UNISM AND PHILOSOPHY

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Unism as a universal doctrine cannot be reduced to philosophy, but philosophy is one of its fundamental integral parts, and one certainly needs some general ideas to comprehend the unist approach to various applied areas. The illustration of the philosophical ideas of unism, as presented here, cannot serve as a guide to philosophy in general and the philosophy on unism in particular; it is far from any breadth and completeness. Still, just a little is better than nothing at all, and that is why I have decided to present the scattered notes as they are, without too much bothering about succession and congruence. The primary principle of unism is to do something rather than merely fancy it. So, here is a part of what could be done.

Seeking for Integrity

To start with, let us accept that there is something which is commonly referred to as philosophy, and which, somehow, is objectively necessary in the whole of the human culture. It is only then that we can proceed with determining what this something really is and what kind of necessity it should satisfy.

This preliminary assumption is not as trivial as it may seem to be. Some people feel a deep contempt to any kind of philosophizing, considering it as mere twaddle worth of nothing. Thus, most scientists are apt to believe that "positive" science can answer to any "philosophical" questions in a much clearer and quite unambiguous way, so that there is no need in anything like philosophy, whatever it is or is not. In the same conceited manner, men of action and businessmen would deny everything of no "practical" value, philosophy included. Also, for a layman just superficially acquainted with the history of philosophy, it may seem to be too vague a notion referring to anything at all and hence to nothing.

Such deniers of philosophy do not observe that the very act of acceptance or denial already assumes a kind of philosophy; they would not admit it even when caught philosophizing. Trying to invent a runaround, they enter philosophy once again, and, being unwilling to reflect and unprepared to thorough study, they soon get lost in inconsistencies and finally they cut it short, refusing any discussion at all.

On the other hand, assuming the objective existence of philosophy as a cultural phenomenon puts forth a quite definite ideological position opposing any attempts to dissolve philosophy in purely subjective speculations and political games. That is, the name of philosophy cannot be arbitrarily applied to whatever, and philosophizing is quite different from merely tossing the words. This also implies that there is something that happens regardless of our personal preferences and will, independently of the momentary interests of any social groups (often expressed as the will of some "supreme" being or an *a priori* prescription), as well as of the level of our understanding and even awareness. Some people would find such "rigidity" rather inconvenient. An objective study must explain both the universal nature of philosophy and the diversity of individual stands.

The word "philosophy" has been used for over two thousand years, designating a kind of human activity. However, in human languages, word usage can be largely uncritical, abusive or metaphorical, and mere enumeration of historical examples is not enough to get the idea of their common core. One needs to decide on what truly deserves the name of philosophy, and what is called philosophy for some other reasons.

In the European tradition, philosophers have often been engaged in philosophizing, a kind of reflection on certain issues of a very general character, sometimes apparently far from the current needs of society. Many philosophers tried to communicate their thoughts to the public in direct

conversation (Socrates), by preaching (Pythagoras) and teaching (Aristotle), or in popular writing (Plato). However, there also were those who did not much philosophize and rather preferred to demonstrate their way of thought by action, sticking to an appropriate way of life (like cynics in Europe, as well as many Eastern philosophical schools). Their "enlightening" practices gave impulse to the others' philosophizing, and conversely, somebody's philosophizing would sometimes drive people to significant changes in their life.

We observe that, in any case, philosophy is neither words, nor actions; it must rather be something behind the both, something "inside" a conscious being that makes one behave in a particular way or say something "philosophical".

But what do we usually find "inside" us? The ready answer refers to our feelings and thoughts as the basic elements of subjectivity. However, the realm of feelings has long since been farmed out to art, while science has usurped the domain of thought since the beginning of the XIX century. Is there anything left for philosophy? Many people (especially philosophizing artists and scientists) believe that there is nothing else, and philosophy should be considered as either a sort of art, or a branch of science. Indeed, many philosophers tried to express their ideas in the art-like or science-like form.

Still, there is yet another aspect of our "inner" life, our intentions. In a way, they are like feeling the necessity of doing something. On the other hand, they are like thinking about something necessary. This synthesis of feeling and thought could presumably be related to philosophy.

From this viewpoint, the traditionally "prescriptive" character of philosophy is easily explained. While art tells us what something is (or, at least, what it is like), and science predicts what something can be, philosophy tries to comprehend what something should (and virtually must) be. Neither of these aspects can be omitted in a congruent activity, they are equally important for the development of consciousness. Philosophy suggests the directions of development, and that is why it may sometimes come into conflict with the already established cultural standards; many philosophers suffered for their convictions. Seeking for the future, philosophy may go far beyond the tradition, which hinders the assimilation of the new ideas by the wide public. Such far-reaching philosophizing would seem to be sheer nonsense, and the followers of the doctrine look queer or crazy. Still, it is these cranks who prepare the society for inevitable changes to come much later; they tie the past, the present and the future together.

So, this is what philosophy really does: it seeks for universal integrity. In this way, it comes closer to the very idea of subjectivity than any other form of reflection. However abstract in its form, it is entirely practical in its content. And as soon as we try to achieve more consistency in our acts (including feelings and thoughts), we become philosophers. Philosophy is everywhere, and a conscious being is bound to eventually develop a conscious attitude to philosophy as well.

The Facets of Philosophy

The ubiquity of philosophy is already reflected in the very usage of the word. In the common language, any perceivable adherence to principles (regardless of whether they have ever been explicitly formulated), any inner consistency of one's behavior is called one's (personal) philosophy. Philosophical principles can easily become stock phrases. In such traditional occurrences philosophy seems to mainly regulate the ethical aspects of people's everyday life, almost coinciding with normative morality. Since this worldly wisdom often looks like arbitrary prescription, following it can only be explained by psychological reasons, personal predispositions and inclinations. However, the presence of philosophy on this level is much wider; it is built in every human activity as its universal background determining a range of routine solutions for every practical task. In this *syncretic* form, philosophy is a kind of projection of the current culture into the individual, a social framework of personal development.

It is important that, even on the syncretic level, philosophy demands a conscious attitude to the ways of one's action, a kind of deliberateness. While something is being done by mere habit, in an automated manner, there is no philosophy behind it. As soon as the choice is justified in any way, we come to philosophy. In particular, the same habitual acts could assume a quite different air when one

is intentionally following the tradition; this is an entirely ideological decision.

However, the universal character of conscious activity also means universal cooperation, and hence conversation. People do not only share the ways of doing things, they also pass them to each other. As soon as this exchange becomes a separate activity, one becomes aware of one's own modes of action and able to consciously organize them. In this *analytical* reflection, philosophy becomes represented by special cultural formations, philosophical categories, or universals. Philosophizing is an essentially analytical activity aimed to developing categories and establishing their interdependencies. Universals are different from mere concepts, since they do not refer to a particular thing, but rather to what in the thing is in common with the whole Universe, to the thing beyond its concept. On the other hand, universals differ from the images of art in that they exist in an essentially objective way abstracted from the possible implementations. This means that philosophical categories can never be named, pictured, designated. Any name is limited, while universals are beyond any limits. Any image presents something special, while universals are unrestricted generality. That is why developing philosophical categories is so difficult, even painful. And that is why, despite its millennia long history, philosophy has not yet become a definite cultural sphere well distinguishable from the other forms of reflection.

Obviously, the analytical level of philosophy does not properly satisfy the demand of universality. After a temporary detachment from the diversity of life, philosophy is to return to it with a general scale allowing us to uncover the universal significance of every individual act.

For every type of activity, philosophy will take a specific form, often imitating the forms of that very activity. Thus, in the arts, the taste of an artist develops within a particular *aesthetics*. In science (including the syncretic and applied levels), the choice of the way is directed by some *logic*. To determine the social attitudes and the general framework of judgment, philosophy is to take the form of *ethics*. One could speak of the philosophy of lifestyle, the philosophy of love, the philosophy of farming, industrial philosophy, political philosophy *etc*. This provides an external subdivision of philosophy into many special disciplines reflecting the real cultural differentiation.

Within philosophy, one can distinguish numerous hierarchical structures referring to various specific aspects of universality. Thus, the universal structure of any activity can be expressed in the triad ***object → subject → product*** or, in the abbreviated form, ***O → S → P***. This abstract notation is convenient to account for different manifestations of the same scheme. For instance, when applied to the world as a whole, it represents the hierarchy ***nature → spirit → culture***, retaining the same relations between the levels.[1] Correspondingly, while philosophy is interested in the objective aspect of the world, it appears as *ontology*; considering the subject in its relation to the object and the product, philosophy becomes *gnoseology* (in a narrowed sense, also known as the theory of cognition, or epistemology[2]); finally, to discover the universal necessity of activity (the correspondence of its product to its idea), we need philosophy as *ideology*. Any philosophical reflection requires a specific balance of all the three levels, sometimes putting accent on one of them while the others are still retained in the background.

Of course, one is free to choose any other approach and develop a different hierarchical structure. All such complementary structures will reflect the different aspects of the same. For example, one could consider the general hierarchy *operation → action → activity*, with the operational level giving the *meaning* of an action, and the embedding activity determining the action's *sense*. In this respect, philosophy applies to any area of conscious action in two complementary ways, as its *methodology* and *axiology*.

Yet another hierarchy reflects the possible cultural forms of the philosophy. In this respect, we

[1] The hierarchy of analytical reflection, as regarded from viewpoint of the quality of its product, implements the same triad in the form ***art → science → philosophy***.

[2] Under the pressure of philosophical positivism the very word "gnoseology" has been expelled from the English language, and most people believe that mere epistemology is enough. But epistemology, studying the forms of cognition and the organization of knowledge, is rather a scientific than philosophical discipline. Most epistemologists could not keep within this restricted approach and made general ontological and gnoseological assertions, thus eclectically mixing different levels of reflection. Similarly, formal logic (including mathematical models) is a science, following the logical principles suggested by some philosophy. No formal research can replace philosophical consideration; the latter makes science purposeful.

distinguish individual (private, personal) philosophy from a philosophical teaching (or school); philosophical schools usually belong to some wider philosophical currents (*e.g*. positivism); on the highest level, there are fundamental philosophical trends (like materialism and idealism) allowing to judge about any particular philosophy in a universal way.

The major part of philosophizing comes from amateurs. People need some philosophy for their practical purposes, and they often have to invent it from scratch, eclectically combining the fragments of quite different philosophical teachings. This is a natural consequence of the deficiency of philosophical education which is mostly confined to the vulgar history of philosophy, dumping together the sayings of well-known philosophers (or other eminent people) without any system, seasoned with tales and libel. Very few people spend any appreciable effort to examine original texts and even less people try to derive an integral view of their own. There are professional philosophers; but they rarely differ from amateurs in the scope of their interests or in the level of education. A modern philosopher is mostly engaged in developing a very special set of categories within a limited domain. Such a petty philosophy may comprise a few universals; in the rest, it arbitrarily extrapolates an individual viewpoint onto the whole world, in the interests of a definite social group.

Thus philosophy as a unique level of reflection becomes many specific philosophies. The unity of all these partial manifestations can only be achieved in people's practical acts. Of course, the elements of an integral world view will grow within the present society, but a truly comprehensive philosophy is to reflect real cultural unity, which is impossible in class societies based on the division of labor and competition.

Philosophy and Language

Conscious activity is saturated with language. However, the role of language is different in different activities. Some of them (the absolute majority) produce things that are immediately present in the culture and do not need any verbalization. In such activities, language is auxiliary and often optional, participating there along with any other instruments and tools. Still, there are reflexive activities that choose language for the material of their product. The cultural content of such products belongs to the sphere of social relations, reflecting all kinds of interaction between different subjects or the different levels of the subject. For example, some kinds of arts apparently produce nothing but texts (belles-lettres, oratory, elocution, recital, epistolary art, epitaphs *etc*.); law is commonly encoded in verbal formulas; language is used in most prescriptions and recipes; and, of course, nearly all science is language based.

As a reflexive activity, philosophy cannot avoid verbal expression. Yes, in many cases, it can well do without language, conveying various ideas by practical action, by example. However, such syncretic forms lack universality, being confined to a particular class of activities; a universal example would comprise the whole of one's life, including the trail of history and the possible imprints on the future.

Language provides a compact expression for many ideas that have already been established and refined in the culture. That is, it can play the role of a primary generalization, preparing further introduction of universals, shaping one's activity to the overall shape of the Universe. Obviously, the involvement of language becomes almost obligatory when it comes to temporal universality as well, to exchange of ideas between distant generations.

But philosophy can never be exhausted by mere words. It implies discourse as one of its levels, as a means of adapting the organization of the subject to a definite way of action, but the real content of philosophy is only expressible in terms of practical activity. That is, one can never give a complete exposure of a piece of philosophy in a number of texts, however long and complex. It does not much matter what the author of a text says; it is much more important what the text is intended for. That is why the analysis of the common language (or its formal derivatives) used to speak about some object area can only provide a preliminary guidance, a sense of the problem that would yet need further philosophical approach. In particular, studying the vocabulary of a philosopher rarely helps to elucidate his philosophical stand. This is especially so in respect to the Ancient authors, whose

language we cannot grasp in full anyway. Therefore, translating philosophical texts from one language into another, we are free to select the appropriate wording with the target language, regardless of the original terminology. In philosophy, literal translations are apt to obscure the basic ideas rather than thoroughly reproduce them.[3]

Any individual philosophy develops its own categories, explicitly or implicitly connecting them to each other in categorical schemes. Though philosophical categories may sometimes be associated with the words (or phrases) of a natural language, such verbal labels acquire specific connotations in the context of a particular philosophy and their meaning is to be derived from their place in the whole, rather than from the previous experience of the reader. Like a scientist, philosopher may introduce a category merely naming it in an arbitrary manner; the meaning of the term is to be unfolded later on. But universals are not like scientific notions in that they can never be exhaustively defined, and thus restricted to some particular domain; they are universally applicable. Treating philosophical categories and schemes as formal models is an essentially scientific approach, which can only produce a kind of science, but never philosophy. In this respect, philosophy resembles art: it will arbitrarily exploit language as its material, but true art begins where language ends.

To be on the safe side, the reader in philosophy should consider every individual text as if it were written in a foreign language. Some constructions of that language may resemble those of the reader's native dialect; this does not imply that they would mean the same.[4] The true meaning of the word is yet to be guessed from the whole, including the cultural context. Quite probably, the text will violate the common norms of the reader's language; sometimes, this is an evident mistake of a foreigner revealing the author's poor education; in other cases, the unusual turn of speech is rather an (awkward) attempt to adapt the language to the needs of the author, to extend its expressive power. In any case, it is no use to ponder on the exact wording or phrasing, since it has little to do with philosophy thus expressed. The words (schemes, formulas) should be treated as mere hints, as an indication of the existence of something that the readers will have to discover on their own, in their individual ways.

Of course, one way or another, language will shape the author's thought and suggest ready-made solutions from a traditional repertory. Different nations develop different philosophies. It is in their interaction that true universality is gained. But, as a way to the universal view, language may come very helpful, since it refers to what has already been established in the culture and hence gained a touch of universality.

For example, the discovery of *Aufhebung* as a universal logical operation would be impossible for philosophers, whose native language does not contain an appropriate word. One could expect this idea to be first formulated in German (as "Aufhebung"), or in Russian (as "снятие"), or even in Ancient Greek (as "ἀναίρεσις"). In Roman languages, this would already require certain artificiality, since there are no direct analogs, or even acceptable loan translations from Greek. The English language is yet to invent an appropriate expression for the idea of *Aufhebung*; the existing translations from German are too flat to convey the many connotations of the original term. One could even observe, that English, with its "extravert" character, is not made for reflexive usage; it does much better in practical situations, demanding plain answers to frank questions. This might explain the generally "positivist" nature of English philosophy. However, English is productive enough to develop, when needed, new forms of expression more suited for discussing reflexive intricacies.

Language intuition is very important. It can suggest a preliminary direction of development, or reveal tendencies that are implicitly present in the culture, without being commonly noticed. A philosopher will listen to this inner voice to avoid abstract manipulation with superficial observations. Reflecting upon speech commonalities, one becomes aware of the inner organization of the culture.

[3] For instance, modern translations from Indian or Chinese philosophy often contain too many alien (and difficult to pronounce) terms that tell nothing to a European reader; the majority of this foreign terminology can be safely replaced by some native expressions. Of course, such interpretations will only be approximate, but no more than any wording at all. Those ideas that do not have natural analogs could be conveyed using the traditional composition techniques of the target language; this would be much more meaningful than a cumbrous foreign term.

[4] In linguistics such misleading similarities are known as *false friends*. In philosophical debates, starting from the ancient times, the opponents are often opposing the words rather than the ideas of the others.

Considering the evolution of language, we discover the general trends of cultural development. Language suggests what should be incorporated in philosophy and provides the necessary means. On the contrary, when language resists the introduction of a new idea, this might indicate that the culture is not yet ready to assimilate it.

But language can also hinder insight. The words of the natural language are too burdened with numerous connotations and neither word can adequately express a universal idea. One has to employ the same word both as a common expression and as a reference to a philosophical category, and it not always possible to tell one usage from another.

Since no philosophical category can be adequately expressed in words, there can be no special philosophical language, like scientific terminology. While certain words are more likely to refer to philosophical categories than the others, the reader must be careful enough to avoid confusing words with ideas they partially convey. The boundary between formal and informal word usage can be rather fuzzy. On the other hand, philosophy can never remain formal, this is contrary to the very idea of universality. A philosopher will widely employ figurative and metaphorical language more resembling belles-lettres than science.

Unfortunately some philosophers understand this freedom in a too extensive manner and produce poorly comprehensible texts pretending to some profundity beyond the common sense. But lack of clarity will always mean lack of philosophy; the author thus attempts to disguise either insufficient reflection or primitive manipulation. Healthy philosophizing has nothing to do with the demonstration of erudition, abusive referencing, self-admiration, startling or stylish turns. Wit is the opposite of wisdom. An occasional joke or metaphor can spice up a lengthy explanation, but too much spice will make the dish uneatable. Philosophy is to express complex things in a simple way and thus reveal their hidden complexity.

Philosophers may discuss whatever as long as they like, but all that philosophizing is nothing but auxiliary preliminaries, the scaffolding erected to facilitate construction. As soon as the building is over, the traces of the construction process must be removed. Philosophy is essentially practical, and it begins with the first practical act. Of course, the universal reflexivity will eventually bring the practice of philosophizing to critical examination and comprehension. But this does not mean reduction to any limited and restrictive formalities.

Language, by its nature, is the universal mechanism of activity transfer. One person would pass an interrupted activity to another, who would make some contribution and then pass the activity to yet another person. In any way, communication can only exist in the context of a certain hierarchy of activities. Abstract discussions are pointless and devoid any sense. They can produce an impression of intensive development, deep thought, or public incentive, while remaining mere tossing words, and their devaluation.

Similarly, in economy, a product is normally intended to be immediately consumed and thus involved in the next cycle of production. When, instead, the product is merchandized and passed from one holder to another as an article of trade, it will lose some part of its consumption value, with an increase in the price. Inflation is an inherent property (an attribute) of the market economy leading it from one crisis to another. Any trade is therefore undermining the normal development of production and wasting the available resources. Elimination of the market would make economy much more efficient, provided there are as universal means of product exchange.

However, market speculation is not entirely fruitless. In fact, it is a very special kind of production; namely, it produces capitalism. A part of the common product is thus used to produce and maintain the system of social relations based on and allowing for the exploitation of one person by another. Similarly, professional philosophizing is often directed to establishing a certain social order rather than the growth of wisdom. Thus, demonstrating erudition and spilling witticisms, one not only tries to raise one's social status and self-appraisal, but also persuades the reader to stop thinking too much on issues that some social circles would like to present as insignificant; being too comprehensive and systematic would often impose the official standard to the detriment of the other possible views; adopting an ostentatiously impersonal style, one will probably try to hide an offensive social position.

Nevertheless, even such biased philosophizing contributes in philosophical search for universal

integrity, and it would not have appeared without an objective necessity. As long as we keep in mind the demand of considering the same thing in all the possible contexts, the partial and imperfect nature of individual philosophies cannot do much harm. It is in the complementarity of the numerous ways of expression that true universality can only be born. Let different philosophers speak different languages, this will only train our ability of interpretation and assimilation. Let the same philosopher apparently change his views during his life, advocating in his old age what he violently opposed in his youth; this will probably provide the necessary contrast for comprehending the fundamental trends in cultural development. Let us do what we can, and let the others do what we cannot.

The Integrity of the World

Human history knew many different philosophies. The range of ideas and the ways of their organization varied from one geographical area to another, from one epoch to the next. Philosophy took different forms, often hiding itself under the mask of religion, art, science, commonsense or buffoonery, mystical practices or anarchy, rebellion or conformism. Sometimes, it even came to denial of any philosophy at all. However, in any guise, it suggested universal solutions and an integral view of the world, albeit in some specific respect. This is a common feature of all philosophies, including those advocating inconsistency and eclecticism. Regardless of their ideological position and social stand, philosophers thought about the world in its totality and formulated the universal principles going far beyond immediate necessity or subjective preference. That is why the problem of the integrity of the world can rightfully be called *the principal question of philosophy*.[5]

Of course, each philosophy would approach it in its own way. In the society split into antagonistic classes, the adherence to one idea usually takes the form of the opposition to another, an ideological controversy. Philosophizing then goes into heated debate, and the participants are often more concerned with refuting the other's stand than with consolidating one's own. It is only much later that somebody will notice the intrinsic commonality of the parties, their objective necessity, mutual dependence and cultural limitations.

Unism explicitly postulates the integrity of the world and declares it to be the first concern of any philosophical reflection at all. This integrity is not trivial; it assumes many hierarchically ordered forms. One is free to unfold this hierarchy in any dimension. With every choice, it is important to account for the following three interdependent aspects of integrity:

1. *Uniqueness:* the world is *all*. Nothing can exist "outside" the world, and the very thought of another world already places that "world" within the world of the thinker. There is only one world, and the idea of multiple worlds can only refer to its essentially distinct parts or aspects.

2. *Universality*: the world is *everything*. The world is diverse; it is the only common universe for all its individual parts (elements, components), as well as every part of the world plays the role of a universe for its constituents. The world comprises any possible distinction, thus consisting of innumerable partial "sub-worlds", which will be conventionally referred to as *things*. The whole world is thus also taken as a thing, and its universal law is that it must eventually shape itself in every possible way, and develop every possible manifestation.

3. *Unity*: the world is a *whole*. Any two things are somehow interconnected in the world, however different they may seem. Any individual thing is related to rest of the world, being virtually equivalent to its environment and hence representing (reflecting) it. In particular, every individual thing is necessarily related to itself (universal reflexivity).

This 3*U* formulation of the principle of integrity of the world is both very general and very practical. It can be applied to various philosophical problems to unfold the appropriate categorical hierarchies. It prevents oversimplification, the attempts to reduce integrity to a single level and, conversely, to ascribe too much universality to special regularities. Thus, one can immediately observe

[5] At least for the present level of historical development. In some distant future, when class societies, with their inherent fracturing, will be well forgotten, some other problems may come to the top of hierarchy. However, this will only mean that the integrity of the world is already generally assumed, and there is no longer need to specially discuss it.

that the primitive rationalism admitting that the world can be described in a purely analytical manner is as delusive as the mystical belief in the illuminative comprehension. From the viewpoint of this principle, the fierce debates about the form and the background in the arts in the beginning of the XX century look generally pointless, as both are equally important for art as such and their distinction can only be relative within an expressive whole. For yet another example, the reconstructions of the Indo-European language popular in modern linguistics exaggerate the analytical aspect of integrity, while neglecting the primary syncretism and various integrative trends. In the ethical sphere, we find that the integrity of one's life is impossible without vacillation, and there is no virtue without faults.

As an immediate consequence of the triplicate integrity of the world, philosophy will perform its integrative function in three complementary ways: it helps to find purpose in our everyday life; it indicates that there is always room for new achievements; it says that there are no problems that could not be resolved some day. In particular, every philosophical category is first implicitly present in people's activity, then it unfolds itself into all the possible structured or systemic representations (including various philosophical doctrines), and finally, it overcomes the contradictive diversity by showing how all the special views originate from the same fundamental idea.

Aspects of Integrity

According to the fundamental principle of the integrity of the world, every philosophical category will reproduce this triplicate integrity in its being, first, a universal applying to the whole world, second, a hierarchy of special concepts and notions (that it, acting as their "local" universe), and third, a unity of all the possible partial definitions. In particular, the very idea of the world can be developed in that manner, resulting in a hierarchy of ontological categories. First, we take the idea of the world as the prerequisite for any thought at all, the most general framework of any philosophizing (and virtually for any human activity at all). Then we observe that this primary integrity can be approached in different respects and thus reveal its fundamental aspects, which can manifest themselves in many complementary ways; that is, we have to accept that the world can be somehow represented within itself. Finally, we need to restore the integrity indicating that all such partial manifestations come from the same source, thus admitting the world's ability to spontaneously unfold one hierarchical structure or another.

That is how we come to a most general categorical scheme representing the interdependent aspects of the world's integrity:

$$matter \rightarrow reflection \rightarrow substance.$$

Each category in this triad applies to the word in general as well as to any individual thing, or any particular way of connecting one thing to another. In different contexts, these categories can equally refer to individual things, their properties (attributes) or their inner organization. In any case, all the three are necessary for integrity, and none of them can be reduced to any other. Of course, starting from a different vision of integrity, we will come to a different scheme of philosophy; there is no need to always put forth ontological issues. But as soon as it comes to considering the origin of things and the principal directions of their development, the ontological triad is to be invoked in full, to ensure the universality and consistency of thought.

The world as matter

Taken in the most general sense, matter is the aspect of the world stressing its priority to any individual thing or manifestation. Things come and go, the world stays. No individual thing can exist outside the world; any kind of motion is nothing but an aspect of the world's motion, and there is no other reason for anything than the inner development of the same world. In this way, the world can be considered as the common origin of all things (including the whole world as a kind of individual thing), their matter. Hence, the whole world is matter, and there is nothing in the world but matter.

On the other hand, at any level, the world is comprised of many coexisting things that move and interact according to the natural laws appropriate for that level. Everything that ever happens assumes

a number of things interacting with each other in a specific way, which constitutes the *material* side of any event, process, state or feature. Everything is material, which is yet another expression of its belonging to the one and only world. In particular, any reflection must be material in that sense. This does not mean that reflection is identical to matter; this only means that there is no reflection without matter.

Finally, every individual thing occupies its own place in the hierarchy of the whole, being necessary for universal integrity. In this respect, things represent the whole world, and this means that individual things must be hierarchically organized in concordance with the organization of the world in general. Things are built of other things, and each individual thing requires some appropriate construction blocks, its *material*. On this level, the materiality of the world manifests itself as the material of an individual thing, a special kind of matter. Matter in general is thus understood as the multiplicity of all the possible special "matters" (materials).

It is important to stress that the thing's material does not need to be some physical carrier made of particles, atoms or physical fields (like solids, liquids, gases, or plasma). The idea of material is much wider, and it may be difficult to indicate the material, say, of a national mentality, though, as an individual thing, it must certainly be made of something. Virtually, we come to physical matter anyway, but the relation of higher level materials to lower levels can be rather complicated and indirect, involving both physical matter and a hierarchy of reflection.

The world as reflection

For every particular thing, being material does not mean that it contains nothing but matter. An idea like that would be incompatible with the very existence of different things; with sheer matter, one would not distinguish golden jewelry from sheer bar of gold, or a painting from a dirty rug.[6]

The shapes and properties of material things, their arrangement and involvement in other things, their motion and interaction, their development—all such manifestations of things are different from their matter, though they would never come about without matter. Each thing is characterized by its place in the whole of the world, or in a system of things involved in a common motion, which determines the specific arrangement of matter within the thing as well. This individual organization of a material thing is called its *form*. In particular, the visible shape of the thing is a component of its form, but there are other, less obvious components, inherent regularities. Some things (like elementary particles or social relations) may have no visible form at all; still, they assume a quite definite organization, which determines the way this thing binds together its material and presents itself to the rest of the world.

The form of a thing as a specific arrangement of its material is not material itself; in this sense, the *material* aspect of every individual thing is complemented by its *ideal* aspect. Of course, this does not necessarily involve any conscious activity, and the word "ideal" does not refer here to any mystical entities "outside" or "prior" to matter. This is just an indication of the presence of at least two complementary aspects in everything, concerning either being a manifestation of the same world or being different from the world in general.[7] The ubiquity of the ideal implies a hierarchy of its possible manifestations, with consciousness and subjectivity at some higher levels. Subjective ideas do not appear from nothing; they are related to more primitive forms, which, in their turn, are related to some lower level phenomena, and virtually to some most general attributes of matter. To develop consciousness, non-conscious matter must have something in common with it. Thus we come to comprehending a thing's material and form as its material and ideal aspects that cannot exist without each other.

Any relation of a thing to other things and the world in general means that there is something in that thing that represents the rest of the world, as well something in the world that represents this particular thing. That is, the thing and the world are mutually *reflected*. Two interacting things will

[6] Sometimes, this kind of "materialism" can indeed be practically observed. Thus, in a pawn shop, jewelry is usually bought by weight, regardless of the gems and make. Similarly, for those without the gift of sublime art perception, a painting may well seem a dirty rug to dispose.

[7] As objective phenomena, human ideas combine their material and ideal aspects as well, and there is no idea without an underlying material process.

reflect each other in accordance with the character of their interconnection within the whole of the world; any relation, motion or interaction is nothing but a kind of reflection. As a philosophical category, reflection refers to the universal way of connecting one thing to another.

Since the world is unique, it cannot be related to anything else, and any relation of material things is a special case of the world's universal relation to itself, which is the primary form of reflection.[8] Any distinction within the whole is an instance of reflection; any change can only happen within the same world, being a kind of reflection too; any interaction is a kind of self-interaction, the world's action upon itself. The integrity of the world implies the universality of reflection, which is as ubiquitous as matter; there is no matter that would not be subject to reflection, and no reflection outside matter (something to reflect). In this sense, matter and reflection are identical, referring to the different aspects of the same.

The world is reflected in itself, and it "returns" to itself with every act of interaction, reproducing itself in every instance of development. This reflexivity is the "glue" that binds the infinite variety of the world's manifestations into a whole.

The world as substance

With every individual thing being made of some material and taking some form, we have to face the question why this particular form should require a quite definite material, and why that material should be shaped in that particular way. The simple answer could just state that, with a different material or in a different form, it would be a different thing. Still, to say that, we need to take the thing as a whole, in its relation to the rest of the world rather than its inner organization. In other words, we need a category to describe the aspects of the world included in the definition of each particular thing; this category could be conventionally referred to as the thing's *content*, the unity of its material and its form.[9]

While the *material* aspect of a thing stresses that the thing belongs to the one and only world, and the form as the thing's *ideal* aspect indicates the place of the thing in the whole, the content of a thing can be said to represent its *reality*, both as its necessity in the world and as the history of its development. In a real thing, its material and ideal sides are intertwined; they can transform into each other, which results in a new instance (shape, state of motion, phase of development) of the same thing. The idea of content is to express the mutability of things within the whole and their inner mutability. Real things change; but, within certain limits, they still remain the same, preserving their content. Thus any individual thing becomes similar to the world in general, a kind of a mini-world.

Considering the reality of a thing, we do not need to seek for any additional reasons for the thing's existence and motion. The thing behaves that way simply because it is that very thing, and not another. There is no need for any creator, or observer, or a motive force. The world is organized that way. All we can is to study the possible kinds of things, and possibly invent new things that could further proceed without our interference. Any real thing is, in this sense, self-sufficient, self-reflected and self-contained.

A thing can become a material constituent of a higher level formation—but this would not remove its ideal aspect; the distinction of the material and the ideal is hence *relative*, depending on the level of consideration—which, however, does not make them any less opposite to each other. One could observe that what is matter for a higher-level formation is ideal *in a different respect* than what is made of it. There is a hierarchy of both matter and reflection, and any reality is hierarchical as well, the levels of hierarchy reproducing the phases of development. In other words, this hierarchy could be understood as matter becoming reflection, and reflection becoming matter, and it is this mutual penetration that constitutes hierarchical reality.

The very distinction between the material and the ideal will only refer to a definite position of

[8] One could explicitly indicate that speaking about *self-reflection*; some authors spell "reflection" as "reflexion" to stress reflexivity. However, in the integrity of the world, any reflection at all is also self-reflection, and one does not usually need any additional syntactic markers.

[9] This category has not yet attracted the attention of philosophers, as philosophy has not yet developed to the awareness of its own content. Aristotle was first to describe this aspect of a thing as the "core of its being". The same idea appeared in later philosophies under different names, in an implicit manner.

the hierarchy of the whole, as it unfolds itself under certain conditions. Applying the idea of content to the whole world, we come to comprehending it as *substance*, the unity of matter and reflection.[10] As substance, the world is both reflected (reflecting) matter and materialized (materializing) reflection. This aspect of its unity refers to the self-reproduction of the world. Nothing else is needed to create it, or to trigger its movement and development.

Like the general idea of matter becomes comprehended as many specific "matters" (materials), we can also consider different substances. However, in this special meaning, the word "substance" still retains its active connotation. One could think of a specific substance as something like material, but with no relation to any particular thing, an ideal material. That is, substance can as well be considered as a kind of form taking an independent (material) existence. Because of this inherent duality, individual substances can, in certain respects, behave as things.

The Hierarchy of Reflection

Matter, reflection and substance are the three complementary facets of the same world. However, following the 3*U* principle of integrity, we can unfold each of the three into a hierarchy of special features, an inner universe. These hierarchies will be the representations of the same, and one can equally develop a consistent philosophy with either approach. Thus, for science, it is important to picture the world as a hierarchy of material forms that could be studied by individual sciences; the mutual dependencies of sciences will then reflect the real organization of that hierarchy. On the other hand, from the very beginning, the human thought has always been trying to comprehend the place of the conscious being in the world, and hence the problems of the origin and development of subjectivity form the core of any philosophy up to now. Since human consciousness is akin to reflection in general, considering the hierarchy of reflection is of primary importance for us to comprehend ourselves.

Since the world is unique, speaking of reflection, we always mean the world's self-reflection, its reflexive connectedness to itself:

One could express it in an inline manner as $\boldsymbol{W} \to \boldsymbol{W}$. Already in this *immediate* reflection, the world reveals the two possible positions: first, it is something to be reflected (the source position), and second, it is something that reflects (the target position). In the graphical scheme, in addition to the linear representation, there is also the idea of circularity, reproduction, the possibility of recursion. The simplest chain of self-reflection, $\boldsymbol{W} \to \boldsymbol{W} \to \boldsymbol{W}$, indicates that the world can also *mediate* its self-reflection, thus revealing its mediator position, the unity of the source and the target. Still, this basic mediation reproduces the same (unique) world, which can be expressed as $\boldsymbol{W} \Rightarrow \boldsymbol{W}$, with the mediation ($\to \boldsymbol{W} \to$) folded into *inner* reflection ($\Rightarrow$) , as opposed to the primary, *outer* reflection.

In inner reflection, the world will reproduce itself through something within it, and this is what we call a thing, in the most general sense. Thus we come to the special form of universal mediation:

$$\boldsymbol{W} \to \boldsymbol{T} \to \boldsymbol{W},$$

with the world reproducing itself through an individual thing. Taking into consideration the cyclic nature of any reflection

$$\ldots \to \boldsymbol{W} \to \boldsymbol{T} \to \boldsymbol{W} \to \boldsymbol{T} \to \boldsymbol{W} \to \boldsymbol{T} \to \ldots,$$

we obtain the complementary form of the same scheme:

$$\boldsymbol{T} \to \boldsymbol{W} \to \boldsymbol{T},$$

[10] The content of a thing can hence be also referred to as its substance, the unity of a specific material and an appropriate form. This will stress the active nature of content, its self-reproduction in the motion of the thing.

with any individual thing reflecting itself through the world as a whole. This fundamental level of individual reflection is referred to as the thing's *existence*. In particular, the whole world can be considered as a universal thing, and the existence of the world is thus understood as the unity of inner and outer reflection.

Of course, this outline of a formal derivation omits the details of underlying diathetical logic. Still, for the time being, it is enough to accept that existence is the most general and fundamental level of reflection, which can be attributed to anything in the world, to all kinds of things. Something must exist, to have any specific features and be reflected in other things (including the human mind). Even when we talk about non-existing things they still exist as abstract ideas, that is, a kind of cultural phenomena.

Iteratively unfolding the hierarchy of existence,[11] the world manifests itself as infinity of individual things reflected in each other, and reflecting themselves through each other. Each thing is, in its turn, a hierarchy of other things. The existence of a thing determines its place in the world (or within a higher level thing), and hence the inner organization of the thing reflects the hierarchy of the world, while the outer world (the thing's environment) is defined as such only in respect to this particular thing, thus reflecting it. Things and their environment exist through each other. However, in general, their mutual reflection is syncretic, remaining mere identity.

The category of existence, referring to a fundamental level of reflection, can be unfolded, in its turn, into a special hierarchy. Thus we come to the triplicate idea of existence as *being*, *motion* and *development*. This is the most general paradigm of human cognition too, since, for every individual formation, we are first interested in what it is, than in how it behaves, and finally, in its origin and destiny. Ontologically, being, motion and development are the universal forms of syncretic reflection. On each level, a thing is compared to itself. Thus, in the aspect of being, the identity of the thing is stressed, its hierarchical organization; in its motion, the same thing presents itself in different positions in respect to its environment (conversion of hierarchies); a developing thing changes, while remaining the same thing all the time, and it is its inner organization and the modes of its motion that vary.

The existence of a thing is always mediated by its environment. The syncretic nature of this mediation makes it essentially random, so that every part of the thing's environment can equally mediate its existence, and there are no preferable or stable mediations. However, development can (and is bound to) eventually transcend the limits of syncretic reflection producing a new kind of things that reflect the world in a very special way, influencing it in the same limited manner. This makes reflection *analytical*, selective. On this level, reflection is primarily self-reflection too, but it can only proceed in some favorable conditions providing the necessary outer mediators. This realm of reflective necessity is called *life*.

Life is a special kind of existence characterized by the distinction and opposition of an organism and its environment.[12] All the laws of non-organic motion and development apply to living beings as well, but, in addition, there are new regularities characteristic of this particular level. Thus, we find that an individual organism is essentially a part of the genus, and its relation to the world is mediated by other creatures of the same, or a different kind. For higher organisms, there is a well-developed hierarchy of such intermediaries. While similar indirect relations may be occasionally found in inanimate nature as random and optional, they constitute the basis of existence for a living organism, which cannot live without going through the same pre-defined chain of interactions with other organisms (the metabolic chain).

There are different levels of life; some of them are almost indistinguishable from inanimate matter, while some others can develop rather versatile behavior, partially removing the restrictions of analytical reflection. When an organism is able to actively transform (produce) its environment to ensure the presence of the necessary mediators, the latter become associated with the certain dedicated states of the organism, thus obtaining an inner representation. The living being becomes aware of the world.

[11] Since any hierarchy can be unfolded in different ways, the hierarchy of things and the forms of their motion cannot be represented by a single hierarchical structure; there is no predefined natural (or "sacred") order.

[12] A living body can even be in antagonism with its environment. Living creatures die in unfavorable conditions; in other cases, they can entirely destroy their environment.

Drawn to the degree of a universal feature, the ability of production brings us to the next level in the hierarchy of reflection, that of conscious *activity*. The random nature of inanimate motion, mediated by life as the realm of necessity, is apparently restored on this new level in the synthetic form of *freedom*, intentional diversity of action, subjectivity, controlled arbitrariness. Reason makes one identical to the whole world, but in a manner different from mere representation typical of the inanimate things. The primary task of the conscious thing, the subject, is to *produce* the world, rebuilding it in order to make it reasonable. That is, the world makes things, the subject re-makes the world.[13] Conscious activity restores the unity of the living thing and its environment through the formation of an "artificial" environment, *culture*; this synthetic unity differs from the syncretism of existence in that the identity of the individual and its environment needs to be repeatedly broken and reproduced in a cyclic way.

The fundamental difference of life from "coarse" matter (including physical and chemical objects), as well as the opposition of conscious and non-conscious life, however contested by some philosophers, is an old philosophical tradition supported by the millennia of practical experience. But, traditionally, the two dyads have generally been considered as unrelated to each other, in different contexts. In unism, they become the levels of the same hierarchy, formally expressed by the triad of reflection:

$$existence \rightarrow life \rightarrow activity.$$

Additionally, this triad suggests the opposition (and mutual transformation) of activity and existence, as well as the numerous hierarchical mediations in existence, life and activity; such mediations provide the mechanisms of the coordinated development of reflexivity.

Of course, one is free to unfold the hierarchy of reflection in a different direction, thus obtaining some other triads (or even more complex schemes) representing the multiple facets of the same. The distinction of existence, life and activity is important in the context of millennia-old struggle of philosophical materialism and idealism, as it answers to the traditional philosophical question about people's place in the world. In other contexts, this problem may be of lighter relevance, and one has to develop more appropriate approaches; neither of them can pretend to be the only truth, though either can show absolute truth in one of its turns.[14]

On the level of activity one finds such phenomena as the mind, reason, consciousness, sociality *etc*. However, in any categorical scheme, its elements are mutually reflected and interdependent. Activity is a kind of existence, and a form of life as well. But there is no absolute distinction of life and activity, and one could find a continuum of intermediate levels both between the "physical" existence and life, as well as between conscious and non-conscious life. Still, the level of consciousness is qualitatively different from life and inanimate existence, and it can be represented in any particular biological system only to a certain degree, so that both the form of implementation would restrict the possible manifestations of consciousness, and the participation in conscious acts would influence biological development, leading to the forms that could never be stable without social support.

Consciousness and subjectivity as a level of reflection are not material; however, they cannot exist without a material implementation, and they need some higher forms of life to establish and support the forms of conscious activity. However, in the hierarchical world, any higher-level formation can be implemented in different combinations of lower level elements; in particular, conscious activity can develop on one or another material basis, in the appropriate forms. The type of conscious life that we find on the planet Earth is in no way the only possibility, and the humanity is certainly not unique as a carrier of reason. Besides the diverse extraterrestrial forms, the present level of human development might give birth to more advanced forms in the future, incorporating both natural and artificial components. No finite existence can ensure complete universality, and therefore any local manifestations of consciousness are mere prototypes, intermediate phases, the tiles of mosaic to show up in the all-embracing spiritual development.

[13] This is the source of the idealistic illusion that the whole world is nothing but a play of the human mind, or an invention of a "superior" reason beyond the world.

[14] This is the fundamental idea of *diathetical logic*, in contrast to classical logic and dialectics.

Universal Mediation

In the real world, things interact with each other and transform into each other. The character of this mutability is different on the different levels of the hierarchy of reflection. However, the very possibility of interaction and transformations is due to that all things belong to the same world, representing its different aspects. The world *mediates* any relation between individual things, which could be expressed by the scheme

$$\boldsymbol{T \to W \to T}.$$

On the lower levels of hierarchy, the mediating role of the world is implemented in a variety of things performing the specific acts of mediation; such mediators represent the world as a virtual mediator, but otherwise they are individual things like any others. Formally, we rewrite the general scheme of mediation as

$$\boldsymbol{T \to M \to T},$$

with $\boldsymbol{M}$ denoting a thing mediating relations between other things. Considering the hierarchy of all the possible mediations, we can express the idea of interconnectedness of all the things in the world by the scheme

$$\boldsymbol{T \Rightarrow T},$$

where the double arrow $\Rightarrow$ represents any relevant mediation without specifically indicating it. This scheme closely resembles the general scheme of the world's self-reflection, $\boldsymbol{W \to W}$; indeed, any individual thing is a kind of world developing on its own, which is yet another expression of the integrity of the world, with any its portion reflecting (and representing) the whole.

The idea of mediation has long since become the corner stone of modern physics, where every kind of interaction is associated with some material carrier (a particle or a field), and conversely, any particle can mediate some interaction.[15] Similar notions saturate the other natural sciences. All information technologies are based on the idea of signal processing and message exchange. Various mediation schemes are widely used in social sciences; in particular, the fundamental idea of universal mediation came from the economic theory of Karl Marx.

The character of mediation is different in inanimate world, life and conscious activity.

Thus, the inanimate world knows only passive mediation: coexistence, intermediate states of motion, correlation *etc*. Mediated interaction is one of the most important cases. In the chain $\boldsymbol{X \to M \to X'}$, the interaction carrier $\boldsymbol{M}$ is *emitted* by $\boldsymbol{X}$ and *absorbed* by $\boldsymbol{X'}$; in many cases, $\boldsymbol{X}$ and $\boldsymbol{X'}$ continue to exist as they were, only changing their state of motion. The mediators are often of the same kind as the things they connect; they can behave like particles, waves *etc*. On this level, a thing can interact with any other thing, and hence mediate interactions of other things. Such mediated connections between inanimate things are *random*, in the sense that they are not necessary for the existence of the things themselves. For instance, an isolated electron will still remain an electron, and a molecule does not need to interact with other molecules to become a molecule of that very sort. Interaction is not needed to support the existence of inanimate things; on the contrary, it may lead to their destruction or transformation into other things.[16]

The animate nature is characterized by active mediation, with the mediator $\boldsymbol{M}$ *consuming* thing $\boldsymbol{X}$ and *producing* thing $\boldsymbol{X'}$. Unlike the interaction of inanimate things, $\boldsymbol{X}$ does not exist any longer after it has been consumed, and $\boldsymbol{X'}$ did not exist before it has been produced by $\boldsymbol{M}$. On this level, $\boldsymbol{M}$ is not merely effectuating the interaction between $\boldsymbol{X}$ and $\boldsymbol{X'}$; now, it seeks for $\boldsymbol{X}$ to produce $\boldsymbol{X'}$. Moreover, the very existence of a living thing (an *organism*) depends on its ways of consumption and production, and terminated metabolism means death. This is the level of *necessary* mediation. On this level, mediations become essentially asymmetrical: the processes within an organism are often clearly

[15] One would admit, however, that physics is not always consistent in this respect. Thus, the exchange effects in a system of identical quantum particles should, logically, require some mediator in any act of exchange, which is generally ignored.

[16] Of course, interaction is absolutely necessary for the integrity of the world, but not for the integrity of individual inanimate things.

distinct from its interaction with the environment.

Like inanimate things can be joined by mutual interactions into a composite body, organisms tend to cling together forming a higher-level organism. However, such coexistence is much more restrictive, since any of the organisms living together requires a quite definite environment to live. In every particular synergy of different organisms, the members of this communion have to adjust their structure and behavior, to serve the whole. Thus, the organs of the animal body, while remaining relatively independent organisms, are functionally dependent on each other, and evolve to the forms, which cannot live outside the body; compare this with the molecules in a solid body: while slightly changing in the solid body's structure, they can always be separated from it, and still continue to exist.

The relation of the living organism $\boldsymbol{M}$ to the things $\boldsymbol{X}$ and $\boldsymbol{X'}$ involved in its metabolism is relatively rigid, pre-defined, characteristic of the species. It is only in higher animals that more flexible types of behavior become possible, so that $\boldsymbol{X}$ is not necessarily consumed to produce $\boldsymbol{X'}$, and different ways of consumption may result in the same metabolic product. The behavior of complex organisms is hierarchically organized, involving both the level of vital functions and the level of conditional functions supporting the organism's ability to maintain its basic metabolism, and life. In higher animals, the support functions significantly overweigh the basic metabolism; this dominance is a prerequisite for the formation of consciousness.

On the level of subjectivity, mediation becomes *universal*, so that any two things can be related to each other by a mediator of a new type, the *subject*; the act of mediation then becomes a part of the subject's activity. Universal mediation differs from random mediation of the inanimate level, since it is necessary for the subject, and any subject is bound to bring things together, to maintain subjectivity. The activity of the subject also differs from organic mediation, since it is no longer restricted to a specific class of dependencies and extends to the whole world. Such an all-embracing necessity is called *freedom*.

While inanimate mediators operate only in their immediate environment, and living creatures must obey the demands of their physiology, the subject can link anything to anything, with no physical or physiological limitations. Things that do not directly interact, to any appreciable extent, can be involved in the same activity of the subject, which restores the unity of the world in the most comprehensive way. For instance, there is no physical reason for the Polar star to influence the movement of a ship, and no physiological reason for the human organism to react on the starry sky in any definite way; however, the course of the ship may be corrected through the observation of the stars by a conscious being. The subject can connect things in time as well as in space: events separated by billions of years become interrelated in consciousness. But the universality of subjective mediation extends beyond mere commutation of material things; it also means the ability of the subject to bring together any aspects of their existence abstracted from the things themselves. Things get tied to sheer forms, one aspect of the world is reflected in another; and there is no limit to the complexity of such abstract mediations. The subject is the only way to build connections like that, and it is for that universal mediation that consciousness appears in the world.

Mediation means virtual presence of all the things thus connected in the mediator, integrative reflection. Externally related thing thus become reflected in the relation of some formations in the mediator. As universal mediation, a subject can also mediate any inter-subject relations, including the subject's self-relatedness. This reflection of the subject's activity in the subject is known as *consciousness*.

The definition of the subject as universal mediation implies that it cannot be reduced to a thing, or an organism, though both inanimate things and living beings are necessarily involved in any subject. In particular, consciousness cannot be a mere property of the human body, or any of its parts (like the brain).Of course, the existence of a number of highly organized material systems is required to produce consciousness. But the quality and composition of this material background can vary within the same subject. For instance, a person's ability to influence relations between other people and things does not vanish with one's physical death, since material traces of one's existence remain, as well one's ideal presence in the hierarchy of social relations formed around the individual. Such outer formations can exist for very long time, and even their dissipation does not mean their disappearance, as they gradually saturate some new structures thus remaining reflected in their inner

organization and history. Sometimes, the inorganic body of a person would entirely outweigh one's bodily existence; thus, history knows many prominent artists and scientists who died in neglect, while their deeds remained publicly known and highly praised.

Like on the other levels of mediation, there is a hierarchy of subjectivity. Any group of subjects can form a higher level subject, which allows for much more diversity than in biological communities. This external hierarchy is complemented by an internal hierarchy integrating all aspects of the subject relatedness to the world.

The active character of subjective mediation is reflected in the category of the *product*. Since universal mediation is a constitutive feature of the subject, the relations between things are no longer random or organically pre-defined; they are consciously *intended*. That is, in conscious activity, the subject takes one thing (the object) to produce another thing, the product of activity. The most general scheme of any activity can hence be written as

$$object \rightarrow subject \rightarrow product,$$

or, in a symbolic notation,

$$\boldsymbol{O \rightarrow S \rightarrow P}.$$

The elements of this scheme can be considered as the levels of hierarchy as well as the hierarchies of the object, the subject and the product. The same scheme applies both to an individual instance of activity and conscious activity in general, as a level of reflection. Thus, the whole world presented to the subject as an object is called *nature*. The highest level of subjectivity is associated with the very universality of reflection in the world reproducing the integrity of the Universe as the unity of all things; this all-embracing reflexivity is referred to as the *spirit*. Finally, the world can be considered as a product of activity, its purpose and accomplishment; on this point, it becomes *culture*.

Though the hierarchy of the world has many levels unrelated to conscious activity, they lie beyond the subject's experience until they happen to be culturally assimilated. Because of the universality of subjective mediation, anything in the world can be actively linked to anything else; in particular, a thing can be actively related to itself: $\boldsymbol{X \rightarrow S \rightarrow X}$. That is, once the thing has been included in conscious activity, it will "contain" the subject inside, and this is what makes it an object, the same thing as it is for the subject. In all the other respects, this thing can exist on itself, regardless of the subject's views and interests. However, it will gradually be drawn deeper in conscious activity, and eventually absorbed in its entirety. While an individual may be unaware of the world beyond one's individual experience, there is nothing that could not be assimilated by the subject in general, as a hierarchy of individual or collective subjects. There is no impenetrable barrier between the subject and the rest of the world, since the subject belongs to this very world, being one of its representations. The subject in full is identical to the object and the product; according to the fundamental principle of integrity, this implies a hierarchy of the forms of activity.

As a part of the world, the subject can also become an object, and thus belong to nature. As any object, the subject has both material and ideal aspects; in particular, the presence of subjectivity requires some kind of matter as its carrier, and an appropriate level of organization. Still, subjectivity cannot be reduced to neither matter, nor reflection; it is a certain way of existence of the both. Things and organisms that implement universal mediation are not conscious themselves; in some respects, they represent the subject, while retaining their existence as material things, or living creatures, in all the other respects. The subject is different from its implementation, no particular implementation can represent subjectivity in full. For instance, any human being is primarily a material thing; but humans also belong to a biological species; finally, they become the members of the society and, in certain respects, manifest consciousness and reason. There are different forms of life, depending on their material implementation; similarly, there can be many forms of reason, and the humanity will eventually have to cope with that.

The order of levels in a hierarchical structure is relative; it depends on the specific way of unfolding the hierarchy. Like the subject can be considered a higher-level object, an object can be treated as a higher-level representation of subjectivity, when the product is included in nature thus lifting any preceding activity. It is due to this transformation into an object that the subject can become aware of itself, thus developing *self-consciousness*. On the next stage, this reflexivity comes to

understanding subjectivity as a product and hence consciously producing it; this is reflected in the category of *reason*, the unity of consciousness and self-consciousness.

No living creature could exist if there were nothing akin to life in the inanimate world; in the same way, subjectivity is rooted in life, and virtually in inanimate existence. On the level of random mediation, there are regular chains of events resembling biological metabolism; also, there is a hierarchy of reflexive phenomena, demonstrating a kind of universality. A living creature can sometimes behave like an inanimate body, while showing glimpses of consciousness in other situations or other respects. Conversely, conscious activity reveals a hierarchy of manifestations, including apparently animal behavior, as well as a regular physical motion. To assess an individual behavioral act, one needs a wider context; consciousness and subjectivity can only be defined in respect to some productive activity. The same applies to self-reflection. Thus, for a conscious being, being aware of one's body has nothing to do with self-awareness. To become self-conscious, one has to perceive oneself as universal mediator, that is, the subject of an activity. This means that one needs to make one's own activity a kind of object and unfold its hierarchy to identify the mediator. The first part is obviously accomplished with any product representing the activity of its production. However, to recognize himself as the producer, an individual needs to be included in the society that would confirm one's individual responsibility. That is, self-consciousness is primarily the awareness of the social attitude to the product and its producer. In the societies, where the product is alienated from the producer, individual self-consciousness (and hence reason) cannot develop in full, they can only exist as a collective effect. That is why, to support universal reflection, such societies will have to be eventually replaced by a higher-level sociality better compatible with reason.

Universal Reproduction

The world's universal relation to itself (reflection) includes the world's self-reproduction, differently manifesting itself on the inanimate, animate and conscious level.

The primary definition of the subject is universal mediation, and hence the subject will also mediate the world's self-reproduction, which, in this case, takes the form of conscious *activity*, as expressed by the scheme

$$\boldsymbol{O} \rightarrow \boldsymbol{S} \rightarrow \boldsymbol{P},$$

with the subject $\boldsymbol{S}$ producing some product $\boldsymbol{P}$ from an object $\boldsymbol{O}$.[17] Any activity hence implies two complementary acts, *consumption* and *production*, expressed by the links $\boldsymbol{O} \rightarrow \boldsymbol{S}$ and $\boldsymbol{S} \rightarrow \boldsymbol{P}$ respectively. Of course, the object in this scheme does not necessarily refer to a simple thing; it may include many interdependent things, or any specific aspects of things abstracted from things themselves. For instance, as an expression of an individual act, the scheme $\boldsymbol{O} \rightarrow \boldsymbol{S} \rightarrow \boldsymbol{P}$ can correspond to using $\boldsymbol{O}$ as raw material for producing $\boldsymbol{P}$; the same scheme with $\boldsymbol{O}$ being a social relation may describe the dependence of behavior on moral norms or cultural stereotypes. Generally, in conscious activity, the object is the part of the world needed to produce a definite product. Similarly, the subject is not necessarily an individual; there are collective subjects, effective subjects and even abstract subjects (the components of a real subject involved in this particular activity). In the same way, the product $\boldsymbol{P}$ can be either a tangible thing or a sublime change in one's soul, or a hierarchy of social relations.

On the syncretic level, consumption and production are the aspects of the same act. Thus, writing a letter on a sheet of paper, we spend some ink; satisfying hunger, we consume food; attending a ballet show (consumption), we produce certain mental structures inside us. In other cases, production and consumption will be formally separated, with many acts of consumption accumulated for a single act of production, or a single act of consumption leading to multiple products. On this analytical level, consumption logically (and often physically) precedes production. However, syncretism does not entirely disappear, it is only lifted in, as any phase of analytical activity remains a simple unity of consumption and production. On the higher, synthetic level, all the analytical activities are included in

[17] From the dialectical viewpoint, $\boldsymbol{O}$ is the thesis, $\boldsymbol{P}$ is the antitheses, and $\boldsymbol{P}$ is the synthesis of the two opposites $\boldsymbol{O}$ and $\boldsymbol{S}$.

the integral process of cultural reproduction, which will also reproduce the objective and subjective preconditions for specific activities.

The product $\boldsymbol{P}$ is an integral part of the same world, and hence it can become a new object $\boldsymbol{O'}$ to initiate a new activity:

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P} \to \boldsymbol{O'} \to \boldsymbol{S'} \to \boldsymbol{P'} \to \ldots$$

The link $\boldsymbol{P} \to \boldsymbol{O'}$ is not trivial; in conscious activity, it means that the product is *intended* for something, that it is made to be used in a definite way. Animals can also consume and produce, within their metabolic chain. Still, for a primitive organism, any metabolic products are mere wastes: they can (and will) occasionally be consumed by some other organisms, but this is not why they have been produced. That is, the results of organic metabolism are of the same kind that any natural thing; for an animal, it makes no difference, whether something has been produced by an animal of the same kind or not.[18] More complex organisms can develop various forms of behavior resembling intentionality. In most cases this is a mere collective effect, a by-product of adaptation; however, the very possibility of producing reusable things is a necessary premise for the development of consciousness. In human activity, lifting a product in a new object is socially mediated and can become a special (aspect of) activity, *delivery*. In the cycle of reproduction, production $\boldsymbol{S} \to \boldsymbol{P}$ and delivery $\boldsymbol{P} \to \boldsymbol{O}$ get contracted in a single act $\boldsymbol{S} \Rightarrow \boldsymbol{O}$ which looks like immediate production of objects as consumption articles. Many philosophers were thence mislead to the mystical belief that the whole world is nothing but the result of conscious creation.

With the production stage lifted in, the activity mediated reproduction of the world will take the form

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \ldots$$

This (potentially infinite) cycle can be equally considered as composed of two complementary acts of reproduction:

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \ldots$$
$$\ldots \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \boldsymbol{S} \to \ldots$$

The first (primary, objective) form describes the reproduction of the world as an object (nature) and can be further contracted into

$$\ldots \to \boldsymbol{O} \to \boldsymbol{O} \to \ldots$$

The second (subjective) form describes the reproduction of the world as a subject (spirit), which can be written as

$$\ldots \Rightarrow \boldsymbol{S} \Rightarrow \boldsymbol{S} \Rightarrow \ldots$$

It is important, that the both schemes refer to the reproduction of the same world, in its complementary aspects. There are other levels of reproduction other than conscious activity; their description will require appropriate schemes; however, universal reflection is virtually indispensable to restore the world's integrity in full.

Since the product has been lifted in the idea of sequential reproduction, the objective and subjective cycles may look largely equivalent. And they are indeed equivalent on the most general scale, since the subject has to assimilate any part and aspect of the world in universal mediation, transforming the whole nature ($\boldsymbol{O}$) into culture ($\boldsymbol{P}$). However, in any individual activity, one should take care to distinguish the primary cycle (object reproduction, material activity) from the secondary cycle (subject reproduction, reflexive activity), and this is how any real activity can be comprehended as the unity of the both.

Instead of eliminating the product in the general cycle of activity,

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P} \to \boldsymbol{O'} \to \boldsymbol{S'} \to \boldsymbol{P'} \to \ldots,$$

one can alternatively fold (contract) the primary sequence $\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P}$, or the process $\boldsymbol{P} \to \boldsymbol{O} \to \boldsymbol{S}$. This formally results in two schemes,

[18] A similar attitude in humans should therefore be treated as the relics of animal behavior.

$$\ldots \to \boldsymbol{O} \Rightarrow \boldsymbol{P} \to \boldsymbol{O} \Rightarrow \boldsymbol{P} \to \ldots$$

and

$$\ldots \Rightarrow \boldsymbol{S} \to \boldsymbol{P} \Rightarrow \boldsymbol{S} \to \boldsymbol{P} \Rightarrow \ldots,$$

which can be used to describe the reproduction of the two complementary aspects of the culture, namely material culture and spirituality. No cultural development is possible without extending the range of available objects and enriching the ways of their possible treatment. In particular, in a comprehensive study, the both sides of the cultural phenomena should be considered. For instance, an abstract theory of objective economic development is as deficient as a sociological picture of economic relations; it is only in the synthesis of the both that real economic and societal processes can be properly understood. In reflexive activities, the same principle will stress, for example, the equal importance of empirical and theoretical research in science. That is, the two schemes can be interpreted on a more specific level as the development of the objective and subjective components in any product: objectively, things become more complex, or elaborate; subjectively, their production and maintenance requires more education and skill. In the most general sense, this means that any conscious activity will keep reproducing both nature and spirit, the objective and subjective aspects of the same world.

Conversely, the same two contracted schemes of reproduction explain the development of both the object and the subject as the products of activity, from the cultural determination of any economic or social phenomena to the notions like reference frame and asymptotic conditions in physics, as well the personal experience of a flower or the distress of menopause. The very acts of birth and death are gradually losing their natural determination and shifting towards regular industry; this process is complemented by the development of a keen sense of individuality, of the cosmic importance of any personal attitude.

Hierarchical Activity

Every time the world is reflected in itself, this is an act of reproduction, and conscious activity is an indispensable component of this general reflexivity. Since every individual thing can represent the whole world, the reproduction of individual things follows the same lines. Thus, the uniqueness of the world finds its counterpart in the *simple reproduction*, with something reproduced as it is, just keeping on; this aspect (or level) of existence is called *being*. On the next level, being becomes represented by the variety of the possible states of the same thing, so that reflection takes the form of *motion*, transition from one state to another. A higher level of reproduction admits changes in both the thing's being and its ways of motion, provided the thing remains qualitatively the same; such *extended reproduction* of a thing's existence is known as *development*.

A similar hierarchy can also be observed in life and conscious activity. Considering the recurrent reproduction of nature and subjectivity

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O} \to \ldots$$

we distinguish the objective ($\boldsymbol{O} \to \boldsymbol{S} \Rightarrow \boldsymbol{O}$) and subjective ($\boldsymbol{S} \Rightarrow \boldsymbol{O} \to \boldsymbol{S}$) aspects of the same infinite chain, that is, the parallel reproduction of the object and the subject through each other. In simple reproduction, this is nothing but the conservation of material culture and spirituality, which is different from being on the level of existence by its active character: any balance must be broken and restored many times to ensure cultural stability. In reflection, this corresponds to the interplay of consciousness and self-consciousness, individual psychology and sociality.

In a wider context, the reproductive aspect of activity refers to the incessant *expansion* of the subject-object relations: more objects are involved in activities of more people, and what was born as rare and difficult will gradually become quite common and simple. Thus, any modern musician has technical skills that, just a couple of centuries ago, only belonged to the most talented few; similarly, the bright mathematical discoveries of Leibnitz and Newton have become a very basic acquirement for a modern student. Applied to an individual (or a group as a collective subject), this active expansion becomes education and socialization; finally, inside the subject (both individual and collective), a

complex inner motion is related to communication and self-communication in the course of several coordinated or competing activities.

On the level of extended reproduction, both the object and the subject develop their inner hierarchy in accordance with the development of the hierarchy of activities, virtually reproducing the hierarchy of the world. The relations between different activities thus become reflected in the inner organization of each activity.

The inner development of the subject is different from mere education, since it requires self-education, reflection, personal attempts and discoveries. Primarily, this is a kind of activity, with the subject being both its object and its product. Spirituality cannot be taught and learnt; one has to build it by conscious effort and will. Sometimes, this is a painful process, since it necessarily involves a critical assessment of the world and a deliberate call for change.

Actions and operations

A full-fledged activity is a potentially infinite chain of transforms

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'} \to \boldsymbol{S'} \to \boldsymbol{O''} \to \ldots$$

All the arrows (links) in this scheme are qualitatively different, but, for a while, let us put aside any explicit distinction. Since the product of activity has been lifted in this cycle, the sequence may seem arbitrary, devoid any particular direction. However, the product is implicitly present all the time; subjectively, it become the *motive* of activity. People are hardly ever aware of their real motives, while they are engaged in an activity that is yet underway. It is only *post factum*, reflecting upon the results and consequences, that one can guess what stood behind all that. One's motivation is closely tied to one's social position, that is, to one's place in the whole of cultural development. This cultural influence could be said to lie above any individual activity, and above the subjective experience, thus forming the sphere of the *superconscious*.

However, on the conscious level, an activity is carried out step by step and is represented at any time by finite units like $\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'}$ or $\boldsymbol{S} \to \boldsymbol{O} \to \boldsymbol{S'}$. In other words, one's activity proceeds as a sequence of *actions* and *communicative acts*. In general, an activity may unfold itself in quite different sequences, which are all subjectively equivalent, as they are attributed to the same motive; that is, they have the same *sense*. An action starts in some objective situation ($\boldsymbol{O}$) and leads to a definite result ($\boldsymbol{O'}$); subjectively, it is done for some *reasons* and directed to a specific *goal*. Due to the universality of subjective reflection, the activity thus actualized will influence the objective situation, becoming one of its levels.

Actions $\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'}$ can be further contracted (folded) into *operations* $\boldsymbol{O} \to \boldsymbol{O'}$ apparently requiring no conscious control at all. Operations could be considered as highly automated acts ready to be taken from the subject and passed to some inanimate machine. For the subject, operations are performed on a level below conscious experience, they are *subconscious*. This how consciousness is complemented by the two kinds of the unconscious, which are both necessary for the development of subjectivity. Any action is implemented as a sequence of operations, and this is what this particular action *means* for the subject, within the current activity. An operation included in some conscious action is called *meaningful*; it is said to be performed in some active *context*. This is how humans differ from machines; for the latter, there is no attribution of operations to any conscious action, and all operations are equally meaningless.[19] Even the most complicated computer systems still need programming.[20]

Obviously, the same action allows many alternative implementations, hence changing its meaning from one activity to another. The embedding activity will constraint the possible

[19] Of course, this is true inasmuch as humans behave like conscious beings, rather than animals, or a kind of robots. The present economic and social conditions do not much favor universal reflection. That is why we can only hope that at least some part of our existence is inspired by subjectivity, while the rest still betrays our animal origin.

[20] Quite probably, computers will soon catch up with humans in the complexity of behavior, and they won't need human programming any longer. In a favorable case, a mixed society will form, uniting all kinds of conscious beings; alternatively, a stubborn humanity might need some programming (conditioning) by more reasonable computers, just like modern people treat domestic animals.

implementations of the actions. Conversely, the same operation can be included in many different actions, but the compatibility of an operation with all kinds of actions is regulated by the current activity. Like an activity is a *hierarchy* of actions, an action is intrinsically a hierarchy of operations which can be unfolded in many ways. But any hierarchy admits hierarchical conversion, transition from one hierarchical structure to another. An operation is understood as the most elementary (folded) kind of a conscious act; attempts to unfold an operation result in an overall reorganization of the hierarchy, with the formation of a new operation level and the former actions unfolding themselves in large-scale activities.[21] This dynamic reorganization of the hierarchy of activity is only possible within the universal reproduction cycle, and hence it is culturally determined. On the other hand, the cyclic reproduction of the culture gives a natural measure of time. Thus, an operation is subjectively performed in no time, and corresponds to the abstraction of a point, representing the discrete side of human behavior; on the other hand, an activity represents behavioral continuity, being essentially a process with a definite direction but no marked beginning or end. An action is the unity of continuity and discreteness: it is limited in time (one can complete an action and get a result), but not dimensionless and syncretic like operations; the idea of a segment of a real axis comes to mind. Operations can be thought of as single moments of the pure (subjectively infinite) duration represented by an activity, while an action occupies an intermediate position between these extremes, spreading in time from the beginning to the end. Obviously, any time units are associated with certain kinds of actions, and we evaluate the duration of an activity comparing it to another.

Inner and outer activity

In the course of activity, its object, subject and product become hierarchical. In simple reproduction, they unfold their hierarchies in appropriate hierarchical structures, so that, in any action, the subject transforms the hierarchy of the object into the hierarchy of the product, thus functioning as a hierarchical system. In extended reproduction, the world develops new forms and aspects of its existence. This leads, in particular, to the growth of the inner hierarchy of the subject.

As a mediator between the object and the product,

$$\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P},$$

the subject has to play two complementary roles, being both the consumer of the object $\boldsymbol{O}$ and the producer of the product $\boldsymbol{P}$. Denoting these two aspects of the subject with S and R respectively, we obtain a more detailed scheme of activity:

$$\boldsymbol{O} \to (S \Rightarrow R) \to \boldsymbol{P}.$$

This scheme can be interpreted in the sense that both the object and the product are *represented* in the subject with some inner formations, one somehow linked to another to ensure the integrity of the subject. But, as a universal mediator, the subject will also mediate the links between its inner hierarchies; this leads to the unfolded scheme of inner activity:

$$\boldsymbol{O} \to (S \to C \to R) \to \boldsymbol{P}.$$

In other words, every act of outer mediation is necessarily complemented by some inner mediation, reproducing any outer behavior in the inner organization of the subject.

Formally repeating this derivation, one can obtain more elaborate mediation schemes:

$$\boldsymbol{O} \to (S_0 \to (S_1 \to C_1 \to R_1) \to R_0) \to \boldsymbol{P},$$
$$\boldsymbol{O} \to (S_0 \to (S_1 \to (S_2 \to C_2 \to R_2) \to R_1) \to R_0) \to \boldsymbol{P},$$
$$\ldots$$

Of course expansions of that kind are only applicable to a limited number of special cases, since they do not account for an essentially nonlinear character of activity; picturing the hierarchy of behavioral acts as a simple succession is only acceptable as the simplest approximation. But even in this linear picture, there are different ways of unfolding the hierarchy of inner activity, and the resulting schemes will depend on the chosen model (that is, on the range of phenomena under consideration). For

[21] In psychology this is well known as “motive shift onto a goal”.

instance, regrouping the terms in the above schemes, we could use them to illustrate the growth of one's knowledge and skills:

$$\boldsymbol{O} \to ((S_0 \to S_1 \to S_2) \to C_2 \to (R_2 \to R_1 \to R_0)) \to \boldsymbol{P}.$$

This is an obvious oversimplification, because, in real activity, the inner mediation C will also become hierarchical, to match the hierarchical structures in S and R. Still, such simplified schemes could be quite practical when the psychological issues are of minor importance.

Yet another approach to the origin of inner activity is to consider the process of the immersion of certain components of outer activity in the subject (interiorization). Thus, the scheme of reflexively mediated outer activity,

$$\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P},$$

can be formally rewritten as

$$\boldsymbol{O} \to (\boldsymbol{S} \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O} \to \boldsymbol{S}) \to \boldsymbol{P}.$$

Lifting the objects in the inner mediation, we obtain

$$\boldsymbol{O} \to (\boldsymbol{S} \Rightarrow \boldsymbol{S} \Rightarrow \boldsymbol{S}) \to \boldsymbol{P}.$$

In this form, the scheme still represents some (folded) outer activity, only hiding their products from the sight. When this reflexive form of the original activity is common enough, it becomes represented in the subject $\boldsymbol{S}$ by some inner motion, a sequence of inner structures rather than public roles. Thus we obtain once again:

$$\boldsymbol{O} \to (S \to C \to R) \to \boldsymbol{P}.$$

Of course, the growth of inner hierarchy of the subject is impossible without the corresponding development of the object and the product. In particular, this means that the acts of consumption $\boldsymbol{O} \to \boldsymbol{S}$ and production $\boldsymbol{S} \to \boldsymbol{P}$ become indirect, mediated by the products of the subject's activity (as the representatives of the corresponding activities):

$$\boldsymbol{O} \to \boldsymbol{T} \to \boldsymbol{S} \to \boldsymbol{T'} \to \boldsymbol{P},$$

where $\boldsymbol{T}$ and $\boldsymbol{T'}$ stand for the instruments and tools. Distinguishing the objective and subjective sides in these mediating products, we obtain

$$\boldsymbol{O} \to (\boldsymbol{o} \to \boldsymbol{t}) \to \boldsymbol{S} \to (\boldsymbol{t'} \to \boldsymbol{p}) \to \boldsymbol{P},$$

or, after hierarchical conversion,

$$(\boldsymbol{O} \to \boldsymbol{o}) \to (\boldsymbol{t} \to \boldsymbol{S} \to \boldsymbol{t'}) \to (\boldsymbol{p} \to \boldsymbol{P}).$$

That is, along with the growth of hierarchy in the object and the product, a part of the outer world becomes included in the subject extending its material implementation and thus developing an *inorganic body*, in addition to the initial physiological base. In its ultimate development the subject will embrace the entire world, and culture will be identical to nature.

In the chain of actions performed by the same subject

$$\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P}_{12} \to \boldsymbol{S} \to \boldsymbol{P}_{23} \to \boldsymbol{S} \to \boldsymbol{P},$$

with intermediate products $\boldsymbol{P}_{12}$ and $\boldsymbol{P}_{23}$, one can explicitly indicate the inner activities involved:

$$\boldsymbol{O} \to (S_1 \to C_1 \to R_1) \to \boldsymbol{P}_{12} \to (S_2 \to C_2 \to R_2) \to \boldsymbol{P}_{23} \to (S_3 \to C_3 \to R_3) \to \boldsymbol{P}$$

Depending on the cultural situation, this reproduction cycle will fold in many ways. Thus, if products $\boldsymbol{P}_{12,23}$ are of the same kind as the object $\boldsymbol{O}$ (being its aspects or features), the inner structures $S_{1,2,3}$, $C_{1,2,3}$ and $R_{1,2,3}$ will become the levels of hierarchy in S, C and R, respectively:

$$\boldsymbol{O} \to \left\{ \begin{pmatrix} S_3 \\ S_2 \\ S_1 \end{pmatrix} \to \begin{pmatrix} C_3 \\ C_2 \\ C_1 \end{pmatrix} \to \begin{pmatrix} R_3 \\ R_2 \\ R_1 \end{pmatrix} \right\} \to \boldsymbol{P}$$

A similar hierarchical structure must also develop in the object $\boldsymbol{O}$ and product $\boldsymbol{P}$, and the scheme will then describe simultaneous transformation of reality on different levels. This ability is an important consequence of the universal reflexive character of conscious activity.

Alternatively, the object ***O*** and product ***P*** can remain the same representing a definite cultural area. In this case the scheme will describe a reflexive activity resulting in the growth of an inner hierarchy:

$$\boldsymbol{O} \rightarrow \overbrace{S_1 \rightarrow C_1 \rightarrow R_1}^{\uparrow} \overbrace{S_2 \rightarrow C_2 \rightarrow R_2}^{\uparrow} (S_3 \rightarrow C_3 \rightarrow R_3) \rightarrow \boldsymbol{P}$$

In this case, S_2 will be qualitatively different from S_1, reflecting the very process $\boldsymbol{O} \rightarrow (S_1 \rightarrow C_1 \rightarrow R_1) \rightarrow \boldsymbol{P}_{12}$, rather than its result, and hence accentuating the subjective side of activity.

The two above interpretations constitute the complementary aspects of the same cultural process resulting in the accumulation of ever more complex forms of activity and their reflection in the very organization of the culture.

Cultural hierarchies

The hierarchical organization of activity implies a hierarchy of products, as well as an inner hierarchy in any product. Culture is the universal product, embracing all the aspects of the world that have been influenced by conscious activity. That is, in the most general sense, culture is the only product of the most general subject known as the spirit. According to the principle of integrity, culture will manifest itself in many special forms, and the hierarchy of these forms restores cultural unity. The uniqueness of culture in general is thus broken up into many separate cultures that have to reflect and penetrate each other in conscious activity, along with the assimilation of the material world, nature.

Since culture is virtually coinciding with the whole world, it is as diverse and inexhaustible. Considering its different aspects, one will find appropriate categories and schemes. Still, like all things in the world, each specific culture must combine its material and ideal aspects synthesized in cultural content. As for material part, culture can be understood as the variety of all the material things produced by the society as a collective subject. This *material culture* is the primary aspect of culture in general, which allows us to judge about the activities of people by their traces in the world.[22]

The ideal aspect of culture comprises all the relations between people and things that are indirectly built in the material culture, or imprinted in the products of reflexive activity. This hierarchy of the modes of activity constitutes the current *mode of reflection*.

The cultural content is the unity of material culture and the mode of reflection which characterizes the type of culture, its basic features, the principal directions of its organization and development. This is what we call *cultural formation*. Every society historically develops through a sequence of cultural formations. Minor changes in the material culture and the mode of reflection do not lead to a different quality of life; however, gradually accumulating, such changes will provoke a revolutionary transition to a different cultural organization.

Each cultural formation is characterized, first, by the type of material production (*socio-economic formation*) and, second, the type of people's involvement in cultural processes (the type of ideation, *historical formation*). This gives yet another dimension in the hierarchy of culture. Quite often, the transition to another cultural formation does not equally affect all its aspects; within a single socio-economic formation, one can observe a sequence of historical formations, as well as economic reorganization does not necessarily mean a drastic change in people's habits and ideas; this discrepancy can sometimes grow to a manifest contradiction, up to the brink of counter-revolution.

As the universal product, culture is the unity of nature (universal object) and spirit (universal subject), and hence it will also reveal its objective and subjective qualities, developing the corresponding hierarchical structures. Thus we come to the distinction of *cultural experience* (culture as an object) and *spirituality* (culture as a subject). The unity of the both characterizes the productive core of the culture, the history and future of the conscious reorganization of the world, which is called

[22] This also applies to an individual person as a carrier of a definite culture.

praxis. In philosophy, the word "practical" has little to do with pragmatism, it refers to praxis as the only way to achieve or establish anything.

The category of cultural experience is related to the current mode of life and the usual ways of making things and using things. This is how people live and what they do. On the contrary, praxis refers to historical development, reorganization of people's life and the whole cultural experience. Spirituality preserves the active character of universal mediation, mediating also the transition from experience to praxis. In diathetical logic, this implies that spirituality will exhibit two opposite aspects: the experiential side is called *tradition*, while the practical orientation could be called the *level of culture*, or culture in the narrow sense, as an expression of a high degree of spirituality. Tradition is very important for culture, but not enough. A well cultivated person will be able to go beyond any tradition if this is required for the practical assimilation of the world. This gift is commonly known as *creativity*. Culture is thus understood as the unity of tradition and creativity. As usual, the categories in this triad can be considered as separate entities, as the mutually reflected aspects of something, or as the levels of some inner hierarchy.

Categories

Any culture could be compared to a huge machine that converts the typical modes of activity into the inner organization of the (individual or collective) subject, and then the subjective hierarchies into objectively present ideas, and then the common ideas into the products of reflexive activity, which influence the development of consciousness, self-consciousness and reason, enhancing the range of available activities and thus starting a new spiral of the same process. Philosophical categories occupy an important place in this cultural mechanism, representing the most general modes of behavior. Though the same content can be expressed in many other ways, it is only philosophy that is concerned with its explicit presentation revealing a universal core in all kinds of special activities.

Historically, categories were first understood as the forms of thought, and the analysis of language remained their primary source for a long time. The philosophical offspring of logical positivism are yet cherishing the vain hope to discover the sense of any text in its formal features, reducing all kinds of knowledge to verbal exercise. Today, we know that philosophical categories reflect the universal attitudes of the conscious subject to the objective world (nature) and its reproduction in the culture. Human thought can be reflected in philosophical categories as a special case of conscious activity, but there all the other aspects of culture will necessarily find their categorical expression as well. Categories mainly apply to what we do, rather than what we think, and to our thought as a kind of action.

Every category represents some mode of universal mediation, and hence an aspect of the world in general. That is, each category contains the whole of philosophy, and any category can be "derived" from any other. Philosophical categories are equally universal regardless of their origin. This implies that a category can never be reduced to a scientific notion, however wide, or expressed by means of art, however abstract. In particular, any association of a category with a single word can only be superficial and optional, so that the same category equally goes under different names. There is no such thing as philosophical terminology. Philosophy has to borrow forms from science, art, language, or common life, and reinterpret them in the context of a philosophical study, restricting and widening their usage in the same time.

This task can be approached in different ways. Some philosophers suggested extensive categorical systems (Aristotle, Hegel); some others preferred to avoid explicit formulations and promote their teachings in an allegoric manner, through tales and parables (Socrates, Nietzsche). There were also those who demonstrated their philosophy in practical decisions and acts, in the very style of life (Diogenes, Tolstoy). It is only in Marxism that the practical character of any philosophy has been explicitly declared, and the formation of philosophical categories has been universally linked to people's life and activity. Philosophical categories are essentially concrete, and no philosophy can be developed as an abstract phrase or personal opinion. That is, every instance of philosophy comes from and is shaped in accordance with an urgent cultural necessity; any universal content of a philosophical

category is a reflection of the cultural universality. Philosophy cannot be invented, it is always born to serve the objective trends of economic and social development.

The subject as universal mediation can interconnect any aspects of the world and all kinds of things. In particular, any two philosophical categories can be compared to each other, transformed into each other and integrated in a categorical scheme. However, this synthesis is far from mere positioning side by side, to immediately observe their distinction or superficially group them be contiguity. The task of philosophy is to explicate the objective commonality already present, or just possible in the culture. In other words, the unity of any two categories implies yet another philosophical category. Any categorical scheme can be unfolded in many dimensions, and the integrity of the world ensures that this hierarchical structure will eventually contain any category at all. Though the same hierarchy can be represented by different hierarchical structures, unfolding is never arbitrary, it must agree with the nature of things, so that any structural link corresponds to our ability to practically connect things in our activity. The flexibility of categorical schemes is therefore an expression of objective diversity.

Though every category belongs to the same hierarchy, one can never pretend to collect a complete set of philosophical categories. The practical character of philosophy implies that, in each individual case, a philosopher will use just a few interrelated categories, avoiding too extensive hierarchical structures but assuming a background of other categories hidden (folded) in the explicitly introduced subset. Ideally, a philosophical treatment of a practical issue will develop a single category appropriate for the case (the topmost element of hierarchy), all the rest playing an explanatory role. This also means that a categorical scheme is normally used in one of the possible positions accentuating the primary categories; one does not need to refer to its aspects irrelevant for the area of interest.

Any scheme is a hierarchy of the possible interpretations, from mere metaphor to a detailed systemic description and developmental approach. This circumstance simplifies scheme transfer from one area to another, and the same scheme can convey different ideas in different philosophies. For instance, a scheme can be interpreted in a structural, systemic, or hierarchical way; the elements of a scheme can be differently ordered; and, of course, the real content of each element depends on the cultural context.

Like the sense of an action is a characteristic of its place within an embedding activity, the sense of a philosophical category depends on its position in a categorical scheme. In a more detailed scheme, categories become more specific, folding their universal content in favor of applied connotations. That is why scheme transfer between different philosophies has nothing to do with mere borrowing or projection; all the elements of the scheme are to be reinterpreted in the new cultural sphere, adapted to the new context. The hierarchy of all the special positions of a category becomes its inner hierarchy, which opens new aspects in the earlier applications; old philosophies cannot be revived in our days without a drastic change in their ideological load, and any local cultures will need to find a common cultural framework to allow borrowing philosophical categories from each other.

A philosophical category is defined in (at least) three complementary ways. Primarily, it refers to a universal aspect of activity, and the conscious effort in organizing life in accordance with a certain ideal will serve as a *practical* definition. On the other hand, one could collect the different partial explications and reinterpret them as the manifestations of the same; in this approach, the category is much like an object of study, and hence the history of philosophy can be used to develop *existential* definitions.[23] Finally, within the current discussion, the category can be explained through its dependence on the other categories, that is, using a number of categorical schemes. Such a *formal* definition can sometimes be a good start, but it is never sufficient. The readers of a philosophical treatise will have to develop their own idea of what is really meant, which is impossible without rediscovering the same universal order in one's practical domain. Categories cannot be simply learnt, they must be lived through.

Though all kinds of schemes can be used in formal definitions, philosophy does not favor highly detailed constructions more appropriate in science, or entirely metaphorical sketches characteristic of

[23] In the most general sense, a definition indicates the role of something in the whole. A practical definition places the category in the whole of the culture; an existential definition puts it in the whole of philosophy; formal definitions describe the category as a part of an abstract (artificial) whole, for instance, a categorical scheme.

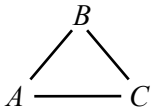
the arts. In philosophy, categorical schemes are also treated as categories, so that different categories of schemes apply to the corresponding spheres of practical activity. A *monad* is the simplest scheme reflexively relating a category to itself. A *dyad* is a scheme of two complementary categories, the opposites thus formally defined as the negation of each other. A *triad* is the minimal extension of dyad introducing yet another category, the synthesis of the opposites; the opposition is said to be lifted (Hegel: *aufgehoben*) in the synthesis, so to say, both annihilated and retained as an inner necessity. Triads are absolutely reflexive, so that any category in a triad can be understood as the synthesis of the other two, the character of their interrelations and the way of their mutual transformations. In this sense, the links between the categories in a triad are the members of the same triad.

In reflexive activity, a monad corresponds to the very presence of something in the culture; we need to feel the existence of a problem before we can try to formulate it and suggest the solution. This is basically what art does. On the analytical level, in science, we do our best to demarcate the boundaries, to tell what something is and what it is not. In other words, science is essentially dyadic, it grows from dichotomy. To restore the integrity of the world, we need to indicate how the opposites depend on each other and penetrate each other; that is, philosophy needs triads to express the unity of the world.[24]

To lift the unity in the uniqueness of the world as inner diversity, a tetradic scheme could be used. However, the practical need for tetrads will come when the triadic logic becomes as common as the traditional dichotomic approach (which requires a different social system free of class antagonisms). Though schemes of four elements can be found in some teachings from the most ancient times, they are not true tetrads, but rather eclectic combinations of lower-order schemes, like the apparently complex tone systems of traditional music are often mere superposition of elementary intonations based on a simple scale (trichord, tetrachord, pentatonic).

Due to inherent reflexivity, more complex categorical schemes are virtually equivalent to tetrads, or triads. Any real necessity of higher-order schemes would drive us from philosophy to a higher level of reflection. Also there is no need to specially consider any kinds of free-form schemes, since monads, dyads, triads and tetrads combine discreteness and continuity as the two complementary aspects of any activity at all.

A categorical triad could be pictured as a diagram



which can be represented by the "inline" (sequential) forms like $A \to B \to C$, or $C \Rightarrow B \Rightarrow A$. The first sequence is called primary; the second is the reflected (or inverted) form of the triad. Recalling that C represents the link between A and B, we observe that the secondary form can be regarded as the triad of links. In formal reasoning, the two forms are entirely interchangeable; one needs to get engaged in a practical activity to objectively distinguish the primary sequence from the secondary. Such sequential representations of the triad are mere projections, the special ways of unfolding the hierarchy; using such simplified schemes we must always keep in mind the whole, including the structural, systemic and hierarchical interpretation of the elements and links, including their convertibility and the cyclic character of reproduction.

Since any two hierarchies are organized in the same way, the very arrangement of three categories in a triad suggests many associations with other categorical triads. Such formal parallelism often hints to some objective similarity, providing a kind of *metaphorical* definition. Further development can establish real dependencies, bringing metaphors to the level of *analogy*, or even the *kinship* of the parallel schemes. In any case, comparison of triads is a fundamental mechanism of scheme transfer, a powerful tool of reconstructing the universal features of some cultural sphere on the basis of the hierarchies discovered in other areas.

[24] In science, considering the interactions of a thing with the rest of the world is unrelated to any integrity considerations. Such interactions remain random, they are not necessary for the very existence of the thing. This is a *projection* of a triad rather than the triad itself.

The practical character of philosophy does not allow any abstract categories, regardless of a particular application area. Conversely, all philosophical categories (from any domain) are equally universal and universally applicable. For instance, one could take philosophy as a kind of reflexive activity for the practical definition of the relevant categories. Alternatively, we study the history of philosophy in order to determine the categorical core of the present culture. Finally, one could choose some categorical scheme for an organizing principle and sort out the categories by the formal criteria. In the rest of this section a few "traditional" categories will be introduced in an informal way; however, we limit ourselves to a kind of "ontological" approach; thus, any esthetical, logical and ethical aspects are to be considered elsewhere. The basically historical approach combined with the triadic arrangement of categories will stress the demand of integrity as the principal concern of any philosophy at all, and the philosophy of unism in particular.

Matter, reflection, substance

Historically, these categories were discussed independently of each other, possibly compared with other categories like spirit, object, consciousness, existence *etc*. The category of matter is one of the oldest in philosophy; though it was often confused with other categories, the fundamental idea of something prior to any distinctions lived through millennia. In unism, this category is closely related to the uniqueness of the world as the first (syncretic) level of its integrity. There is the only world, and nothing else. The words like "outside", or "beyond", are inapplicable to the world as a whole. In particular, all kinds of subjectivity belong to the same world, and any tales about the independent existence of abstract ideas, mental constructions, or deities are out of question.

With the development of science, this monadic approach was felt insufficient, giving birth to the problem of the source of the observable diversity, the cause of universal motion. The category of substance was introduced to express the self-sufficiency of the world (or any of its parts as a miniature replica of the whole), eliminating the very necessity of any external cause. However, the difference between the categories of matter and substance remained rather vague, and these categories were often treated as basically equivalent. Still, the very formation of a new category reflected an important cultural achievement. It was yet another step away from the early anthropocentrism and beyond the anthropomorphic character of the natural language. Nature was thus ascribed the capacity of acting "in a subjective manner", to be its own cause, with no conscious intervention required. This laid the foundation for the subsequent emancipation and triumph of science. On the other hand, the presence of the subjective element in substance was yet to be explained, which could not be done until the introduction of the category of universal reflection as the first attribute of matter (Lenin).

Anything in the world is a kind of self-reflection. Individual things represent the different modes of reflection, the "projections" of the world into itself. Any change is the inner transformation of the same world, an instance of self-reflection. As a sequence of distinct acts, reflection results in a hierarchical organization of the world, a number of hierarchical structures that can be folded and unfolded in a different direction, thus producing the inner diversity of the world, its universality. The category of substance then restores the integrity of the world comprehended as the unity of all the partial manifestations and all the aspects; this is what we express with the triad *matter* → *reflection* → *substance*, assuming that substance is the unity of matter and reflection.

Individual, particular, general

These are traditionally considered as logical categories introduced yet by Aristotle and mostly used as modifiers of any the other categories suggesting the possible frameworks for discussion. Alternatively, this triad refers to the fundamental stages in any philosophical development. That is, any aspect of the world is first taken on itself, as isolated and self-contained; then we discover numerous similarities and come to considering any individual as a carrier of some common feature (and hence its representative); finally, any particularity is understood as a manifestation of a universal principle, which is used to bring all the partial aspects of a thing together, under the same integrative idea. Obviously, this is yet another reformulation of first principle of any philosophy, the integrity of the world assuming its uniqueness, universality, and unity. The world in general gets reflected in itself in many particular aspects, which results in an infinity of individual worlds (things).

However, any logical category can borrowed by any other branch of philosophy, and become ontological, esthetical, ethical, and so on. Historically, the same categories were often independently introduced in different contexts, under different names.

The qualitative difference between the levels of individuality, particularity and generality has always been a difficult problem in science, a source of paradoxes and contradictions. For instance, in mathematics, the difference between a set and an element, or the difference between extensive and intensive properties, is essentially incompatible with the traditional notion of scientific rigor, and there were attempts to abandon the discussion of the qualitatively different scopes and entirely eliminate the individual or general notions. Indeed, distinctions like that do not belong to the realm of science, but philosophical considerations have always been a source of sharp turns in scientific thought.

As a logical form, any categorical scheme can be taken in the individual, particular and general sense. Thus, the fundamental hierarchy of world, *matter* → *reflection* → *substance*, can be reinterpreted as the hierarchy of the basic aspects of anything definite:

material → *ideal* → *real*.

Everything in the world has its material side, being somehow related to matter. In the same way, everything becomes ideal when considered as a kind of reflection. However, real things combine both the material and the ideal, thus representing their relatedness to the world as substance. The same triad taken in the singular sense distinguishes the three aspects of any individual thing:

material → *form* → *content*.

Roughly, the material of a thing is what this thing is made of; the form of the thing refers to how its material is organized to produce that very thing; the content of the thing is the unity of material and form determined by the thing's place in the world.

Of course, philosophy cannot blindly trust such formal exercises. Categories represent the universal features of practical activity, and the formal possibility of something does not make any sense but in the appropriate cultural context. That is why, it may be different to indicate a category for a vacant position in a scheme; this means that the corresponding cultural phenomenon has not yet developed to the degree of reflexive activity. Suggesting a new philosophical category to complete a categorical scheme is the same as to suggest a new direction of economic and social development.

Essence, appearance, actuality

Though this Aristotle's triad has long since become a standard instrument of philosophical study, there is no general consent as to what its components should really mean, and thence numerous terminological experiments and misconceptions.

In our context, this triad could be roughly identified with the triad *material* → *ideal* → *real*, with the qualities of things treated as things. This formal trick explains the common association of existence with materiality, and form with appearance; but such parallels can be misleading unless they are practically justified. In general, one could say that the triad *essence* → *appearance* → *actuality* refers to the outer presence of a thing, to its reflection in the rest of the world (or in other things), thus being a complement of the triad *material* → *form* → *content* as a characteristic of the thing's inner organization.

Essence of a thing is the unity of its materiality, ideality and reality;[25] it is the expression of the thing's being *in* the world. On the contrary, the category of appearance reflects the particular way of unfolding the essence into something *for* the world (a phenomenon). In the philosophical context, the categories of essence and appearance reflect the ontogeny and phenomenology of the thing, respectively. Actuality as the synthesis of essence and appearance is to express the idea that no appearance is possible which would not be implied by the thing's essence, and nothing in the essence is hidden from appearance; all the latent features have to become (or be made) actual.

The essence of a thing refers to the possible manifestations, representing its *potential* existence.[26] The *actual* existence is a definite entity, as distinct from similar and different entities.

[25] Here, we leave the triadic formalism in favor of tetrads.

[26] The possibility of existence is a kind of existence itself. If something is possible in principle, it is already present in

However, the essence of an individual thing is never expressed in any individual manifestation; it can only be revealed as the common core of many different phenomena. On the other hand, any appearance can be comprehended as an inherent ability of the thing to get actualized in this particular way. In this sense, appearance is a part of the thing's essence. In the hierarchical approach, essence and appearance are mutually reflected, and actuality is the mechanism of their development through each other.

Individual representatives of essence are known in philosophy as *entities*. Any specific appearance of something is referred to as one of its *aspects*. The unity of an entity and its aspect is the unit of actuality, a *thing*. Conversely, an entity is the common core behind all its possible aspects of a thing, and an aspect of a thing is a manifestation of some entity. Since the same hierarchy can be unfolded in many ways, the same thing can represent different entities taken in their corresponding aspects.

Quality, quantity, measure

Though all the three categories are among the most ancient, quality and quantity have been put forth by the newly born science, while the category of measure stayed in the dark, treated as an esthetical or ethical notion. Though Hegel tried to revive the idea of measure as a necessary complement to quality and quantity, this attempt was obviously premature in the epoch of the aggressive self-determination of science. Later, when the categories of quality, quantity and measure have been highly praised by Marxism as a cornerstone of dialectical logic, this triad fell into disgrace for political reasons.

The category of *quality* conveys the idea of a thing as it is, as that very thing, and not another. In unism, similar ideas are expressed by the categories of *content* and *essence*; the former could be characterized as the inner (intrinsic) quality, while the latter refers to extrinsic quality, the place of the thing among other things. The unity of these two aspects of quality constitutes the thing's *identity*.[27]

The philosophical category of *quantity* cannot be reduced to mere numerical estimate, as well as numbers do not necessarily denote quantity. Quantity is related to the *form* of the thing, its *appearance*, to its *value* in the broadest sense, including subjective value and cultural value. Quantity describes any structural aspects, systemic behavior, or other external manifestations of inner complexity; this is how things of the same quality differ from each other. In other words, the category of quantity says that different things are not isolated from each other, they are always comparable in some respects, on some levels of the world's hierarchy. This is how things stick together.

Formally, the category of *measure* is the unity of quality and quantity, the necessity of the both. Though many people find it difficult to comprehend, they use it all the time in their everyday life. For instance, if one has a couple of friends, this already connects some quantity (couple) to some quality (friends). Getting a hundred dollars is not the same as getting one dollar or a hundred roses, though such equations are quite possible in a different cultural context (for instance, in a currency exchange office, or in a flower market). One thing can be made the measure of another thing; this is one of the first gains of human cognition.[28] However, the power of the category of measure goes beyond mere measurement; it states that quality and quantity cannot be treated as independent[29] of each other but in a very limited area; in a wider context they need to be considered together, as the two mutually reflected aspects of the same. On the syncretic level, we find that the available units of measurement are not equally convenient in different situations. Thus, we can, in principle, measure the distance between Moscow and New York in microns; but miles and kilometers are much more appropriate

the world as possibility.

[27] This example shows that philosophical categories are all mutually reflected; there are no basic categories producing all the rest, and one can derive the whole of philosophy starting from any single category, however special it might seem.

[28] Primarily, this took the form of the anthropic principle: a human being is the measure of all things. The relics of the early anthropomorphism and anthropocentrism strongly influence our behavior up to now.

[29] Such rigid separation takes quality and quantity as two orthogonal dimensions; that is, in a purely quantitative manner. Hegel distinguished reflective and ontological categories; in reality, all philosophical categories are reflective, as well as ontological. Hence an important methodological consequence: the multidimensional spaces used in science to represent the configuration and the state of motion of a dynamic system are essentially local; on a larger scale, any system will exhibit a variable dimensionality.

here, while astronomic units, light years and megaparsecs provide a natural hierarchy of measure in the outer space.

Everybody knows that most things can be slightly modified without ceasing to be the same things. Such changes, irrelevant to the quality of the thing, are called quantitative. However, small changes can gradually accumulate to produce something qualitatively different from the original thing, which is always perceived as a kind of leap. Thus a child suddenly becomes adult, comfortable warmth grows into ruthless heat, and low income may accidentally turn into poverty. In such cases we say that the quantitative changes have gone beyond measure and become qualitative.

On the other hand, the quality of the thing determines its possible manifestations, establishing a range of possible variations. The very distinction form other things implies the possibility of comparison, and hence evaluation. Even unique things are measurable, at least by their uniqueness. This mutual determination of quality and quantity is reflected in the category of measure.

It is important that qualitative changes do not produce anything from nothing, they *transform* the already existing things, but never annihilate them. A change in quality is still a *change*, which implies the retention of something that undergoes the change. Conversely, subtle quantitative change could be considered as highly significant in a different context: one dollar difference might seem negligible compared to the totals of about $1000; however, if something costs $1000, and you have only $999, you cannot afford it, and you will have to decide on whether you are going to abandon the idea of purchase, or to raise additional funds. Measure is hierarchical, and the distinction of quality and quantity depends on the level of hierarchy.

Possibility, necessity, universality

Traditional philosophy has been discussing the problem of necessity since the first glimpses of reflexive thought. However, this idea lacks clarity up to now. Paradoxically, the very ubiquity of necessity in the culture has hindered the formation of a category incorporating all the special cases, and the idea of necessity still remains restricted to a number of applications, with the universal core of necessity illustrated by oppositions of a local character like “regular—random”, “slavery—freedom”, “logical—arbitrary”, and others. Philosophers feel that there is something to complement the category of necessity, but they are not sure about what it should be. The traditional adherence to dichotomies adds to the confusion, since there are two opposite complements of necessity, one merely breaking the links and connecting things in a chaotic manner, and the other retaining regularity and order, but adding many alternative kinds of necessity more likely to actualize under certain conditions, that is a kind of higher-order necessity. These two poles are close to what Ancient Greeks pictured as Chaos and Cosmos. Of course, the transition from mythological consciousness to analytical reflection was not easy, and different philosophers differently treated these ideas on the different stage of social development. However, one could take the sum of individual interpretations to outline the scope of the corresponding categories. The resulting “cosmogonic” triad

$$Chaos \rightarrow Order \rightarrow Cosmos$$

closely resembles the fundamental triad of the aspects of the world’s integrity,

$$matter \rightarrow reflection \rightarrow substance,$$

which, for an individual thing, can be rewritten as

$$material \rightarrow form \rightarrow content.$$

That is, the understanding of Cosmos as the unity of Chaos and Order, was one of the first expressions of the material integrity of the world. Of course, mythological consciousness is essentially syncretic, and the same scheme has an alternative interpretations, with Order mystically identified with the God’s will, either in the act of creation, or in every instance of being (like in the so called philosophy of occasionalism). Modern physicists tend to consider order in the creationist way, as Big Bang, a primary act of unfolding the hidden dimensions of the Universe into what we currently know as the standard model. Unism admits the possibility of such a sudden transformation, with the only remark that this would lead to only one of the possible manifestations and, in view of the integrity of the world, it should be a normal instance of reflection rather than something exotic and rare; quite

probably, such things happen every moment, but we cannot observe them from within a particular unfolding of the world's hierarchy, though, for the very same reason, nothing prevents us from developing the idea of higher order embracing our local universe, and we can even try to provoke a kind of big bang by our conscious activity, thus becoming gods. Again, it is quite probable that we already do things like that, on some scale, but do not notice them.

The two opposites of order correspond to its two complementary manifestations that could be conventionally called *possibility* and *universality*. The category of possibility brings in the idea that, in any case, at least something is bound to happen, to be, or to lie ahead. This is the realm of potential existence, the essence of things. On the contrary, universality says that if something is possible, it will happen, be and be in for. The common aspect of both possibility and universality is that connotation of something obligatory and inevitable. This is what we call *necessity*. And this gives us yet another triad:

possibility → *necessity* → *universality*,

which can serve as a formal definition of the three categories. This scheme is an obvious parallel to the triad

essence → *appearance* → *actuality*,

and one could consider essence as a kind of possibility, and universality as actualized possibility. This leads to a vast range of conclusions about the nature of necessity. On the other hand, the basic aspects of an individual thing form the triad

materiality → *ideality* → *reality*,

and we are free to conclude that universality is nothing but the reality of both possibility and necessity, and conversely, the possibility is to express the material aspect of things (everything that is possible is possibly because it is an aspect of the same world), while necessity is ideal, in a sense. This is how triad can form higher-order triads.

In this very general and all-comprehensive treatment, necessity is much wider than mere causality; it equally applies to the physical world, human culture, or the hierarchy of the spirit. Accordingly, the triad of order can be treated as ontological, logical, esthetical, or ethical law. In this way, it provides an integrative view to the history of the philosophical treatment of necessity.

Existence, life, activity

Traditionally, these categories were discussed separately; moreover, only the category of existence was generally considered as philosophical, while life and activity were often treated as applied notions. In unism, we define existence, life and conscious activity as the levels of reflection, and this triad is as fundamental as the triad *matter* → *reflection* → *substance*, though it may seem to be more special, referring to a specific way of unfolding the mediating component of the later scheme. One could come to the categories of matter, reflection and substance unfolding the category of existence; philosophical categories cannot be arranged in any standard order, they are equally universal.

In the triad *existence* → *life* → *activity*, we stress the qualitative difference between the inanimate and animate world, as well as between unconscious life and the world of reason. In unism, these traditional oppositions become the levels of the same hierarchy, representing the objective direction of development. But any triad also implies hierarchical conversion; the order of its elements depends on the context. Thus, though activity can be understood as a special form of life, or a special kind of existence, life and existence can sometimes be treated as derivatives of activity, which is reflected in the common word usage ("life of dignity", "purposeful existence"). As the whole world is gradually assimilated by the culture, inanimate existence and life in such cultural environment change their quality, absorbing the elements of conscious activity. The human brain can serve as an immediate illustration: as a mere collection of cells, it will never develop the form of functioning characteristic of social behavior; consciousness needs a brain, but the brain must be well-cultivated to support consciousness.

Individual existence is referred to a *thing*; the unit of life can be called an *organism*;[30] every activity needs a conscious *subject*. As a sort of thing, an organism is an organic *body*; but living body is different from dead body, and this difference is called *soul*. This does not mean that souls exist as independent entities; a soul is only a specific way of the body's existence in a biological environment modifying the non-organic processes. A soul cannot be detached from the body without killing the organism and hence the elimination of the soul. Similarly, a subject is primarily an organism, but of a very special kind; its body can combine both organic and inorganic components involved in common collective behavior. The difference of the subject from mere organism is known as the *spirit*. Once again, no spirit can exist on itself, without any organism at all. However, since the subject's body is a hierarchy of organic and inorganic components, the spirit is no longer attached to an individual body, it can find a different carrier without violating the integrity of the subject. This feature of the spirit is known as *immortality*. To kill the spirit, one needs to destroy a hierarchy of cultural formations, so that its elements would no longer belong to any common integrity, serving the same range of activities. This is a difficult task, since the universality of the subject makes it highly adaptable to any cultural changes, and it is practically impossible to erase all the direct and indirect influences, the products of the subject's activity.[31] Nevertheless, for a particular body, spiritual death is quite possible, meaning a change in the mode of the spirit's existence. The spirit can leave the body without physically or biologically destroying it; the body just stops to support spirituality. For instance, a person can continue to live, to exist as a biological organism, but this living body is no longer spiritually active, it does not produce anything culturally valuable. Since spirituality is hierarchical, including the universal hierarchy of consciousness, self-consciousness and reason, spiritual death can destroy some levels without touching the rest; that is why the lack of spiritually can be rather hard to detect.

Being, motion, development

The category of being always remained in the core of any philosophies at all, even those that openly denied the philosophical significance of ontology; for instance, the category of being could become a mere logical form. Ancient philosophers also tried to comprehend the universality of motion, and this tradition still lives in modern philosophizing, though the study of motion has largely been usurped by science, so that philosophical treatment gets often reduced to a kind of meta-scientific approach. The category of development did not attract much public attention in the old times, and today, it has not yet reached any definiteness, which is objectively related to the complexity if the idea, and, on the other hand, to cultural immaturity. This category seems to stay suspended somewhere in between science and philosophy, neither pretending to fully assimilate, nor discard it. Though modern science has long since become saturated with the idea of development, it still gets lost in coping with developmental issues, lacking due philosophical support.

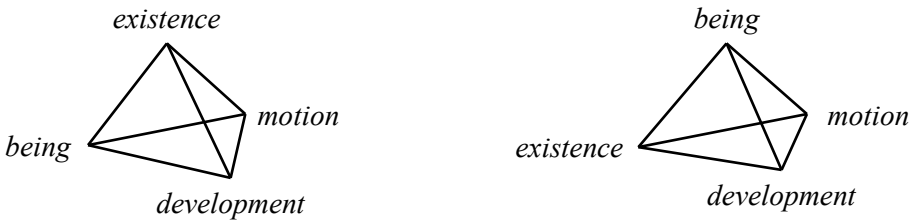
In unism, the three categories are regarded as the universal levels of existence (and hence the forms of reflection). Any isolated consideration is incompatible with the principle of the integrity of the world. There is no development without being and motion, and no being without motion and development. Each element of the triad is the synthesis of the other two.

Amateur philosophizing tends to confuse being with existence. However, even the everyday word usage already suggests a broader treatment, since "to be" as "to exist" is not the same as "to be something", with yet another connotation of "to play the role of", or "to be regarded as". Logical positivism tried to reduce all kinds of being to mere predication, entirely excluding the category of existence from philosophy, which is obviously the same vulgar identification in the idealistic guise. Arbitrarily discarding a category does not eliminate the problem; other categories will absorb the missing logical links reproducing the same contradictions elsewhere.

[30] Mere organic molecules are not enough to be a form of life. Life begins where the motion of molecules is coordinated in a stable metabolic chain reproduced on a regular basis. That is, one needs yet another level of hierarchy, a superstructure built upon the chemical composition. However, various chemical cycles, waves and other collective effects serve as a natural prototype of life within inanimate existence.

[31] In fact, there is absolutely no way to annihilate any spirituality by conscious action, since conscious activity directed towards some spiritual formation will only add yet another dimension to its hierarchy, and hence to its deeper implanting in the culture rather than disappearance. Spirit can only be killed by inanimate nature, or an animal.

In diathetical logic, it does make much difference, whether to consider being as a level of existence, or existence as an aspect of being; these are merely two hierarchical positions of the same tetrad:



In the latter case, existence can be readily reinterpreted as *presence*, which is one of the connotations of the German term *Dasein* denoting a definite kind of being, and especially being here and now. Obviously, this does not reflect the idea of existence in full, only representing one of its aspects.

The universal character of the category being in unism demands as universal ideas of motion and development. That is, the forms of motion go far beyond mere displacement, or a physical change, and we can justly talk about the motion of ideas, or the motion of the soul. Following the mechanical tradition, motion is often pictured as a trajectory in some configuration space, finite or infinite, continuous or discrete, of any dimensionality and probably non-trivial topology. This scientific metaphor may be helpful in philosophy, provided one does not forget about the limited character of any formal representation. The category of motion covers all kinds of comparison, transition, transfer, interaction, or interdependence; a dyad could be said to be its logical counterpart, and that is why the study of motion lies in the core of any science.

Similarly, unism comprehends development as a universal idea, the unity of being and motion, staying and change. Anything in the world is subject to development, changing in some respects while remaining essentially the same. The category of development is closely related to the ideas of complexity and integrity: a developing thing adds new components to those retained, and hence becomes more complex; alternatively, it must integrate new aspects and features in its current existence to remain the same thing. That is, each level of development assumes a certain measure, a kind of balance between the thing's quality and quantity; however, this balance inevitably gets broken to produce a new quality that did not exist before, so that the developing thing can no longer be considered as the same. The unity of the old and new quality determines a higher-level measure, so that there is still something definite to develop. In other words, development makes things hierarchical, and it can be formally pictured as the growth of a thing's hierarchy. From this perspective, being represents the static, structural aspect of existence, while motion accentuates system dynamics.

Along with the general idea of being, one can consider an individual being as an entity, an aspect, or a thing. On the level of particularity, being is represented by the category of a *state*. That is, every particular occurrence of something, or any instance of being in general, corresponds to a definite state of the universe, or a thing correlation, as its representative. Accordingly, an elementary act of motion takes the form of transformation, transition or interaction, and we employ the category of *change* to express the idea of one state replacing another. Finally, individual development can be characterized as genesis, evolution, or formation, while the particular level of development is related to *becoming*.

Nothing

Since existence is comprehended as a level of universal reflection (linking the world to itself), there is no need in the category of *nothing*, which was so much cherished by many philosophers of the idealistic ilk. In Germany, Hegel has even put this category (*das Nichts*) in the basis of his whole categorical system, producing being from nothing via becoming (*das Werden*). The principle of the integrity of the world states that any distinction is only possible within the same world, as one of its manifestations. That is, there is always something that makes any individual thing (its material), and all kinds of reflective phenomena (including consciousness and subjectivity) require a material basis.

The category of nothing is philosophically void, it does not reflect anything universal.

However, the very presence of this idea indicates that there are certain aspects of the culture that could serve as its prototypes (even the idea of nothing does not come out of nothing!). And indeed, one can observe that the idea of nothing is related to the cultural recognition of integrity.

It is well known that the first conscious definition is negative: as soon as something takes root in the culture, we discover it as an object that is *not like the others*. For the next step, we try to find a *measure* of the new thing, that is, another object that would resemble the unknown and thus make it a little bit more tractable. Finally, after collecting the different aspects of the same, we can determine the place of the newcomer in the world, a kind of higher-order negation, opposing what the thing is and what it is not. This also makes the thing virtually identical to the rest of the world, since the two opposites are defined through each other.

Now, when it comes to the integrity of the world, the logic of negation fails, since there is nothing else, and there can be no comparison, nor measure. The negation of the whole is nothing. That is, it is identical to nothing. In other words, the category of nothing refers to the whole world taken in its syncretic integrity, as unique. Then this syncretic whole is reflected in itself to produce a universe of distinctions, individual things, which have to be brought to unity by the conscious subject. In this sense, Hegel was right to choose that very starting point for the development of the whole of philosophy; his only mistake was in the idealistic interpretation of the category, and naming it as "nothing" instead of "the world". With this shift of focus, Hegel's philosophy becomes identical to the philosophy of Marxism.

On the next level of integrity, when the world gets represented by the infinity of things and their mutual reflection, every part of the world can reproduce the world's integrity in its inner hierarchy, so that the idea of "nothing" will apply to such "mini-worlds" as well. However, local integrity can never be complete, and, in addition to the general sense of the presence of the integral whole, this category can take two complementary forms, of emptiness and vacancy. The whole world is always present; on the contrary, individual things can be or not be, and hence the idea of emptiness as the possibility of a thing that actually is not there. The integrity of the thing is still preserved, but this is a latent integrity, an entity. On the other hand, an actual thing can only unfold its content in a partial way, and hence it will never entirely correspond to its idea. This deficiency appears as vacancy, the lack of integrity, a kind of inner emptiness.

Of course, emptiness and vacancy are never absolute; these ideas are relative, they always refer to a particular level of hierarchy. The absence of one thing means the presence of another; lack of something means availability of something different. Thus, the empty space between the stars is filled with radiation, plasma and dust; elementary particles are immersed in (and existing as) a combination of fields; physical vacuum is far from being absolutely empty, it has a complex structure as a sea of virtual particle-antiparticle pairs. On the other hand, a vacancy in an atomic shell is really a collective phenomenon demonstrating particle-like behavior; it will interact with atomic electrons and external fields, and several vacancies may show a kind of collective behavior as well. This example illustrates the hierarchical organization of "nothingness" in the real world.

Unism and Materialism

The several thousand years of the development of reflexive activity, and specifically, analytical reflection, knew a whole range of quite different philosophies. In every historical epoch, people discussed the universal foundations of their life and activity, but the focus of discussion, the principal questions to answer changed from one culture to another, from one historical period to the next, following the main directions of economic and social development.

In a class society, the dominant problems of philosophy reflect the arrangement of social forces at each stage of social development, and philosophical argument reproduces the forms of class struggle. In XIX and XX centuries, with capitalism seizing the leading role on the global scale, the opposition and mutual dependence of bourgeoisie and proletariat has split philosophers in two major philosophical parties, materialism and idealism, and this ideological distinction will stay until a new

socio-economic formation brings in a different balance of economic and social forces, and hence the new key points in reflection.

One of the characteristic feature of capitalism is that it completes the development of class society, bringing it to the level, where the fundamental principles of its organization find an explicit and unequivocal expression, and its inherent contradictions manifest themselves as well observable cultural trends. The same features are present in all class societies, but in an implicit manner, as a syncretic contribution to other phenomena. In particular, materialism and idealism do not emerge from nothing, they have a history as long as the history of philosophy.[32] In every epoch, there were those, whose philosophizing would justify the existing economic and social inequality, advocating the preservation of classes, castes, ethnic and other barriers, the right of the few to deprive the majority of what the ruling classes enjoy in excess. But there were also those, who declared the equal right of everybody to whole of the culture, hence standing against any elitism, for elimination of all kinds of cultural discrimination; they insisted that all people were equally necessary in the world, equally important and valuable, and that everybody should be able to live and feel the human way. The former would inevitably come to the blind reverence for the authoritative word, regardless of the merits or demerits of the thought. On the contrary, the latter would only esteem consistency and adequacy, with no authority allowed to suppress ideas better responding to natural challenges and human needs. The first position admits the existence of something beyond human understanding and control that governs people's fortune and fate. The opposite view denies any supernatural influences and says that everybody can and will master all kinds of phenomena, including the motion of one's soul.

No philosopher was free from vacillation, doubts, transition from one idea to another. Materialists may sometimes behave like staunch idealists, while some idealists may speak quite materialistic and eventually break with idealism… But the changes in one's individual position does not deny the very presence of two antagonistic ideological stands, which can confront each other within the same person lacerated by contradictory interests. This is how life in a class society feels; it is rarely possible to associate a name with a single philosophic school, as one can hold different interests in each particular situation.

However, as long as one keeps in the domain of philosophy, all individual philosophies represent the same hierarchy of ideas, and the apparent conflicts only express some aspects of the whole. Universal drive for integrity distinguishes a philosopher from a political profiteer and reveals a common core in all philosophies of all times. This is how the opposition of philosophical materialism and idealism is treated in unism.

The fundamental principle of integrity leads to the comprehension of the unique, all-comprising and holistic world in three mutually opposite and complementary aspects: as *matter*, as *reflection*, and as *substance*. No part of the world can be entirely separated from the rest, so that every individual thing represents the whole world and hence reveals the same hierarchy. The material aspect of a thing is known as its *material*, while the ideal (reflective) aspect is conveyed by the category of *form*. In other words, from the viewpoint of conscious activity, we indicate *what* is needed to make the thing, and *how* it should be arranged to produce that very thing.

Any activity can be pictured as transformation of some *object* by the conscious *subject* into some *product*. The subjects is said to *mediate* the transition from one thing (object) to another thing (product); the distinctive feature of conscious activity as compared with inorganic existence and life is the universality of such mediation, the ability of the subject to connect any things at all, thus restoring the integrity of the world. That is why the whole world can be virtually represented by some activity, in which the universal object (nature) is transformed by universal subject (spirit) into universal product (culture). That is, in its full development, the world will manifest itself as either nature, or spirit, or culture; this is yet another dimension of the world's hierarchy.

The two triads, *matter* → *reflection* → *substance* and *nature* → *spirit* → *culture*, are interrelated but not identical. This is the source of problems in traditional materialism identifying the categories "material" and "objective", as well as "ideal" and "subjective". Basically, such association is valid in

[32] Note that philosophy as a level of analytical reflection could not form in the societies preceding the class-based civilization. Early forms of reflection were absolutely dominated by syncretism. The post-capitalist society will certainly overcome the persistence of analyticity and develop synthetic reflection.

many cases; but in more complicated matters it may be delusive. Any object is a thing in its relation to the subject, while it may remain uninvolved in this particular activity in some other respects. Due to universality of subjective mediation, there is nothing that cannot eventually be assimilated by the subject. In this limit, the object coincides with an individual thing; but in this case the whole thing is also a part of the subject, as well as a product of activity. Paradoxically, objectivity means the presence of the subject, and subjectivity implies an object as its nature.

Further, like any other thing, an object has both material and ideal sides. The presence of the subject in the object makes both its material and its form hierarchical, containing both objective and subjective levels. That is, "material" does not necessarily mean "objective", and the material of a thing involved in conscious activity has a subjective component. A star on itself and the same star as an object of study are different. An electron involved in conscious activity has many culturally induced properties that remain unknown to another electron outside the current interests of the humanity. The physiology of the human brain does not make it an organ of consciousness, though the formation consciousness certainly requires something as complex as the brain.

Finally, even without recourse to conscious activity, the distinction of the material and ideal aspects is not trivial, since the world is hierarchically organized, with higher-level things taking lower-level things for their material only arranging them in some higher-level form. The ideal side of a lower-level thing becomes a part of the higher-level material; conversely, the higher-level form provides a kind of background for the lower level, changing the properties of the lower-level material. For instance, a living cell will differently develop in a laboratory culture and inside an organism. In atomic scattering, the experimental setup will determine the asymptotic conditions for the microscopic systems involved thus significantly influencing their behavior. The human brain supports consciousness only in the context of some culture; in natural conditions, it will develop some other patterns of functioning.

The first historical form of materialism does not distinguish the properties of things from things themselves; for such a "vulgar" materialist, everything is matter, and there is nothing else. The exaggeration of the material side of the world leads to the idea of nature as something external, absolutely independent of human activity, so that all we need is to *discover* natural laws established once and for ever. The essentially static character of nature is a logical consequence of neglecting reflection. Any philosophizing about such indifferent world will necessarily take the form of metaphysics, an abstract speculation for no real reasons. That is why vulgar materialism is also called metaphysical. The formal character of metaphysical philosophy makes it resemble science, and that is why materialistically thinking scientists often get stuck on this lowest level, being unable to digest dialectical and diathetical logic. Metaphysical materialism is therefore expansively called "natural-scientific". However, too vague formulations and the absence of well-delimited application area in metaphysics drives many scientists to despising any philosophy at all and denial of its relevance to real (admittedly scientific) problems. As a result, scientists come to philosophical idealism in hope to find a remedy for the metaphysics of vulgar materialism.

As a primitive, syncretic form of philosophy, vulgar materialism lies in the basis of people's everyday philosophizing and it is very common under certain social conditions. Thus, a typical bourgeois cannot think of a work of art, or a scientific discovery, otherwise than in terms of investment and possible profit; similarly, a hungry person can hardly appreciate fine cookery, until the pains of hunger get discharged. The ruling classes intentionally support and cultivate this kind of materialism, to divert the public attention from any serious consideration of the inherent problems of the capitalist system. As a result, for the philosophizing bourgeois, the very word "materialism" only refers to vulgar, metaphysical materialism; the existence of advanced and more consistent varieties of philosophical materialism (such as dialectical materialism) is simply being hushed up.

While metaphysical materialism exaggerates the material aspect of things, philosophical idealism is basically identifying the world with reflection. On the syncretic level, the world is indeed identical to reflection, which, in this case, is undistinguishable from matter, and there is no difference how the only existing thing will be called. Consistently unfolding the hierarchy of reflection one will obtain exactly the same philosophy as that derived from the category of matter. That is why the writings of some idealists can be more materialistic than the restricted reasoning of vulgar

materialism. However, in general, philosophical idealism does not much care for consistency; its social function is different.

For primitive minds, it looks like magic, that the same material can take so many different shapes, and the same shape can be cast in different materials. The question about the source of the observable mutability of the world was one of the first philosophical questions at all. Since, on the dawn of humanity, primitive people became aware of their ability to produce certain kinds of changes, the obvious answer was that any change should be attributed to somebody's activity; thus the world became inhabited by myriads of fantastic creatures animating the early human's reality. In this animistic hierarchy, some creatures were much like ordinary people, producing changes of a comparable scale. Much more powerful phantoms were deemed to be responsible for the catastrophic natural events beyond human tractability. As the people's picture of the world gained more integrity, the topmost level of the supernatural hierarchy were allotted to the most powerful agents, gods. The whole world could then be readily explained by the divine activity and hence be entirely derived from reflection.

Metaphysical materialism is basically homogeneous; on the contrary, idealism is divided into numerous schools and trends, which fight each other as if they did not share to the same ideological position. This makes philosophical idealism an ideal tool for brainwashing, since the real contradiction of the class society get easily slurred over in the noise of stagy antagonism. For instance, in the most general scheme of activity,

$$object \rightarrow subject \rightarrow product,$$

the subject mediates the transition from the object to the product. This means that subjectivity has at least two complementary aspects related to consumption and production respectively. Subjectively, this inherent duality of the subject takes the form of sensitivity and will, the only two manifestations of subjectivity known by primitive people: "I feel" and "I want"[33]; later, the ability of thought adds yet another dimension to philosophical controversy. Any aspect of subjectivity can be exaggerated, opposed to the other sides of the same, and made yet another philosophical fashion distorting the world in its own peculiar manner. Still, there is a fundamental distinction that deserves a separate consideration.

All kinds of idealism start with turning conscious activity inside out, substituting the practical assimilation of the world, producing new objects from other objects and hence changing matter, $\boldsymbol{O \rightarrow S \rightarrow O}$, with mere reflection, $\boldsymbol{S \rightarrow O \rightarrow S}$. The first historical form of idealism, *objective idealism*, still retains the object as the mechanism of reflection. However, putting the object to the position of universal mediation, one cannot avoid its interpretation as a kind of subject. Thus, the Ancient tradition treated this scheme in the ontological sense and emphasized the objective existence of ideas, while modern idealists prefer to exaggerate the role of language as the universal mediation of communication, reducing philosophy to the analysis if texts.

The hierarchy $\boldsymbol{S \rightarrow O \rightarrow S}$ can be folded in apparently immediate self-reflection, $\boldsymbol{S \rightarrow S}$. In reality, such folding assumes inner reorganization of both the subject and the link, lifting objective mediation in their inner hierarchy. A flat interpretation of this scheme forgets (or intentionally suppresses) the inherent objectivity and comes to the philosophical stand known as *subjective idealism*. For the advocates of this philosophy, we do not perceive but ourselves and do not produce but ourselves. For an honest and consistent idealist, the world does not exist at all—or, which is the same, coincides with the self of the philosopher. Such a conviction is known as *solipsism*. Any thought of the others, or outer things, would violate the integrity of this solitary world and thus push the solipsist out of philosophy. This indeed happens when, for instance, the philosopher gets hungry. But most idealists have hardly ever been acquainted with real hunger and need; they prefer to ignore the questions about consistency and integrity and consequently move away from philosophy, from wisdom. Philosophizing becomes mere play on words, which is deliberately used by the ruling circles to compromise the very idea of philosophy, to scare the masses away.

Still, philosophical idealism is not entirely nonsense. It is rooted in some real features of conscious reflection, which thus get at least a twisted expression. In certain cultural conditions, there

[33] In the first syncretic self-awareness, these two aspects coincide.

can be no other way. Similarly, in the arts, progressive views took sometimes mystical or perverted forms, and in science, drastically new theories were primarily developed in the old language. It is only in the hands of the exploiter classes that idealistic philosophy becomes a means of oppression. The reactionary role of such philosophies is especially dangerous in social revolutions, when the inherent inconsistency of idealism objectively helps to break the unity of revolutionary forces.[34]

An early attempt to overcome the antagonism of materialism and idealism was trying to develop philosophy from the category of substance (Spinoza). However, abstracting the world's substantiality from the material and ideal levels is bound to get lost in artificial problems; in a class society, it can only hide ideological conflicts without actually removing them.

The promising direction to true synthesis was first outlined in idealism by Hegel, and later materialistically reinterpreted by Marx and Engels to formulate a consistent philosophy of dialectical materialism, eliminating the narrowness of the traditional metaphysics. In the beginning of the XX century, the fundamental role of reflection as the primary mode of the world's self-reproduction was explicitly indicated (Lenin). Unfortunately, these ideas received practically no continuation in the conditions of fierce political struggle, which are much more favorable for ideological controversy rather than integrative efforts. Additionally, the new logic required for this new philosophy was too different from the common rationality, and it still waits for a comprehensible explanation.

In unism, both the material and the ideal are the aspects of the same reality that cannot be isolated from each other; any distinction in the world is only temporary, it must always be compensated by a unifying trend. Moreover, the integrity of the world is understood as its hierarchical organization, so that the difference of the material and the ideal can only be relative, depending on the level of hierarchy. Lower-level reflection is a kind of higher-level matter; any matter necessarily incorporates reflection. That is, the duality of matter and reflection is only meaningful for individual things, and not for the world in general. The world is unique, and subjectivity entirely belongs to this only world, along with anything else; this is a reformulation of the principle of the primacy of matter. But everything in the world is a result and a kind of refection; this supersedes philosophical idealism.

From the viewpoint of hierarchical integrity, philosophy is to indicate the material basis and reflective character of any natural phenomenon, including the objective development of the culture and as objective hierarchy of subjectivity. It is not enough, to demonstrate the material substrate of a thing or event; we also need to comprehend why this material takes this particular form. The relative independence of form from material leads to a separate line of development, with its specific regularities.

For example, the basic idea of the so called historical materialism is that social development depends on the type of economy, and the whole of culture is a superstructure built on the current mode of production and economic relations. In this line, one can distinguish a few fundamental stages (levels) of historical development, socio-economic formations; the history of any culture must follow this "standard" sequence. However, this does not mean that all cultures will develop in the same way. Puzzled by the huge historical diversity, many philosophers deny the very existence of universal stages in cultural development, thus shifting from scientific materialism to all kinds of idealistic doctrines. Considering the ideal aspect of historical development as the necessary complement of economic development allows to retain the materialistic idea of objectively necessary levels, extending it to developing spirituality, which will also show a sequence of distinct stages, historical formations. The whole of the culture will, therefore, be the unity of the current socio-economic formation and historical formation, that is, a cultural formation. This approach explains the diversity of real cultures without picturing it as random and arbitrary.[35] In particular, the interplay of the economic and reflective history results in the inner hierarchies of both socio-economic and historical formations. Thus, each objective stage of economic development unfolds itself in a sequence of "sub-stages", and the detailed structure of economic development may differ from one culture to another.

[34] That is why, in Russian revolution, Lenin's critique of philosophical positivism responded to an urgent necessity rather than purely academic interest.

[35] The relative independence of the form of the culture from its economical basis was indicated in early Marxism and stressed by many followers, but the polemic exaggeration of the material aspect of historical development has prevented Marxism from consistent treatment of the reflective phenomena in history.

As all hierarchies can be folded without any loss of inner complexity, local cultures may pass some socio-economic formations in the folded form, as if entirely "skipping" them. The hierarchical approach also indicates that any formation is saturated by the traces of other formations, which adds to the apparent diversity of real cultures.

The same method will also work in "natural" sciences. Being a part of human culture, scientific objectivity depends on subjective choice, which, however, does not make science arbitrary. The object of any study can only be defined within a definite mode of reflection, which, in particular, warns against extrapolating scientific results beyond the range of their applicability. Any time physicists speak of "observer" they mean the ideal aspects of physical reality rather than direct interference of human being or the presence of consciousness in inanimate world. For instance, all classical mechanics is based on the ideas of space and time, while the observer is represented by a frame of reference, which does not need to be bound to any conscious being, though its very construction mimics certain modes of human activity. Space and time are not material, but they are the fundamental forms of physical motion. From the philosophical standpoint, the reflectivity of the material and the ideal would result in a hierarchy of spatial and temporal relations; in particular, space and time must, in general, depend on moving matter and conversely, they can determine the properties of matter on some level of hierarchy. Today, such views have become commonplace; modern science is already approaching the thought about inapplicability of the notions of space and time to the world as a whole. But unism suggest yet another picture of the world, indicating that the same hierarchy can unfold itself differently in different respects. That is, the same world could "simultaneously" develop multiple hierarchical structures, while we observe only one of them; still, the integrity of the world and the universality of subjective mediation imply the necessity of including such "parallel" worlds in practical activity, one way or another.

Philosophy is not science, and it does not describe or predict anything. Still, one can be certain that future science will discover new kinds of matter and new forms of its organization, which are beyond our present imagination. The pretensions of some theoreticians to deciding the fate of the world are nothing but ridiculous. The practical assimilation of the world will eventually change it up to physical reorganization, probably lifting the very idea of a physical law in some wider approach, regardless of whether the humanity will remain in the Universe.

Communication

For the subject as universal mediation, conscious activity unfolds itself in an endless stream of mutual transformation of an object into a subject and back, the subject into another object:

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'} \to \boldsymbol{S'} \ldots$$

In this chain, both the object and the subject are repeatedly reproduced through each other:

$$\ldots \to \boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'} \to \ldots$$

$$\ldots \to \boldsymbol{S} \to \boldsymbol{O} \to \boldsymbol{S'} \to \ldots$$

The first form (the object cycle) describes the subject-mediated development of nature; this also implies the growth of the inner hierarchy of the subject, since the subject is primarily an object, albeit of a special kind, a universal mediator. The second representation (the subject cycle) links one subject to another and hence it provides a basis for discussing communication and self-communication.

The origin and the primary function of communication is to enhance the universality of mediation by substituting one subject with another within the same production process:

$$\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{C} \to \boldsymbol{S'} \to \boldsymbol{P}$$

That is, the product $\boldsymbol{P}$ can be made using the object $\boldsymbol{O}$ in many ways, sometimes involving a single subject, but often by the consolidated effort of many people. This cooperation can only be achieved through sharing the products of some other activity, which will mediate the intersubjective links and therefore culturally represent them. In a well-developed form, communication can become a separate activity, apparently independent of any production; however, this independence is mere illusion, as

any communication on the level of universal mediation is always related to the object cycle of reproduction, though this relation may be most indirect and hidden from awareness.

The mediator $\boldsymbol{C}$ is a primarily a product $\boldsymbol{P}_C$ of $\boldsymbol{S}$, which then becomes an object $\boldsymbol{O}_C$ for another subject $\boldsymbol{S'}$, so that

$$\boldsymbol{O} \to \boldsymbol{S} \to (\boldsymbol{P}_C = \boldsymbol{O}_C) \to \boldsymbol{S'} \to \boldsymbol{P}$$

Obviously, to mediate activity transfer, both the productive and objective aspects of $\boldsymbol{C}$ must include, along with its own material implementation, the whole hierarchy of objective premises needed to produce the final product $\boldsymbol{P}$ by anybody who is going to take over the activity.

Besides being a regular object, the mediator $\boldsymbol{C}$ plays a special role, namely, it *represents* the whole activity. Such representation can develop a hierarchy of forms, but, within a communicative act, the mediating object has three complementary functions. Fist, in its objective aspect, this is a *signal*, a thing that carries information about another thing. Signal processing develops already in primitive organisms, and the specificity of human communication is in its universal character, since any object at all can serve as a signal of anything else. When speaking about the inanimate world, the word "signal" cannot be used but metaphorically. Though modern computers largely involve signal processing, they do not do it on their own; for a computer, any physical processes in their circuits remain meaningless, and it is only in the context of some human activity that these processes can be interpreted as information exchange.

The subjective aspect the mediator $\boldsymbol{C}$, is related to the formation of a higher-level (collective) subject in the course of a common activity, and virtually to all kinds of socialization. Communication is the glue that keeps the members of a social group (or the whole society) together, determining their social positions and making them carriers of certain social roles. In the scheme of activity, $\boldsymbol{C}$ serves as a placeholder, a vacancy that must be filled by some individual or collective subject to initiate the activity.

Finally, the productive aspect of communication is to produce activities as a special kind of products. The mediator $\boldsymbol{C}$ then works as a substitute for a real product in an incomplete activity, an indicator of what should be done, rather than an actual achievement.

Formally, these aspects of communication can be expressed by differently grouping the terms in the original scheme of subject substitution:

$$\boldsymbol{O} \to \boldsymbol{S} \to (\boldsymbol{C} \to \boldsymbol{S'} \to \boldsymbol{P})$$
$$\boldsymbol{O} \to (\boldsymbol{S} \to \boldsymbol{C} \to \boldsymbol{S'}) \to \boldsymbol{P}$$
$$(\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{C}) \to \boldsymbol{S'} \to \boldsymbol{P}$$

These schemes correspond to the different ways of folding the communication-mediated activity. Of course, since hierarchical folding is not a linear operation, such a symbolic representation can only be considered as a convenient mnemonic, or a hint.

In their activity, people used numerous instruments and tools, which results in the extension of the subject beyond any organic body (or a community of organisms). The inorganic body of the subject includes all the artificial "sensors" and "effectors", and the inner organization of the subject is essentially the hierarchy of the modes of their usage. Communication further extends this hierarchy representing the other people in the subject as specific instruments and tools. When the goal is not directly achievable, people manipulate the others to eventually come to the desirable result. The possibility and necessity of such a second-order (subject mediated) production is an immediate consequence of the universality of subjective mediation. Higher animals can develop primitive forms of manipulation, but it is only with conscious beings that all the behavioral acts become saturated with communication. However, direct manipulation is the lowest, animal-like form of communication, a pre-requisite of subjectivity. The appearance of self-consciousness and reason requires a well-developed *self-manipulation* through the other people and the society as a whole. In general this reflexive communication takes the form

$$\boldsymbol{O} \to (\boldsymbol{S} \to \boldsymbol{C'} \to \boldsymbol{S'} \to \boldsymbol{C''} \to \boldsymbol{S}) \to \boldsymbol{P}.$$

For an external observer, this looks like ordinary production, $\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{P}$, with an imperceptible, or considerable, delay between consuming the object $\boldsymbol{O}$ and producing the product $\boldsymbol{P}$; communication

with the others in order to get prepared for the final production may take some time, from negligible effects within the physiological spread, to many years, or even centuries and millennia (for collective subjects). Folding this hierarchical structure, we observe that self-communication is always mediated by somebody else's activity:

$$\boldsymbol{O} \to (\boldsymbol{S} \to (\boldsymbol{C'} \to \boldsymbol{S'} \to \boldsymbol{C''}) \to \boldsymbol{S}) \to \boldsymbol{P},$$

or

$$\boldsymbol{O} \to (\boldsymbol{S} \to \boldsymbol{C} \to \boldsymbol{S}) \to \boldsymbol{P}.$$

That is, one cannot communicate with oneself without being a member of the society involved in a number of cultural processes. The activities mediating self-communication form a full hierarchy, from individual activities to the self-reproduction of the whole culture (the activity of the society as a whole). Any isolation (or deprivation) means gradual degradation of the inner world and eventually the death of subjectivity.

It is important that different subjects perceive each other as activities, and not mere objects. Thus, in the scheme $\boldsymbol{S} \to \boldsymbol{S'} \to \boldsymbol{P}$, the subject $\boldsymbol{S}$ plays the role of yet another object, with no subjective quality; on the contrary, in the scheme

$$(\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'}) \to \boldsymbol{S'} \to \boldsymbol{P},$$

the entire activity $\boldsymbol{O} \to \boldsymbol{S} \to \boldsymbol{O'}$ plays the role of the object for $\boldsymbol{S'}$, so that $\boldsymbol{S}$ can be perceived as a subject of activity, universal mediation.

The first syncretic form of communication understood as activity transfer is non-separable from that very activity. The members of society join their efforts in a common act of production, so that the physical and social organization of activity determines a hierarchy of cultural roles, which is an indispensable part of any product, though people may be entirely unaware of this or consider it as a side effect. When one of the positions becomes void, some individual will occupy it, and the activity will go on. This role inheritance is yet a semi-animal form of cooperation; for instance, wolves can take over the roles one from another while pursuing the prey, depending on their hierarchical positions in the pack. However, as an aspect of universal reproduction, syncretic communication acquires specific traits reflecting cultural development. First, conscious activity results in the formation of some material culture, a universal environment for any interpersonal contacts. Acting within the same economy, people become essentially interdependent, so that their behavior can no longer remain mere reaction to random events or needs. The higher-level subject thus formed shapes people's individuality to favor the integrity of the whole, and even apparently egoistic motives represent a social position rather than individual preferences. Though communicating people lose a part of their individuality, transferring it to the group, the formation of a collective subject can drastically increase their efficiency as universal mediators and hence the level of spirituality. As a result, the reproduction of the social conditions becomes as important as material production, and the communicative component of activity may overweigh its primarily objective mediation. We do something together just for the sake of togetherness, and it does not matter what we do.

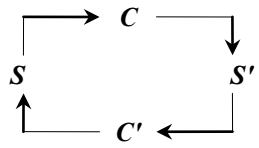
On the other hand, any product at all will serve both to satisfy some need and to mediate syncretic communication. That is, within the culture, any object includes a symbolic component reflecting its intentional usage as a signal. This ideal aspect, the cultural function, is reproduced in human activity along with any other content. In cultural development, this aspect of reproduction may become more and more important, up to absolute dominance. Thus syncretic activity grows into reflexive activity.

In syncretic activity, all the participants are basically equivalent, and any person can overtake the function of another. However, the growth of the cultural hierarchy leads to a traditionally layered organization of activities, with a limited range of roles available to each particular person or group. This results in a difference in the forms of communication characteristic of the distinct social layers. The hierarchy of cultural roles as a specific product is reproduced in parallel with the other modes of reproduction. However, such violated integrity contradicts to the very definition of the subject as universal mediation, which gives rise to a special activity serving to restore the whole as a kind of unity. Once again, we come to reflexive activity, cultural self-reflection. The transformation of

syncretic communication into a separate communicative activity is thus prepared. As any other conscious activity, communication will then unfold a hierarchy of finite communicative acts, which, in their turn, are implemented as sequences of operations (transactions).

On the analytical level, one can consider communication as relatively independent of material production. However, being a part of universal reproduction, communication between the subjects always implies message exchange rather than one-directional information transfer. For a conscious being, there is no word without a response; even a most solitary writer addressing himself to some distant generations and risking to be never read at all, without really being aware of it, is engaged in reciprocal communication, as the very idea of a virtual interlocutor comes from the current cultural trends, and therefore, is somehow communicated to the writer. Subjectively, this may take the form of following the call of beauty, truth, or a supreme ideal.

In a simple act of activity exchange, two subjects are substituted for each other: $\boldsymbol{S \leftrightarrow S'}$, which implies a folded communication cycle:



This process establishes the cultural equality of the communicating subjects, their interoperability; but it also develops a cultural framework for such communication, a common system of signals. Different classes speak different language, but as soon as they come to sharing the same range of activities, the social hierarchy is bound to change. Talk to each other to get free; but the very possibility of such talk is based on a certain level of economic development.[36] The whole of the human society as a collective subject, is impossible without a common system of communication, and a common language is an objective necessity in the history of the humanity. Language barriers, restricting people's universality, are incompatible with the development of consciousness. If humans will ever meet some other conscious forms, they will have to develop a common language, to avoid degradation of consciousness and reason.

Though any product can serve (and virtually serves) for communication, most products do it in a very limited way, in the context of a specific activity. The universality of the subject demands the existence of a hierarchy of products mediating communication in a universal manner, in any activity at all, including those that have not yet appeared. Such a universal mediator is known as language. The development of language is another side of economic development, and consciousness, as soon as it passes beyond the most primitive forms, cannot develop without language, which provides universal forms for conscious self-construction and self-reconstruction. The ubiquity of language feeds the illusion that the any consciousness at all is due to language, and verbal activity is prior to any other cultural phenomena. However, the objective necessity of a universal means of communication does not imply that consciousness cannot develop in other forms; in any culture, there are numerous language-like activities that may occupy a significant portion of the cultural space. Of course, all such modes of communication gradually become language-saturated, as they influence the development of language.

Unlike other mediators that do not function as such outside the context of their reproduction, language retains the traces of subjectivity in a much wider range of situations, being absolutely artificial and hence impossible outside communication. The relics of gone civilizations tell us about their material culture, but the sparks of their language convey the motions of their souls. This is the way with any reflexive activity, but it is only language that can preserve the universal core of the culture.

[36] In the capitalist society, all kinds of activities is formally allowed to anybody; this makes people formally equal. However, economy based on the division of labor cannot ensure real interoperability, and thus overcome social stratification. The recent technological development has opened the way for practical interoperability, which means that the economic system of capitalism is no longer compatible with the level of economic development and has to be eventually replaced with a higher-level formation.

The growth of the hierarchy of the subject in conscious activity is expressed with the same scheme $\boldsymbol{S \to O \to S}$; reflexive communication is thus understood as the fundamental mechanism of spiritual development. The inner hierarchy of the subject reflects the hierarchy of the culture. Being a folded form of practical activity, any subjective phenomenon can be unfolded in a communicative activity, thus allowing of verbalization. This is yet another manifestation of the universality of language. The inner world of the subject takes the exteriorized form of language, which presents us our hidden selves in an explicit manner. That is why language analysis occupies an important place in the scientific study of consciousness. Though comprehending subjectivity is impossible without the study of the material culture from the viewpoint of universal mediation, language often gives the clues for deciphering such indirect indications and organizing isolated facts in an integral view.

The role of language in human communication closely resembles the role of money in economy. Exactly like material production gets eventually subordinated to rotation of capital, language becomes apparently independent of the relations of material production and consumption and begins to develop on its own basis. Still, like a banknote is a representative of a social relation rather than mere scrap of paper, words mean nothing outside the context of communication.

The formation of language is based on the cultural association of activities, with one product representing many others, and thus a hierarchy of activities. Within such an association, the product becomes a sign. Though almost any product can function a sign, the practice of sign exchange selects products (words; later, symbolic expressions) that are more suited for that purpose, thus developing language as a hierarchy of signs. However, verbalization, as well as sign exchange in general, is not the only form of communication, and that is why language will never embrace the whole of culture. Otherwise, language would no longer develop.

Reflecting the diversity of culture, language is in no way restricted to speech; it can incorporate any verbal and non-verbal components, rearranged in a universal manner. Conversely, spoken words are not necessarily related to language; they can be mere voice signals, without the specifically human cultural reference, that can be used, for instance, as a kind of physical material in the arts, just like written language is used sometimes for mere ornamentation, or as a canvas, or as a set of standard elements used in a combinatory manner. Non-verbal forms play an important role in human communication, and silent communion can convey much more conscious content than vast prolixity.

Like the same world can unfold its hierarchy in a many ways, and any manifestation of the same world is a kind of universe, language in general can take the form of many different languages. Each of them represents a separate aspect of communication, reflecting individual cultures within the cultural whole. In the physical conditions of the planet Earth, higher organisms have developed the capacities of hearing and vision, and the two most common forms of language (spoken and written) originate from the voice and the gesture. This does not mean that there are no other implementations. Quite probably, when the humanity will populate the outer space, it will develop some kinds of language adapted to the new physical environment. This does not necessarily suppress the already existing forms, since communication develops towards the highest possible diversity, including both verbal and non-verbal components.

The history of communication assumes a dynamic balance between the two opposite processes, verbalization and “disverbalization”, which is reproduced in the hierarchy of communicative activity. First, syncretic activity exchange finds an adequate language expression; later, verbal communication gets folded in various non-verbal transactions. Within a certain cultural context, such folded forms can be as universal as verbal contacts, developing a hierarchy of symbols representing all kinds of ideas. In other words, non-verbal communication, to be universal, must be mediated by the whole of the culture, in analogy with the process of ideation (the formation of ideas as objective counterparts for the inner structures of the subject) and the presence of the super-conscious level in the hierarchy of activity.

The folded forms of communication make it much more economical, since a long verbal message can be “compressed” using commonly accepted symbolic systems. For instance, both speech and writing can be reduced to a sequence of standard symbolic transactions (the characters of some formal system, an alphabet). Since any object at all can acquire a symbolic function of any kind, any text could be replaced, say, by a conventional sequence of zeroes and ones (binary code).

Alternatively, verbal communication can be folded in ideomotoric sequences, which will deliver the message to the partners as reliably as (or even more reliably than) any discrete constructs.

Communication is commonly said to transfer information from one partner to another. However, people differ in their opinions on what the term "information" should really mean in this context. This may sometimes lead to confusion, as the formal information measures used in some natural sciences become uncritically applied to human communication, and conversely, animal behavior and physical interactions are anthropomorphically interpreted in the terms of subjectivity and consciousness. There is no communication in physical nature, and it is only in higher animals that the communication-like forms of behavior can develop as a necessary premise for any spirituality.[37]

Understanding conscious activity as universal mediation, one could conjecture that the idea of information reflects the reorganization of the subject within the same activity, folding and unfolding the inner hierarchy. For instance, if my partner's words do not influence the state of my activities, they remain entirely void for me, carrying no information at all. That is, information transfer depends on both the source activity and a specific reaction in receiver extracting the content of the message from the signal and accordingly modifying the receiver's activity, including the subject's hierarchy. The very possibility of information exchange is based on the existence of a higher-level activity joining both the sender and the receiver in a collective subject. This approach to information accounts for its both quantitative and qualitative aspects, well in accordance with the original meaning of Latin *informo* (I induce a change in the form of something). In general, communication can affect both the material and the form of the subject; information transfer is only concerned with the latter, formal aspect.

The quantity of information is inseparable from its quality. Basically, it depends on the scale of the induced rearrangement of one's activity. Larger reorganization means more information. This evaluation may differ in the sender and the receiver, depending on their involvement in the common activity. In the two limit cases, a presumably informative message (for instance, this text) may carry no information at all to the public, while some unintentional acts addressed to nobody (for instance, somebody's silly whim or hobby) may acquire a tremendous cultural significance and turn the society's development in a different direction. The traditional mathematical treatment binds the quantity of information to the inner diversity of the signal, and hence the idea about the required minimum of information (Kolmogorov complexity). In a more general context, information is largely unrelated to the parameters of the signal, depending on the complexity of the sender and the receiver, within a certain cultural context. However, information exchange is impossible without any signal at all; communication is essentially based on passing the product of somebody's activity to another subject. The signal can certainly be associated with some complexity measure; but this inner complexity does not need to correlate with the content of the message and information transfer. Still, in the cultural context, the hierarchical organization of any signal can be considered, including its subjective meaning as one of the level of hierarchy. In this case, obviously, the formal complexity of the signal cannot be less than the quantity of information on either side of the communication act. One can observe that any quantitative notions are inapplicable to the activity as a whole, since it can be unfolded in quite different hierarchical structures, admitting an infinite variety of actions and operations, even within the current level of cultural development.

Yet another quantitative common approach to information is to consider the degree of novelty of the message to the receiver, rather than mere statistics of the signal. In a way, this is a special case of evaluating the quantity of information by the message-induced changes in the inner hierarchy of the receiver, which partially reflects the universal scheme of activity exchange. Folding typical communication acts in a number of standard transactions is an objective basis of the idea of novelty. In particular, something entirely new can hardly ever be recognized as meaningful; to function as a cultural link, the message must incorporate traditional elements, albeit unexpectedly organized. The new has to grow from within the old. Objectively, few people can invent anything absolutely

[37] The very organization of the human language is fundamentally anthropomorphic, being an objective representation of the inner hierarchy of the subject. That is why, our words are bound to present life and inanimate nature *as if* they were of the same kind as conscious activity. To compensate this bias, we have to go beyond language in reflection, to the sphere of praxis.

uncommon, and the major problems with the meaning of the message arise from cultural incompatibility of different societies or social layers. Like the statistical measure, novelty also depends on the level of cultural hierarchy, and the commonality of cultural scales, a common interpretation system, is an indispensable requirement for mutual understanding. Language provides one of the possible integrative contexts. Traditional forms of reflexive activity play the same role. For example, to enjoy a musical piece, the listener must share the same scale hierarchies with the composer; music written in an uncommon scale will most probably be perceived as lacking order and harmony.

In any communication, the presence of a common cultural context makes the behavior of the partners highly correlated. In this respect, information exchange resembles quantum physics, which applies to essentially correlated systems observed from an upper level of dynamic hierarchy. This is the objective reason for the numerous attempts to reinterpret quantum mechanics in terms of a conscious observer, or even a kind of conscious demon manipulating quantum particles and fields. Taking similitude for identity is a typical source of mistakes in theoretical science, which is essentially based on scheme transfer.

The collective nature of conscious activity suggests yet another parallel to quantum physics. It well known that the parts of a quantum system are mutually correlated regardless of any physical interaction, as if they were communicating in no time. This "quantum telepathy" was much speculated upon as a reason for admitting the possibility of telepathy and extrasensory perception in humans. Sometimes it may seem that people can produce changes in the world by mere force of their will. In reality, the only way for the subject to influence nature is getting engaged in a conscious activity, combining physical interaction with communication and mental processes. However, in the motion of a highly correlated system, one can observe various collective effects apparently violating natural laws. Thus, the relative phases of oscillations in a standing wave are maintained without any energy transfer between the parts of the oscillating string; plasma waves can move faster than light, *etc*. Similar phenomena can be observed in cultural systems, provoking the illusion of extrasensory communication or perception.

Art, Science, Philosophy

Considering different ideas together means that these ideas have something in common, hence differing from all the other ideas in a particular respect. The corresponding categories will form a logical scheme (for instance, but not necessarily, a triad) expressing their difference and integrity in a consistent manner.

The commonality of art, science and philosophy starts from the observation that all the three belong to the sphere of *reflexive activity* (which, in the context of this section, will be often referred to as simply *reflection*). Since any conscious activity at all involves communication and self-communication, there is always a kind of built in reflexivity; however, the product of activity is primarily to satisfy people's material needs, and the participants do not pay much attention to accompanying subjective changes. However, according to the triad

$$object \rightarrow subject \rightarrow product,$$

which is the most general scheme of any activity, the product of activity must reflect some features of the subject along with the reflection of the object. In historical development, this subjective aspect becomes more prominent in some products, thus making them the representatives of the subject. Involved in further activities as objects, such products enable conscious reflection of one's own acts. Eventually, this self-reflection becomes a separate activity, aimed at reproducing the organization of all kinds of people's activities in very special products whose only purpose is to represent anything else. Such reflexive activities shape the inner organization of the subject, giving way to conscious self-reconstruction and the overall growth of spirituality as the subjective side of the culture.

In its turn, reflexive activity is hierarchically organized, and this organization reflects the history of spiritual development. The triad

$$art \rightarrow science \rightarrow philosophy$$

refers to some level of this hierarchy.

According to the general principles of the hierarchical approach, any hierarchy can be unfolded in many ways, producing quite different hierarchical structures. Considering art, science and philosophy as the formations of the same level selects a definite class of the possible representations of the hierarchy as a whole. There other representations that may differently incorporate the forms of reflexive activity; in such hierarchical structures the direct comparison of art, science and philosophy may be irrelevant.

In a couple of words, one could express the specificity of reflexive activity on the level of art, science and philosophy as *analytical reflection*. On the lower levels of hierarchy, the product of reflection is syncretic, that is, it merged with the products of other activities, whose subjective aspect is more or less stressed, while retaining the overall tint of material culture. Such reflexive activities would evolve from mere ornamentation to all kinds of imitation, and then to full-fledged rites; this hierarchy reflexively grows to more complex forms of syncretic reflection like folklore, traditions and mythology. In its socialized form, as a part of the culture, syncretic reflection may produce various regulatory mechanisms, such as communal order, common sense, moral prejudice, or religions.

As usual for all hierarchies, the highest levels of syncretic reflection may involve many analytical elements, intertwining them in a syncretic way. But the true analytical reflection starts with consciously detaching the product of activity from any material interests, thus making it essentially spiritual. That is, the product of art, science, or philosophy does not exist as an immediately observable thing; any material formations produced on the level of analytical reflection do not mean anything on themselves, they merely represent some social relations. Such representatives are of no use outside their embedding culture, but they are essentially saturated with it; that is why, by the traces of analytical reflection, we can learn about the mentality and behavior of people that lived in a distant epoch, just like we guess about the usage of the tools or the purpose of buildings. This also means that our ability to appreciate the esthetical, scientific or philosophical value of any artifact of the past is closely related to the preservation of certain aspects of the early culture in the present.[38] In a wider context, cultural commonality is the basis of mutual understanding for the different social layers; this is especially so with analytical reflection. A beautiful painting will be of no value where there is nobody to appreciate its beauty. A scientific theory will mean nothing to those who have no concern for the phenomena it describes. And no philosophizing can produce a slightest response in the public without a publicly felt social demand.

Logically, art, science and philosophy are to be superseded, in some manner, with reflexive activities of a higher level, which, in respect to the syncretic and analytical reflection, could be called synthetic. In synthetic reflection, the product is both immediately usable and representing some aspects of subjectivity, as well as the roles of the object and the subject within an integral activity. Such forms of reflection are to be discussed elsewhere.

The hierarchy of analytical reflection

Once we have outlined the difference of art, science and philosophy from the other kinds of reflection, their mutual differences and complementarity can be comprehended. Comparing analytical reflection to its opposites and complements in different ways, one comes to the corresponding inner interrelations. Thus, formally considering the triad *art* → *science* → *philosophy* as the middle element in the hierarchy of syncretic, analytical and synthetic reflection, we conclude that art should be apparently syncretic, while philosophy tends to synthetic forms; science, by its form, is essentially analytical. Of course, this relative prevalence keeps within the same analytical level, and the difference of the product from what it represents is of primary importance.

To form a general impression of how this dimension of distinction could characterize art, science and philosophy, one could construct a number of parallel triads, loosely sorting out the typical features of reflection according to the formal scheme:

[38] Thus, for those acquainted with Marxist philosophy, the Ancient teachings would generally seem as primitive as modern bourgeois philosophies that cannot overcome the narrow mental limits imposed by the capitalist economy. Still, we can indicate the germs of the new mentality in the great masters of the past, and hence esteem them as our predecessors.

art	*science*	*philosophy*
object	subject	product
what	how	why
wit	intelligence	wisdom
opinion	knowledge	conviction
assimilation	learning	cultivation
technique	method	principle
perfect	congruent	consistent
image	notion/concept	category
uniqueness	integrity	unity
commonality	regularity	necessity
beauty	truth	ideal
expressive	powerful	deep
vivid	formal	concrete
exact	precise	thorough
grasp	understanding	comprehension
sensitivity	efficiency	productivity
manner	school	position
passion	interest	love
veracity	validity	relevance
liberty	order	freedom

This is not a true categorization, as it does not assume any meaningful order of the triads, and the development of each triad from the primary scheme has not been traced. Still, this might be taken for an at least metaphorical illustration, and possibly a hint for a deeper investigator. In general, every level of analytical reflection will present its own hierarchy of related categories; however, belonging to the same level of a wider hierarchy, art, science and philosophy will be mutually reflected, and their inner organization is to exhibit many formal similarities. Moreover, being a necessary part of any activity, reflection will induced analogous structures everywhere, and the components of an arbitrarily taken activity may well fit into the same triadic pattern.[39] This structural similarity does not play any significant role within the individual activity, but it is important to allow scheme transfer from activity to another. The analytical nature of reflection simplifies detaching the modes of operation from operations themselves, to arrange another act in a similar manner.

As usual, the categories in a scheme are not mere words denoting some special concepts. An idea behind a philosophical category cannot be fully expressed in words, in however universal language. Ideas are the objective forms of cultural organization reflecting (and reflected in) the inner organization of the subject. The same words may have an entirely different (and even the opposite) meaning in another context. That is why it's no use to ponder on terminology in the above table; it is not meant for that, taking each term in its specific connotation of an objective phenomenon that could as well be named otherwise.

An alternative approach in unfolding the hierarchy of reflection is to take it in its historical development.

Originally, analytical reflection is born as an integral whole, without any inner distinctions. It enjoys the very ability to oppose spirituality to everyday occupations, and the form of the abstract product is of no importance. Later, art has become a separate activity, a socially established cultural phenomenon. For some time, art played the leading role in cultural development, all the other kinds of reflection being treated as subordinate to art as the highest form of spirituality. The beginning of the XIX century was marked by science breaking its way to the top of the hierarchy of reflection and gaining an independent cultural existence. Knowledge has been declared to be of the highest and absolute value, and all the rest was to submit to science in a vain aspiration to achieve some of its rigor. After the first excitement about the power of science has receded, the social conditions for the

[39] For instance, in programming, one could recall the basic triad of LISP operators: QUOTE, EVAL, APPLY.

self-determination of philosophy have developed. In the future, when the era of the social division of labor will be left behind, the levels of analytical reflection will grow into a new unity, remaining distinct but mutually reflected within the whole.

In their fully developed form, art, science and philosophy can culturally manifest themselves in different ways. Thus, they can be mere aspects of some other activity, which incorporates them all in some order, while pursuing its own purpose. One's activity can be more or less artistic, potentially scientific, and somewhat philosophical, while remaining practical in other respects. However, the components of any activity can, under certain conditions, become separate activities; in particular, analytical reflection will manifest itself in three distinct kinds of reflexive activity: artistic creativity, scientific research, and philosophizing. This does not mean any absolute separation; as in any activity at all, the three levels are always present, and it is only their relative significance that change, the inner organization and apparent accents. Art may express scientific knowledge or be concerned with philosophical matters. Science will always assume a certain degree of art, as well as a general world view, a kind of operational philosophy. Similarly, philosophy is impossible without integrating both art and science in the same categorical framework, it grows from the artistic and scientific experience, augmenting them with an ethical dimension.

When the levels of analytical reflection become opposed to each other as separate activities, each level gradually develops inner distinctions reflecting the modes of external comparison. The implicit presence of art, science and philosophy in each other becomes an explicit subdivision of art in general into "creative", "conceptual" and "critical" arts; in science, experimenting becomes opposed to theory and methodology; in philosophy, one finds such disciplines as aesthetics, logic and ethics. Of course, this classification is complemented with unfolding the formal structure in other dimensions, related to the relations of art, science and philosophy to other aspects of culture.

In further cultural development, the activities of art, science and philosophy become permanent occupations, and then professions. The professional attitude shifts the stress from reflection to maintenance, to preservation of distinctions; it lifts reflection in a job. As a result, professions are not immediately related to their reflective core, the formal aspects being more important than any content. Being a professional does not imply professionalism. Thus, some artists would produce anything but art; a professional scientist may have nothing to do with science; being a philosopher does not make one any wiser that the rest. However, this fully objectified existence of art, science and philosophy offers them to further reflection, and this is how analytical reflection becomes self-aware.

Art

The characteristic feature (and the principal function) of art is to "translate" the objective experience into a spiritual form. This representation implies suppressing any irrelevant detail thus refining the universal content of a thing, or an event; that is, art is essentially abstraction, it cannot and should not perfectly imitate nature. The product of art (an artistic image) is different from the object thus reflected, and this difference is obvious and deliberate. However hyper-realistic, art does not produce natural forms, it reproduces them in an entirely new material, in a way that would make the product utterly unusable for anything but reflection. Art is essentially impractical; otherwise, it would not be art.

As a kind of abstraction, art serves for primary generalization; the artistic image does not picture any particular thing, it expresses something that is in common for many things, or rather, for certain aspects of human activity about things. Due to the universality of conscious reflection, art can also reflect reflexive activities, thus developing a hierarchy of abstractions.

However, opposing itself to immediate experience, art takes its forms from that very experience. That is, the principal method of abstraction in the arts is to superpose the shape of one activity onto another; this would effectively detach the shapes from activities, transforming them into abstract ideas. There are no restrictions for the choice of the source and target activities, and consequently, no specifically artistic activities; any activity at all can implement artistic reflexivity. In particular, any activity can reflexively alter its purpose and organization just going beyond the ordinary skill. An excessive degree of proficiency shifts the focus from the usable product to activity itself; in this sense, perfection is the initial and primary source of art, which lies in the basis of any advanced forms. As

soon as there is some perfection, there is a kind of art; and no art is possible without striving for perfection. This, once again, stresses the abstract nature of art: since real life cannot be perfect, a perfect experience demands "refining" a regular activity to reveal its universal core. A perfect product is no longer a consumption value; it becomes an elementary construction block of any art, an artistic image.

Since art grows from within experience, every artist has to seek for one's individual way to perfection; art cannot be taught and learned. A certain level of general erudition can be helpful; but it can also be an impediment. Studying the history of arts, the techniques of the talented artists, the traditional patterns of work will never make one an artist. Perfection is only born in experience, which can be extended by aesthetic education but never enhanced. There are no recipes of extracting the eternal from the transient.

An artistic image is essentially unique, since a perfect thing is out of any comparison. Repetition kills art, reducing it to mere technology. That is why the articles of art cannot retain their artistic quality forever; when ideas they express come to common awareness and lose their novelty, we appreciate the mastery without being personally touched. Uniqueness then becomes a commercial rather than artistic value.

Elementary artistic images can be built into a hierarchy of images, a higher-level image. Such hierarchies can develop within a single art as well as cross the family boundaries. In the latter case, art take the form of an artistic movement (like romanticism, symbolism or impressionism) that unites the representatives of quite different arts on the basis of a common idea. As with any artistic image, such complex modes of reflection cannot last long; they are bound to dissipate and give way to other trends. Still, since no universal idea can ever be expressed in full, the traits of the old artistic movements remain in modern art as the elements of individual styles.

Science

The primary abstractions implanted in numerous articles of art can become an object for a new level of analytical reflection detaching reflexive activity from the common occupations and establishing reflection as a universal activity. The products of this activity are no longer arbitrary, they take the form that can be equally used to express ideas of any kind. Such are scientific notions.

A notion is a kind of very general image, the common core of many artistic images cleared from their individual shapes. Therefore, a notion is designed to be shared by many individuals and transferred from one person to another. Basically, science is all about knowledge, something that can be learnt.

Since the products of science are deliberately devoid of individuality, they may seem to be entirely objective, referring to the world as it is, regardless of the presence of the subject. In a way, this is true, and science is indeed objective, but this is the objective side of our practical experience rather than the indifferent objectivity of the world on its own. This is *our* knowledge, and we cannot know anything that did not yet enter the sphere of our experience and practical interests. We cannot act in the world contrary to its natural organization; but the world becomes nature (and not just something existing on its own) only in respect to the subject, and consequently, as a product. The universality of the subject means that there is nothing in the world that cannot (at least in principle) be included in our experience and scientifically studied, revealing its objective laws.

Just like images of art form a hierarchy of creative forms, scientific notions develop a hierarchy of knowledge that can unfold itself in different directions, like the level of abstraction (reflexivity), formal complexity, the modes of usage *etc*. For instance, there is a triad of observation, theory and experiment, manifesting itself in various research cycles in science.

While art is free to choose any expressive form to reflect specific aspects of the culture, science is more formal in that it tries to use the same form for all kinds of reflection. Since language plays the role of a universal mediator in human communication, science naturally starts with adapting language to the needs of analytical reflection, transforming it into various terminological systems. Abstracted from the common usage (and hence missing expressiveness and universality), such formal languages need to be augmented by numerous artificial constructs like formulas and schemes. Accordingly, the active side of the ordinary language is reduced in science to a number of operational standards,

prescriptions rather than patterns.

By its origin, every notion refers to a standard way of operation adopted in the culture; this limits the applicability of the notion by a certain class of activities. The ubiquitous presence of applicability domains is a characteristic feature of science. There is no science of everything; each science studies its specific object, and the diversity of our operation with real things is directly reflected in the multitude of sciences. This means, in particular, that there are no eternal truths in science; however fundamental, scientific theory exists within the limits of its applicability and it is bound to give way to another theory as soon as the culture assimilates yet another aspect of reality. Scientific revolutions have much in common with the drastic shifts of artistic vision; the both reflect the same processes in the history of the culture in general.

As the quality of science is linked to the generality (that is, portability) of the notions, scientific reflection can never be as exact as the images of art; however, it is much more precise, since the context for the usage of notions is no longer arbitrary and often consciously controlled. While the perception of art requires co-creation as a kind of social resonance, the product of science can be transferred from one person to another as it is, requiring almost no adaptation (and sometimes even discouraging it). The restricted usability of scientific notions, limiting the exactitude of description, allows formal manipulation with abstractions, with the results being as impersonal as the premises. This feature makes science a powerful tool for generating hypotheses, the new options of behavior that may (when practically justified) significantly enhance its efficiency and versatility. Of course, the very possibility of combining abstractions into other abstractions is due to the objective presence of such generalized levels of operation in the hierarchy of the culture, and specifically in reflexive activity. On the other hand, scientific predictions, being based on inherent inexactitude of description and methodology, are mere attempts to guess the most probable order of things; the trustfulness of such guesses depends on many factors.[40] In any case, it is only after practical validation that scientific results can be generally accepted and included in the factual basis of science for further propagation.

Philosophy

In respect to the general triad of activity, *object* → *subject* → *product*, art and science correspond to its objective and subjective levels. Indeed, the product of art essentially depends on its material, it is object-bound. On the contrary, science aims at uniformly representing any kind of reflection in the same material form. In this way, the objective aspect of knowledge becomes irrelevant, and hence scientific reflection can be said to reproduce the subjective core of any activity. Superficially, art may seem to be an entirely subjective play of forms, while science could produce an impression of utter objectivity. In fact, the picture is exactly the inverse, since the very adherence to some standards of rigor makes science highly conventional, and hence subjective.

Representing the universal aspects of any activity, the complementary kinds of abstraction, art and science are equally necessary for the integrity of reflection, but establishing this integrity requires yet another, synthetic level. Here is where philosophy enters on the scene. In the universal triad of activity, philosophy corresponds to the productive aspect of reflection, that is, to the production of the ways of reflection.[41]

On this level, reflection becomes abstracted of its own form, and hence philosophy is closely related to practical activity. This negation of abstraction makes philosophy concrete. Art is *on the occasion of* something, scientific knowledge is *about* something, but philosophy is always philosophy *of* something, it takes things in their integrity and suggests the ways for restoring integrity if it has occasionally been broken. Thus reality becomes reflected in philosophical categories.

Categories in philosophy combine the features of both the images of art and scientific notions. Thus, like in art, categories can be expressed in any material form (including the objective forms of human activity, and the forms of reflection); however, this expression is not arbitrary, it must follow

[40] When you multiply two numbers of a finite precision, the result cannot be more accurate than the original operands. This is an expression of the same principle.

[41] That is why philosophy is often viewed as a collection of imperatives, though it certainly has other fundamental aspects and levels.

the nature of the corresponding ideas, and the very choice of a form of expression is meaningful in philosophy. Similarly, the history of philosophy can no longer be considered as outer to philosophy itself, and the ways of producing categories are as important as the categories thus produced.

Philosophizing is a rather common variety of philosophy, but it is in no way unique, or otherwise distinguished. This science-like behavior bears the same mark of impersonality, which makes it well suited for passing philosophical ideas from one person to another in a universal way, through space and time. Still, it also brings in the same illusion of absolute objectivity, of the supreme power of thought that does not require the very ability of thought. It may seem that mere verbiage is enough, and a glib tongue can make one a philosopher. That is why it is important to always keep philosophizing within a practical domain, as well as within a personal perspective that would compensate the imperfection of rigid terminology. In other words, a philosopher will never discuss the world as it is (like scientists do); we must firmly express our attitude to any problem and the preferable direction of solution.[42] However, the exaggeration of feeling and judgement is as disastrous for philosophy as the prevalence of cognition. The idea of integrity is in the core of philosophy, and all the aspects of activity are to be kept in mind in any instance of philosophy.

The impersonal style of science is often used to disguise the real interests of various social groups. When news starts with “Scientists have found that…” or “Experts believe that…” it may seem to convey an objective statement of the matter of facts. A philosopher will always ask who those “scientists” and “experts” are; please give the names and tell us who pays. Without that information one can hardly assess the validity of results. The personality means as much in philosophy as a natural law; here, we explicitly state what is diffidently concealed on the other levels of analytical reflection, namely, that any word view is somebody’s view, and it serves somebody’s interests. However philosophical statements differ from mere opinions in that they are culturally determined and never arbitrary. An artist may pretend to express a personal impression free from any social obligations. A philosopher must belong to a definite cultural trend, to actively support this and oppose that. The arbitrariness of art and the rigor of science are synthesized in philosophical determinism.

Philosophy could be considered as a synthesis of art and science in yet another way. Scientific constructs are void unless they can be somehow pictured, brought together and viewed as a whole. Even within science, an abstract idea will first take the form of an intuitive principle, an overall stand, or a basic approach, before it could become really applicable to anything. On the other hand, an artistic image can never be perceived as such without a preliminary training, which associates the image with many others producing a hierarchy of associations similar to a scientific notion. Reflexively repeating this development, we come to ideas that are no longer scientific, not artistic. Art and science annihilate each other in a philosophical category, remaining its necessary reflective background.

Yet another aspect of the same: science penetrates art to provide the technical background of artistic creativity, and art penetrates science as scientific intuition. Artists can learn the basics of their trade; and this is the scientific part of art. Erudition and skill do not make an artist, but few artists can develop from scratch, rediscovering their art on their own. Similarly, the talent of feeling the answer before it could be scientifically justified is an important component of science; however mere intuition is not enough in scientific research. Philosophy becomes a universal mediator for this kind of mutual enrichment. It is neither art, nor science. It cannot be imitated, nor learned. One has to find one’s own way to wisdom, and this is why philosophy is so difficult to comprehend.

Philosophy can express itself in the forms of art, or science, as well as in any other forms. However, while it is expressed in a borrowed form, philosophy remains a mere aspect of some other activity, and one can only speak about the level of philosophical thought within the hierarchy of a certain reflective activity, but never about philosophy as a self-contained cultural phenomenon. The language of philosophy will certainly include the elements of the artistic or scientific origin, but philosophy must eventually develop its own forms of reflection, to become fully adequate and consistent, clearly distinct from both art and science. It is only on that stage that art and science will be

[42] In Marxism, this is traditionally referred to as the party spirit of philosophy. In a class society, every philosopher will take the side of a certain political force, consciously or not. Any philosophizing is objectively promoting the ideas of a particular class, or a specific social layer. In a classless society of the future, a more general approach will be needed, but philosophy can never remain indifferent anyway.

able, in their turn, borrow forms from philosophy, thus adopting philosophical views and methodology.

While art sorts out our impression, and science trains our ability of manipulation, philosophy is application-driven. There is a distinction of empirical, theoretical and applied science. Nothing like that is possible in philosophy, which is always empirical, theoretical and applied in the same time, in the same act of reflection. The main function of philosophy (as long as it can be treated in a functional way) is to seek for practical consequences of any abstraction, to make abstractions concrete. However, philosophical reflection remains analytical, as its product, philosophical categories and schemes, is distinct from the other aspects of culture. This inherent analyticity results in numerous kinds and branches of philosophy, in a hierarchy of philosophical disciplines. In practical activity, we need to lift this multiplicity in a deliberate decision, thus abstracting from the philosophical abstraction of application. This how we can leave the level of analytical reflection and grow to the sphere of praxis.

Synthetic Reflection

In its syncretic form, reflection is inseparable from common activities, and the vision of the world it brings is implicit, built in the products that are not specially intended for conveying any ideas. When reflection becomes a separate activity, with its own product, all kinds of analytical reflection develop from occasional manifestations up to socially delimited professions. The fundamental levels of analytical reflection could be distinguished by the character of the product; we thus distinguish art, science and philosophy, reflecting the world in typical characters, abstract concepts and universal categories, respectively. However, these self-contained reflections would remain mere play until we turn back to practical activity, somehow introducing our creative imagination in palpable things and the modes of their presence in the culture. This is impossible within the analytical level, since the very its definition (and its creative power) comes from our ability to separate an object from its reflection. To transform abstractions into practical guidance, we need yet another level of reflection that would link the products of analytical creativity to our needs and interests, so that our vision of reality would shape our goals and motives. This is what we call synthetic reflection, the unity of comprehension and intention.

The basic entities of the synthetic level implement the active connotation of the word ‘idea’, whereas syncretic and analytical reflection reveal its alternative connotations: either a predisposition (impressions and preferences), or a subjective representation of an object. That is, synthetic ideas are ideas as such, conscious attitudes to the world based on an integral vision. For instance, we try to arrange things according to our ideas of harmony, we develop an argument following our idea of logic, and we expect other people to esteem certain moral principles. On this reasons, we could refer to this level of reflection as *ideology*, in the most general sense.

Each synthetic idea may induce different kinds of ideological acts. Thus, in its reflective aspect, it shows up as *judgment*. Ideology is much like reflection on this level, it binds various cultural events to some reflective forms (borrowed from the analytical level). In this way, we build a kind of context for further operation, outlining a range of relevant situations.

From the opposite, practical side, ideas lead us to all kinds of *decisions*, taking the form of inner determination, resolution, choice. A decision does not necessarily manifest itself in an evident manner; it may result in apparent passiveness, withdrawal, estrangement, or even a chaos of spontaneous acts. Decisions initiate actions, but they do not shape them.

Finally, the inner integrity of one’s judgements and decisions determines one’s *attitude* to the world. In particular, when it comes to common attitudes shared by a relatively wide social group, we speak of an ideological position, or stand. Like any hierarchy, an attitude can turn from one position to another (which is known as hierarchical conversion). This does not imply any lack of consistency or responsibility, as some social partners might observe; solidarity in one respect may (and necessarily will) be complemented by divergence in another.

However subjective, attitudes represent the uniqueness of the subject as a part of the world, and their individuality will always take a variety of cultural forms, such as belief, doubt, rejection, or

conviction. These forms interact with each other in different combinations, so that one kind of attitude may (gradually or suddenly) transform into another, in response to practical occurrences.

Though the hierarchy of synthetic reflection can (and eventually must) be unfolded in many ways, there is a historical distinction of primary importance for humans on the current stage of cultural development. Today, we are already aware of the three fundamental modes of synthetic reflection conventionally referred to as esthetics, logic and ethics. However, their role in conscious activity is yet unclear, their specificity is difficult to grasp, and their application remains mostly intuitive and rather basic. In a way, this is a normal effect of the synthetic character of such reflection, as it cannot be adequately represented by any analytical form and thus brought to the eyes as an external object. On the synthetic level, we are not separate from our reflection; the only possibility to "visualize" it is to develop some activity according to our judgment, attitudes and choices, so that the very selectivity of our actions will be a natural indicator of our esthetics, logic and ethics.

In fact, any distinction within the synthetic integrity of an idea can only be virtual, and we speak of the esthetical, logical and ethical aspects of any act rather than of a specifically esthetical, logical or ethical acts. All the three modes are necessarily present in any conscious activity, coming to awareness in different order, in different cultural contexts. The same act can be characterized from one side or another, depending on one's individual preferences, and this assessment may change with time, when the current activity flows into the next. Still, people can feel sometimes the importance of certain type of synthetic reflection and say that they do something for esthetical, logical or ethical reasons. Of course, such statements, however sincere, should be treated as situational and relative.

Unlike the forms of analytical reflection, the synthetic modes cannot develop into separate cultural formations. Art, science and philosophy readily produce individual arts, sciences or philosophies, which often become officially acknowledged branches and even social institutions. However, there are no institutionalized esthetics, logic or ethics; ideology is a common platform for any individual manifestations. In certain cases, ideological work may become a primary motive, but this does not make the corresponding activity specifically ideological. Indeed, to promote a kind of ideology, one has to work in one of the available cultural areas, only developing in an ideologically determined direction. For instance, a politician is primarily engaged in politics (as a special activity, or a profession), but the character of this engagement may well be explained by ideological motives. In particular, ideology can develop on the basis of art, science or philosophy (as culturally distinguished activities); this does not reduce synthetic reflection to the corresponding analytical level. Thus, mathematical theories of logic may represent (and be inspired by) certain levels of logic in general, as a mode of synthetic reflection; no such theory can pretend to be logic as such, they always remain mere science. Similarly, a philosopher may discuss esthetical, logical or ethical problems, and even specialize in developing categories to assist the growth of our synthetic self-recognition; this results in philosophical esthetics, logic and ethics as distinct branches of philosophy, but never synthetic reflection. To "lift", say, philosophical esthetics to the synthetic level, we need a practical necessity in that particular mode of action, which will involve all kinds of other reflective forms, besides philosophy.

Traditionally, esthetics, logic and ethics are taken in a narrow sense, as the areas of analytical reflection, and in particular as philosophical disciplines. This reflects a specific attitude to the world exaggerating the passive aspect, mere perception of natural phenomena (and social phenomena as a level of nature) and adjusting the inner world of the subject to match that objective order. In this abstract picture, reflection is treated as mere replication, losing the connotation of reflexivity, self-action. As the arts consolidated in a separate cultural formation, the artists usurped the right of esthetical judgment, and philosophical esthetics was generally identified with the philosophy of art. Later, science has found its own cultural niche, associating logic with mere cognition and limiting it to formal rationality. Accordingly, philosophical logic has shrunk to mere philosophy of science.

Yes, the institutionalized forms of reflection provide a clearer vision of certain aspects of synthetic reflection. However, in the proper sense, esthetics does not need to apply to the arts, nor to be derived from the arts. This is an aspect of any activity at all, and an aspect of art regarded as a specific activity. Similarly, logic is needed in every conscious act, science being just an (illustrative) instance. In this approach, it is quite obvious, that the arts must follow their own logic, not necessarily

resembling the scientific method; conversely, scientific judgment may well be directed by esthetic criteria, as many scientists admit. The synthetic view can therefore be practical even without a clear understanding of the distinctions between the complementary modes of reflection. Moreover, in the synthetic realm, we can never entirely trust any particular conceptualization, only taking it for an approximate expression of an existing cultural reality. There is no absolute differentiation and all-embracing comprehension. Still, we need philosophy of synthetic reflection to explicate our self-awareness, in the same way as we need art and science.

Space and Time

Emancipated from philosophy since the beginning of the XIX century, physics still suffers from the common malady of all the new-born nations, exaggerated egocentrism. In the rage of self-determination, it claims its rights to all the gains of culture and puts forth its method as the only path of any true science, while all that is not science (in this degenerate sense) must be at most tolerated with disdain. Science is deemed to be the supreme arbiter in any dispute, the all-potent source of definitive answers, and the only road to the future. As soon as something becomes a physical problem, the others automatically are out of business. In particular, the ideas of space and time have come all the way downward from universal categories to narrow physical concepts.

A closer look will reveal that the emancipation of physics from philosophy was spurious and ephemeral, and all the conceptual breakthroughs in the history of modern science came from philosophical considerations rather than rigorous study and formal derivation. Scientists have generally been too philosophically ignorant and too self-conceited to admit that what they do is not exactly science, but often a kind of amateur philosophizing eclectically mixing popular ideas and political propaganda. Luckily, the world is made so that, moving in any direction, you will necessarily find something interesting and worth a deeper investigation. That is why philosophical misconceptions were as productive in science as most profound wisdom, and no official decree can stop the progress and forbid further discoveries.

The ideas of space and time originally expressed the general aspects of human life and activity, from the topography and growth of the human body to the geographic range and a sequence of generations. These germinal categories reflected the cyclic nature and the scope of activity, production and reproduction. No wonder that space and time also served as a universal expression of measurement, producing the two primary mathematical notions, a range (collection, set, segment) and a number. In the course of activity, space and time were mutually reflected and penetrated each other; thus sets became measurable (countable), and numbers were grouped according to various qualitative criteria.[43] Practical needs gave birth to the three principal branches of ancient science: geography (dealing with space), chronometry (measuring time), and astronomy (the synthesis of the other two, the abstraction of motion).

The qualitative notions of space and time preserved their importance up to the Age of Enlightenment, and they have not yet entirely disappeared in our days. However, the development of natural sciences preparing the industrial revolution of XVIII–XIX centuries gradually spread a purely quantitative approach, overemphasizing the idea of measurement.[44] The number became the king and god of the new epoch, while mathematics and mechanics were put in the basis of any knowledge at all. Starting from Descartes, space and time were generally identified with the length of a segment (the dimensions of a body) and a measurable duration. The Newtonian idea of infinitesimal elements

[43] The idea of continuity came much later; the early measurement was essentially discrete. When a value could not be expressed as an integer number, people preferred to change the measure, rather than admit any fractions (except, possibly, the trivial dichotomy dividing the whole into two subjectively equal parts). That is why the discovery of incommensurable segments required a new mentality and hence produced a heavy impact on the ancient culture in general, far beyond reflexive activity. This could be compared to the famous Gödel theorems that shook the foundations of science in the XX century and caused a general shift in the public attitudes.

[44] Traditionally, Galileo is said to be the father of the scientific method; however, the experimental approach of Galileo was yet predominantly qualitative, with measurement playing an auxiliary role as an instrument of discovery rather than a value in itself.

naturally extended this numerical treatment. In the lines of Cartesian mechanism, the ideas of space and time were detached from any activity and made the designations of an absolute frame for any mechanical motion, which was declared to be the only conceivable form of motion at all, and the degree of understanding any other kind of existence was related to the possibility of its expression in mechanical terms. Though modern physics has gone a whole way away from this purely mechanical picture, its basic elements remain intact in most physical theories, including the most advanced chapters of the quantum theory of everything. The formal unification of space with time and further with the dynamics of masses does not change the principal assumption of a common measure applicable to the whole Universe and embracing all the special manifestations of spatiality or temporality. Popular books on cosmology are rich in picturesque descriptions of the world's development on the same time scale, from the supposed beginning to the possible end. Despite the obvious incompatibility of such a chronological order with the principle of relativity, the very attempts to extrapolate the regularities of the observable Universe to the whole world are nothing but the relics of the old anthropomorphic views, if not a kind of religious mysticism.

A slightest philosophical observation reveals a number of weak spots in radical physicalism. First of all, the ideology of measurement does not tell much about the moments of time and space points, despite the general notion of their being the elements of space-time. A physical system cannot be infinitely small (or large); otherwise, it would not be measurable. Representing physical characteristics with mathematical abstractions is only an approximate model applicable to the systems with characteristic dimensions within definite limits. For instance, solid bodies interact as point masses at distances much greater than their sizes; to describe the dynamics of close bodies, one has to account for their shape. In general, there is a hierarchy of characteristic lengths (durations) determining the applicability areas of different formal representations. This does not deny the importance of measurement as such, but prevents us from too wide generalizations absolutizing one of the natural scales in the detriment of the others.

On the other hand, the numerical value of anything makes little sense on itself. A thousand miles, is it far away or close at hand? It depends. A couple of seconds, does that mean "just a moment", or "for ages"? Both interpretations are equally possible. That is, any measurement is only meaningful within a qualitative description of the system, assuming an overall conception of the typical spatial and temporal relations. Of course, all the special manifestations of space and time assume some commonality that we address speaking about space and time as universal categories. In particular, one could imagine a most general measure associated with such universals. But why these universal ideas should coincide with the notions of physics, reducing all the diversity of space-time to mere numerical values? Even in physics, we encounter the elements of hierarchical understanding of space and time irreducible to mere coordinate systems; for instance, in quantum mechanics, the coordinates and the moments of time as the parameters of the wave function (or a state vector) have nothing to do with observable positions and moments of time (dynamic variables), which are rather represented by translation operators transforming wave functions, or state vectors, which, in general, do not need to be their eigenstates. Why not admit that reality is much wider than our limited experience, and that it may comprise formations irreducible to mere physics? The available answers all repeat the same: because space and time are physical notions. This is not ultimately true. The notions of science never come from within science; they reflect the common modes of conscious activity, the way we see and transform the world.

In general, the hierarchy of the possible forms of motion will produce the corresponding hierarchy of spatial and temporal relations, and physical space-time reflects one of the lowest levels of this hierarchy. Thus, an organism is primarily a physical body, and it will obey the laws of physics. As a chemical system, it will certainly obey the laws of chemistry. However, life cannot be reduced to mere physics or chemistry, this is a special arrangement of otherwise inanimate things that makes them behave as living creatures. Physics and chemistry make such higher-order organization possible, but they do not imply it. On the contrary, life restricts the range of appropriate conditions and thus modifies the effect of physical and chemical processes. This means that, while the physical notions of space and time are still applicable to the body of a living organism, there are also manifestations of spatiality and temporality characteristic of life and absent in dead bodies. Similarly, conscious activity

cannot be reduced to any physical or biological motion, and, along with any physical and biological space-time relations, there must be something that belongs to this very level of hierarchy, and which is absent outside the totality of cultural phenomena. Of course, the levels of any hierarchy are mutually reflected and the same hierarchy can be unfolded in many ways to produce quite different hierarchical structures. That is, the distinction of physical, biological and subjective time is also hierarchical: there can be intermediate levels, or some intricate differentiation within a single level. But this does not change the situation in principle: there are many kinds of space and time that cannot be reduced to pure physics.[45]

Well, we could just shut our eyes and dismiss the unpleasant complexity as philosophical nonsense. Sooner or later, the cultural necessity will oblige us to somehow cope with these delicate issues, and then we'd better have a sound philosophical basis for serious research than start inventing anything from scratch, following our commonsense stuffed with philosophical prejudice of the past. Who knows? If we are lucky enough, philosophy could suggest nontrivial solutions to some of the difficult problems of today.

For instance, the problem of distinction and unity of space and time. Mere declaration that there are no separate space and time, but rather a combination of spatial and temporal dimensions, is not enough to deny the fact that space and time are differently treated in real life, despite all the possible resemblance and interdependence. However radical, physical theories are essentially asymmetric, they may contain lots of spatial dimension, but only one temporal. The sporadic attempts to develop a "many-times" formalism have remained an exotic technical trick far beyond any fundamental significance.[46] While a scientist can always sweep the garbage under the carpet calling such questions non-physical (well, nature is designed that way, and the job of a scientist is to describe it as it is, without ever asking why), the evident discrepancy between the declarative adherence to the strategy of unification and the lame ground principles does not add to the beauty and clarity of the result.

In philosophy, we turn to practical activity in order to find the answers. How do we get aware of space? Through time, collecting our experience of moving from one point to another. How do we get aware of time? Through space, observing the others' motion. That is, space and time are always interrelated, but the experience of time comes from a different level of reflection. As long as we keep within the same cultural environment, we can project our own experience to the presumable experience of the others, thus coming to the notions of space and time apparently independent of the observer (the principle of relativity). The rest of related physics hence follows. All we need is to compare the kinds of reflection involved in the formation spatial and temporal experience. However, one important consequence is ready before any closer investigation. The organization of the physical space-time reflects the physical aspects of our activity; in an entirely different culture built on a different physical background one is bound to find some other notions of space and time, thought as distinct and as interrelated. In a way, the transition from the Galilean culture of mechanical motion to the new culture based on electromagnetism and quanta has caused a revolution in the physical picture of the world in the beginning of the XX century. Maybe the computer revolution we face today will significantly influence the notions of space and time as well.

Unfortunately, modern philosophy borrowing the ideas of space-time from physics (possibly in the form of their negation) cannot suggest much in revealing their universal content. In the following, I will outline an approach that could restore space and time in their rank of philosophical categories rather than special concepts. Otherwise, any productive cooperation of science and philosophy would be impossible. It is only after comprehending the place of space and time in an integral picture of the world that the peculiarities of physical space-time can be considered as a special manifestation of the

[45] Alternatively, one can arbitrarily *declare* that space and time are physical characteristics, and all the related ideas belong to the realm of physics. In this case, we will treat spatial and temporal relations of the higher levels of the world's hierarchy as the manifestations of the physical aspects inherent there. Thus, in a psychological study, one can picture people's behavior as a kind of physical motion in the motivation space, applying all the traditional physical notions with minor modifications. However, such *physical psychology* does not exhaust psychology in general; on the other hand, physical psychology is still a branch of psychology, since it is the motion of the human soul that is concerned, and not the motion of the physical bodies.

[46] It should be noted that such models often were merely replicating the usual four-dimensional space-time, thus only multiplying the inherent asymmetry.

universal features. However, discussing general issues, I will certainly have to use illustrations from physics, where no other source is available.

Any definition is primarily comparing different things in a common respect. This is how space and time are defined in real life, in any practical situations. For instance, one can measure time by the quantity of food eaten, by the subjective feeling of tiredness, or by the sum accumulated on a bank account. Similarly, there are different measures of space, like muscle effort, the weight of a standard piece of the same material, or the quantity of certain lexical elements of the local dialects. All such "measurements" (or, rather, evaluations) reveal some important features of space and time and extend our understanding of the matter. However, in philosophy, we must seek for a universal mode of comparison incorporating all the possible distinctions and dependencies. That is, we need to indicate a philosophical category (or a categorical scheme) producing the ideas of space and time in a comprehensive and necessary manner. Since the possibility of such an attribution is related to the current level of cultural development (assimilating a certain range of activities), there is no final answer for all epochs to come. So far, space and time seem to be appropriately referred to as the universal aspects of any *motion*.

In a very general sense, motion is a level of *existence* along being and development, which is expressed by the triad

$$being \rightarrow motion \rightarrow development,$$

assuming that any being comes as a result of development, so that the whole picture gets reproduced in he next cycle, or on the next level of hierarchy. For completeness, let us recall that existence is a level of *reflection* in the hierarchy

$$existence \rightarrow life \rightarrow activity,$$

while reflection is one of the universal aspects of the world as the only unity of all the possible distinctions:

$$matter \rightarrow reflection \rightarrow substance.$$

Within this categorical framework, we can introduce the categories of space and time to express the relations of motion to being and development respectively.

This definition has a number of far-reaching implications. Space and time have been characterized by V. Lenin as the universal attributes of motion as early in 1908 in the context of criticizing the attempts of idealistic interpretation of the relativistic revolution in physics. The phrase has later been replicated by millions of Soviet authors and has become an obligatory element of the official high school philosophy. Still, its interpretation remained tied to physics, as if there were no other kinds of motion. Paradoxically, Lenin's words were often mentioned along with the references to F. Engels' description of the hierarchy of forms of motion including the biological and social levels. Thus official Marxism has yet another time demonstrated its inability to assimilate the basics of dialectical materialism, nothing to say about any further development. Lenin was not acquainted with Engels' *Dialectics of Nature* which has first been published in 1925, after Lenin's death. However, he stressed the idea of the unity of all kinds of motion (including the human society) in his philosophical notes as the only consistent kind of materialism. This means that he understood of space and time was much wider than mere physical notions; the idea of the objective necessity of the specific forms of spatial and temporal aspects of motion on different organization levels has been entirely overlooked by the public.

In this section, the hierarchy of the word is associated with the forms of reflection rather than the forms of motion. There is no principal difference, since the categories are all mutually reflected, and the hierarchy can be converted in other contexts, to satisfy some practical needs. In particular, the levels of reflection can be derived from the hierarchy of motion, in accordance with the classical Marxist approach. The principal conclusion remains the same: the world is hierarchical, and hence any spatial and temporal aspects must reflect the same hierarchy. However, the indirect relation of motion to reflection could explain, and probably justify, the monopoly of physics in the study of space-time. Indeed, if motion is an aspect of existence, space and time as its attributes refer to existence as well, keeping a low profile on the levels of life and conscious activity. In other words, any motion is

primarily *physical* motion in the wide sense, as contrasted with biological and social phenomena. This means that the peculiarities of space and time on the higher levels of hierarchy should mainly be observable as modifications to the physical space-time, some unusual behavior that cannot be attributed to mere physical reasons. Such higher-level effects may be hard to detect, as they have to be separated from the forms of physical motion, which shape the inner hierarchy of existence. Thus, some philosophically inclined physicists tried to explain quantum effects by the direct interference of consciousness; this is a typical example of methodological confusion. The influence of the human reason on microscopic interactions is indeed important, since our practical activity comes to involving certain kinds of quantum systems and therefore *prepares* them so that they can exhibit essentially quantum behavior. Still, similar types of behavior can also occur without any human interference, like in the objects of the distant space; their observation, however, is not entirely free from subjectivity, since it will necessarily put forth some specific aspects while neglecting anything else, in accordance with the current trends of cultural development and human practical needs.

For a physicist, the above abstrusities suggest at least one important corollary: any physical system is regarded as such in respect to the current organization of human activity, the level of cultural development in general, and technological development in particular. Consequently, there is no physical theory, however fundamental, that would not, sooner or later, be modified or replaced by a more general approach, reflecting (and reflexively enhancing) the new realities of everyday life. Scientific revolutions of any scale are always a result of industrial and social development, and never an arbitrary invention of a supreme genius. Formal constructions may lead to incredible guesses, but, first, the very formal method reflects the options of development inherent to the present culture, and second, any novelty can only be accepted by a society prepared enough for discoveries of that kind. Thus, the objective necessity in the heliocentric system appeared well before Copernicus; similarly, the laws of genetics only provided a concise expression of what people practiced for centuries. Mathematicians keep saying that complex numbers were historically introduced for purely technical reasons, as the solutions of algebraic equations. But higher-order equations did not come from nothing, they were needed to solve quite practical problems. Mathematical abstractions are as culture-dependent as any other scientific models.

While waiting for the new physics to come, let us look closer at the categorical background of the scientific treatment of space-time, which might probably extend our present notions, at least adding a new interpretation to the already known.

First of all, defining space to characterize motion from the aspect of being makes this category essentially *static*, associating it with the ideas of stability, constancy, permanence *etc*. On the contrary, time as the link between motion and development is an expression of *change*, both quantitative and qualitative. In this context, time is the opposite of space, and one can never be reduced to the other, though, as any opposites, they are mutually reflected and impossible without each other.

In a way, this returns us to the classical picture treating space and time as essentially different. On the other hand, a distinction like that could explain the traditional asymmetry of physical theories in respect to the dimensionality of space and time. The commonly felt *arrow of time* is readily associated with the overall direction of development, from the primitive forms to more complex formations.

In physics, the unity of space and time is usually imposed in a static manner, reducing time to space through a standard motion, the propagation of light in vacuum (understood as empty space). Such an approach is a concession to the common sense; for a plain reasoning, spatial relations seem to be much more tractable due to their immediate presence “here and now”—the prejudice relativistic physics claims to ruin. The attempts to turn it the other way round and derive space from time did not receive much academic (and public) interest, mainly due to the necessity to explain three spatial dimensions from the single-dimensioned time. However, in the modern algebraic formulations of quantum field theory, one could discern a prototype for the possible reconstruction of space through a series of symmetry violations (that is, unfolding space in time).

The traditional relativistic reductionism involves a kind of logical circularity, since the constancy of the speed of light in vacuum as the logical basis for the geometric treatment of time is based on the assumption of an empty space spanned by propagating light; no wonder that relativistic

physics is perfectly explaining facts from which it was basically derived. To discover other kinds of physics, one needs an entirely new kind of interaction that would serve as a measure of space-time independent of the propagation of light.

The unity of the opposites can only be established through yet another category embracing the both poles in a synthetic manner and hence mediating their mutual transformations. In particular, we need something different from space and time while containing them both. Like space, this something must present a static arrangement of elements; like time, it must admit an inner orientation, the direction of development. In unism, we make a bold assumption that this unity is expressed in the category of *organization*, taken as both the process and result.[47] Now, in the triad

$$space \rightarrow organization \rightarrow time,$$

time is understood as organization of space, and space is understood as organized time. In any case, space and time appear to be the modes of organization, in addition to other possible organization forms. While space refers to something between being and motion, and time refers to the link between motion and development, organization links motion to itself, providing a kind of inner reflection.

However sudden, this unification of space and time with organization well agrees with common intuitive ideas as well as the ways space and time figure in physics. From the ancient times, the very word "space" referred to the nearest environment, the portion of the world already assimilated by the culture, organized according to the range of common activities. Similarly, time was associated with the expansion of the organized activities to involve more of the objective world (nature). The simplest form of temporal organization, mere repetition, determines a spatial point; the simplest form of spatial relation, mere distinction, determines a moment of time. The combination of the two, repeated distinction, or distinction in repetition, forms a *scale* as the simplest kind of the inner organization of any motion. Different kinds of motion run on different space-time scales, and this the first knowledge we get about any new physical phenomena; quite often, establishing the scale for a physical system allows to attribute its behavior to quite definite physical processes and explain it at least on the qualitative level. Characteristic times and lengths are of fundamental importance in physics and are certain to play as fundamental role on the other levels of the hierarchy of reflection.

Scales combine both qualitative and quantitative features and provide measure for a class of phenomena. A scale does not need to be an ordered set, it may admit no quantitative estimates at all. For example, a music scale is a collection of notes (the points of a pitch space) that are distinguished by their quality rather than quantity, and their usage does not necessarily depend on any numerical estimates. The relation of musical scales to pitch perception is nontrivial, and the commonly known "well-tempered" 12-tone scale is a result of long evolution of musical hearing; there are other scales used in certain cultural areas, and a number of new scales can be theoretically predicted.[48] In any case a point in the musical pitch space is rather a zone allowing small variations without changing the quality of the tone; moreover, musical motion develops in several pitch dimensions implied by the same scale (scale embeddings and super-scales). Though this example refers to esthetics and psychology, similar types of organization are quite admissible on the physical level as well.

Scales can be differently ordered, depending on the cultural context. Thus, in European tradition, musical tones are normally ordered by pitch; however, many cultures (including the music of Ancient Greece and medieval modal systems in Europe), admit only a partial order, while for people with absolute pitch sense there is no order at all, as any tone has its own qualitative definiteness that does not require comparison with other tones. On the other hand, the elements of the standard 12-tone scale can be ordered either by pitch (which gives the ordinary piano keyboard), or by the interval of the fifth (which is the standard in the traditional treatment of harmony and the principle of most combinatory scale theories). In physics, the "natural" order of spectral lines says nothing about the sequence of transitions producing that very observable pattern. However, an ordered scale corresponds to a higher level of hierarchy, introducing the ideas of *distance* and *delay*. Primarily, these are merely

[47] Of course, philosophical categories are irreducible to mere terminology, and the word "organization" could be safely replaced with more appropriate terms in other contexts.

[48] L. V. Avdeev and P. B. Ivanov, "A mathematical model of scale perception". *Journal of Moscow Physical Society*, **3**, 331 (1993).

qualitative estimates reflecting the fact that some point (moments of time) immediately follow or precede each other, while others requires several hops to reach. In the terms of activity, one might consider the overall effort needed to achieve the result. It is only when all the spatial points (and the moments of time) are treated as equivalent (in some respect) that we come to the idea of *translation* (transition from one point or moment to another) as a level of motion.

Note that this logic is the inverse of the usual physical approach, which first assumes space and time, and then imposes the requirement of spatial and temporal invariance as the basis of momentum/energy conservation, but primarily of the very possibility to define a frame of reference for the notions of momentum and energy to make sense.

Now, as we got to the idea of translation, there is all we need to define measurement as comparison of translations. An attentive reader will immediately notice that this implies yet another level of hierarchy, treating translations as points of some space. Anyway, we finally obtain the familiar notions of length and duration as quantitative estimates of distance and delay in respect to some standard measure. And here is where regular physics begins (but in no way the end of the row).

I dwell so much on this stage only to show that the basic physical ideas are not as elementary as they might seem.[49] On each step, we could decide to unfold hierarchy in a different direction, thus getting to space and time of a very uncommon sort. So far, physics did not need them. But who knows? Our future experience may require a revision of the most elementary conceptions; philosophy is to indicate how we could cope with that.

> Instead, I could choose to clarify the universal content of the categories of space and time formally extending the scheme
>
> $$being \rightarrow motion \rightarrow development$$
>
> into
>
> $$being \rightarrow space \rightarrow motion \rightarrow time \rightarrow development,$$
>
> which is a standard logical operation in diathetical logic: every link between two categories can be represented by a new category mediating the original relation. Then we fold the hierarchical structure (yet another standard logical operation) treating the triad
>
> $$space \rightarrow motion \rightarrow time$$
>
> as an inner hierarchy of yet another category; probably, we could even find a self-referential name (for instance, “action”, or “interval”). Taking translation for the basic kind of physical (mechanical) motion, we come to the concise expression of physics as
>
> $$space \rightarrow translation \rightarrow time,$$
>
> so that time becomes defined through elementary translations in space, and space is related to elementary translations in time. Thus we get it in full, but this is a rather plain notion of space-time, isn’t it?
>
> Formal operations of diathetical logic express certain features of our practical activity. Without reinterpreting the elements of a scheme resulting from formal derivation, we can produce nothing but yet another reformulation of the present views. Though such reformulations may be most stimulating, new concepts and paradigms grow from a revision of the categorical basis. And that is what we try to find here: the possibility of development, rather than a scientific theory.

The integration of space and time with organization is a kind of research program aimed to establishing the interdependence of the corresponding special notions on all the levels of motion, including physics. That is, any discussion of space and time implicitly assumes a specific organization of the system of interest, and the numerical (or other formal) expressions are necessarily restricted to this problem area. In particular, this might mean that the future generalizations of space-time in physics will include a third element related to the system’s organization (for instance, statistical characteristics, or inner symmetries). In a way, the general relativity theory is a step in that direction, since it tries to bind the structure of space-time to the arrangement of material fields and conversely, the distribution of matter to the spatial and temporal characteristics. However, reducing time to mere

[49] An empirical enumeration of different scales can be found in any book on mathematical psychology. A philosophical treatment is rather concerned with the practical origin and meaning of the formal constructions.

spatial coordinate, it remains too geometrical, while organization is wider than mere geometry. A new physical theory of space-time will certainly need an enhanced language overcoming the geometrical or temporal bias in terminology.

In the rest of this section, a number of traditional spatial and temporal notions will be projected into the basic categorical framework, without too much concern about formal consistency. Any categorical scheme must be unfolded in the context of a specific practical problem; within a general ontological discourse any detailed construction would bear a touch of arbitrariness, merely illustrating the general ideas rather than really developing them.

Like in any triad, the mediating position of organization between space and time assumes two complementary forms of organization that could be called spatial and temporal organization to refer to the outer manifestations of motion; as usual, there is also a third element, a kind of inner organization that is both determines the features of the observable motion and reflects any external determination. Thus we get an organization triad:

$$\textit{spatial organization} \rightarrow \textit{inner organization} \rightarrow \textit{temporal organization},$$

or, in the inverted form,

$$\textit{temporal organization} \rightarrow \textit{outer organization} \rightarrow \textit{spatial organization},$$

with inner and outer organization being the aspects of some dynamic organization in general. This distinction is quite intuitive, saturating all the modern physics. Thus, the description of spatial organization includes overall dimensionality, topological assumptions, and a hierarchy of natural measures. Temporal organization specifies any kinds of sequencing, like the order and contiguity of time moments, parallel processes and cascades, typical durations *etc*. Dynamic organization is represented in physics by a formal description of matter, including its distribution in space, evolution in time, as well as the law of dynamics, asymptotic conditions and higher-level constraints. Basically, this corresponds to a model of the experimental setup, or the accepted level of observation. It is through inner organization that space gets related to time, and conversely, temporal organization in certain conditions leads to a definite spatial organization.

A frame of reference is an important example of organization in physics. It combines some spatial organization (represented by a coordinate system) with a definite temporal organization (represented by the value of time). The choice of the frame of reference is determined primarily by the outer conditions (the observer), and the transitions between different reference frames are described in terms of motion. However, the parts of a physical system can play the role of observer for each other, and hence there are preferable reference frames associated with the inner organization of the object. The reduction of time to space in relativistic physics assumes a kind of outer organization, the propagation of light, and is meaningful only within this light-bound framework. However, a relativistic frame of reference is more than mere coordinates; even in an entirely geometrical approach, it assumes a clear distinction of space and time, albeit on the local level and in a relative way. Physicists tend to ignore the ubiquity of this distinction and the obvious asymmetry saying that this is how nature is organized, and that is why we need a particular group to describe it. But a mathematical construct is merely a form of expression, it does not imply any physics and cannot explain anything.

The hierarchy of organization in the triad

$$\textit{space} \rightarrow \textit{organization} \rightarrow \textit{time}$$

can be unfolded in yet another direction, stressing the static nature of space and developmental origin of time. Thus we come to the fundamental triad of organization levels:

$$\textit{structure} \rightarrow \textit{system} \rightarrow \textit{hierarchy}.$$

An extensive discussion of the hierarchical approach is available elsewhere.[50] Here, we only indicate that the structural aspect of any object takes it in a kind of simultaneity, all the structural features are present at once and hence mutually comparable; a system transforms structures according to its inner structure; the levels of an object's hierarchy reflect the stages of its development and manifest themselves as hierarchical structures and hierarchical systems. This triad is fully applicable to all kinds

[50] P. B. Ivanov, *Philosophy of Consciousness* (Trafford , 2009).

of organization, though some situations would accentuating one of these aspects. In particular, spatial or temporal organization can be considered on the structural, systemic or developmental level. The triad of organization will also apply to the category of motion, which lead to the three fundamental levels of motion, or the general kinds of change: *transition* → *transformation* → *reproduction*. Roughly, the category of transition is used to express the spatial aspect of motion, while the temporal aspect is associated with reproduction; the category of transformation is the synthesis of the poles, as well as the necessity of their mutual reflection.

Space, as suggested, refers to the link between being and motion in the triad

being → *motion* → *development*.

This means that both being has an aspect related to motion, and motion has an aspect related to being; the category of space serves to express the unity of these aspects. The element of a space as a kind of individual being is readily identified with a *point*, a minimal portion of space. The spatial aspect of motion must obviously be an abstraction of displacement, transition from one point to another. Taken apart from development, this transition does not make any difference between the distinct points, and hence the idea of symmetry. Any sequencing requires the idea of time, which is basically expressed by the terms like "after" and "before". A pair (set) of points produces a space. An ordered pair (sequence) produces time.

Time assumes spatial differentiation, at least regarding the same point in two complementary aspects, as the starting point and the destination point. That is, time compares two instances of the same space (structure), thus producing a layered, hierarchical structure. The layers in this hierarchy are characterized as "previous" and "next", which is already a kind of development. But the mechanism of structural transformations (and structural comparison in particular) is known as a *system*. Any motion is impossible without this systemic core. Hierarchy appears in reflexive systems, mapping a structure into itself. Such systems can be unfolded into a pair of transformations, one from the initial space into some inner space, and the other restoring the initial space from its inner representation. In the meanwhile, a complex inner motion may take place, which will result in a non-trivial character of an elementary displacement in the initial (outer) space. This possibility may, for instance, lead to quantum dynamics. However, in general, there is no restriction on the number of levels, and a quantum state can be decomposed into inner hierarchical structures, as well as the "macroscopic" space-time can serve as an inner space for some higher-level motion.[51]

The general concept of space point as an aspect of being is much wider than the traditional geometrical notion; it could be compared to the notion of a configuration space, which is well known from physics but could be applied to any levels of motion, including biological and social systems. However, the hierarchy of being admits many conversions exhibiting very unusual types of spatiality. Thus, one could imagine a space with no points at all. For instance, a topological space is defined as a family of open spheres, with a number of formal properties; such a sphere can be pictured as a collection of points, but this not necessary, provided we know the structure of the family. A spatial point, in this model, can be defined as the limit of a sequence of intersecting spheres; but, for some spaces, such sequences may have no limit at all, being a kind of filter without the least element, which is equivalent to an infinitesimal region of space that cannot be reduced to a point. In a way, this mathematical abstraction well agrees with the physical understanding of space-time, since there are no abstract point objects, and any "physical point" is only a region of space of a negligible size. Still, in respect to any elementary motion, we still need the idea of the initial and final states, and hence generalized points possibly far from the traditional graphical visualization. Conversely, the abstract idea of an entirely continuous motion that cannot be decomposed into elementary transitions (however infinitesimal) and hence does not require the notion of a spatial point comes from a different categorical context, where the category of motion is not directly related to being and development. For instance, for some practical reasons, one could study interrelation between matter, motion and form and discover different hierarchical structures in either category.

As indicated, a space point can be understood as folded time, when some activity would repeatedly reproduce forms of being that we (for some reasons) consider to be the same. Such a

[51] This is, in particular, how relativistic physics could be generalized to include faster-than-light movements.

reflexive activity is what we call *observation*. Psychologically, this corresponds to an elementary act of categorization (classification, grading), when a number of the possible forms of being is treated as a single form, thus producing a new level of hierarchy. In other words, any space point is a hierarchy of the modes of reproduction, implying multiple changes that eventually restore the initial state. Thus any spatial point will involve time and develop an inner organization. A common way to represent this inner organization in physics is to treat measurements in a statistical sense, so that a spatial point would be characterized by a distribution of results rather than a single coordinate. This leads to the notion of a point as a representation of the whole space, a specific *position* of hierarchy (in the sense of hierarchical conversion), in this case manifesting itself as a spatial position. Any particular type of dynamics will produce a different inner hierarchy of the spatial points thus understood as folded motion. The organization of the whole space is reflected in the inner hierarchy of each point, but the two hierarchies does not need to coincide. One could associate the global organization with some higher-level dynamics taking the whole space as a point of another space. The notions of inner and outer organization thus become relative.

> In diathetical logic, the triad is a minimal categorical scheme that is closed in respect to the distinction of elements and links. In a triad each element represents a link between the other two, and each link represents an element mediating the connection of two links. In this context, one could consider a triad of spaces
>
> $$space\ 1 \rightarrow space\ 2 \rightarrow space\ 3,$$
>
> such that a point of *space 2* is a hierarchy in *space 1*, a point of *space 3* is a hierarchy in *space 2*, but also a point of *space 1* is a hierarchy in *space 3*. This triad describes the spatial aspect of the whole in a closed form and can be said to implement a particular type of dynamics. This approach to system dynamics is very common in physics, taking the form of a general consent to preferably describe motion with equations that do not contain higher than second-order derivatives of the dynamic variables. All the fundamental forces are instances of such triadic dynamics, while theoretical models involving higher-order derivatives are commonly treated as semi-empirical.

Any distinction within a space is associated with a moment of time. Since a spatial hierarchy can be unfolded in many ways, there is a corresponding hierarchy of time. The same motion may look differently on different time scales. What seems chaotic dynamics on one level may be fully deterministic on another, manifesting an entirely new type of behavior on yet another level.

The unity of space and time exhibits a hierarchy of organization forms. For instance, spatial organization may take the form of a *trajectory*, while temporal organization takes the form of *history*. One could say that a trajectory is spatially represented time, while history is a temporal aspect of space. On a different time scale, a trajectory may become chaotic; with a different spatial scale, history may become fragmented. In general, such organization forms assume projecting a dynamic hierarchy onto a different hierarchy, a structural approach to systemic or developmental phenomena.

Since time is closely related to development, it can never “turn back”, and the next moment of time is never like any previous moment. However, due to hierarchical conversion, several levels of a hierarchy can be folded in a single level, thus becoming a kind of inner development hidden on the higher-level scale. As an inner distinction, time will manifest itself as space, and become formally revertible. While physics can ignore development, physical time will remain equivalent to space. As soon as it comes to self-organization or decay, the notion of time has to be reconsidered. That is why thermodynamic time is essentially different from space dimensions, and complex values of time (or energy) are employed in quantum physics to describe decay.

With time related to the direction of development (and hence to hierarchical organization), one could conclude that time is essentially one-dimensional, thus providing the universal basis for distinguishing spatial directions and determining the dimensionality of space. However, such a view is only locally valid, it refers to a particular level of hierarchy, while the general picture may be much more intricate. Since any hierarchy can be unfolded in many ways, the “flow of time” gets split into numerous alternative channels, each being a cluster of parallel threads. This also leads to a complex spatial organization assuming hierarchical dimensionality. For an illustration, consider two one-dimensional oscillations with very different periods. The moments of coinciding spatial positions will form a level of hierarchy manifesting a kind of chaotic dynamics. While they virtually cover all the

incident (one-dimensional) space, there is no adequate notion of direction, and a fractal (dynamic) dimension may differ from unity. Similarly, electronic and ionic components in plasmas move on very different time scales, and hence the complex picture of plasma waves.

One could argue that such "statistical", or "collective" effects are not significant since they can be deduced from a number of "fundamental" interactions that are all compatible with the traditional idea of dimension as an oriented scale. But nature does not need to adhere to our notions of fundamentality; the directions in space-time could as well be explained by the type of dynamics producing ordered scales on average. This is yet another example of hierarchical conversion.

Modern physics has long since gone beyond the common picture of three-dimensional space. Today, physicists deal with all kinds of configuration spaces, and even the conventional classical dynamics has been shown to produce nontrivial manifolds far from reproducing the plain Euclidean structure. Quantum theories operate with infinite-dimensioned Hilbert spaces and their extensions, with the classical space-time used to represent the "degrees of freedom" in such dimensional infinities; in principle this geometrical representation is not necessary, since one can choose any set of dynamic variables (not necessarily independent) to parameterize the configuration space, so that the difference between configuration spaces and phase spaces becomes relative.

Nevertheless, the fact that the 3+1 geometry is still saturating physical theories as a kind of symmetry required in any case, possibly in combination with other (inner) symmetries, may indicate that the roots of space-time dimensionality problem lie outside physics, probably being related to the most universal features of the world as a whole, requiring a philosophical treatment.

One possible explanation binds the observed properties of space-time to the organization of human activity, which is a partial reflection of the overall organization of the physical world admitting the existence of other forms in certain objective conditions. In other words, we impose the organization of our culture (as a local circumstance) onto the world in general, extrapolating our previous experience to what we expect to encounter in the Universe. This differs from Kantian apriorism in that we always are aware of the natural origin of our ideas, however ancient and ubiquitous.

On the other hand, the development of the world will always manifest some features in common for all the individual worlds coming as the different positions of the same hierarchy. Though, at any moment, we can only observe one of the possibilities, their universal core will shape our activity in a quite definite way, eventually brought to awareness in the form of a philosophical category, or a categorical scheme, as a basis of any special notions and concepts.

Thus, the resemblance of the traditional 3+1 space-time with the overall topology of a tetrad may be purely incidental; but it might also express a fundamental feature of any reflection at all, including the world's self-interaction and self-development. In the latter case we must expect the same structure to be found in all the possible instantiations of space-time.

The universal phases of reasoning in diathetical logic, *syncretism* → *analysis* → *synthesis*, must be followed by lifting the synthetic whole in yet another syncretism (a logical operation of *lift-in*, or *anairesis*, or *Aufhebung*), thus allowing the reproduction of the same chain in a new context, and hence introducing a kind of time, so that the previous stages would play the role of space in respect to this particular direction of development. This logical tetrad might be considered as a subjective counterpart of the objective organization of the world's development in triadic spatial forms lifted in time.[52]

The primary hierarchical position of a tetrad taken in the linearized form as $A \to B \to C \to A'$ is the most general description of reproduction through a hierarchy of inner distinctions and outer motion. In this respect, time is understood as a form of cyclic reproduction. In the simplest form, motion returns to the original point ($A = A'$), spanning a spatial area in the meanwhile. This leads to the usual "geometrical" time. In extended reproduction, the organization of the whole will change, and the new cycle will span a different space. In any case, the act of reproduction provides a natural

[52] In physics, yet another fundamental discreteness is related to the electric charge. This could be considered as a manifestation of the same fundamental tetrad, naturally leading to the values 0, 1/3, 2/3 and 1 as the basic scale of electric charge, assuming that the fractions 1/3 and 2/3 can only appear in the *inner* organization, while the electric charge of a real particle must be integer.

measure of time, and in particular, a time scale.

Since the hierarchy of reflection corresponds to the same hierarchical organization of matter, the distinction of things and their motion is relative. This means that any spatial and temporal relations will always be expressible in "material" terms similar to the well-known duality of space-time and momentum-energy in physics. In this picture, the inner organization of a physical system corresponds to the notion of mass. Since inner hierarchies are nothing but folded development, the origin of mass can be found in cyclic reproduction on a lower-level time scale, similar to the appearance of self-energy (or effective mass) in virtual interactions of a particle with the medium (*e.g.* vacuum). However, simple reproduction is only the lowest level of reproduction in general, which is impossible without systemic reorganization and true development. The world will necessarily change, and the space-time aspects of motion will change as well. First, merely quantitative changes will lead to the world's *expansion*, in the most general sense, concerning all the aspects and manifestations. The famous cosmological expansion does not need to be explained by some huge explosion; the world expands in every point and at any moment just because "a point" and "a moment" are folded hierarchies that must get unfolded due to inner development and the overall development of the world. The way of such unfolding depends on the current environment and virtually on the state of the whole world. For the same reasons, each cycle of reproduction may have its own measure of time. That is why the rate of expansion may vary both in space and in time, though the overall trend will remain the same.

But expansion does not exhaust the range of possibilities. Extended reproduction starts where quantitative changes surpass the current measure and situation will qualitatively change, thus opening new directions of expansion. Within each expansion mode this will look like Big Bang; but all that happens within the same world, and the cosmological catastrophes in one respect are accompanied by simple reproduction in another. This indicates that the universal categories of space and time are to be redefined in respect to a particular direction of development, with its own chain of quantitative changes and qualitative leaps. Thus we come to a hierarchy of organization that would differently unfold itself in every instance of motion, and the world's self-reflection in general.

The universality of the subject as a level of mediated reflection implies that there is nothing in the world that could not be involved in the subject's activity. If the humanity happens to belong to one of the branches of the world's hierarchy, this does not mean that we cannot get aware of the other branches. Our philosophical discussion of space and time gives us at least the assurance that such hierarchically converted forms must certainly exist. To practically assimilate them, we need to develop our activity to the point where mere expansion is no longer possible and a qualitative leap becomes inevitable. Of course, if we do that on the global scale, the resulting reorganization of the world may put an end to our existence in favor of some other implementations of consciousness. This would only mean that we were not reasonable enough and could not find an optimal operation scale never exceeding our power of coping with the products of our own activity. Of course, this is a question of all the aspects of motion on any level of reflection, physical space-time being a very special case.

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