Relative Ontology and Science

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Abstract

Ontology is a knowledge about world as a whole. Union of ontology and science put some limitations on ontology, that are caused by need to co-ordinate language of science with language of ontology. Main characteristic features of science are logic and mathematics. Union of ontology and science could be successful only if ontology will have the same features. These requirements meets relative ontology based on a assumption that being is possible only through act of inequality, and non-being – through act of equality. Examining of inequality structure leads us to a need of considering in being act of equality as well. As a result we should refuse of considering problems of Being—Non-Being separately and proceed to united problem of Being—Non-Being. Inequality can be represented by mathematical subtraction. That allows to substantiate ontologically basic mathematical concepts: concepts of set and number. Mathematics become a part of ontology. Inequality is an idea. Equality is a matter. Being is a unity of matter and idea. Change of being can be fulfilled in two ways – material and ideal. Relation between both ways of change gives us three basic kind of being: somatic, anthropological and theological. In somatic being change is realized by means of material way. In anthropological being – both material and ideal ways are equally available. Theological being uses ideal way of change. Development of world proceeds from somatic – through anthropological – to theological one.

Keywords: ontology, relative ontology, categories, being.

Resumen. *Onotlogía relativa y ciencia.*

La ontología es un conocimiento acerca del mundo como un todo. La unión de la ontología y de la ciencia pone algunas limitaciones a la ontología, que son causadas por la necesidad de coordinar el lenguaje de la ciencia con el lenguaje de la ontología. Las principales características de la ciencia son la lógica y las matemáticas. La unión de la ontología y de la ciencia podría tener éxito sólo si la ontología tuviese las mismas características. Estas condiciones se dan en una ontología relativa basada en la idea de que "estar" solo es posible a través de un acto de desigualdad, y "no-ser" a través de un acto de igualdad. El examen de la estructura de la desigualdad nos lleva a la necesidad de considerar también el ser acto de la igualdad. Como resultado de ello debemos rechazar la consideración de los problemas de ser-no-ser separado y proceder al problema de la unión de ser-no-ser. La desigualdad se puede representar por resta matemática. Esto permite fundamentar los conceptos matemáticos básicos: ontológicamente conceptos de conjunto y el número.

Palabras clave: ontología, ontología relativa, categorías, ser.

When we speak about ontology of science, it turns out that term *ontology* is less definite than term *science*. In XX cent. term *ontology* turned out to be as diffused as term *philosophy*. In the article by *ontology* we mean a knowledge about world as a whole. A starting point of such knowledge is the problem of Being of beings. While each positive science is a knowledge concerning some region of the universe, ontology is a knowledge about world as a whole. That is the main difference between ontology and science.

Yet speaking of indefiniteness in understanding of ontology we primarily mean its indefiniteness in content. Throughout the history of philosophy various doctrines of the world as a whole were elaborated. In this connection there arise a problem of some ontological doctrine selection.

In science such selection is made upon the basis of experiment, yet in ontology this is impossible.

Selection of ontology may be realized not only by means of verification principle but on basis of problem of correspondence between content of ontology and its primordial functions as well. In order to stay within frameworks of *Ontology and Science* theme we should look for ontology co-ordinated with science. In this situation it is science that set requirements ontology must conform.

The main requirement is derived from aim set at the union of ontology and science. In the perspective of science, ontology due to its scale and consistency may exercise following functions: first, integrate different positive sciences; second, within frameworks of ontology also due to its scale, it is possible to reconsider both foundations of scientific knowledge as a whole and foundations of some specific sciences. So ontology should conform the assigned task.

In this perspective the common language field of ontology and science gets an enormous importance. So the next requirement to ontology concerns the form of ontology language. As it is known the basis of syntax in scientific language is constituted by formal logic. We may put more exacting requirements to language in connection with a well-known statement that each knowledge may be called science to an extent it may be put on a language of mathematics. Rephrasing this statement we may put the following requirement to ontology that works for a union with science. Such a union will be effective only to the extent the ontology is connected with mathematics.

Suggested requirements to ontology in the perspective of science do not mean submission of former to science. The substance of the suggested requirements may and even should be reconsidered by ontology itself. That is why eventually these requirements turn to be internal ones of ontology within itself. As for science, ontology is merely an initiator of these requirements.

For instance, the requirement concerning logical form of ontology language means that foundations of logic should be reconsidered within ontology. The urgency of such

study is caused by the fact that modern logic is incapable to cope with vital needs of language formalization.

The result of considering the foundations of logic do not suppose that logic itself remain unchanged. It may change radically. Possible innovations in logic would be a contribution we may expect from the union of ontology and science. In such situation instead of requirement for adaptation of logic of ontology to logic of science requirement of mutual coordination between logic of ontology and one of science is proposed.

The same situation may be expected from the requirement of mathematicity of ontology. We should reconsider the foundations of mathematics within ontology. This problem became urgent as a separate theme – *The Ontology of Mathematics*. Last time such a consideration was made in the end of XIX – beginning of XX cent. Heavy growth of mathematics during last century demands a new reconsideration of the foundations of mathematics.

As an indication of crisis in mathematics may be considered its over-complification leading not only to the gap between mathematics and a task of different regions of the world description, but also to insurmountable differentiation within mathematics itself. Mathematicians working with some specific mathematical discipline can hardly understand colleagues working in neighboring specific discipline.

Complification in mathematics is accompanied with very modest achievements in reflecting some substantial aspects of non-physical regions of the world. Mathematics here study only problems that have principal similarity to some physical issues. Possibly, comlification of mathematics is a result of some specific statements steal in its foundations that prevent from successful work in the regions of the world where such specific character is absent. Revision of the foundations of mathematics will allow to detect such non-legitimate foundations.

We suppose to realize theme *The Ontology and Mathematics* in some other way compared with proposed by Alain Badiou. If Badiou uses modern mathematical apparatus for explication of statements of ontology – i.e. goes from mathematics to ontology – we propose quite opposite relations between ontology and mathematics. We have not any grounds to entrust to ontological foundations on which modern mathematics based. We propose a way from ontology to mathematics.

So requirement of mathematicity of ontology, as well as in case of logic, is a requirement of mutual correspondence between mathematical foundations, elaborated within ontology, and foundations of contemporary mathematics. That is why the requirement of mathematicity of ontology is mutually co-ordinated one directed both to science and ontology as well.

Mentioned above requirements are valid for relative ontology based on a statement that Being of beings is possible as Being of specific beings. And vice verse if Being is not specified, then it is actually not present (Non-Being). Indeed, every specific being we

interact has some definiteness. For instance, we see every specific rose having its color (for instance, red). That is why we consider the seen rose to be present, i.e. assign it a status of being. And vice verse, it is impossible to see rose that has no color at all, i.e. has no distinctive features. Hence it is clear that we consider unseen rose to be non-present, i.e. assign it status of non-being. The same think-train is valid not only for sense perception, but for perception of mind as well. When someone tries to explain a new concept to someone else, he makes it by indicating specific features of the concept initially unknown to the later. Specific features of concept are nothing else but its definiteness. The statement of Being as definiteness is valid not only for interaction of human with any other being, but in case of his absence as well. So a rose interacts with a wind that has some distinctive features such as its velocity, temperature, humidity, chemistry, and atmospheric pressure. That is why the only wind presented (Being) for the rose is the one having some distinctive features. And vice verse, the wind having no distinctive feature is not presented (Non-Being).

Next statement of relative ontology is that any definiteness is possible only through an act of distinction. That is why Being is also possible only as an act of distinction. And vice verse, Non-Being is realized though non-distinction, i.e. equality (identity). Red rose exists (Being) only because it differs for instance from green grass growing around bush of roses, or differs from blue color of wall papers in the room where it is located. And vice verse, red rose does not exist (Non-Being) on a background of just the same red color. Distinction as a necessary criterion of Being also have a place in the region of thought. For instance, concept of "red" exist (Being) only if there is at least any other concept from which it may be distinct, for example, concept of "green" or "blue".

Any distinction of the being is a result of its comparison with other being. Hence, Being of one being always suppose Being of another one. That means that problem of Being of beings is always a problem of co-existance (co-being) of several beings, i.e. problem of Being is always a problem of co-being. The result of situation is impossibility of Being for any absolutely separate being. Following our example, the necessary condition of red rose existence (Being) is the existence (Being) of, for instance, green grass or blue wall-papers. Hence if there do not exist (Non-Being) beings with a color distinct from red, then there do not exist (Non-Being) red rose itself. The same is valid for thinking. If there do not exist (Non-Being) other concept of the color except red, there do not exist (Non-Being) concept of red itself.

In act of comparison there always supposed a basis of comparison (basis of relation), that is a common feature for members of the act. Analyzing being of red rose we take into consideration its property of color. That is why any conclusion made is valid only in relation to its color. Besides property of color red rose also has such property as a form of a flower. On this basis we may differ it from, for instance, camomile. In this case its status of existence (Being) is provided by the form, not by the color.

The basis of relation is a common feature for both related beings (carriers of relation). Yet such commonness is nothing else but a non-distinction, i.e. equality (identity), that is Non-Being. Hence we proceed from distinction as Being to non-distinction as Non-Being. This situation compels us to refuse considering Being and Non-Being as a separate problems and to proceed to a united problem of Being—Non-Being. As far as we marked out non-distinction as a separate concept – a basis for relation, we need a specific concept for distinction, that is "a result of relation". By relation itself we understand a totality within which takes place act of distinction.

The most proper form for act of comparison (distinction) explication is a relative proposition. Per se relative proposition is a logical form for expressing main ontological principle of Being—Non-Being. In such a case logic based on relative propositions becomes not only a notion about forms of thinking, but a notion of Being—Non-Being as well, i.e. logic becomes a part of ontology. In this logic every attributive proposition is a specific form of relative proposition, i.e. formal logic (Aristotelian) in whole could be explicated as logic of relations. Now let us demonstrate this statement.

Traditional form to put a relative proposition is the following:

aRb. (1)

Yet here a basis of relation is not taken into consideration. We can easily correct the obstacle, if we put relative proposition in following way:

$m_\alpha \ m_{\alpha\beta} \ m_\beta$. (2),

where besides carriers of relation (α, β), a basis of relation (m) is taken into consideration as well. This relative proposition should be taken as an expression for distinction of terms of proposition by basis. If all non-distinctness is collected in basis of relation, then in «$m_{\alpha\beta}$» (result of relation) we have momentum of distinction of proposition terms, i.e. «$m_{\alpha\beta}$» is the point to differ one proposition from another.

Efforts of logicians to expand facilities of reasoning with relative propositions were not, on my opinion, successful enough. Seemingly, it was connected with representation of relative proposition in a form "aRb". Ontological substantiation of relative proposition by means of distinction helps us to introduce other form for relative proposition. We may represent distinction as a subtraction. Adopting this operation from mathematics and filling it with ontological and logical meaning, we may put relative proposition in the following form:

$m_\alpha - m_\beta = \Delta m_{\alpha\beta}$. (3)

Now let me demonstrate that any attributive proposition:

«$S - P$» (4)

is a cancellation of set of relative propositions

«$m_\alpha - m_{\beta 1} = \Delta m_{\alpha(\beta 1)}$»,
«$m_\alpha - m_{\beta 2} = \Delta m_{\alpha(\beta 2)}$»,
«$m_\alpha - m_{\beta 3} = \Delta m_{\alpha(\beta 3)}$»,   (5)
……………………
«$m_\alpha - m_{\beta n} = m_{\alpha(\beta n)}$»
with a same result of relation
$\Delta m_{\alpha\beta} = \Delta m_{\alpha(\beta 1)} = \Delta m_{\alpha(\beta 2)} = \Delta m_{\alpha(\beta 3)} = \ldots = \Delta m_{\alpha(\beta n)}$, (6)
where remains the same term of each relative proposition and all others are omitted.
Here "P" from (4) is the same «$m_{\alpha\beta}$» as in (6), and "S" from (4) – the same as "a" in (5). For example, suppose following relations given:

"a coin (a) by reflected light (s – shining)
shines more ($\Delta s_{\alpha(\beta 1)}$) than a book cover (b1)",
"a coin (a) on reflected light (s) shines more
($\Delta s_{\alpha(\beta 2)}$), than a flowerpot (b2)",
"a coin (a) by reflected light (s) shines more
($\Delta s_{\alpha(\beta 3)}$), than a granite (b3)".
In attributive form this totality is presented as:
"a coin (a) shines more $\Delta s_{\alpha\beta} = \Delta s_{\alpha(\beta 1)} =$
$\Delta s_{\alpha(\beta 2)} = \Delta s_{\alpha(\beta 3)}$) by reflected light (s)".
Let a coin be a member of some other set of relations. For example,
"a coin (a) in case of mechanical shock (m – malleable)
more easily change its form ($\Delta m_{\alpha(\beta 1)}$), than a book cover (b1)",
"a coin (a) in case of mechanical shock (m) more easily
change its form ($\Delta m_{\alpha(\beta 2)}$), than a flowerpot (b2)",
"a coin (a) in case of mechanical shock (m) more easily
change its form ($\Delta m_{\alpha(\beta 3)}$), than a granite (b3)".
In attributive form this set is presented as follows:
" a coin (a) can be easily processed ($\Delta m_{\alpha\beta} = \Delta m_{\alpha(\beta 1)} = \Delta m_{\alpha(\beta 2)}$
$= \Delta m_{\alpha(\beta 3)}$) by means of mechanical shock (m)".

Let there exist other set with a participation of a coin (a) -- separately for such bases as compactness (c – compact), heat capacity (h – heat), fusion temperature (t -- temperature). In attributive form they are presented as follows:
"a coin is more compact",
"a coin has a greater heat capacity",
"a coin has a greater fusion temperature".

Imagine ourselves that derived predicates, obtained as a result of relation together with its basis (shining – «$\Delta s_{\alpha\beta}$», easy mechanical processing by means of shock – «$\Delta m_{\alpha\beta}$», higher compactness – «$\Delta c_{\alpha\beta}$», greater heat capacity – «$\Delta h_{\alpha\beta}$», higher fusion temperature – «$\Delta t_{\alpha\beta}$») indicate some totality that becomes denotatum for a concept of metal – (R). Here "R" is a set of elements «$\Delta s_{\alpha\beta}$», «$\Delta m_{\alpha\beta}$», «$\Delta c_{\alpha\beta}$», «$\Delta h_{\alpha\beta}$», «$\Delta t_{\alpha\beta}$» and on elements «s», «m», «c», «h», «t» set «C» is formed. Then whole set of derived attributive propositions may be represented by one attributive proposition:

"a coin (a) is a metal (R)",
  that has the same form as (1).

In relative ontology expressing of relative proposition as a subtraction can be used for representation of Being and Non-Being. Indeed, if the result of subtraction is not equal to zero ($m_\alpha - m_\beta = \Delta m_{\alpha\beta} \neq 0$), it means differentiation between terms of subtraction, i.e. such a result is a mathematical expression for Being «m_α» in relation to «m_β». If the result is equal to zero ($m_\alpha - m_\beta = \Delta m_{\alpha\beta} = 0$), it means absence of differentiation between terms of comparison and hence this is a mathematical expression for Non-Being principle «m_α» in relation to «m_β». In logic reduction of every proposition to subtraction operation allows reduction of every reasoning to subtraction operation. For all that we speak not about mathematical logic, but about representation of whole logic in whole as mathematics.

The record of a relation proposition in the form (3) allows to make logical and due to this an ontological substantiation of mathematical concept of relative set. Let for one term in relation (3) (for instance, for m_α) there exist other relations with some other terms on the same basis, i.e.:

$m_\alpha - m_\gamma = \Delta m_{\alpha\gamma}$;
$m_\alpha - m_\delta = \Delta m_{\alpha\delta}$; (7)
$m_\alpha - m_\varepsilon = \Delta m_{\alpha\varepsilon}$.

Suppose that in all results of these relations included terms are distinct. If we look aside specific content of the results and fix only the fact of distinction (denoted passim as «$\neq$»), these results are indistinguishable. So all relations (7) have the following form:

$m_\alpha \neq m_\gamma$;
$m_\alpha \neq m_\delta$;   (8)
$m_\alpha \neq m_\varepsilon$.

Condition (8) define a set of beings distinct from each other on the same basis. This condition is a description of relative set concept, where only the fact of distinction is stated.

The concept of relative set is not the same thing as in the set theory. For instance, compared with traditional set theory in relative set concept significance of empty set is lower, infinite sets are excluded. Advantage of relative set application is not only due to logical, but to ontological substantiation as well, whereas traditional set theory is substantiated only logically.

Expression of relative proposition in the form (3) allows logical and due to this ontological substantiation of mathematical concept of relative elementary number. Let there are following relations:

$$m_b - m_a = \Delta m_{ba};$$
$$m_s - m_b = \Delta m_{sb}; \qquad (9)$$
$$m_d - m_s = \Delta m_{ds};$$
$$m_e - m_d = \Delta m_{ed}.$$

Common feature of all of relations (9) is that some of character belonging to one term of relation do not belong to another. Then all results of relations (9) are just the same, i.e.:

$$\Delta m_{ba} = \Delta m_{sb} = \Delta m_{ds} = \Delta m_{ed} = r. \quad (10)$$

Then (9) can be put in following:

$$m_b - m_a = r;$$
$$m_s - m_b = r; \qquad (11)$$
$$m_d - m_s = r;$$
$$m_e - m_d = r.$$

In each particular relation basis is realized specifically, but all such specificity is represented in carriers of relation. Concept of basis include only features common to all particular objects in (9). Then all specifics of objects in (9) represented in corresponding carriers of relations (a, b, s, d, e – carriers of relation correspondingly for «a», «b», «c», «d», «e»). As an example of such relations can be mentioned relations of vertical extension of segments.

From (11) we can easily get relation of «b», «c», «d», «e» with «a»:

$$m_b - m_a = r;$$
$$m_s - m_a = r + r; \qquad (12)$$
$$m_d - m_a = r + r + r;$$
$$m_e - m_a = r + r + r + r.$$

Each of the results of these relations is a definition for relative elementary numbers:

r – «1»;
r + r – «2»;   (13)
r + r + r – «3»;
r + r + r + r – «4».

Negative values of these numbers signify correspondingly:

«– r» – «– 1» (less);
«– r – r» – «– 2»;
«– r – r – r» – «– 3»;
«– r – r – r – r» – «– 4».

Assume (12) with a consideration (13):

$m_b – m_a = 1$;
$m_s – m_a = 2$;   (14)
$m_d – m_a = 3$;
$m_e – m_a = 4$.

In view of universal character (for 12), «ma» (denoted as "etalon") can be omitted.
Let for some reasons (ontological or pragmatic) we have instead of (3)

$m_\alpha = m_\beta$.   (15)

It means indiscrimination of «m_α» и «m_β» in (3). The meaning of indiscrimination is in its interchangeability on basis «m». Such relations can be expressed by means of relative zero concept:

$m_\alpha – m_\beta = 0$.   (16)

As it was mentioned above, indiscrimination ontologically signifies Non-Being of one being in its relation to another one, i.e. Non-Being is relative. Only if there would be no other being distinct from the former, such Non-Being would be absolute.

Relative number concept is not the same thing as concept of number in traditional mathematics. This is caused primarily by the fact that relative numbers are connected with a relation basis (m) out of which they were derived. Whereas numbers in traditional mathematics in this perspective are totally "deprived of individuality". To some extent this position is a return to J.Mill's point of view and a refutation of its criticism by G.Frege. It is well-known that afterwards prevailed exactly the position of G.Frege. Reference to J.Mill's

position is urgent not in itself but because of new perspectives opened in connection with logic of relations, based on presenting relative proposition according to form (3). More than that, such a presenting allows to reconcile both positions. For that purpose we must take a set with infinite number of elements where the following rule is valid: for each result of relation between two terms taken at random, there always exist such a third term, that differs from result of relation between two formers in such a way, that this result posses some features that third term does not posses. In this case relative elementary numbers transform into infinite number series.

Operating with relative numbers is to a great extent determined by basis of relation and its carriers. Their common and invariable feature is ontological and logical substantiation demonstrated above. For each relative set operations with relative numbers may be different. Yet the lack of universality turns out to be an advantage because of avoiding a lot of paradoxes and nonsense connected with numbers in traditional mathematics. For instance, in school sum on three diggers who dig two pits, the task is: calculate how much diggers are needed to dig a one pit? The answer in traditional mathematics is – one and a half. Yet it is nonsense, there cannot be one and a half man. In relative mathematics such situation is impossible because there is no concept of infinitely large or infinitely small. In that perspective relative mathematics always has a quantum character – in full accordance with human experience. Indeed, accurate calculations are often excessive for in practical needs we are always limited with practical error that have a quantum character.

Mathematical representation of relative ontology gives it a close relation to sciences, that use a mathematical language. In that case mathematics turns out to be the only method of presentation for statements of ontology and science. As an example of relative ontology efficacy in informational sciences can be mentioned exact formulating of the information concept as a result of relation. Besides, mathematical part of relative ontology allows to formalize such an important concept as meaning (content) of information that in turn makes possible some sort of ordering in various IT databases. This makes easier use of all aspects of information, for instance, a transition from seek of information to based on meaning calculations.

Definiteness as a result of distinction (result of relation) is nothing else than an ideal (eidos, image, idea, form, quantity). Basis of distinction (basis of relation) together with carrier of relation is a material (matter, property, quality). As far as the necessary condition of Being—Non-Being is both discrimination and indiscrimination, being is a unity of both sides, unity of material and ideal.

Hitherto we examine only one method of description of distinction, i.e. distinction as relation. In this method static side of being is presented. Its dynamic side is presented in another way of distinction's description, i.e. distinction as interaction. At present proximity of meaning of interaction and relation concepts is obvious. There is one common feature: each of them presuppose in its content presence of at least two members. Interaction is

often called a relation of cause and effect. That is why while constituting content of category of interaction it makes sense to base on the same postulate as in case of substantiation of relation as a necessary condition of Being.

Discrepancy of categories' relation and interaction content starts from such structural concept as *carrier of relation*. Relation category supposes that carriers of relation (α, β) are discriminated (in other relations) from each other. Yet we may assume a variant when bases are equal. It means that terms of distinction are similar in each feature except dimension, and that is why may be considered (in relative meaning, not absolute) to be the same being undergoing some changes (indeed, just these changes do not allow existence of absolutely singular being), i.e. is differentiated from itself. In everyday speech we may say "from itself" implying that "it" and "self" are just the same. In relative ontology such expressions have no sense. So, distinction where carriers of relation coincide, is called change. Seemingly, we may put it in symbolic form as following:

$m_\alpha - m_\alpha = \Delta m_{\alpha\alpha} = \Delta m_\alpha \neq 0$, (17)

where Δm_α — a short notation for $\Delta m_{\alpha\alpha}$ — change of "a", in whose content carrier "α" is included. The problem of such expression is, that if «m_α», standing to the left from symbol «–», and «m_α», standing to the right – are just the same, we must accept

$\Delta m_\alpha = 0$ (18),

that means absence of distinction. In order to avoid such difficulties we will use slightly different form of notation for change, using upper index:

$m_\alpha^e - m_\alpha^b = \Delta m_{\alpha\alpha} = \Delta m_\alpha \neq 0$, (19)

where m_α^b — initial state of being, who's carrier is «α», on basis «m»; m_α^e — final state of being, who's carrier is «α», on basis «m».

At the same time we must take into consideration that distinction between "initial state" and "final state" of some thing is not a determining momentum for distinction (as a result of relation) for a given change (Δm_α). It is impossible to specify logically genus for distinction, i.e. in any definition distinction there will always be a determining concept. In given case (19) distinction is a determining concept for determinate terms.

Here it is just distinction that determinates what is "final state" and what is "initial state" for any thing, and not vice verse, as it may seem due to language structures. In such situation it is always necessary to remember that language of ontology is based mainly on everyday language, yet later is not fit to exact representing of non-everyday situations. In everyday reality we are convinced that always can specify a conditionality of any appearance. Therefore language cannot express situation of total "unconditionality", except by means of additional stipulations. In everyday speech it is possible to say: "a distinction from one another". Yet by saying "one" and "another" we have already introduced a distinction. In everyday reality we suppose that there are some "one" and "another" as such, we can discriminate. It is all clear on a level of everyday experience. Yet situation becomes more difficult if we assume that there are no any "one" or "another", but distinction is a necessary

condition of their existence. These predicaments are the language predicaments built as a conceptual one. Then for appropriate expression of relation situations we need a language based on relative propositions.

As far as we have now two ways of distinction, we need to differentiate them terminologically. For this purpose we will use terms "static distinction" and "dynamic distinction". Static distinction is such a distinction, that appears in situation of carriers' of relation distinction in case of it (distinction) realization on another relation(s). Dynamic distinction (or "changing") is such a distinction, that appears in situation of carriers' of relation non-distinction. Accordingly (in case we talk just of dynamic relation or just of static relation) there modify structural elements' of relation designations; for instance, in case of dynamic relation (or changing) instead of term "carrier of relation" should be used term "carrier of dynamic relation" (or "carrier of changing") and etc.

For example, to clarify structural elements of interaction, let us take situation of two changes. First one is a change of being as a consequence, that is a specific dynamic relation. Let's designate its structural elements as following: carrier of a consequence — β», basis of a consequence — «m», a result of consequence — «Δm_β». At that corresponding being (we will call it "being-consequence" and designate as "b") proceeds from its initial state «m_β^b» to its final state «m_β^e», i.e. consequence may be put as

$$m_\beta^e - m_\beta^b = \Delta m_\beta \neq 0. \ (20)$$

For instance, in process of punching consequence is a change of geometrical form of billet. Then being-consequence "b", who's change is a consequence, may be, for example, aluminum plate, out of which in a process of punching a spoon is made. In that case carrier of consequence has all characters of aluminum plate of billet except its geometrical form, that is a basis of consequence "m". initial state of being "b" is a plain form of aluminum plate «m_β^b», and its final state is a bent surface of the same aluminum plate after punching «m_β^e». Discrimination of these states gives us a geometrical form that is an image of consequence «Δm_β», that we call a form of a spoon.

Second is a change of being, a cause, that is a specific dynamic relation. Let us designate its structural elements as following: carrier of a cause — «α», basis of a cause — «f», result of a cause — «Δf_α». At that corresponding being -- designate it as "a" – pass from its initial state «f_α^b» to its final state «f_α^e», i.e. a cause can be put as following:

$$f_\alpha^e - f_\alpha^b = \Delta f_\alpha \neq 0. \ (21)$$

In our example with punching a cause is a change of a model-punch location, that is a being-cause "a", and basis of cause "f" may be, for instance, a height of a model-punch location over a billet. Then all other features of a model-punch will belong to a carrier of a cause. Let the location of a model-punch over a billet equal to h_1 corresponds to initial state of being-cause («f_α^b») and to its final state («f_α^e»,) – location h_2. The difference between these two locations is a result of cause («Δf_α»).

Presence of two changes in interaction – change as a cause (Δf_α) and change as a consequence (Δm_β) – realized on different bases (m и f), allows to interpret interaction as a combination of these changes:

$$\Delta f_\alpha \rightarrow \Delta c_\beta. \text{ (22)}$$

Here interaction is designated by distinction put as a subtraction. In my opinion such form of ontological category of interaction's presentation promotes to a great extent a coordination of language of ontology with one of mathematics.

A change of being is a change in its definiteness. Due to double-sidedness of being, theoretically speaking three ways of changing are possible. First way is a material one when a cause of change is situated within a sphere of being undergoing material changing. For instance, a cause of change in definiteness of physical body volume is a change of its temperature. A cause of given material body change lies within the sphere of other material body, and a cause of that body change in turn lies within a sphere of third body and so on. Ontological school that stands for only material way of change in philosophy is called a materialism.

Second way – an ideal one, when a cause of given being's change lies directly (i.e. without a material mediation) within ideal sphere of another changing being. Essence of this way of change is that definiteness of one being tends (in physics such tendention is designated by concepts of power, intensity, energy) to change (on the same basis of relation) another being's definiteness. Simple example of that kind is an act of thinking accompanied by human activity: one day there appeared an intension (a definiteness of second being – a cause) to move a furniture in a room (location of furniture is a definiteness of first being). Realizing this forethought, we change a definiteness of first being. Surely, given change was realized by means of material mediation, but in such situation it is always a consequence, not a cause. There are some ontological doctrines expanding that sort of change on Being as a whole. An extreme example of such casual chain is a Divine Creation of the world, conceived as absolute ideal. This ontological school assuming only ideal way of changing, is conventionally called in philosophy an idealism.

Ideological advantage of materialism is due to its well-accordance with a lot of phenomena in a field of natural sciences. Yet science can describe only a part of all variety of beings. Weakness of materialism is revealed in considering of beings possessing thinking. Situation of idealism is quite the opposite: it is successful and convincing in dealing with a region of the world connected with thinking and looses in region described by natural sciences. Such a regional opposition can be explained by the fact that none of these doctrines is ontologically universal, but is a sort of particular, regional knowledge. Our interpretation of materialism-idealism relation not only decreases mutual tension between them but shows the need for their co-completing as well.

This task is realized in the third way of change of being: the same being undergoes both kinds of change – material and ideal as well. Just various extent of inherited features

allows us to proceed from materialism-idealism opposition to their co-completing. This can be made due to the fact that relation between material and ideal ways of changing reveals three main kinds of being. First one – somatic being, for which change is fulfilled primarily in material way. That kind of being is described by natural sciences. Second kind – anthropological being, for which both material and ideal ways of changing are equally available. That is a kind of being endowed with thinking. Human is only a one sort of such anthropological being. Third kind – theological one, that uses primarily ideal way of changing. Beside these three kinds of being there are some others, having various degree of material/ideal ratio. Development of the world proceeds from somatic – through anthropological – to theological being.

Thus relative ontology is based on clear and obvious statement of being as a distinction. Such approach allows to represent being as a material-ideal unity, give it an onto-mathematical substantiation and opens new possibilities for a union of ontology and science. Dualistic substance of being surmounts materialism/idealism opposition due to a need of their co-completing demonstration. As a result of such approach we discover three main kinds of being in its development, to wit: somatic, anthropological, and theological being. This succession of being's uncovering is the main tendency of global world development.

Aknowledments