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Author(s)	Chiba, Kei
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Aristotle's Theory of Definition in *Posterior Analytics* B. 10

Kei CHIBA

Abstract: Aristotle has a project to create a positive relationship between 'definition' which is claimed to be the scientific method among his colleagues in the Academy and his new method called 'demonstration' in his new theory of definition in the *Posterior Analytics*. He had to solve various difficulties concerning with the relationship between the two methods. I argue that Aristotle's theory of definition in B. 10 presupposes his discussion on definition in the *Topics*. He has there distinguished 'the defining-phrase (ὁρος)' by means of which one can gain a successful definitional practice from 'the definition (ὁρισμός)' (I. 5, 101b37-102a5). On the basis of the defining-phrase which signifies the what a thing was to be, the thing becomes possible to be defined. Although none of Aristotelian scholars has distinguished one from the other, I shall argue that it is crucial to distinguish them for a correct understanding of the chapter. I shall offer alternative solutions from this perspective for the difficulties raised on this chapter by scholars. I argue that Aristotle makes use of the *Topics* type signifying account to endorse three types of definition of what it is. Also some difficulties involved in the *Topics* type of signifying account are solved by establishing the existence of a relevant thing through demonstration. Thus all of three definitions in his new theory of definition are of the what it is of a thing which exists. In this sense, Aristotle finds a way to establish the demonstration of what it is which was previously denied in B. 3-7.

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1. Introduction

Aristotle develops a new theory of definition based on demonstration in *Posterior Analytics* B. 10. He raised various difficulties on the relation between his new scientific method as demonstration and the traditional method as definition in terms of their functions. At the end of the aporematic chapters B. 3-7, Aristotle summarized his discussion on this relation as follows; 'From these considerations it appears that definition and syllogism are not the same, and that there cannot be syllogism and definition of the same thing; and further that definition neither demonstrates nor proves anything, and that it is not possible to know what a thing is either by a definition or by a demonstration' (92b35-38). I shall call this irrelevancy or even antagonistic claim between them 'drag down relation'. In B. 8-10, however, Aristotle develops a positive

relation between them as a scientific theory by overcoming these difficulties raised in the aporematic chapters.

After having reminded his colleague Xenocrates' attempt of proving what it is, he assesses it and declares a new start that 'Now it was said before that this method may not be a demonstration but a formal syllogism of the what it is. Let us talk by what method it is possible, starting again from the beginning' (93a15f). At the end of B. 10, he summarized his attempt of combining both the definition, i. e., the account of what a thing is and the demonstration, i. e., the account of why a thing exists as follows;

So it is evident from what has been said, (i) both by what method there is a demonstration of what a thing is, and by what there is not; and (ii) in what cases there is and in what cases there is not; and again (iii) how many ways something is called a definition, and (iv) by what method it proves what a thing is and by what method it does not, and (v) in what cases it does and in what cases it does not; and again (vi) how it is related to demonstration and (vii) by what method it is possible for them to be of the same thing and by what it is not possible' (94a14–19).

In other words, these lists of achievement were the agenda which Aristotle has to solve in his new start, when he has faced with his colleagues' rival theories on the appropriate method of scientific inquiry into what it is. A corresponding question which he is concerned with (iii), for instance, is to make clear how many ways 'definition' or 'the what it is' is said. In this paper, I cannot argue all these issues but mainly (i), (iii), (vi) and (vii). In order to convince his colleagues, he has to be able to deal with their definitional practices in his new system. In fact, I shall claim that insofar as the wording 'τὸ τί ἐστὶ' ('the what it is' or 'the what a thing is') is concerned, he follows the traditional usage to make himself enable to show that his new proposal is compatible with the traditional ones. In other words, one of Aristotle's aims is to build the *Topics* type definition developed in the Academy into a scientific definition. But he specifies the content of the what it is from a new perspective by building the role of demonstration into his new theory of definition. His proposal is endorsed by a rather simple claim that any definitional practice is useful or efficacious after the existence of the relevant thing is proved by demonstration. On this condition, he establishes the appropriate process of inquiry which can maximize the functions of the two methods. I shall argue that as far as the theory of definition is concerned in B. 10, any definitional practice cannot be placed at the previous stage to demonstration.

I shall offer an interpretation of *Posterior Analytics* B. 10 from the view point of the distinction between 'defining-phrase (ὅρος)' and 'definition (ὁρισμός)' which have not been distinguished by Aristotelian scholars⁽¹⁾. This distinction is crucial for the correct understanding of the chapter in the sense that he introduces the notion of 'defining-phrase' as a building block of a successful definition. Because three defining-phrases which have different functions are mutually complementary in formulating a definition of the what it is. Thus this distinction between a definition and a defining-phrase endorses the claim that there are plural approaches for a definition, so that a new perspective can be built into the already established notion of the what it is. A new defining-phrase, I shall call this 'the *Analytics* type proving account' can solve some problems which have been left unsolved in the already established defining-phrase in the *Topics*, which I shall call 'the *Topics* type signifying account'. I shall suggest that the causal turn by

developing the theory of demonstration in the *Posterior Analytics* is a necessary next step for his ontology.

2. Signification of both a name and a defining-phrase

Aristotle begins the chapter B. 10 by reminding the *Topics* type signifying account and raises a difficulty involved in it by putting it in the process of inquiry established in B. 1–8. I shall offer my translation of the passage based on Bekker's text by assuming that we can understand the text as it stands without altering it which has been done by some scholars since D. Ross⁽²⁾. He says as follows;

Since a definition is said to be an account of the what it is, it is evident that the definition *will be* some account of what the name or an other name-like account signifies in such a case that the 'what' stands for 'what a triangle is', insofar as it [what is signified] is a triangle. (Ὅρισμός δ' ἐπειδὴ λέγεται εἶναι λόγος τοῦ τί ἐστι, φανερόν ὅτι ὁ μὲν τις ἔσται λόγος τοῦ τί σημαίνει τὸ ὄνομα ἢ λόγος ἕτερος ὀνοματώδης, οἷον τὸ τί σημαίνει τί ἐστι ἢ τρίγωνον). When we grasp that the very thing [triangle] exists, we seek why it exists. But it is difficult to assume [the account of what a name signifies] in this way [as the account of what it is] concerning things of which we do not know that it exists. The reason of difficulty was previously mentioned [in B. 7. 92b4–34, especially b20–25] that we do not know whether it exists or not except accidentally. But an account (λόγος) is one in two ways. Either the account is (a) one in virtue of a connective, like [a speech by many sentences (cf. 1457a23–30)] 'the *Iliad*', or the account is (b) one in virtue of revealing one thing of one thing non-accidentally. Then, one defining-phrase of a defining-phrase is the one stated, but another is an account which reveals why it exists. Thus, while the first defining-phrase signifies but does not prove, it is evident that the latter type *will be* like a demonstration of the what it is, differing from a demonstration in the arrangement of terms (93b29–94a2).

In this paragraph, Aristotle first confirms the basic understanding of definition so as to establish his new theory of definition. He introduces the Academicians' common understanding of definition which is expressed by a wording 'λέγεται' (being said). According to the Academicians' tradition, defining a thing is to state what it is. Identity fixing is the task of their definitional practice. In the Academy, it is said that 'In connection with definitions, we are greatly preoccupied with the issue of whether things are the same or different' (*Top.* I. 5. 102a7–9). The first sentence appears to be condensed so that it has invited many interpretations. This is because he has presupposed the theory of signification which is developed in such works as the *Topic*s and the *De Interpretatione*. Since D. Ross could not read it according to the manuscript, he even deleted four words 'the.. what it is insofar as (τὸ...τί ἐστι ἢ)' from the manuscript⁽³⁾. Although this passage requires in fact any reader to consult his arguments in the *Topics* on the definition of what it is, no scholar has seriously consulted it. Since anyone has not taken heed of the distinction between the defining-phrase and the definition, the chapter has not received a

proper understanding. I shall suggest that there is a parallel passage to this and argue that on the basis of this distinction, he put the *Topics* type signifying account into a new theory of definition in this chapter by overcoming some difficulties involved in that type of account.

To begin with, I shall offer an interpretation of the first sentence in B. 10. The reason why this sentence is condensed is, as I construe, that Aristotle presupposes his discussion of signifying account in *Topics* I. 5. First I shall display two parallel passages;

[A] a definition will be some account of what the name or an other name-like account signifies in such a case that the ‘what’ stands for ‘what a triangle is’, insofar as it [what is signified] is a triangle. (ὁ μὲν τις ἔσται λόγος τοῦ τί σημαίνει τὸ ὄνομα ἢ λόγος ἕτερος ὀνοματώδης, οἷον τὸ τί σημαίνει τί ἐστι ἢ τρίγωνον).⁽⁴⁾ ...Then, one defining-phrase of a defining-phrase is the one stated, but another is an account which reveals why it exists. Thus, while the first defining-phrase signifies but does not prove..’

[B] Defining-phrase is the account signifying the what it was to be (τὸ τί ἦν εἶναι). But it is rendered either by an account in place of a name or by an account in place of an account (ἢ λόγος ἀντ’ὀνόματος ἢ λόγος ἀντὶ λόγου). Because it is possible for something of things which are signified by an account to be defined (δυνατὸν γὰρ καὶ τῶν ὑπὸ λόγου τινὰ σημαινομένων ὀρίσασθαι). But people whose rendering consists of a name only in any way, clearly do not render the definition of the thing in question, because every definition is some account (λόγος τις)’ (101b38–102a5).

Since any linguistic act of signification either by a name or a phrase belongs to the act of identity fixing, he claims as an *evident* fact that some account of what the name (whatever it is) or an other name-like account signifies will be the account of what it is, that is, the account of identity. When a name or a phrase is uttered or written, it accompanies a signification, insofar as it conveys an understandable item which is expressed by a replaceable account of the name or phrase. What is signified by them is primarily expressed by its account. When Aristotle says ‘an other name-like account’ in ‘a name or an other name-like account’ in [A], he has the account in place of the name in mind. By ‘in place of’ in [B], he has explicitly stated the replacement. The replacement is easy, insofar as one puts a name on any account. Since one can put a name on any account, both can signify the same thing. But it is not enough for it to be called a definition. The replaced account must signify the what a thing which is signified by the name is. I construe that Aristotle adds a sentence ‘in such a case that the ‘what’ stands for ‘what a triangle is’, insofar as it [what is signified] is a triangle’ as a qualification of his general description of signifying role so as to make the signifying account to be a definition. The qualification ‘insofar as it is a triangle’ makes the signifying account as the account of what a triangle is, by successfully referring to the triangle which exists. The act of identity fixing by signification will become a definition, insofar as the what is signified by a name is an exiting and definable thing like a triangle.

It is not the case that any account will be a definition. Since an account must satisfy a further condition for its purpose to be a definition, he qualifies ‘an account’ by adding ‘some’ in both [A] and [B] (93b30, 102a5). Among the things signified by both a name and its account, ‘some thing (τινὰ)’ can be defined (δυνατὸν..ὀρίσασθαι). The further condition is that the ‘some thing’ must be a definable thing. This condition is endorsed respectively by ‘the what it

was to be' in [B] and by 'what a triangle is' in [A]. Since both 'the what it is' and 'the what it was to be' belong to an existing thing, it is necessary for any account to be a definition that any definable thing must exist. The phrase 'the what it is' in [A] is supposed to cover 'the what it was to be (the essence)' in [B] which is introduced as one of the four predicables. Because the four predicables are, as I argued elsewhere, the four possible answers to Socratic 'What is F?' question (See note (1)). Since 'the what it was to be' was introduced by Aristotle himself so as to specify what Socrates sought for in his inquiry of what F is, he did not employ his own concept in this context in which Academicians' theories of definition is meant to be superseded by his new theory.

In both passages [A] and [B], Aristotle introduces 'a defining-phrase' which has a role of signification to make a definition possible. Insofar as an account signifies the essence of a thing, that thing will be defined by a name and its replaced defining-phrase, both of which signify the same definable thing. I take it that Aristotle eventually introduces 'the defining-phrase' in place of 'an other name-like account' in [A]. This is because Aristotle has made clear that his explanatory example of a triangle can satisfy the condition of its signifying the what it is. The peculiar and unique word in the Corpus 'name-like' together with 'other' (ἕτερος ὀνοματώδης)⁽⁵⁾ suggests that this expression which qualifies an account conveys the replacement of a name by an other expression in terms of signification. I read the disjunctive ἢ 'or' as a substitution such that 'the name' whatever it is is replaced by *other* phrase. What are signified by them is the same thing is shown in his use of 'other' in 'other name-like account', which shows the contrast with the name mentioned.

In the *Topics*, as we saw in [B], the role of replacement and signifying essence are assigned to the defining-phrase. The sameness based on the signification of defining-phrase is expressed by 'the most strict and primary use of sameness' in the *Topics* I. 7. An account in replacement of a name signifies the one and same thing in the world such as triangle. Aristotle expresses there three types of sameness between a name and an account. While the first one which is concerned a defining-phrase is said to be strictly the same, the other two are either necessarily or accidentally same. He says that 'The most strict and primary way of the sameness is presented, when the sameness is rendered either by a name or by a defining-phrase, as when 'coat' is same as 'cloak' or 'two-footed land animal' as 'man' (103a26–28). In this primary case of sameness, a name can be replaced by its defining-phrase just as in the case of, say, 'man' and 'two-footed land animal'. Because they signify the same definable thing, that is, man. In the case of names such as 'coat' and 'cloak', what is signified by these is strictly the same too. Because their defining-phrases are the same one so that each of two synonymous names can be replaced by the same account (cf. 162b36f). 'Coat' and 'cloak' are identical because they signify the definable by the same account. This exchange between a name and its defining-phrase is justified, because these are supposed to signify strictly the same definable thing.

It is important to confirm that unless a name and a phrase signify the same definable thing, one cannot formulate its definition. I take it that since a definitional account presupposes the object so defined being one which exists, the same signification between a name and its defining-phrase must be endorsed by some method which establishes the existence of identified object. That is why he employs a future tense 'will be' at his introduction of the *Topics* type signifying

account as a definition in [A]. In [B] in the *Topics*, however, Aristotle did not discuss the condition how a defining-phrase signifies the essence, but he was concerned with distinguishing formally each of four predicables, one of which is the defining-phrase which is supposed to signify the essence. This is the difficulty which is left unsolved in the relevant passage in the *Topics*.

3. Difficulties involved in the signification account.

In our text of B. 10, Aristotle raises a difficulty which this *Topics* type signifying account is inevitably involved by putting it in the process of inquiry developed in B. 1–8.

When we grasp that the very thing [triangle] exists, we seek why it exists. But it is difficult to assume [what a name or account signifies] in this way [as the account of what it is] concerning things of which we do not know that it exists (χαλεπὸν δ' οὕτως ἐστὶ λαβεῖν ἃ μὴ ἴσμεν ὅτι ἔστιν). The reason of difficulty was previously mentioned [in B. 7. 92 b19–25] that we do not know whether it exists or not except accidentally.

First, Aristotle confirms the role of signifying account in general as the first stage of inquiry to initiate the inquiry into the existence and the why it exists. In this sense, I agree with David Charles' three stages view⁽⁶⁾. At this stage, by raising a difficulty, he shows his reluctance to admit this kind of signifying account as a definition. He says that 'But it is difficult to assume [what a name or account signifies] in this way [as the account of what it is] concerning things of which we do not know that it exists'. My interpretation is different from any other scholar. It is important to confirm the fact that Aristotle uses the same word 'assume' both in this passage and the relevant passage in B. 7. He says there that 'While Geometrician *assumed* what 'triangle' signifies, he proves that it exists. Then what will a definer prove except what a triangle is?' (92b15–17). I take it that the object of this verb in B. 10 must be 'what a name or an other name-like account signifies' as in this case in B. 7 rather than 'grasp' the existence (cf. 76a33,, 76b7, 71a12). We have to understand the adverb 'in this way' in connection with this verb 'assume'⁽⁷⁾. I do take that one assumes what a name or other name-like account signifies 'in this way' i. e., as the account of what a thing is.

On this passage, J. Barnes comments that 'When we know that there are triangles we ask why there are; but if we have only a nominal definition it is hard to attain the explanation, since we do not yet know if there are any triangles. 'In this way' means 'having only a nominal definition' ; the difficulty has been explained already at B. 8, 93a20 (where it was impossibility. If this interpretation is correct, then we have 'incidental' knowledge that there are Xs when we know (only) the nominal definition of X'⁽⁸⁾. I disagree with this interpretation in every respect. Here I shall claim three points of difference and shall develop alternative views.

The *Topics* type signifying account is not mere a nominal definition such as Philoponus and Barnes interpret⁽⁹⁾. Since it is an agreed claim among Academicians that some of accounts of what a name signifies are the accounts of what it is, this passage is not concerned with the nominal definition. It is concerned rather with the possible identity claim between them. Aristotle admits that both accounts will be identical in such cases whose existence has already been known. The reason of difficulty, then, lies not in the passage of B. 8 in which it is not said 'difficult' but 'impossible (ἀναγκαῖον μηδαμῶς)' (93a25) as Barnes admits but lies in the one of B. 7 which

I shall suggest in the next section. Concerning the accidental or incidental knowledge of existence too, it is not due to the characteristics involved in a nominal definition, but due to a room for asking a further reason i. e., 'the why' question between the thing so defined and the defining-phrase in B. 7. I shall make this point clear in what follows.

The difficulty consists in that while the *Topics* type account claims itself to be the definition of what it is, it does not properly establish the existence of the relevant object. Aristotle says in B. 7 that 'How will one prove what a thing is? For it is necessary for anyone who knows what a man or anything else is to know too that it exists. For of that which is not, no one knows what it is. One may know what the account or the name signifies when I say goat-stag, but it is impossible to know what a goat-stag is' (92b4–8). This is the proper passage to be quoted to show the difficulty with which the *Topics* type signifying account is entangled. We are indeed able to have an account of what a name or an account signifies for non-existent things such as goat-stag. Since this creature does not exist, no one can know what a goat-stag is. The *Topics* type signifying account cannot cope with 'things of which we do not know that it exists'. It has been made clear through the analysis of process of inquiry in B. 1–8, any knowledge of what a thing is presupposes the knowledge of the existence of the relevant thing whose existence is proved 'through demonstration' (92b12).

In B. 7, Aristotle criticizes 'the current manors of defining-phrases' in the Academy (92b19). By 'the current manors of defining-phrases' Aristotle has Xenocrates' demonstration of definition in B. 4, Plato's division in B. 5 and a hypothetical demonstration of definition in B. 6 in mind. According to these fashions of defining-phrase, 'the definers do not prove that a thing exists' (92b19f). Aristotle explains its reason by taking up an example of circle. Even supposing that there is something equidistant from the center, we can further ask (w1) why the object so defined exists and (w2) why it is a circle (92b21f). Concerning (w2), 'it might be able to assert of itself [something equidistant from the center] to be the defining-phrase of mountain-copper' (92b22). There are gaps between the object so defined and its defining-phrase, which necessarily invite the why question. These two difficulties claim that the relation between the object so defined, for instance, circle and the defining-phrase, for instance, something equidistant from the center is accidental one so that the existence of the latter does not endorse the existence of the circle nor the *per se* relation between them. This defining-phrase may be the one of mountain-copper rather than circle. Aristotle explains this accidental relation as follows; 'For the [Academicians'] defining-phrases do not in addition make clear either that (w1) it is possible for what is said to be, or that (w2) it is identical with that of which, they say, there are definitions, but it is always possible to ask 'Why?'" (92b23–25). Take the example of an eclipse, the account 'not being able to produce a shadow during full moon although nothing visible is between us' (93a37) affirms only the existence of eclipse but not its reason why. He says that 'it is plain that it is eclipsed, but not yet why. And we know that there is an eclipse but we do not know what it is' (93b2f). Mere observance of an effect of eclipse is not enough to establish the reason why it occurs. Even if there is a situation of not being able to produce a shadow during full moon although nothing visible is between us, we can ask (w1) why the eclipse exists and (w2) why it is connected with the object so defined in the definitional relationship.

I take it that the passage in B. 7 is referred back by the relevant sentence in B. 10 that 'The

reason of difficulty was previously mentioned [in B. 7. 92 b19–25] that we do not know whether it exists or not except accidentally'. Since the relevant passage in B. 8 which is consulted by many scholars is concerned with degrees of grasping a thing accidentally and a thing by having something of itself, it is better to refer back to our passage in B. 7⁽¹⁰⁾. Because the difficulty has to do with the signifying account called 'defining-phrase'. In this way, the room for asking the why questions is rendered as holding only the accidental knowledge of the existence of the object. The current manors of defining-phrases cannot establish the necessary connection between the object of definition and the current defining-phrases nor prove the existence of the relevant thing except accidentally, i. e. by chance or without holding its *per se* relation (cf. 1030a15).

Therefore, as the consequence of this discussion in B. 7, Aristotle is entitled to force a definer to choose an apparent alternative in a definitional practice. Because, unless we know properly the existence of the object of inquiry, we are not able to inquire into the what it is. Aristotle says that 'Thus if the definer proves either what a thing is or what a name signifies, if definition is no sense of the what it is, the definition must be an account signifying the same as a name. But this is absurd' (92b26–29). This offers a premise of the *reductio ad absurdum*. He raises a spurious alternative to choose between what a name signifies and what a thing is by separating the one from the other. In other words, he raises this on the assumption that the account of what a name signifies will never be taken as the account of what a thing is, although this assumption itself is not endorsed by anything but rather accidental. Given that a definer cannot deal with the what it is, a definer only proves what a name signifies. But this is absurd. The first reason (ab1) of this absurdity of separating the account of what a name signifies from the one of what it is consists in that there would be definition not only of non-substances but also of non-existents, since even non-existents can have a significant name. The second reason (ab2) consists in that all accounts would be definitions, since a name could be attached to any account. 'Therefore we would all converse defining-phrases and 'the *Illiad*' would be a definition' (92b30f). Any utterance, insofar as it can be labeled by a name, would be a definition, given that a definition is strictly the same as the account of what a name signifies. Then we would converse all the time a defining-phrase by means of which we formulate a definition by putting it a name. This is absurd. For instance, if we recite the all sentences or even the first sentence of 'the *Illiad*', we can put a name on it and thus we are reciting a defining-phrase. The sentence 'the *Illiad*' would be a definition' means that the name 'the *Illiad*' together with its content of the book, would constitute a definition.

This interpretation will gain a support from a passage in the *Metaphysics* in which Aristotle says that 'The what it was to be is of which the account is a definition. But it is not the case that there is a definition, if a name signifies the same thing as an account. For in that case all accounts would be defining-phrases. For there will be a name for any account [signifying] the same thing. Thus 'the *Illiad*' will be a definition too' (1030a6–9). In this passage, the name 'the *Illiad*' is regarded to be the identical with the content of that book in terms of the signification so that 'the *Illiad*' together with the content of the book is said to constitute a definition.

The third reason (ab3) for the absurdity of the alternative consists in that 'no demonstration would demonstrate that this name makes this clear nor then do definitions make this clear in addition' (92b32–34). This is because, on this absurd assumption, one cannot establish the identity between what a name signifies and the object whose existence a demonstration proves, nor

can definitions establish the identity. Thus, Aristotle's new theory of definition based on the theory of demonstration must overcome these absurdities by rejecting the spurious premise. That is why Aristotle introduced a defining-phrase which has a signifying role on the what it is in [A] in B. 10 and seeks some cases in which there are the same accounts both in signification and in proof. This is the situation in which Aristotle is placed, when he develops the theory of demonstration in such a way that he can construct a new theory of definition from the new perspective.

4. New theory of definition

4.1 Oneness of account

After pointing out the deficiency of the *Topics* type signifying account, Aristotle proposes two ways by means of which an account is made one. Then he interconnects the *Topics* type signifying account with his new proposal of definition in terms of defining-phrases, by making use of the two ways of making one account.

But an account (λόγος) is one in two ways. Either the account is (Oa) one in virtue of a connective, like [a long speech] 'the *Iliad*', or the account is (Ob) one in virtue of revealing one thing of one thing non-accidentally. Then, one defining-phrase of defining-phrase is (Oa') the one stated, but another is (Ob') an account which reveals why it exists (93b35–39).

Aristotle raises two ways (Oa) (Ob) of making one account. Because he intends to offer an ideal form of one account as a definition. While keeping the identity in terms of letter components between two accounts (Oa') (Ob'), he formulates 'a definition' (94a7) by making use of each of the two functions. In other words, he states the possible connection between the *Topics* type signifying account and his new proposal of definition which has a mission to overcome the deficiency of the former by revealing one thing of one thing non-accidentally and at the same time by taking up the former function.

The correct understanding of this sentence 93b35–37 which is usually bracketed as a gloss (cf. Ross, Barnes, Charles) is at stake how we can connect the adverbial expression 'by (non-) accidental way' which appears twice in the two consecutive sentences so as to overcome the deficiency of traditional practice of definition. The oneness of the account is an important notion, because unless we have a single account, we cannot tell whether it is either true or false. In the dialectic, it is essential for a questioner to formulate a contradictory pair of assertions so that an answerer can deliver a yes-or-no response (cf. *Top.*, 158a14–17, *De Int.*, 20b14–27). Homonymous or ambiguous account should be rejected for this reason. In scientific research too, it is indispensable for a proposition of demonstration to be a single account whose contradiction has necessarily an opposite truth value. Aristotle says that 'A principle of a demonstration is an immediate proposition, and a proposition is immediate if there is no other proposition prior to it. A proposition is the one part of a contradiction, *one thing said of one thing*; it is dialectical if it assumes indifferently either part, demonstrative if it determinately assumes the one that is true' (72a7–11). It is clear from this constraint that the one account of type (Ob) constitutes, for instance, an immediate premise of a demonstration. Aristotle overcomes the *Topics* type signifying account by this type of non-accidental proposition on the basis of which

a new theory of definition must be established.

The contrast between these two accounts of oneness will be characterized by ‘linguistic vs real’ oneness. While the (Oa) type account is *composed* of plural linguistic elements in virtue of a connective like ‘the *Iliad*’, the (Ob) type account reveals one *thing* of one thing non-accidentally. A similar passage in a different context from the *Poetics* helps for the correct interpretation of our passage.

An account is one in two ways. For it is one either (Ob) by signifying one thing, or (Oa) in virtue of a connective based on longer [speeches]. For example, while (Oa) the *Iliad* is one in virtue of a connective, (Ob) the account of man is one in virtue of signifying one thing (1457a29f).

The account (Oa) is composed by connecting its elements together. The word ‘συνδεσμός’ means grammatically conjunction such as ‘and’ (*Rhet.* 1407b37, 1408a1, Philoponus, *ad. loco*). The book ‘the *Iliad*’ is composed of many sentences but constitutes one account in virtue of a connective in the sense that the name ‘the *Iliad*’ and these sentences connected signify the same thing: the book ‘the *Iliad*’. The example of ‘the *Iliad*’ has a double role or is ambiguous to the effect that this is an artifact, that is, a human made story and thus can remain at the level of language, although it could signify something which occupies a place having a mass as a book in the world. It is, however, certainly true to say that this delicate example is presented by considering our linguistic act. Aristotle claims that a linguistic act can formulate one account on the basis of signifying the same thing by a name and its account. It is also clear from his remark on this type in the *Metaphysics* that this type is not regarded to be a definition. He says that ‘The definition is one account not by a connective, like ‘the *Iliad*’, but by being one thing’ (1045a12–14). Any proper definition must be of the thing which exists in the world. But while the context of this passage in the *Metaphysics* is about the definition, the context of our passage is simply about the one account in order to specify a demonstration which proves the existence of a relevant thing.

The (Ob) type account must be able to grasp the non-accidental knowledge of the relevant thing. In the account (Ob), the phrase ‘one thing of one thing’ always express a predication such that one thing is predicated of one thing (eg. 72a7–11 (see the above quotation), 83a22, 83b17). Aristotle qualifies the predication of one thing of one thing by putting an adverb ‘non-accidentally’ so as to meet the deficiency of the *Topics* type signifying account. Given that the theories of defining-phrase developed in the Academy could not establish the existence of a relevant thing nor the *per se* relation between the thing so defined and the defining-phrase, one must construct a theory of definition on the *per se* predication. Demonstration reveals the reason why a relevant thing exists with its necessity which is made manifest in connecting the components of the conclusion which expresses the relevant thing by their immediate middle term.

The *Topics* type signifying account has a place in his new theory of definition, insofar as it contributes to formulate one thing by means of signification at the linguistic level. That is why, in the relevant passage in the *Poetics* above quoted, Aristotle does not hesitate to employ the role of signification to characterize somewhat similar account as the (Ob) in our passage. There he says that ‘it is one either by signifying one thing’ (1457a28). There is no contradiction in these two passages, insofar as the signification can reach to a thing in the world. It is note worthy that

the (Ob) type one account allows to be described by a signification. The definition based on a linguistic practice of signification offers a linguistic basis for a new theory of definition so that the *Topics* type signifying account can be put into the system of new one. I construe it that the role of the *Topics* type signifying account for a new theory of definition is to identify the one thing defined and the one thing which defines it. In this manner the (Oa) type of one account is useful for the (Ob) type one account. Thus a new theory with the help of the theory of signification must be able to establish the essence or the *per se* identity of a thing on the basis of the establishment of its existence. I construe that the (Ob) type account is proffered as the basic condition for the basic ingredient of his new theory of definition.

4.2 Two defining-phrases for a definition

I construe that the two defining-phrases (Oa') (Ob') can be the same account in terms of letter compositions, though the roles of 'defining-' are different. The locution 'one defining-phrase of a defining-phrase' can be read as follows. Just as this locution is employed in the case that one divides two groups within a class (cf. *Met.* 1052a32), Aristotle has in his mind that both defining-phrases (Oa') (Ob') can be divided within a class of defining-phrase so as to show that these two share the same characteristic of the defining-phrase. These two are concerned with one purpose which is to constitute a definition. This is possible, insofar as these two accounts will constitute one definition in terms of the composition of letters. These defining-phrases are of one definition in the sense that these make a definitional practice successful. The one definition is mentioned by Aristotle that 'the same account is said by another way, first as a continuous demonstration and second as *a definition*' (94a6-7).

Now that Aristotle has raised a formal condition, that is, the (Ob) for a new definition to be met, he can raise a sub-sentential component as a new defining-phrase. He makes use of these two ways of making one account for a new definition by ascribing each role into respectively each of two complementary defining-phrases.

Then (Oa') one defining-phrase of a defining-phrase is the one stated, but (Ob') another defining-phrase is an account which reveals why it exists. Thus, while (Oa') the first defining-phrase signifies but does not prove, it is evident that (Ob') the latter type *will be* like a demonstration of the what it is, differing from a demonstration in the arrangement of terms. For, there is a difference between saying why there is thunder and what thunder is. For one will say in the first case 'because fire is quenched in the clouds'. But 'what is thunder?' 'It is the noise of fire being quenched in the clouds'. Thus, the same account is said by another way, first as a continuous demonstration and second as a definition (93b38-94a7).

He raises a new kind of defining-phrase (Ob') by means of which one can prove what it is. We do now understand why Aristotle employs defining-phrase (ὅρος) rather than definition (ὁρισμός) in this discussion. He could not admit the traditional definitional practice based on (Oa') in the Academy as a definition without incorporating it into a new system. Since it is found out through the argument in B. 1-9 that a definition is concerned with what a thing is of the thing which exists, the traditional account could not be regarded to be a definition due to its inability of proving the existence, until its signification is confirmed of the one of an existent thing. It could be regarded to be a definition only on the basis of theory of demonstration whose

function is to prove the existence of the relevant thing.

Therefore he compares the traditional one (Oa') with his new proposal (Ob') at the sub-sentential level according to their differences of function with respect to 'defining-'. While the former signifies the item which corresponds to explain why it exists without proving it, the latter proves why it exists. It is necessary for him to mention not 'definition' but 'defining-phrase', because the account's signifying role itself is not counted to be a definition. After the existence of what is signified is proved by a demonstration, it will constitute a definition. The future tense 'will be' conveys that the defining-phrase which occupies in fact the place of middle term in a demonstration will constitute eventually a definition which is delivered by the syllogistic structure like a demonstration of what it is. But the arrangement of the terms will be different from a demonstration.

The crucial point is that according to the new theory of defining-phrase, one can establish the existence of the relevant thing by revealing why it exists. Grasping why it exists contains in fact the same element as the definition by division of genus-differentiae. For instance, the account of what a thunder is will be distributed to the genus 'the noise' and to the differentia 'fire being quenched in the clouds'. This differentia is the same as the middle term of the demonstration; 'because fire is quenched in the clouds' (94a4f). Now Aristotle can claim the identity between them in terms of involving explanatory element of the existence of a relevant thing through this example that 'Thus, the same account is said by another way, first as a continuous demonstration and second as a definition'. A demonstration as a whole holds the role of identity fixing as well as a definition. In other words, 'the same account' between a division type definition and a demonstration endorses that Aristotle established a new definition on the basis of demonstration.

Thus we can create 'a syllogism of the what it is, differing in arrangement from the demonstration' as a type of definition (94a12f). Now that we have a demonstration by the same components as the ones of definition, we can present a definition on the basis of the establishment of existence by the same components. Take an example of thunder. Aristotle offers a demonstration whose middle term is an efficient cause 'Fire being quenched' ;

(D1) Maj. Thunder belongs to Fire being quenched.

Min. Fire being quenched belongs to in Clouds.

Con. Noise/Thunder belongs to in Clouds (93b9-12).

Here Aristotle is concerned with proving the existence of the thunder by its efficient cause and concludes through the immediate proposition that noise belongs to in clouds. In this case, Aristotle avoids to deduce 'the same thing [i. e. what it is] from the same thing [i. e. what it is]' which is the characteristic of formal (λογικὸς) syllogism (93a11). 'Noise' and 'Thunder' are interchangeably used in the conclusion, because of, as D. Charles suggests, 'permissible substitution of names and (parts of) accounts of what names signify'⁽¹¹⁾. The same signification between 'thunder' and 'noise in clouds' allows the substitution so as to show that this proof is not concerned with proving what thunder is but why thunder occurs. He tries to demonstrate the existence of a noise in clouds which is the thunder. As a preliminary task of this demonstration, the meaning of the word 'thunder' was already presented as 'a kind of noise in clouds' (93a22).

Now that the existence of thunder is established, it is allowed to offer its definition in the syllogistic form as follows;

- (LS1) Maj. Noise in clouds belongs to Fire being quenched in clouds. [The genus belongs to the differentia].
- Min. Fire being quenched in clouds belongs to Thunder. [The differentia belongs to the definiendum].
- Con. Noise in clouds belongs to Thunder. [The genus belongs to the definiendum].

In this syllogism, the account of what a thunder is is given by both the minor premise and the conclusion. Since this syllogism proves the what it is through what it is, this is 'λογικὸς (formal) syllogism of what it is' (B. 8. 93a14f), just as this is found in syllogizing a definition of soul by Xenocrates in B. 4 (91a33–91b1)⁽¹²⁾. In this syllogism one proves the what a thunder is 'through the another what a thunder is' (cf. 93a10). In this syllogism, what should be proved is assumed in a premise of the syllogism and thus cannot be a demonstration. However, since Aristotle, having introduced (Ob') type defining-phrase as a hinge between a demonstration and a definition, established the reason why by (D1) a proper demonstration, he can allow (LS1) a syllogism of the what it is as a type of definition on the condition of being based on (D1) a proper demonstration. What is offered as a definition through (Ob') type defining-phrase in B. 10 formulates a premise of (LS1) a formal syllogism of the what it is. That is why Aristotle calls (LS1) type definition as 'syllogism of the what it is'.

'This way may not be a demonstration' (B. 8. 93a14). But, just as the division theory is useful, if once the existence of a relevant thing is proved by a demonstration, the formal syllogism is also useful, given that its corresponding demonstration is once offered. Indeed this is not a demonstration by begging a question, but is now regarded to be a definition, because the why thunder exists is proved by a demonstration composed of the same components as the ones of a definition. The formal syllogism is authorized to be a definition, insofar as its same account is explained by a demonstration.

He is now entitled to say that there is a demonstration of what it is which was previously denied (92b38). He has shown in this paragraph that the what it is is proved by not immediately, but through the formation of demonstration. This is the content of his summary (iv).

Now that we have seen two accounts of what it is in a formal syllogism, he can introduce a new defining-phrase (Oc') which corresponds to the conclusion of the demonstration of what it is. He says that 'Again, a defining-phrase of thunder is noise in clouds. This is a conclusion of the demonstration of what it is' (94a7–9). Since 'the what it is is proved by another what it is' (93a10f) in this syllogism, Aristotle can offer this account as an account of what a thing is, i. e. a definition. The reason why a conclusion of demonstration becomes a defining-phrase is that this enables to establish the mediated identity proposition. In this (Oc') type defining-phrase, an identity proposition is established as having been mediated by a middle term.

Aristotle distinguishes three types of defining-phrase according to their modes of presentation. While (Oa') type signifies, (Ob') type proves and (Oc') type is proved. The common feature among three types of defining-phrase is that these have respectively a type of identity fixing. These are Aristotle's new idea and device about how to theorize the talk of definition and how to fill in the concept of 'the what it is' which has never been made clear in the Academy. Aristotle develops the theory of defining-phrase so as to offer the various norms for the definitional practice and to offer a clear understanding of the theory of definition.

Among things which are addressed to ‘What is F?’ question, these two kinds of definition as the accounts of what a thing cover the demonstrable things. But there are un-demonstrable things which are also addressed by ‘What is F?’ question (93b24f). He has discussed this issue in B. 9. Concerning the things which are un-demonstrable, that is primary things of a science, Aristotle offers its definition which must satisfy the (Ob) type of one account. He says that ‘But the definition of the immediate things is an un-demonstrable *posit* of what it is’. The *posit* is an immediate syllogistic principle which cannot be proved (72a15–24). He says that ‘A *posit* which assumes either of the parts of a contradictory pair- what I mean is that something is or that something is not-I call a supposition. One without this, a definition. For a definition is a *posit* (for the arithmetician posits that a unit is what is quantitatively indivisible), but not a supposition (for what a unit is and that a unit is are not the same)’ (72a18–24). The definition as a *posit* is itself to assume what a thing is. The reason why Aristotle does not introduce its defining-phrase is that a *posit* of what it is itself a linguistic signifying act. In fact, Aristotle says in A. 10 that ‘I call principles in each genus those which it is not possible to prove to be. Now both what *the primaries* and what the things dependent on them *signify* is assumed; but that they are must be assumed for the principles and proved for the rest, e. g., we must assume what a *unit* or what straight and triangle *signify*’ (76a31–35). We find ‘a unit’ which is a primary thing of an arithmetics twice in these two passages as an example of positing respectively what a unit is and what a unit signifies. Since assuming its existence is allocated to another *posit* called ‘hypothesis’, a definition as a *posit* based on the hypothesis can be expressed by both the accounts of what a unit signifies and what a unit is. Thus, we can safely say that the defining-phrase of this un-demonstrable *posit* of what it is must be nothing but the *Topics* type signifying account.

But, Aristotle claims that we can have an un-demonstrable knowledge of a thing which is initially presented as a *posit*. Through having a deductive system of a science, un-demonstrable primaries of a science can be grasped through the process of feedback by having demonstrations about their attributes *as* their primaries. Aristotle says that ‘We claim that neither every knowledge is demonstrative, but in the case of immediates it is un-demonstrable knowledge’ (72b18f). In this way, the what it is of a proposition called ‘*posit*’ can be known on the basis of its existence.

5. Conclusion

Then Aristotle raises three definitions as a response to the question of (iii) how many definitions there are. He says;

[d1] One definition is an un-demonstrable account of what it is. Its defining-phrase is (Oa’).

[d2] One is a syllogism of what it is, differing in aspect from the demonstration. Its defining-phrase is (Ob’) based on (Oa’).

[d3] A third is a conclusion of the demonstration of what it is. Its defining-phrase is (Oc’) based on (Oa’). (94a11–14).

In [d1], the word ‘*posit*’ is not any more found, because this definition can convey an un-demonstrable knowledge. In [d2], ‘a syllogism’ stands for a formal syllogism so that he can agree with his colleague such as Xenocrates. That is, the what it is can be proved in a way, that

is, on the basis of the relevant demonstration which provides the defining-phrase (Ob') for a definitional practice. After having established the existence of a relevant thing through a demonstration, the *Topics* type signifying account based on genus-differentiae combination in the division theory is employed for the layout of a thing in different terms. But in this stage, the role of signification is dispensed with, for the reference has already been fixed through demonstration to the thing in the world. In [d3] too, he can agree with his colleague such that one can prove the what it is as a conclusion of a formal syllogism.

When it is required to show his new device to overcome difficulties such as the drag down relation between demonstration and definition among his colleagues which is discussed in B3–7, Aristotle employs three types of 'defining-phrase' as his new theory of definition and shows that these defining-phrases can be built into the current practice of definition of the what it is in the Academy. The *Topics* type signifying account will have its role in each of these three types of definition. Thus, we should understand that an indefinite pronoun 'some' in 'some account' with the future tense 'will be' in the first sentence of B. 10 [A] is filled in by these three accounts [d1] [d2] [d3] of what it is.

According to his recollection on B. 10 in B. 13, this attempt is resumed that 'It was said [in B. 10] how 'the what it is' is articulated into the defining-phrases' (96a20). Three types of defining-phrases offer the basis of his claim of three types of definition. Aristotle has raised these three types of definition, because the three types of what it is are in fact found in the context of inquiries into scientific knowledge in the *Posterior Analytics* or rather perhaps in the activities of the Academy.

The common characteristic of [d1] [d2] [d3] is that each reveals each type of identity between a subject and a predicate among existing things. In this way, Aristotle enriches the current definitional practice of the what it is in the Academy. That is, Aristotle's new theory of defining-phrase is built into the traditional Socratic inquiry. Or rather, Socratic inquiry into universal definition is articulated by the three types of identity account. Through his introduction of the theory of defining-phrase, he can now build it into the theory of definition in the Academy. Or rather, since he establishes how to know the existence of a relevant thing through the theory of demonstration, he establishes a new theory of definition of the what it is which exists. He only borrows the traditional phrases and renderings.

Note

- (1) For instances, Philoponus interchangeably uses two words. When Aristotle says 'Εἷς μὲν δὴ ὁρὸς ἐστὶν ὅρου (One defining-phrase of a defining-phrase)' at 93b38, he comments that Εἷς μὲν δὴ ὁρισμὸς ἐστὶ τοῦ ὅρου κυρίως τὸ λόγος ἐν καθ' ἑνὸς κατηγορῶν μὴ κατὰ συμβεβηκός. ἄλλος δὲ ὁρισμὸς τοῦ ὅρου ἐστὶ λόγος ὁ δηλῶν διὰ τί ἐστὶν, ἥγουν ὁ ἔχων τὴν αἰτίαν τοῦ πράγματος ἅμα καὶ τὸ αἰτιατόν. *Commentaria in Aristotelem Graeca* ed. M. Wallies *ad. loco.* (Berlin 1909). J. Barnes translates 93b38ff that 'One definition of definition is the one we have just stated. Another definition is an account which shows why something exists'. *Aristotle's Posterior Analytics*, p.58 (Oxford 1993). Concerning the arguments for this distinction, see my work on the *Topics* entitled 'Aristotle on Essence and Defining-phrase in his Dialectic' in *Definition in Greek Philosophy* ed. D. Charles (Oxford 2008).
- (2) D. Ross, *Aristotle's Prior and Posterior Analytics* (Oxford 1949), J. Barnes, *ibid.*, cf. H. Tredennick, *Aristotle Posterior Analytics* (Loeb 1960)

(3) D. Ross, *ibid.*, *ad loco*. See the note (4).

(4) D. Charles considers a possibility of retaining the manuscript, by consulting an interpretation suggested by W. Detel, but draws a pessimistic conclusion. He says that ‘An alternative is to regard as name-like expressions ‘accounts which signify the same as names’ (B.7,92b27f). This latter suggestion might be strengthened by construing the subsequent line as follows: (e.g.) that which is signified by the answer to the question ‘What is ‘triangle?’’. In this interpretation, one would retain the τὸ from MSS and take it as a place-holder for the subject phrase τί ἐστὶ τρίγωνον as W. Detel suggests, *Aristoteles: Analytica Posterior* S. 675–6 (Berlin 1993). ‘τρίγωνον’ might be taken to refer to the term ‘triangle’. If so, the answer to the question ‘What is ‘triangle?’ would be a phrase like ‘figure with internal angle sum of two right angles’. So, the whole phrase would mean: (e.g.) that which is signified by a phrase like ‘figure with internal angle sum of two right angles’. One might ask what this phrase signifies if one does not know what (e.g.) ‘right angle’ signifies. So understood, Aristotle is envisaging two questions; What does ‘triangle’ signify? And What is signified by the phrase used to answer the question ‘What does ‘triangle’ signify?’ Both answers could be useful in teaching. While this interpretation is attractive, I shall not rely on it in what follows. The text is too short and too uncertain to allow one to place confidence in any of these readings’. D. Charles, *Aristotle on Meaning and Essence*, p.26 (Oxford 2000).

I agree with a view that a name and an other name-like phrase signify the same thing, given that the same signification between them is stated in other passages of the same context too (92b6,b31). But I construe the sentence ‘οἷον τὸ τί σημαίνει τί ἐστὶ ἢ τρίγωνον’ very differently from this and other interpretations. Since ‘οἷον’ leads a sentence, I translate it ‘in such a case that’. Then he explains the object of signification by specifying ‘the what’ which is quoted from the previous sentence by adding a definite article ‘the’ as ‘what it is’. This is possible, ‘insofar as’ what is signified by a name or a name-like phrase is in fact an existent entity such as triangle.

(5) The word ‘name-like’ is difficult to understand, since we do not find this word in any other extant Greek text except the commentaries of the relevant passage by his Greek commentators. He seems to have in mind such a phrase like ‘two-footed land animal’ instead of the name ‘man’ and ‘three sided figure’ instead of the name ‘triangle’. See D. Charles, *ibid.*, p.26.

(6) According to D. Charles’ analysis, The process of Aristotelian inquiry consists of three stages. ‘StageI: This stage is achieved when one knows an account of what a name or another name-like expression signifies. Stage II: This stage is achieved when one knows that what is signified by a name or name-like expression exists. Stage III: This stage is achieved when one knows the essence of the object/kind signified by a name or name-like expression’. *Ibid.*, p.24. In connection with these distinctions, D. Charles’ claim on semantic shallowness and depth in Aristotle’s theory of meaning is important. He says against the view of ‘my modern essentialism’ that ‘For Aristotle, by contrast, knowledge of the meaning of a kind-term need not involve anyone’s having knowledge of the existence of instances of the kind. I shall argue that he separates these two stages of enquiry, and thus rejects my modern essentialist’s Existence Assumption (p.17f)’. I agree that the account gained at the Stage I is semantically shallow without involving any knowledge of the existent of a relevant item. But I shall argue that the role of signification of a name or a phrase after having satisfied Stage II will be absolved by the account of a thing which exists, provided that some conditions would be met.

(7) D. Charles, *ibid.*, p.23. He says also that ‘I take ‘in this way’ to refer to progress to Stage III in investigation. It has been suggested that ‘in this way’ should be taken to refer rather to grasp on Stage II or Stages I and II. However, both these alternatives are problematic. It is not at all clear (with regard to the first option) why it should be difficult to grasp an account of what a name signifies in cases where we do not know that the kind exists. Indeed, Aristotle envisages that this is just what we do when we do grasp an account of what the name signifies in the case of ‘goatstag’ or indeed ‘triangle’ (76b33ff). Further, it is completely platitudinous to say that it is difficult to know a thing to exist if we do not know it to exist! Indeed, the problem mentioned in the next lines appears to refer back to the discussion in B.8 of the difficulty of the transition from Stages II to III, and not of the difficulty of arriving at Stage II’. p.34. n.18. Although Charles raised the apparent difficulties in construing ‘in this way’ as the ones of Stage I, his raised difficulties will merely result in, only if the verb ‘λαβεῖν’ (assume) should be understood by the meaning of ‘grasp’. What Aristotle meant to convey in ‘a difficulty’ is to assume Stage I account as Stage III account, concerning the things whose existences are unknown.

(8) J. Barnes, *ibid.*, p.223.

(9) J. Philoponus also takes ‘in this way’ as grasping a nominal definition (ἀπὸ τοῦ ὀνοματώδους). *ibid.*, ad.

loco. J. Ackrill considers two possibilities of this passage either taking 'in this way' as 'simply knowing what the name signifies' or as 'with knowledge of why it is'. J. Ackrill, *Aristotle's Theory of Definition: Some Questions on Posterior Analytics* II8–10. *Aristotle on Science The «Posterior Analytics»*, ed. E. Berti p.375 (Padova1981) But these are not only the possibility to be taken.

(10) But T. Waitz refers to 92b28–30 as the reference of the reason of difficulty. T. Waitz, *Organon Pars Posterior*, p.398 (Lipsiae 1846).

(11) D. Charles, *ibid.*, p.199. n.5.

(12) The reason why this type of syllogism is called 'formal syllogism' is that this syllogism appeals to the characteristic of sameness which is a general property of being by offering a proof of the what it is (or property) from the what it is (or property). Since this type of syllogism 'assumes what one must prove' (91a31), this cannot be counted to be a demonstration. An example of formal syllogisms is as follows;

The cause of its own being alive is just what is a number that moves itself.

Soul is the cause of its own being alive.

Soul is just what is a number that moves itself (91a37–b1).

In this syllogism, the what is soul is assumed in a premise 'in the sense of being the same' (91b1).

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