FROM THE VIEWPOINT OF THE LVOV-WARSAW SCHOOL

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3. ON FORMS OF OBJECTS

3.1

Many years ago, in Cracow, Roman Ingarden wrote in his paper "Was wir über die Werte nicht wissen": "*Ich will mir gewiße Schwierigkeiten, auf welche die Werttheorie stößt, zum Bewußtsein bringen, um Wege und Weisen ihrer Überwindung zu suchen*" [Ingarden 1964, p. 97]. The intentions of this paper are very similar. I am far from a "*skeptische Hochmut*" in approaching the problem of forms of objects characteristic of the work of some scholars who recognise it as a scholastic pseudo-problem bereft of topical interest. But I must also admit that I am distant from a minimalistic humility, which would lead me to consider this problem as one of the irresolvable mysteries of the world.

3.2

To begin with: I assume:

(1) For every x [x is an object *iff* for a certain P (Px)].

Formula (1) is increasingly gaining acceptance [Kotarbiński 1931, p. 70; Augustynek 1984, p. 3]. It is remarkable that reists, who also assume this formula, deny at the same time the thesis that, for example, properties belong to objects [Kotarbiński 1930—1931, p. 200; 1931, p. 73]. As Kazimierz Ajdukiewicz writes, the opponents of reism would appeal to the fact that it is not only things that we can predicate properties of, whereas reists would deny this fact.

Can such a controversy "be settled within ordinary language" [Ajdukiewicz 1934d, p. 107]? In fact, reists can only make use of the semantic postulate that an object is a body [Kotarbiński 1929, p. 55] and so (according to another postulate), it is something inert.

Let us consider the question more closely. Let us contrast, in particular, the following words from natural language: "thing", "event", "change", "state", "property", "relation", "set", "part". These words do not have precise senses,[1] but I shall try to compare them within the bounds of their sharpness.

First, I would like to point out that some of these words can be iterated; natural languages allow us to talk about properties of properties, properties of properties of properties ...; about relations between relations ...; about sets of sets ...; about parts of parts, and so on. It is inadmissible, however, to talk about things of things, or about events of events. The question of the admissibility of talking about changes of changes ..., and about states of states ... does not have a clear answer. Let us agree, that:

(2) For every x and y (x is a property of y *iff* y is the subject of x).

(3) For every x, y and z (x is a relation between y and z *iff* y and z are members of x).

(4) For every x and y (x is a set containing y *iff* y is an element of x).

(5) For every x and y (x is a part of y *iff* y is a complex including x).

My first remark is that properties can be subjects of properties, relations can be members of relations, sets can be elements of sets, and parts can be complexes of parts. Secondly, iterable terms can be linked together and they can be added to the other terms. Let us call this phenomenon "interpredicativity". It is admissible to talk about properties of relations, sets, and parts, as well as about properties of changes and states, and about properties of things and events; we can talk about relations between properties, between relations, between sets, and between parts, as well as about relations between things and between events; it is admissible to talk about sets of properties, relations, and parts, as well as about sets of things, and events, and changes, and states. We can probably also talk about parts of properties, about parts of sets, about parts of things, and about parts of events, as well as parts of changes and states, but hardly about parts of relations.

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[1] Even serious philosophical texts inexactly talk about "properties, relations, dispositions, events etc.", or about "properties, relations, states, processes etc." (cf. for instance [Kotarbiński 1931, p. 74] and [Ajdukiewicz 1948, p. 69]).

The terms "change" and "state" can also be added to at least some of the remaining terms. Thus, it is admissible to talk about changes in properties, relations, parts, and things, but hardly about changes in sets and events; and it is more difficult to talk about states of properties and relations. I doubt whether it is admissible to talk about states of sets, but we certainly can talk about states of parts.[2] Using the convention introduced above and accepting the view that things, events, changes, states, properties, relations, sets and parts are, in any case, objects, my second remark is that all objects can be subjects of properties, members of relations and elements of sets but only some objects can be complexes of parts. Similarly, we cannot say about any object that it undergoes changes or that it is *in* a certain state (of affairs).

3.3

Are there any ontic relations that correspond to the above syntactic relations between terms? If so, we are forced to accept the view that two separate forms of objects can be distinguished: the form of things and events, on the one hand, and the form of properties, relations and sets, on the other hand. Following Aristotle (cf. [Kotarbiński 1929, p. 40]), let us call objects of the second form "accidents" (or "fortuities").

We have now:

(6) For every x [x is substantial *iff* it is not the case that for a certain y (x is an accident of x)].

(7) For every x [x is accidental *iff* for a certain y (x is an accident of y)].

The possibilities of iteration and interpredicativity are not the only pecularities of accidents. All accidents are also (contextually) reducible one to another. Let us suppose that A stands in relation S to B. If so, then A has a certain property: the property of standing in relation S to B. And if so, then A belongs to a certain set: the set of objects that have the property of standing in relation S to B. Since A belongs to this set, A has thereby also a certain property, *viz.* the property of belonging to this set. Furthermore, since A has the property of belonging to a cer-

[2] Augustynek discusses this probability in this context [Augustynek 1975, p. 131].

tain set, A stands in a certain relation to B, *viz.* the equality-relation with respect to belonging to the set to which B also belongs. This reducibility also finds its expression (on the logico-philosophical grounds) in the identification of properties and relations with respective sets. The question thus arises: Is also the operation of distinguishing properties, relations and sets among accidents a purely verbal operation?

Let us now consider the status of changes and states (of affairs). "Change of x" means, in the first sense, the same as "replacing (at a certain time) one property of x with another one"; in the second sense it means the same as simply "replacing". We use the word "change" in this last sense, when we say, for example, that a movement (of any body) is a change of locality (of this body). Likewise, "state of x" denotes, in the first sense (let us call it "the situation-sense"), a lasting (at a certain time) of a property of x; in the second sense (let us call it "the attributive sense"), it denotes a lasting (in a certain sense) property of x — i.e. something which, as Henryk Stonert says, a given thing is in [Stonert 1964b, p. 169]. Tadeusz Kotarbiński was probably aware of this polysemy when he identified states of affairs and changes (processes), first, with the fact *that* things happen in such-and-such way or with the fact *that* they change in such-and-such a way [Kotarbiński 1954, p. 395] and, later, with *how* things happen and *how* they change [Kotarbiński 1935, p. 118—119]. Bogusław Wolniewicz points out a certain ambiguity in the Polish equivalent of the English expression "state (of affairs)" which has its roots in the following amphibology: the idea here can be not only of a state of x (or a state in which x is present), but also of a state of x-s (or a mutual configuration of many things) [Wolniewicz 1968, p. 95], that is, of the existence of a certain relation between x-s. He proposes paraphrasing the second sense with the aid of the phrase "that it is so-and-so" [Wolniewicz 1968, p. 319].

Every change is a certain «situation»-state [Stonert 1964a, p. 169]. While a «situation»-state is a certain event, an «attributive» state is a certain property. Not every property, of course, is an (attributive) state; only a relatively unstable property is involved. Thus, extra-temporal properties are not in question here (if such properties exist) do not constitute states. Ingarden also makes a distinction here, though he does so in a different way: "*Zustand muß mehr oder weniger dauernd sein*" but it must be something (in Ingarden: "*der Gesamtbestand*") that has

been created "*in dem Gegenstande durch einen Vorgang*" [Ingarden 1947, p. 224]. Similarly, not every event is a change; only events that are capable of happening exclusively in a certain place come into play here; thus, extra-spatial events are not in question here (if such events exist). Let us suppose that a buried in thought thin man is walking. We shall say, that thinness is his *property* but that he is in the *state* of contemplation, and that he undergoes a certain *change* (here: of location). When something rots, we can say that it undergoes a certain *change* (i.e. rotting), that it is in a certain *state* (i.e. of rotting), and that it has a certain *property* (i.e. of rotting). When somebody is irritated, we can say that s/he is in a certain *state* (i.e. of irritation), that s/he has a certain *property* (i.e. of irritation or, better, of being irritated), but we cannot say that s/he undergoes a *change*. When something is green, we can say that it has a certain *property* (i.e. of greenness) but we cannot say that it undergoes a certain *change*, or that it is in a certain *state*. Moreover, when something rots, when somebody is irritated, or when something is green, we can say that this object belongs to a certain *set* (i.e. of rotting, irritated, or green objects, respectively). But when a certain object is a man, we do not usually say that this object *as such* undergoes a certain *change*, or that it (*as such*) is in a certain *state*, or that it (*as such*) has a certain *property*. Thus, perhaps it would be possible to reduce the category of accidental objects (i.e. accidents) to objects of just one kind, to sets, say.

3.4

I have included things and events among substances. I might leave it at that (as does Peter F. Strawson [1959, p. 15]).[3] But we can inquire as to whether the reduction outlined for accidents can be performed for substantial objects as well.

We may therefore ask whether things can be reduced to events, or *vice versa*. It seems that the pair part-complex could be a mediator in both cases. Then, correspondingly, the term "thing" would mean the same as "complex of events" ("*Verband von Sachverhalten*") [Ingarden 1948.1, p. 284] or "part of an event"; and the term "event" would mean the same as "complex of things" or "part of thing". Assuming

[3] In fact, Strawson considers things and events as particulars.

that complexes of events and parts of events are events by themselves, and also that complexes of things and parts of things are things, we may talk about two ontic forms only: events (or things) and sets (or properties, or relations).

The situation would be different if things were reduced to events (or *vice versa*) by means of the element-set pair. Tadeusz Czeżowski mentions such a procedure. Things ("individuals enduring in time") are thus sets of events ("momentary individuals"), and the latter, as "objects of a higher logical type" [Czeżowski 1951, p. 220], are not events.

To assess the admissibility of such a "clean-shaven picture of reality", as Bertrand Russell described it [Russell 1959, p. 66], we should make a prior choice as to the specific explication of the terms "thing" and "event" since they are far from being precise in natural languages. It is impossible to do without arbitrary decision here. Some authors answer the question of what things and events are by indicating the requisite objects — not so much by ostension [Augustynek 1984, p. 4] as through exemplification by means of verbal tools — the required objects. However, these exemplifications, as well as the comments appended to them, are usually rather imprecise.

3.5

Let us consider THINGS, first. "Things include: tables, stones, trees, houses, men [...]." Socrates is certainly a thing, but what kind of object is Socrates? Andrzej Grzegorczyk proposes the following quasi-grammatical criterion: things are identical with "designates of the majority of nouns" [Grzegorczyk 1959, p. 10]. But this criterion is of little use here; after all, grammarians usually answer the question "What is a noun?" by saying that it is a name of things, primarily.

Let us assume for the sake of simplicity that, prior to Socrates' birth, Socrates was nothing at all and that, after his death, he is fully annihilated and becomes nothing at all (this assumption is, of course, far from correct). In every period of his life, Socrates has various properties, including various states and changes. Let us ignore the fact, again for the sake of simplicity, that he is also (willy-nilly) the member of various relations. Is Socrates (a) the «residuum» that remains after separating

these properties, or (b) this «residuum» with all these properties, or (c) this «residuum» only with those («essential») properties that are not states? The following counterintuitive consequence speaks against version (a): all sentences that stated something true about Socrates would be synthetic (moreover, would such a «bare» Socrates be an object at all?). Version (b) has the equally counterintuitive consequence that all true sentences about Socrates would be analytical.

EVENTS are generally identified with "a given occurrence of a phenomenon [here: of a property *in specie*] in a given object and at a given time" [Ajdukiewicz 1965b, p. 163], or with "the fact that an individual located in a determinate place and time has [...] [a certain] property" [Ajdukiewicz 1934b, p. 90] or, more generally, with the fact that a certain thing has a property (or the fact that some relations occur between some things) [Stonert 1964b, p. 53]. This is how the situation is described by Ajdukiewicz and Stonert. It should be remembered that states of affairs (of the «situation» kind) and changes are only some types of such events. According to Kotarbiński, for instance, an event is either a state (static events) or a change (kinetic event) [Kotarbiński 1929, p. 51]; though sometimes he equates an event with a state [Kotarbiński 1954, p. 396]. In Augustynek, we read of the possibility of identifying events and changes (processes) [Augustynek 1975, p. 95]. According to Russell who uses here the term "fact" after all events "consist always of relations between parts of a whole or qualities of single things. [...] It is convenient to use the word "fact" to express the analysed connection of the parts rather than the complex whole that they compose" [Russell 1959, p. 151]. Some authors give grammatical criteria for being an event or being a fact as well. George Edward Moore, for example, writes: "I am going [...] to use the name "facts" simply and solely as a name for [...] the kind of things which we express by phrases beginning with "that"" [Moore 1953, p. 298]. Wolniewicz distinguishes events (states of affairs) from facts. The latter are "existing states of affairs" [Wolniewicz 1968, pp. 122-123] or rather "the existence of states of affairs", i.e. they are what is stated by a true sentence [Wolniewicz 1968, p. 97]. On the other hand, according to Ingarden, events are identical with "*das Ins-Sein-Treten eines Sachverhalts*" [Ingarden 1947, p. 216], where these states of affairs can be «*handlungsmäßig*» or «*eigenschaftlich*» [Ingarden 1948.1, p. 315].

In these circumstances, many scholars construct a technical sense of the word "event", without looking at its use in natural languages. For Ryszard Wójcicki, for example, events are "momentary sections of a thing" [Wójcicki 1972, p. 21]. For Hans Reichenbach, events "are space-time coincidences and do not endure" [Reichenbach 1947, p. 267]. In Karl Popper, an event is not "a complex, or perhaps a protracted, occurrence, whatever ordinary usage may suggest" but a class of occurrences. Thus, for example, that a glass of water has just been upset (i.e. a certain occurrence) belongs to the event that consists in "the upsetting of a glass of water" as to a certain event [Popper 1934, p. 89].

I would add that processes (changes) are sometimes reduced to events [Augustynek 1975, p. 73] or (momentary) states of affairs [Quine 1950, p. 67] as sets (or complexes) of these events or states of affairs, partly ordered by the relation of anteriority.

3.6

Looking for objects, to which the remaining ontic forms can be reduced is not the same as looking for basic (atomic) objects.

I assume:

(8) For every x [x is atomic *iff* it is not the case that for a certain y ($y = x$ and y is a part of x)].

(9) For every x [x is molecular *iff* for a certain y ($y = x$ and y is a part of x)].

The division of objects into atomic and molecular is probably feasible within the realm of substances, and probably also within the realm of accidents. Russell identifies molecular objects with facts. He writes: "facts [...] are whatever there is except what (if anything) is completely simple" [Russell 1959, p..151]. Rather unexpectedly, Ludwig Wittgenstein calls objects that fulfil conventions (8) "things". Wolniewicz identifies Wittegnsteinian things with material points and notes that the Wittgensteinian criterion "does not imply [...] individuality (concreteness) of his objects" [Wolniewicz 1968, p. 78].

It is worth stressing that if the search for individual (atomic) objects did not involve partitioning (i.e. isolating parts) but abstracting (i.e.

isolating accidents), this would impose the condition of not having any accidents (properties in particular) on atomic objects. This would give rise to the paradoxical situation, in which atomic objects would not be objects at all, according to formula (1).

3.7

I shall further distinguish the division of objects into substantial and accidental, on the one hand, from the division of objects into autonomous and heteronomous, on the other.

I assume:

(10) For every x {x is autonomous *iff* it is not the case that [if for a certain y ($y = x$) then for a certain z ($z \neq x$)]}.

(11) For every x {x is heteronomous *iff* [if for a certain y ($y = x$) then for a certain z ($z \neq x$)]}.

These formulae are explications of the phrases: "primary existence", "independent existence", "existence in abstraction from anything", on the one hand, and "existence in something" [Ajdukiewicz 1949, pp. 78, 84], "existential dependence" [Augustynek 1975, p. 133], on the other.

If things are complexes of events then things are heteronomous objects. Are events autonomous? Reichenbach claims cautiously that if things turn out to be "classes of events" then "for physics, events are more fundamental units than things" [Reichenbach 1947, p. 267]. Since Russell CONCEIVES "each event as occupying a finite amount of space-time and as overlapping with innumerable other events which occupy partially, but not wholly, the same region of space-time" [Russell 1959, p. 20] then no event is autonomous according to this ASSUMPTION.

Similarly, if events are complexes of things then events, but not things are heteronomous objects. However, we should not jump to the conclusion that consequently only things are autonomous. On the contrary, everything seems to show that they too are heteronomous.

3.8

I now assume:

(12) For every x and y [x is separated from y *iff* for a certain z ($z \neq x$, $z \neq y$ and z is between x and y)].

(13) For every x and y {if x or y is subjected to suitable forces then [x is separable from y *iff* x (not having been separated from y before the action of these forces) becomes separated from y]}.

(14) For every x [x is concrete *iff* for a certain y (x is separable from y)].

(15) For every x [x is abstract *iff* for every y (it is not the case that x is separable from y)].

Of course, one needs to establish whether this separation of objects consists in a spatial or a temporal separation, or in both (where one must also establish what is to be a level of magnitude), or in something else (the term "separation" should be, in any case, understood in such a way that abstracting, i.e. mentally isolating properties in any object, is not denoted by the term). In the first three cases, abstract objects would be heteronomous as well while concreteness would exclude neither autonomy nor heteronomy.

3.9

The opposition concretes-abstracts is sometimes characterised not by means of separability but by means of separation. To prevent possible misunderstandings, I shall talk in these cases of isolated and connective objects.

Thus:

(16) For every x [x is isolated *iff* for every y (if $y \neq x$ then x is separated from y)].

(17) For every x [x is connective *iff* for a certain y ($y \neq x$ and it is not the case that x is separated from y)].

Of course, all isolated objects are concretes, but some concretes can be connective. Likewise, all abstracts are connective, but some of connective objects can be concretes.

Willard van Orman Quine argues against identifying concretes with objects that are "continuous in geometrical shape"; he points to the fact that, for example, "the territory of the United States including Alaska is discontinuous, but it is none the less a single concrete object; and so is a bedroom suite, or a scattered deck of cards" [Quine 1950, p. 69]. Reichenbach goes further by saying that, according to the spirit of natural languages, "the furniture of a certain house is not an individual, but a class of individuals". Earlier he defines "individual" as "something occupying a continuous and limited part of space and time", and therefore as something that we would determine as just an "isolated object" [Reichenbach 1947, p. 266]. Material concretes which constitute an «equipment» of the world, are characterised according to formula (16) by Małgorzata Czarnocka. She gives a denotative definition of "concretes"[4] and indicates bodies as well as (among others) waves and fields, since she views bodies as being "concentrated in a part of space, close (in general) nubbles of matter with positive mass and of any form" [Czarnocka 1986, p. 14]. This would imply that the world, at least in spatial terms, has a «grainy» structure: it is these «grains» (of various «plies») which fill phase-complexes separated from one another by portions of space(-time)[5] that would be concretes. As Russell succinctly put it, the universe would be "all spots and jumps" [Russell 1931, p. 98].

3.10

I shall now distinguish the pair: concreteness-abstractness from the pair: intelligibility-incompatibility.

I assume:

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[4] In fact, Czarnocka talks about physical individuals (as well as about empirical or real individuals), but we can interpret her statements as concerning concretes alone, since she contrasts these physical individuals with, i.a., properties, processes, and events.

[5] We should probably agree with Kotarbiński that "empty fragments of space" cannot be concretes [Kotarbiński 1935, p. 488].

(18) For every x [x is intelligible *iff* it is not the case that for a certain P (Px and it is not the case that Px)].

(19) For every x {x is incompatible *iff* [for a certain P (Px and it is not the case that Px)]}.

If we impose no further restrictions on intelligible and incompatible objects, we cannot exclude beforehand that divisions of objects into intelligible and incompatible ones, on the one hand, and into concrete and abstract ones, on the other hand, are logically independent.

3.11

The division of objects into concrete and abstract is frequently connected — or confused — with the divisions of objects into individual and universal, on the one hand, and particular and general, on the other hand. Kotarbiński claims, for instance, that universals are a kind of abstracts [Kotarbiński 1954, p. 359], whereas Augustynek CONSCIOUSLY IDENTIFIES abstracts with universals [Augustynek 1975, p. 64] and then identifies the latter with sets [Augustynek 1984]. Similarly, Quine identifies abstracts with universals, but in regarding sets to be universal objects, he does not identify the former with the latter [Quine 1937—1950, pp. 114—115, 128].

I assume:

(20) For every x {x is individual *iff* for a certain P [Px and for every y (if Py then $x = y$)]}.

(21) For every x {x is universal *iff* for every P [if Px then for a certain y (Py and $x \neq y$)]}.

The difference between individuals and universals is clearly indicated by Joachim Metallmann:

> If we describe two [«identical»] buttons successively in two long series of sentences [...] of such a kind that every sentence distinguishes, say, one property of the object, then among these series of sentences besides identical sentences there will always show up sentences *different* as to their content, provided that the description is sufficiently long. [...] Only [universal] objects can be identical, i.e. such that whatever can be told about one of them, can also be predicated about any other one [Metallmann 1939, pp. 24, 27].

The distinction expressed by formulae (20) and (21) can be carried out for objects characterised in formula (15) as abstracts: these (properties, in particular) happen to be either individual or universal. When Ajdukiewicz calls "a property which at a certain time [can] be an attribute of this or that object, but can also not be its attribute at another time" a "phenomenon", and when he contrasts these "general entities" with realised properties [Ajdukiewicz 1965b, p. 163], he is drawing the distinction between individual and universal abstracts mentioned above. We should bear in mind, however, that "by a "phenomenon" we usually mean the same as by an "event"" [Kotarbiński 1929, p. 79], or — in traditional terminology — "something that is observable" (see below). In any case, as Reichenbach points out, "sometimes events are important units also for the purposes of daily life" [Reichenbach 1947, p. 267].

3.12

I assume:

(22) For every x [x is particular *iff* for every P (Px or it is not the case that Px)].

(23) For every x [x is general *iff* it is not the case that for every P (Px or it is not the case that Px)].

Formulae (22) and (23) are explications of the distinction between objects "*in keiner für sie möglichen Hinsicht unbestimmt*" and objects either having "*in dem Gehalte* [...] *eigenartige Elemente*" or being "*nach verschiedenen Richtungen hin ganz unbestimmt*", that is, possessing "*Unbestimmtheitsstellen*" Ingarden calls the former "individual objects" and the latter "ideal" [Ingarden 1947, pp. 40—41] or "(purely) intentional objects" [Ingarden 1948.1, p. 219]. Formula (22) is not, of course, identical with Kotarbiński's assumption that "every object has either a certain property or its negation" [Kotarbiński 1949, p. 422]. Thus, formula (22) describes only particular objects. Metallmann writes:

> The description of such an object by means of individual sentences, enumerating its properties one by one, is strictly speaking never exhaustive. [...] Thus, in everyday life, as well as in scientific practice, the description of an object is always executable, because [...] we break it off in the moment that appears advisable for

> us. But during the evolution of science [...] the number of possible aspects of the «same» object appears to be in principle unlimited [Metallmann 1939, p. 24].

Metallmann calls such an object "concrete" and not "particular". In opposition to the description of *particularia*, the description of *generalia* "can be performed by means of the finite and, in general, small number of properties and relations" [Metallmann 1939, p. 27]. According to Wolniewicz, it is this opposition that is hidden beneath the terms "concrete"—"abstract" in the Hegelian tradition [Wolniewicz 1968, p. 202].

It is rather surprising that things (understood as objects that have only these properties that are not states excluding relations into which these objects enter) are general (as well as heteronomous and, probably, abstract) objects.

Note that under assumption (23) we have:

(24) It is not the case that for every P {Px or it is not the case that Px *iff* for a certain P [it is not the case that (Px or it is not the case that Px) *iff* for a certain P (it is not the case that Px and it is not the case that it is not the case that Px)]}.

Now, there are two possibilities. If we adopt the principle of non-contradiction (in a certain form):

(25) It is not the case that it is not the case that p *iff* p.

then we obtain:

(26) For a certain P (it is not the case that Px and it is not the case that it is not the case that Px) *iff* for a certain P (Px and it is not the case that Px).

Thus, generality is identified with incompatibility. This is the standpoint of, among others, Kotarbiński (who has previously identified *generalia* with *universalia*) [Kotarbiński 1920, p. 14]. On the other hand, if the principle of non-contradiction in the form of (25) is not accepted then the difference between generality and incompatibility will consist in the fact that the former will be ascribed to objects to whom a certain property neither belongs nor does not belong, whereas the latter is ascribed to objects to whom this property both belongs and does not belong. Ingarden thinks that "*das Prinzip der ausgeschlossenen Dritten und das Prinzip des Widerspruchs, in ontologischer Deutung ihre Geltung bezueg-*

lich der IDEENGEHALTE verlieren" [Ingarden 1948.1, p. 242], and thus, these principles are characteristic of ideal objects.

Independently of any interpretation, *generalia* understood in terms of formula (23) cannot be identified with sets (in the sense of set-theory). Moreover, it seems that no set is a general object.

Of course, formula (22) does not exclude the possibility that some *particularia* are intelligible whereas others are incompatible.

3.13

In general, two other distinctions of objects interfere with the distinctions discussed above: the division into material and ideal objects, and the division into real and irreal objects.

I assume:

(27) For every x [x is material *iff* for a certain y (y is a place-moment, and x is at y)].

(28) For every x [x is ideal *iff* it is not the case that for a certain y (y is a place-moment, and x is at y)].

In formulae (27) and (28), a "place-moment" means the same as a "spatio-temporal atom".

Kotarbiński initially grants that "material" means the same as "extended AND inert at the same time" [Kotarbiński 1931, p. 71]. However, he provides neither examples of objects that are extended but not inert, nor examples of objects that are inert but not extended. He then identifies materiality with temporality, spatiality (for example, extension in breadth, length and depth) and resistance [Kotarbiński 1935, p. 118]. In the end, according to him "everything that is temporal and spatial and physically defined — for instance, physically influencing something else", is to be material [Kotarbiński 1949, p. 426; cf. also Augustynek 1984, p. 5]. On the other hand, George Edward Moore understands by "material object" something that "is situated somewhere or other in space" [Moore 1953, p. 128], thus ignoring its temporal localisation and also whatever is not "a mind, nor an act of consciousness" [Moore 1953, p. 131].

How are concreteness and materiality related to each other? If the introductory condition of formula (13) concerns a certain material

operation then concretes as well as abstracts will be material objects. We can hardly talk about the separation of ideal objects one from another since they are *ex definitione* outside space-time. But if (particular) concretes are expected to be separated one from another, and (particular) abstracts are expected to be unseparated one from another by any portion of space-time, then we cannot exclude that some material objects will be concrete, some will be abstract, and that all ideal objects will be abstract. As Quine notes, "with a little stretch of imagination, [...] [the] notion of physical [here: material] objects can [...] be made to accommodate physical processes or events, on a par with bodies" [Quine 1966—1974, p. 260]. According to Wolniewicz, every event is a material object; in any case, it is "always localised in time". "On the other hand, the content of the word "event" does not imply [...] definitely EXISTENCE" [Wolniewicz 1968, pp. 58ff] (here: objectivity; see below).

Formulae (18) and (27) show that we should not follow the widespread practice [cf. for example, Augustynek 1975, p. 135] of definitionally identifying intelligibility and materiality. On the other hand, these formulae do not exclude the possibility that *de facto* the class of real objects is identical with the class of material objects. The definitional reduction of reality to materiality (or *vice versa*) should, of course, be distinguished from the identification of reality (or physicality) with the possession of spatio-temporal localisation by means of an appropriate meaning-postulate, as Rudolf Carnap [1935, p. 21], Ajdukiewicz [1949, p. 79] and Strawson [1959, pp. 29—30] do (for reality), as well as Quine [1966—1974, p. 259] does (for physicality).

The question arises as to whether the so-called *Universe* fulfils the condition indicated by formula (27). Augustynek claims that it does not fulfil it saying that "in relation to the world as a whole, there is no sense to talk about a spatio-temporal localisation; what is the temporally and spatially external object, which would be the fiducial point of localisation of the world" [Augustynek 1984, p. 5]? Thus, if the possibility of referring to something external is the "immanent property of localisation" then formula (27) should read:

(29) For every x {x is material *iff* for a certain y [y is a place-moment, and x is at y — or for a certain z (z is a part of x, and z is at y)]}.

3.14

I assume:

(30) For every x [x is real *iff* for a certain y ($y \neq x$ and x acts upon y)].

(31) For every x [x is irreal *iff* for every y (if $y \neq x$ then it is not the case that x acts upon y)].

Augustynek appeals to (physical) action in his characterisation of material objects. His definition runs as follows:

(32) For every x {x is material *iff* for a certain y [$y \neq x$ and x acts upon y — or for a certain y and a certain z ($y \neq x$, $z \neq x$; y, and z are parts of x, and y acts upon z)]} [Augustynek 1984, p. 5].

In Ingarden, the condition of reality is causal action [Ingarden 1947, pp. 109-110]. I place this condition on determination:

(33) For every x [x is determined *iff* for every y ($y \neq x$ and x is causally conditioned by y)].

(34) For every x [x is acausal *iff* for every y (if $y \neq x$ then it is not the case that x is causally conditioned by y)].

Regardless of whether we define "reality" or "determination", it seems that the following difficulty arises. If we agree that the range of the variable y is the set of real (*resp.* determined) objects, then we must also use the above formula to decide whether, in a given case, we are dealing with any object at all. Thus, using this formula implies a *regressus ad infinitum*.

In any case, the division of objects into concrete and abstract, on the one hand, and into real and irreal, on the other, are mutually independent on such an approach.

3.15

The pair "concretes-abstracts" is sometimes compared not only with ontological terms but also with epistemological ones — primarily with the pair "observable-noumenal".

I assume:

(35) For every x {x is observable *iff* for a certain y [y is a place-moment and for every z (if z is cognitively directed towards y then z recognises x)]}.

(36) For every x [x is noumenal *iff* for every y and z (if y is a place-moment and z is cognitively directed toward y, then it is not the case that z recognises x)].

Nothing, of course, can be forejudged about the relation of observability and concreteness before we specify what type of cognitive activity is mentioned in formulae (35) and (36). For this purpose, we can assume, for example:

(37) For every x and z (z recognises x *iff* x acts on the receptors of z and z realises that x acts on the receptors of z).

It would be necessary to impose on z the condition of normality (not yielding to delusions) and, probably, reliability (veracity). On what basis, however, are we to admit these and reject other epistemic operations?

Let us suppose that this problem is decided in such a way that observation is limited to extraspection and introspection. If we now assume that we are entitled to talk responsibly only about objects that are observable (in this sense), then for the time being we could not admit the view that some material objects are at the same time incompatible. Nor could we responsibly decide, respectively, the concreteness and intelligibility of ideal object which are simultaneously noumenal.

3.16

I assume:

(38) For every x and z [x is observable for z *iff* for a certain y (y is a place-moment, and if z is cognitively directed towards y, then z recognises x)].

We may now characterise the pair intercognitivity-monocognitivity (or intersubjectivity-monosubjectivity) [Ingarden 1948.2, p. 4].

(39) For every x [x is intercognitive *iff* for every y (x is observable for y)].

(40) For every x [x is monocognitive *iff* for every y and z (if x is observable for y, and x is observable for z, then $y = z$)].

Formula (40) is usually enriched by the condition that x should stand in a determined relation to y (= z). Ajdukiewicz expresses this condition by saying, for instance, that "mental phenomena can be perceived only by one person, namely the person who is experiencing these phenomena". He calls this property "intrasubjectivity" [Ajdukiewicz 1938, pp. 157ff]. Although, only mental objects are monosubjective, one should distinguish their monosubjectivity (here: monocognitivity) from their mentality.

I assume:

(41) For every x {x is extra-mental *iff* it is not the case that [if for a certain y ($x = y$) then for a certain z: z consciously experiences x]}.

(42) For every x [x is mental *iff* if for a certain y ($x = y$) then for a certain z: z consciously experiences x].

Ajdukiewicz recognises conscious experiencing (the contents of consciousness) as only ONE of the characteristic properties of mental objects [Ajdukiewicz 1938, p. 158]. His understanding of "objectivity" (here: "extra-mentality") can also be interpreted as follows:

(43) For every x [x is extra-mental *iff* it is not the case that for a certain y (y consciously experiences x)].

Thus, Ajdukiewicz claims that phenomena are objective (here: extra-mental) *iff* "they are never the contents of consciousness and they can exist independently from the consciousness of anybody" [Ajdukiewicz 1938, p. 158].

If we agree, that only experiences are given in introspection, then mental objects — according to formula (42) — are abstracts. The hypothesis that there are also mental concretes (for example, «minds»), is much more doubtful than the hypothesis that some objects are physical concretes.

3.17

There appears here the need, and the opportunity, to distinguish the empirical from the fictitious.

I assume:

(44) For every x [x is empirical *iff* for a certain y (y is observable and x acts on y).

(45) For every x [x is fictitious *iff* it is not the case that for a certain y (y is observable and x acts on y)].

Sometimes formula (44) is given as an explication of the term "reality" [Moore 1953, p. 229].

After it is further specified what an action is, formula (44) does not stand in the qay of assuming that empirical objects include not only some observable objects but also some noumenal objects (*viz.* the *designata* of theoretical terms). After all, we can impose upon empirical objects, for instance, the condition of being in the part-complex/whole relation to them, instead of the condition of acting on the observable objects.

3.18

I assume:

(46) For every x {x is objective *iff* for a certain P[either Px or for a certain y (y thinks that Px) but not both]}.

(47) For every x {x is subjective *iff* for every P [Px *iff* for a certain y (y thinks that Px)]}.

One can (partially) «depsychologise» formulae (46) and (47) and express them as follows:

(48) For every x {x is objective *iff* for every P [Px or for a certain y (y describes the fact that Px) but not both]}.

(49) For every x {x is subjective *iff* for every P [Px *iff* for a certain y (y describes that Px)]}.

Here *y*-s are not only people but also sentences and definitions in particular.

Formulae (46) and (48) will be probably more intuitive if the right-hand side of the equivalence is stated in the following manner:

(50) For a certain P ⟨Px and it is not the case that for a certain y {y thinks (*resp.* describes the fact) that Px; or it is not the case that Px and for a certain y [y thinks (*resp.* describes the fact) that Px]}⟩.

It is now easier to note the intention of this formula, according to which something "exists OBJECTIVELY, i.e. independently of a cognitive subject" [Augustynek 1975, p. 18] or that its "existence is not necessarily conditioned by a thought" [Ajdukiewicz 1923, p. 99].

Subjectivity is correlated, of course, with heteronomy, but they are not identical, contrary to those scholars who "regard matter as self-subsistent" [Russell 1959, p. 51]. Moreover, one remember that in such cases one often speaks about reality and ideality [Kotarbiński 1929, p. 341; Ajdukiewicz 1949, p. 79] or reality and fiction [Moore 1953, p. 211] instead of objectivity and subjectivity.

Le us call all objective objects simply "objects", and all subjective objects "quasi-objects".

First, distinction between concreteness and abstractness and the distinction between extra-mentality and mentality are applicable, strictly speaking, only to objects: quasi-objects are at most quasi-concrete or quasi-abstract, and quasi-extra-mental or quasi-mental. Second, only objects can be observable or material, although some of them are probably noumenal or ideal. Third, all objects are empirical or individual. Fourth, all quasi-objects are noumenal or ideal. Thus we cannot claim that the differences between observability and noumenality are not "ontologically essential" [Czarnocka 1986: 119,121]. On the other hand, it is true that ontological forms are not identical with epistemological forms. "Objects perceived in different ways need [not] belong to different ontological categories" [Czarnocka 1986: 124]. Fifth, only quasi-objects can be fictitious or universal, though some of them are probably empirical or individual. Thus, since only (individual or universal) fictions are incompatible, only quasi-objects possess the property of incompatibility.

3.19

It remains only to consider the question of whether concretes and abstracts exist, or more generally whether objects distinguished in formulae (1)—(5) exist.

I am suspicious of the view that existence is not a property since it is not backed by adequate arguments. An answer to the question "Which objects exist?" should be preceded by an answer to the question "Which intuitions ought to be preserved?". It seems to me that, for example, the following statement comes closest to common sense:

(51) For every x (x exists *iff* x is objective).

Existence would not be a property only if it had could not be identified with any property from among the properties characterised in this paper. But then the question of what exists would be *questionae gustuum* and not *questionae facti*.

3.20

The problem of ontic forms puts us to a great deal of trouble not so much because scholars differ as to the accepted solutions as because we do not exactly know what these differences consist in.[6]

[6] For detailed discussion of these problems cf. my "Ontological minimum" [Augustynek and Jadacki 1993].