

History of Logic from Aristotle to Gödel

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Selected Bibliography on the Early Stoic Logicians: Zeno, Cleanthes, Chrysippus

Zeno of Citium

Editions

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1. Adorno, Francesco. 1957. "Sul Significato Del Termine *Hyparchon* in Zenone Stoico." *Parola del Passato* no. 12:362-374.
2. ———. 1959. "Sul Significato Del Termine *Mnemonicion* in Zenone Stoico." *Parola del Passato* no. 14.
3. ———. 1966. "I Fondamenti Della Logica in Zenone Stoico." In *Studi Sul Pensiero Greco*, 121-178. Firenze: Sansoni.
4. Brinkmann, Klaus. 1997. "Zénon, Matérialiste Et Nominaliste?" *Diotima* no. 25:48-55.
"The article questions the standard perception of Stoic philosophy as materialist and nominalist in nature. Rather than being materialistic, Stoic ontology represents a consistent hylemorphism in which nothing exists without matter and which is intended to circumvent and the matter-form dualism in Aristotle's metaphysics and to avoid Aristotle's epistemological problem of the unknowability of matter. Similarly, Stoic semantics is not entirely nominalistic. Although Stoic universals ("ennoemata", "ennoiai") are "post rem", unlike word or sentence meanings ("lekta") they are nonmental noematic or conceptual structures."
5. Döring, August. 1902. "Zeno, Der Gründer Der Stoa." *Preussische Jahrbücher* no. 107:213-242.
6. Fritz, Kurt von. 1972. "Zenon Von Kition." In *Pauly's Real-Encyclopädie. Band 10 A*, 83-121.
7. Graeser, Andreas. 1975. *Zenon Von Kition. Positionen Und Probleme*. Berlin: de Gruyter.
See in particular: Teil I. *Zur Logik*, pp. 8-81.
Review by Jaap Mansfeld: *Zeno of Citium. Critical observations on a recent study*, *Mnemosyne*, 31, 1978, pp. 134-178.
8. Hunt, Harold Arthur Kinross. 1976. "A Physical Interpretation of the Universe. The Doctrines of Zeno the Stoic." In. Melbourne: Melbourne University Press.
9. Ieorodiakonou, Katerina. 2002. "Zeno's Arguments." In *Zeno of Citium and His Legacy. The Philosophy of Zeno*, edited by Scaltsas, Theodore and Mason, Andrew S., 81-112. Larnaca: The Municipality of Larnaca.
10. Mansfeld, Jaap. 1978. "Zeno of Citium: Critical Observations on a Recent Study." *Mnemosyne* no. 31:134-178.
Critical review of: A. Graeser, *Zenon von Kition. Positionen und Probleme*.
11. ———. 2002. "Zeno on the Unity of Philosophy." In *Zeno of Citium and His Legacy. The Philosophy of Zeno*, edited by Scaltsas, Theodore and Mason, Andrew S. Larnaca: The Municipality of Larnaca.
"The formula "the elements of *logos*" in the Zeno quotation by Epictetus at Arrian, *Diss.* 4.8.12 need not, pace e.g. von Arnim, pertain to the parts of speech, but more probably means the elements, i.e. primary theorems of philosophical theory, or doctrine. Theory moreover should become internalized to the soul

- and "lived": philosophy is also the so-called "art of life". These theorems are to be distinguished but should reciprocally entail each other. Philosophy according to Zeno is both tripartite and one, and tripartite especially in that its parts (and subparts) cannot be transferred simultaneously: of necessity these have to be taught and learned one after the other."
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 13. Pohlenz, Max. 1938. "Zenon Und Chrysipp." *Akademie der Wissenschaften in Göttingen. Philologisch-Historische Klasse. Nachrichten*:173-210.
Neue Folge. Fachgruppe 1. Altertumswissenschaften Bd. 2, Nr. 9.
 14. ———. 1940. "Grundfragen Der Stoischen Philosophie." *Abhandlungen der Gesellschaft der Wissenschaften zu Göttingen. Philologisch-Historische Klasse*:1-122.
Folge 1, Nr. 26.
 15. Rist, John M. 2006. "Zeno and the Origins of Stoic Logic." In *Les Stoïciens Et Leur Logique*, edited by Brunschwig, Jacques, 13-28. Paris: Vrin.
Actes du Colloque de Chantilly 18-22 septembre 1976.
Première édition 1978; deuxième édition, revue, augmentée et mise à jour (reproduit la pagination de l'édition originale).
"I have attempted to sketch what Zeno left behind for Chrysippus to develop (63). Cleanthes has been mentioned in passing, and his contributions are, so far as we can see, largely limited to additional work of the same general sort as his master. He too took an interest in the work of Diodorus Cronus, and as we have seen, is the first recorded Stoic to have discussed the notorious Master Argument and its theory about the possible and the necessary. Probably some form of a theory of *lekta* may be ascribed to him, as Clement of Alexandria tells us. But how much he said on the topic is beyond our ken; probably not very much. For I am personally even inclined to think that it is more likely to have been Chrysippus who formally added *lekta* to the list of incorporeals, though such an addition might be implicit in the thought of anyone who postulated that there are "non-existents": subjects of *meaningful* discourse which cannot be put in category One, the category of what exists. For it is hard to see how that which does not exist can be corporeal. Perhaps it was from some such considerations that the notion of "meaning" itself arose, as well as the thesis that words may have a sense but no reference." p. 27
"Résumé. Avant le développement systématique que Chrysippe donna à la logique stoïcienne, peut-on préciser l'œuvre de Zénon dans ce domaine? Souhaitant donner à l'idée de nature un contenu plus positif que ne le faisait la morale cynique, il devait rencontrer l'hypothèque éleatique; il fut l'élève et le condisciple de plusieurs dialecticiens mégariques (bien qu'on ne lui attribue pas de position dans le problème du Dominateur et des possibles). Il a dû s'intéresser aussi à la théorie des signes et au problème du critère de validité du conditionnel, sur lequel il adopte la position de Philon (que Chrysippe abandonnera sous la pression des critiques de Diodore). Ce problème est lié à celui de la nature du sage; en reconnaissant dans l'aptitude à inférer un aspect fondamental de la nature humaine, Zénon accélérerait sa rupture avec le cynisme. Des Mégariques, Zénon a hérité certaines divergences de vocabulaire et de fond avec la logique aristotélicienne; de Stilpon, notamment, il peut avoir reçu l'idée du primat de l'individuel, contre les Formes platoniciennes et peut-être aussi contre les universaux aristotéliciens. Parmi les domaines que Zénon n'a apparemment pas touchés, on peut compter: la théorie des signifiants et des signifiés; peut-être, la notion même du *lekton* (qui aurait été rajouté, après Zénon, aux trois incorporels primitifs, nés en terrain physique), et du même coup la classification systématique des *lekta*; enfin, la théorie des indémonstrables. En matière de théorie de la connaissance, c'est en revanche Zénon qui a jeté les bases de la doctrine stoïcienne; le problème était urgent, après le platonisme et le pyrrhonisme, comme le démontre l'attitude contemporaine d'Épicure.
Le Professeur Rist n'a pas souhaité rédiger de compléments pour la deuxième édition. (Note de l'éditeur)" pp. 27-28.
(63) *Ibid.* p. 153-154.
 16. Scaltsas, Theodore, and Mason, Andrew S., eds. 2002. *The Philosophy of Zeno. Zeno of Citium and His Legacy*. Larnaca: The Municipality of Larnaca.
 17. Schofield, Malcolm. 1983. "The Syllogisms of Zeno of Citium." *Phronesis. A Journal for Ancient Philosophy* no. 28:31-58.
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Cleanthes of Assos

Editions

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2. Thom Johan Carl. 2005. *Cleanthes' Hymn to Zeus*. Tübingen: Mohr Siebeck. Text, translation, and commentary.

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2. Cambronne, Patrice. 1998. "L'universel & Le Singulier: L 'Hymne À Zeus De Cléanthe: Notes De Lecture." *Revue des études anciennes* no. 100:89-114.
3. Goulet-Cazé, Marie-Odile. 1982. "Un Syllogisme Stoicien Sur La Loi Dans La Doxographie De Diogène Le Cynique À Propos De Diogène Laërce Vi 72." *Rheinisches Museum* no. 215:214-240. "Le syllogisme sur la loi était un syllogisme stoicien attribué à Diogène le Cynique dans la doxographie que lui consacre Diogène Laërce. Il n'est que l'écho d'un ensemble de syllogismes sur la loi et la cité dont l'auteur est vraisemblablement Cléanthe. La source de Diogène Laërce pourrait être Apollodore de Séleucie."
4. Guérard, Christian. 1994. "Cléanthe D'assos." In *Dictionnaire Des Philosophes Antiques*, edited by Goulet, Richard, 406-415. Vol. II
5. Meijer, Pieter Ane. 2008. *Stoic Theology. Proofs for the Existence of the Cosmic God and of the Traditional Gods. Including a Commentary on Cleanthes' Hymn on Zeus*. Delft: Eburon.
6. Thom, Johan C. 2005. *Cleanthes' Hym to Zeus*. Tübingen: Mohr Siebeck. Text, translation and commentary. "Although the *Hymn to Zeus* is often cited as one of the most important documents of early Stoic philosophy -- indeed the only text to survive more or less intact -- it has not yet received a detailed treatment in a monograph by itself. Besides its indubitable philosophical interest, the poem also provides crucial evidence for the way philosophy came to function as a form of religion from the Hellenistic period onwards. The present study strives to pay due attention to the most relevant factors which make this poem exceptional: the philosophical and moral ideas conveyed in poetic form, the religious underpinning given to Stoicism, and the intricate interaction with the preceding literary tradition. Cleanthes offers his own philosophical answer to the human moral dilemma in terms of the Greek cultural heritage; the *Hymn to Zeus* should therefore not simply be interpreted against the background of Stoicism in general." (From the Preface).
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Chrysippus of Soli

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"Analisi paleografica di *PHerc. 1380* e ricostruzione della *subscriptio*: si tratta dell'opera "Degli elementi del discorso e della frase" di Crisippo, di argomento logico-dialettico, affine per tema al trattato sulle ambiguità del linguaggio tramandato in *PHerc. 307*."
4. Marrone Livia, "Le *Questioni logiche* di Crisippo (*PHerc. 307*)," *Cronache Ercolanesi* 27: 83-100 (1997).
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5. Marrone Livia, "Nuove letture nel *PHerc. 307* (*Questioni Logiche* di Crisippo)," *Cronache Ercolanesi* 12: 13-18 (1982).
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The catalogue of the works of Chrysippus preserved by Diogenes Laertius (7, 189 ff.) may derive from a handbook by Chrysippus himself ; this makes it a fairly reliable guide to his thought.
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11. Burke, Michael B. 1994. "Dion and Theon: An Essentialist Solution to an Ancient Puzzle." *Journal of Philosophy* no. 91:129-139.
"The puzzle of Dion and Theon was pondered more than 2000 years ago by the Stoic philosopher Chrysippus. Puzzles of the same type engage identity theorists today. After surveying the many solutions currently on offer, and noting their drawbacks, this article presents a new solution, one that affirms the long- ignored position of Chrysippus, although not the reasoning by which he arrived at it. The solution employs (and assumes) the recently resurgent doctrine of Aristotelian Essentialism, which provides a hitherto unexploited resource for dealing with the full range of putative exceptions to the principle that different objects cannot simultaneously occupy the same place."
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13. ———. 2009. "Sunártesis Crisippea E Tesi Di Aristotele." In *La Logica Nel Pensiero Antico*, edited by Alessandrelli, Michele and Nasti de Vincentis, Mauro, 105-164. Napoli: Bibliopolis.
"This paper aims at analysing the logic and truth-conditions of the Chrysippean conditional. In its first part some influential interpretations of *sunártesis* are examined, their shortcomings are disclosed, and two distinct possible versions of the truth-conditions of *sunártesis* are proposed and spelled out in outline. In the second part the question is investigated of whether the so-called Aristotle's thesis and Boethius' thesis can be regarded as genuine properties of the Chrysippean conditional, as some scholars have interestingly maintained. Textual evidence is exhibited suggesting that it is likely that such theses were valid in Stoic logic. Finally, the problem of how to reconcile the purported truth of these theses with some prima facie incompatible arguments attested by our sources is explored: some possible explanations for the alleged inconsistency are examined."
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See Chapter IV. *Logic* pp. 45-91.
23. Goulet, Richard. 1994. "Chrysippe De Soles." In *Dictionnaire Des Philosophes Antiques*, edited by Goulet, Richard, 329-365.
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"Chrysippus' works were read and commented on in Epictetus' school, and they influenced Epictetus' discussions of formal logic."
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Analysis of Cicero's argument at *De fato* 6 against Chrysippus' doctrine about future contingency
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"Chrysippus claims that some propositions perish, including some true conditionals whose consequent is impossible and antecedent is possible, to which he appeals against Diodorus's Master Argument. On the standard interpretation, perished propositions lack truth values, and these conditionals are true at the same time as their antecedent are possible and consequents impossible. But perished propositions are false, and Chrysippus's conditionals are true when their antecedent and consequent are possible, and false when their antecedent is possible and consequent impossible. The claim of the Master Argument that Chrysippus rejects, then, is stronger than usually supposed."
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"The paper explores the logical paradox of the sorites and its scope. By examining the original sources in Diogenes, Sextus, and Cicero and contemporary commentators (Barnes and Burnyeat), and elaborating upon the context in which the paradox arose (the debate between the Stoics and the Sceptics), I hope to illuminate what the paradox can and cannot accomplish. By focusing on the dialogical nature of the original presentation of the paradox, I outline a better understanding than has been offered previously of the strategy that the Stoics deployed, under their leader Chrysippus, in dealing with the skeptical challenge."
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"Un nouvel examen des col. 4-14 de ce papyrus montre que cette oeuvre a bien, comme le veut le genre des *zetemata*, un caractère aporétique, présentant des propositions dans lesquelles le *semainomenon* n'est pas exprimé clairement. La variété et la vivacité de ce texte important pour notre connaissance de la dialectique des stoïciens traduit l'existence d'un milieu culturel riche en innovations et en provocations."
37. ———. 1993. "Gnoseologia Stoica Nel *Pherc.* 307." In *Ercolano 1738-1988. 250 Anni Di Ricerca Archeologica.*, edited by Dell'Orto, Luisa Franchi, 339-341. Roma: "L'Erma" di Bretschneider.
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Atti del Convegno di Napoli, 19 marzo 1991.
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"Profilo dei trattati filodemei di epistemologia, fondati sulla rielaborazione delle lezioni di Zenone Sidonio (*PHerc.* 1389, 1003, 671, 861, 1065), e di alcuni testi di logica stoica, con particolare attenzione

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"A sentence *p* is necessary, according to Chrysippus if *p* is true and, *p* being susceptible of being false, the external circumstances prevent it from being false. This explanation is used in order to construct the

modal square or rather the two modal squares. Something is specific in the chrysippean logic: from the necessity of p we may validly conclude that it is impossible that *not* p , while the converse conclusion is not valid."

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