physical particles is identical to* ***the form of physical reality***].

In other words, actual forms in formal space constitute the form of physical reality.

(306) [*The difference of the form of the space-time system of physical particles from all actual physical forms is identical to* ***the form of the physical Universe***].

Symmetrically to what was previously stated, the space of actual physical forms is the physical Universe.

Now, let's shift our focus to movement as another line of physical forms concretization. Everything to be said here obviously concerns the motion of physical particle *forms*, there is no need to point this out each time.

We have already considered the absolute and relational movement of a form (forms), the absolute and relational displacement of a form (forms), the time of the movement of a form, the distance between forms and the change in distance, the initial state of a moving form, the trajectory (path) of movement and the direction of movement, the change in external movement, the change in the space of a form, the change in the space of other forms, and the change in the external movement of other forms. This is the ground for further concretization.

One line of concretization is realized through the shaping trajectories and forms of displacement. Another line – through defining quantitative values of movement. It is about the quantities of space and time attributed to movement.

Let's define the known types of physical (mechanical) movement. The first of them must be oscillatory movement.

(307) [*The difference of the form of physical movement (the movement of a physical particle) from the movement direction (the direction of movement from one reference point) is identical to* ***the form of oscillatory motion***].

It is clear that this formula, as well as all the others in this section of the book, refers to both the form of a physical particle and physical particles. Based on the provided metaphysical premises, one can argue that oscillatory motion is the primary and fundamental type of physical movement. This is because it is the closest to the most abstract absolute movement, which lacks a specific direction (or is the movement in all directions at once).

(308) [*The difference of the form of physical movement (the movement of a physical particle form) from the trajectory (path) of movement is identical to* ***the form of translational motion***].

The movement here has some identity with the trajectory in that the change in one is a similar change in the other. The difference between them thus takes the shape of translational motion.

(309) [*The difference of the translational motion form from the one of movement directions is identical to* ***the form of (recti)linear motion***].

(310) [*The difference of the translational motion form from some movement directions is identical to* ***the form of curvilinear motion***].

(311) [*The difference of the form of curvilinear motion of every part of a physical particle from all movement directions (in a plane) is identical to* ***the form of closed trajectory motion***].

The concept of movement in a plane is not explicitly defined, but its definability is implied, based on the concept of a plane as a part of pure space. It follows from the implementation of all directions that the movement follows a closed trajectory. This refers to any movement along a closed trajectory. If the reference points form a circle, we can speak of rotational circular movement.

(312) [*The difference of one quantitative value of displacement from equal parts of the time of movement is identical to* ***the form of uniform motion***].

(313) [*The difference of non-equal (greater or smaller) quantitative values of displacement from every succeeding part of the time of movement is identical to* ***the form of non-uniform (accelerated) motion***].

The parts of the time of motion are a sequence. Therefore, each succeeding part exists (as well as each previous one).

(314) [*The difference of the physical particle movement from different types of movement is identical to* ***the form of complex motion***].

The rationale for the formula is based on the fact that types of movement include all identified objects. The type of movement here is an intermediate entity, determined by the relationship of the parts to the whole. This makes it possible to define such an entity as different types of movement (numerically they can be perceived as a sequence).

Some additional quantitative parameters of physical movement.

(315) [*The difference of the quantitative value of the formal space part from the trajectory of movement is identical to* ***the distance passed***].

The spatial quantity associated with the trajectory of movement is the distance passed.

(316) [*The difference of the quantitative value of the formal time part from the displacement of the physical particle form is identical to* ***the time of movement***].

The temporal quantity associated with displacement is the time of movement.

(317) [*The difference of the quantitative value of equal parts of physical particle displacement from equal parts of the time of movement is identical to* ***the (average) velocity of movement***].

Velocity is determined by relating equal parts of displacement to equal parts of movement time. The difference between the first and the second provides the quantitative value of velocity. The unit of velocity is expressed directly in spatial quantities and indirectly in temporal ones, for example, as kilometres per hour. The intermediate entities, although not explicitly defined here, are evidently identifiable as equal parts of displacement and time of movement.

Physics also uses the term "instantaneous velocity". This object is real and can be defined metaphysically.

(318) [*The difference of the quantitative value of the smallest equal to others part of displacement from the smallest equal to others part of time is identical to* ***the (quantitative value of) instantaneous velocity***].

The smallest equal parts of movement and time act as intermediate entities (not defined here, but obviously definable). The existence of the smallest relative to other parts of any sequence follows from the infinite density and the unlimited divisibility of pure space. The smallest part, of course, is relative and not absolute. This means that the quantitative value of the instantaneous velocity is a sequence of quantities that can be specified infinitely. (The limit of this sequence, in the mathematical sense, does not represent a real instantaneous velocity; it is a theoretical convention).

Another aspect of physical movement frequently used in physics is vector representation, which also has its metaphysical basis. The vector of instantaneous velocity is a concretization of physical movement.

(319) [*The difference of the movement direction from the minimal displacement of a physical particle form is identical to the form of* ***the vector of instantaneous velocity***].

The same can be said of the derivative of velocity phenomena, specifically acceleration.

(320) [*The difference of the unequal (increasing or decreasing) quantitative values of the parts of displacement from equal parts of time is identical to* ***the quantitative value of acceleration***].

(321) [*The difference of the parts of displacement with unequal quantitative values from equal parts of time is identical to* ***the acceleration of a physical particle form***].

Analogous to velocity, the ***instantaneous acceleration*** and its ***vector*** are defined.

In the same way, one can define parameters of oscillatory movement.

(322) [*The difference of the quantitative value of displacement from one of directions of oscillatory movement is identical to* ***the oscillation amplitude***].

(323) [*The difference of the quantity of displacements in one direction from the equal parts of the time of motion is identical to* ***the oscillation frequency***].

The intermediate entity here is *movement in one direction*. This entity is based on the direction of movement and the possibility of different directions (the existence of a sequence of directions and one of the elements of this sequence).

One more specific type of physical (mechanical) movement is rotational.

(324) [*The difference of the physical particle form location from some parts of the physical particle form movement is identical to* ***the repetition of a moving particle location***].

One location differs from various parts of motion – this is the sense of the formula.

(325) [*The difference of the physical particle form movement from the sequence of repeating locations is identical to* ***the form of rotational motion***].

Replacing sequentially repeated locations with a sequence of unique locations singles out one rotation (revolution) of a physical particle. We can also speak, drawing from the analogy of forms with numerical entities, about the number of revolutions of a physical particle in rotational motion.

There is further concretization of rotational movement.

(326) [*The difference of the relative zero from equal distances to all locations of a moving physical particle form is identical to* ***the centre of circular rotational motion***].

(327) [*The difference of all locations of a moving physical particle form from the centre of circular rotational movement is identical to* ***the physical particle form's circular rotational motion***].

The absence of movement is also one of its concretizations.

(328) [*The difference of the physical particle form location from the changing locations is identical to* ***the unchanged location (rest)***].

(329) [*The difference of the physical particle form from the rest is identical to* ***the resting (unmoving) physical particle form***].

Rest is defined as an unchanging spatial location. It is assumed that the spatial location is specified by other forms, but their locations are not determined. Concretizations of rest will be the states of rest relative to se-

lected other physical forms. Rest is naturally relative, as the physical particle is always in absolute movement. To stop this movement, the whole world would have to stop, which contradicts the definition of movement. According to the definition, movement cannot but exist.

In addition to movement, there is a coordinated change in physical particles. These changes involve alterations in structure, composition, spatial form, and movement parameters. The mutual change of physical forms should be distinguished from their concretization. Concretization is a universal metaphysical law and is carried out with all formal objects through their differentiation. The difference is sufficient to concretize objects.

But physical particles are objects of the same level of concreteness. Their change can be their concretization, or it can be a change with the emergence of other objects that essentially coincide with them (that is, modifications of the same objects). In the latter case (which can be referred to as physical differentiation rather than metaphysical), the change occurs as a result of both differentiation and the identification of objects. Objects are identified (they are not already partially identical, as in a metaphysical distinction), and some properties of one object are transferred to another object. This leads to a coordinated change in objects.

There is a medium for this relative identification, since the objects themselves are only physically different. This medium is the form of physical space in which physical particles move. Physical particles are spatial entities, all essential properties are associated with the form of physical space (this is not, of course, all formal space). Therefore, the consistency of change is mediated by space and the position of particles within that space.

As we already know, the space of pure objects is identical to pure objects. That is why the space from the reference point of any pure object is the same (all reference points merge into one). The space of forms is created by forms but is not identical to their totality. Forms are different not only numerically but also qualitatively, including the parameters of the movement of physical particles as a quality. Therefore, a formal space of one form is not the same as another. Each physical particle has its own formal space. At the same time, the formal space of physical particles is the same, since it contains different particles.

A difference is discovered between the unified space of physical particles and the individual spaces of each particle. This difference is identical to a coordinated change in the forms of physical particles (in other words, a coordinated change realizes this difference).

(330) [*The difference of the formal space of physical particle forms from the formal space of a physical particle form is identical to* ***the coordinated change in physical particle forms***].

The change is directed towards the unification of particles (ultimately, towards their identification and complete unity of space). But this result is never achieved because formal space and the forms within it exist only through differentiation from each other. Consistent change occurs both by simplifying forms and by complicating them (since the utmost complexity coincides with the utmost simplicity), without reaching the end in either direction.

The unification (simplification and complication) of the forms of physical particles occurs through the transfer of parameters from some particles to others. Three options are implemented: a) merging the forms of particles into one; b) the emergence of new additional forms of particles that create a general similarity of particles (in some respect); c) transferring parameters (quantitative and spatial values) of movement from one particle to another. The last option can be referred to as mechanical (the first two are synthetic-analytical options).

A coordinated change in the parameters of movement of the forms of physical particles involves alterations in velocity of movement (acceleration) and direction. They can be reduced to acceleration along the line connecting the particles (positive acceleration) or acceleration in opposite directions (negative). Obviously, both are associated with the difference between the common formal space and the private formal spaces of the particles. Positive acceleration distinguishes a single space with identical particles (becoming one), while negative acceleration corresponds to a space with maximally separated particles. In the first case, one private space is embedded in another; in the second case, one private space is added to another.

(331) [*The difference of the coordinated change in physical particle forms from one form (location) is identical to* ***positively accelerated movement***].

(332) [*The difference of the coordinated change in physical particle forms from the maximum distance between the particles (locations) is identical to* ***negatively accelerated movement***].

(The maximum distance is determined by the distance and the maximum quantitative value).

What do both options depend on? Let's assume that in the first scenario, particles with private spaces of different n-order structures mutually change, parts of the space of one particle are identified with parts of the parts of

another particle's space. In the second scenario, private spaces share the same n-order structure, and parts of one space are added to parts of another. As a result, the overall space is additive, and particles scatter.

The concept of private space can be associated with the physical term "field". We will consider the terms "form of private space" and "form of physical field" as interchangeable. Private space (field) belongs to a particle; it is a medium that transmits changes in physical particles. It is not a particle; it is a specially structured part of formal space.

The field form has specific properties and spatial configuration. We can speak of the density of the field form; one can distinguish between relative and absolute density.

(333) [*The difference of the quantity of n-order parts of a physical particle form local space from the quantity of the same-order parts of the local spaces of some physical particle forms is identical to* ***the relative density of a physical particle form local space***].

In this case, a quantitative difference does not imply exceptional inequality of quantities; the relative density may well be zero (the specific value of density is not determined here in any way, only the form of density with its indefinite value is determined).

(334) [*The difference of the quantity of n-order parts of a physical particle form local space from the quantity of the same-order parts of all physical particle forms local space is identical to* ***the absolute density of a physical particle form local space***].

(335) [*The difference of a physical particle form local space from the relative density is identical to* ***the physical field form***].

The concretization of density is *the field strength*. Since the field strength changes in the field space, *the field potential* can be derived.

(336) [*The difference of the relative density of one part of the physical field form from the relative density of other parts is identical to* ***the field intensity in its part***].

The possibility of distinguishing different parts of a physical field by density is evident. The realization of this possibility is due to the fact that the form of a field is generated by the form of movement of physical particles; therefore, there must be differences in the relationship of various parts of formal space to the movement of certain physical particles.

Transmitted parameters of movement are concretized in a special reality, which is denoted by the term "energy". The difference between changing and having been changed movement is realized in the pure quantity

(one may call it «the reserve») of movement. The pure (different from its change) amount of movement attached to a particle is *the energy* of that particle.

(337) [*The difference of the change in a determining physical particle form from the physical particle form is identical to* ***the form of energy of a physical particle***].

The determining physical particle form is the result of metaphysical differing between the determining form and the physical particle form. Energy can be understood as change (in particular, spatial change – movement) separated from an object. Outside the object, it is, of course, not realized; that is, it exists as a possibility tied to the object and not as a reality. It is the ability to act, a kind of action reserve available to the object.

In physics, there is a distinction between potential and kinetic energy of moving physical particles. The first is associated with the concept of *potential* (in a broad sense).

(338) [*The difference of the field intensity in the physical particle form locality from that in another physical particle form locality is identical to* ***the particle form potential***].

(339) [*The difference of the form of energy from the particle form potential is identical to* ***the form of potential energy of a particle***].

Thus, the pure quantity (or reserve) of movement is defined as the quantitative value of a specific (and no other) physical form movement in some uncertain conditions, separated from the movement itself.

(340) [*The difference of the form of energy from the particle form movement is identical to* ***the form of kinetic energy of a particle***].

It is clear that particle movement is the reserve of change in location and in the structure and qualities of forms.

One of the fundamental physical concepts is *mass*. The mass of a particle is an energetic essence, but it is not energy itself, nor is it identical to the particle itself or even its internal space. It is something else – one of the forms of the particle that has an energy essence, but is directly related not to movement but to the particle. One could (figuratively) call mass an "energy accumulator," or the accumulative capacity of a particle. The greater the mass, the more energy the particle can absorb, and the more energy is required for the particle to change its movement significantly. Let's not forget that the amount of energy is also affected by the speed of a particle.

(341) [*The difference of the density of the internal space of a particle from the (form of) energy is identical to* ***the mass of a particle***].

Mass can be understood as an object that exists outside of change and, therefore, movement, yet it is connected to them – serving as a container for change and movement. This container preserves the amount of change and movement when the object remains stationary and does not move. It also directs change towards another object that is changing along with it.

Note that all the parameters identified in modern physics that describe physical objects (also referred to as dimensions) can be categorized into two groups. The first can be called *space-time dimensions*. These include indicators of displacement, amplitude of oscillations, speed, and acceleration. The second group may be called *energy parameters*. These are energy and all its varieties, mass, force and parameters derived from them (including, for example, momentum).

(342) [*The difference of the external local space of a particle form from the form of mass is identical to* ***the gravitational rarefaction of the local formal space***].

Mass is associated with the internal (hidden) movement within a particle. The latter changes the structure of the particle's space (internal compaction – external rarefaction). This change creates a dependent positive acceleration of other forms of particles relative to a given one (physics uses the term "gravity"), hence it is termed as "gravitational field" or "gravitational force".

(343) [*The difference of the external local space of a physical particle form from the gravitational rarefaction of the local formal space is identical to* ***the form of gravitational field***].

(344) [*The difference of the form of acceleration of a physical particle from the gravitational field is identical to* ***the form of gravitational force***].

It is obvious that the difference between acceleration and the gravitational field takes the form of gravitational force. It should, however, be remembered that we are discussing the form of acceleration, the form of a physical particle, and the form of gravitational field.

It should be added that, as is well known, there are particles without mass. In the case of massless particles, the object does not differ from change; it manifests itself only in change.

(345) [*The difference of the simple particle form from the mass form is identical to* ***the massless particle form***].

Massless particles are obviously structureless particles, since they lack internal motion.

(346) [*The difference of the particle from the particle's mass form is identical to* ***the particle with mass form***].

Particles with mass are structured particles for reasons opposite to the masslessness of structureless particles.

Gravity is not the only form of dependent change in the movement of physical particles' forms. Modern physics identifies four types of physical dependent changes (gravitational, electromagnetic, weak, and strong interactions). All of them are akin to gravity in the metaphysical sense, but have their own characteristics. However, we will not delve into a detailed characterization of these interactions, as it would overly complicate this book. Its purpose, let me remind you, is not to describe the world in extreme detail, but to demonstrate that the given system and principles of metaphysical description work.

It is also necessary to pay attention to dependent qualitative changes in the forms of physical particles. There are two types of them: firstly, the synthesis and decay of elementary particles (which we will not dwell on), and secondly, the synthesis and analysis of macro-particles. We are referring to the chemical composition of a substance (an aggregate of particles) and chemical changes. The chemical formal reality, which is part of the physical realm, embodies the qualities of the forms of physical particles, which dependably change as a result of the emergence and disintegration of the structures of these particles (that is, the combination and recombination of their parts and conditions of existence).

(347) [*The difference of the qualities of the macro-particle form from the dependent change in the parts of the form is identical to* ***the chemical qualities of the macro-particle form***].

It is obvious that chemical qualities are dependent on the structure of the form, that is, on what parts it consists of.

(348) [*The difference of the chemical qualities of a macro-particle form from the structurally simple form is identical to* ***the elementary chemical qualities of a macro-particle form***].

Chemical qualities manifest in structurally complex forms but are determined by structurally simple forms.

(349) [*The difference of the macro-particle form from its elementary chemical qualities is identical to* ***the form of a chemical element***].

Put simply, a chemical element is a set of elemental chemical properties. For this reason, each chemical element has a complex structure.

(350) [*The difference of the (structural) part of a complex form from the form of a chemical element is identical to* ***the form of the chemical compound's component***].

(351) [*The difference of the macro-particle form from the forms of chemical compound components is identical to* ***the form of a chemical compound***].

§ 7. Non-physical Forms

Physical forms are not the only way of the forms' concretization. There are forms that are not physical. The negation in this context does not refer to forms that are more abstract than physical forms, but to forms that are similar to physical ones in their level of specificity. Let's refer to them as *non-physical forms*. The difference between physical and non-physical forms lies in the concretization of the forms' structure, exactly – in the relationship of kinds, individuals and single forms. Physical forms presuppose a distinction between *the individual form* and *the single form*. There are physical forms that are numerical copies of an individual physical form. For instance, a physical particle (or body) of a certain mass and geometrical configuration is an individual form, yet it can exist in multiple copies.

The indiscernibility of the single form and the individual form is opposed to their discernibility, creating a special class of forms – non-physical.

(352) [*The difference of the single form from the individual form is identical to* ***the copy of the individual form***].

(353) [*The difference of the individual form from the copy of the individual form is identical to* ***the non-physical form***].

The non-physical forms are defined in the same way.

It means that every single non-physical form is individual and vice versa – every individual non-physical form is single.

Unlike the physical form, the non-physical form can be described as purely qualitative. This means that the numerical differences of non-physical forms coincide with qualitative differences. In other words, each individual non-physical form is qualitatively different from all other non-physical forms. It cannot be denied that there are general non-physical forms. However, individual non-physical forms are not simple instances of a generic form, differing only numerically. Individuals have qualitative differences. Let's imagine a non-physical form, for example, the political one – the state. There is, of course, a generic, general form of the state. Still, each state is not only an instance of this generic form; it is essentially determined as an individual by its qualitative originality.

As previously mentioned, the physical form can also be unique, i.e., qualitatively different from all others. The specificity of the qualitative uniqueness of

a non-physical form is that this uniqueness is necessary and not just possible. It completely determines the position of the individual non-physical form among other forms, revealing the essence of the non-physical form. The difference between physical and non-physical forms, in the long run, lies in the fact that the former is directly qualitative-quantitative, while the latter is directly qualitative.

(354) [*The difference of the single qualitative form from the individual form is identical to* ***the non-physical form representation***].

Naturally, it would be correct to say about the non-physical form representations (non-physical individuals).

Non-physical forms do not lack quantitative aspects – it is obvious – but they have them indirectly. They are embedded in physical forms as non-physical form representations and thus can be counted (the state, for example, has a geographical location and is associated with a group of people, which allows us to count states). The non-physical forms localization, which is indirect in physical formal space, simultaneously has a direct spatial representation. It is the localization of non-physical forms in the non-physical part of formal space. There is an abstract qualitative formal space, within it exists its special part – the space of non-physical forms. It is connected with formal physical space but does not coincide with it.

The principal question concerns the movement and change of non-physical forms.

(355) [*The difference of formal change (spatial movement) from a non-physical form is identical to* ***the non-physical formal change (non-physical form's movement)***].

(356) [*The difference of a non-physical form from formal change (spatial movement) is identical to* ***a changing (moving) non-physical form***].

The transformation of non-physical forms is evident. As far as movement is concerned, we need to understand that we speak of the movement of a non-physical form in formal space, moreover, precisely in that part of space that is made up of non-physical forms (thus, not directly in physical space). In physical space, non-physical forms move indirectly through their physical carriers. Thus, non-physical movement refers only to non-physical form. In this sense, it is non-physically closed. It is not movement relative to physical forms. What has been said about non-physical entities also applies to the movement of non-physical forms.

Non-physical forms can be structurally complex or simple. Their simple parts are their qualities. Their complex parts are partial forms. It is clear that the parts of non-physical forms can be of various orders.

Physical forms can be parts of non-physical forms, so their qualities become the qualities of non-physical forms. In the latter case, there may be simple (basic) forms of a non-physical form that are the qualities of certain physical forms. However, these physical forms themselves exist beyond the non-physical form. It is a kind of basis that exists before the non-physical form. Thus, non-physical forms can include the elements of qualitatively different reality. Examples can be found among physical elements of mental or social objects.

Non-physical forms are differentiated by the kinds of changes we are familiar with. There are, of course, structural changes in forms. Parts of forms can be added or lost, and sets of parts can also change. A distinction can be made between the parts that do not change the whole and the parts that transform the whole form. Then there is a change in qualities (on the abstract level – qualities as such, not specific – specific qualities emerge during concretization). The ground for it lies in the elements of a form and its external conditions. Complex qualities can change partially, while simple qualities are replaced by others. There is also the differentiation between essential and non-essential qualities. The former change the whole form, the latter do not.

There is a certain analogy between the omnipresence of physical particle forms and the presence of non-physical forms in all parts of their transformation. A non-physical form exists in all states of the sequence between its absence and its presence, but not within the same moment in time. The difference is identical to the process of becoming the form. Some states remain only possible if the process is not finished but this occurs beyond formal reality, where all forms are real.

The change of non-physical forms involves either their transformation or their repositioning within the aggregate of non-physical forms. Their transformation may be viewed as what we call 'development'. There are well-known stages of genesis, formation, and full realization. There can also be deviant development, decline, and extinction. The position of a form among other forms changes when new forms directly connected to the given one appear or disappear, or when direct connections become indirect or vice versa.

There is, naturally, a dependent change of non-physical forms. Two types of this change can be traced – direct and indirect. Direct dependent change is that which concerns mutually changing forms. It can involve the exchange of parts or the exchange of qualities. All parts and qualities of non-physical forms are exchanged, but only within formal reality (in other words, as

possibilities). Indirect change is realized through the mediation of physical forms. The change of a non-physical form leads to the alteration of its basic physical components, and vice versa. In the long run, it becomes apparent that the dependent change of physical elements of various non-physical forms affects their non-physical qualities and structural parts.

Non-physical forms create a special reality within the overall formal reality. They occupy part of the space of forms (although not the space of physical forms). This can be called a special world of non-physical forms. The world of non-physical forms is relatively separate from the physical Universe (although connected to it). It is separated by specific properties of these forms. So, we have a distinct world that exists separately, and in this (and only in this) sense, is self-sufficient.

Through physical forms, non-physical forms are included in pure object space and thus in the whole structure of the Universe. They depend on more abstract layers of reality as well as on other (physical) forms that serve as their grounding. At the same time, non-physical forms act as determinants in terms of the relationship between goals and means that emerges here (we will not dwell on this for the time being).

PART 6. MATTER

§ 1. Material Reality. Material Objects

Some strata in the structure of the Universe have been discovered so far, namely, those of primary realities, pure objects, and forms. Yet the structure of the Universe remains half-built. None of the strata found represent a complete concretization of what exists. There is a need for and a reality of a further step on this path. The difference between primary reality and pure objects leads to forms. There must be something arising from the difference between pure objects and forms.

(357) [*The difference of the object (objects) from the form of the object is identical to* ***the material object (objects)***].

(358) [*The difference of the material objects from formal reality is identical to* ***material reality (matter)***].

Why is the difference of the object from the form of the object not identical to the pure object? The former is the object that stands out from the object with form but still remains to be the object with form. It represents only the objective side of it; it is an object that has a form (just an object), not the form of an object. It is opposed to form as the bearer of form. That is to say, there is an object – a carrier of form, which we call *the material object*.

Material objects represent a special reality. They are not forms or pure objects. We can recognize these objects as part of the empirical reality directly given to us. The name of matter is therefore attributed here to a collection of informal, fully concretized entities, as well as any part of this collection. Matter is one of the principal parts of the Universe, along with pure space and the space of forms. Matter is a complete whole. At the same time, matter is discrete as it disintegrates into separate entities. One should not lose sight of the fact that in the metaphysical system under consideration, matter is not all that exists; it is one of the realities. Note also that material reality is the concretization of pure objects and forms. It includes them; it contains them within itself. But it adds something more specifically material to them and brings into existence more specific objects.

Three main principles specify matter. The first is ***the singularity of material objects***. In connection with this principle, we must revisit the formulas that define a material object, material objects, and material reality. The terms used in the formulas do not represent specific material object or objects, they are still the names of forms. We are discussing *the specific form of a material object* and *the form of material objects* (which collectively constitute material reality). To reach material reality, we need to concretize objects till absolutely specific *this* object or *these* objects. In order to speak of such objects, we need to use proper names. The set of such names lends itself to the usual quantification in modern scientific language, where variables are used to run through all the names or some of them. Thus, when speaking of material objects (and not about the forms of material objects), we will use the designations "object x," "object y," "object p," "objects X," etc.

(359) [*The difference of the form from the material object (objects) is identical to* ***the form of material object (objects)***].

(360) [*The difference of a material object from the form of material object is identical to* ***(unique actual) material object x***].

(361) [*The difference of material objects from the form of material objects is identical to* ***(unique) complex X of (actual) material objects***].

Note that in the last two formulas both differing entities are forms (the form connected to material objects and the form of material objects as pure form). But the resultant entity is not formal. It is material.

To sum it up briefly. Matter is distinguished by the uniqueness of each of its parts. Unlike more abstract realities where each part differs from the others only in its position or essence, each part of matter primarily differs in its unique existence, the uniqueness of its presence in the world. This difference between matter and more abstract realities can be called *materiality*. There is also the alternative between the potential and the actual in these circumstances. Unique non-formal objects either actually exist or they do not exist. Hence, a material object or objects are only actual (if it pertains to their possibility; they exist as forms, not as material objects).

A material object is immediately different from all other material objects, just as it is different from its own form. Therefore, such an object is absolutely specific. Correspondingly, any set of material objects is also specific. Material objects are always a set consisting of each individual object. The indeterminacy of a set of objects (objects without further distinction) is not present here. There are local collections of material objects.

Thus, matter and its parts are extremely specific entities. In matter, concretization reaches the point of individualization, that is, the existence of unique individuals present in a single copy. All the entities associated with the existence of such an individual and creating it form a unique unity. Any addition of entities to this unity, any complication, does not change the fact of the uniqueness of this unity. In this sense, the material individual is not concretized into something else, something even more individual and concrete. It follows that there is no reality more specific than matter.

Being a part of the universal structure, matter depends on pure space and the space of forms. The first determines the quantitative parameters and relationships of material entities. The second determines their forms, including forms of movement, change, and interaction. Matter, as a concretization of numerical and formal entities, is a reality that, in a sense, encompasses these entities. On the one hand, matter and its parts have quantitative, numerical properties. On the other hand, matter and its parts have formal aspects and represent the materialization of forms. It is reasonable to claim that matter represents forms and numerical entities tied to singular (individual) materiality. In this sense, matter is an extremely complete reality. Only the Universe as a whole can be considered a more complete reality than matter.

It follows from what has been said that the more abstract realities – numerical and formal – are, in some sense, incomplete. This does not mean, however, that they do not exist as relatively independent realities. Ultimately, the more abstract realities are separated from matter by their abstractness; they exist as special realities. Their existence lies in their difference. We can, therefore, speak of the coexistence of pure space, the space of forms, and matter. At the same time, all realities are interconnected; one does not exist without the others. Abstract realities depend on matter as incomplete realities. Matter, in turn, depends on abstract realities as defining matter, giving it formal, quantitative characteristics, and the very possibility of existence.

Material objects are partially grounded on pure (numerical) objects; they necessarily coexist with the latter. It is the quantitative (numerical) aspect of the existence of material objects.

(362) [*The difference of a material object from pure objects is identical to* ***the quantitative value of a material object***].

Based on this formula, there is the line of its concretizations. In this way, we can obtain *one material object, some material objects, any number of material objects, all material objects* (within a certain area), as well as *parts of material objects* of any order. Naturally, when speaking about material

objects, it is necessary to use terms such as "n objects," "all objects of n," "the set X of objects of cardinality n," "n-order subpart x of object Y," etc.

In the same way, material objects are partially grounded in forms, having forms as their organizing aspect. Thus, they acquire formal characteristics; that is, they have a qualitative aspect to their existence.

(363) [*The difference of a material object from qualitative forms is identical to* ***the quality of a material object***].

So, there is the reality of material objects' qualities, which is the same as material objects having forms (any quality may be represented as a form of an object or, conversely, any form present in a material object is its quality). When discussing material objects, it is natural to refer to *quality m of object x, group Y of qualities of object z*, and so forth.

Forms are organized into kinds and individuals, so are material objects. One can discern kind forms and individual forms in material objects.

(364) [*The difference of a material object from the kind form is identical to* ***the kind of a material object***].

(365) [*The difference of a material object from the individual form is identical to* ***the individual material object***].

Of course, there are kinds of material objects, the kind (and kinds) of kinds (genera), various individual objects within a kind or the kind represented by one individual object. All this is produced in the same manner as other metaphysical objects (which we will not formalize here) and is obviously achievable. And don't forget that when speaking about material objects, we have in mind *individual object a, kind z of object b, genus c* etc.

Let us revisit the characteristics of material objects that follow from the discussion thus far. First of all, it is the singularity of objects in material reality. Every material object (or a set of them) is singular, unique, and available in a single copy. Uniqueness is the main feature of material objects. Each material object differs from all other material objects, in addition to formal and numerical differences, first of all, as a unique entity. For this reason, a collection of material objects is not necessarily a material object. It can be just a collection of objects. Material objects (as opposed to a material object) are not immediately a special entity, but a set of objects separable from each other. Even when included in such a multitude, material objects remain singular and unique.

A form can exist in one or many copies; it is individual only relative to its kind. A material object is completely individual; it cannot exist in different ways or disintegrate into different objects (while it exists as itself). Matter is

the reality of individual objects. It should be noted that the informal individual is unique in the fullest and ultimate sense. At the same time, the form of a unique real individual can be embodied in various carriers, all of which are indistinguishable in form (one might say, determined solely by form in addition to their informal uniqueness). Designating such an individual with the symbol *x* makes this individual a representative of a set of similar individuals, and the symbol *x* becomes a variable that encompasses this set.

Accordingly, all other numerically determined concretizations (objects, some objects, every object, all objects) are derived from a single object. Many objects are many single objects. Every object is every single object. *Objects* and *the object* are not different entities here; they are the same, with the former consisting of the latter. Objects are not a special entity, but rather an object repeated many times. Of course, objects are a different entity, but only relatively, that is, in one aspect.

Material objects have a numerical, quantitative certainty. They can be counted. They also engage in more complex numerical (quantitative) relationships. Each material object corresponds to a specific element of pure space. Furthermore, every element of pure space is correlated with each material object. In this sense, a material object serves as a relative zero in pure space. With a specific relationship between a material object and an element of pure space, all other material objects obtain precise numerical values linked to well-defined elements of pure space.

Another important point is this. A material object has a form. An individual form of a material object is a combination of other individual and general forms. There are different general forms in one object, and one form in different material objects. A material object is a collection of forms. But in addition to forms, it also includes a special object (a special entity) – materiality. Or the entity of a material object as such. Individual forms, when brought to their uniqueness and complete concreteness (actuality), cease to be forms in the full sense. A stronger statement is also true: in general, unique actual individual forms are no longer forms. Going beyond formal reality is associated with the state of uniqueness.

The form can be as specific as possible within the limits of formal reality; it can be individual. But the form of a particular individual is not unique in the full sense of the word (it is unique only in the formal sense). This form allows for duplication in other entities, even informal ones. In other words, it can exist in numerically distinct entities. So, it does not exclude the existence of different entities with one individual form.

Complete uniqueness reduces existence to a single, given entity. Other entities identical to this one are excluded. On the contrary, what fully exists is one and the same entity, identical to itself. Such an entity (or entities) can no longer be called a form. In particular, it does not exist apart from its concretizations. Concretizations do not create new entities; they form more specific layers of existence within one or another informal (i.e., material) entity. The informal essence encompasses more abstract entities and forms in their ultimate concretization at the level of reality. In general, extreme concretizations compose a holistic layer of completely real entities.

Now let's turn to the kinds/individuals aspect of matter. Each material object has a *kind form*, or rather kind forms that are shared with other material objects. The kind form of a material object determines the composition and relationship of its parts. The kind form of various material objects is identical, not just similar. If a material object is the only instance of its kind, the coverage of other material objects by the kind form exists as a possibility. Each material object is associated with a hierarchy of kind forms (forms of lesser and greater generality). A change in a kind form signifies the transformation of a material object into a different form.

At the same time, there is the individual form of a material object. The *individual form* of a material object includes a set of characteristic kind forms, as well as a formal expression of its individuality – a formal individual. An individual form is different from the materiality of a material object. The individuality of an individual form is not determined by the form itself, but by its unique position among other forms, in other words, by its relationship to other forms, while the uniqueness of the materiality of an object is immediate. We can assert that an individual form is a set of kind forms concentrated in a particular place and in specific relations to other forms. What the individual form and the materiality of an object have in common is that they are uniquely linked to that object.

Unlike numerical objects, material objects do not immediately transform into others through a change in their position within the structure of reality. When a material object enters a different environment, it remains itself (unless it undergoes substantial changes due to the influence of other objects). The environment does not create a material object solely by the mere fact of this environment's existence, to the same degree that it can create a formal object (although it can alter a material object by acting upon it). To create a material object, specific changes in certain elements of the environment are necessary. These are designated by the term "cause".

Informal entities are related to forms in the same way that forms are related to pure objects. In some respects, informal entities remain forms. In the informal entity itself, there are two sides: a unique form and a bearer of a unique form. A unique form is both formal and informal; the bearer of a unique form is entirely informal. Within material reality, the two sides create an inextricable unity. They exist together at the level of actual informal (material) entities. At this level of extremely concrete reality, it is impossible to separate them. (When we see an object – a flower, a vase, a windowsill – we also perceive its unique form, which is present here). Both are separated only in relation to formal reality, which itself exists separately from material reality.

Unique entities require a change in notation. They are divided into sets and appear as elements within sets. They lose the unity of form in relation to other forms. Thus, the form of "the five individual forms" is one. Five unique entities are five entities, not one. The set of five unique entities is one, but it does not consist of the form of the entity and the number five, but directly of five entities. That is why, if constant symbols have been used in recording forms and numerical entities, then variable symbols (when referring to one of a set of entities) or proper name symbols (when referring to a specific entity) are needed to designate material objects. Variable symbols represent each entity from a specific collection. Name symbols distinguish one entity from many similar ones.

§ 2. Material Space and Time

There are special material objects that unite all other objects – material space and time. The space of pure objects is identical to pure objects. Formal space and time are created by forms and their pure form parts. Material space and time differ from material objects as a relatively independent environment. The relationship between the parts of material space and time and the material objects in them can be called "coexistence," "direct link," or "direct difference."

In search of the ground for material space, we encounter two entities already familiar to us – matter and space. Matter is all material objects, and the space available to us is formal space. The difference between them is evident and is no more than material space.

(366) [*The difference of formal space from material objects is identical to* ***(the form of) material space***].

(367) [*The difference of material objects from formal space is identical to* ***(the form of) material spatial objects***].

(368) [*The difference of (the form of) material space from all material objects is identical to* ***(material) material space***].

(369) [*The difference of (the form of) material spatial object from all material objects is identical to* ***all material spatial objects***].

Similarly, one can define ***material spatial objects X*** and ***material spatial object x***.

Material space is a concretization of formal space. The means of concretization are material objects. Material space, as follows from the formula and its explanation, remains, in a sense, a space of forms. In this space, there are forms, even if not directly. At the same time, space itself is no longer only formal, since it is not formal space itself, but the difference between formal space and material (exclusively material) objects. Material space is determined by the space of forms. It has formal characteristics. In particular, the curvature of formal space in the movement of spatial entities is transferred to material space.

Material space is also a concretization of the space of pure objects (numerical space), so it possesses numerical properties. Numerical features manifest in material space: quantity, equal or greater or lesser parts, dimensions. The finitude and infinity of material space, its finite or infinite density, follow from the potential infinity of numerical and actual finitude of formal spaces.

A numerical property of material space is its division into parts.

(370) [*The difference of material space from the part (parts) of formal space is identical to* ***the part (parts) of material space***].

Similarly, we can speak *of parts of parts, wholes of wholes, parts and wholes of the nth order of material space*.

We can generalize what has been said by asserting that all the characteristics of pure and formal space, except those that define them as purely numerical and formal realities, are transferred to material space.

(371) [*The difference of quantity n from parts* x_1, …, x_n *of material space is identical to* ***quantity n of material space***].

(372) [*The difference of parts of material space from (the same) quantity n of material space is identical to* ***equal parts of material space (of n quantity)***].

(373) [*The difference of the sequence of parts from equal parts of material space (of n quantity) is identical to* ***distance n in material space***].

Parts of material space are organized into sequences (by analogy with formal and pure spaces). All concretizations of numerical sequences are

applicable to material space, including the dimension whose instantiation is the n-dimensionality (for example, 3-dimensionality) of material space.

Material space is a material object, so the main specific feature that distinguishes it from formal and pure spaces is the same as that of all material objects – it is its uniqueness. Material space is unique as a whole and in all its parts. The parts of numerical space can be concretized in many instantiations, so can the parts of formal space. Each part of material space is one and the same; it is not realized in many ways, and it cannot be changed by another part. It would be appropriate to apply the term "the extensivity of material space" here. Both a separate part of space and a collection of parts have the attribute of uniqueness.

(374) [*The difference of a part (parts) of material space from all other parts is identical to* ***unique part x (unique parts*** x_1***, …,*** x_n***)***].

Yet the parts of material space are qualitatively indiscernible. The qualitative indistinguishability of its parts is what makes this object material space. All spaces have this attribute. To be a space means to have qualitatively indiscernible parts. When separated from other material objects, material space is completely homogeneous. This is in contrast to formal space, where qualitatively distinct forms render spatial elements only partially indiscernible. On the contrary, all parts of material space are only space. It is generally accepted that material space is isotropic: all its equal parts of the same order are qualitatively (but not numerically) identical.

(375) [*The difference of material space from material objects is identical to* ***material space with objects***].

(376) [*The difference of material objects from material space is identical to* ***material objects within material space***].

(377) [*The difference of a part of material space from a material object is identical to* ***a part of material space with an object (in it)***].

(378) [*The difference of a material object from a part of material space is identical to* ***a material object in a part of material space***].

The resulting terms in these formulas can be interpreted in a manner where material objects are externally linked to material space, contrary to forms. From the uniqueness of material space, it follows that there can only be one material object in one part of material space. Naturally, this object can serve as a structural part of another object (or other objects). For the same reason, the opposite is also true: any material object exists only and precisely in one part of material space. In fact, such an object is completely localized, unlike a formal object that is present in different parts of space.

The internal space of a formal object is directly a part of the object (and indirectly, a part of external space). The internal space of a material object is directly a part of the external unique material space and indirectly a part of the object.

(379) [*The difference of a part of material space with an object (in it) from a material object is identical to* ***the internal space of a material object***].

So, the internal space of a material object is real. In this respect, material objects have spatial dimensions and spatial forms. Material space creates the unity of a material object due to its uniqueness. All parts of a complex material object must be localized in one specific area of space. The complexity of a material object, at least a physical one, presupposes spatial connectivity. In this sense, we can say that there is structural localization of material objects.

The material object is connected to space by direct difference (formal – by indirect difference). The material object is not a part of space, but is located in space; it is present in it, one might say. Being present, an object occupies a part of space, thereby excluding the presence of other objects in this part. In doing so, an object can occupy any part (the parts are homogeneous) of material space, which, in this sense, is "transparent" to the object and "opaque" to other objects.

One key feature of material space is its separation from material objects. This allows the same material object to be associated with different parts of space. At the same time, material space is uniquely connected with material objects, which implies the association of a unique part of space with a unique object. Such a connection can be called the localization of a material object. Localization and the ability to alter it (to connect with different parts of space) make material space the environment for material objects. Material objects are in space (forms, by contrast, create space). Space both unites and separates material objects. Their positions in relation to each other are mediated by material space. We can also discuss the localization of the aggregates of material objects in material space.

It follows from the relative mutual independence of material space and objects within it that material space is something like a container for objects (while formal space is the aggregation of local spaces). In this sense, material space is absolute. A local space here is a part of the absolute one. Local position (relative to nearby objects) and its quantitative concretizations (distances to objects) are part of an object's position relative to all objects.

(380) [*The difference of a part of material space with an object (in it) from the internal space of a material object is identical to* ***the external space of a material object***].

(381) [*The difference of the external space of a material object from other material objects is identical to* ***the spatial position of a material object***].

Since material space is the concretization of formal space, it possesses characteristics of the latter, but they are secondary. A material object influences space (but does not create it), and vice versa, space influences an object. The visible manifestations of this relationship are the curvature of space and the change in size of an object depending on its position.

(382) [*The difference of the formal space change from material objects is identical to* ***(the form of) material time***].

(383) [*The difference of material objects from the formal space change is identical to* ***(the form of) material objects in time***].

(384) [*The difference of (the form of) material time from all material objects is identical to* ***material time***].

(385) [*The difference of (the form of) material object in time from all material objects is identical to* ***all material objects in time***].

Similarly, one can define ***material objects X in time*** and ***material object x in time***.

Material time (or just *time*, since formal time is not really time) is the pure variability of objects. It can also be characterized as variability separated from objects and tied to formal time (since the change in formal space is formal time). Material time is a change, but not a change of one object or a group of objects. It is a joint change, a change of an object (objects) against the background of changes occurring in other objects. If not a single object in the Universe were changing, there would be no time. But a change in any one of all objects is the time trigger, because this change is correlated with all other objects. Change arises as something general, independent of each individual object, and this is time.

Material time is not created by material objects but coexists with them. Analogous to space, material time is a concretization of formal time. However, material time is significantly different from formal time; it loses its spatial character. The uniqueness of a material object in time is manifested in the fact that it does not coexist with its other states. There is actually only one of a number of states in which change is realized. Therefore, material time is compressed into a point moving forward with the progression of formal time (or within formal time). For material objects, time is reduced to

the present, which becomes the past and into which the future transforms. Along with this, material objects change within formal time, where the past, present, and future coexist.

So, only the present material time is actual. This also implies the uniqueness of material time. Material time is unique, similar to matter as a whole. Each part of time cannot be replaced by another part. The uniqueness of material time is determined by the uniqueness of material space and the aggregate of material objects – in other words, the uniqueness of the real world.

Material time is a concretization of formal time and exists within the limits of formal time. In formal time, there are parts of material time that come before and after the actual time point. Thus, the past and future of material time are parts of formal time. In material time, on the contrary, the past and the future do not exist, but they do not exist only directly, they exist indirectly, through formal time. It is formal time that separates the present, past, and future of material time. Unlike formal time, in material time, the past and future coexist not as parts of reality (in material reality only the present is fully real), but as forms of the past and possibilities of the future.

There is a single line of formal-material time along which the point of actual material present moves. The movement of the material present is a numerical sequence of parts (moments of time). Parts of time remain parts of time, although they lose their direct material character except for the point of the actual present (but retain their indirect material character). Time is, therefore, numerical, one-dimensional, and directional. Material time is not completely isotropic, as its different parts have different existential statuses. Material time is unidirectional because the difference between a greater quantitative value (comprising all direct and indirect parts of material time) and a lesser one (of the present and the past components) is linked to the expansion of formal space-time.

The temporary nature of changes in material objects is manifested in at least two properties of change. Firstly, a temporary change has a directionality, changing in a specific direction. Secondly, this change coincides with the sequence of formal time parts, that is, it has a single direction and is irreversible.

The numerical nature of time is realized in the qualitative homogeneity of its parts and the assignment of quantitative values to time. Time, as a sequence, is a whole divided into parts. While the present has no parts, the past and the future do. Since the continuum of material time is created by the movement of a dimensionless point of the present, time is absolutely

homogeneous and is divided into parts by external factors (cycles of object changes). Besides, it can be divided into any parts and any quantity of them, the limit of time division into parts is determined by the divisibility of material objects. The division of time into parts is concretized in various durations, with its intervals being defined by equal parts of time.

(386) [*The difference of a part (parts) of a sequence from time is identical to* ***part x (parts*** x_1***, … ***x_n***) of time***].

(387) [*The difference of quantity n from equal parts of time is identical to* ***quantity n of time***].

Material time (like space) does not completely coincide with material objects, unlike the relationship between forms and formal time. Material time, like material space, is both separate from material objects and connected to them. Time is not a part of the object. Material objects exist within time. Various states of material objects are associated with separate parts of time. The connection of a material object with time is established through changes in the object and its position relative to other objects. Different states of material objects do not coexist in one local space; their coexistence is realized in a special environment through a special material object-mediator. This function of object's variability is performed by time. Variability correlates directly with various objects. The connection of a material object with time is, therefore, not symmetrical in terms of its uniqueness. An object in one state can only exist in one (current) part of time, but this part of time relates not only to one material object.

So, the difference between various objects and various states of an object (or objects) can be described as the distinction between material space and time. Or, to put it another way, the diversity of objects is mediated by material space, whereas the diversity of states is mediated by material time.

Accordingly, material time has no spatial nature; nevertheless, it is related to material space. The change in a material object belongs not only to the object itself but also to its location (spatial position). The sequence of states occurs only if an object maintains a single location (which may change relative to other objects but never becomes more than one at a time; if an object splits, there is a corresponding split in material time). Time is directly related to the change in material objects but is not identical to this change. Time acts as a mediator organizing any change within the framework of a strict numerical order represented by a sequence composed of equal, non-qualitative parts. Hence, material time, although indirectly, is always realized in specific locations.

The time of a localized material object is to be called ***local time***. Its defining characteristic is its immediate relation to change in the object. An object has only one time to be mediated by it; in other words, an object is supposed to change as a whole. Local time refers to the entire locality as one point. Hence, it is not directly different from another local time (of a material object at another spatial position). In this sense, local time is closed. That is why it is not possible to synchronize the measurement of time. To synchronize two clocks, we have to take into account the time of the signal transmission from one clock to the other. However, to measure the time of signal transmission equal to both clocks, we need to synchronize the clocks.

Every material object, which changes as a whole with its (perhaps also changing) spatial position, exists in its own local time. Thus, we have to acknowledge the multiplicity of times. A local time is located both in the inner and outer space of an object. In this sense, the full local time includes the entire material world centred on the given object. All previous locations of the object are the local past, its actual (real) location is the local present, and the rest of the world is the (potential) local future.

Which material objects have local times? It is a question of what kind of objects exhibit signs of integrity. Any material object or a system of interdependent objects is a whole in some regard. Consequently, every system of objects has its own local time. There are local times of smaller or larger extent. There are locations of local times comprising (or entering) other locations. In every complex location, the time is the same for all its elements. Any change in any objects of a system leads to a new state of the system, a process is mediated by the system's local time.

So, each material object lives simultaneously in its own time and in the times of the larger complex of objects. Correspondingly, other objects share the common local time with a given one and, from another perspective, they have their own times that differ from the local time of a given object due to their influence on this object. Since the impact (for example, a signal reaching an object) is realized after the change in its source, other local times always lag behind a given one.

It follows from what has been said that every material locality has its own local time. This implies that the material world as a whole (or the physical Universe) also has its own local time. Naturally, we should not name this time "local" because it pertains to everything that exists within the physical Universe. It is ***world time*** or ***absolute time***. Within this temporal reality, everything in the physical Universe exists and changes simultaneously. Let's

explain this (perhaps puzzling) fact. All material objects relate not only to other objects but also to the world of material objects (the physical Universe) as a whole. Every material object is a part of the Universe and this relationship of the part to the whole is direct. Every material object is directly different from the Universe, and this is essentially a matter of time. There is time which is correlated with the material world as a whole. No wonder that the world as a whole changes and has its own time (as a medium of change), while every material object is immersed in both world and local time.

(388) [*The difference of the change in formal space from the material world (matter in general) is identical to* ***the time of the world***].

The actual part of the changing world (or parts of it) in its temporal aspect is the world present.

(389) [*The difference of the parts of the change in formal space preceding the actual part from the material world is identical to* ***the past of the world***].

(390) [*The difference of the parts of the change in formal space succeeding the actual part from the material world is identical to* ***the future of the world***].

The past and future of the material world do not exist directly materially, but exist in the world of forms.

It seems that local time is based on world time. World time plays the role of a measure of local time because world (absolute) time is universal and invariable, and so are the parts of world time, which can serve as elementary units of local times. Local times can run faster or slower than world time. In accordance with this, the time of other objects either slows down or accelerates relative to the reference point of a given object.

All material objects are, at least in part, physical objects. They are characterized by spatial movement; their displacement in material space is based on their form of spatial movement. Thus, the reasons for the movement of material objects lie in the necessary movement of physical forms. The movement of physical forms transferred to material space turns out to be a spatial movement of material objects.

(391) [*The difference of the movement of physical forms from material objects is identical to* ***the movement of material (physical) objects***].

(392) [*The difference of material objects from the movement of physical forms is identical to* ***moving material (physical) objects***].

The difference between formal and material movement consists only in the uniqueness and extreme concreteness of moving material objects.

(393) [*The difference of the movement of material (physical) objects from material object x (objects X) is identical to* ***the movement of object x (objects X)***].

(394) [*The difference of material object x (objects X) from moving material (physical) objects is identical to* ***moving object x (objects X)***].

Material objects have a position in space relative to other objects. They can change this position. Such a change in position should be called relative spatial movement. This is movement in the local space of objects.

(395) [*The difference of the distance from the spatial positions of material (physical) objects a and b is identical to* ***the distance between a and b***].

(396) [*The difference of object a from the distance between a and b is identical to* ***reference point a***].

(397) [*The difference of the distance between object b and reference point a from the formal process of movement is identical to* ***the relative spatial movement of object b***].

Relative movement is mutual; it characterizes different material objects. One and the same material object can be in different movements in different systems of objects. For instance, it can be at rest in one system, moving uniformly in another, and accelerating in a third.

Similar to space and time, movement is concretized as local (relative) and world (absolute). The movement of material objects in world space and world time is ***absolute movement***.

Each material (physical) object moves not only relative to specific other objects but also relative to the world as a whole and itself in the world, which turns out to be one and the same. Therefore, the absolute movement of each material object is unique and individual (belonging only to it).

(398) [*The difference of the space of object a from other spaces of (the same) object a is identical to* ***the absolute spatial movement of object a***].

The explanation is based on the fact that absolute spatial movement is movement relative to space as a whole. Different spaces of an object are parts of space as a whole, and different parts of space are determined relative to the whole. It is assumed that material space is not a property of material objects but represents a distinct entity, different from material objects (and only relatively identical to them).

All types of movement that characterize physical forms also shape the movement of material objects. The difference between a specific form and a particular material object is manifested in a specific form of movement of that material object. Let's take oscillatory movement as an example.

(399) [*The difference of the form of oscillatory motion from material object* ***x*** *(material objects* ***X****) is identical to* ***the oscillatory motion of an object x (objects X)***].

All other forms of movement of any material object can be derived from this example. (I will not elaborate on this for the sake of brevity).

In this way, we have ***translational motion of object x (objects X), rectilinear motion of object y (objects Y), curvilinear motion of object z (objects Z)***, *rotational motion, uniform motion, and accelerated motion*. This list can be expanded by adding various concretization of forms of movement and various concrete material objects.

Spatial configurations of movement are similarly transferred to material objects. We can speak of ***trajectory l of the movement of object x (objects X), the vectors of speed and acceleration of the movement of object x (objects X) at time t,*** as well as their more complex (and more specific) derivative parameters.

In the same way, all quantitative indicators of all forms of spatial movement are transferred to material objects.

(400) [*The difference of the spatial positions of material object a from the relative (absolute) movement of material object a is identical to* ***the displacement of object a***].

(401) [*The difference of the number n of spatial parts m from the movement of material object a is identical to* ***the quantitative value n of the movement of object a***].

Then we can discuss value *n* of the distance travelled by object *x*, the amount of time object *x* is in motion, its velocity, and acceleration. The movement of material objects also involves other quantitative parameters such as the amplitude and frequency of oscillations, the number of revolutions per unit of time, and so on.

The minimum and maximum values of quantitative parameters for the movement of material objects are determined within the boundaries of what is possible for physical forms (and these boundaries are not defined). They are determined by the initial quantitative restrictions for matter, which are in the nature of a choice from a range of possibilities.

§ 3. Material Interaction

The third fundamental feature of material reality, along with the uniqueness of objects and their localization in material space and time, is direct and complete (the most concretized) interaction.

(402) [*The difference of coordinated changes in objects from material objects is identical to* ***material interaction***].

Material interaction is identical to formal coordinated change as coordinated change, but differs in its materiality (which allows us to call it *interaction*). So, interaction (instead of coordinated change) is what defines matter as a specific reality. Material objects are objects that interact directly.

We now need to specify what interaction means in contrast to the coordinated change of formal objects. There is a clear difference between change and action. First of all, unlike the dependent change of forms, the dependent change of material objects is directly related not to change, but to individuals. This means that in the case of forms, their changes depend on changes in other forms, and these changes are interconnected. In the case of material objects, dependent change is directly caused by objects that, through their changes, affect other objects. We refer to the direct connection of dependent change with changing objects as 'interaction'. Strictly speaking, change is the result of the presence of dependently changing objects; it is the outcome of their actions. The very concept of action (or interaction) expresses the direct involvement of unique material objects in dependent change.

Material interaction occurs in material space and time. Material interaction, in contrast to formal interaction, presupposes physical space and time as its environment. This implies the presence of some contact – direct or indirect – between interacting material objects. This also means that interaction always occurs in a limited part of space (albeit significant in size) within a limited time. The space of material interaction is unique; it cannot be replicated in concretizations as the space of formal interaction. Accordingly, there is a temporal localization of material interaction that covers a limited part (or parts) of the temporal sequence, unless the interaction is eternal.

The informality of interaction is characterized primarily by its uniqueness. Dependent changes during material interaction are associated with a unique set of objects and their unique localization. Moreover, they belong only to these objects as their states. That is why we can talk about the action of material objects on each other, and not about their dependent change. Material interaction can only occur between acting specific material objects.

(403) [*The difference of the dependent change of forms from unique material objects* x_1, …, x_n *is identical to* ***the unique dependent change of objects*** $\boldsymbol{x_1}$, …, $\boldsymbol{x_n}$].

(404) [*The difference of unique material objects* x_1,…x_n *from dependent changes in forms is identical to* ***dependently changing (interacting) unique objects*** $\boldsymbol{x_1}$,…$\boldsymbol{x_n}$].

(405) [*The difference of the unique dependent change in material object x from the change in material objects* y_1, …, y_n *(material object y) is identical to* ***the unique change in object x under the activity of objects*** y_1, … y_n ***(object y)***].

A unique dependent change is informal in the sense that it connects extremely specific entities. An entity is associated only with a change in a specific other one or specific other entities, and only in connection with it or with them. It is therefore reasonable to consider this as the action of some entities on others or their interaction (bearing in mind that the action and its results are reciprocal). Uniqueness presupposes, empirically speaking, the directional nature of dependent relationships. At the same time, a formally dependent change does not relate to a specific material object but to a form. It is a joint change in forms that can be represented by various concretizations. In other words, this is a connection of forms regardless of their specific embodiments. Informal dependence, on the other hand, is a connection between specific embodiments of certain forms.

As agents, material objects are distinct from action. This provides them with relative stability. A change in a material object under the influence of another material object is not identical to its instantaneous transformation into another object, in contrast to dependently changing forms.

(406) [*The difference of material object x from its unique change, dependent on the change in material objects* y_1, … y_n *(object y), is identical to* ***material object x that is stable in interaction***].

Let us remember that it is not the forms that are directly involved in material interaction, but their carriers. Since in this case it is not the formal changes themselves that are directly connected by dependence, but the actions of interacting objects, the latter must, to some extent, remain unchanged. Otherwise, there would be no interaction, but a continuous change of forms (which also cannot happen, since, strictly speaking, forms do not change, but are in a series of new forms being realized, becoming actual, which series is a formal change).

The statement above assumes the relative stability of material objects during interaction (although this does not rule out the possibility of their complete transformation). Unlike forms, which immediately change in response to a dependent change (any change in form produces a different individual form), material objects in interaction retain their stability to a certain extent. In other words, they do not change as a whole but partially.

(407) [*The difference of the nth-order parts of material objects* $x_1,\ldots x_n$ *from the interaction of material objects* $x_1,\ldots x_n$ *is identical to* ***the stable parts of the interaction of material objects*** $\boldsymbol{x_1,\ldots x_n}$].

The parts of individuals are understood not only as structural elements but also as qualities, quantities, and locations; in other words, as any entities, the totality of which is identical to a specific object.

(408) [*The difference of material object z from the unique change in material object x, dependent on the change in material objects* $y_1, \ldots y_n$ *(object y), is identical to* ***material object x, which has essentially changed in interaction***].

The empirical meaning of the formulated concept is that if object *x* changes only under the influence of object *y*, and as a result, object *z* appears, then object *z* can be considered as the outcome of the change in object *x*. Essential change involves the loss of an object's individual form, the emergence of another individual form in its place. At the same time, we can speak of the emergence of a new material object.

However, this rule is not total; not every change in material objects in interaction is essential. Only at a certain level of interaction, when a certain extent of influence of some objects on others is reached, do interacting material objects lose stability and turn into something else. The distinction from formal dependence lies in the degree of influence and the duration of impact on the fundamental transformation of material objects.

(409) [*The difference of the parts (part) of material objects* $x_1,\ldots x_n$ *that are stable in interaction from the parts of one (some) of (interacting) material objects* $x_1,\ldots x_n$ *is identical to* ***the parameters of interaction transferred between material objects*** $\boldsymbol{x_1,\ldots x_n}$].

The formula refers to the parts that belong to all interacting objects (i.e., their common parts in a certain sense) and is based on the fact that the parts of all interacting objects differ from the part or parts of one or several objects engaged in interaction. Eventually, it is a matter of parts being transferred from one object to another during the process of interaction. Specific types of such transfers are abstracted – it can involve an exchange of parts or a one-way transition, a transfer of parts with their loss by the transmitting object, or with their retention by it. Thus, in the interaction of informal objects, something is preserved as it passes from one object to another. Interaction is the transfer of parts from one material object to another. Empirically, this is expressed by the natural laws of conservation.

Interacting material objects have individual forms, as well as specific forms. The interaction of material objects is also a dependent change in their

individual forms. Such a change, in turn, takes a form that can be referred to as 'the form of interaction of material objects'. The form of interaction is common to interacting material objects and includes their individual forms or parts of their individual forms. Because of this, we can think of the transfer of the form of one material object to another material object during the process of interaction. (This transmitted form is the essence of the phenomenon which we call *information*.)

(410) [*The difference of the local space and time of material objects* $x_1,\ldots x_n$ *from the unique dependent change (interaction) of objects* $x_1,\ldots x_n$ *is identical to* ***the localization of the unique dependent change (interaction) of material objects*** $\boldsymbol{x_1,\ldots x_n}$].

The reality of the local space and time of material objects $x_1, \ldots x_n$ follows from the specificity of the objects' material space and their local time. Localization reveals the uniqueness of the interaction of material objects; we can say that localization is the concretization of uniqueness. On the one hand, the change in material objects is localized. The dependency itself is localized, which is even more significant. In other words, the dependency has a unique localization; the very dependency of material objects is located in a specific, and moreover, the only part of material space and time. In contrast to formally dependent change, material change occurs in a limited space and time. There is a reason to argue that formal dependence is non-local, while material dependence is local.

(411) [*The difference of the dependent change of material objects* $x_1,\ldots x_n$ *from the local space and time of material objects* $x_1,\ldots x_n$ *is identical to* ***the local dependent change (interaction) of material objects*** $\boldsymbol{x_1,\ldots x_n}$].

(412) [*The difference of material objects* $x_1, \ldots x_n$ *from their local dependent change is identical to* ***locally dependently changing (interacting) objects*** $\boldsymbol{x_1, \ldots x_n}$].

In material interactions, there is a distinction between the influencing object and the affected object, or between acting and undergoing action.

(413) [*The difference of the unique dependent change in material object x from the interaction of material objects x, y* $(y_1,\ldots y_n)$ *is identical to* ***the undergoing the action of object y (objects*** $\boldsymbol{(y_1,\ldots y_n)}$ ***) by an object x***].

(414) [*The difference of a material object from the object x undergoing the action of object y (objects* $(y_1,\ldots y_n)$*) is identical to* ***object x undergoing action***].

(415) [*The difference of the interaction of material objects x, y* $(y_1,\ldots y_n)$ *from the dependent change of object x is identical to* ***the action of object y (objects*** $\boldsymbol{(y_1,\ldots y_n)}$ ***) on object x***].

(416) [*The difference of the material object y (objects* $(y_1,\ldots y_n)$*) from the action on object x is identical to* ***active object y (objects*** $(y_1,\ldots y_n)$***)***].

(417) [*The difference of the action (undergoing action) of material objects* $x_1,\ldots x_n$ *from each of the interacting objects* $x_1,\ldots x_n$ *is identical to* ***the symmetrical interaction of material objects*** $x_1,\ldots x_n$].

Symmetrical interaction means that each object affects and is affected by the others in the same way.

(418) [*The difference of the action (undergoing action) from one (some) of interacting material objects* $x_1,\ldots x_n$ *is identical to* ***the asymmetric interaction of material objects*** $x_1,\ldots x_n$].

Asymmetric interaction means that only one or some objects exert an influence on others in a specific manner and are affected by them, while the others do not act (do not undergo action) the same way in relation to a given object or objects.

(419) [*The difference of the localization of material objects* $x_1,\ldots x_n$ *interaction from the space between them is identical to* ***the distant interaction of material objects*** $x_1,\ldots x_n$].

There is the presence of material space between interacting material objects during their interaction. Space (its forms) here turns out to be a mediator of interaction.

(420) [*The difference of the localization of material objects* $x_1,\ldots x_n$ *interaction from their (common) internal space is identical to* ***the contact interaction of objects*** $x_1, \ldots x_n$].

The common internal space is the space covering the internal space of objects $x_1,\ldots x_n$. In an interaction where the localization is limited to a common internal space, we can observe the contact between informal individuals interacting. In this case, one object occupies the internal space of another or directly modifies it.

(421) [*The difference of the interaction of material objects* $x_1,\ldots x_n$ *from the change in their movement is identical to* ***the dynamic interaction of material objects*** $x_1,\ldots x_n$].

(422) [*The difference of the change in the movement of material object x from the action of another object y is identical to* ***the dynamic action of object y on object x***].

(423) [*The difference of the contact interaction of objects* $x_1,\ldots x_n$ *from their dynamic interaction is identical to* ***the contact dynamic interaction of objects*** $x_1,\ldots x_n$].

(424) [*The difference of the distant interaction of material objects x1,…xn from their dynamic interaction is identical to* ***the distant dynamic interaction of objects*** x_1, … x_n].

The dynamic interaction may be contact and distant.

Distant dynamic interaction is concretized by the physical field form of material objects. Differing of this form from material objects is due to the fact that the former and the latter are both physical objects. The difference of the physical field form from physical objects is identified in ***the form of the material physical field of an object***, specifically as ***the material physical field of material object x***.

(425) [*The difference of the material physical field of material object y from the dynamic action of object y on object x is identical to* ***the physical field of object y dynamic action on object x***].

The concretization advances with a certain type of physical fields.

(426) [*The difference of the material gravitational field of object y from the dynamic action of object y on object x is identical to* ***the gravitational field of object y's dynamic action on object x***].

There is also a further concretization of dynamic interaction through the inclusion of concretizing quantitative values. Interacting material objects are partially identical to numerical entities and possess quantitative parameters. Therefore, material interaction is, in a certain aspect, a numerical structure. It has quantitative certainty. Material interaction is accompanied by a change in the underlying numerical structure of material objects and the space of their interaction. The quantitative parameters of material objects (their sizes, quantity of movement, and intensity of manifestation of certain properties) change. Quantitative parameters also characterize the interaction itself and, like form, are transmitted from one material object to another.

Another type of interaction emerges from the transformational change of forms.

(427) [*The difference of the interaction of material objects* $x_1,…x_n$ *from their transformation (change of form) is identical to* ***the transformational interaction of material objects*** $x_1,…x_n$].

(428) [*The difference of the transformation of material object x from the action of another object y is identical to* ***the transformational action of object y on object x***].

(429) [*The difference of the interaction of material objects* $x_1,…x_n$ *from their disintegration (synthesis of other objects* $y_1,…y_n$*) is identical to* ***the analytical (synthetic) interaction of material objects*** $x_1,…x_n$].

(430) [*The difference of the disintegration (synthesis) of material object x from the action of another object y is identical to* ***the analytical (synthetic) action of object y on object x***].

The transformational interactions of material objects may vary depending on the types of transformational changes that material objects undergo. The changes referred to involve alterations in geometrical forms, structures, elements, physical properties, and quantities of material objects.

The structural transformation concerns the chemical forms of material objects; therefore, one can speak of *the chemical interaction of material objects*.

(431) [*The difference of the interaction of material objects* $x_1,\ldots x_n$ *from the change in their forms of chemical compound (chemical qualities) is identical to* ***the chemical (synthetic, analytic, qualitative) interaction of material objects*** $x_1,\ldots x_n$].

(432) [*The difference of the chemical compound (chemical qualities) change of material object x from the action of another object y is identical to* ***the chemical (synthetic, analytic, qualitative) action of object y on object x***].

There is, of course, a further concretization of chemical interaction. It is realized by the differences of specific chemical qualities, elements and compounds, as well as external factors (physical conditions such as motion, radiation, temperature, state of aggregation, density etc.).

The next step in the concretization of the material objects' interaction is realized in the relationships of physical parameters. Such relationships, being stable and universal, have the status of physical laws. Physical laws are grounded in physical forms on one side and material objects' interaction forms on the other. Specific forms (or properties) based on this ground differ quantitatively, and therefore physical laws commonly have a quantitative form (can be expressed as equations). The precise quantitative relationships of the material objects' parameters within their interaction are nothing more than actualized possibilities. As such, they have additional grounding (apart from physical forms and interaction forms) that can be traced back to pure contingency or to the choice function (which, in turn, raises the question of the world subject).

Let's postulate that any physical law can be derived from formal metaphysical premises and formulated by the basic metaphysical formula. Here are some rather simple examples.

One may begin with classical mechanics, starting with Newton's laws of motion. Let's take the formula of the second law as an example. We preliminarily receive some elements (which are obviously obtained through

metaphysical differentiation from already known objects): *material physical macro-particle x, material physical force F, material acceleration A of particle x, and material mass M of particle x*. In metaphysical terms, the formula can be expressed as follows:

(433) [*The difference of the dependent change in movement of material physical macro-particle x from the action of material physical force F is identical to* ***acceleration A related to (or multiplied by) every part m of the particle x's mass M***].

Next example: Newton's Law of Universal Gravitation. Preliminary elements received include *physical macro-particles x and y, their masses M and m, the distance between particles r, the gravitational force F, and the gravitational constant G as a fixed (accidental) quantitative value*. The formula in metaphysical form is as follows:

(434) [*The difference of gravitational force F from material physical macro particles x and y is identical to* ***their masses M, m being mutually multiplied and divided by the squared distance r between the particles, and then multiplied by the fixed quantity G***].

One more example is the law of conservation of energy. Preliminary elements received include: *material energy of interacting material objects* x_1,… x_n*; material energy transferred to objects* x_1,…x_n*; material energy transferred from objects* x_1,…x_n*; the stable parts of the interaction of material objects; and the quantitative value of energy*.

(435) [*The difference of material energy from the energy of interacting material objects* x_1,…x_n *with material energy transferred to the objects* x_1,… x_n *and material energy transferred from the objects* x_1,…x_n *is identical to* ***the stable quantitative value of energy***].

It must be admitted that these formulas are rather cumbersome compared to those expressed symbolically (in mathematical/physical symbolic language). The former are surely not for practical use. Yet, they show the metaphysical sources of physical formulas and demonstrate the way of arriving at physical laws from a metaphysical perspective. Being a bit more abstract and less precise than physical formulas, they can reveal some hidden aspects of the well-known elements in the natural order's functioning.

§ 4. Physical Reality

Sometimes a distinction is made between the concept of *matter* and the concept of *physical reality* or *nature*, although sometimes they are identified.

It seems that the distinction between the material and the physical is not without significance. *Material reality* is a broader and more abstract concept. *Physical reality* is its concretization. Unlike the forms where non-physical and physical realities are two different domains, material reality does not part into two distinct domains. Physical reality is the same as material, with some specific traits added to it. The principal attributes of matter are: 1) the uniqueness and individuality of material objects; 2) their existence in space and time as separate entities; 3) their direct interaction (not just dependent changes).

Physical entities possess all material properties, but they also exhibit additional distinguishing properties. These additional properties are associated with the exclusively spatial mode of existence of physical entities. All properties, even the most complex ones, of physical entities are strictly reducible to spatial properties. More precisely, physical properties can be defined as the presence of only spatial parts (localized in material space) of material objects.

(436) [*The difference of a material object (objects) from the spatial elementary parts of an object (objects) is identical to* ***a material physical object (objects)***].

Material physical objects differ from physical forms and, at the same time, represent them. The peculiarity of material physical objects is that they have only spatial parts as their elementary components. It follows from this, firstly, that material physical objects are necessarily and fully localized in material space. Otherwise, they don't exist. Secondly, all properties of material physical objects are reduced to spatial properties. Namely, the properties of movement and position in space (absolute and relative). Moreover, material physical objects, being material objects, naturally have individual and kind forms that exist not in material but in formal space. Still, the all-encompassing material spatiality refers to the material essence of physical objects.

We can also speak of physical space as the space of material physical objects. Physical space is not extensionally different from material space. The only difference is that it is a medium specifically for physical objects. Otherwise, it is the same material space, representing the same projection of formal space onto the material world. For non-physical objects created by physical ones, physical space exists primarily as material space. In general, the concept of physical space can be disregarded without serious consequences.

The same thing that can be said about physical space can also be said about material physical interaction. It represents the interaction of material physical objects, and only because of this it acquires its name. Such a physical interaction is a material interaction in which all parameters are reduced to material-spatial ones. The interaction of material physical objects is completely quantitatively (or, more broadly, numerically) determined due to their total spatiality.

Physical objects, physical space, and physical interactions establish *material physical reality*, which we will simply call *physical reality*. Physical reality is a part of matter, or more precisely, a concretization of matter. It makes sense to separate physical reality from matter only when we contrast inorganic nature with more complex parts of matter such as life, mind, society, and human personality. Since more complex entities are concretizations of physical reality, the latter can be considered the main part of matter. When abstracting from the specified difference of material entities, physical reality coincides with matter.

Physical objects, including physical space as an object that serves as a medium for other objects, and physical interaction as a process object, are defined in a standard manner. They are the realization of the differences of material objects (as a metaphysical entity) from physical forms (as another metaphysical entity). The opposite differences to the above are realized through the physical properties of the corresponding objects (distinguishing the forms of physical objects, not the forms themselves). Standard formulas for such a distinction are: [***The difference of material object x from the form y is identical to physical object xy (an object with form y)***]; [***The difference of the form y from material object x is identical to the form y of physical object x (the form of object x, which is identical to y***].

Note that the definition of *physical objects* refers to specific objects. We are talking about a unique object x, or each of the objects x_1, x_2, x_3… When we say 'a physical object' instead of 'physical object x', it is clear that we mean the form of a physical object, and not a particular individual (or a particular representative of a group of individuals). The same applies to the form y of physical object *x*. This refers to a specific manifestation of form (referred to in metaphysics as a 'trope') – individual and unique. It exists together with a physical individual and disappears with its transformation.

But at the same time, this specific manifestation is relatively identical to the form as such (not just the individual), which exists not only in conjunction with the physical individual but also on its own (and possibly with other

individuals). It does not disappear during the transformation of the physical individual, but eternally resides in the space of forms (and therefore can once and somewhere be reproduced again in the physical world).

On the basis of a given formulaic scheme, it is possible to describe the objects of physical reality as they are now presented in the modern scientific picture of the world. (Naturally, this picture is incomplete and perhaps partially erroneous. But we do not have another, better-founded one).

In particular, the following entities are metaphysically definable:

(437) [*The difference of part x of material space from the physical form of the field is identical to* ***material physical field x***].

(438) [*The difference of material physical object x from the form of a structureless particle of matter is identical to* ***elementary particle x***].

The existence of elementary particles x_1, … x_n is also justified and determined.

(439) [*The difference of material physical object x from the existence condition of the structurally simple form of a physical individual is identical to* ***particle x conjugated with another elementary particle***].

The existence of elementary particles x_1, … x_n conjugated with other elementary particles, is also justified and determined.

(440) [*The difference of material physical object x from the form of a structured particle of matter is identical to* ***physical body x***].

The existence of physical bodies x_1, … x_n is also justified and determined.

(441) [*The difference of material physical object x from the structural part form of a physical individual (or from the structural part of the physical individual form) is identical to* ***structural part y of physical body x***].

It is obvious that all physical bodies are structural parts of one or many physical bodies.

The aggregate states of matter (collections of particles and fields) are determined in a similar way.

(442) [*The difference of all structural parts of physical macro-particle (body) x from the form of elementary particles is identical to* ***the plasma aggregate state of physical body x***].

Plasma, according to the concepts of modern physics, presupposes the presence of free electrons and other charged particles.

(443) [*The difference of the structural parts of physical macro particle (body) x from the totally moving minimal structural particles is identical to* ***the gas aggregate state of body x***].

The justification and definition of the resulting entity are obvious if we assume the existence of the entities specified in the formula. *Minimal structural bodies* – atoms, molecules. The concept of *totally moving minimal structural bodies* is an accepted additional assumption. It is not justified, but the concepts of *everything (totality), spatial movement, structural parts, and physical elementary and macro-particles* already exist in our metaphysical language.

(444) [*The difference of the structural parts of physical body x movement from the associated minimal structural macro-particles is identical to* ***the fluid aggregate state of body x***].

The additional entity accepted as a presupposition is *the associated minimal structural macro-particles* – physical bodies that have forms and are wholes (not aggregates). The concepts of *physical body, form*, and *whole* are articulated in the language of metaphysics. The *movement of structural parts* is also justified by the presence of *movement* and *structural parts* in the language of metaphysics.

(445) [*The difference of physical body x stable parts from the associated minimal structural bodies is identical to* ***the aggregate state of solid body x***].

(446) [*The difference of the form of body mass from material physical object x is identical to* ***the mass of material physical object x***].

The masses of material physical objects x_1, … x_n are determined similarly.

(447) [*The difference of the mass of material physical object x from the masses of other material physical objects is identical to* ***quantitative value n of the mass***].

The values of material physical objects x_1, … x_n masses are determined in a similar manner.

Not only is the material body mass a concretization of forms, but also other energy properties, including those that have not been specifically identified among the forms in our text (for example, electric or magnetic charge).

(448) [*The difference of the form of electric (magnetic) charge from material physical object x is identical to* ***the electric (magnetic) charge of material physical object x***].

(449) [*The difference of the charge of material physical object x from the charges of other material physical objects is identical to* ***magnitude n of the charge***].

(450) [*The difference of the form of kinetic energy from moving material physical object x is identical to* ***the kinetic energy of material physical object x***].

(451) [*The difference of the form of potential energy from material physical object x is identical to* ***the potential energy of material physical object x***].

Physical force parameters are also determined in this way.

(452) [*The difference of the quantitative change in physical form from the action of material physical object x on material physical object y is identical to* ***the force of action of material physical object x on material physical object y***].

(453) [*The difference of the force of action of material physical object x on material physical object y from other forces of action of material physical objects is identical to* ***quantitative value z of the force of action of material physical object x on material physical object y***].

(454) [*The difference of the form of attraction from the action of material physical object x on material physical object y is identical to* ***the attraction of material physical object y to material physical object x***].

(455) [*The difference of the attraction of material physical object y to material physical object x from other attractions of material physical objects is identical to* ***quantitative value z of the force of attraction***].

(456) [*The difference of the form of repulsion from the action of material physical object x on material physical object y is identical to* ***the repulsion of material physical object y from material physical object x***].

(457) [*The difference of the repulsion of material physical object y from material physical object x from other repulsions of material physical objects is identical to* ***quantitative value z of the force of repulsion***].

(458) [*The difference of the form of spatial position from material physical object x is identical to* ***the spatial position of material physical object x***].

(459) [*The difference of the material physical object x spatial position from the spatial positions of other physical objects is identical to* ***spatial position y of material physical object x***].

(460) [*The difference of the form of the state of rest from material physical object x is identical to* ***the state of rest of material physical object x***].

(461) [*The difference of the displacement of a form in formal space from material physical object x is identical to* ***the displacement of material physical object x***].

(462) [*The difference of the displacement of material physical object x from the displacements of other material physical objects is identical to* ***quantitative value y of the displacement of material physical object x***].

(463) [*The difference of the form of oscillatory motion from material physical object x is identical to* ***the oscillatory motion of material physical object x***].

(464) [*The difference of the oscillatory motion of material physical object x from the oscillatory motions of other material physical objects is identical to* ***quantitative value y of the oscillatory motion of material physical object x***].

(465) [*The difference of the form of vibration frequency from material physical object x is identical to* ***the vibration frequency of material physical object x***].

(466) [*The difference of the vibration frequency of material physical object x from the vibration frequencies of other material physical objects is identical to* ***quantitative value y of the vibration frequency of physical object x***].

(467) [*The difference of the form of vibration amplitude from material physical object x is identical to* ***the vibration amplitude of material physical object x***].

(468) [*The difference of the vibration amplitude of material physical object x from the vibration amplitudes of other material physical objects is identical to* ***quantitative value y of the vibration amplitude of material physical object x***].

(469) [*The difference of the form of rotational motion from material physical object x is identical to* ***the rotational motion of material physical object x***].

(470) [*The difference of the rotational motion of material physical object x from the rotational motions of other material physical objects is identical to* ***rotational quantitative value y of material physical object x***].

(471) [*The difference of the form of angular velocity from material physical object x is identical to* ***the angular velocity of material physical object x***].

(472) [*The difference of the angular velocity of material physical object x from the angular velocities of other material physical objects is identical to* ***angular velocity quantitative value y of a material physical object x***].

(473) [*The difference of the form of angular acceleration from material physical object x is identical to* ***the angular acceleration of material physical object x***].

(474) [*The difference of the angular acceleration of material physical object x from the angular accelerations of other material physical objects is identical to* ***quantitative value y of the angular acceleration of physical object x***].

(475) [*The difference of the form of translational motion from material physical object x is identical to* ***the translational motion of material physical object x***].

(476) [*The difference of the translational motion of material physical object x from the translational motions of other material physical objects is identical to* ***the trajectory of translational motion y of material physical object x***].

(477) [*The difference of the form of translational motion velocity from material physical object x is identical to* ***the translational motion velocity of material physical object x***].

(478) [*The difference of the translational motion velocity of material physical object x from the velocities of translational motion of other material physical objects is identical to* ***quantitative value y of the velocity of material physical object x in translational motion***].

(479) [*The difference of the form of translational motion acceleration from material physical object x is identical to* ***the translational motion acceleration of material physical object x***].

(480) [*The difference of the translational motion acceleration of material physical object x from the accelerations of translational motion of other material physical objects is identical to* ***quantitative value y of the translational motion acceleration of material physical object x***].

(481) [*The difference of the form of the direction of movement from material physical object x is identical to* ***the direction of movement of material physical object x***].

(482) [*The difference of the direction of movement of material physical object x from the directions of movement of other material physical objects is identical to* ***direction of movement y of material physical object x***].

(483) [*The difference of the form of the physical individual's relative size from material physical object x is identical to* ***the relative size of material physical object x***].

(484) [*The difference of the relative size of material physical object x from the relative sizes of other material physical objects is identical to* ***relative size y of material physical object x***].

(485) [*The difference of the form of the physical individual internal space from material physical object x is identical to* ***the spatial form of material physical object x***].

(486) [*The difference of the spatial form of material physical object x from the spatial forms of other material physical objects is identical to* ***spatial form y of material physical object x***].

(487) [*The difference of the forms of chemical elements from the parts of material physical body x is identical to* ***the chemical composition of material physical body x***].

(488) [*The difference of the form of a change in chemical compound from the action of material physical object x on material physical object y is identical to* ***the chemical change in physical object y caused by physical object x***].

(489) [*The difference of the form of chemical compound synthesis from the action of physical object x on physical object y is identical to* ***the chemical synthesis of physical object z as a result of the action of object x on object y***].

The explanation of these formulas follows the pattern outlined in the discussion of chemical forms and dependent changes in forms.

The identification of various characteristics of material physical objects and the discovery of new types of material objects can, of course, continue. However, the entities identified thus far are sufficient to formulate the principle of this activity. This principle consists in the connection of a physical form (or forms) with a material physical object x (material physical objects $x_1, \ldots x_n$). The difference between the form and the material object determines one quality or another of the object. The difference between the material object and the form determines the specific bearer of quality, which can sometimes coincide with the quality itself.

§ 5. The Natural Universe. The Limit of Reality Concretization

The physical reality known to us empirically is a unique collection of physical objects and physical space-time. This unique totality is often referred to as "the Universe." To distinguish it from the Universe in the metaphysical sense, we will use the term 'the natural Universe (or Nature)'.

The unity of the natural Universe is attributed to the fact that it is fundamentally only physical reality. On the other hand, it embraces the entire physical reality within the unique totality of its parts. Whether there are other unique physical realities remains in the realm of hypotheses. It should be kept in mind that uniqueness is not the same as universality. A unique set of entities does not exclude the existence of other unique sets, unless we are talking about the set of all entities, which can be called the world in an extremely general sense. Such a world was called "the metaphysical Universe" at the beginning of the book. In any case, various unique collections of material entities exist as possibilities. At least one of these possibilities must be the actual reality. Perhaps this is all we can say for now.

In modern concepts, the natural Universe has a structurally ordered character. Different structural levels are identifiable within it. The higher levels include the lower levels. Reality is thus concretized from the bottom up. The Universe itself is the highest concrete whole. This can be described as a distinction between the levels of existence of the physical objects that make up the Universe.

The basic level is a physical environment closely related to material space. In physics, a medium with a minimum of characteristics is called ***vacuum***.

(490) [*The difference of material space from the external space of the forms of physical particles is identical to* ***physical vacuum***].

Physical vacuum is material, but not completely identical to material space. Vacuum is material space united by a negative (and exclusive) connection with forms (and indirectly – matter) of physical particles. In other words, this is space without realized particles. Therefore, it is more precisely defined as the environment in which physical particles exist (and, in accordance with the physical concepts of our time, arise).

The next level of the natural Universe is ***the micro-world***.

(491) [*The difference of material (physical) fields and elementary particles from vacuum is identical to* ***the physical reality of the micro-world***].

The micro-world differs from vacuum in the movement and interaction of physical particles (objects with mass or charge).

Next comes ***the macro-world***.

(492) [*The difference of physical bodies (macro particles) from the reality of the micro-world is identical to* ***the physical reality of the macro-world***].

The macro-world includes objects that exhibit the characteristics of chemical matter (chemical compounds) in addition to that of movement and interaction present in the micro-world.

We can also distinguish the upper level of the natural Universe – let's call it ***the mega-world***.

(493) [*The difference of the largest physical bodies in the Universe and their aggregates from the reality of the macro-world is identical to* ***the physical reality of the mega-world***].

The objects of the mega-world or their aggregates, in addition to possessing the characteristics inherent in the objects of the macro-world, demonstrate their influence on the Universe as a whole or on its significant parts through interactions with them.

Not all levels of the structure of the natural Universe are clearly perceived by us. For example, modern physics discusses the problem of so-called dark matter and dark energy. What they are is unclear. Still, it is obvious that they fit into the metaphysical relations of differentiation of everything that exists. Simply because they exist (if, naturally, they exist).

The natural Universe is the physical world in its concreteness. It is the most concrete reality that exists. It includes all metaphysical levels of existence that have been described. Let us remember them: the primary level, numerical reality (the reality of pure objects), the reality of forms. And actually material reality. This applies to any physical object. A physical object is

something that exists. It is a pure (numerical) object. It is obviously a form (more precisely, a set of forms). Finally, it is a material object.

Material objects are, as it follows from their definition, completely individual and unique. Thus, the tendency of transitioning from the general to the individual, from the abstract to the concrete, ends with them. If the objects from all preceding spheres of reality admit the status of common entities in relation to the objects from the structurally following spheres of reality, then material objects, due to their individuality, cannot be something common to any other objects.

Material objects are extremely concrete. They represent the final stage of concretization that begins with primary reality. The concreteness of material objects is a set of features which, due to the uniqueness of the objects, cannot be an abstraction of a more specific set of features. It is true that one can imagine the concretization of a specific material object as the addition of new features to it. But the former object would not coexist with the new one as something more abstract. It would be the same object in its more complex (and in this sense may be more concrete) form. The concretization of material objects does not make them non-material; it leaves them within the sphere of material reality.

Further concretization of the existent is therefore impossible. Extreme specificity, however, does not imply the completion of the Universe's structural development, the tendency of reality to become more complex. Concretization cannot go further than material reality. But it can go beyond matter in the opposite direction, into the reality of forms. In other words, it is possible to formalize the concrete; that is, to shift the boundary of concretization into the realm of forms. Under these conditions, a concretized form may include material objects as its grounding. In this sense, such a form realizes the most complete reality. And this is what remains to be discussed in this book.

PART 7. MATTER THAT SEPARATES FORMS

§ 1. Life

As we know, all material objects are concretizations of forms. At the abstract level of material reality, formal and material objects correlate. It enables the derivation of some general formulas.

(494) [*The difference of the material object from the formal object is identical to* ***the material carrier of the form***].

(495) [*The difference of the formal object from the material object is identical to* ***the form of (belonging to) the material object***].

The form belonging to the material object is meant here, and not the form of material object, i.e. the object as a form.

(Note that these formulas are valid because their range reduces reality exactly to its elements and highlights the difference between those elements).

(496) [*The difference of the form of the material object from the change in the material carrier of the form is identical to* ***the stable form of the material object***].

(497) [*The difference of the material object's interaction with others from the stable form of the material object is identical to* ***the material object's retaining its form (during interactions)***].

The interaction of material objects is derived from what has been discussed in the previous part of the book. Its use in the last formulas opens up a new specific class of material objects – those that retain their form in a changing environment. Such objects include what we call animate as well as inanimate objects (among the latter, there are some crystalline bodies, for example).

However, there is an essential difference in the way material objects retain their form. The change in an object retaining its form can have various grounds. Sometimes, the change is directly caused by the material structure of an object. The structure itself transforms external actions into the same formal result.

There is another way of retaining a form – by having a part of an object transform external action according to the form encoded in that part of the

object. It is, one might say, the mediated change that preserves the form, or in formula writing:

(498) [*The difference of the material object's retaining its form (in the interaction with others) from the structural parts of a material object is identical to* ***the structural retention of form (by a material object)***].

(499) [*The difference of the material object's retaining its form (in interaction with others) from the form retained is identical to* ***the retention of the form mediated by the form (as a part of an object)***].

What form does the object retain? There is the form as a complex of material parts of an object – let's call it *material form* (it is the part of material reality that connects it to the realm of forms), and there is *the object's form* that belongs to formal reality; it is the formal analogue of material form.

(500) [*The difference of the material object's form from an object with form is identical to* ***the pure form of a material object***].

The pure form is consequently something different from a material object and its immediate form; still, it is the form of that very object.

(501) [*The difference of a material object from its pure form is identical to* ***the physical body of an object with a pure form***].

A physical (material) body is supposed to be an individual carrier and analogue of the pure form.

The pure form is a formal analogue not only of a material object itself but also of its relations with other objects.

(502) [*The difference of the pure form from an object interacting with other objects is identical to* ***the pure form of a material object's relations with its environment***].

The pure form of relations is obviously a part of the pure form of an object.

To summarize. The difference between the form of a material object and the material object itself exists. In any case, it can exist in the material world as a pure form, separated from the material object. It can also be called the form of a form, as it is directly different from the material form of an object, that is, the form as a composition of its material parts. The form we are discussing is immaterial, but it is connected to its material carrier – the physical body. Pure form can be described as a project or image that is represented or expressed through the physical body. An example of a developed pure form is the psychic reality of animals and humans.

(503) [*The difference of the pure form of a material object from the determinant form is identical to* ***the determinant pure form of a material object***].

(504) [*The difference of the material form of an object from the determinable form is identical to* ***the determinable material form of an object***].

This means that there is a class of material objects whose change is defined by their pure forms. In this case, the change in material object is mediated by its pure form, not realized directly by external objects' influence.

Insofar as the change in an object and its relations with other objects consists in the preservation of form, the latter becomes the anticipated result of the change or its aim. Since the physical conditions necessary for the existence of the form of an object (including pure form) are created by its interaction with other physical objects, this interaction acquires signs of purposefulness.

The relationship between ***goals*** and ***means*** concretizes the previously discussed dependent change of objects (forms and material objects). The classes of object-goals and objects-means appear when one distinguishes the result of a change as the final (implemented) and initial (anticipating the end) parts of the sequence of changes.

Thus, the aim of changing a material object and the means to achieve it appear. The aim lies in the domain of forms. It is also the starting point of changes or, in terms of material reality, the cause of changes. For the changes directed by the formal aim, we need another term – let's call it 'activity' (not just action) of the specified class of objects.

(505) [*The difference of the material object's change from retaining the determinant pure form is identical to* ***the material object's activity***].

Accordingly, material objects that exhibit the property of activity should be called 'the subjects'. Those objects that are undergoing the action of a subject or subjects should retain their name 'the object', but in a specific sense (an object of a subject).

(506) [*The difference of a material object from the material object's activity is identical to* ***a subject***].

(507) [*The difference of an object undergoing the action of a subject is identical to* ***an object of a subject***].

The term "subject" in its broadest sense refers not only to human beings but also to all material sources of activity, including living beings of all kinds as well as technical devices exhibiting features of artificial intelligence. Activity, as an attribute of a subject, allows us to speak of the subject's activity proper and its orientation towards objects opposed to the subject. So, there is a need to distinguish between subjects and objects of activity.

(508) [*The difference of an interacting object from an interacting subject is identical to* ***an object of activity***].

(509) [*The difference of an interacting subject from an interacting object is identical to* ***a subject of activity***].

The class of subjects is further narrowed down to the class of living beings. Experience suggests that living beings are those subjects that: 1) have a natural origin; 2) are oriented towards retaining their material (individual and generic) form.

(510) [*The difference of the subject from physical reality is identical to* ***the natural subject***].

It means that *only* physical reality is what a subject is directly different from. The difference from other subjects or their activities as subjects (including technical activity) may exist, but it is indirect within the range of the formula (it does not directly produce a natural subject).

(511) [*The difference of the natural subject from retaining its physical form is identical to* ***the living being (living material object)***].

The living being is, of course, a natural subject. But it adds something to the quality of the natural subject to be a physical object and to appear only in relation to other physical subjects. The defining characteristic of the living being is that it directs its activity towards the preservation of its own physical form (which is not necessary for the natural subject as such).

A single living being is evidently supplemented by ***living beings, some living beings, all living beings, another living being, and other living beings*** according to the standard metaphysical procedure.

It is metaphysically correct to distinguish in a living being both ***the form of a living being*** and ***specific material living being x*** (as well as ***group of living beings X***). The former is further concretized by the difference between ***the individual form of a living being*** (which coincides with its material form) and ***the kind form of a living being***. The latter undergoes further differentiation. There is the common generic form of all living beings and more specific kind forms proper.

(512) [*The difference of the kind form from the living being (or from all material living beings) is identical to* ***the generic form of a living being***].

(513) [*The difference of the individual form of a material object from a living being is identical to* ***the individual form of a living being***].

In the same way, ***the individual form of living being x*** is obtained.

(514) [*The difference of a single kind form from some living beings is identical to* ***the common form of some living beings***].

In material reality, we have ***the common form of living beings X*** correspondingly.

(515) [*The difference of the common form of some living beings from the generic form of a living being is identical to* ***the form of a kind of living beings***].

It goes here about an abstract kind, not a certain element of biological taxonomy. The detailed taxonomic order is the result of the more developed concretization of living beings' forms. We can also rewrite these formulas in material terms coming to ***the form of kind x of living beings, the forms of kinds x, y, z… of living beings and accordingly kind x or kinds x, y, z of living beings*** having in mind specific groups of material living beings.

(516) [*The difference of material living being x from the form of kind y of living beings is identical to* ***representative x of biological kind y***].

There is, of course, a formal analogue to this materially expressed formula.

The subject's activity is concretized in the activity of living being (living beings).

(517) [*The difference of the subject's activity from a living being is identical to* ***the activity of a living being***].

It can be further concretized as a specific kind of activity.

(518) [*The difference of retaining its physical form from a natural subject is identical to* ***the vital activity (of retaining the physical form) of a living being***].

Let us note that vital activity is associated not simply with the preservation of form (which also occurs with inanimate entities), but with the preservation of the subject's form. There are two main goals of vital activity.

(519) [*The difference of the stability of the living being's individual form from the activity of a living being is identical to* ***the retention of the individual form as a goal of activity***].

For a living being, the goal is to maintain the stability of its individual form.

(520) [*The difference of the quantitative increase in the kind form of a living being from the activity of a living being is identical to* ***the multiplication of the kind form as a goal of activity***].

Another goal of a living being is the preservation and quantitative increase of its kind.

Vital activity is what we call *life* (in a theoretical sense).

(521) [*The difference of the vital activity of a living being from the (indicated) goals of activity is identical to* ***life***].

In other words, life is defined as vital activity bound to its goals.

Life is a special domain of existence of material objects. The corresponding class of objects purposefully preserves its individual and kind forms on a material medium that is in a state of physical interaction with other material objects. This condition is observed in certain material objects that are able to maintain their forms in changing environmental conditions, exchanging matter and energy with the environment, and also reproducing material objects similar to themselves. These are the living beings known to us: bacteria, plants, and animals. The interaction of the physical body with other material objects in this case is caused by its changes, which are determined by its general form (material and pure), and not vice versa (where changes are caused by interaction), as is the case in other parts of the physical world.

Vital activity is concretized in the types of activities that must be identified as *vital functions*.

(522) [*The difference of the synthesis of a (physical) part of a living being from the disintegration of a part of another physical object (parts of objects) is identical to* ***the form of the nutritional function of a living being***].

Remember that the synthesis and decay of form were defined in Chapter 5.

(523) [*The difference of the form of a living being's part from the form of the nutritional function is identical to* ***the form of the digestive organ(s) of a living being***].

Accordingly, ***the nutritional function of living being x*** and ***digestive organs Y of living being x*** are determined.

The next function differs from the goal of preserving and increasing the kind form of the living being.

(524) [*The difference of the emergence of the form of a living being of a certain kind from the change in the forms of other living beings of the same kind is identical to* ***the form of the reproductive function of a living being***].

It means that some changes in existing living beings are necessary for a new living being of this kind to appear. The character of the change is specified by further differentiation.

(525) [*The difference of the form of a part of a living being from its reproductive function is identical to* ***the form of the reproductive organ(s)***].

Accordingly, ***the reproductive function of living being x*** and ***reproductive organs Y of living being x*** are determined.

(526) [*The difference of the preservation of the form of a living being from the form of the physical parts of a living being is identical to* ***the form of the connective function of a living being***].

We are discussing the individual components of a living being that unite into a single (physical) being. This refers to something that prevents a living being from falling apart.

(527) [*The difference of the form of a part of a living being from the form of its connecting function is identical to* ***the form of the connecting organ(s) of a living being***].

In biological terms, we speak of connective tissues, various membranes in living beings and, to some extent, the musculoskeletal system.

In the same way as before, ***the connective function of living being x*** and ***connecting organs Y of living being x*** are determined.

(528) [*The difference of the physical interaction of a living being with other objects from the form of its physical parts is identical to* ***the form of the physical contact with environment function of a living being***].

It is about the physical presence of a living being in environment. This abstract form of physical contact, apart from its nutritional and reproductive functions, manifests in the forms of living being's physical movement and its protection from unfavourable environmental conditions.

(529) [*The difference of the form of a part of a living being from its form of physical contact with the environment function is identical to* ***the form of external physical contact organ(s) of a living being***].

Speaking in biological terms, we recall the outer coverings of the body, the organs of movement in living beings, and to some extent, the musculoskeletal system.

In the same way, ***the physical contact function of living being x*** and ***physical contact organs Y of living being x*** are determined.

(530) [*The difference of the form of vital activity of a living being from the form of a part of a living being is identical to* ***the form of the governing function of a living being***].

(531) [*The difference of the form of a part of a living being from the form of its governing function is identical to* ***the form of governing organ(s) of a living being***].

We are, of course, talking about the nervous system of a living being. Including the peripheral and central nervous systems. And also about its analogues in some living beings.

The explanation is similar to that of other functions. It should follow from the explanation that the purposeful activity of a living being is necessarily connected with a certain part of the form of a living being. In other words, it exists only in the presence of this part of the form. Such a connec-

tion is empirically represented as governance and can be designated by this term in metaphysical language.

It should be noted that there are, of course, ***the governing function of living being x*** and ***governing organs Y of living being x***.

The form of the governing function differs directly from the pure form of a living being. This difference is identical to ***the form of a pure subject***. The form of a pure subject exists in a living being as its governing subsystem and at the same time exhibits signs of a special ***subjective reality*** (the separately existing form of a given subject and the form of material environment associated with it).

(532) [*The difference of the form of a living being from the forms of nutritional, reproductive, connecting, physical contact, and governing organs is identical to* ***the form of a living organism***].

Correspondingly, there are ***material organism x, material organisms Y*** etc. In the formula's representation, it is:

(533) [*The difference of (material) living being x from the form of a living organism is identical to* ***material organism x***].

(534) [*The difference of the form of a living organism from (material) living being x is identical to* ***the organism of material being x***].

Obviously, there is a distinction between a particular living being as an organism and the organism of this living being (the organism as belonging to a living being and thus detached from the latter in some way). An organism is also defined as a collection of organs that perform all the functions of a living being. Naturally, the complete set of functions of a living organism is also definable.

Living organisms known to people at the moment exist only in terrestrial conditions. They are divided into groups (taxa) according to their structure and functions.

According to some taxonomic views, the most common groups (superdomains) of *precellular* (viruses) and *cellular* organisms are distinguished. Among the cellular organisms, there are groups (empires) of *prokaryotes* (organisms whose cells do not contain nuclei – these include bacteria and some algae) and *eukaryotes* (whose cells have nuclei).

Eukaryotes are further divided into the kingdoms of *Protista, Fungi, Plants*, and *Animals*. These are followed by increasingly narrowing taxa – *phyla* (in plants – *divisions*), *classes, orders, families, genera, and species* of living beings.

The metaphysical view of living organisms, however, favours their functional distinction. Functional differences distinguish between *autotrophs* and *heterotrophs*. Autotrophs produce their organic elements from inorganic substances in the environment, while heterotrophs obtain organic elements from other organisms. Further concretization is possible based on the methods of reproduction, preservation of structural integrity, governance, and interaction with the environment of living organisms. Such concretization goes from functions to the structure of living beings, including all structural features present at the level of species characteristics. Simplifying somewhat, we can identify autotrophs with some bacteria, protists, fungi, and plants. Heterotrophs largely coincide with animals.

(535) [*The difference of the form of nutritional function from physical objects of a living being (opposed to it as a subject) is identical to* ***the form of autotrophic activity in living being***].

(536) [*The difference of a living being from the form of autotrophic activity is identical to* ***an autotroph***].

(537) [*The difference of the form of nutritional function from other living beings as objects of a living being (as a subject) is identical to* ***the form of heterotrophic activity in living being***].

(538) [*The difference of a living being from the form of heterotrophic activity is identical to* ***a heterotroph***].

From a metaphysical perspective, plants can be defined in this way (not completely, but to some extent):

(539) [*The difference of an immovable living being from autotrophic activity (concretized as photosynthetic activity) is identical to* ***a plant***].

An immovable living being is supposed to be defined preliminarily, which is certainly achievable. The definition of animals should be provided in this context.

(540) [*The difference of a movable living being from heterotrophic activity (concretized by activity of nutritional organs) is identical to* ***an animal***].

There are a variety of species of living objects, particularly plants and animals. Each species is represented by many individuals. This abundance of living material objects creates the life environment in which living beings are interconnected in various ways. On the basis of metaphysically determined biological functions and physical spatial relationships, corresponding connections among living beings emerge. In the first aspect, the existence of living beings (biological activity) is specified as their food and reproductive contacts.

The former are realized in the so-called *food chain*, while the latter are evident in the reproductive relations of plants, animals, and other creatures. Both can be expressed in metaphysical formulas, but for the sake of brevity, this will not be done here.

Next, we have the concretization of living beings' activities through their connection with the physical environment and spatial relationships with one another. The habitat of living organisms and the aggregate of organisms – both of the same species and of different biological species – united by their co-presence in the same environment are distinguished.

In biology, a local community of living beings is called a *biocenosis*; the entire habitat, together with all living beings, is called the *biosphere*.

(541) [*The difference of the local space from material living organisms is identical to* ***the habitat of living organisms***].

(542) [*The difference of the totality of material living organisms X from local space y is identical to* ***biocenosis z***].

(543) [*The difference of all material living organisms from the habitat of living organisms (concretized by the boundaries of planet Earth) is identical to* ***the biosphere***].

§ 2. Mind

The difference between *the pure form of a material object* (of *a living being as a material object*, to be precise) and *this material object* (*the living being*) undergoes further differentiation out of metaphysical necessity. There appears the sequence (or line) of pure form concretizations that lead from the domain of life to the domain of mind. These concretizations are twofold – they appear both on the side of a subject and on the side of an object. All of them frame *subjective reality* but not to the same degree. *Full-scale subjective reality* (or *a completely pure form*, one might say) emerges only at the final stage of the sequence in question.

Any living being is a subject and a material (physical) object. The immediate difference leads up to the form of a physical subject and its interaction with other physical entities.

(544) [*The difference of the pure form from the physical body of an object with the pure form is identical to* ***the pure form of a physical subject***].

It means that the pure form here is limited to the form of a physical body.

(545) [*The difference of the pure form from the physical body activity is identical to* ***the pure form of the subject's physical activity***].

The subject's physical activity involves both a subject and objects of activity that are not discerned as physical objects. Activity (not objects exclusively) is the result here because there is no difference between a subject and objects as physical entities.

The lower living beings correspond to the pure form concretizations mentioned earlier. They include all primitive beings such as bacteria, plants, and lower animals. These living beings have no subjective reality fully detached from their bodies. Their pure form is entirely the form of the body; it is opposed to the body only as a whole that fulfils the goal function. Within this incomplete subjective reality, there are no special forms of objects that interact with living beings. They merge into the form of undifferentiated physical interaction, which looks like some positive and negative influences eliciting appropriate reactions.

The concretization and complication of the pure form are achieved through the differentiation of the subject and object forms. The form of a subject is opposed to the form of an object; there appears the form of a subject as the subject of activity directed towards an object. Accordingly, the form of an object becomes the formal object of the subject's activity.

(546) [*The difference of the pure form from a subject of activity is identical to* ***the pure form of a subject of activity***].

The form of a subject parts with its material carrier (physical body), transforming into something different yet corresponding to a body, and becomes a separately existing image of a body.

(547) [*The difference of the pure form from an object of activity is identical to* ***the pure form of an object of activity***].

In the same way, the image of an object appears as the objective of the subject's activity. A subject and an object here are inextricably connected, but they are distinct from the interacting physical subject and physical object. This metaphysical distinction allows the pure form to achieve a rather full (though not complete) manifestation, which can be described as not just subjective but *psychic reality*.

Psychic reality is an attribute of higher living beings, including higher animals and humans. Thanks to the presence of the psyche, the animal is able to separate itself from the environment and relate to it. The form of the object of activity is in simple difference with the form of the subject, and this simple difference forms two aspects of the subjectivity of a living being. This is clearly realized in the psyche of animals.

The point is that the psyche of higher animals contains the pure form of the subject and the pure form of the object of activity. The animal distinguishes itself and highlights objects that are of vital importance to it. But at the same time, the animal does not single out the relationship between one and the other as something separate. Therefore, the animal does not see itself from the outside, does not evaluate itself, does not know that it is an animal, and similarly does not see or evaluate the object of activity in itself. It is attracted to certain objects, afraid of certain objects, avoids them, uses them, and acts upon them in a specific way. This objectification also applies to other animals of the same species; they are highlighted as special objects requiring special actions, but they are just objects.

(548) [*The difference of the pure form from the pure form of a subject of activity is identical to* ***the form of pure subject***].

(549) [*The difference of the pure form from the pure form of an object of activity is identical to* ***the form of pure object***].

The forms of pure subject and object differ from the pure forms of a subject and an object in that the former are completely subjective, that is, detached from their mutual connections. The pure form that coincides with the subject (as it happens in lower living beings) is an image that determines the subject's activity but is not separated from this activity. When the image is separated from activity and opposes it, consciousness arises.

(550) [*The difference of the form of pure subject from the form of pure object is identical to* ***consciousness***].

Consciousness is directly the pure subject form and indirectly the pure object form (which it thus includes as well). The specificity of consciousness lies in the separation of the subject from the object, where the subject represents consciousness itself, and the object is separated from the subject as the conscious object (the object present in consciousness). Here we have a further differentiation of the pure form, now from itself (namely from the difference between itself and the interaction of the body with other objects). The pure form is present to itself and distinguishes itself. It can be called ***the form of form*** (more precisely, ***of forms***). On the part of the subject, it is a reflection on oneself, an awareness of oneself as being aware of something.

The form of forms of any order is a form that is distinct from another form or other forms. We can say that this form is perceptible against the background of another form; it is an extractable, recognizable form. This feature allows us to associate forms of forms with the concept of consciousness. Consciousness is the discrimination of forms. In particular, the form

of one's own self (the form of the subject as a person), the forms of other selves, the forms of objects, and the forms of relationships and actions differ. One pole of consciousness is self-awareness, while the other pole is the awareness of another as another. The poles can change places. Self can become different, and another Self or even some objectivity can take the place of self-consciousness. However, they must be present for consciousness to be real. Consciousness distinguishes goal and means, subject and object, object and action, action and result as adjacent entities. Therefore, consciousness can be defined in particular as *knowledge*, i.e., as a selected and formalized juxtaposition of images.

(551) [*The difference of the form of pure object from the form of pure subject is identical to* ***the mind***].

The mind coincides with consciousness as the pure form of forms, but it differs in that it directly represents the form of object(s) and indirectly represents the form of a subject. A subject can be directly present in mind, but only as its specific object. Therefore, the mind as a subjective reality may be viewed as comprising both the mind itself (or cognitive phenomena) and consciousness.

In this sense, the mind contains the forms of pure object(s) and pure subject(s) as object(s). The form of a pure object is the image of the object as an object in itself, detached from the object as the direct aim of the subject's activity. This is the objective (intentional) side of the mind. The objective world opens up to the bearer of reason as a distinct existing objective reality outside the rational creature. In this reality, objects only relate to each other, revealing their qualities that are not directly related to the needs of rational beings. An intelligent being cognizes this objective reality, identifies various qualities and relationships of objects, and then (in some cases) finds the opportunity to utilize them as a means of indirect satisfying its primary needs. In the case of humans, this often results in an increase in the variety of needs, many of which extend beyond the purely biological.

The form of the pure subject as an object of reason is the image of the subject separated from its activity. The animal perceives itself through its impulses, drives, and fears; a human turns out to be able to distinguish him- or herself as a subject, as a distinct and separately existing entity. This can be called self-awareness or the image of one's own Self. True, this Self is still uncertain, a kind of qualityless self. In this sense, it can be characterized as *abstract self-awareness*. At the level of differentiation of realities described, we still do not have a completely human being, but a certain cognitive (and

through this active) subject; it can also be called *an abstract mind*. This part of the human psyche (let's call it ***the cognitive mind***) includes abstract self-consciousness, the image of oneself as a rational and active being, as well as objective consciousness – the knowable world of objects (in other words, the cognitive mind is identical to the simple difference between abstract self-consciousness and knowable pure objects).

Mind and consciousness are forms, but they exist in connection with material objects, for example – the bodies of living beings.

(552) [*The difference of the form of mind (consciousness) from living being x is identical to* ***the mind (consciousness) of living being x***].

(553) [*The difference of living being x from the form of mind (consciousness) is identical to* ***rational (conscious) being x***].

As material objects, rational conscious beings are individual and numerous. We may count them as material objects – *rational conscious being x, rational conscious being y*, etc. In the same way, we can quantify their minds (consciousnesses) or their forms of forms. We just have to take into account that the forms here are secondary to the material bodies; they are produced by the material bodies. Therefore, the forms are not countable as forms, but only as the forms of particular bodies. So, they are not in direct relation as forms; within one body, its mind (consciousness) is unique and not quantifiable.

The only kind of rational conscious beings known to us are humans. Everything that can be said about rational, conscious living beings can be said about humans. It is obvious that as a living being with intelligence and consciousness, a human is distinguished by self-governing activity. The mind is a separate part of one's activity, enabling self-governance to be not only real, but also a separate, formalized (what is called rational and conscious) reality.

So far, we have both material and formal subjects, material objects (with their forms), the form of pure subject, and the form of pure object. This is the basis for further differentiation. The differences between the stated entities evoke more specified entities. Generally speaking, the forms of relations between a pure subject and a pure object, as well as between a subject and a pure subject, an object and a pure object (and vice versa), differ from the forms of a pure subject and a pure object. At lower levels of existence of subjects (living beings), it is impossible to separate the relations from a subject and an object, as the subject and the object themselves are not completely separated – everything merges into one unit.

Let's first analyse the progress of concretization on the side of the subject. Its basis lies in the formal differentiation between a pure subject and a subject undergoing the action of an object (or objects).

(554) [*The difference of a subject from an object undergoing the action of another object (other objects) is identical to* ***a subject undergoing the action of an object (objects)***].

(555) [*The difference of an object acting on another object (other objects) from a subject is identical to* ***an object (objects) acting on a subject***].

(556) [*The difference of the action of one object on another from an object (objects) acting on a subject is identical to* ***the action of an object (objects) on a subject***].

(557) [*The difference of the action of an object (objects) on a subject from a subject undergoing the action of an object (objects) is identical to* ***the subject's undergoing the action of an object (objects)***].

(558) [*The difference of the pure form of a subject from the subject's undergoing the action of an object (objects) is identical to* ***the pure form of the subject's undergoing the action***].

(559) [*The difference of the pure form of a subject from the pure form of the subject's undergoing the action is identical to* ***the pure form of a subject having the pure form of the subject's undergoing the action***].

Here, a subject is differentiated from itself being effected by its objects and becomes a pure form. It is the pure form of a subject having pure form of the subject's undergoing the action. This is a special state of a subject reflecting its being affected by the object. This reflection contains two distinct aspects: a) the pure form of the object affecting the subject (note that this object may consist in the subject reflected to itself) and b) the pure form of a subject being affected, the latter is different from the pure form of a subject itself creating the new reality of a subject in its relation to an object interacting with it – apart from such a relation, apart from being affected and apart from an object (or objects) affecting the subject. It is a qualitatively unique state of a subject.

Such a state of a subject is nothing but an emotion (emotional state). ***Emotion*** is a state of the subject that corresponds to the significance of the action of objects on it (including oneself as an object), but separated from these significances – a kind of self-significance of the subject, pure significance. This is a pure state of the subject, that is, a state detached from objects but (directly or indirectly) associated with them (it is important to note that every object acts on the subject, even those that are amenable to the action of the subject).

The emotional state is further concretized into individual emotions (joy, anger, fear, curiosity, pleasure, sadness, amusement – we will not analyze them for the sake of brevity). It should be done in the same way as everything else in the metaphysical system. Note that we are discussing conscious emotions, not the instincts of animals, where everything is intertwined – forms and matter, subjects and objects.

Another line of distinction has to do with the activity of a subject and not with the actions of objects. There is a formal distinction between the pure subject and the subject of activity (action on the object), as well as between the subject of activity and its activity. Besides, there is a distinction between the process of activity and the result of activity, as well as a distinction between the process and the result in themselves, and the process and the result in relation to the subject (i.e., as a goal and as a means).

(560) [*The difference of the pure form from a subject of activity is identical to* ***the pure form of a subject of activity***].

(561) [*The difference of the pure form from an object of activity is identical to* ***the pure form of an object of activity***].

(562) [*The difference of the pure form of an object of activity from the form of a goal is identical to* ***an object(s) as a goal***].

(563) [*The difference of the pure form of an object of activity from the form of means is identical to* ***an object(s) as a means to achieve a goal***].

(564) [*The difference of the pure form of a subject of activity from an object(s) as the means of achieving a goal is identical to* ***the pure form of a subject using the means to achieve a goal***].

(565) [*The difference of the pure form of a subject of activity from an object(s) as the goal is identical to* ***the pure form of a subject achieving a goal***].

(566) [*The difference of the pure form of a subject of activity from the pure form of a subject using the means to achieve a goal is identical to* ***the pure form of a subject having the pure form of a subject using the means to achieve a goal***].

(567) [*The difference of the pure form of a subject of activity from the pure form of a subject achieving a goal is identical to* ***the pure form of a subject having the pure form of a subject achieving a goal***].

The same can be said here as it has been said about emotions – a subject is differentiated from its activity. This is a twofold differentiation – from the activity of a) using the means and b) achieving the goal. The specific state of a subject arises here – these are the pure forms reflecting the subject's

relations to means and goals. In particular, it is the pure form of a subject that is distinct from its activity, means, and goals (the form of a subject exclusively – without its real activity, but connected with it). It is just a form of having goals and means in mind (not exact goals and means); that is, the form of a subject ready to use the means or to achieve some goals.

In reality, there is a distinction between the goal of activity and the subject having a goal, between the subject having a goal, and the subjective orientation towards the goal (state of the goal orientation as a specific entity). The latter is what we call ***desire*** (we can further distinguish between *desire as an emotion* and *desire as an intention*, but we will not delve further).

The distinction between the means (process) of activity and the subject possessing the means (being in the process) of activity also leads to well-known empirically psychic states. There is a more specific distinction between the subject possessing the means of activity and the subjective state of possessing the means of activity. The latter is ***volition*** (***volitional impulse***). This can also be further divided into *volition as readiness for action* (determination) and ***will*** *as self-compulsion to action*, and we will not delve any further into this.

Taken together, these phenomena indicate ***the volitional sphere***. It is closely connected with the emotional sphere and characterizes ***a conscious, intelligent being***. Note that the forms of emotion and will are specific and have a material individuality associated with particular material conscious and intelligent beings, while still remaining forms.

Let's now analyse the progress of concretization on the object's side. The pure object form is also differentiated, showing more and more specific objects existing for a rational subject's mind. There are differences between objects in themselves and objects in the presence of a subject (one might say – objects for the subject). These differences are formalized as distinctions between sensory and intellectual cognitive phenomena.

(568) [*The difference of pure objects from pure subject states is identical to* ***sensory objects***].

Within this formula, it goes about the direct difference of pure objects from a pure subject (indirectly, they differ here from other objects).

For a subject, objects differ directly from the subject, or more accurately, from its states. Therefore, they are associated with these states, included in the subject's states. Yet, they are not the states of a subject; they are objects.

(569) [*The difference of pure objects from other pure objects is identical to* ***intellectual objects***].

There is also a direct difference between pure objects (which indirectly differ from the subject states).

Objects themselves differ directly from other objects; further, these differences differ from the subject (that is, objects differ indirectly). For a rational being, objects exist as forms of purely objective qualities and parts.

Sensory objects share common qualities with the states of a subject. They differ from different qualitative states of subjects, and that is why they differ from each other (this does not imply that the distinctions among sensory objects are illusory). The forms of sensory objects can be referred to as ***sensory images***. Sensory images are the forms of the forms of material objects, they carry within themselves the forms of objects designed in the forms of the subject's states. That is why they are real. They are not illusory images or mere reflections, but truly existing forms within material objects. They are exactly the forms realized in the material represented by the elements of a subject. Among sensible objects, the qualities (or parts) of material and sensory objects are distinguishable. Material objects consist of sets of qualities that form their integrity.

The sensory states of the subject are called modalities of sensory perception. Let us note again that these forms of forms are identical for the subject and objects (the forms of objects are different from the forms of the subject, but the forms of forms built on their basis are the same). These forms of forms exist on the side of the subject (directly different from the subject and indirectly from the objects).

(570) [*The difference of sensory objects from subject states is identical to* ***the elementary sensual objects (sensations)***].

The direct difference between sensory forms of forms gives rise to sensations. The variety of modalities they exhibit, and even more – of images (specific sensations), is due to the heterogeneity of the subject's structure, upon which the heterogeneity of the forms of objects is superimposed.

The forms of forms of the next order are the forms formed from direct sensory forms. They can be called ***gestalts***, which are holistic images based on entities already known to us – *the wholes* and *sensory objects*. Holistic images that differ from the forms of objects are to be called ***perceptions***.

(571) [*The difference of the whole sensory objects from the forms of material objects is identical to* ***perceptions (perceptive objects)***].

Holistic images that differ exclusively from other gestalts (and not directly from real objects) are denoted by the terms *fantasy* and *imagination*.

(572) [*The difference of the whole sensory objects from the other whole sensory objects is identical to* ***imaginations (imaginative objects)***].

The wider difference of pure objects from others creates a distinct class of objects – *abstract objects*. Abstract objects are forms that exist within material objects and beyond them. These are the complexes of qualities without their materiality. They are not directly connected with the subject's states, but they directly connect various material and formal objects.

(573) [*The difference of the forms of pure objects (in the subject's mind) from other forms of pure objects is identical to* ***abstract objects (in the mind)***].

(574) [*The difference of abstract objects (in the mind) from formal objects (in formal and material reality) is identical to* ***abstract representations of formal and material reality in the mind***].

Kind forms are abstract objects; individual forms are also abstract objects when they are presented as collections of kind forms. Abstract objects are distinguished as general and particular entities, such as things, qualities, relations, changes, processes, facts, and states of affairs.

Directly related to the mind are objects that contain pure forms and are presented to the subject as sensory objects. Such objects are called ***signs*** (or *symbols*). A sign is a sensory object that is identical in form to a quality or part of another object (*target*). Sign images in aggregates point to the desired objects, so images of abstractions can have different degrees of concreteness. In other words, they can be concretized, and thus a model of reality that approaches the true one arises.

(575) [*The difference of sensory objects in the mind from the forms of pure objects (in formal and material reality) is identical to* ***the signs of pure objects***].

(576) [*The difference of the signs of pure objects from abstract objects is identical to* ***the signs of abstract objects***].

One might naturally add to these signified abstract objects, *sign aggregates*, and *signified parts of reality*.

There are states of a subject that are directly different from the images of abstract objects (i.e., forms in the mind). These are concepts, symbols, and elements of schemes. Their form and content can be distinguished. All of these, especially concepts, are abstract objects linked to the sign form (as expressed by the following formula).

(577) [*The difference of an abstract object from a sign of an abstract object is identical to* ***a notion (a concept)***].

Connections of elementary images' representations are distinguished as direct or mediated by other images. There are complex abstract images such as thoughts, judgments, schemes, classifications, complex symbols. Complex images of the following orders include inferences, texts, theories. In particular, traditional logic distinguishes between judgments and inferences.

(578) [*The difference of the dependence of abstract objects in the form of notions from a sign is identical to* ***a judgment***].

(579) [*The difference of the dependence of abstract objects in the form of judgments from a sign is identical to* ***an inference***].

(580) [*The difference of the abstract representations of formal and material reality in the mind from the sequence of objects is identical to* ***the process of thinking***].

(581) [*The difference of the process of thinking from rational being x is identical to* ***the thinking of rational being x***].

The process of connecting abstract symbolic images and arranging them in sequence is called *thinking*. The content of mental actions includes the transition from uncertainty to certainty, solving problems (finding the unknown), and anticipating the future. We will not define them through formulas here. The form of the subject thinking and solving intellectual problems can be referred to as ***intellect*** or ***intelligence*** (so a rational creature possesses intelligence).

A rational being is an individual. But there are many rational beings. The mind of some individuals exists for others through its materialization. Material carriers of abstract images transmit the forms of objects; these transmitted forms are *information*. This is its definition.

(582) [*The difference of a form of an object from the (same) form of other objects is identical to* ***information (as a transmitted form)***].

Information, as a formal object, is concretized in *the information unit* and in its movement or *transmission* (information as a process). There is, of course, information interaction between intelligent beings, that is, an exchange of information. Such an exchange, in essence, involves the distribution of pure object forms between minds.

The exchange of information is ***the communication*** among intelligent beings. There are three stages of communication: information encoding, reception/transmission, and decoding. These stages can be represented by the corresponding metaphysical formulas. Encoding is based on the difference between the subjective and objective existence of the mind (in intellectual and sensory form). This is about the distinction between internal

signs (images) and material signs. In the Peircean tradition, material signs are typically categorized as iconic, indexical, and symbolic. Signs and meanings are also distinguished. The transmission of information is associated with the movement of material signs. Decoding is the process opposite of encoding; it involves the transition of signs from an objective to a subjective state. Communication requires *sign systems*, which, in turn, distinguish subsystems of *semantics*, *syntax*, and *pragmatics*. Sign systems are the languages of intelligent beings. The process of communication as a whole and its participants, the communicants, also differ (all this can be expressed in metaphysical formulas, but this possibility is omitted here).

§ 3. Society

Rational beings are naturally the subjects of activity. Their activity paves the way for their concretization as social beings. The first stage concerns the appearance of specific rational beings' activity. The ground of differentiation contains already existing entities: *activity, rational being, goal*, and *means*.

(583) [*The difference of the goal (means) from the rational being activity is identical to* ***the goal (means) of activity***].

It should be clear that the goal of activity is a form and this form is associated with changes (changes as a completed process – in this sense of the term) in both the subject and object as a consequence of their interaction. The pure form of change represents the image of the goal, while the material form is the achieved goal.

(584) [*The difference of the rational being's activity from the goal of activity is identical to* ***the goal-oriented activity***].

(585) [*The difference of the goal-oriented activity from the living beings is identical to* ***practice***].

(586) [*The difference of the living being (beings) from the goal-oriented activity is identical to* ***the subject of practice***].

(587) [*The difference of practice from activity of (some) rational beings is identical to* ***cooperative practice***].

We can speak of changing the same forms by different intelligent beings. One can add this condition into the formula by adding the terms "change in an aggregate of forms" or "change in a complex form" to the term 'practice'. However, if one considers this condition, the formula can remain as presented. The same principle applies to changes in material objects – to ***the material cooperative practice of intelligent beings*** $x_1, \ldots x_n$.

Then there is a structure of cooperative practice. First, there are the subjects of it.

(588) [*The difference of the subjects of practice from cooperative practice is identical to* ***the subjects of cooperative practice***].

Apart from this, there are objects of cooperative practice that are divided into several elements.

(589) [*The difference of the objects of activity from cooperative practice is identical to* ***the objects of cooperative practice***].

(590) [*The difference of an object of cooperative practice from the goal of cooperative practice is identical to* ***the product of cooperative practice***].

Here, we are dealing with formal or material objects; both types can be identified as products of cooperative practice.

(591) [*The difference of changing objects from the object of cooperative practice is identical to* ***the means of cooperative practice***].

A further difference in the means of practice is also important; the means are, in a way, stratified into several objective elements of practice.

(592) [*The difference of the object of cooperative practice from the product is identical to* ***the object being processed***].

It is obvious that an object which is a product but is not yet a product in the full sense, as it is not yet accomplished, is an object undergoing processing.

(593) [*The difference of the cooperative practice objects from the object being processed is identical to* ***the tools of cooperative practice***].

Similarly, objects engaged in cooperative practice, but not being processed, and hence not being the objects having been processed (i.e. products), are nothing more than tools.

Cooperative practice presupposes a separation of functions that results in the emergence of organizational forms in rational conscious beings, namely humans.

(594) [*The difference of cooperative practice from the parts of the practice goal (or the parts of practice product) is identical to* ***the (partial) functions of cooperative practice***].

(595) [*The difference of functions from cooperative practice is identical to* ***the division of functions (among the participants in cooperative practice)***].

The division of functions can be understood as the performance of each function (leading to a part of the changes) by all rational beings or by a part of rational beings, as the performance of several functions by a part of rational beings, as the performance of a separate function by each rational being,

etc. The provided entity does not highlight these potential options, but they can be easily identified through its concretization (which is not included here). The same can be said about *the cooperation in material cooperative practice Z of intelligent beings* $x_1, \ldots x_n$.

(596) [*The difference of rational beings from the (partial) functions of cooperative practice is identical to* ***co-operators (co-workers) acting as executors of functions***].

(597) [*The difference of executors of functions from their functions is identical to* ***the social organization***].

(598) [*The difference of all rational (human) beings from cooperative practice is identical to* ***(human) society***].

Human beings, united by cooperative practices, form society. This does not imply that all humans are engaged in the same cooperative practice; rather, it signifies that cooperative practices, in general, are what unite all human beings.

(599) [*The difference of cooperative practice from all rational (human) beings is identical to* ***the social production process***].

The term 'social production process' should be understood as the production of society (making society real), not as the manufacturing of goods in society.

(600) [*The difference of aggregate X of material rational beings from material cooperative practice Y is identical* ***to (material) society Z***].

(601) [*The difference of material rational being x from a part (element) of society Y is identical to* ***member x of society Y***].

(602) [*The difference of material rational beings* $x_1. \ldots x_n$ *from society Y is identical to* ***members*** $x_1 \ldots x_n$ ***of society Y***].

(603) [*The difference of the (form of) goal from the social production process is identical to* ***the goal of social production***].

(604) [*The difference of a part of cooperative practice from the goal of social production is identical to* ***a social function***].

Social functions are parts of the social production process that serve to achieve the most significant social goals. It is possible to concretize the functions by emphasizing the main ones and more specific ones. The implementation of the main functions divides society into spheres of its existence. The division into social spheres forms the most general (and most abstract) structure of society.

(605) [*The difference of a part of the members of society (some members of society) from a social function is identical to* ***a social institution***].

Since the essence of society includes the performance of social functions (society is based on the interaction of rational beings and their activities in which specific functions are performed), then a part of the members of society may be associated with the performance of a particular function. This is obvious.

There is no empirical doubt that society exists in the physical environment, usually referred to as 'nature'. Thus, the hierarchy of social spheres begins with the differentiation of society and material reality in a broader sense.

(606) [*The difference of material objects from the social production process is identical to* ***the material conditions of society existence***].

Material conditions directly define the fundamental sphere of social reality – ***technological***.

(607) [*The difference of the cooperative practice (realized by members of society) from the material conditions of society existence is identical to* ***the objects' transformation by the subjects (of cooperative practice)***].

(608) [*The difference of the objects' transformation by the subjects (of cooperative practice) from cooperative practice (implementation of social functions as a whole) is identical to* ***technological activity***].

(609) [*The difference of technological activity from society X is identical to* ***the technological function of society X***].

(610) [*The difference of social institutions from the technological function implementation is identical to* ***the technological institutions of society***].

In material reality, of course, we are talking about ***technological institutions Y (or technological institution y) of society X***.

(611) [*The difference of the technological function (implementation) from social institutions is identical to* ***the technological sphere of society (or the technological process)***].

In material reality, we speak of ***the technological sphere of society X, societies X, Y***, etc.

The transformation of objects by subjects can be called *technological activity*, and the subjects who change objects are *workers*. Workers and technological activities constitute the technological sphere of the social production process. At a surface level, it is important to note that social production is a technical process. Hence, the external aspect of production pertains to the technological sphere. Delving beyond this external aspect, we encounter other spheres of social production.

Technological activity includes objective elements; they consist of objects used in it, which are concretizations of the objects of cooperative practice

(objects processed, tools, products). They also consist of technological processes (or, in general, the technological process).

(612) [*The difference of the processed object from technological activity is identical to* ***the processed technological object***].

(613) [*The difference of (material) tools from technological activity is identical to* ***the (material) tools of technological activity***].

(614) [*The difference of the product from technological activity is identical to* ***the product of technological activity***].

(615) [*The difference of technological activity from the processed technological object is identical to* ***technological impact on the processed object***].

(616) [*The difference of technological activity from the (material) tools of technological activity is identical to* ***the implementation of (material) tools in technological activity***].

Technological activity contain subjective elements. They consist of subjects and their parts. The subjects of technological activity are concretized in two directions, which one may call internal and external. The first is identified as the technological skills of an individual worker. The second is represented by different groups of workers. There is also the subjective aspect of technological activity as a process.

(617) [*The difference of the subjects of activity from technological activity is identical to* ***workers***].

(Workers here are understood as everybody engaged in technological activities – not as a specific professional or social group).

(618) [*The difference of technological activity from workers is identical to* ***work***].

(619) [*The difference of a worker from the physical changes in objects is identical* ***to a physical subject of work***].

(620) [*The difference of a worker from the mind's activity is identical to* ***a mental (cognitive) subject of work***].

(621) [*The difference of work from the physical changes in objects is identical to* ***physical work***].

(622) [*The difference of work from the mind's activity is identical to* ***mental (intellectual) work***].

The institutes (and corresponding organizations) in the technological sphere are units that produce objects (both material and formal) needed by society. They unite subjective and objective elements of technological activity

(623) [*The difference of a worker from the objects of technological activity is identical to* ***the individual producer***].

(624) [*The difference of the workers of cooperative technological activity from the objects of technological activity is identical to* ***the collective producer (the enterprise)***].

(It goes without saying that the terms "cooperative technological activity" and "the workers of such activity" are supposed to be definable).

Similarly, some presuppositions (which are considered obviously true) are needed for the following formulas:

(625) [*The difference of all producers from the products of one kind form is identical to* ***a branch of economy***].

(626) [*The difference of all producers from some (limited) space is identical to* ***the regional economy***].

The concretizations of the last formula include ***the economy of a province, national economy, and world economy***.

The objects' transformation by subjects demands joining subjects and objects. Subjects (rational human beings) are surely the active side of this process. This is the ground for the next social sphere – ***economical***. First of all, there is the direct differentiation of joining subjects with objects and the objects' transformation by subjects.

(627) [*The difference of cooperative practice (realized by society members) from the objects' transformation by subjects (of cooperative practice) is identical to* ***the joining of objects and subjects (of cooperative practice)***].

(628) [*The difference of joining objects and subjects (of cooperative practice) from cooperative practice (implementation of social functions) is identical to* ***economic activity***].

(629) [*The difference of economic activity from society X is identical to* ***the economic function of society X***].

(630) [*The difference of social institutions from the economic function (implementation) is identical to* ***the economic institutions of society***].

In material reality, we should speak of ***economic institutions Y (or economic institution y) of society X***.

(631) [*The difference of the economic function (implementation) from social institutions is identical to* ***the economic sphere of society (or the economic process)***].

In material reality, this is about ***the economic sphere of society X, societies X, Y***, etc.

Let's recap briefly. In order to change objects, you need to connect subjects to them. We will refer to the connection of subjects with objects as economic activity, and the subjects connecting with objects as economic

subjects. Economic entities and economic activities constitute the economic sphere of social production. The economic sphere creates conditions for technical activity, that is, for the existence of the technological sphere.

Economic activity includes objective elements. They consist of objects being joined with subjects. These objects are differentiated by the way of joining – the latter gives them their economic status. Objective aspects of economic activity also encompass economic processes that can be reduced to two: the *acquisition* and *alienation* of objects.

(632) [*The difference of a subject's economic activity from the joining of an object with a subject is identical to* ***the acquisition of an object by a subject***].

Joining is here the result of activity; acquiring, accordingly, is this part of activity that distinguishes activity from its result.

(633) [*The difference of a subject's economic activity from the joining of an object with another subject is identical to* ***the alienation of an object by a subject***].

(634) [*The difference of an object being acquired from the joining of an object with a subject is identical to* ***an object becoming economic value***].

The revelation of value distinguishes acquisition from (any) joining an object with a subject. An object is acquired by a subject when it can be used and, generally, when it is of value to the subject. Value is manifested in the appropriation of an object. However, the act of appropriation only reveals the value; it is not identical to the object becoming valuable.

(635) [*The difference of the joining of an object with a subject from an object becoming economic value is identical to* ***the exchange of economic values***].

The connection of an object with a subject occurs in the form of acquisition and alienation of the object. Depending on the economic value of an object, its acquisition and alienation constitute an exchange. It is fundamentally important that the very identification of the economic value of an object is carried out through its comparison with another object, that is, it involves exchange.

(636) [*The difference of the joining of an object with a subject from an exchange of economic values is identical to* ***the accumulation of economic values***].

Accumulation occurs as a result of exchange (in the sense given to the term) which is the main economic activity.

Now there are economic objects-substances analogues to economic processes.

(637) [*The difference of an object from the acquisition of an object by a subject is identical to* ***an object being acquired by a subject***].

In the same way, we may obtain *an object being alienated*, *an economically valuable object, an object of exchange, or the objects of accumulation* (which, in aggregate, are called ***wealth***).

Economic activity includes subjective elements as well. They consist of economic subjects of various kinds. The subjects of economic activity are concretized according to their specific relationships with objects. The ground for this concretization is the same as for objects – the two processes of joining objects with subjects – acquisition and alienation.

(638) [*The difference of the subjects of activity from economic activity is identical to* ***economic subjects***].

(639) [*The difference of economic subjects from the acquisition of objects by subjects is identical to* ***subjects acquiring objects***].

(640) [*The difference of economic subjects from the alienation of objects by subjects is identical to* ***subjects alienating objects***].

(641) [*The difference of the joining of objects with subjects from the acquisition of objects by subjects is identical to* ***the subjects' application of objects***].

This refers to the connection of a subject with an object without acquisition and alienation.

(642) [*The difference of the joining of objects with subjects from the subjects' application of objects is identical to* ***the subjects' disposal of objects***].

(643) [*The difference of the joining of objects with subjects from the subjects' disposal of objects is identical to* ***subjects' ownership of objects***].

Correspondingly, there are subjects of economic objects' application, subjects of disposal, and subjects of ownership.

The institutions (and corresponding organizations) of the economic sphere are the subjects, both individual and collective, engaging in economic activity. This activity involves the acquisition and alienation of economic objects, their use, disposal, and ownership, as well as the exchange and accumulation of economic values. Economic institutions also integrate subjective and objective elements of technological activity.

(644) [*The difference of a member of society from economic activity is identical to* ***the individual economic subject***].

(645) [*The difference of the workers of an enterprise from economic activity is identical to* ***the enterprise as an economic subject***].

(646) [*The difference of the branch of economy from economic activity is identical to* ***the economic sphere of the branch of economy***].

(647) [*The difference of the regional economy from economic activity is identical to* ***the regional economic sphere***].

The concretizations of the last formula include ***the economic sphere of a province, the national economic sphere***, and ***the world economic sphere***.

In order to connect subjects with objects in a social way and to change objects, it is necessary for the subjects themselves to change. Joint change of subjects is a social (organizational, management) activity, and subjects changing together with other subjects can be referred to as subjects of social organization. Managing social activities and the subjects of social organization constitute the sphere of ***social management***. The sphere of social management creates conditions for the economic and technological spheres.

(648) [*The difference of cooperative practice (realized by the members of society) from the joining of objects and subjects is identical to* ***the subjects' mutual transformation***].

(649) [*The difference of the subjects' mutual transformation from cooperative practice (implementation of social functions) is identical to* ***managerial and organizational activity***].

(650) [*The difference of managerial and organizational activity from society X is identical to* ***the managerial and organizational function of society X***].

(651) [*The difference of social institutions from the managerial and organizational function (implementation) is identical to* ***the managerial and organizational institutions of society***].

In material reality, it is proper to speak of ***managerial and organizational institutions Y (or managerial and organizational institution y) of society X***.

(652) [*The difference of the managerial and organizational function (implementation) from social institutions is identical to* ***the managerial and organizational sphere of society (or the managerial and organizational process)***].

In material reality, there is ***the managerial and organizational sphere of society X, societies X, Y***, etc.

If the economy mediates technological activity, that is, the acquisition or alienation of objects is a condition for working with them or consuming them, then social organization mediates the economy by establishing conditions for the acquisition and alienation of objects by subjects. Such conditions involve coordinating the actions of different subjects. This is the content of the process of social organization.

Both sides of organizational activity are subjects, but this does not exclude a subject-object relationship. In every organizational situation, there

are positions of the subject and the object of social management (organization). The ground for this should be found in two types of managerial and organizational activity. Coordination of any subjects' activity has two sides: coordinating the actions of other subjects with the actions of a given one (*leadership*) and coordinating the actions of a given subject with others (*subordination*).

(653) [*The difference of the change in a subject from the change in another subject that changes together with the given one is identical to* ***leadership***].

(654) [*The difference of a subject from leadership is identical to* ***the leading subject***].

(655) [*The difference of the change in a subject that changes together with another from the change in another subject is identical to* ***subordination***].

(656) [*The difference of a subject from subordination is identical to* ***the subordinate subject***].

The objects of leadership-subordination (if we concretize the subjects playing the role of objects) are changes in subjects that can be observed through their actions. Otherwise, this can be called "regulated forms of behaviour or social activity." Patterns of such behaviour have the nature of instructions or norms.

(657) [*The difference of the form of the subject's action on the object from the subject's change is identical to* ***the technical norm of behaviour***].

Technical norms show how objects of activity (including subjects as objects) should and should not be treated. These include professional instructions, household customs, traffic rules, etiquette, rules of communication, guidelines for handling various objects and living beings, etc.

(658) [*The difference of the form of the subject's action on the subject from the change in the subject is identical to* ***the legal norm***].

The law regulates the actions of subjects aimed at subjects, that is, conscious actions aimed at persons who are conscious and autonomous in their decisions and actions.

(659) [*The difference of the form of subject-subject relation from the change in the subject is identical to* ***the moral norm***].

We need the form of subject-subject relation here, but for the sake of consistency, it will be introduced in the next chapter. Note that relation is a broader entity than action; it includes action. Moral norms directly regulate a person's relationship with himself/herself and other people and indirectly his/her actions.

The implementation of leadership-subordination objects is a series of social management and organizational processes. Processes are distinguished by the forces that carry them out, in other words, by the subjects.

(660) [*The difference of leadership and subordination from (any) activity of the subjects of social production process is identical to* ***following custom***].

(661) [*The difference of leadership and subordination from the activity of the leading subject (leading subjects) is identical to* ***the exercise of power***].

(662) [*The difference of leadership and subordination from the activity of a (any) member of society is identical to* ***authoritative leadership***].

By the subjects of leadership and subordination, we mean both individual and collective subjects. Since the processes of leadership and subordination create a social organization, they are always carried out within the framework of group subjects. Fundamental to the sphere of social management are groups of individual subjects united by common activities, norms of behaviour, relationships, customs, and structures of power and authority. Such ordered groups of people are referred to as social institutions.

(663) [*The difference of the subjects of social organization (leadership and subordination) from following customs is identical to* ***the traditional social institution***].

(664) [*The difference of the subjects of social organization (leadership and subordination) from the exercise of power within the limits of technical norms of behaviour is identical to* ***the administrative public institution***].

(665) [*The difference of the subjects of social organization (leadership and subordination) from the exercise of power and authority within the framework of common (for all members of society) legal norms is identical to* ***a political public institution***].

The state is a concretization of a political public institution.

Social institutions realize themselves procedurally, manifest themselves in the processes of management and organization.

(666) [T*he difference of leadership and subordination from a traditional public institution is identical to* ***direct management***].

Immediacy means direct contact of subjects – leaders and subordinates – and also the fact that management is not mediated by objectives that are alien to the subjects; what is organized is that which relates to the way of life of people.

(667) [*The difference of leadership and subordination from an administrative public institution is identical to* ***administrative management***].

(668) [*The difference of leadership and subordination from a political public institution is identical to* ***political management***].

In historical societies, political governance typically involves establishing legal order within local communities through the use of force and employing public, ideological forms of power addressed to everyone's consciousness.

For any social activity, subjects must join each other as subjects perceiving each other as subjects. This perception is achieved thanks to culture, which produces patterns of values and personal meanings, and consequently, standards of subjectivity. The connection of subjects with subjects as subjects is the basis of any subjective activity. Therefore, ***the sphere of culture*** creates the conditions for all other spheres of social production.

(669) [*The difference of cooperative practice (realized by society members) from the subjects' mutual transformation is identical to* ***the subjects' joining as subjects***].

(670) [*The difference of the subjects' joining as subjects from cooperative practice (implementation of social functions) is identical to* ***cultural activity***].

(671) [*The difference of cultural activity from society X is identical to* ***the cultural function of society X***].

(672) [*The difference of social institutions from the cultural function (implementation) is identical to* ***the cultural institutions of society***].

In material reality, there are ***cultural institutions Y (or cultural institution y) of society X***.

(673) [*The difference of the cultural function (implementation) from social institutions is identical to* ***the cultural sphere of society (or the cultural process)***].

In material reality, we have ***the cultural sphere of society X***, as well as ***societies X, Y,*** and so forth.

Ultimately, in order for subjects to change together, they must relate to each other as subjects, connect as subjects or connect subjectively, see each other as subjects. We will refer to the connection of subjects with other subjects as *subjects' cultural activity* (the formation of a common culture), and the subjects connecting as subjects – *subjects of culture*. Cultural activities and cultural subjects together constitute the sphere of culture. Culture turns out to be a precondition for all other spheres of social production.

In the cultural sphere, two opposing processes are empirically clearly distinguished – *culture creation* and *culture reception (perception)*.

(674) [*The difference of the subject's joining another subject (to oneself) from the subjects' joining as subjects is identical to* ***culture creation***].

(675) [*The difference of the subject from culture creation is identical to* ***the subject of culture creation***].

(676) [*The difference of the subject's joining to another subject from the subjects' joining as subjects is identical to* ***cultural reception***].

(677) [*The difference of the subject from cultural reception is identical to* ***the subject of cultural reception***].

Culture focuses on the human being as a subject. The subject, however, manifests itself through objects. In the cultural process, objects are both created and perceived. Since culture is the production of human beings as subjects of subjective relations, objects are the components of human subjectivity. They have material manifestations and an immaterial, some might say spiritual essence.

(678) [*The difference of the form of an object from the product of cultural activity is identical to* ***the cultural form***].

(679) [*The difference of the form of an object from the personality (a human subject) is identical to* ***the subjective sense***].

Personality will be defined later.

(680) [*The difference of the form of an object from subject-subject relations is identical to* ***the absolute cultural value***].

Subject-subject relations are also to be defined, along with values.

In the formulas defining the objective elements of cultural activity, the first part (different from the second) pertained to the created and perceived form, while the second part related to the outcome of activity (as an aspect of activity). By inverting this relationship, by placing activity in the first position and the created form in the second, we obtain the object processes of cultural creation and cultural reception.

(681) [*The difference of cultural activity from the subjective form of an object is identical to* ***the implementation of the cultural form***].

(682) [*The difference of cultural activity from personality is identical to* ***the implementation of subjective sense***].

(683) [*The difference of cultural activity from personal relationships is identical to* ***the implementation of absolute cultural values***].

Subjects in the cultural sphere can be both individuals and groups of individuals, social organizations, or cultural institutions. However, it should be borne in mind that both cultural creation and the reception of cultural forms are ultimately the work of individuals. ***Cultural institutions***, such as communities of artists and scientists, museums, libraries, and educational institutions, primarily serve to transmit created cultural forms from the

creators to the public and facilitate the conditions for the work and communication of both.

(684) [*The difference of the subject from the implementation of cultural forms is identical to* ***the cultural individuality***].

The individual originality of forms distinguishes the subject's presence in them from the process of their self-implementation. In other words, the cultural individuality of the subject determines the choice of forms of the objects he/she creates.

(685) [*The difference of the subject from the realization of subjective senses is identical to* ***cultural personality***].

The personality of the creator is expressed through the cultural objects they create and their forms, while the personality of the recipient is expressed through their ability to assimilate and interpret these objects and forms. It is no longer the originality of forms, but the originality of the subject who creates and perceives them that is realized at this level of culture.

(686) [*The difference of the subject from the implementation of absolute cultural values is identical to* ***cultural personal relations***].

The subject of culture can be unified with absolute values that are realized in personal relations. The individual subject is nothing more than a facet of subjective relations and, consequently, a component of the embodiment of absolute values within them. Cultural personal relations manifest themselves as the subjective aspect of implementing absolute values. The depth of the subject, the source of culture, turns out to be, one might say, dialogical.

The subjects of cultural creation and cultural reception manifest themselves in the corresponding processes. They are defined by formulas similar to the previous ones. By doing so, we achieve ***the realization of cultural individuality, the manifestation of cultural personality, the establishment of cultural personal relations***.

§ 4. Personality

Society is formed by rational conscious beings, but these social elements are not sufficient for a fully developed society. They have to become humans – that is, more specific entities. The specificity of human beings, which enables them to form society, is achieved only when rational conscious beings acquire the form of personality.

Human, as a special being superior to animals, is, from a metaphysical point of view, a further and deeper distinction between form and matter.

The first takes the form of consciousness – a mental image of oneself, other people, and the world around us; the second is a specific, individual body of a given person. The metaphysical basis for the emergence of humans is the objects that form a living being: *the subject; the living being; the pure form; the form of a subject form; the form of an object of activity;* and *the physical body of the object having these forms*.

Metaphysical (in other words, not formal, but existential) differentiation of the listed objects (where it occurs in physical reality) forms a new essence – ***human***. A human being is a biological object – a living being, whose form, however, undergoes significant changes.

Let's take a step back and remember that the *mind* and *consciousness* are *the forms of forms* implemented into a living being. These formal objects arising on the ground of matter are concretized in specific pure forms – *the pure form of object* (objects) and *the pure form of subject* (the form of the abstract Self as the source of activity). A living being with consciousness and mind is distinguished by self-governing activity. Consciousness and mind represent a separate part of a living being's activity, which renders self-governance not just real but also a distinct, formalized (what is called *conscious*) reality. Such a living being is distinguished from others as a conscious and thinking living being. At the same time, we are still looking into abstract consciousness and reason.

At the described level of reality differentiation, we do not yet have a complete human being, but a *cognitive* (and through this, active) *subject*. This part of the human psyche (let's call it ***the cognitive conscious mind***) includes abstract self-consciousness, the image of oneself as a rational and active being, as well as objective consciousness or mind – the knowable world of objects. In other words, the cognitive conscious mind is characterized by the simple difference between abstract self-consciousness and knowable pure objects.

The situation described above is not the end of the differentiation between form and matter. The higher, integral level of the human being's structure represents a further distinction between matter and form. This further distinction constitutes *the forms of forms of the second order* (or *forms of forms of forms*).

(687) [*The difference of the form of a pure object from the form of a pure subject is identical to* ***the form of an object as a subject or the form of another subject***].

(688) [*The difference of the form of a pure subject from the form of a pure object is identical to* ***the form of the subject as an object or the form of self-consciousness***].

(689) [*The difference of the form of self-consciousness from the form of another subject is identical to* ***the form of the subject of subject-subject relations or the form of personality***].

Note that the form of *the subject of subject-subject relations*, or *the form of (human) personality*, contains not only personal self-awareness, but also other forms of subjectivity that are in distinct relationships with other subjects of activity.

(690) [*The difference of the form of another subject from the form of self-consciousness is identical to* ***the form of another personality***].

The form of an object as a subject is the form of an object that is at the same time a subject. This is the form of another subject. For humans, unlike animals, other people exist as different subjects. Only a person treats other people as subjects – this is the specificity of a person. It is only for a human being that the great secret of another subjectivity is revealed. It is exclusively for a person that another person is another *I*, is exactly the same subject as the given person.

Since subjectivity, one's own Self, is the closest reality to a person, one might say her/his intimate reality, the attitude towards another person as a subject gives a special, intimate character to human relationships in general, a quality that does not exist anywhere else in the world known to us.

The form of a subject as an object is the form of a subject that is an object for another subject. This is an image of one's own Self from the point of view of other people, and at the same time, from one's own point of view, taken from outside, from the point of view of oneself as another, as an observer external to oneself. It should be borne in mind that this image does not belong to other subjects but to the given subject (in terms of metaphysics, it directly coexists not with other subjects but with the given one). To put it more simply, this is how a person sees herself/himself, taking the point of view of other people or reflecting, contemplating oneself. The image of oneself is acquired by a person and becomes the basis of her/his self-awareness, self-esteem, attitude towards other people, behaviour and practical activities. This form of the subject can be called ***the form of personal*** (no longer abstract) ***self-awareness***.

The personality of a human being has an integral character. It includes, in addition to the actual form of personality (the subject of subject-subject rela-

tions), the cognitive subject – abstract self-consciousness and forms of pure objects, forms of the subject and objects of activity, and finally, a material, biological substrate – the human body and its objective (material) actions. Under these conditions, the form of personality becomes the highest level of personality structure, subordinating other levels.

(691) [*The difference of the form of personality from the cognitive conscious mind and the physical body of a living being (human) is identical to* ***the dominant part of the human being***].

(692) [*The difference of the cognitive conscious mind and the physical body of a living being (human) from the form of personality is identical to* ***the subordinate parts of the human being***].

The composition of a human personality also includes forms of other personalities – those individuals with whom (directly or indirectly) this personality is in subject-subject relationships. Other personalities perceived by this one play a special, determining, and constitutive role in the existence of any human personality. Only when surrounded by other personalities does a person become a person in the full sense of the word. This circumstance makes the existence of society as a society of humans possible and necessary.

The foregoing gives grounds to assert that the form of a completely human Self is created by a relation to other Selves. In relation to other Selves, it is revealed that the subject of this relationship is also the Self; moreover, it is not another, but given to oneself directly, one's own Self. The Self is realized as a form of the form of oneself, the form of oneself as a form among other similar forms (and not just a form or image of oneself, as opposed to images of non-self, which are also present in animals). Thus, the form of the subject of activity, which includes not only personal self-awareness but also other forms of subjectivity located in selected relations with other subjects of activity, should be called *the form of the subject of subject-subject relations or the form of (human) personality*.

Human personality or the personal level of the structure of a human being, encompasses all forms of subject-subject relationships. Personality exists directly as a simple difference in the forms of other subjects, the form of a given subject as an object, and the subject of subjective relations, as well as the forms of the subject relations themselves (which can be seen as the forms of the third order). At the centre of these relations is the subject, the human personal Self. ***The personal form or the form of personality is the essence of a human being***. The personal form, together with its material (physical and biological) carrier, constitutes ***a distinct human personality***.

(693) [*The difference of the form of a person from (material) living being x is identical to* ***person x***].

So, the essence of a human should be identified with the subject of personal (subject-subject) relations. When choosing a metaphysical definition of a human being, it is advisable to focus on this: ***a human being is a form of personality realized on the biological carrier which is a certain species of animal.***

Personality is the highest integral quality of an individual. This is the human essence in its full manifestation. This is a type of superstructure above the lower levels of human organization. A person is a pyramid of structural levels and ways of existence, with the personality at its apex. The lowest level is, of course, a *biophysical individual*, a living being with its vital needs. The intermediate level (if you do not delve into more detailed structuring, which is quite possible) is a *cognitive subject*, a thinking and emotional being with corresponding informational needs. *Personality* integrates all levels of human existence, which means that there is no personality without a biophysical individual and a cognitive subject. If there is a personality, then lower levels of existence are presupposed; they are part of the personality. At the same time, the lower level provides the possibility of existence to the higher one.

The entire hierarchy is subordinate to the personal level. In this sense, a human being in its entirety is a person. And each level is potentially personal and, therefore, truly human. Personality encompasses all the aspects inherent to an individual, organized in a hierarchical order.

Let's fix the following scheme of human personality:

Integral level – personal level, the highest: *the form of the subject of subjective relations (the form of personality) – the form of another subject*.

The level of mediating subjectivity – the cognitive level, the intermediary level: *the form of a pure subject – the form of a pure object.*

The level of material carrier of personality – the physical level, the lowest (it does not mean – the worse, rather the basic, without which there are no others and in which others are embodied): *the form of the physical subject (body form) – the form of the direct (physical, sensory) object of activity*.

Personality is a concretization of the subject and, as such, it is a source of activity. The specific activity of a human personality (and a human being in general) can be called ***practice***. Unlike personality, practice involves a subject-object relationship. Even when practice is directed towards another person, it embodies the relationship of one person to another as a subject to an object. However, such practice serves as a means of realizing subject-

subject relations to which it is subordinate. Therefore, the subject-object relationship is revealed as a component of the subject-subject relationship.

The specificity of human activity consists in distinguishing the form of the goal, which is the resulting object of activity. This form is absent in the activity of animals, for which there is an undivided object of activity. The peculiarity of human activity, in comparison with animal behaviour, lies in the dissection of the subjective target image of activity. The elements involving the joint change of subject and objects are separated into distinct images, and relationships between goals and means are established among these elements. The dependence of material changes on subjective forms remains.

The resulting definition is as follows: ***purposeful (consciously aimed at a goal) or, more simply put, targeted, objectified, conscious activity should be called practice***. Practice is a necessary trait of personality, but it is not sufficient for the existence of personality. Such a condition is to be found in personal (subject-subject) relationships. Personal relationships are the sole reality in which a human personality exists and expresses itself.

(694) [*The difference of a person from another person (other persons) is identical to* ***the person's relation to another person (other persons)***].

(695) [*The difference of the person's relation to another person (other persons) from (some) persons is identical to* ***personal relations***].

Doubts may arise regarding the existence of personality only in human relations, one can point to personalities that exist and manifest outside of these relations. But, firstly, personality is not formed beyond human relationships. Secondly, although in certain situations a person can act autonomously, without any visible connection with other individuals, the general context of any personal activity is the environment of personal relations. A person always does something that can be perceived by other people, that bears the imprint of her or his experience of personal relationships, that sets him or her apart from the circle of people and at the same time connects him/her with this circle. A person cannot exist as an individual in any other way.

Remember that we defined personality as *the form of a material object*, specifically the human body. Form (meaning *pure form*) exists outside of matter, and in this sense, it is immaterial. But in the material world where a person finds oneself, form is always linked to material objects. A person can only realize himself/herself as a person through material objects. It follows from the above that for a person as a material being, the relationship between one person and another is not immediate, but is carried out through

physical contacts, which in turn are mediated by various material objects (the latter can be called ***things*** in another manner). Personality, then, appears only as a facet of human selves (self-consciousnesses) relations mediated by things, which, we note, also exist solely within human relationships.

Let us repeat and summarize what has been said. ***Personality is created and exists in personal relationships mediated by joint objective activities (involving the exchange of actions, information, and things)***. Personality, understood in this sense, is the human essence in its most complete manifestation. There is nothing more human in a human being.

The differences in the forms of subject and object present in a human being as a personality also realize the forms of their correspondence. We will call the *correspondence of entities* their partial (one might also say relative) identity. In the case of personality, we are talking about the partial identity of object and subject. From the subject's perspective, the correspondence of an object (or another subject) to him/her represents *the significance of the object or other subject in relation to the given one*. Significance may vary quantitatively. To denote such quantitatively distinguishable significance, it is customary to use the term "value."

(696) [*The difference of the objects of the subject's activity from the personality is identical to* ***the objective means of personality's existence***].

(697) [*The difference of the sequence of objective means of personality existence from the person is identical to* ***the sequence of significances for the person***].

Since objective means are objects (material and formal), then, like any forms and material objects, they have an analogy with numerical entities. Therefore, they form a sequence. Furthermore, this is a sequence of the means of existence for a personality. Individual elements of the sequence realize their quality as a means of existence for the personality more or less indirectly, which can also be understood as – to a greater or lesser extent. This measure is expressed by the concept of significance.

(698) [*The difference of objective means from the sequence of significances for a person is identical to* ***value (or an objective means as a value)***].

From this formula, it is clear that values are ***relative***; they can be greater or lesser. It is also clear that there must be ***absolute values*** that are directly related to personality.

Empirically, it is quite understandable that values are identified with the objective means of personality existence in their sequence, originating within the personality itself. Firstly, it is empirically obvious that value exists

only for the subject, for the personality. Something cannot be valuable in itself, in the complete absence of someone for whom something is valuable.

Secondly, value is a means of personal fulfilment. In this case, we are not discussing the physical existence of the individual; some situations involve the exclusion of personality degradation (preserving the personality from decay) at the cost of ceasing the physical existence of the individual. Nor are we talking about the egocentric nature of values. The personal Self is not something completely separate from other personal Selves (just as all relative zeros in numerical reality are nothing more than the same absolute zero).

In this context, values can be defined as the means of existence that are more or less adequate to the personality. The greater or lesser adequacy arises, thirdly, from the arrangement of the means of personality existence in a certain sequence. The very presence of such a sequence makes the means unequal.

It should be added (this will be the fourth) that the personal Self (like absolute zero in numerical sequences) is outside the sequence of objective means, that is, outside the gradation of values. Personality can be defined as ***the super-value*** or absolute goal that values realize. Personality can also be identified by fully realized values; in this sense, values are entities that approach personality and merge with it in an ultimate state (whether achievable or not – we will not judge here).

Value exists only relative to the subject; it is a form of subjective reality. But it is not a purely psychological phenomenon. A distinction is made between values related to the form of the subject, which are naturally represented in the individual human subject (they can be called ***objective values***), and values related to the individual form of a subject, in relation to a particular person (***subjective values***). It is clear that subjective values are derived from objective ones, and if they do not correspond to the latter, they represent inauthentic values or pseudo-values.

Values determine human activity and are embodied in patterns, standards, norms, and ideals that take the place of the target form. At the same time, absolute values are identified with *the ultimate goals of human existence*. This is how they differ from intermediate (relative) values. The latter are significances for something related to a person; they can be called *utilitarian significances*, which should be distinguished from significances for a person as a whole, for a person who is not partial, not momentary, but eternal and complete (although one who realizes oneself or, figuratively speaking, is "translucent" in the momentary human being).

Values rank all objects, including things and personalities, with which a person relates. Personality, therefore, exists in the world of values. It can be argued that a human is not so much a rational being as a being for whom values exist, a being who evaluates, *homo evaluant*. Personality is reproduced not by operating with objects themselves, but by operating with objects as values. It follows from this that full-fledged value in this world is that which fully shapes a human's personality. Since personality is reproduced in personal relationships, it is evident that ***the highest possible value for a human being is that of positive (constructive rather than destructive) personal relations***. Objective values are real and complete only within the context of personal relationships.

Since personality is a form, there are parts of this form (the formula of which may be presented but is omitted here). These parts of the form of a personality will be referred to as ***partial forms of personality***. Similarly, the objects of personality's activity are nothing but things to be exchanged in joint objective activity or ***objective means of communication***. Both are the ground for the concretization of personal relationships.

(699) [*The difference of objects of activity from personal relations is identical to* ***objective means of communication***].

(700) [*The difference of personal relations from objective means of communication is identical to* ***(material) personal communication***].

(701) [*The difference of a partial form of personality from objective means of communication is identical to* ***the personal sense of an object***].

(702) [*The difference of objective means of communication from a partial form of personality is identical to* ***the means of realizing personal sense (or an object – the bearer of personal sense)***].

Human activity is aimed at realizing one's personality, which happens, as mentioned, through personal relationships mediated by the object elements of activity. At the same time, material objects that are involved in activities turn out to be implementers of certain aspects of personality. They exist as significant for the personality, in other words, they carry *personal senses*.

Despite their differences, all forms of human subjectivity are identical in that they are forms, i.e. they coexist (correlate) with certain material objects (bearers of forms) and are realized in the material world through these objects. In this sense, forms can be characterized as being contained in material objects, serving as their content.

On the other hand, material objects, as bearers of forms, appear to be the means of revealing their formal content. The hierarchical structure of a hu-

man being, as we already know, assumes that the content revealed by material objects associated with a person is a set of subjective forms through which the human personality ultimately expresses itself (via the forms of lower levels). Simply put, the objects and actions produced by a particular person can, to one degree or another, bear the imprint of his or her personality.

Such contents of things, signs, and actions produced by a person should be called ***personal senses***. Personal senses exist only for a given individual and for other individuals who assimilate the means of their expression. A personal sense is a form of personal relationship that incorporates aspects of the personality of a sense producer and elements of its recipient. It is realized as the material form of an object (or process) that is the bearer of personal sense and serves as a medium for establishing personal relations.

Since only the realization of personal senses (in material media) simultaneously actualizes the form of personality (the form of a personal subject), we can say that individual persons exist fully in the exchange of personal senses. ***The production and exchange of personal senses is a mode of existence for personalities***.

A person conveys and perceives personal senses, which are realized in material means of communication such as actions, things, information. By exchanging material means, people also exchange personal senses. By exchanging the latter, they mutually reproduce themselves as personalities; that is, they become full-fledged people. Personal senses can be succinctly described as *the building blocks of human personality*.

All human life activities are ultimately aimed at creating personal senses. By creating personal senses, a person shapes his or her personality. It is clear, however, that personal senses may not be, and often are not, a direct conscious goal of human activity. In specific historical conditions, the immediate goals of human activity may be quite different. Personal senses are the objectively predetermined ultimate, maximum possible goal of a person's life activity; however, the current conditions of activity may focus a human being on immediate goals that are far from these.

Personality, in a sense, is identical to the essence of a person, representing what is essential in a person (as opposed to what is non-essential). In this definition, personality represents the highest part of a human being, a kind of superstructure in a person. On the other hand, personality is synonymous with the entirety of a human being, as the core of a human being encompasses all aspects that are uniquely human in a person, that is, the essence of being human (everything within a person is human).

Personality potential, or in other words, the essence of a human being, is inherent from the very beginning. This is the a priori form of human being. The more or less complete realization of this form, its transformation from possibility into reality, is the result of the specific conditions of human existence and self-development, of a particular person's correct or erroneous decisions. But the opportunity to become a fully realized personality exists within all individuals, even though not everyone realizes it, and for some, this opportunity may be pitifully limited.

It would be an exaggeration to say that every human individual always and in all its manifestations exists as a personality. At the same time, everything in the personality structure is human; therefore, even an incomplete or unformed personality can be considered human. The fact of human existence in a non-personal form does not contradict the statement about personality as the essence of humanity. Every human individual is a potential personality. Only a potential personality can be human. A human is a human because he/she always manifests, at least partially, a distinct personality.

§ 5. Personality as an Ultimate Reality

Matter is extremely specific in the sense that there is no more specific reality, distinct from matter and all other pre-material realities. The concretization of a material object can only be another material object – equally individual and unique. It is obvious that the metaphysical distinction of material objects does not lead to the emergence of a different reality. The difference between material objects can be either a simple (non-productive) difference, where the objects remain themselves, or it can manifest as more complex material objects. In this sense, the metaphysical distinction ends at matter; it is correct to say that the distinction does not go further than matter.

But there is another point that should be paid attention to: matter concretizes only material objects. This means that only the matter in material objects is truly concrete. The form of a material object is concrete as the form of that very object, but it is abstract as a form (not matter). The same is true of numerical (pure) objects and even of primary reality – they are concretized in material objects but remain abstract realities in themselves. It is obvious that a material object is concrete as a material object, but abstract as a form (numerical object) embodied in a material object. This means that any form – even an individual one – can be embodied (concretized) in various material objects. There is no absolute prohibition on the existence

of two identical things simultaneously in different places or in one place at different times. The same applies to any numerical object (i.e., quantitative value) that can refer to different material objects.

Matter is the concretization of forms as a whole, as previously demonstrated. However, within the bounds of forms (as well as pure objects), concretization is also possible – it is necessary to find out how far it can go. Since forms and numerical objects are embodied in matter, their concretization can reach the material concreteness through matter. Yet, it must be borne in mind that the focus here is not on the form or numerical parameter of a specific material object, but on the form or numerical object itself.

Pure objects, it must be admitted, do not become extremely concrete and unique – such is their nature. The possibility of unique objects appearing exists only for forms, owing to the differences between kind forms and individual forms (numerical objects are always kinds relative to more specific areas of reality). From what has been said, it follows that among forms, there are to be discerned abstract forms (referred to as pre-material) and completely concrete forms (referred to as post-material).

In addition to differentiation within matter, a distinction is made between forms and matter (and indirectly with pure objects). A class of material objects has been identified in which such a distinction takes place. This distinction has the character of the appearance of living beings, intelligent beings, and humans (human personality) – all of these entities are defined as special classes of material objects. These objects represent a concretization of forms that eventually reaches its limit. The complete concretizations of forms (unique forms) coexist with material objects and, at the same time, are (in some metaphysical sense) isolated from them.

The form, thanks to matter, becomes extremely concrete; it can no longer be replicated anywhere or at any time. In the same way, an object becomes unique, it is a singular entity with no other quantitative parameters. It can also be referred to as an absolute point of reference. This is the general limit of concretization of the existent, and besides, it is the limit of metaphysical distinction.

If we analyse the objects presented in the book, we shall see that the description in question corresponds to the human (and perhaps not only human) personality. In addition to the specificity of a material carrier (the human body), the form of personality is extremely specific. There is little doubt that each personality is unique. Moreover, one should pay attention to the fact that personality is unique as a form. The individual form of

a material object (for example, a particular physical thing) is also, in some sense, unique. But it is unique in its implementation within this material object. The personality form is unique as a form. This form is unique in itself. The form of personality, we note, generally coincides with subjective reality. The uniqueness of subjective reality is expressed in the fact that one person's consciousness cannot be reduced to the consciousness of another person. Consciousness, reason, psyche, and subjective reality are unique and, therefore, closed in a sense.

Personality is concrete in its physical embodiment. A different (in its individual form, if not in its material substrate) material carrier distinguishes a different personality. Personality is also extremely specific as a numerical object. A material object is characterized by a variety of quantitative traits. A person is outside of quantitative certainty; it is a unit, but a unit that is beyond all numerical series. It seems that personality is relatively identifiable at absolute zero. It is the absolute reference point for everything in the world. (Of course, this identification is incomplete and external, but it is real).

There is reason to believe that personality is also extremely concrete as existence and the existent. In a sense, it is everything that exists, namely, everything that exists for itself. The rest exists relative to it. The completeness of personality's existential concreteness means that personality is, in a sense, the Universe as a whole. It embraces the Universe, although only as its beginning, the structural foundation (which is the inverted structural end of the Universe). It is in this sense that personality is closed and impenetrable.

Despite its integrity, the personality reveals differences and concretization within itself. Only other personalities can play the role of personality concretizations. In this case, other personalities appear to be parts of a given personality. Thus, concretization does not go beyond the personality. Other personalities are a necessary aspect of the personality's existence. They enter the personality through its material carrier, are incorporated into it, and become different selves of the personality. The self-awareness of a person is constantly shifting, taking the place of other personalities, yet simultaneously remains the same self-awareness. A personality does not exist as a single personality. It exists in the form of personal relationships. But these relationships are centred on the self-awareness of this personality. The personality thus remains itself – an increasingly complex and all-encompassing centre of personal relationships.

Thus, the structural development of the real world ends with the human personality (let's leave the question of non-human personalities open). The

world reaches structural completeness, or, which is the same thing, complete concretization (not only extreme).

At the same time, there is a discrepancy between the material carrier of personality and the form of personality. The material carrier is extremely concrete (like the form of personality), but it does not cover the entire world with its concreteness. The elimination of this discrepancy in a more specific (all-concrete) reality, in which matter would coincide with form, is the content of the history of mankind. It is possible, however, that this content has no completion.

CONCLUSION

In the conclusion of a scientific book, the author typically summarizes what has been stated and briefly restates the main points discussed throughout the work. Instead, in this conclusion, a significant question will be discussed that was not even raised in the book's text but is difficult to avoid in a general work on metaphysics. This is the question of God. It would be a good place to remind that there exists a paradigm of metaphysics as the rational theology of a monotheistic religion, where the question of the existence of God is central, and the affirmative answer to it is axiomatic. In this book, metaphysics is understood differently – as neutral (with respect to religion) knowledge that follows general scientific principles about the world as a whole. Nevertheless, here too, the question of God's existence as the creator of the world and the omnipotent being inevitably arises (not excluding, of course, a reasoned negative answer to it).

Let us revisit the main structural parts of the metaphysical picture of the Universe within the context of the inquiry into God. This question does not arise when discussing primary reality – such a reality undoubtedly exists on its own basis. Nor does the question arise when considering the reality of pure objects (or numerical reality). Such objects exist because they cannot but exist (more precisely, they simply exist – without necessity, chance, or possibility). When we move on to the reality of forms, however, we have to take into account the modal aspect of existence. Forms exist as only possible or actual, contingent or necessary (the actual being concretized in material objects); therefore, not everything that can actually exist here does exist in the full sense.

The question that cannot be avoided is: why is the real world like this and not another? In the various possible and actual forms, in their material concretizations, we find nothing that determines the difference between the realm of the possible and the realm of the actual. This means that there is an external factor (separate and different from forms) that brings about this difference. It exists separately from all forms and in connection with them, being itself a form that contains the ground for the division of other forms into the only possible and actual. It is natural to call such a division a "choice." There is, therefore, *the function of choice* in the Universe. And

there is an object (form) that fulfils this function (or, in the terminology used here, is directly different from this function).

The function of choice obviously breaks down into the action of choice and the ground for choice. As a result of this, the object that performs this function is complex. It distinguishes ***the form of the action*** and ***the form of the selection criterion*** that triggers the action. The form of the criterion necessarily turns out to be the target object (the aim), while the form of the action serves as the mediating one. Accordingly, the activity of the carrier of the choice function acquires a purposeful character. This means that the carrier of the function itself corresponds to the characteristics of a subject. This is how we arrive at the existence of ***the world subject***.

The external (facing the world) reality of the world subject lies in activity, the objects of which are forms and material entities. The choice of forms is carried out, and their concretization in material objects as well. But there is also the internal reality of the world subject, which can be called subjective. It consists of the previously mentioned forms of action and selection criteria, which correspond to human mental states of volition and sensuality. The world subject can be called a rational being, since the abstract forms of the objects of activity must be present in its subjective reality. The world subject can also be referred to as a personality, since the objects of its activity are other subjects (people, at least). The position of the world subject in the structure of the Universe described in this book is the position of the ultimate form of forms (that is, the form of forms of the ultimate order – the form of forms of forms of forms etc.), which contains all other forms and carries out their materialization.

In general, the characteristics of the world subject correspond to the religious ideas about God in monotheistic religions. The problems with the world subject are also similar to those that arise when someone criticizes religion. Arguments against the existence of God are numerous. The main of them can be categorized into two groups: logical and empirical. Logical arguments boil down to the fact that the concept of an omnipotent, omniscient, and all-good Creator of the world is extremely contradictory. For example, an omnipotent being cannot be simultaneously omniscient; the existence of an omnipotent and all-good being contradicts the presence of evil in the world, and so on.

Logical contradictions are easily resolved when we abandon the thesis of the absolute omnipotence of God. It is enough to accept the concept of relative omnipotence (only within the limits of the choice of forms and

their materialization), and then the power of God no longer contradicts His omniscience, goodness, and the presence of evil in the world, etc.

The situation becomes more complicated when it comes to empirical arguments against the existence of God. The simplest of them is this: there is no reliable evidence of human contact with God. All existing evidence, from the sacred texts of world religions to prophetic dreams and stories of witnesses of miracles, can be interpreted in both religious and non-religious contexts. The usual practice of addressing believers to God is one-sided. In prayers, there may be a subjective feeling of closeness to a higher interlocutor, but there is no objectively confirmed fact of communication with God. Meanwhile, if God exists, there are no serious reasons known to us why He does not reveal Himself to people clearly and reliably. The silence and secrecy of God, of course, can be explained (for example, by the desire to preserve human free will). However, all such explanations leave the question of God unanswered.

The openness of the question of God allows for alternative interpretations of the world as it is. The atheistic interpretations can generally be called naturalistic. They stem from the primacy and closedness of Nature. The basis of such interpretations is the knowledge and theoretical constructs of the natural sciences. Naturalistic ideas about the world receive powerful support due to the fact that the natural sciences more or less satisfactorily explain the reality in which we find ourselves. The problem is that explanations in the natural sciences always concern only a part of the world's reality and never extend beyond these limits. When knowledge from the fields of physics, cosmology, and other natural sciences is extrapolated to the Universe as a whole, insoluble difficulties arise in explanation. This is why, by the way, we can be certain that the final theory of everything will never be created solely based on theoretical physics.

From a metaphysical perspective, there are three options for a naturalistic explanation of the world as it is (rather than being something else). Option one: There is something that, for natural reasons, has a greater chance of existence. This is a kind of cosmological theory of natural selection (I'd call it the Dawkins paradigm). The inconsistency of this explanation arises from the fact that the very grounds (greater or lesser) for the existence of one thing or another must have a further ground. The question of why this exists, and not that, is simply pushed further and further into the dull infinity.

Option two: The world simply exists as it is, and one should not ask why. In fact, this is a recognition of the absolute randomness of our world. Yet,

it takes only a little thinking to realize that absolute randomness cannot be an explanation of our natural world. Absolute randomness is a state of ungrounded choice among various possibilities. If the choice is grounded, it is not fully randomized. But some possibilities cannot be ungrounded (just because they are some – not one), and therefore, their choice has a ground. Besides, if absolute randomness is a no ground state, this is even more true of absolute necessity. In fact, absolute necessity and absolute randomness are the same; or rather, they are neither one nor another, they are simply the state of existence without any ground. This condition applies to primary reality, but it is not the case of forms and matter.

Option three: Everything exists that can exist in some way. This includes realities that cannot exist together. Therefore, they exist separately, like parallel worlds. In fact, absolutely everything does not actually exist because "absolutely everything" encompasses realities that not only cannot coexist together but also do not coexist separately. If everything exists, then, for example, a single, unique Universe and a multiple Multiverse (many Universes) coexist – it is clear that such coexistence is impossible. A choice of one or another state of everything is inevitable.

It seems that naturalistic explanations of the real world are implausible. This speaks in favour of recognizing a supernatural source of the real world. Such recognition is consistent with the most general religious theistic ideas (the specific content of any particular religion is not meant here). However, even when it comes to the question of the existence of God, the theoretical mind of human beings lacks arguments that exclude any doubt. This question has already been resolved by many people, but the resolution has been within the framework of faith, not knowledge. The greatest of all questions remains open and requires special efforts of the cognizing human mind in search of sublime reality. There is, for instance, the possibility that humanity has not yet mastered the language of real communication with God.