

## On Tadeusz Czeżowski's Semiotic Views

Using terms not being precisely and univocally determined, as well as uttering propositions not having right justification, is intolerable in philosophy as well as in every scientific research.  
(*Tadeusz Czeżowski*)

### 1.

There are, in my opinion, four reasons to focus our attention on Czeżowski. Firstly, Czeżowski was (in 1959) the very initiator of Cracow conferences concerning the history of logic; it is worth — for historians of logic — to fall back upon our own history.

Secondly, as all experts of the matter<sup>1</sup> stress in agreement, he belongs to the “corps” of the most representative members of the Lvov-Warsaw School<sup>2</sup>, and this school — as a whole — is a legacy of Brentano; it is enough to recognize that it is worth to examine his views to a nicety.

Thirdly, Czeżowski immediately referred to Brentano, reconstructing Brentanian interpretation of Aristotelian logic in terms of propositional and functional calculi, i.e. without special axioms for the syllogistic (as it is in the case of Lukasiewiczian interpretation), but with the explicit isolation of its existential assumptions, in return.

Forthly, and lastly, everybody, who falls back — as I do — upon Czeżowski's ‘philosophical miniatures’ not for the first time, finds them always so interesting theoretically, that he becomes convinced it is worth to consult them not only once in a blue moon.

If I succeed in inspiring participants of the present conference to do it, one of the main purposes of my paper will be reached.<sup>3</sup>

### 2.

Semiotics is one but not only one branch of *largo sensu* logic, engaging Czeżowski; many of his logical works concern also *stricto sensu* (scil. formal) logic, and methodology. Among the most important issues, ac-

quired in these works — apart from reconstructing Brentanian interpretation of the syllogistic, mentioned above — I would set up the following results:

- (1) in the class theory: a solution of the paradox of the class of classes not constituting their own elements — by recognizing such a class being incorrectly defined (classes not constituting their own elements, as well as classes constituting their own elements, being admitted), namely defined by a reflexive property (1918, 10);<sup>4</sup>
- (2) in the theory of propositional functions: giving a good criterion of their classification after syntactic categories of arguments (for sentences: after logical types of objects in question), a criterion affording decision as to a category of mixed sentences, like e.g. “a has property C” (1957/1965, 120);
- (3) in the theory of syllogistic: filling up the traditional pentamerous classification of possible relations between categorical sentences (and analogically: of possible relations between extensions of two non-empty names) to heptamerous classification (distinguishing independence, subordination, subopposition, opposition, superiority, and contradiction) (1921, 15; 1929, 27; 1931, 28);
- (4) therein: discovering a graphic method of illustrating relations, mentioned sub (3), by means of either sections or ranges of concentric angles (1929, 27);
- (5) therein: giving triple admissible interpretation of individual sentences (of the form “This *S* is *P*”): (a) as universal sentences (then their converse sounds: “No non-*P* is this *S*”), (b) as particular sentences (then their converse sounds: “A certain *P* is this *S*”), or (c) as compound existential sentences (of the form “There is such *x* that: *S* refers to *x*, and *x* is the one, and *x* is *P*, and *x* is identical with *S*) (1952/1958, 88);
- (6) therein: reconstructing various interpretations of Aristotelian modal logic and demonstrating its duality for logic of categorical sentences (see e.g. following correspondences: “It is necessary that *S* is *P*” — “Every *S* is *P*”; “It is possible that *S* is *P*” — “A certain *S* is *P*”) (1936, 33);
- (7) in methodology: demarcating the following logical operations: (a) generalization (scil. logical summing), (b) idealization (scil. selecting types), (c) abstraction (scil. passing to a higher logical category), and (d) formalizing (scil. replacing constants by variables) (1926, 19; 1963/1965, 120; 1978, 179);

- (8) therein: precisising criteria of distinguishing (a) real definitions (among them: either content, scil. normal and axiomatic, ones, or extensional, scil. ostensive ones and definitions by abstraction) in opposition to nominal (vel 'verbal') definitions; (b) analytic versus synthetic definitions; finally (c) reporting versus projecting definitions (1960, 101; 1960, 111; 1966, 125).

### 3.

Before exposing Czeżowski's semiotic views it might be of use if we give thought to one methodological problem, because it is an essential problem for estimating his philosophical production in general, and semiotic production in particular. The question is about two inquiring methods in science, named by Czeżowski "analytic" and "synthetic" (vel "inductive") respectively.

It may be simply said, that both of them consist of three 'steps'. In the case of the analytic method, the first step lies in formulating real definitions of certain distinguished objects, the second step being inferention of analytic consequences from formulated definitions. In the case of the synthetic method, the first step lies in inductive generalizing interdependences occuring among the examined objects of different types, the second step being a formulation of hypotheses explaining these interdependences. The first step in both the cases is a certain (analytic or synthetic, respetively) 'description'; the second one is reasoning (scil. deduction or reduction). The third step is common to both of the methods: it is testing consequences and hypotheses respectively.

Czeżowski warned many times against neglecting the analytic method as purporting to be only prototheoretic. What is more, he believed there were disciplines of science, in which this method was either more fruitful than remaining ones, or simply it made the only method, which showed a certain promise of achieving conclusive results. He considered i.a. the philosophy as one of the last disciplines.

It is not suprising that he himself practiced semiotics by means of the very analytic method.

### 4.

*Largo sensu* expressions — or lingual signs (scil. symbols) — play various 'representative' functions: they express something, mean something, refer to something, indicate something, signify something.

Let what is expressed by a given expression be the content (scil. sense) of this expression.

Having or not-having sense breaks the set of expressions into two subsets: the subset of expressions-with-content (scil. *stricto sensu* or senseful expressions) and the subset of expressions-without-content (scil. senseless expressions). Contents of expressions are acts of thinking (scil. thoughts) expressed by these expressions. An expression, if it is a *stricto sensu* name, expresses a certain presentation (in particular: ‘a presentation connected with the name, and causing that this name names a *designatum*, to which the presentation in question refers to’ (1918, 8)); if it is a *stricto sensu* sentence, it expresses a conviction (scil. a judgement).

The difference between presentations and convictions can be verbalized i.a. in the following manner: to have a presentation of something is to know about something, *what* it is like; to have conviction — is to know about something, that it occurs or does not occur.

There is something mediate — as to the content — between *stricto sensu* names and *stricto sensu* sentences: these are *quasi*-sentences (scil. suppositions). Suppositions are expressions having the (grammatical) form of sentences, but their contents are not convictions: they are presentations of a special kind, i.e. presentations of judgements (scil. judgements not ‘made’ but only presented). As suppositions can be considered i.a. all the sentence-like expressions, (a) which might be proceeded by the words “Let us suppose that” or “Let us assume that” (and must not be — under threat of changing their sense — proceeded by the words “It is true that” or “I claim that”); (b) which are members of conditionals; (c) which are quotations (and should be placed in quotation marks).

## 5.

Sometimes (*largo sensu*) sentences belonging to works of literary fiction are considered as suppositions.<sup>5</sup> According such an approach sentences-suppositions like “Achilles killed Hector” are interpreted as abbreviations of *stricto sensu* sentences “We read in *Illiad* that Achilles killed Hector”, “After Homer, Achilles killed Hector” etc.

The fact that proposed paraphrases speak neither about Achilles nor about Hector, but about a certain work of art or its author, militates against this approach.

It is more natural to assume, that some of these sentences are true in a special manner — namely are formally true (after the fashion of hypothetico-deductive systems in science). It means they are true under the

condition of adopting assumptions 'constituting' the world of literary vision. The only rigor valid at such a 'construction' is the rigor of non-contradiction: contradictory 'constructions' are

unimaginable; thus they are unintuitive. Individual concretisations of literary works — of imaginative, scenic or cinematographic kind — can be treated here as semantic models of these 'schematic' works; only for the sake of such concretisations, one can say about material truth of respective interpretations of a given work.

Formal truth of a given schema-work and material truth of its interpretation for the sake of a respective concretisation must be distinguished from 'metaphoric': truth, where (as it goes in naturalistic literature) the more literary 'constructions' are similar to real situations, the more they are 'true' (1966-1969, 138).

The virtue of the last approach lies in its explanatory power: it explains namely the essence of creative contribution brought by readers and performers of a given literary work: every interpretation asks for making some additional assumptions, individualizing a model — and a lower or higher element of creativity sticks in the very choice of these assumptions.

## 6.

Let what is meant by a given expression be the meaning (scil. connotation) of this expression.

Having or not-having connotation breaks the set of expressions into two subsets: the subset of meaningful expressions and the subset of meaningless expressions.

Meaningful names — contents of which usually being concepts — are common names (scil. general names, Russellian 'class concepts'); meaningless names — contents of which usually being psychical images — are proper names (scil. individual names) and (in definite conditions) personal or demonstrative pronouns (scil. indexical expressions like "this"; "here"; "today", "tomorrow"; "present"; "local").

The difference between common names and proper names in everyday speech is defaced by ambiguity of the word "is". If we insert a meaningful name instead of dots in the expression "... is B", the word "is" will be synonymous with "is included in" (scil. it indicates the relation of subordinating), and an arising expression will be equivalent to the expression "Every ... is B". On the other hand, if we insert a meaningless name there, the word "is" will be synonymous with "is element of" (scil. it indicates the relations of belonging), and such an expression might not be — with-

out changing (or losing?) its content — proceed by the expression “Every”.

Now, meaningful sentences are real sentences, meaningless sentences being nominal ones. The first sentences (e.g. “Cain killed Abel”) are of general form “ $aRb$ ” (scil. “ $a$  stands in the relation  $R$  to  $b$ ”), and their content is a conviction about the existing relation  $R$  between objects  $a$  and  $b$ . The second sentences (e.g. “Planets are heavenly bodies”) are of general form “ $A$  is  $B$ ”, and their content is a conviction about the existing relation of subordination between the expression “ $A$ ” and the expression “ $B$ ” (1918, 8). In other words, they state that a certain object has two different names, predicating nothing about the extralingual reality.

The meaning of an expression can be approached either extralogically — i.e. psychologically, behavioristically, or objectivistically — or logically.

The psychological meaning of a given expression is a content of thought expressed by this expression: a content of presentation — in case of *stricto sensu* names, and a content of conviction (scil. judgement) — in case of *stricto sensu* sentences.

To determine what is a behavioristic as well as a objectivistic and a logical meaning, one needs to determine in advance what is indicated by expressions.

## 7.

Let what is indicated by a given expression be the ‘indication’ (scil. *designatum*) of this expression.

Having or not-having *designatum* breaks, on the one hand, the set of *stricto sensu* names into two subsets: the subset of non-empty names (i.e. non-empty common names like “king”, and non-empty proper names like “Nero”) and the subset of empty names (i.e. empty common names like “square circle”, and empty proper names like “Chiron”). Instead of speaking that a given (empty) name has no *designatum*, we can assume that its *designatum* is ‘nothing’.

On the other hand, having or not-having *designatum* breaks the set of *stricto sensu* sentences into two subsets: the subset of true sentences (i.e. true real sentences like “Kant wrote *Kritik der reinen Vernunft*”, and true nominal sentences like “Whale is mammal”) and the subset of false sentence (i.e. false real sentences like “France lies in America”, and false nominal sentences like “Triangle is quadrilateral”).

The common *designatum* of true sentences is truth. The following argument speaks for such a solution.

- (1) The sentence *a* is equivalent to the sentence "a is the true".
- (2) The sentence "a is the true" is a nominal sentence; thus the expression (here: the sentence) *a* is subordinated with regard to the expression "true" (or "truth").
- (3) The expression "true" ("truth") indicates truth, thus the sentence *a*, as well as all the other true sentences, must also indicate truth.

Assuming, that the *designatum* of a given sentence is e.g. this state of affairs, which is a conviction expressed by this sentence concerns, would result in the necessity of accepting the identity of *designatum* both of the sentence "Volcanoes appear nearby Cracow" and of the name "appearance of volcanoes nearby Cracow".

Like in the case of names, instead of speaking that a given (false) sentence has no *designatum* (scil. it does not indicate truth) one can say that its *designatum* is falsity.

## 8.

The behavioristic meaning of a given expression can be now described as a definite behavioral disposition (of users of this expression) with regard to a *designatum* (vel to *designata*) of this expression.

The objectivistic meaning is but a certain 'aspect' of *designata*: a definite complex of their essential properties — in case of names, and a definite state of affairs (being a certain described 'aspect' of truth, resp. a certain fragment of reality) — in case of sentences; if such a sentence is false, it 'inserts' into this state of affairs a certain property not occurring in it in fact.

Lastly, the logical meaning of a given expression is a result of a definite operation made over another expressions. Logical meaning of a given name is, in particular, the product of (all?) names superior with regard to this name. (Logical meaning and logical extension fulfill the traditional principle of inversion of content — or here: meaning — and extension.)

## 9.

Let what is referred to by a given expression be the object (scil. The correlate) of this expression, identical with the object of thought expressed by the same expression.

Correlates of general names are general objects, i.e. objects having all and only 'generic' properties, belonging to contents of respective presentations. A general object can be identified with an alternative complex of certain individual objects. Thus the correlate of the name "Napoleon's eye" is the object: Napoleon's right eye or Napoleon's left eye.

The following paradox is connected with general objects: since a given general object is general, then generality is a 'generic' property, and — as such — this property belongs to the content of (every) general presentation; thus this property belongs to all individual (non-general!) objects, falling under this presentation. The paradox will disappear, if we agree, that (a) generality is identical with having (in content) 'generic' properties, and that (b) having and not-having certain 'generic' property *W*, in particular, is not having a (new) property of having this 'generic' property *W*.

Correlates of sentences are, of course, objects of convictions expressed by these sentences; e.g. the correlate of the sentence "It rains" is raining.

## 10.

Let what is signified by a given expression be the extension (scil. denotation) of this expression. The objectivistically approached denotation of a given name is the set of (all) its *designata*. The logically approached denotation of a given name is the sum of (all) names subordinated with regard to this name.

## 11.

Expressions-with-content (scil. meaningful expressions) and expressions-without-content (scil. meaningless expressions) should be distinguished from expressions-with-indefinite-content (or, shortly speaking, indefinite expressions) as well as from expressions-with-many-contents (or, shortly speaking, polysemic expressions).

The set of indefinite expressions contains indefinite names, i.e. nominal variables and nominal functions, as well as indefinite sentences, i.e. sentential variables and propositional functions. Indefiniteness of their sense causes that their *designata* are also indefinite, i.e. unknown or any one.

In everyday speech, 'indefinite' pronouns (like "anybody", "somebody", "something"; "any one", "some one"; "whichever") can be considered as nominal variables. The following fact witnesses a nominal variable

being only *largo sensu* (and not *strico sensu*) names. One must predicate nominal variables about nothing: the expression "This is  $x$ " is an expression-without-content.

Nominal functions are expressions consisting of a functional concept (scil. a functor) and its determination (scil. its argument), the last being a variable; e.g. the functional concept of the nominal function "killer of  $x$ " (vel "killer of somebody") is the expression "killer of".

Sentential functions are *largo sensu* sentences consisting of at least one indefinite member (an indefinite name, in particular).

A special kind of indefinite sentences are 'autoreflexive' sentences (scil. antinomian impredicative phrases, Epimenidean sentences like "The sentence, uttered by me now, is false"), containing a variable (here: "the sentence, uttered by me"), which could become constant, only if a sentence, containing it, were indefinite, i.e. only if this variable were not variable (what is, of course, impossible).

## 12.

A polysemic name — in opposition to indefinite names (i.e. names-with-indefinite-content) — has many contents, given conditions (like who utters it, and in which circumstances) deciding, which of these contents is at stake. One can identify expressions of a varying content with meaningless names, because proper names, as well as 'demonstrative pronouns' acquire derivatively — by indicating designata — a 'temporary' (scil. 'occasional') content (vel meaning?). Both the proper names and 'demonstrative pronouns' are closely interconnected. On the one hand, 'demonstrative pronouns' (like "that", "this"; "today", "tomorrow"; "here") become, in definite circumstances, proper names (e.g. on the first of January, 1919, the word "today" names this very day; when I am indicating a certain chair, pronouncing the word "this", the very chair is designatum of the word pronounced). On the other hand, 'connecting a proper name with its designatum takes place by using an indexical name, indicating the *designatum*, in a sentence, identifying the *designatum* of both the names' (compare: "This is Gartuch") (1956, 81).

There is the following method we can 'disoccasionalize' sentences (containing indexical expressions). Let us call a sign-token of a given expression-design "signant" (an expression-design being the class of equiform signants). Now, every sentence of the form "This is  $P$ -al" is equivalent to the sentence "The object, indicated by this signant, is  $P$ -al",

where the word “This signant” indicates the inscription, to which they belong.

### 13.

What is said above, in the paragraphs 4.-12., can be considered — in the light of remarks of the paragraph 3. — as a complex of real definitions of semiotic entities. However, Czeżowski does not limit himself to perform the first step in analysing semiotic problems: he performs also the next step, posing and defending some theses.

That is how they sound.

(T1) There is an analogy (vel a parallelism or duality) between two classes of main elements of lingual systems, i.e. the class of names and the class of sentences: e.g. the relation of subordinating in the domain of names corresponds to the relation of consequence in the domain of sentences (1918, 8).

(T2) Every sentence — concerning any object — is reducible to a sentence stating that a certain object belongs to a certain class (scil. is element of this class); e.g. the sentence “Harpagon is miser” states that Harpagon fulfills the propositional function:  $x$  likes excessively money; the sentence “Cherry is red” states that cherry fulfills the propositional function:  $x$  is like *this* (object); the sentence “Harpagon exists” states that Harpagon is like  $x$  (or anything) (1918, 10).

(T3) Every nominal sentence (scil. stating that a certain object is element of a certain class) of the type “ $a$  is  $\emptyset$  ( $b$ )” (e.g. “ $a$  is the killer of  $b$ ”) is equivalent to a certain real sentence of the type “ $aRb$ ” (here: “ $a$  killed  $b$ ”) (1919, 13).

(T4) Some sentences can be interpreted either as real or as nominal. One can regard the content of the sentence “Salzburg is more picturesque than Cracow” either as the conviction about occurring the relation of being more-picturesque-than between Salzburg and Cracow (in real interpretation), or as the conviction that the expression “Salzburg” is subordinated by the expression “being more picturesque than Cracow” (in nominal interpretation) (1918, 8).

(T5) No expression-without-content has *designatum* (1918, 8).

(T6) The logical konnotation of a given name (and of every expression?) is identical with its logical denotation (1958-1963/1965, 120).

(T7) If there is given the *designatum* of a nominal variable (i.e. the class of its values, the scope of this variable), there is given also (or there can be

created) a common name having denotation identical with the set of *designata* of values of this variable — and inversely (1920, 13).

(T8) Some expressions are used in some cases as common names (e.g. the word “palace” in the sentence “A palace is distinguished among houses by its magnificence”), in some other cases being functional concepts (e.g. the same word in the sentence “Versailles is a palace of Louis XIV”) (1920, 13).

(T9) Negative names with an empty name as a determination (e.g. “non-work of Minotaur”) are empty names. Negative sentences with an empty name in place of their grammatical subject (e.g. “Minotaur is not the devote of communism”) are true sentences respectively (1920, 13).

(T10) Let us call sentences of the type “ $aRb$ ” (scil. “ $a$  stands in the relation  $R$  to  $b$ ”) “Zarembian sentences”, if  $a$  (and  $b$ ?) does not belong to the field of the relation  $R$ , i.e. if there is no object, to which something could stand in this relation (the sentences “Warsaw is the logical consequence of

Lvov” being an example of such a sentence). Zarembian sentences are not sentences-without-content (scil. indefinite on account of logical value). Otherwise we should agree that some definite — true, in particular — sentences either would be consequences of Zarembian sentences, or would have Zarembian sentences among their consequences. Let us consider the sentence “Wawel is not a number”; it is hard to deny this sentence being true, but it is the consequence of the conjunction of the Zarembian sentence “Wawel is neither lesser, nor greater than, nor equal to the number 2” and the sentence “It is true for all pairs of numbers that one of the members of a given pair is either lesser, or greater than, or equal to the other member”. Now, let us consider the sentence “Every entity stands in a spatial relation to the Mozarteum”; its consequence is the Zarembian sentence “My psychological image of the Mozarteum stands in a spatial relation to the Mozarteum”; if we denied the last sentence (and other similar sentences) a logical value (falsity, in particular), the respective generalization would not be falsified.

## 14.

Now, I would like to formulate some comments on Czeżowski’s semiotic definitions and theses.

(K1) According to Czeżowski, the word “is” in expressions like “Whale is mammal” is synonymous to the expression “is included in” (or “is subset of” etc.), whereas the same word in expressions like “Gartuch is a mountain” is synonymous to the expression “belongs to” (or “is

element of” etc.). It is, however, a kind of simplification. One must say neither that whale is ‘included in’ mammal, nor that Gałuch ‘belongs to’ mountain (the right formulas sound: the set of whales is included in the set of mammals, and Gałuch belongs to the set of mountains, respectively).

(K2) I am afraid that if the theses (T2)-(T4) were accepted, the classification of sentences as either real or nominal would be superfluous.

(K3) Czeżowski’s declaration for the semantic definition of truth. He formulates it — with reference to empirical theories — in such a loose way:

A given sentence is true, iff it is fulfilled by every sequence of values (of variables), representing — on the ground of a respective theory — various observational conditions.

But this sentence is fulfilled, only if it becomes true for every sequence, or — more explicitly speaking — true in every circumstances. We have, finally, the result that a certain sentence is true<sub>1</sub>, iff it is true<sub>2</sub> in every circumstances. If “truth<sub>2</sub>” differs from “truth<sub>1</sub>”, the question of the meaning of “truth<sub>2</sub>” arrises; if both the words are synonymous, the danger of *circulus in definiendo* appears.

(K4) All horses are *designata* of the common name “horse”; its denotation is identical with the set of horses. The sultan Soliman is the only *designatum* of the proper name “Soliman”. The question of the denotation of this last name (and denotations of proper names, in general) is not answered by Czeżowski.

(K5) Let us assume that the thesis of duality (T1) has no essential delimitations. If so, one could regard the conjunction of all (semantic?) consequences of a given sentence as a logical connotation of this sentence. Analogically, the disjunction of all (semantic?) reasons of a given sentence can be regarded as its logical denotation. Such a solution provoke some questions, e.g.: are connotations and denotations, defined in such a way, equal, as it takes place in the case of logical connotations and logical denotations of names, according to the thesis (T6)?

(K6) Czeżowski introduced a “logical’ approach to the connotation and denotation of names in order not to leave the sphere of “lingual entities” in the process of defining semantic relations. However, reaching this goal seems to be an illusion, because logical multiplication as well as logical addition are made *de facto* over objectivistic denotations, i.e. *over classes of designata* of respective names. The matter would stand better in the case of sentences: conjunctions and disjunctions are operations carried into effect “immediately” over them.

(K7) In Czeżowski's conception, there is a parallelism between the results of logical and psychological analysis, e.g. between indefinite names and sentences in the area of logic, and general presentations and presented judgements (vel presentations of judgements) in the area of psychology, respectively, variables in propositional functions being the analogue of a basic presentation. However, neither general presentations, nor presentations of judgements, are objectless. On the contrary, both of them have "definite" objects: "general" objects and judgements, respectively. Thus, we cannot also regard variables expressions without "definite" contents, because they express the very respective presentations. Propositional functions finally approach to suppositions, in this respect.

(K8) The status of *designata* of indefinite expressions, i.e. indefinite names (scil. nominal variables) seems not to be clear in Czeżowski. On the one hand, one should not say that variables — like empty names — have no *designata*. One should not say also that variables — like (some of) common names — have many *designata*. On the other hand, Czeżowski identifies "extensions" (i.e. scopes) of variables with sets of their values, i.e. some definite names, which can be substituted in place of these variables; we use here the word "extension" in a sense quite different from the sense, when "extension" refers to the set of *designata* of a given expression.

Another matter is, that Czeżowski contrasts logical variables in question with *objective* variables (e.g. mathematical variables). A certain object *O* corresponds to such an objective variable *x*, and this *x* is the name of *O* like the word "Rome" is the name of the Eternal City. Thus an objective variable is a name, namely indicating (scil. symbolizing) a certain (changing) object — i.e. its range — as its only *designatum*: it is the set of its objective values, i.e. some objects given together with their positions. The last ones are interpreted as juxtaposition of objective values and some other objects (scil. *designata* of determinations) on the ground of a certain relation; if values of the variable *y* are integral numbers, then the value of the variable *y* juxtaposed with the *designatum* of the determination "7" on the ground of the relation of being-greater-of 3, is the number 8.

## 15.

Concluding, I would like to express a few historical remarks.

Czeżowski's semiotic views were crystallized and formulated at the beginning of our century. They were closely connected with the main ideas transmigrating inside the European philosophy of this period.

I have indicated Czeżowski's ideological parentage with Brentano. Now, I shall add some other parentages.

The solution of the Russellian paradox of classes, proposed by Czeżowski, is a certain modification of solutions given by Poincaré and Zermelo. In generalizing the classification of relations among categorical sentences (and among non-empty names) Czeżowski recurs to Gergonne, Schröder, and Sleszyński. The conjunctive interpretation of individual sentences bases on Reichenbach's proposal. Regarding the distinction between acts and products, a foundation for delimiting psychology and logic, invokes Twardowski's conception; Czeżowski accepts here Twardowskian psychological analysis of thinking (with his idiogenic conception of judgements, in particular), as well as his interpretation of indexical expressions.<sup>6</sup> The analysis of *quasi*-sentences is made in terms similar to the Ingardenian conceptual apparatus.<sup>7</sup> In recognizing truth as a common *designatum* of true sentences, Czeżowski goes, of course, after Frege. The starting point of Czeżowski's views on truth in empirical sciences is the semantic definition in the version given by Tarski. Czeżowski's position in the matter of sentences-without-content is his reaction to Zaremba's views on the very subject. Finally, the analysis of autoreflexive sentences take advantage of some of Bolzano's observations.

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## Notes:

- 1 Cf. e.g. Woleński (1988).
- 2 It is a characteristic fact that he was the only member of the School using exclusively the bracketless logical notation (except for its discoverer, Łukasiewicz).
- 3 The second purpose is to supply one of main gaps in the picture of Polish semiotics, presented in my (1987). Cf. also the penultimate note to this text and my (1984).
- 4 Here and below I refer to Mincer (1981). Numbers after dots indicate the numbers of positions in this bibliography; numbers before dots indicate years of presenting or/and publishing works.
- 5 This is Czeżowski's initial standpoint (1946, 43), essentially modified in the posterior works (cf. below).
- 6 In the matter of Twardowski's semiotic views cf. my (1992) & (1993).
- 7 Cf. my (1989).