



DARIUSZ PIĘTKA

The Elentc Proof of Aristotle's Principle of Non-contradiction

ABSTRACT: The paper is an attempt at presenting the elentc proof of Aristotle's principle of non-contradiction. The first part gives an account of a theory of the three aspects of the semiosis process. An aim this chapter is to put forward a foundations to distinguish notion of the proof in strictly deductive sense and notion of the proof in persuasion sense. The second part is dedicated to the notion of elentc proof which has a pragmatic sense. Subject of the third part of papper is the elentc proof of Aristotle's principle of non-contradiction from a pragmatic point of view. The elentc proof is a way of arguing aimed at refuting of a contrary thesis of the opponent. Aristotle's concept of the deductive proof concerns to syllogistic. The elentc proof goes beyond syllogistic and it is certain procedure that is to demonstrate the weakness of the denegation of the principle of non-contradiction on the basis of the easiness of refuting the opponent's convictions.

KEYWORDS: elentc proof • principle of non-contradiction • syllogism • pragmatcal argument

Introduction

Aristotle's proof of the principle of non-contradiction has always raised doubts as to its correctness. How can one prove something that – as Aristotle himself claimed – cannot be proved¹. Science, or more broadly, rational knowledge, understood statically, is a set of logical propositions. Some propositions are accepted on the basis of other previously accepted propositions, and these are accepted on the basis of other previously accepted propositions, *etc.* This, however, cannot be repeated *ad infinitum*. The basis of every science are propositions without proof, accepted only through some kind of direct cognition. Apart from basic propositions, characteristic of individual sciences, every science assumes certain principles common to them all – in the philosophical tradition they are frequently called the principles of thinking and of being. The most important of them, it seems, is the principle of non-contradiction. It first, incomplete formulation can be found

¹ Aristotle, *Metaphysics*, 1006a 5.

with Parmenides of Elea. It was applied and uttered by Plato, but it was only Aristotle that fully turned it into an object of inquiry². One of the questions regarding the principle of non-contradiction is that whether this principle, although it is one of the primary principles, and is thus beyond proof, can somehow be justified? This question was raised by Aristotle's adversaries as well as by Aristotle himself. In response to sophists' objections, he formulated the so-called elenctic proofs, which – as he himself claims – are not proof *sense stricto*, but refutations of an adversary's conviction in a debate³. Aristotle's elenctic argument requires going beyond the sphere of syntactic relations and considering pragmatic ones. Both syntactic and semantic relations of signs are naturally considered in this text, and are the basis for the acceptance of propositions. By no means can they be overlooked because they are a certain foundation for pragmatic relations.

1. Three aspects of the semiosis process

In order to adequately interpret the elenctic proof of the principle of non-contradiction, we will distinguish between different aspects of the process of the use of a sign and the various relations in which signs are involved. Morris named three aspects of the semiosis process⁴: syntactic, semantic and pragmatic. Signs are somehow constructed, refer to something and remain in relations with the users of language. Users of language signs convey information to one another by means of propositions that are justified in various ways. For logical and mathematical theorems the usual method of justification is deductive proof, naturally where applicable. Axioms do not have such proofs even though they are part of theory. Aristotle's principle of non-contradiction also has the status of an axiom. The deductive proof in logic is syntactic, that is individual expressions are transformed into other expressions by means of rules abstracting from their meaning and the convictions of language users. Axioms are accepted not on the basis of a proof but directly, *a priori*. They are a product of a convention or intuition. Although axioms cannot be justified as secondary theorems of formal sciences are, they must be understandable and intersubjectively communicable. Thus other language users can be persuaded that they are true. Such a justification would have some persuasive power. One person in a dialogue argues (i.e.

² Bocheński notes that Aristotle himself never gave this name to the principle. I. M. Bocheński, *Ancient Formal Logic* (North-Holland Pub. Co., Amsterdam, 1957), p. 38.

³ Aristotle, *Metaphysics*, 1006a 7–12.

⁴ Ch. W. Morris, *Foundations of the Theory of Signs* in O. Neurath, ed., *International Encyclopedia of Unified Science* (University of Chicago Press, Chicago 1938), vol.1, no. 2, p. 3–5.

tries to prove) in front of another that a given proposition is true. Operations aimed at persuading another person (or several persons) to one's line of argument are operations performed in the sphere of pragmatic relations. Such is Aristotle's elenctic proof. Whether Aristotle's idea can be carried out with respect to philosophers who reject the principle of non-contradiction depends on a number of factors, mostly psychological ones.

2. The notion of elenctic proof

The elenctic proof is a way of arguing aimed at refuting (ἔλεγχος) of a contrary thesis of the opponent⁵. Therefore it is strictly pragmatic. In order for elenctic proof to be developed, it is necessary that person v make a proposition contradictory (or at least contrary) to what person w claims. In *On Sophistical Refutations* Aristotle says: "For a refutation is the proof of the contradictory of a given thesis." Similar statement can be found in the *Analytics*⁶. This calls for some explanation⁷. Two syntactic relations regarding the conclusions of elenctic proof are raised here. First, that between the antecedent and the consequent of a proposition in the form of an implication being a syllogism there is the relation of logical implication. Second, there is a contradiction between the conclusion of syllogism and the previously accepted thesis. The syllogism of elenctic proof is a proof of a thesis contradictory with another thesis. As the conclusion of a syllogism is a necessary consequence of accepting the premises, one can assume that unlike the previously accepted thesis, it is true. The relations can be described as follows:

if \mathcal{P} belongs to all \mathcal{M}
and if \mathcal{M} belongs to all \mathcal{S}

\mathcal{P} does not belong to some \mathcal{S} – contradiction – then \mathcal{P} belongs to all \mathcal{S}

" \mathcal{P} does not belong to some \mathcal{S} " and " \mathcal{P} belongs to all \mathcal{S} " are contradictory⁸. Let us assume that a sophist v in a discussion with person w participating claims

⁵ Aristotle, *Analytics prior* 66b.

⁶ *Ibidem*.

⁷ I assume, after Łukasiewicz, that all theses of the Aristotelian logic are implications with a conjunction in the antecedent. According to him, the difference between the Aristotelian and the traditional syllogism is fundamental, because implication is a proposition, and as a proposition must be either true or false. Inferences are neither true nor false. They may be valid or not. J. Łukasiewicz, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, Oxford 1951, p. 20–21.

⁸ Traditionally, these propositions are expressed not by means of the relation of belonging but by means of the relation of being something: if all \mathcal{M} are \mathcal{P} and all \mathcal{S} are \mathcal{M} , then all \mathcal{S} are \mathcal{P} . I adopt Aristotle's original form because it expresses the substantial and accidental character of reality.

that (i) being a liar, for practical reasons, belongs to certain philosophers. By definition both accept that a lie is a purposeful misleading of another person (deliberate falsehood). W disagrees with thesis (i) and claims that (ii) being a truthful person regardless of practical purposes belongs to everyone who loves wisdom (part of its essence is the disinterested pursuit of truth). If v accepts the proposition as well as another premise submitted by w that being a wisdom-loving person belongs to every philosopher, then, necessarily, he must assume that truthfulness regardless of practical purposes belongs to every philosopher. This claim contradicts the original thesis. Therefore a sophist v , by accepting the premises of a syllogism, must necessarily accept its conclusion and dismiss the original thesis. Thus w has refuted v 's thesis.

Apart from the syntactic relations, the elenctic argument makes use of pragmatic relations. The proof is carried out in a discussion with person v with whose claim another person, call him w , cannot agree. We assume that the dialogue is taking place in time, and its participants utter propositions at certain moments – call them t_p, t_j, t_n, t_m , where t_i is a moment in time preceding t_j, t_j , preceding t_n , whereas t_n precedes t_m or is simultaneous with t_m . Let us assume that the participant in the dialogue – person v – accepts at one moment t_i the thesis that “ \mathcal{P} does not belong to some S ”. But another participant in the dialogue – person w does not agree with the thesis. Person w at the moment t_j posits (accepts) during the dialogue with v the thesis “ \mathcal{P} belongs to all \mathcal{M} ”. Person v , influenced by the w 's arguments also accepts the thesis at t_j . Both also accept the proposition “ \mathcal{M} belongs to all S ” at a moment t_m . Both also accept the proposition “ \mathcal{M} belongs to all S ” at a moment t_n . (Or simultaneously with the acceptance of the premise “ \mathcal{P} belongs to all \mathcal{M} ”) – the issue whether the acceptance of the conclusion is simultaneous with the acceptance of the second premise, or whether it follows it, is not important here). As “ \mathcal{P} does not belong to some S ” is contradictory to “ \mathcal{P} belongs to all S ”, participant v accepting at a moment t_n the second proposition, he automatically dismisses at t_n the first, thus at the juncture in the dialogue there is no contradiction. Person v accepts at t_j “ \mathcal{P} does not belong to some S ” and v accepts at t_j the proposition “ \mathcal{P} belongs to all S ”. But it is not the case that he accepts “ \mathcal{P} does not belong to some S ” and “ \mathcal{P} belongs to all S ” at the same time. The time factor is – I believe – important for the elenctic proof of the principle of non-contradiction.

Let *in-a* stand for the relation of belonging to all, and *in-e* for the relation of belonging to none. The relation of belonging to some will be represented by *in-i* and the relation of not belonging to some *in-o*. Thus we get four types of sentences: *in-a*(\mathcal{P}, S) – „ \mathcal{P} belongs to all S ”, *in-e*(\mathcal{P}, S) – „ \mathcal{P} does not belong to any S ”, *in-i*(\mathcal{P}, S) – „ \mathcal{P} belongs to some S ”, *in-o*(\mathcal{P}, S) – „ \mathcal{P} does not belong to some S ”.

As the elenctic proof is persuasive that takes place in time, one should consider that the individual propositions of syllogisms with the language user v , w and the moments in time are arguments of the relation of acceptance, which we shall denote as \mathcal{U} . The Barbara syllogism that takes into account the pragmatic relations shall be written as: $\mathcal{U}[v, \text{„in-}a(\mathcal{P}, \mathcal{M})\text{”}, t]$ i $\mathcal{U}[v, \text{in-}a(\mathcal{M}, \mathcal{S}), t]$, to $\mathcal{U}[v, \text{in-}a(\mathcal{P}, \mathcal{S}), t]$. We shall read it as follows: if person v accepts proposition “ \mathcal{P} belongs to all \mathcal{M} at moment t ”, and the person accepts “ \mathcal{M} belongs to all \mathcal{S} at moment t ”, then he also accepts “ \mathcal{P} belongs to all \mathcal{S} at the moment in question, t ”.

There can be more than one elenctic proof that denegate the original thesis⁹. The difference between two elenctic proofs of the same theorem can be formal or material. The formal difference is one where a given thesis is refuted by means of inferences that employ various syllogistic schemata. For example, the thesis *in-i*(\mathcal{P}, \mathcal{S}) can be refuted by means of the syllogism of the first figure: “if *in-e*(\mathcal{P}, \mathcal{M}) and *in-a*(\mathcal{M}, \mathcal{S}), then *in-e*(\mathcal{P}, \mathcal{S})”, but also by means of syllogisms of the third figure: “if *in-a*(\mathcal{M}, \mathcal{P}) and *in-e*(\mathcal{M}, \mathcal{S}), then *in-e*(\mathcal{P}, \mathcal{S})” and “if *in-e*(\mathcal{M}, \mathcal{P}) and *in-a*(\mathcal{M}, \mathcal{S}), then *in-e*(\mathcal{P}, \mathcal{S})”, or by means of the syllogism of the fourth figure: “if *in-a*(\mathcal{M}, \mathcal{P}) and *in-e*(\mathcal{S}, \mathcal{M}), then *in-e*(\mathcal{P}, \mathcal{S})”. But if we were to refute *in-o*(\mathcal{P}, \mathcal{S}), then, from a formal point of view, we are left with only one syllogism: if *in-a*(\mathcal{P}, \mathcal{M}) and *in-a*(\mathcal{M}, \mathcal{S}), then *in-a*(\mathcal{P}, \mathcal{S}).

When it is possible to refute a formally contrary thesis only by means of one syllogism, we can construct inferences containing different intermediate terms. Properly constructed syllogisms with the same minor and major terms but with different intermediate terms will be different syllogisms from the point of view of their content. Their conclusions, however, will be the same. If a refutation is to concern the thesis “*in-o*(\mathcal{A}, \mathcal{B})”, then the conclusion must have the form: “*in-a*(\mathcal{A}, \mathcal{B})”. The minor premise contains the major term \mathcal{B} , while the minor premise the term \mathcal{A} . There must exist some \mathcal{C} which belongs to \mathcal{A} or to which \mathcal{A} belongs, and belongs to \mathcal{B} or to which \mathcal{B} belongs. In one elenctic argument of the thesis T there is the intermediate term \mathcal{C} . In another argument of the same type \mathcal{C} can be replaced with \mathcal{D} .

Aristotle's logic contains sixteen irrefutable syllogistic schemata. Each can be used to refute a contrary thesis. The choice of an appropriate syllogism depends on the type of thesis to be refuted and the consent of person v from which a contradictory theorem is derived. There is, however, one condition: the premises in a chosen inference scheme must be accepted by the opponent.

⁹ Aristotle, *On Sophistical Refutations*, 170b.

3. The elenctic proof of Aristotle's principle of non-contradiction from a pragmatic point of view

Having a general concept of the elenctic proof, we can consider a particular type of the elenctic proof, i.e. the proof of the principle of non-contradiction. All the proofs that aim at refuting the opponent's convictions in a discussion make use the principle of non-contradiction and aim at placing them in contradiction with another conviction of his. But when an opponent accepts the eventuality of contradiction, the proof is, in principle, impossible.

In order to prove the principle of non-contradiction, Aristotle resorts to a kind of stratagem¹⁰. He accepts the fact that some philosophers believe that there can be contradiction in reality. This is obviously contradictory to Aristotle's position, who claims that it is impossible for one thing to be and not to be¹¹. Aristotle employs the syntactic aspect of language in order to persuade his opponent to his position. According to him, all inference ultimately comes down to the principle of non-contradiction. If this is the case, then it is impossible for anyone to believe that the same thing is and is not¹². Thus, on the basis of the law of transposition: if it is possible for someone to believe that the same thing is and is not, then it is not true that all inference ultimately comes down to the principle of non-contradiction. Therefore, if there were to be such a person who believes that something is and at the same time is not, then it is possible that he accepts contradiction in inference. Acceptance of contradiction in inference can be local, i.e. it can concern only some, but not all inferences. It cannot be a blanket rejection. Aristotle would say directly that the opponent must say something so that his thesis that admits of contradiction could be refuted. It is impossible to present a proof to someone who cannot give any proof¹³. Thus Aristotle assumes a local acceptance of contradiction and a local rejection thereof by opponents of the principle of non-contradiction. Such a possibility is a result of the denegation of the principle of non-contradiction. If the principle states that it is impossible for something to be and not to be at the same time, then

¹⁰ Kwiatkowski contrary to what Łukasiewicz says, claims that Aristotle does not treat his argument as proof *sensu stricto*. They are operations aimed at persuading the readers or listeners to one's view. According to Kwiatkowski, the achievement of the pragmatic aim, the conviction of the auditorium does not compel one to assume the correctness of reasoning. Aristotle's argument, he claims, aims at compelling one to reflect and provoke intellectual effort. T. Kwiatkowski, *Szkice z historii logiki ogólnej*, Lublin 1993, p. 297.

¹¹ Aristotle, *Metaphysics*, 1005b.

¹² *Ibidem*, 1005b 30.

¹³ *Ibidem*, 1006a 10.

its denegation will be a theorem that it is possible for something to be and not to be. If contradiction is possible, then so is non-contradiction. Such a local acceptance of contradiction cancels out the possibility of acceptance of the general principle that something can be and not be. But an argument that aims at changing the opponent's conviction allows for a local rejection of contradiction.

If we accept that a discussion on any subject entails two parties of the dialogue – the proponent and the opponent – then in our case one of the parties, i.e. one that accepts the principle of non-contradiction, would commit the *petitio principii* fallacy, then the other party, which rejects the principle of non-contradiction and accepts its denegation as true, would be in contradiction with the denegation of the principle of non-contradiction when trying to prove something. Thus, from the proponent's point of view, it would indirectly prove the principle of non-contradiction, by reducing its denegation *ad absurdum*. Thus the opponent would not risk falling into *petitio principii*. The problem is, however, that the opponent does not accept the proponent's point of view. The argument that reduces the opponent's thesis *ad absurdum* is no argument for him, since he rejects the principle himself, and therefore a reduction *ad absurdum* does not have to change anything in his system of knowledge.

If a person rejects the principle of non-contradiction, i.e. he does not accept it in his system of knowledge, then he accepts a denegation of this principle in this system. From the proponent's point of view, an indirect proof is possible, one that consists in demonstrating the contradiction with the denegated principle of non-contradiction. Thus it is not a proof *sensu stricto*, but a proof of a persuasive character¹⁴. For Aristotle, the justification of this principle is primarily, if not exclusively, pragmatic. The object is to persuade a language user that rejects the principle. Those who accept it know that it does not require proof¹⁵.

If we have a proof in the ordinary sense in mind, then it is syntactic. It does not consider any other relations between signs other than syntactic ones. Rules of inference are employed to prove, operating on the forms of linguistic expressions, abstracting from their meaning and human convictions. An important pragmatic feature of such a proof is intersubjective character and conformability. In no way do pragmatic relations affect the proof and its correctness. A proof can be carried out again and by means

¹⁴ Woleński points this out in his introduction to J. Łukasiewicz, *O zasadnie sprzeczności u Arystotelesa*, Warsaw 1987, p. XLV.

¹⁵ Aristotle, *Metaphysics* 1006a.

of definite rules achieve the same results. If the proof procedure meets the conditions of intersubjectivity, then the argument is confirmable and generally accepted by competent persons. It is in fact the case that if an ordinary proof were to be carried out, then we have the fallacies of *petitio principii*, *ignoratio entelechii*¹⁶, and according to some also that of *non sequitur*¹⁷. Pragmatic relations, such as the conviction as to the truthfulness of a proposition, do not affect this truthfulness. Similarly, the conviction as to the correctness of a proof in no way affects whether the proof is carried out correctly or not.

The argument to refute the position that admits of contradiction should have the form of a syllogism. Aristotle's argument is not perfectly clear, but it seems that it can be encompassed in the following scheme. There are two participants to a dialogue – proponent *w* and opponent *v*. The latter admits of the possibility of a contradiction, which can be expressed as: “something is such and not such at the same time”, “something is something and not something at the same time”, “something is and is not at the same time”. When we admit of contradiction, we reject the principle of non-contradiction. Aristotle's argument is to aim at refuting the conviction that contradiction is possible. He demands that the person who denegates the principle of non-contradiction that he – at the outset – refer to something (σημαίνειν τι) he would refer to himself (refer for himself): αὐτῷ) and the other participant in the dialogue (to refer for the other: ἄλλῳ)¹⁸. The reference operation is a necessary condition of any communication. Aristotle claims that otherwise man would not be able to reason at all¹⁹. Anyone who would not recognize it would have to keep silent until he changed his views.

A term denotes something definite or not definite in any manner (does not exist at all). The premise of the proof in which the proponent *w* persuades opponent *v* has the form:

- (i) the term “man” denotes something (implicitly: one)²⁰.

¹⁶ J. Łukasiewicz, *O zasadzie sprzeczności u Arystotelesa*, Warsaw 1987, 76–82. J. Salamucha, *Pojęcie dedukcji u Arystotelesa i św. Tomasza z Akwinu. Studium historyczno-krytyczne*, [in:] *idem, Wiedza i wiara. Wybrane pisma filozoficzne*, Lublin 1997, p. 309.

¹⁷ T. Kwiatkowski, *Szkice...*, *op. cit.*, p. 296.

¹⁸ As Aristotle, the function of referring is used by Leśniewski in his argument in favor of the principle of non contradiction. S. Leśniewski, *Próba dowodu ontologicznej zasady sprzeczności*, „Przegląd Filozoficzny”, r. XV(1912).

¹⁹ Aristotle, *Metaphysics*, 1006a 22–23.

²⁰ *Ibidem*.

Later in the text, Aristotle says that

- (ii) if the term “man” denotes something singular, then this is something singular, a living being with two legs²¹.

From (i) and (ii) follows (iii) – something singular that is a living being with two legs.

Evidently, this conclusion was not elaborated by Aristotle, but already at this stage we have an implicit conclusion, which seems to confirm that the term denotes something already definite. The acceptance of the consequent of implication (ii) is quite arbitrary, but based on cognition. It seems, however, that it is a confirmation that what is singular has some features. This operation is to compel the opponent ν to accept the objective relation of denotation between linguistic expressions and object that have certain features (such as having two legs and existing as a living being). The connection of the denoted object with the term that denotes is a kind of assigning meaning to the term²². Already in those fragments, Aristotle implicitly proves that by denoting something we cannot accept something contrary at the same time. But the first elenctic proof has the form²³:

- if
- (i) a term denotes something and something singular;
- (ii) if the term “man” denotes something singular, then the term “humanity” does not denote the same as “non-humanity”;
- then
- (iii) if a term denotes something, the term “humanity” does not denote the same as “non-humanity”.

A twin argument to this is the second elenctic proof that employs the premise from the previous inference that “if the term ‘man’ denotes something singular, then this is something singular, a living being with two legs”, and

²¹ *Ibidem*, 1006a 31–32, [...] ἔτι εἰ τὸ ἀνθρώπος σημαίνει ἕν, ἔστω τοῦτο τὸ ζῶον δίπουν.

²² It seems that this stratagem by Aristotle is the reason why many translators interpret the word σημαίνει as has “means” and not “denotes” – as it should be literally translated. Such an understanding of the term can be found, for example, in the commentary to W. D. Ross, *Aristotle's Metaphysics*, London 1956, p. 265, or in the translation of Leśniak's *Metafizyka* (Aristoteles, *Metafizyka*, transl. S. Leśniak, Warsaw 1984, p. 81).

²³ I make use of the translation and the description of this argument by Łukasiewicz in his summary of his book by the same title. This summary was published in *Bulletin International de l'Academie des Science de Cracovie*, 1910, no. 1–2, 5–38. Contemporary edition: J. Łukasiewicz, *O zasadzie sprzeczności u Arystotelesa*, [in:] *idem, Logika i metafizyka*, Warsaw 1998, p. 351.

it can be found in the final paragraphs of page 1006b²⁴. I give here a certain paraphrase of the text that would have an explicit form of syllogism, in accordance with the postulate concerning the form of the elenctic proof in *Analytics* and *On Sophistical refutations*, and at the same time preserves the meaning of the original text. Aristotle offers this argument in the form of a conditional syllogism:

- if
- (i) if the term “man” denotes x (something), then x is a living being with two legs;
 - (ii) and if x is a living being with two legs, then x is not not- x ;
- then
- (iii) the term “man” denotes x , then x is not not- x .

As we have assumed that the term “man” denotes x , then x (something), then x is not not- x .

Every proposition of the form: $\forall x(Sx \rightarrow Px)$ can be transformed into a general proposition: SaP (all S are P), and this into the canonic form of Aristotle’s syllogistic: P belongs to all S – symbolically: *in-a* (P , S). If we transcribe the argument in the canonic form:

- if
- (i’) living being with two legs belongs to all x denoted by the term “man”;
- and
- (ii’) not being x (not something) belongs to every living being with two legs;
- then
- (iii’) not being not- x (not something) belongs to every x denoted by the term “man”.

From (iii) we can infer that every object denoted by the term “man is an x – or in other words, it is something. To generalize, as such seems to be Aristotle’s intention, we will say that objects denoted by any meaningful term are something. This thesis contradicts what opponent ν originally claimed, namely with the acceptance of a situation where something is something (it is definite) and is not something (is not definite).

The fundamental criticism of Aristotle is that of employing the principle of non-contradiction to prove its validity. The question is, however, whether Aristotle actually failed to notice it, or whether he had something

²⁴ Aristotle, *Metaphysics*, 1006b 28–34.

different in mind in the proof in question. As I have demonstrated, the above argument can be reduced to the Barbara syllogism.

Let the original thesis be the proposition that some S 's are not S 's. In the canonic form: S does not belong to some S . Abbreviated: $in-o(S, S)$. The syllogism to refute this contradiction has the form:

if $in-a(S, \mathcal{M})$;
 and $in-a(\mathcal{M}, S)$;
 then $in-a(S, S)$.

Let us introduce symbols representing the participants in the dialogue, the temporal moments and the predicate of acceptance \mathcal{U} . Let us assume, that originally v accepts the proposition " $in-o(S, S)$ " in t_1 . Symbolically: $\mathcal{U}(v, „in-o(S, S)”, t_1)$. Whereas person w accepts the proposition " $in-a(S, \mathcal{M})$ " at t_1 an persuades v to accept it. Person v accepts " $in-a(S, \mathcal{M})$ " at t_2 . Opponent v also accepts " $in-a(\mathcal{M}, S)$ " at t_3 . Due to the previous acceptance of proposition S at t_2 and t_3 , v also accepts " $in-a(S, S)$ " at t_4 .

We shall read the formula $\mathcal{U}[v, „in-a(\mathcal{P}, S)”, t_j]$ as: "person v accepts the proposition " $in-a(\mathcal{P}, S)$ " at t_j ". Our original thesis will have the form (o), while the operation of inference by person v runs along (i"), (ii"), (iii"):


(i") if $\mathcal{U}[v, „in-a(S, \mathcal{M})”, t_2]$
 (ii") and $\mathcal{U}[v, „in-a(\mathcal{M}, S)”, t_3]$,
 (o) $\mathcal{U}[v, „in-o(S, S)”, t_1]$ (iii") then $\mathcal{U}[v, „in-a(S, S)”, t_4]$.

As the dialogue takes place in time, and the individual premises are accepted at different moments, therefore there is no contradiction between propositions that describe events (iii") and (o). As regards propositions concerning the acceptance of propositions, there is no contradiction. There is contradiction between $in-a(S, S)$ and $in-o(S, S)$. The proponent that presents the opponent the major and minor premises for acceptance and says nothing more. He does no inference on his own, one that would be based on the principle of non-contradiction. The conclusion is achieved by the opponent. The very fact of accepting the conclusion on the basis of accepted premises compels him to admit that the principle of non-contradiction is employed. If he accepts that it is so, he will reject the contrary. But he can accept otherwise. The acceptance of each of the propositions takes place on the basis on certain persuasive power of premises and the relations between (i.e. argument). If that is the case, then for those who reject the conviction about the possibility of contradiction on the basis of syllogistic arguments, a principle that denegates the principle of non-contradiction has little persuasive power.

It seems that this weak persuasive power of the denegation of the principle of non-contradiction was the object of Aristotle's argument. After all, Aristotle must have been aware that the opponent who rejects the principle of non-contradiction, who in a syllogistic inference reaches a conclusion contrary to the original thesis, could have dismissed the fact and would remain faithful to the rules of his language (if he had any). The most important rule would be the rule of contradiction, which would enable the acceptance of mutually contradictory propositions. But if the opponent accepted the conclusion of elenctic argument, as a result of his decision to denote something with a term, means no less than he must have accepted implicitly the principle of non-contradiction, while contradiction itself seemed to him absurd and useless in dialogue.

Conclusion

The paper is an attempt at presenting Aristotle's elenctic proof of the principle of non-contradiction from the pragmatic perspective. I have tried to present the elenctic proof in the framework of syllogistic inference, according to Aristotle's intentions. It does not seem, however, that Aristotle's argument can be exhausted in syllogistic proofs, by means of which a proposition that denegates the negation of the principle of non-contradiction. The argument in favor of the principle of non-contradiction is part of pragmatic relations, whose essence in this case is persuasion. Aristotle himself claimed that the principle of non-contradiction requires no proof. Thus it is hard to assume that several sentences later he would contradict himself and carried out the proof. It would demonstrate a profound inconsistency, and ultimately of a conscious rejection of the principle of non-contradiction. Therefore, we should put in parentheses the objections made by Łukasiewicz, Salamucha, Bocheński and others who charged Aristotle with *petitio principii*. This fallacy would be the case if the proof was carried out in an ordinary way, with only one aspect of the semiosis process – the syntactic aspect. The elenctic proof of the principle of non-contradiction is, primarily, a method to refute opponent claims that something can be such and not such, by compelling him to employ the principle of non-contradiction. This compulsion consists of two stages: first, the operation of denotation by means of a term (terms) of a definite object (objects), and, second, the operation of concluding from adopted premises that contain the terms. Here we have relations along the axis: language user (proponent) – sign designating something – language user (opponent). The elenctic proof is not a proof in the proper sense, but a certain procedure that is to demonstrate the weakness of the denegation

of the principle of non-contradiction on the basis of the easiness of refuting the opponent's convictions. If we were to consistently employ the rule that denegates non-contradiction, we would have to say nothing or treat all speech as meaningless noise. On the other hand, inasmuch as the traditional interpretation of elenctic proofs demonstrates mistakes that in a certain way reveal the irrationality of such arguments (mainly due to *petitio principii*), then the change of convictions motivated by the arguments in time does not appear in any way irrational, and the more so the attempts to have its opponents accept it. I believe that in his argument Aristotle wanted to emphasize the small persuasive power of the denegation of the principle of non-contradiction and the ease with which it is refuted in dialogue practice, which directly translates into the necessity of its application. 

DARIUSZ PIĘTKA – dr, pracuje w Instytucie Filozofii (Katedra Metafizyki) UKSW w Warszawie. Kierunki badań: zastosowania logiki do metafizyki (w szczególności: zagadnienie przyczynowości, zagadnienie analogii), ontologia formalna, metodologia metafizyki, filozofia starożytna (szczególnie ontologia Parmenidesa, Platona, Arystotelesa).

DARIUSZ PIĘTKA – Ph.D., Institute of Philosophy (Faculty of Metaphysics), Cardinal Stefan Wyszyński University in Warsaw. Research fields: an application of logic to metaphysics (particularly in the issues: causality, analogy), formal ontology, methodology of metaphysics, ancient philosophy (Parmenides, Plato, Aristotle).