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Protasis and Apophansis in Aristotle's Logic

Aristoteles Mantığında Protasis ve Apophansis

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Abstract: This essay examines how Aristotle creates propositions. It evaluates his use of quality and quantity in his theory of syllogism. In *De Interpretatione*, Aristotle used the term, 'apophansis', but he preferred 'protasis' in *Analytica Priora*. While Aristotle classified these as affirmative and negative due to their qualities, he embraced a different point of view about classifications based on quantity. Differences in apophansis are evaluated on the basis of their singular and universal structures, and their predications are also taken into consideration. As he studied protasis, however, he re-arranged the classifications of apophansis and re-shaped them according to their predicative properties. The structural difference between *De Interpretatione* and *Analytica Priora* are revealed through a careful examination of Aristotle's use of these two concepts.

Keywords: Proposition, protasis, apophansis, singular, universal, Aristotelian logic.

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Introduction

In his famous book, Łukasiewicz asked "why singular terms were omitted by Aristotle" (Łukasiewicz 1957: 1.3). Similarly, we can ask, "why were indefinite terms omitted by Aristotle?" Łukasiewicz asks this question of *Analytica Priora*, but he disregarded Aristotle's investigation of them in *De Interpretatione*, which should also be given attention. This essay intends to show the differences in the way that Aristotle examined apophansis (ἀπόφανσις) in *De Interpretatione* and protasis (πρότασις) in *Analytica Priora*. He did not omit singular and indefinite terms and instead showed how to construct syllogisms by use of these apophansis (ἀπόφανσις) as protasis (πρότασις). In this context, the relationship between apophansis and protasis will be explored, including why Aristotle used different terms and classifications in each of these works.

In *De Interpretatione*, Aristotle examined apophansis (ἀπόφανσις), and in *Analytica Priora*, he instead spoke of protasis (πρότασις). Both how these terms should be translated and how the relationship or correlation between them should be understood are important issues. Which terms correspond to proposed notions such as proposition, statement, assertion, premise, etc. is not clear from a straightforward reading of Aristotle's syllogistic theory. Often, different but related notions of assertion have been translated with the same terms. How these terms are translated to English is important at a conceptual rather than only linguistic level. Aristotle supplied a definition of logos (I prefer, 'logos' for 'λόγος'):

> Λόγος δέ ἐστι φωνὴ σημαντική, ἧς τῶν μερῶν τι σημαντικόν ἐστι κεχωρισμένον, ὡς φάσις ἀλλ' οὐχ ὡς κατάφασις. (16b26-16b28)
>
> Λόγος is a significant spoken sound (gestures) some part of which is significant in separation – as an expression, not as an affirmation.[1]

Aristotle further defines logos:

> ἔστι δὲ λόγος ἅπας μὲν σημαντικός, οὐχ ὡς ὄργανον δέ, ἀλλ' ὥσπερ εἴρηται κατὰ συνθήκην· ἀποφαντικὸς δὲ οὐ πᾶς, ἀλλ' ἐν ᾧ τὸ ἀληθεύειν ἢ ψεύδεσθαι ὑπάρχει· (16b33-17a3)

[1] Translation: Ackrill, 2014. For the sake of notional clarity, however, all references to the Ancient Greek texts are instead from Minio-Paluello, L., Oxford Classical Texts, 1949 & Ross, W. D. and Minio-Paluello, L., Oxford Classical Texts, 1964

> Every [logos] is significant (not as a tool but, as we said, by convention), but [not all of them] is a apophantikos, but only those in which there is truth or falsity.[2]

From this statement, it is clear that some logos are not affirmations or negations. But some clearly are:

> Ἔστι δὲ εἷς πρῶτος λόγος ἀποφαντικὸς κατάφασις, εἶτα ἀπόφασις· (17a8-17a9)
>
> The first single [proposition-being logos] is the affirmation, next is the negation.[3]

In paragraph 16b26, truth and falsity exist as some characters of logos; accordingly, these are noted as affirmation and negation in paragraph 17a1. Thus, 'proposition-being logos', which is an affirmation or negation, also has a truth-value. Therefore, this Aristotelian understanding of proposition, by virtue of its having a truth-value, can be understood with the contemporary term 'proposition'. One kind of logos is the proposition. And Aristotle classifies propositions as 'ἁπλόος' (simple):

> τούτων δ' ἡ μὲν ἁπλῆ ἐστὶν ἀπόφανσις, οἷον τὶ κατὰ τινὸς ἢ τὶ ἀπὸ τινός, ἡ δ' ἐκ τούτων συγκειμένη, οἷον λόγος τις ἤδη σύνθετος. (17a20-22)
>
> Some of these propositions are simple, e.g. something to something or something of something; the others are compounded of them, e.g. a kind of composite logos.[4]

Additionally, Aristotle gives the definition of 'ἁπλῆ ἀπόφανσις' as;

> Ἔστι δ' ἡ μὲν ἁπλῆ ἀπόφανσις φωνὴ σημαντικὴ περὶ τοῦ εἰ ὑπάρχει τι ἢ μὴ ὑπάρχει, ὡς οἱ χρόνοι διῄρηνται· (17a23-24)
>
> The simple proposition is a significant spoken sound (gestures) about whether something does or does not [belong to], [according to] the divisions of time.[5]

This is because a proposition is simple (ἁπλόος), asserting only one truth-value (20b10-12). Every 'simple proposition' is either true or false. But as every 'non-simple proposition' makes more than one affirmation or negation. Hence, it has more than one truth-value.

[2] Translation is modified from Ackrill, 2014.
[3] Translation is modified from Ackrill, 2014.
[4] Translation is my own.
[5] Translation is modified from Ackrill, 2014.

Consider another of Aristotle's definitions, this one of protasis (πρότασις), from *Analytica Priora*:

> Πρότασις μὲν οὖν ἐστὶ λόγος καταφατικὸς ἢ ἀποφατικός τινος κατά τινος· οὗτος δὲ ἢ καθόλου ἢ ἐν μέρει ἢ ἀδιόριστος. (24a15)
>
> Πρότασις, then, is a logos affirming or [negating] something [to] something; and this is either universal or particular or indefinite.[6]

According to this definition, protasis (πρότασις) corresponds to 'proposition', but in order not to confuse matters, it would be helpful to use a new term: it can be equivalent to 'premise', but there are some challenges with this new term. Crivelli and Charles remark that

> He [Aristotle] applies 'πρότασις' to the conclusion of a syllogism. Thus, 'πρότασις' does not, in the *Prior Analytics*, refer only to the premises from which the conclusion is derived. It follows that 'πρότασις', as used in the *Prior Analytics*, is not coextensive, nor equivalent in sense, with 'premise'. (Crivelli & Charles 2011: 198)

I agree with this concern, but if protasis (πρότασις) continues to be translated as 'proposition', then there is no way to show that it does not have many truth-values. This distinction is important, because Aristotle says that protasis (πρότασις) is a different concept than that of the proposition. As follows, protasis (πρότασις) defined in this way requires emphasizing the simple (ἁπλόος) character of assertion:

> ὥστε ἔσται συλλογιστικὴ μὲν πρότασις ἁπλῶς κατάφασις ἢ ἀπόφασίς τινος κατά τινος τὸν εἰρημένον τρόπον, (24a28-30)
>
> Therefore, a deductive πρότασις will be an simple affirmation or [negation] of something [to] something in the way we have described.[7]

In any syllogism, propositions must be 'ἁπλόος' (simple); syllogism can only be made up of them (34b7-18). In this case, we can say that, protasis (πρότασις) is equivalent to simple propositions. The protasis (πρότασις) concept and study in *Analytica Priora* are different than Aristotle's understanding of propositions in *De Interpretatione*. As such, it is clear that protasis (πρότασις) is true or false, and as such, it must be un-

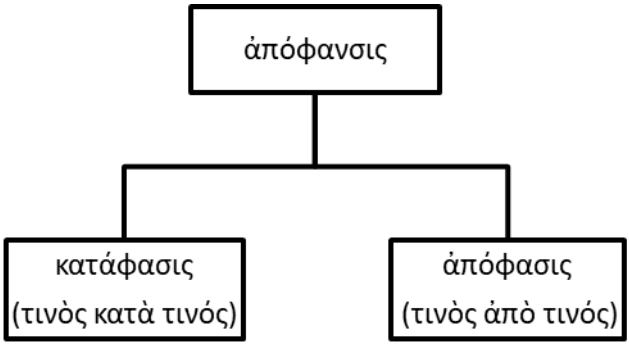
[6] Translation is modified from Jenkinson, 2014.
[7] Translation is modified from Jenkinson, 2014.

derstood as a different concept than the proposition.[8] So protasis (πρότασις) corresponds to simple-proposition (ἁπλῆ ἀπόφανσις). Because of these differences, Aristotle needed to develop a new term. In my opinion, there has not yet been a sufficient translation of protasis (πρότασις), so it must be rendered as 'Protasis'.[9]

The Proposition in the Work of Aristotle

The first division of propositions in Aristotle is that between the affirmative (κατάφασις) and the negative (ἀπόφασις):

> κατάφασις δέ ἐστιν ἀπόφανσις τινὸς κατὰ τινός, ἀπόφασις δέ ἐστιν ἀπόφανσις τινὸς ἀπὸ τινός. (17a25-26)
>
> An *affirmation* is a [proposition] affirming something [to] something, a *negation* is a proposition [negating] something [from] something.[10]



τινὸς κατὰ τινός is something according (concerning) to something; τινὸς ἀπὸ τινός is something away (excluding) from something.

Affirmative (κατάφασις) → $x \in P$

Negative (ἀπόφασις) → $x \notin P$

If predication occurs only to one something, then the proposition is singular; if something is instead predicated to more than one element by whole or part, it is universal. That is, for singular propositions, predication contains only one element; for a universal proposition, predication contains more than one.

[8] Structural differences between the two types of propositions in the two texts will be examined in the next section.

[9] Corcoran and Boger have similar embarrassment to translate protasis. They discussed this point in a different concept (Corcoran and Boger, 2011: 151-2).

[10] Translation is modified from Ackrill, 2014.

> Ἐπεὶ δέ ἐστι τὰ μὲν καθόλου τῶν πραγμάτων τὰ δὲ καθ' ἕκαστον, -λέγω δὲ καθόλου μὲν ὃ ἐπὶ πλειόνων πέφυκε κατηγορεῖσθαι, καθ' ἕκαστον δὲ ὃ μή, (17a38-40)
>
> Now of actual things some are universal, others [singular] - I call universal that which is by its nature predicated of [more] of thing, and [singular] that which is not.[11]

Based on Aristotle's definition, further specification of the types of propositions may be made: there are those in which predication applies to a Universal (καθόλου) term and those in which it applies to a singular (καθ' ἕκαστον) term instead (Whitaker 2002: 83). Further,

> ἀνάγκη δ' ἀποφαίνεσθαι ὡς ὑπάρχει τι ἢ μή, ὁτὲ μὲν τῶν καθόλου τινί, ὁτὲ δὲ τῶν καθ' ἕκαστον. (17b1-3)
>
> It is necessary to propositions that belong to or doe not, some of them as universal, some of them as singular.[12]

It is clear that in this distributed understanding, there is no a third option. For instance, 'human' and 'Kallias' will be universal or singular terms according to how they are predicated. Due to predication, 'human' will be a plural; 'human' is universal term. This sort of predication can be either of all elements belongings to 'human' or only to one of them. The important point is that there is a larger group that could predicated of. A man whose name is 'Kallias' is only one, though, so predication occurs by way of one; as such,'Kallias' is a singular term.

Universal (καθόλου) → Human (ἄνθρωπος)

Singular (καθ' ἕκαστον) → Kallias (Καλλίας)

Aristotle has given examples here that show how general use of a name may vary depending on the use. For instance, we may take 'Kallias' not as an singular but instead as all of the people named 'Kallias'. In this case, it will be understood as a universal term. If this is so, then predication can occur related to either all of the singulars belonging to the group or instead only to one of the 'Kallias'. Determining whether a term is singular or universal requires examining how it is being used. This same theme can be seen in an example that Aristotle gives for induction,

[11] Translation is modified from Ackrill, 2014.
[12] Translation is my own.

in which he indicates that a universal category consists of the combination of many singulars.

> Γ τὸ καθ' ἕκαστον μακρόβιον, οἷον ἄνθρωπος καὶ ἵππος καὶ ἡμίονος. (68b20)
>
> Γ for the long-lived singulars such as man and horse and mule.[13]

In this case, 'long-lived' is applied to an singular 'human' and 'horse' and 'mule'. So here, 'human' is singular term. In this case, the intent is not 'a human' in general, but rather a singular person. Although the term 'human' adopts a universal structure, in the context of singular humans and their long or short lives, as in the above use of 'human', this is clearly a case of the term being used to refer to a singular. By Aristotle's theory of induction, however, each of these singulars combines to create a universal made up of singulars. This understanding helps to make sense of passages such as this one:

> Κατὰ παντὸς μὲν οὖν τοῦτο λέγω ὃ ἂν ᾖ μὴ ἐπὶ τινὸς μὲν τινὸς δὲ μή, μηδὲ ποτὲ μὲν ποτὲ δὲ μή, οἷον εἰ κατὰ παντὸς ἀνθρώπου ζῷον, εἰ ἀληθὲς τόνδ' εἰπεῖν ἄνθρωπον, ἀληθὲς καὶ ζῷον, καὶ εἰ νῦν θάτερον, καὶ θάτερον, καὶ εἰ ἐν πάσῃ γραμμῇ στιγμή, ὡσαύτως. σημεῖον δέ· καὶ γὰρ τὰς ἐνστάσεις οὕτω φέρομεν ὡς κατὰ παντὸς ἐρωτώμενοι, ἢ εἰ ἐπί τινι μή, ἢ εἴ ποτε μή. (73a28-33)
>
> Now I say that something holds of every case if it does not hold in some cases and not others, nor at some times and not at others; e.g. if animal holds of every man, then if it is true to call this a man, it is true to call him an animal too; and if he is now the one, he is the other too; and the same goes if there is a point in every line. Evidence: when asked if something holds of every case, we bring our objections in this way—either if in some cases it does not hold or if at some time it does not.[14]

Universal predication occurs over singular terms; this is a process whereby a predicate applies one by one to all singular members of a subject. If 'belongs to' (ὑπάρχειν) is provided with singular (καθ' ἕκαστον), we look only at this as a category. If 'belongs to' (ὑπάρχειν) is provided with universal (καθόλου), we look at all singular (καθ' ἕκαστον) within the category.

For singular (καθ' ἕκαστον) → $S \in P$

[13] Translation: Tredennick, 1938.
[14] Translation: Barnes, 2014.

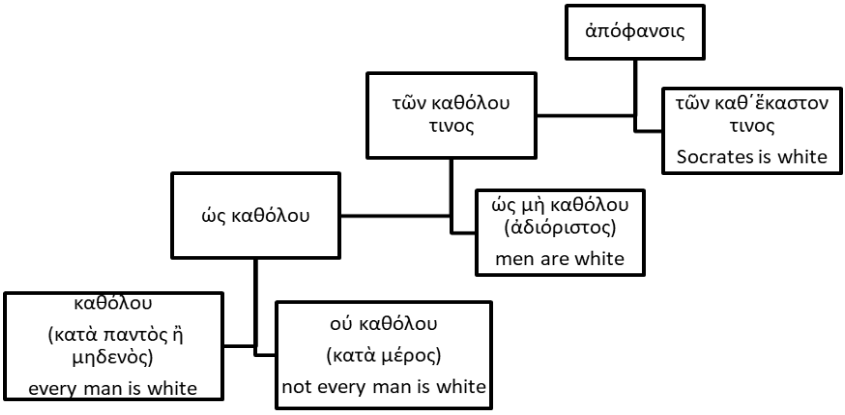
For universal (καθόλου) → $x \in S \text{ such that } x \in P$

Stated simply, predication is not directly from or to the universal; rather, it is from all of those singulars within a universal category.

The quantity of a propositions is determined according to its subject, i.e. if the subject term is singular, then proposition is also singular; likewise, if the subject term is universal, then the proposition will be as well. Aristotle distinguished two parts in universal propositions that establish whether predication occurs universally or not universally:

> λέγω δὲ ἐπὶ τοῦ καθόλου ἀποφαίνεσθαι καθόλου, οἷον πᾶς ἄνθρωπος λευκός, οὐδεὶς ἄνθρωπος λευκός (17b5)
>
> I mean by 'stating universally of a universal' are: every man is white – no man is white.[15]
>
> λέγω δὲ τὸ μὴ καθόλου ἀποφαίνεσθαι ἐπὶ τῶν καθόλου, οἷον ἔστι λευκὸς ἄνθρωπος, οὐκ ἔστι λευκὸς ἄνθρωπος (17b9)
>
> I mean by 'stating of a universal not universally' are: man is white — man is not white.[16]

Aristotle categorized propositions as follows: According to Aristotle, the terms predicate each one to another. So a universal can predicate to a universal, singular to universal. But it cannot predicate universal to singular (17a38-b16). This is also mentioned in the *Analytica Priora*:



[15] Translation: Ackrill, 2014.
[16] Translation is modified from Ackrill, 2014.

Ἁπάντων δὴ τῶν ὄντων τὰ μέν ἐστι τοιαῦτα ὥστε κατὰ μηδενὸς ἄλλου κατηγορεῖσθαι ἀληθῶς καθόλου (οἷον Κλέων καὶ Καλλίας καὶ τὸ καθ' ἕκαστον καὶ αἰσθητόν), κατὰ δὲ τούτων ἄλλα (καὶ γὰρ ἄνθρωπος καὶ ζῷον ἑκάτερος τούτων ἐστί)· τὰ δ' αὐτὰ μὲν κατ' ἄλλων κατηγορεῖται, κατὰ δὲ τούτων ἄλλα πρότερον οὐ κατηγορεῖται· τὰ δὲ καὶ αὐτὰ ἄλλων καὶ αὐτῶν ἕτερα, οἷον ἄνθρωπος Καλλίου καὶ ἀνθρώπου ζῷον. (43a25-32)

Of all the things which exist some are such that they cannot be predicated of anything else truly and universally, e.g. Cleon and Callias, i.e. the singular and sensible, but other things may be predicated of them (for each of these is both man and animal); and some things are themselves predicated of others, but nothing prior is predicated of them; and some are predicated of others, and yet others of them, e.g. man of Callias and animal of man.[17]

In some situations, singular terms can be found in predication. But this predication appears only incidentally.

φαμὲν γάρ ποτε τὸ λευκὸν ἐκεῖνο Σωκράτην εἶναι καὶ τὸ προσιὸν Καλλίαν. (43a35)

for we sometimes say that that white object is Socrates, or that that which approaches is Callias.[18]

But these cannot use for deduction:

οὐδὲ τὰ καθ' ἕκαστα κατ' ἄλλων, ἀλλ' ἕτερα κατ' ἐκείνων. (43a39-40)

Neither can singulars be predicated of other things, though other things can be predicated of them.[19]

For a proposition such as, "every one of these organs are Socrates", 'Socrates' is predicated to 'organs' as accidental. All of these organs in total are Socrates, but one by one, treated as singulars, they are not Socrates. This is not compatible with the earlier definition of 'belongs to' (ὑπάρχειν). See, for instance, what occurs where there is an attempted combination of "all of these organs is Socrates", and "one by one these organs are not Socrates". This does not check out with 'belongs to' (ὑπάρχειν). An absurd syllogism like this would then be warranted:

[17] Translation: Jenkinson, 2014.
[18] Translation: Jenkinson, 2014.
[19] Translation: Jenkinson, 2014.

Socrates is a philosopher

Every one of these organs is Socrates

Hence, every one of these organs is philosopher

Aristotle expresses definite-universal (ὡς καθόλου) propositions in *De Interpretatione* as follows:

Every man is white

Not every man is white

Some men are white

No man is white

Here the terms "Every, Some ..." signify definite-universal statements; i.e. it shows the proposition's quantity;

τὸ γὰρ πᾶς οὐ τὸ καθόλου σημαίνει ἀλλ' ὅτι καθόλου. (17b12)

For 'every' does not signify the universal but that it is taken universally.[20]

Hamilton indicates (1860: 277) that if we take quantity of not only subjects but also predications, we have eight possible types of propositions:

All A is all B	Any A is not any B
All A is some B	Any A is not some B
Some A is all B	Some A is not any B
Some A is some B	Some A is not some B

There is no question of quantity of predication in Aristotle. He explains that predication is universal but cannot take universally of universal;

ἐπὶ δὲ τοῦ κατηγορουμένου τὸ καθόλου κατηγορεῖν καθόλου οὐκ ἔστιν ἀληθές· οὐδεμία γὰρ κατάφασις ἔσται, ἐν ᾗ τοῦ κατηγορουμένου καθόλου τὸ καθόλου κατηγορηθήσεται, οἷον ἔστι πᾶς ἄνθρωπος πᾶν ζῷον. (17b12-16)

It is not true to predicate a universal universally of a subject, for there cannot be an affirmation in which a universal is predicated universally of a subject, for instance: every man is every animal.[21]

So we have these propositions;

[20] Translation: Ackrill, 2014.
[21] Translation: Ackrill, 2014.

Socrates is white	$s \in W$
Socrates is not white	$s \notin W$
Men are white	$x \in M \text{ such that } x \in W$
Men are not white	$x \in M \text{ such that } x \notin W$
Every man is white	$\forall x \in M \text{ such that } x \in W$
Not every man is white	$\exists x \in M \text{ such that } x \notin W$
Some man is white	$\exists x \in M \text{ such that } x \in W$
Any man is not white	$\forall x \in M \text{ such that } x \notin W$

Protasis in the Work of Aristotle

There is no kind of protasis as singular evaluated in the *Analytica Priora*; from this assessment, one might think that Aristotle passes over the singular protasis altogether. In this context, we see for the first time particular (ἐν μέρει) as term and structure, so one might think that Aristotle also passes over particular propositions in *De Interpretatione*. Both of these assessments are unwarranted. We see the particular proposition is included in a discussion of the universal in *De Interpretatione*. Aristotle evaluated particular protasis separately in *Analytica Priora*. Because particular propositions make use of universal propositions to take part of the universal, they are used like universal (23a17). We see Aristotle's consideration in *Analytica Priora* about indefinite protasis as follows:

> δῆλον δὲ καὶ ὅτι τὸ ἀδιόριστον ἀντὶ τοῦ κατηγορικοῦ τοῦ ἐν μέρει τιθέμενον τὸν αὐτὸν ποιήσει συλλογισμὸν ἐν ἅπασι τοῖς σχήμασιν. (29a27-29)
>
> It is evident also that the substitution of an indefinite for a particular affirmative will effect the same deduction in all the figures.[22]

Especially, we see some discussion of this in chapter four. He says, in the first figure, indefinite protasis must occur as particular;

> ὁ γὰρ αὐτὸς ἔσται συλλογισμὸς ἀδιορίστου τε καὶ ἐν μέρει ληφθέντος. (26a29-30)
>
> for we shall have the same deduction whether it is indefinite or particular.[23]

[22] Translation: Jenkinson, 2014.
[23] Translation: Jenkinson, 2014.

Avicenna describes the situation as follows;

> [٢١-٢٢] You must know that the indefinite proposition does not necessitate generalization. This is because in it there is mention of a nature which can be either properly taken universally or properly taken particularly. Taking it purely [i.e., by itself], without linkage [to a quantity indicator] does not necessarily make it universal. If that were necessarily to impose universality and generality on it, then the nature of "human being" would have necessarily been general – and thus an singular would not be a human being. But since it can be properly taken universally, and there, it can also be applicable particularly; for that which is predicated of all is predicated of some - the same being true of [that which is predicated] negatively - and [since] it can be properly taken particularly, then in the two cases its judgment is applicable particularly. Thus the indefinite proposition is of the same force as that of the particular one.
>
> But the fact that a proposition is explicitly applicable particularly does not prevent it from being at the same time applicable universally. / For if a judgment is made about some, it does not follow from this that the rest is the opposite. Thus even though the indefinite proposition is explicit of the same force as a particular one, there is nothing to prevent it from being applicable universally. (Ibn-Sīnā 1984: 81-82).[24]

This professes agreement with a definition of Aristotle's indefinite protasis, and as Aristotle claimed:

> ὅσαι δ' ἐπὶ τῶν καθόλου μὴ καθόλου, οὐκ ἀεὶ ἡ μὲν ἀληθὴς ἡ δὲ ψευδής·—ἅμα γὰρ ἀληθές ἐστιν εἰπεῖν ὅτι ἔστιν ἄνθρωπος λευκὸς καὶ ὅτι οὐκ ἔστιν ἄνθρωπος λευκός, καὶ ἔστιν ἄνθρωπος καλὸς καὶ οὐκ ἔστιν ἄνθρωπος καλός· εἰ γὰρ αἰσχρός, καὶ οὐ καλός· καὶ εἰ γίγνεταί τι, καὶ οὐκ ἔστιν.— δόξειε δ' ἂν ἐξαίφνης ἄτοπον εἶναι διὰ τὸ φαίνεσθαι σημαίνειν τὸ οὐκ ἔστιν ἄνθρωπος λευκός ἅμα καὶ ὅτι οὐδεὶς ἄνθρωπος λευκός· τὸ δὲ οὔτε ταὐτὸν σημαίνει οὔθ' ἅμα ἐξ ἀνάγκης.(17b29-37)
>
> But if they are about a universal not taken universally it is not always the case that one is true and the other false. For it is true to say at the same time that man is white and that man is not white, or that man is noble and man is not noble (for if base, then not noble; and if something is becoming some-

[24] Translation: Inati, 1984.

thing, then it *is* not that thing). This might seem absurd at first sight, because 'man is not white' looks as it if signifies also at the same time that no man is white; this, however, does not signify the same, nor does it necessary at the same time.[25]

Indefinite protasis cannot make universal claims. As such, indefinite protasis will set out like particular protasis, i.e. Aristotle understands indefinite protasis as particular protasis.

In Aristotle's logic, it is obvious that singular propositions are a protasis. So, Aristotle explains for singular problems as follows;

καὶ καθ' ἕκαστον πρόβλημα ἡ αὐτὴ σκέψις δεικτικῶς τε βουλομένῳ συλλογίσασθαι καὶ εἰς ἀδύνατον ἀγαγεῖν· (45a36-38)

[and singular problem], the same inquiry is necessary whether one wishes to use a probative deduction or a reduction to impossibility.[26]

also he explains how to take this kind of problem in a previous chapter;

Φανερὸν οὖν ὅτι εἰς τὰ προειρημένα βλεπτέον ἑκατέρου καθ' ἕκαστον πρόβλημα· διὰ τούτων γὰρ ἅπαντες οἱ συλλογισμοί. δεῖ δὲ καὶ τῶν ἑπομένων, καὶ οἷς ἕπεται ἕκαστον, εἰς τὰ πρῶτα καὶ τὰ καθόλου μάλιστα βλέπειν, ... (44a36-39)

It is clear then that in [singular] problem we must look to the aforesaid relations of the subject and predicate; for all deductions proceed through these. But if we are seeking consequents and antecedents we must look especially for those which are primary and universal...[27]

Then, we come to see that singular affirmative or negative protasis implement as universal affirmative or negative protasis. In this case, protasis varieties can be created according to Aristotle:

A	τὸ A παντὶ τῷ B ὑπάρχει	BaA
E	τὸ A μηδενὶ τῷ B ὑπάρχειν	BeA
I	τὸ A τινὶ τῷ B ὑπάρχειν	BiA
O	τὸ A τινὶ τῷ B μὴ ὑπάρχειν	BoA

With this in mind, it is important to see that there is a structural dif-

[25] Translation: Ackrill, 2014.
[26] Translation is modified from Jenkinson, 2014.
[27] Translation is modified from Jenkinson, 2014.

ference between propositions and protasis. Simple propositions and protasis are two forms: 'belongs to' (ὑπάρχει) and 'does not belong to' (μὴ ὑπάρχει). The expression that 'belongs to' is affirmation (κατάφασις) as 'τινὸς κατὰ τινός', and the expression that 'does not belong to' is negation (ἀπόφασις) 'τινὸς ἀπὸ τινός'. Here the expression 'τινὸς' corresponds to 'φάσις', which means verb (ῥῆμα) and name (ὄνομα), and this relation is made by the act itself being the verb or by being connected with 'to be' (εἰμί). However, since a grammatical approach is not suitable for formal application, Aristotle makes this distinction as 'τινὸς κατὰ τινός' over 'belongs to' (ὑπάρχει) and 'does not belong to' (μὴ ὑπάρχει) for protasis. In this case, affirming (καταφατικὸς) is 'τινὸς κατὰ τινός ὑπάρχει', and negating (ἀποφατικός) is 'τινὸς κατὰ τινός μὴ ὑπάρχει'. How this difference operates is clear in the following expression:

> τὸ A παντὶ τῷ B ὑπάρχει ἢ μὴ ὑπάρχει (35b5)

Aristotle shows, in this notation, examples of both universal affirmative and universal negative protasis. So we understand this is a negative predication of the verb. Aristotle has examined this equivalence in *De Interpretaione* X:

> Every man is non-white ≡ No man is white
>
> $BaA\bar{} \equiv BeA$
>
> τὸ A παντὶ τῷ B μὴ ὑπάρχει ≡ τὸ A μηδενὶ τῷ B ὑπάρχειν

Thus, Aristotle regulated protasis in this manner:

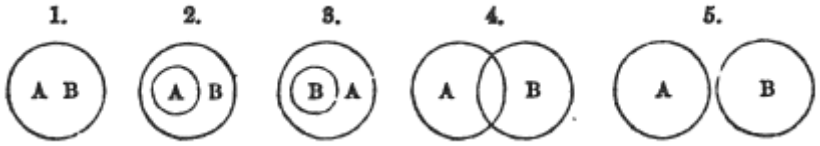
BaA $\forall x \in B \; such \; that \; x \in A$

BeA $\forall x \in B \; such \; that \; x \in \bar{A}$

BiA $\exists x \in B \; such \; that \; x \in A$

BoA $\exists x \in B \; such \; that \; x \in \bar{A}$

Aristotle builds his theory on these four protases. All other propositions are constructed on these four protases. Since other types of proposition ensure compliance with the form established by these propositional varieties, there is no need to treat it as a separate Aristotelian issue. This situation, with the quantity of the predicate mentioned by Hamilton, was also drawn by Venn diagrams (Venn 1881: 6);



Here, for Aristotle, protasis holds in this manner:

A: 1, 2

I: 1, 2, 3, 4

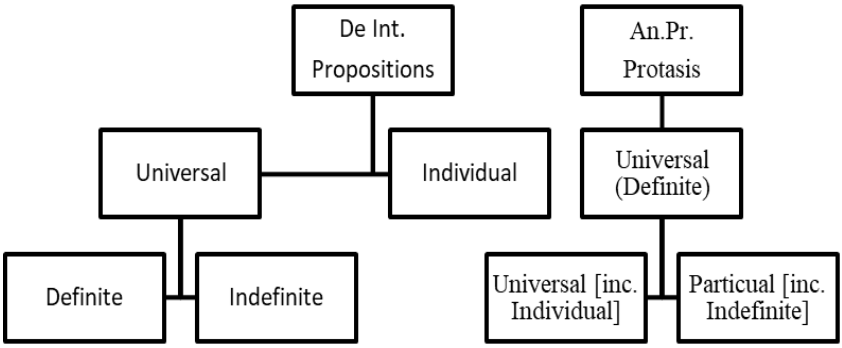
E: 5

O: 3, 4, 5

Aristotle's system contained all of them, so it is appropriate to be able to work on them. However, this has no independently place in Aristotle's system as it mentioned above.Finally, in Aristotelian logic, there are four more types of proposition used in syllogisms. These are different than the four kinds of proposition taken in classical logic, but in this case we can talk about Aristotle's logic having eight proposition and four protases. This eight propositions is examined in terms of the four protases:

Propositions	**Protasis**
Universal affirmative	A
Universal negative	E
Particular affirmative	I
Particular negative	O
Singular affirmative	A
Singular negative	E
Indefinite affirmative	I
Indefinite negative	O

And we see that, Aristotle asserts propositions in *De Interpretaione* and protases in *Analytica Priora* as follows:



In *De Interpretatione*, Aristotle's inquiry is almost entirely taken up from a grammatical perspective. In *Prior Analytics*, on the other hand, his research has turned to the formal side. This is because, in part, that Aristotle has used different terms and classification in these works. Aristotle examines many features of propositions in *De Interpretatione*, such as how they are created, used, and classified in language. Formal use of these propositions leads to great confusions,[28] however, so he reorganized the topic in *Analytica Priora* with an alternative concept, protasis. With this modification, syllogism theory operates more regularly and precisely. This transition is a significant change. From the view of formal language, we can say that Aristotle's deductive language generated 'simple propositions' by 'protasis'. This is given a way to show that Aristotle was in a position to grammatical in *De Interpretatione* and formal in *Prior Analytics*. Furthermore, Hamlyn (Hamlyn 1961: 111) says that *De Interpretatione* is the most grammatical of Aristotle's consideration via predication. Herewith this event can be fixed via many ways.

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[28] For instance, the total number of possible syllogism by protasis is 192, but by simple propositions is 1536. For calculating method see: Williamson, C. (1988), 'How many syllogisms are there?', *History and Philosophy of Logic,* **9**, p.79

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Öz: Çalışmamızda Aristoteles'in önermeleri nitelik ve nicelik bakımından nasıl oluşturduğu açıklanacak, bu önermelerin kıyasta öncüller olarak nasıl alındığı açıklanacaktır. Aristoteles *De Interpretatione*'de 'apophansis' ve *Analytica Priora*'da 'protasis' kavramlarını incelemiştir. Bunları olumlu ve olumsuz olarak niteliklerine göre ayırmış, bununla birlikte niceliklerine göre sınıflandırmalarında ise farklı bir bakış açısı izlemiştir. Apophansislerin ayrımları terimlerin tekil ve tümel alınmış olmasına göre değerlendirilmiş buna ilaveten yüklemlenmeleri de değerlendirmeye alınmıştır. Protasisleri incelerken önermelerin gruplandırmalarını yeniden düzenlemiş ve yüklenmelerinin özelliklerine göre yeniden gruplandırmıştır. *De Interpretatione* ve *Analytica Priora* arasındaki yapısal fark, Aristoteles'in bu iki kavramın kullanımını dikkatli bir şekilde inceleyerek ortaya çıkar.

Anahtar Kelimeler: Önerme, protasis, apophansis, tekil, tümel, Aristoteles mantığı.