# KANT AND ZENO OF ELEA: HISTORICAL PRECEDENTS OF THE "SCEPTICAL METHOD"[1]

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**ABSTRACT:** For Kant's interpretation of Zeno in *KrV* A502-507/B530-535, scholars have usually referred to Plato's *Phaedrus* (261d); in reality the sources Kant uses are, on one hand, Brucker (who depends in turn on the pseudo-Aristotelian *De Melisso, Xenophane, et Gorgia*, 977 b 2-21), and, on the other, Plato's *Parmenides* (135e6-136b1) and Proclus' commentary on it, as quoted by Gassendi in a popular textbook he wrote on the history of logic.

**KEYWORDS**: Contradictory Propositions. Contrary Propositions. Dialectic. Antinomy. Sceptical Method. Dogmatism. Scepticism. Apagogical Proof.

In his "[…] critical solution [Entscheidung] of the cosmological conflict of reason with itself", Kant explicitly recalls, as his predecessor and model, Zeno of Elea, who apparently had maintained "[…] that God (presumably for him this was nothing but the world) is neither finite nor infinite, is neither in motion nor at rest, and is neither similar nor dissimilar to any other thing. To those who judged him, it appeared that he wanted entirely to deny two mutually contradictory propositions, which is absurd", and for this reason he "[…] was severely reprimanded by Plato as a wanton sophist";[3] unjustly, according to Kant (who considers more in detail the first of his propositions), since the propositions in question are not contradictory: if they were, by the principle of excluded middle, they could not both be false, and it would be sophistic to maintain their consistency. One is not a mere contradictory of the other, for it "[…] does not merely contradict the other, but says something

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[3] *KrV*, A 502/B 530.

more than is required for a contradiction".[4] Rather, both propositions contain the same singular subject (the world) but two contrary predicates (it is either finite or infinite), so that, by the principle of contradiction, they cannot both be true, but they may both be false. In this case, however, since they negate each other, their mutual inconsistency discloses a common, untenable, assumption, namely that "[…] the world in itself [is] determined in its magnitude".[5] Therefore, according to Kant, it is such a common assumption which needs to be negated, and, because of the principle of excluded middle, leads to the acceptance of its contradictory opposite, that is to say that the world in itself is not a thing in itself.

Kant calls opposition by contrariety "*dialectical* opposition", that is to say only "seeming" opposition in so far as it does not exclude a third possibility, while he calls opposition of contradictories "*analytical* opposition", that is to say, "true and real" opposition since it excludes any other possibility.[6] Here Kant takes up, expressing it in the language of the critical philosophy, the Aristotelian distinction between propositions that are opposed to each other by contrariety – which cannot be both true, although it is possible that they are both false – and propositions that are opposed by contradiction, in which the truth of the one necessarily implies the falsehood of the other.[7]

Kant applies this rule to the first two antinomies:

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[4] *KrV*, A 504/B 532.

[5] *KrV*, A 504-505/B 532-533.

[6] *KrV*, A 504/B 532.

[7] Cf. ARISTOTLE, *De interpretatione*, 17b16-26; on Kant's dependence on Aristotle concerning this particular point, see BERTI, E. *Contraddizione e dialettica negli antichi e nei moderni*, Palermo, 1987, p. 124-126, 169-172; on Aristotle's theory of the kinds of opposition between propositions, see WHITAKER, C.W.A. *Aristotle's* De interpretatione. *Contradiction and Dialectic*, Oxford, 1996, p. 83-94. In his lessons on logic, Kant takes up the doctrine, of Aristotelian derivation and subsequently developed by the Scholastic tradition, which he could find in the manuals of logic he made use of (see MEIER, *Vernunftlehre*, Halle, 1752, §§ 377-380; Id., *Auszug aus der Vernunftlehre*. Halle, 1752, §§ 342-345) and which concerns the different types of opposition between propositions, distinguishing for example in the *Logik Jäsche* (IX, p. 115-117) between inferences of the understanding *per judicia contradictorie opposita* (where "*in consequence of the principle of the excluded middle*, the two contradicting judgements cannot both be true, and just as little can they both be false; if the one is true, then the other is false, and conversely"), inferences *per judicia contrarie opposita* (where "only the inference *from the truth of the one to the falsehood of the other holds, but non conversely*"), and inferences *per judicia subcontrarie opposita* (where "*if one of these propositions is false the other is true, but not conversely*"); cf. also *Refl. zur Logik 3168-3178*, XVI, p. 691-698; *Logik Blomberg* [1771], XXIV, p. 281-2; *Wiener Logik* [early 1780], XXIV, p. 938-939; *Logik Dohna-Wundlacken* [1792-1793], XXIV, p. 769-771.

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> […] if one regards the two propositions, "The world is infinite in magnitude", "The world is finite in magnitude", as contradictory opposites, then one assumes that the world (the whole series of appearances) is a thing in itself. For the world remains, even though I may rule out the infinite or finite regress in the series of its appearances. But if I take away this presupposition, [...] and deny that the world is a thing in itself, then the contradictory conflict of the two assertions is transformed into a merely dialectical conflict, and because the world does not exist in itself (independently of the regressive series of my representations) it exists neither as *an in itself infinite* whole nor as *an in itself finite* whole. It is only in the empirical regress of the series of appearances, and by itself it is not to be met with at all.[8]

And in this way Kant believes he has provided an "[…] indirect proof of the transcendental ideality of appearances".[9]

The demonstrative nature of this argumentation is not denied by what Kant states about the inapplicability in philosophy of apagogical proofs,[10] which consist in proving "p" by showing that "non-p" leads to a contradiction.[11] The solution of mathematical antinomies, however, is not a *reductio ad absurdum* of *one* of the two horns of the antinomy, but consists rather in proving that *both* contrary propositions are false (as shown in the

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[8] *KrV*, A 504-505/B 532-533.

[9] *KrV*, A 506/B 534.

[10] *KrV*, A 791/B 819: "The apagogical method of proof […] can be allowed only in those sciences where it is impossible *to substitute* that which is subjective in our representations for that which is objective, namely the cognition of what is in the object. Where the latter is the dominant concern, however, then it must frequently transpire that the opposite of a certain proposition either simply contradicts the subjective conditions of thought but not the object, or else that both propositions contradict each other only under a subjective condition that is falsely held to be objective, and that since the condition is false, both of them can be false, without it being possible to infer the truth of one from the falsehood of the other"; see also *Logik Dohna-Wundlacken*, where it is maintained that the apagogical proofs are inapplicable in philosophy: "[…] When an accepted concept itself contains a contradiction, then the predicate can conflict with the concept and the opposite of the predicate can too […]. One can prove quite different propositions simultaneously. This often happens in philosophy. Someone can refute his opponent apagogically and be refuted by him just as forcefully by being also reduced *ad absurdum*" (XXIV, p. 749); this is exactly what happens with antinomies, where each of the two opposed theses (the only exception is the demonstration of the thesis of the fourth) is demonstrated by confuting the other thesis; this also means that each proposition, taken separately, is non-contradictory and rationally demonstrated.

[11] *KrV*, A 791/B 819: "The *modus tollens* of rational inferences, which infers from the consequences to the grounds, is not only a quite rigorous but also an extremely easy mode of proof. For if even only a single false consequence can be derived from a proposition, then this proposition is itself false"; cf. also *Logik*, IX, p. 116-117.

proofs of the antithesis and thesis respectively), and hence that the negation of their common assumption is true.[12]

The discoverer of this procedure, which Kant calls the "sceptical method", was - according to Kant - Zeno of Elea. But where did Kant take this singular interpretation of Zeno from?[13] I believe it is possible to prove that there were two sources: from the first Kant took the doctrinal contents of Zeno's system, and from the second he took the method which he attributes to Zeno.[14]

Kant derived the theories he attributed to Zeno from Brucker's *Historia critica philosophiae*, which in its turn was based on the pseudo-Aristotelian text *De Melisso, Xenophane, et Gorgia*,[15] known in the manuscript tradition

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[12] Cf. *KrV*, A 793/B 821, where the apagogical proofs, namely the *modus tollens*, are again clearly distinct from the procedures put into practice in the *Antinomy of Pure Reason*: in order for the indirect, or apagogical, proofs – based on the *modus tollens* – to hold, and for the principle of excluded third to be applicable correctly, "the propositions must be opposed *contradictorily* or *diametraliter*. For two propositions opposed only as contraries (*contrarie opposita*) can both be false" (*Logik*, IX, p. 71[30-34]); in this case, therefore, the contradictory of both – i.e. that which denies both of them – is valid (cf. CAPOZZI, M. *Kant e la logica*, I. Naples, 2002, p. 577-580; see also HEIMSOETH, H. *Transzendentale Dialektik*, vol. IV, Berlin-New York, 1971, p. 736-739).

[13] In the passage here in question Kant does not refer to any of the arguments against movement, multiplicity, and divisibility, which had been traditionally ascribed to Zeno, and which he must have known through Bayle, who had set them out and discussed them in his *Dictionnaire historique et critique* (art.'Zenon d'Elée', note F). Scholars mostly refer (cf. HEIMSOETH, H., *Transzendentale Dialektik*, vol. II, Berlin, 1967, p. 302) to Plato's *Phaedrus* (261d), where Zeno is given the appellative 'Eleatic Palamedes', which Kant could have found in Bayle (note B). This reference, however, if it can explain the fact that Kant attributes the origin of the accusation that Zeno was a "sophist" to Plato (*KrV*, A 502/B 530), does not explain why Kant attributes these arguments to Zeno, since in the *Phaedrus* Zeno is credited with theories which, if we look at them carefully, are the exact opposite of those that are attributed to him in the passage from the first *Critique*: in the *Phaedrus* (261d) Zeno is presented as "such an artful speaker that his listeners will perceive the same things to be both similar and dissimilar, both one and many, both at rest and also in motion", that is to say as a sophist who had the absurd claim to deny two mutually contradictory propositions.

[14] Cf. also MICHELI, G. *Kant storico della filosofia*. Padua, 1980, p. 128-142.

[15] ARISTOTLE, *De Melisso, Xenophane, et Gorgia*, ch. 3, 977a12-b20: "[…] if anything exists, it cannot have become, and he [i.e. Zeno according to Brucker] applies his conclusions to God. For that which has come into existence must have risen either from that which is similar or from that which is dissimilar. But neither of these is possible. For it is neither natural that like should be begotten by like, any more than that like should beget like (for the same features occur in all equal quantities and their interrelations are similar), nor is it possible that unlike has come into existence from unlike. For he argues that if the stronger could arise from the weaker or the greater from the less, or conversely the inferior from the better, the non-existent would arise from the existent, or conversely the existent from the non-existent; both of which are impossible. On these grounds then he claims that God must be eternal […] and he says that He [God] must be one […]. But being eternal, and one, and spherical He [God] must be neither limited nor unlimited. For non-Being is unlimited; for this has neither middle, nor beginning, nor end, nor any other part, and this is the character of the unlimited. But Being cannot have the same character

as *De Xenophane, Zenone et Gorgia*.[16] Because of this incorrect title, Brucker mistook as a theory of Zeno's what in the text was expounded as a teaching of Xenophanes. In his *Historia critica*, Brucker reconstructs Zeno's 'system' according to his own method, by philosophemes, as follows:

> Doctrinam vero ejus [i.e. Zeno] metaphysicam ita exposuit Aristoteles: I. Impossibile est, ut, si aliquid sit, it genitum sit, vel fiat; cum enim, quidquid gignitur, vel ex similibus, vel ex dissimilibus gignatur, neutrum fieri potest; in illis enim, omnia eundem ad se invicem respectum habent; in his nihil ex non ente, vel minore vel deteriore, ens, majus vel melius, oriri potest. II. Ergo unum tantum ens est, et hoc Deus est. III. Ens hoc excellentissimum est, adeoque aeternum, et unum tantum. [...] IV. Unus itaque Deus est […]. VI. Cum omni parte similis sit, rotundum esse oportet, neque enim parte una hanc, aliam parte altera figuram prae se ferre potest. VII. Quia aeternus est, et unus, et rotundus, neque finitus est, neque infinitus. Unum enim neque enti, neque non-enti simile est. VIII. Cum tale unum sit Deus, neque moveri potest, neque immobilis est, illud enim rebus multis convenit, hoc non-enti. IX. Neque locus est, neque motus […].[17]

In the account Brucker took from the pseudo-Aristotelian work we find all the elements of the doctrine which Kant attributes to Zeno in the first *Critique*, that is to say the identification of being, and hence the world, with God, and the triple negation of the pairs of opposite predicates, finite-infinite, similar-dissimilar, and mobile-immobile.

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as non-Being. If they were more than one they would be limited by each other. But the one is in no way similar to non-Being, or to the many […]. Again the one, of the type which he [i.e. Zeno] declares God to be, could neither move nor be immovable. For non-Being is immovable; for another thing cannot enter into its place, nor it into the place of another. It is only things more than one which move. For one thing must move into the place of another. But nothing could move into the place of non-Being; for non-Being has no place. If, then, they could change places, the one would be more than one […]. But the One can neither be at rest nor be moved; for it is similar neither to non-Being nor to the many. In all respects, then, God is of this kind, eternal and one […], neither limited nor unlimited, neither at rest nor movable" (ARISTOTLE*, Minor Works,* trans. by W.S. Hett, Cambridge (Mass.), 1963, p. 483-486).

[16] Actually, Fabricius, although on the basis of only one codex (and of the testimony of Sextus Empiricus), had already formulated the hypothesis that chapter 3 did not report Zeno's but Xenophanes' doctrines; however, Brucker rejected this proposal and continued to adhere to the traditional reading (cf. BRUCKER, I, p. 1170, note q); still in 1831, Bekker, in his edition of Aristotle, accepted the traditional – although certainly inexact – title of the work; on this work cf. ZELLER, E., MONDOLFO, R. *La filosofia dei Greci nel suo sviluppo storico*, parte I, vol. 3, ed. by G. Reale, Florence, 1967, p. 1-55.

[17] BRUCKER, J. *Historia critica philosophiae.* Leipzig [1742], 1767², I , p. 1169-1170. Brucker (I, p. 1170) also refers to the theory of Cudworth (*Systema intellectuale huius universi*, Jena, 1733, p. 473), according to which Zeno maintained that the world is not corporeal, but divine.

As for the method that Kant attributes to Zeno, again in the passage from the first *Critique*, namely the "sceptical method", this seems to be the same method that Plato attributes to Zeno in the *Parmenides*, where he theorises the need for a rigorous dialectic analysis, carried out according to the method by hypothesis, that is to say, once a hypotheses has been made, to see not only those consequences which derive from its affirmation but also those that derive from its negation, both with respect to itself and with respect to the other elements of reality, taken in themselves and taken in relation to each other.[18] The passage from the *Parmenides*, together with Proclus' commentary on it, was quoted by Gassendi in the chapter "Logica Zenonis, seu Eleatica" of the *De logicae origine et varietate*, contained in his *Syntagma philosophicum*,[19] and Kant may have read this in one of the text books of logic he used, the *Via ad veritatem* by Joachim Georg Darjes,[20] which would thus be the source of this attribution.

In Gassendi's work, as used by Darjes, as well as in the passage from the *Parmenides* theorising the method by hypothesis, which Proclus, and Gassendi with him, call *Eleatikè méthodos*, *Eleatica methodus*,[21] there is also a brief summary, as we have said, of Proclus' commentary on Plato's text.

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[18] PLATO, *Parmenides*, 135e6-136b1: "What manner of training is that" he asked. "The manner is just what you heard from Zeno. […] But you must do the following in addition to that: if you want to be trained more thoroughly, you must not only hypothesize, if each thing is, and examine the consequences of that hypothesis; you must also hypothesize, if that same thing is not" "What do you mean?" he asked. "If you like," said Parmenides, "take as an example this hypothesis that Zeno entertained: if many are, what must the consequences be both for the many themselves in relation to themselves and in relation to the one, and for the one in relation to itself and in relation to the many? And, in turn, on the hypothesis, if many are not, you must again examine what the consequences will be both for the one and for the many in relation to themselves and in relation to each other. And again, in turn, if you hypothesize, if likeness is or if is not, you must examine what the consequences will be on each hypothesis, both for the things hypothesized themselves and for the others, both in relation to themselves and in relation to each other […]" (ed. by J.M. Cooper. Indianapolis: Hackett Publishing Company, 1997).

[19] GASSENDI, P. Syntagma philosophicum, in: *Opera omnia*, Lyon, 1658, I, p. 38; cf. PROCLUS, *Commentaria in Platonis Parmenidem*, in: Procli philosophi Platonici *Opera inedita*. Parisiis, 1864, cols 997[10-15], 1007[35]-1008[2], 1009[13-18] (for the passages from the *Parmenides* quoted by Gassendi), 1000[34]-1002[34] e 622[25]-623[28] (for the passages from Proclus' commentary on the *Parmenides* summarised by Gassendi).

[20] DARJES, J.G. *Via ad veritatem commoda auditoribus methodo demonstrata*. Jena, [1755] 1764[2], p. 195-196. Darjes' textbook contains a short history of logic as an appendix, and entitled *Meditationes in logicas veterum*, which is taken, though without indicating the source, from a work by Gassendi. Kant certainly knew Darjes' textbook which he quotes on more than one occasion and uses in his lessons on logic as a source for the history of ancient logic (cf. *Logik Dohna-Wundlacken*, XXIV, p. 777); on Darjes see BERNET, C. *Darjes, Joachim Georg*, in *Biographisch-Bibliographisches Kirchenlexikon*, Nordhausen, 2001, vol. XIX, p. 163-173.

[21] PROCLUS, *Commentaria in Platonis Parmenidem*, 1000[35].

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Here, Proclus illustrates at length, and with a long example, the various ways in which the two initial hypotheses, "x exists" and "x does not exist", each generate twelve hypotheses, to give a total of twenty-four hypotheses. It is in practice a set of rules for obtaining consequences from given opposite hypotheses with the greatest of rigour.

Kant could see therefore in Zeno's method, the "Eleatica methodus", that is to say in the procedure illustrated in the *Parmenides*, a first example of that method of contrasting a thesis with its antithesis, rigorously deriving the consequences of opposite hypotheses, demonstrating thereby the truth of the contradictory proposition with respect to both horns of the antinomy, which was put into practice in the *Antinomy of Pure Reason*. The passage from the first *Critique,* which begins by defending Zeno from the accusation of having been a "wanton sophist", ends by stating that transcendental dialectic "does not favour scepticism", but on the contrary "[…] it does favour the sceptical method, which can point to such dialectic as an example of its great services".[22]

**RIASSUNTO:** Per l'interpretazione kantiana di Zenone in *KrV* A502-507/B530-535 gli studiosi rinviano solitamente al *Fedro* platonico (261d); in realtà, le fonti cui Kant attinse sono, da un lato il Brucker (che a sua volta dipende dallo scritto pseudo-aristotelico *De Melisso, Xenophane, et Gorgia*, 977 b 2-21), dall'altro il *Parmenide* platonico (135e6-136b1) e il commento di Proclo al passo, riportato dal Gassendi in una sua fortunata storia della logica.

**PAROLE CHIAVE:** Opposti contraddittori. Opposti contrari. Dialettica. Antinomia. Metodo scettico. Dogmatismo. Scetticismo. Dimostrazione apagogica.

[22] *KrV*, A 507/B 535. According to Kant, the "sceptical method" (or "zetetic method") must not be confused with scepticism; on the contrary, it represents the method proper to philosophy: "This method of watching, or rather provoking, a contest between assertions, not in order to decide it to the advantage of one party or the other, but to investigate whether the object of the dispute is not perhaps a mere mirage [*Blendwerk*] at which each would snatch in vain without being able to gain anything even if he met with no resistance – this procedure, I say, can be called the *skeptical method*. It is entirely different from *skepticism* […]. For the skeptical method aims at certainty, seeking to discover the point of misunderstanding in disputes that are honestly intended and conducted with intelligence by both sides […]. This skeptical method, however, is essentially suited only to transcendental philosophy, and can in any case be dispensed with in every other field of investigation, but not on this one" (*KrV*, A 423-424 B 451-452). Analogously, with regard to the history of ancient philosophy, Kant distinguishes between "zetetics" and "academics": the former "suspended their judgement, and researched"; the latter "judged definitively that nothing can be demonstrated"; the former used doubt as a method of research, the latter transformed doubt into a dogmatic affirmation (cf. *Storia delle storie generali della filosofia*, ed. by G. Santinello, Padua, 1988, vol. 3, p. 923-927).

## BIBLIOGRAPHY

ARISTOTLE. De interpretatione. In: BARNES, J. (Ed.). *The complete works of Aristotle*. Princeton: Princeton University Press, 1985. v. 1.

_____. De Melisso, Xenophane, et Gorgia. In: HETT, W. S. (Ed.). *Minor works*. Cambridge, Mass.: Harvard University Press, 1963.

BERTI, E. *Contraddizione e dialettica negli antichi e nei moderni*. Palermo: L'Epos, 1987.

BRUCKER, J. *Historia critica philosophiae*. Leipzig: Breitkopf, 1767². v. 1.

CAPOZZI, M. *Kant e la logica*. Naples: Bibliopolis, 2002.

DARJES, J.G. *Via ad veritatem commoda auditoribus methodo demonstrata*. Jena: Hartung, 1764.

GASSENDI, P. Syntagma philosophicum. In: _____. *Opera omnia*. Lyon: Anisson & Devenet, 1658. v. 1.

HEIMSOETH, H. *Transzendentale Dialektik, Ein Kommentar zu Kant's Kritik der reinen Vernunft*. Berlin: De Gruyter, 1966-1971.

KANT, I. *Kritik der reinen Vernunft*. Berlin: Akademie Ausgabe: Reimer, 1911. v. 3.

_____. *Logik*. Berlin u. Leipzig: Akademie Ausgabe: De Gruyter, 1923. v. 9.

MEIER, G.F. *Auszug aus der Vernunftlehre*. Halle: J. J. Gebauer, 1752.

_____. *Vernunftlehre*. Halle: J.J. Gebauer, 1752.

MICHELI, G. *Kant storico della filosofia*. Padua: Antenore, 1980.

PLATO. Parmenides. In: COOPER, J. M. (Ed.). *Complete works*. Indianapolis: Hackett Publishing Company, 1997.

PROCLUS. Commentaria in Platonis Parmenidem. In: COUSIN, V. (Ed.). *Opera inedita*. Paris: Durand, 1864. v. 1.

SANTINELLO, G. (Ed.). *Storia delle storie generali della filosofia*. Padua: Antenore, 1988. v. 3.

WHITAKER, C.W.A. *Aristotle's De interpretatione*: *contradiction and dialectic*. Oxford: Claredon Press, 1996.

ZELLER-MONDOLFO. *La filosofia dei Greci nel suo sviluppo storico*. Ed. by G. Reale. Florence: La Nuova Italia, 1967. v. 3, pt. 1.