THREE CONCEPTS OF DEFINITION

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1) Definitions had been discussed before the concept of formalized languages and formalized systems was born. Definitions were being written about in school textbooks of logic, and the so-called real definitions and nominal definitions were distinguished. Real definitions can be definitions of any objects, whereas nominal definitions always are definitions of some words or expressions. The grammatical structure of the terms « real definition » and « nominal definition » suggests that the corresponding concepts are specifications of some general concept of definition, that is, that the intension of the concepts « real definition » and « nominal definition » is obtained from the intension of the *genus* « definition » by enriching it with properly selected *differentiae specificae*. If we, however, more closely examine the meaning of the terms « real definition » and « nominal definition », we must come to the conclusion that it is not so, that the intension of the concepts corresponding to those terms is not a specification of the intension of some more general concept, and this means in turn that there is no general concept of definition of which the concepts of real definition and nominal definition would be specifications.

To substantiate the above statement let us explain the meaning of the terms « real definition » and « nominal definition ». Real definition of an object is an univocal characterization of that object, i.e., a statement about that object which states about it what in conformity with truth can be stated about one and only one object. The sentence « Warsaw is the city which in 1958 A.D. is the capital of Poland » is an univocal characterization, and consequently a real definition, of Warsaw. The sentence « Common salt is the body having the chemical composition NaCl » is an univocal characterization of common salt, i.e., of a certain genus or class of bodies. The term « real definition » needs to be related only to the object being defined, there is no need to relate it to language. It is not so with the term « nominal definition », since the latter needs to be related not only to the word or expression being defined, but also to a certain language. In other words, no statement is simply a nominal definition of a word; it can be such a definition only for a certain language. Because : to be a nominal definition of the word W for the language L means to be an instrument (a means) which allows to translate any sentence built of words belonging to the language L and of the word W, which does not belong to that language L, into a sentence consisting exclusively of words belonging to the language L, and which does not contain the word W.

It is sufficient to compare these two definitions, explaining the intensions of the concepts « real definition » and « nominal definition », to realize that

these intensions are not derived from the intension of a more general concept of « definition » by enriching it with distinct specific differences.

Hence it follows that the word « definition » which appears in the terms « real definition » and « nominal definition » has in isolation no meaning at all. If we use the word « definition » without any adjective, we use it elliptically and ambiguously, meaning either real definitions or nominal definitions or some other thing.

Apart from these two meanings of the elliptic term « definition » there is also a third. When, e.g., Poincaré calls the axioms of geometry « disguised definitions » he means neither that they are univocal characterizations of some objects, i.e., that they are real definitions, nor that they serve as a means of translating certain terms, i.e., that they are nominal definitions. He means that they are sentences whose truth is guaranteed by certain terminological conventions, that is, by certain decisions as to what objects are to be symbolized by certain terms. This is the third concept associated with the term « definition ». To distinguish it from the concepts of real definition and nominal definition we may call it « arbitrary definition ». A sentence is called arbitrary definition or a postulate of a certain language, if a terminological convention *is binding* in that language, which lays down that some terms appearing in that sentence are to symbolize such objects which, taken as denotation of those terms, satisfy the sentence in question. It would be difficult to discover in the intension of that concept a common core which, when enriched with corresponding specific differences, would yield the intensions of the concepts of real definition, nominal definition, and arbitrary definition or postulate.

Thus, there is no single concept of definition on the genus level, subdivided into three kinds of definition on the species level, but there are at least three different concepts forming the connotation of three terms which from the grammatical point of view consist of the word « definition » and a corresponding adjectival apposition. These three different concepts of definition are not mutually exclusive; they intersect, and their extensions include common and non-common elements. The theory of formalized languages knows all the three concepts of definition as specified above; it knows the concept of a sentence which is an univocal characterization of a certain object, it also knows the concept of nominal definition and of arbitrary definition, that is of postulate. But if the term « definition » is used in the theory of formalized languages, it is always understood as « nominal definition ». And if, in that theory, nominal definitions are referred to, then only such nominal definitions are meant which either are arbitrary definitions, i.e., postulates based on terminological conventions, or are themselves terminological conventions of the syntactical type, i.e., conventions laying down that some expressions can replace. or be replaced by, some other expressions· Thus the theory of formalized languages in dealing with definition does not

exhaust the problems connected with the three concepts of definition, and therefore cannot replace a general theory of definition.

The purpose of this paper is to outline such a general theory of definition. It will consequently deal, one by one, with all the three concepts of definition enumerated above. It will also endeavour, within the limits of each concept, to elucidate some subordinated concepts and to prevent quite common confusions. Certain important problems connected with the three concepts will also be pointed to.

2) The concept of real definition of an object, i.e., the concept of its univocal charaterization, will be discussed first. Historically, this is the oldest concept of definition, and the very term « definition », as well as its Greek equivalent « ὁρισμός » was etymologically adapted to this concept. One can formulate real definitions of objects of all types and orders: one can formulate univocal characterizations of singular objects. of classes, of properties if they are distinguished from classes, of relations, etc. One can also formulate real definitions of words, since these too are some objects which can be characterized in an univocal way. The Aristotelian theory of definition denied the possibility of formulating real definitions of singular objects, but Aristotle understood real definitions in a narrower way than we do; for him not every univocal characterization of an object was a definition. We shall revert tothat problem later.

The focal problem usually raised in connection with real definitions is that of criterion of a good real definition. The terms « good » and « bad » are not at all univocal. In logic, they are most often understood so that a real definition of an object is called good if it is such a definition in fact, and not only in appearance. Similarly in this interpretation, a classification or a proof is called good if it is a classification or a proof in fact, and not only in appearance. In this interpretation of the terms « good » and « bad », a real definition of an object will be called bad if it was intended to be an univocal characterization of that object, but in fact is not such a characterization.

Another interpretation of the terms « good » and « bad », which can be met with in logic in relation to logical constructs having the form of a sentence, is such that they are called « good » if they are true sentences, and « bad », if they are false sentences. In this interpretation of the terms « good » and « bad », every such sentence which states about an object O something which can truly be stated about one, and only one, object, namely the object O, will be called a good real definition of the object O, and every sentence which about an object O states something which can truly be stated about one, and only one, object, but which cannot be truly stated about the object O, will be called a bad real definition. In this interpretation of the terms « good » and « bad », a good real definition of an object O is its adequate definition, and a bad definition is a definition which is too narrow, too broad, etc.

There is, finally, a third interpretation of the terms « good » and « bad »,

which is often used in methodology; it is the relative interpretation of good or bad for some purpose. In this interpretation something is called « good » if it is instrumental in attaining this purpose and it is called « bad » if it does not serve that purpose. In this interpretation, the adjectives « good » and « bad » are elliptic abbreviations of relative terms «good for the purpose P» and «bad for the purpose P», respectively. If often happens that such a relativization with respect to purpose is passed over with silence, or even is not realized by those who use the adjectives « good » and « bad », and must only be guessed from circumstances.

The purposes to which the value of a given real definition is related, can vary considerably. For instance, the criterion may be, whether a given real definition serves the diagnostic purpose, i.e., whether its characterization of the object concerned makes it possible to recognize whether in a definite case we have to do with such an object, or not.

In other cases something else is required from a real definition: the characterization which it formulates should be such as to make it possible on the basis of some theory to deduce from it, in a purely logical way other properties of the object being defined, and if possible all its properties belonging to it from some point of view which is of interest for us. Such a requirement means that real definitions should be so to say syntheses of our knowledge of the objects they characterize. This was satisfied, for instance, in the 19th century by the definition of light as electromagnetic wave, because, within the Maxwell theory of electromagnetism, it made it possible to deduce all the then known properties of light. In a similar way, definitions of the various chemical elements, which characterize them by describing the structure of their atoms, are formulated so that on the strength of appropriate physical theories we can from these characterizations deduce all other properties of those elements, e.g., their specific weight, chemical affinity, valency, etc.

Real definitions which in the sense outlined above are syntheses of our knowledge of the objects being defined, can be said to formulate the essence of those objects, if the term « essence » be understood properly.

The above interpretation of the requirement that a good real definition should formulate the essence of the object being defined is not the only interpretation of that requirement, which has been put forward since Aristotle's times. Other interpretations of that requirement are either so vague that they evade exact formulation, or else require from real definitions what should rather be required from nominal definitions. We shall revert to this problem in connection with nominal definitions.

A real definition of an object is to give its univocal characterization. Such a characterization can be contained in sentences having various forms structures, and that is why real definitions cannot be characterized by a description of their structure. Aristotle's requirement that a real definition of a species should give its *genus* and *differentia specifica* was justified by an

interpretation of the concept of real definition that was different from ours as well as by the assumptions of Aristotelian metaphysics. Real definitions understood as univocal characterizations can in some cases have that form which Aristotle considered to be the only correct, but in other cases can have quite different forms; they can have the form of a definition by abstraction, the form of recursive definition, or the form of a system of certain sentences which, when taken jointly, suffice to give an univocal characterization of the object being defined definition by postulates. Such a system of postulates can, as is well known, give a sufficient characterization not only of one, but of several objects. As an example we can give a consistent system of n linear equations in n unknowns. In view of such cases it would be possible to extend the concept of real definition so as to cover not only real definitions of one object, but also real definitions of several objects, and not only single sentences being univocal characterizations of one object, but also systems of sentences being univocal characterizations of several objects.

3) So much for the real definitions. As to the nominal definitions, let us suppose that there is a certain language in which the word W does not appear. The theses T and the rules of inference R are adopted in that language. To express this we mark the language in question $L_{T,R}$. Let it be further assumed that we have enriched the sentences asserted in the language $L_{T,R}$ with a new sentence D_W, which includes the word W, or the rules R with a new rule R_W which refers to the term W. Now, if the sentence D_W or the rule R_W makes it possible, together with the theses T and the rules R of the language $L_{T,R}$ to translate every sentence consisting of words belonging to the language $L_{T,R}$ and the word W in a sentence consisting only of words of the language $L_{T,R}$, then such a sentence D_W or such a rule R_W is called a nominal definition of the word W *for* the language $L_{T,R}$. In other words a nominal definition of the word W *for* the language $L_{T,R}$ which does not contain that word W, is such a sentence or such a rule of inference which, when joined to the sentence saccepted as true and to the adopted rules of the language $L_{T,R}$, makes it possible to translate every sentence built of words belonging to the language $L_{T,R}$ and the word W into an other sentence, built only of words belonging to the language $L_{T,R}$ and not containing the word W.

A nominal definition of the word W formulated as a sentence including the word being defined itself and not its name is called a nominal definition formulated in the object language. A nominal definition of the word W formulated as a rule of inference is called a nominal definition formulated in the metalanguage, because that rule, concerving the use of the defined word W, contains its name and not this word itself. For instance, the definition: « the square is the rectangle having four equal sides » is formulated in an object language since it includes the very word being defined, and not its name. The definition: « whenever we accept as true any sentence containing the word ‚square', we may also accept as true a sentence obtained from the former

one by substituting in it for the word ‚square' the expression ‚a rectangle having four equal sides' » is formulated in a metalanguage, since it includes not the word being defined but its name.

A general form of object-language nominal definitions cannot be given, since it depends on the vocabulary of the language $L_{T,R}$, on its sentences accepted as true, and on its adopted rules of inference. In such languages $L_{T,R}$ which include the symbol of identity, to which the usual logical theses and rules of inference apply, the simplest form of the object-language nominal definition of the word W for the language $L_{T,R}$ is an identity whose one side consists of that word W alone and the other of an expression built of words belonging to the language $L_{T,R}$ to which — as supposed — the word W does not belong. These are so-called explicit definitions. In such languages we also meet contextdefinitions naving the form of an identity of which the one side is an expression built of the word being defined as the only constant and of variables, and the other side is an expression built only of the same variables and of constants, all of them belonging to the language $L_{T,R}$.

As for the metalanguage nominal definitions, certain general and always applicable forms can, however, be given. These are the two forms of rules laying down the so-called abbreviations. One of them is the rule of explicit abbreviations, which allows, whenever a sentence including the word W being defined is accepted as true, to replace that word by an expression built exclusively of words belonging to the language $L_{T,R}$. The other is the rule of context abbreviations, which allows, whenever a certain sentence including the word being defined in a certain context is accepted as true, to accept as true a sentence obtained from the former by the substitution for that context of some other context which consists exclusively of words belonging to the language $L_{T,R}$. These abbreviation rules are usually symbolized briefly as „$a = b$" $\underset{\text{df}}{}$, e.g.,

„$1 = \text{seq O}$" $\underset{\text{df}}{}$, „$pvq = \sim p \to q$" $\underset{\text{df}}{}$ etc.

Our definition of nominal definition includes the term « to translate » which requires explanations, the more so as it is ambiguous, since we can speak of extensional translation and of intensional translation. To translate extensionally, on the basis of the theses T and of the rules of inference R, the sentence A into the sentence B means the same as to deduce the sentence B from the sentence A and the theses T following the rules R, and vice versa, to deduce the sentence A from the sentence B and the theses T following the rules R. In other words, to say that the sentence A is, on the basis of the theses T and the rules R, an extensional translation of the sentence B is the same as to say that the sentence A is inferentially equivalent to the sentence B on the basis of the theses T and the rules R.

It is more difficult to explain that it means to translate intensionally the sentence A into the sentence B on the basis of the theses T and rules R.

To do so we must among the rules of inference distinguish the group of rules of inference which are proper to the language L, or briefly, the rules of inference of that language. We call so those rules of inference which we may not violate if we want to use the language in question. More exactly: a given rule of inference is called a rule of inference proper to the language L, if the fact that someone accepts the premises P but rejects the conclusion C allowed by that rule to be inferred from P, proves that he does not speak the language L. It seems, e.g., that the rule of inference, which allows, on the basis of the premise « no A is a B», to accept the sentence «no B is an A», is a rule of inference proper to our language, since the fact that someone would accept the sentence «no A is a B» and yet reject the corresponding sentence « no B is an A» would prove that he does not understand the words which he uses in conformity with the rules of our language, and consequently, that he pronounces sentences belonging to the set of sentences of that language, but he does not speak that language.

Now by resorting to the notion of a rule of inference proper to a given language, i.e., such a rule which may not be violated if one wants to speak that language, we can define intensional translation: the sentence A is in the language $L_{T,R}$ an intensional translation of the sentence B if the sentence A can be deduced from the sentence B and vice versa, the sentence B can be deduced from the sentence A, with the use of only those of the rules R which, firstly, are rules introducing abbreviations and, secondly, are rules proper to the language $L_{T,R}$. In other words: the sentence A is, in the language $L_{T,R}$, an intensional translation of the sentence B, if one of the two sentences can be transformed into the other by means of expanding abbreviations or abbreviating expanded expressions in conformity with such rules which may not be violated, if one wants to speak the language $L_{T,R}$.

We have above distinguished object-language nominal definitions and metalanguage nominal definitions of the word W. Further analysis will be because of scarcity of time confined to object-language definitions only but may be expanded partly also to metalanguage definitions.

A nominal definition of the word W for the language L is a sentence which includes the word W being defined, which does not belong to the language L. Consequently, such a definition is not a sentence of that language and is, therefore, in that language neither true nor false. But such a nominal definition of the language L is a sentence of a certain more comprehensive language $L + W$ which includes the word W and, possibly, other words not belonging to the language L, which is however, part of the language $L + W$. In that more comprehensive comprehensive language $L + W$ our definition is a sentence and as such is either true or false. Let the language of the pupils on a certain level of its evolution not include the word «micron» which, however, belongs to the more comprehensive language of the teacher. The sentence «a micron is a thousandth part of a millimetre » can be considered a nominal definition

of the word « micron » *for* the pupils language, It is not a sentence of the pupils language, and so it is neither true nor false in that language. But the same definition ia a sentence *in* the teacher's language, and a true sentence in that language. The sentence « a micron is a hundredth part of a millimetre » also is a definition of the word « micron » *for* the pupils language, but is not a sentence in that language; it is, however, a sentence in the more comprehensive language of the teacher, and a sentence which is false in that language.

If a sentence of the language *L*, containing the word *W*, is an object-language nominal definition of the word *W* in the language *L* which is part of the language *L*, we call it a possible nominal definition of the word *W in* the language *L*. The sentence « a micron is a thousandth part of a millimetre », like the sentence «a micron is a hundredth part of a millimetre », is *in* the teacher's language a possible nominal definition of the word « micron ». Possible nominal definitions in a language are normal sentences of that language and as such can be true or false. Like all sentences, they require a proof before being accepted as true. Such proofs can be of the various kinds: they can be obtained by deduction from some already proved premises, they can be obtained by induction from perceptional sentences, but they can also find their proof in the so-called axiomatic rules of the given language. Axiomatic rules of a given language are such rules which allow unconditionally to accept as true certain definite sentences or sentences having a certain definite form, and at the same time forbid to reject them under the penalty of violating the principles of the language. It seems that, e.g., one of such axiomatic rules of the English language is the rule which allows to accept as true every sentence of the type « every A is an A» and forbids, under the penalty of violating the principles of that language, to reject any sentence of that type. The sentence « every square is a rectangle » also seems to be dictated by a corresponding axiomatic rule.

Axiomatic rules can be binding in a given language either on the strength of an explicit terminological convention or on the strength of a linguistic usage. The sentence «a centimetre is a hundredth part of a metre» is dictated by the axiomatic rule which owes its binding force in the language to the decision to denote with the word « centimetre » the length that satisfies the above sentence — a decision with which all those who speak the English language must comply. The sentence « an uncle is a mother's brother» also is dictated by an axiomatic rule which forbids to reject it under the penalty of violating the peculiarity of the English language, but it owes its binding force not to any explicit decision, but to the linguistic usage.

Now possible nominal definitions of the word *W in* the language *L*, dictated by an axiomatic rule which owes its binding force to an explicit terminological convention are called synthetic nominal definitions of that word *in* that language. All other possible nominal definitions in a given language are called analytic definitions of that language. The above dichotomic classi-

fication of the possible nominal definitions of a certain term *in* some language divides them into those which are dictated by an axiomatic rule of that language, based on a corresponding terminological convention. and into all the remaining ones. The latter category also includes those which are dictated by some axiomatic rule of the language concerned, i.e., such which cannot be rejected without violating the peculiarity of that language, but by such an axiomatic rule which does not owe its binding force to any terminological convention. E.g., the definition « an uncle is a mother's brother » is an analytic definitiou of the word « uncle » in the English language, though it is a sentence based on an axiomatic rule of that language, because that rule, however, has no sanction in any terminological convention, but is based on the linguistic usage.

4) Synthetic nominal definitions of a word fall under the third type of definitions, as specified above, i.e., that of arbitrary definitions or postulates. The sentence «F (a)» of the language L is a postulate in that language, if a terminological convention, binding in that language, lays down that the term «*a*» is to symbolize an object satisfying the sentential formula « F x». (This definition of postulate can be generalized so as to cover a larger number of terms). E.g., the sentence «a centimetre is a hundredth part of a metre» is a postulate in our language because a convention, binding in that language, lays down that the word «centimetre» is to symbolize the length that satisfies the sentential formula «x is a hundredth part of a metre». The example given above is not only a postulate, but also is a possible nominal definition of the word «centimetre» in our language. It is further a real definition of the length of one centimetre, since it gives a univocal characterization of that length. Postulates can, however, be quoted which are neither possible nominal definitions of any word in any language, since they do not allow to eliminate that word from the sentences of that languages, nor real definitions of anything, since they are not univocal characterizations of any object.

In connection with the notion of postulate, the most interesting problem is, whether the postulates must always be true in the language in which the corresponding convention is binding. This question, with which I dealt in greater detail in one of my lectures delivered in Belgium in February this year, is usually answered rather in the affirmative. It is often said that a sentence is *true as a definition*, or that a sentence is *true by definition*. In these contexts the word « definition» is taken in its third meaning pointed to in this paper, and so it is taken as isosemic with the word « postulate » understood so as has been defined above.

The proof of the assertion that every postulate must be a true sentence can be outlined so: if the sentence «F (a)» is a postulate in the language L, this means that in building that language we have decided to use the term «*a*» as denoting such an object which satisfies the formula «F (x)». But if we have decided so, then it is so, because in building the language in question we can make its terms the names of such objects as we like. Consequently, if «F (a)» is

a postulate in the language L, then the term «a» satisfies the formula «F (x)», which means that «F (a)» is a true sentence.

In this reasoning we have to question the premise that if in building a language we decide that the term «*a*» is to denote the object satisfying the condition «$F(x)$», then that term will denote such an object. That term will not, in spite of our decision, denote the object satisfying the condition in question if such an object does not exist at all. For in building a language we can choose to our liking the objects that are to be the denotation of any term, but we can choose them only among those objects which *do* exist, and we cannot create such objects on the strength of our convention.

Hence it follows that a terminological convention alone is not sufficient to warrant the truth of a postulate; it is further needed the proof of existence of objects satisfying the condition imposed by that convention on the denotation of the term in question. Consequently, the demonstration that certain assertions are true as definitions or true by definition is not a sufficient demonstration of their truth. A sentence is true as a definition in the third of the meanings specified above i.e., as a postulate only if the condition of existence is satisfied.

This is realized by the mathematicians who before accepting a sentence as a definition require the proof of existence and the proof of uniqueness, The reason for which the proof of existence is required, has been explained above. The reason for which the proof of uniqueness is required is, that the mathematicians, when speaking of definitions, mean what we have called synthetic definitions of a word. And synthetic definitions are such postulates which at the same time are nominal definitions of the word being defined, i.e., which can be used to translate sentences containing the word in question into sentences that are free from that word. And it can be demonstrated that if a sentence is to serve as a means of translation, always allowing to eliminate the term being defined from the sentences of the language, it must be a univocal characterization of its denotation, i.e., must be its real definition.

5) This last remark, outlined here very briefly and without proof, leads to the problem, what is the extensional relationship between the three concepts of definition discussed in this paper, namely the concept of a real definition of an object, of a nominal definition of a word, and of an arbitrary definition or a postulate.

This problem will not be investigated here in a systematic way. This would be a boring and laborious task. So we confine ourselves to a number of remarks loosely connected with the problem in question, We must state first that there can be sentences which fall under all the three categories of the concept of definition as explained in this paper. E.g., the sentence «a micron is a thousandth part of a millimetre» is, firstly, a real definition of the length of one micron, since it supplies its univocal characteristics. Secondly, it is an object-language nominal definition of the word «micron» in the English language, since it allows to translate any English language sentence containing

the word «micron» into a sentence belonging to that part of that language which does not include the word «micron». Thirdly, this is also, for the English language, a definition in the third sense, that is a postulate of the language concerned, because the terminological convention laying down that the word «micron» should be used as a name of a length satisfying the condition: «x is a thousandth part of a millimetre» is binding in the English language. This example-and their number could easily be multiplied — shows that the three notions of definition which we have devised are on no account mutually exclusive, but have some elements in common.

It is rather easy to answer the question, whether each of the three notions has elements that are proper only to itself; difficulties arise in one point only. There are, of course, nominal definitions that are neither real definitions nor postulates, for instance, the metalanguage nominal definitions, laying down some abbreviations. There also are postulates which are neither real nor nominal definitions; those are postulates which do not give a univocal characterization of the object they denote.

Are there, however, real definitions, i.e., univocal characterizations of a certain object, which are not nominal definitions of the name of that object in the language in which that definition is formulated? It is not possible to answer this question generally. For the fact whether a given sentence is a nominal definition of a certain word in, or for, a certain language depends not only on that sentence as such, but also on the sentences accepted as true in the language L and on the accepted rules of inferance. Depending on what sentences are accepted in the language L and on what rules of inference are applied in that language, the same sentence, taken jointly with those other sentences and rules of inference, can, or cannot, suffice as a means of translation eliminating the word being defined. As far as those languages are concerned, in which the usual laws and rules of logic are accepted, it can be proved that every sentence which is a univocal characterization of an object O that is its real definition suffice jointly with the accepted laws and rules of logic as a means of those translations which allow to regard that real definition of the object O as a nominal definition of the name of that object. Hence, it follows that the nominal definitions of certain terms in the language L include all the real definitions which can be formulated in that language.

There are people who see red when they encounter anything that savours of Platonian idealism. And the notion of real definition does savour of Platonian idealism. If one calls the sentence «the square is the rectangle having four equal sides» a real definition of the square then one refers to a univocal characterization of the genus square, i.e., of a certain universale. Consequently, the opponents of Platonism avoid speaking of real definitions of objects and endeavour to replace all statements about real definitions of certain objects by statements about object-language nominal definitions of the names of those objects. They will, e.g., protest against the formulation that when we

try to answer the question, «what is justice?» we are looking for a real definition of justice, or that we are trying to give a univocal characterization of justice. The opponents of Platonism will say that in seeking an answer to the question, «what is justice?», we are trying to give a true nominal definition of the word «justice» in the language in which that question is formulated, and which already includes the word «justice». They will be right in so far as such an answer to that question will be a nominal definition of the word «justice» in that language. They will, however, be wrong in so far as those who ask the question, «what is justice?», are concerned not with the word «justice», but with that what that word denotes. The meaning of that remark can be formulated more precisely as follows. The sentence «John asks what is justice» is an intensional sentence, which can be translated into another intensional sentence «John is looking for a real definition of justice». But the opponents of Platonian idealism translate it into the intensional sentence «John is looking for an object-language nominal definition of the word ‚justice' in English». Now, although the terms «a real definition of justice» and «an object-language nominal definition of the word ‚justice' in English» have the same extension, yet if the former is replaced by the latter in an intensional sentence that sentence can be transformed from a true one into a false one. And this just happens — as it seems.

That is the reason why, I think, the general theory of definition cannot dispense with real definitions and confine itself to nominal definitions alone.

With this I conclude my remarks on the three types of definitions and apologize to my listeners for the lengthiness of my paper.

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