

Annotated Bibliography on the Ancient Stoic Dialectic (First Part: A - E)

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Résumé: "Le présent article est une discussion de l'interprétation proposée par Claude Panaccio [*] de la théorie stoïcienne du *logos endiathetos*. Deux points sont plus précisément abordés : 1) la question du rapport entre le logos endiathetos et les lekta ; et 2) la question du caractère, linguistique ou prélinguistique, du *logos endiathetos*."
[* Dans son livre *Le discours intérieur. De Platon à Guillaume d'Ockham*, Paris: Seuil 1999.]
2. Alessandrelli, Michele. 2013. *Il problema del 'lekton' nello Stoicismo antico. Origine e statuto di una nozione controversa*. Firenze: Olschki.
"According to Michael Frede's interpretation, the notion of lekton was developed in the context of the Stoic theory of causality, and conceived as a metaphysical entity. The author of the book challenges this developmental explanation, upholding the linguistic origin of the notion of lekton, that would have been always conceived by the Stoics as a purely semantic entity – that is, as the incorporeal meaning of a corporeal linguistic voice."
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9. ———. 1993. "Osservazioni sull'interpretazione Prantliana della logica Stoica." In *Studi di filosofia antica. Vol. II*, 125-138. Como: Libreria Nosedà.
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"Were Aristotle's logical writings known to the early Stoic logicians, and did Aristotle's logical ideas have any influence on the development of Stoic logic? The evidence which bears on this question is perplexing: there are numerous pertinent texts which favour an affirmative answer; yet as we approach them they seem, like so many will-o'-the-wisps, to retreat -- and we are stumbling

in a treacherous marsh.

But the question is not without its fascination, in as much as it concerns the historical relations between two magnificent monuments to Greek philosophical acumen; and it may stand some discussion. Section I presents some general ruminations. Section II deals with the preliminary question of whether the Stoics could in principle have read Aristotle. Section III assembles a sample of the evidence which suggests that the Stoics did in fact read and study their Aristotle. And the remaining sections try to assess the value of this evidence.

The question is a historical one, and it invites consideration of a certain type of historical explanation. It is not merely a matter of whether the Stoics were aware of the Peripatetic achievement in logic: it is a matter of whether this awareness influenced their own logical thoughts and caused them to think in this way rather than in that." (p. 23)

16. ———. 2005. "What Is a Disjunction?" In *Language and Learning: Philosophy of Language in the Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum*, edited by Frede, Dorothea and Inwood, Brad, 274-298. Cambridge: Cambridge University Press.
 "That the Stoics were the instigators of the emphasis put on linguistic observations in ancient philosophy is uncontested. To what degree they are rightly accused of paying more attention to expressions rather than to things is quite another matter, despite the fact that this reproach was voiced repeatedly in antiquity by authorities such as Galen and Alexander of Aphrodisias and has lasted through the nineteenth century AD. If the Stoics have enjoyed a better press since the twentieth century it is because they were taken to be logicians for logic's sake, committed formalists who stopped just short of inventing the appropriate type of artificial language. That this picture needs revision is argued by Jonathan Barnes (What is a disjunction?) in a painstaking investigation of the treatment of connectives in Apollonius Dyscolus' essay with that title and Galen's *Institutio logica*. Barnes shows that Apollonius' text is coherent and thereby undermines a long-standing prejudice about the Stoic impact on the development of traditional grammar: contrary to what has been assumed (via an unwarranted textual emendation in a crucial passage of Apollonius Dyscolus) Apollonius does not criticise the Stoics' meddling with grammar, but rather their insufficient interest in some of its finer points. Far from adopting a purely formalistic stance, the Stoics distinguished between natural and non-natural disjunctions and colligations. They used these considerations not only to distinguish between natural and occasional disjunctions, but also between grammatical and semantical nonsense. Since no other text besides Apollonius' attributes the conception of 'natural disjunctions' to the Stoics it is a question whether it actually is of Stoic origin rather than derived from the Peripatetics or an invention by certain grammarians. As Barnes shows, the interconnections and boundaries between natural language and formal logic did not only play a crucial role in the treatment of disjunctions by Apollonius Dyscolus. They are also the basis of Galen's criticism of Stoic logic on the differentiation between complete and incomplete conflict and implication, whose intent was to show what is and what is not a legitimate use of conjunctions. If that distinction is at stake, then Galen's view on disjunctions and conjunctions turns out to be coherent, despite initial appearances to the contrary. The differing parties accused each other of not having paid sufficient attention to the *pragmata*; however, their complaint is not that the facts in the world have been ignored, but rather that the meaning of the terms has not received sufficient attention." From the *Introduction* by Dorothea Frede and Brad Inwood (pp. 11-12).
17. ———. 2009. "Grammaire, rhétorique, épistémologie, et dialectique." In *Lire les stoïciens*, edited by Gourinat, Jean-Baptiste and Barnes, Jonathan, 135-149. Paris: Presses Universitaires de France.
18. ———. 2011. "Reading the Hypotheticals." In *Argument from Hypothesis in Ancient Philosophy*, edited by Longo, Angela,

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21. Bobzien, Suzanne. 1986. *Die Stoische Modallogik*. Würzburg: Kōnighausen-Neumann.
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English Abstract: "Part I discusses the Stoic notion of propositions (assertibles, axiomata): their definition; their truth-criteria; the relation between sentence and proposition; propositions that perish; propositions that change their truth-value; the temporal dependency of propositions; the temporal dependency of the Stoic notion of truth; pseudo-dates in propositions. Part II discusses Stoic modal logic: the Stoic definitions of their modal notions (possibility, impossibility, necessity, non-necessity); the logical relations between the modalities; modalities as properties of propositions; contingent propositions; the relation between the Stoic modal notions and those of Diodorus Cronus and Philo of Megara; the role of 'external hindrances' for the modalities; the temporal dependency of the modalities; propositions that change their modalities; the principle that something possible can follow from something impossible; the interpretations of the Stoic modal system by B. Mates, M. Kneale, M. Frede, J. Vuillemin and M. Mignucci are evaluated."
For a shorter, updated, English version of Part I see "Stoic Logic", in K. Algra et al. (eds), *The Cambridge History of Hellenistic*

Philosophy, Cambridge: Cambridge University Press 1999, pp. 92-157.

For a shorter, updated, English version of Part II see "Chrysippus' Modal Logic and its Relation to Philo and Diodorus", in K. Döring, Th. Ebert (eds.), *Dialektiker und Stoiker*, Stuttgart: Franz Steiner 1993, pp. 63-84.

22. ———. 1996. "Stoic Syllogistic." *Oxford Studies in Ancient Philosophy* no. 14:133-192.

"For the Stoics, a syllogism is a formally valid argument, and the primary function of their syllogistic is to establish the formal validity of arguments. Stoic syllogistic can be understood as a system of formal logic that relies on two types of argumental rules: first, five rules (the accounts of the indemonstrables) which were used to determine whether any given argument is an indemonstrable argument (anapodeiktos logos), i.e. an elementary syllogism the validity of which is not in need of further demonstration (D.L. 7.79), since its validity is evident in itself (Sextus, M. 2. 223); second, one unary and three presumably binary argumental rules, called themata, which allow one to establish the formal validity of non-indemonstrable arguments by analysing them in one or more steps into one or more indemonstrable arguments (D.L. 7. 78). The function of these rules is not to generate non-indemonstrable syllogisms from indemonstrable ones, but rather to reduce given non-indemonstrable arguments to indemonstrable syllogisms. Moreover, the Stoic method of deduction differs from standard modern ones in that the direction is reversed. The Stoic system may hence be called an 'argumental reductive system of deduction'.

In the following I present a reconstruction of this system of logic. The rules or accounts used for establishing that an argument is indemonstrable have all survived, and the indemonstrables are among the best-known elements of Stoic logic. However, their exact role and logical status in Stoic syllogistic are usually neglected. I expound how they are integrated in the system of deduction. The state of evidence for the themata is dismal -- although perhaps not hopeless. I suggest a reconstruction of the themata, based on a fresh look at some of the sources, and then offer a reconstruction of the general method of reduction of arguments and some general remarks on Stoic syllogistic as a whole and on the question of its completeness (much of which will not depend on the particular formulation of the themata I propose, but on more general considerations for a reconstruction).

Stoic logic is a propositional logic, and Stoic negation and conjunction are truth-functional. This has, naturally, led to comparisons with the 'classical' propositional calculus (as e.g. presented in *Principia Mathematica*), including repeated examinations of Stoic syllogistic on completeness in the modern sense. The Stoic theory of deduction invariably comes out as deficient, inferior, or simply outlandish in such comparisons, which has evoked adjusting additions and modifications -- tacit or explicit -- in previous reconstructions of the system. I suggest that this is the wrong approach; that the classical propositional calculus is the wrong paradigm; that Stoic logic has to be considered first of all in its own light; and that, if one looks for comparisons with contemporary logic, one can find some rather more interesting parallels when turning one's attention to non-truth-functional propositional logics." (pp. 133-134)

(1) By an argumental rule I mean a rule that produces arguments from (zero or more) arguments, as opposed to a rule that produces propositions from (zero or more) propositions.

(2) The accounts of the indemonstrables, when interpreted as rules, are nullary argumental rules.

23. ———. 1997. "The Stoics on Hypotheses and Hypothetical Arguments." *Phronesis. A Journal for Ancient Philosophy* no. 42:299-312.

"In the list of Chrysippus' logical writings in Diogenes Laertius, in its fourth section of works on arguments (λογοί), we find ten books on hypothetical arguments (υποθετικοί λογοί, D. L. VII 196). The question I shall follow up in this paper is: what were these Stoic

hypothetical arguments about which Chrysippus had so much to say? Little has been written on this issue, the situation of the sources being not exactly favourable. No example of an hypothetical argument assigned to Chrysippus or any other early Stoic has survived, nor do we have any Stoic definition.

One way of approaching the issue is to look and see what arguments were called "hypothetical arguments" or "hypothetical syllogisms" after Chrysippus, and to examine whether these are the same kind of arguments Chrysippus wrote about." (p. 299)

24. ———. 1999. "Logic. III. The Stoics." In *The Cambridge History of Hellenistic Philosophy*, edited by Algra, Keimpe, Barnes, Jonathan, Mansfeld, Jaap and Schofield, Malcolm, 92-176. Cambridge: Cambridge University Press.
§§ 1-7 (pp. 92-157) by Susanne Bobzien; § 8 (pp. 157-176) by Mario Mignucci.
25. ———. 2002. "Pre-Stoics Hypothetical Syllogistic in Galen's *Institutio Logica*." In *The Unknown Galen*, edited by Nutton, Vivian, 57-72. London: Institute of Classical Studies, University of London.
"The text of the *Institutio Logica (IL)* or *Introduction to Logic* is not found in Kuhn [*] because its sole surviving manuscript was first published, not long after its discovery, in 1844, and thus too late for inclusion in Kuhn. Moreover, some have thought the work to be spurious.(1)
The reasons given for this assumption were on the whole unconvincing. I take it for granted that the *Institutio Logica* is by Galen. In this paper I trace the evidence in the *Institutio* for a hypothetical syllogistic which predates Stoic propositional logic. It will emerge that Galen is one of our main witnesses for such a theory. In the *Institutio*, Galen draws from a number of different sources and theories.
There are the so-called ancient philosophers (οι παλαιοι των Φιλοσοφων); there is the Stoic Chrysippus, whose logic Galen studied in his youth.(2) There are the 'more recent philosophers' (οι νεωτεροι), post-Chrysippean Stoics or logicians of other schools who adopted Stoic terminology and theory.(3) There are from the 1st century BC the Stoic Posidonius and the Peripatetic Boethus, both of whom Galen may have counted among the 'more recent philosophers'. Again, in some passages Galen seems to draw from contemporary logical theories of non-Stoic make, presumably of Peripatetic or Platonist origin; and in others he explicitly introduces his own ideas.(4) But apart from Plato, who is generously credited by Galen with the use of the later so-called second hypothetical syllogism, the only promising candidates for pre-Stoic proponents of a hypothetical syllogistic are the above-mentioned 'ancient philosophers'. In the following I concentrate on their theory."
[* Karl Gottlob Kühn, *Claudii Galeni Opera Omnia*. Leipzig: C. Cnobloch, 1821-1833, 19 volumes, reprinted Hildesheim: Georg Olms, 1964-1997].
(1) E.g. C. Prantl, *Die Geschichte der Logik im Abendlande* vol. I (Leipzig 1855) 591-92.
(2) Cf. Galen, *On my own books*, 43 (Kühn XIX).
(3) Cf. L S. Kieffer, *Galen's Institutio Logica* (Baltimore 1964) 130-32; J. Bames, 'Form and Matter', in A. Alberti, ed., *Logica, Mente e Persona* (Florence 1990) 7-119, at 71-23.
(4) E.g. in chapters 16-17 of the *Institutio*.
26. ———. 2003. "Stoic Epistemology." In *The Cambridge Companion to Stoics*, edited by Inwood, Brad, 59-84. Cambridge: Cambridge University Press.

27. ———. 2005. "The Stoics on Fallacies of Equivocation." In *Language and Learning. Philosophy of Language in the Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum*, edited by Frede, Dorothea and Inwood, Brad, 239-273. Cambridge: Cambridge University Press.
 "As Susanne Bobzien shows, the Stoics had philosophical reasons for the development of strategies to handle 'lexical' ambiguities, because they regarded fallacies of ambiguity as complexes of propositions and sentences that straddle the realm of linguistic expression (the domain of language) and the realm of meaning (the domain of logic); moreover, there is also a pragmatic component because being deceived is a psychological disposition that can be reduced neither to language nor to meaning. Not all arguments are, after all, as transparently fallacious as is the example that exploits the ambiguity of 'for men/manly' and concludes that a 'garment for men' must be courageous because manliness is courage. Bobzien provides a detailed analysis of the relevant passages, lays bare textual and interpretative difficulties, and explores what the Stoic view on the matter implies for their theory of language. She points up that the Stoics believe that the premisses of the fallacies, when uttered, have only one meaning and are true, and thus should be conceded; hence no mental process of disambiguation is needed, while Aristotle, by contrast, assumes that the premisses contain several meanings, and recommends that the listeners explicitly disambiguate them. Bobzien proffers two readings of the Stoic advice that we 'be silent' when confronted with fallacies of ambiguity, and explicates how each leads to an overall consistent interpretation of the textual evidence. Finally, she demonstrates that the method advocated by the Stoics works for all fallacies of lexical ambiguity." (From the *Introduction* by Dorothea Frede and Brad Inwood, (pp. 10-11)
28. ———. 2011. "The Combinatorics of Stoic Conjunction: Hipparchus Refuted, Chrysippus Vindicated." *Oxford Studies in Ancient Philosophy* no. 40:157-188.
29. Bobzien, Suzanne, and Mignucci, Mario. 2003. "Logic." In *The Cambridge Companion to Stoics*, edited by Inwood, Brad, 85-123. Cambridge: Cambridge University Press.
 §§ 1-7 (pp. 92-157) by S. Bobzien; § 8 (pp. 157-176) by M. Mignucci.
30. Bochenski, Joseph. 1951. *Ancient Formal Logic*. Amsterdam: North-Holland.
 Chapter V. *The Stoic-Megarian School*, pp. 77-102.
31. ———. 1961. *A History of Formal Logic*. Notre Dame: Indiana University Press.
 Translated from the German edition "Formale Logik" (1956) by Ivo Thomas.
 Reprinted New York, Chelsea Publishing Co., 1970.
 On the Stoics see Part III. *The Megarian-Stoic School*, pp. 105-251.
32. Brancacci, Aldo. 2005. "Antisthène et le stoïcisme: la logique." In *Les Stoïciens*, edited by Romeyer, Dherbey Gilbert and Gourinat, Jean-Baptiste, 55-73. Paris: Vrin.
33. Brittain, Charles. 2005. "Common Sense: Concepts, Definition and Meaning in and out of the Stoa." In *Language and Learning: Philosophy of Language in the Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum*, edited by Frede, Dorothea and Inwood, Brad, 164-209. Cambridge: Cambridge University Press.
 "Charles Brittain also focuses on an important aspect of the philosophical analysis of language: its relation to reality and to the conceptual apparatus in the human mind, which on most theories connects reality to language. To the naive mind, a concept like

'common sense' would not seem to be in need of development since it must have been in place since the dawn of human reasoning. Nor is that the issue of Brittain's paper. Instead, he focuses on the development of a theory of common sense that is based on the connection between a stock of rational conceptions that is the common possession of all humans and the words which map naturally onto those conceptions and so give expression to them. The Stoics themselves did not maintain that everyone can acquire conceptions that successfully capture the essence of things; such success presupposes the uncorrupted mind of the wise; so these normative concepts do not seem to be an obvious source for a theory of common conceptions that are open to all. As Brittain contends, it would nevertheless be wrong to attribute such a theory to the later Platonists despite the fact that they advocated the existence of universally acceptable word-meanings that are open to every human being's grasp. For Platonists regarded these meanings as mere accidental features of the thing in question. What was needed to establish a theory of common sense was a combination of the two theories: the 'preliminary definition' of a term with universal acceptance that lays claim to at least a partial grasp of the thing's essence. En route to this solution Brittain offers, *inter alia*, a reconstruction of the mechanism at work in the formation of common concepts with abstract and general contents and seeks to solve the conundrum of how definitions of the words corresponding to the concepts are formed. He does so by carefully sifting through different sources that employ Stoic vocabulary (such as 'preconceptions' or 'common conceptions') but that differ significantly from the Stoic view that all humans have at least a partial grasp of a thing's essential properties, rather than mere accidental properties. This assumption paves the way towards a theory of 'common sense' that establishes a direct connection between the concepts and the objects of the world and explains how ordinary language-speakers have at least an outline understanding of the world. Such a theory, so Brittain argues, is the upshot of Cicero's treatment of preconceptions, in the basis of definitions. The rendering of 'preconception' (prolepsis) as shared by all - *bycommunis mens* and finally *bycommunis sensus* - justifies the attribution to Cicero of at least 'a fragment of a theory of common sense' in civic and political matters that everyone in principle can understand. This was a theory that deeply influenced the later rhetorical tradition and thereby became a lasting asset in cultural history." (From the *Introduction* by Dorothea Frede and Brad Inwood, (pp. 8-9)

34. Brochard, Victor. 1892. "La logique des Stoïciens." *Archiv für Geschichte der Philosophie* no. 5:449-468.
Repris dans: V. Brochard, *Études de philosophie antique et de philosophie moderne: XI. La logique des Stoïciens* (Première étude, pp. 220-238); XII. *La logique des Stoïciens* (Deuxième étude, pp. 239-251), Paris: Vrin, 1954.
35. Brunschwig, Jacques. 1980. "Proof Defined." In *Doubt and Dogmatism. Studies in Hellenistic Epistemology*, edited by Barnes, Jonathan, Burnyeat, Myles and Schofield, Malcolm, 125-160. Oxford: Clarendon Press.
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"The purpose of this note is to raise and clarify certain questions concerning deduction in Stoic logic. Despite the fact that the extant corpus of relevant texts is limited, it may nevertheless be possible to answer some of these questions with a considerable degree of certainty. Moreover, with the answers obtained one might be able to narrow the range of possible solutions to other problems concerning Stoic theories of meaning and inference.

The content of this note goes somewhat beyond the comments I made during the discussion of Professor Gould's paper 'Deduction in Stoic Logic', in the symposium. I am grateful to Professors Gould and Kretzmann for pointing out the implications of those comments as well as for encouraging me to prepare them for this volume.

One of the obstacles to a careful discussion of Stoic logic is obscurity of terminology. Clarification of terminology may catalyze recognition of important historical facts. For example, in 1956 a modern logician suggested (incorrectly) in a historical note [Alonzo Church, *Introduction to mathematical logic*, Princeton. 1956, fn. 529] that the distinction between implication and deduction could not have been made before the work of Tarski and Carnap. But once historians had clarified their own terminology it became obvious that this distinction played an important role in logic from the very beginning. Aristotle's distinction between imperfect and perfect syllogisms is a variant of the implication-deduction distinction and Gould 'Deduction in Stoic Logic' suggests the existence of a parallel distinction in Stoic logic." (p. 169)

49. Crivelli, Paolo. 1994. "Indefinite Propositions and Anaphora in Stoic Logic." *Phronesis. A Journal for Ancient Philosophy* no. 39:187-206.
 "If I utter in succession the sentences 'Someone is ringing at the door' and 'He is looking for you', my utterance of the pronoun 'he' is anaphoric on my utterance of the indefinite description 'someone', and the proposition expressed by my utterance of 'He is looking for you' is anaphoric on the indefinite proposition expressed by my utterance of 'Someone is ringing at the door'. Propositions anaphoric on indefinite propositions are very important in Stoic logic because they can be parts of indefinite conditionals and indefinite conjunctions, which are 'universal' and 'particular' propositions.
 In this paper I aim at establishing two main results concerning the Stoic conception of indefinite propositions and propositions anaphoric on them: the verb $\upsilon\omicron\tau\alpha\tau\tau\epsilon\upsilon$ belongs to the jargon of Stoic logic and expresses the operation of subordination, which yields the definite propositions that are relevant to the truth or falsity of a given indefinite proposition; the standard ('sentential') truth conditions of conditionals and conjunctions yield the expected ('quantificational') truth conditions of indefinite conditionals and conjunctions, i.e. truth conditions suitable for 'universal' and 'particular' propositions." (p. 187)
50. ———. 1994. "The Stoic Analysis of Tense and of Plural Propositions in Sextus Empiricus, *Adversus Mathematicos* X 99." *Classical Quarterly* no. 44:490-499.
 "*Adversus Mathematicos* (M.) x is the second book dedicated by Sextus to the discussion of the physical doctrines put forward by dogmatic philosophers. An extensive section (M. X 85-120) deals with Diodorus Cronus' arguments concerning movement. M. X 99 occurs within the report of a debate on motion and time between Diodorus and some unnamed opponents. The passage is probably corrupt (as was already noticed by Heintz) [*] and contains some observations on plural propositions and tense which have not yet been satisfactorily explained. In this paper I argue that Diodorus' critics are Stoics, propose a new emendation of the text, and attempt a plausible account of the remarks on plural propositions and tense. Thereby some light is shed on a hitherto unexplored region of Stoic logic." (p. 490)
 [* Werner Heintz, *Studien zu Sextus Empiricus*, Halle, 1932.]
51. ———. 2009. "La dialectique." In *Lire les Stoïciens*, edited by Gourinat, Jean-Baptiste and Barnes, Jonathan, 41-61. Paris: Presses universitaires de France.
52. ———. 2010. "The Stoics on Definitions." In *Definition in Greek Philosophy*, edited by Charles, David, 359-423. New York: Oxford University Press.
 "The present study is a reconstruction of the Stoic theory of definition. The topic is vast and the sources are scarce. My focus is on the epistemological and semantic aspects of the Stoic theory of definition.
 The study's first section explains how important definitions were for the Stoics. The second section expounds the different locations of the study of definitions within the Stoic system of philosophical disciplines. The third section discusses the epistemological side of the theory of definitions on which one of these locations relies. In particular, it addresses two roles played by definitions: sharpening our conceptions in such a way that they are more successfully applied to or withheld from entities, and endowing our conceptions with a systematic structure that makes them suitable for instruction. The fourth section discusses the link between definition and essence: it argues that the Stoics do not think that definitions reveal the essence of what is defined. The fifth section discusses the position of definitions within Stoic philosophy of language: definitions are not linguistic expressions, but sayables of a special kind (distinct from *statales*)." (p. 359)

53. Croissant, Jeanne. 1984. "Autour de la quatrième formule d'implication dans Sextus Empiricus, *Hyp. Pyrrh.* II, 112. Essai de mise au point." *Revue de Philosophie Ancienne* no. 2:73-120.
Repris dans: J. Croissant, *Études de philosophie ancienne*, Bruxelles: Ousia 1986, pp. 297-345.
"Le chemin que nous avons suivi nous a conduits à interpréter la quatrième formule de Sextus comme l'expression d'un lien causal entre l'antécédent et le conséquent, avec cette précision supplémentaire, qui fait corps avec le texte de Galien, que la proposition hypothétique dans laquelle s'exprime l'endeixis procède à partir de l'effet pour découvrir la cause. Nous débouchons donc sur une présence du lien causal dans la proposition hypothétique qui est à l'opposé de l'interprétation de J. Moreau (126) qui voit dans l'*emphasis* l'inclusion dynamique de l'effet dans la cause, disons plutôt de l'ultérieur dans l'antérieur. Alors que mes réflexions m'ont orientée vers le domaine médical, J. Moreau a cherché à retrouver dans la logique stoïcienne la trace et la mise en forme de la conception stoïcienne de l'ordre du monde et des raisons séminales qui président à son déroulement. Les deux positions impliquent en outre une métaphorisation d'*emphasis*, un peu différente de part et d'autre, sous l'identité du "περιεχεται δυναμει". C'est aux lecteurs qu'il appartiendra de juger." (pp. 116-117)
(126) [Joseph Moreau, "Immutabilité du vrai, nécessité logique et lien causal", *Les Stoïciens et leur logique* (Actes du Colloque de Chantilly, septembre 1976), Paris, Vrin, 1978, pp. 347-360] Cf. p. 84.
54. Detel, Wolfgang, Hülsen, Reinhard, Krüger, Gerhard, and Lorenz, Wolfgang. 1980. "λεκτὰ ἑλλιπῆ in der Stoischen Sprachphilosophie." *Archiv für Geschichte der Philosophie* no. 62:276-288.
55. Dorandi, Tiziano. 2005. "La tradition papyrologique des Stoïciens." In *Les Stoïciens*, edited by Romeyer, Dherbey Gilbert and Gourinat, Jean-Baptiste, 29-52. Paris: Vrin.
"J'ai organisé ma contribution en cinq sections:
1. Noms de philosophes stoïciens et de leurs oeuvres dans les papyrus (d'Égypte et d'Herculanum).
2. Histoire de la Stoa de Philodème de Gadara.
3. Textes stoïciens en tradition directe (livres ou fragments de philosophes stoïciens transmis par les papyrus d'Égypte ou d'Herculanum). Je considère d'abord les textes dont l'attribution à un philosophe défini est certaine ou présumée telle: Chrysippe, Hiéroclès, Musonius Rufus; ensuite, je m'arrête sur le papyrus *Parisinus 2* dont l'attribution à Chrysippe a été contestée; enfin, j'examine des cas de fausses attributions.
4. Textes stoïciens en tradition indirecte (les extraits de la *Politeia* de Zénon de Citium cités par Philodème; ceux tirés des œuvres d'Ariston de Chios, d'Antipatros de Tarse et de Diogène de Séleucie).
5. Pour terminer, je dresserai une liste de papyrus où se trouve une référence à la Stoa, aux stoïciens, ou des allusions à des doctrines stoïciennes." (p. 30)
Les pages 35-37 sont sur les *Recherches logiques (Logika zêtēmata) (fragmenta, P. Herc. 307)* de Chrysippe.
56. Döring, Klaus, and Ebert, Theodor, eds. 1993. *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*. Stuttgart: Franz Steiner.
Inhaltsverzeichnis: Vorwort 7; Abkürzungsverzeichnis 8; Teilnehmerverzeichnis 9; Wolfram Ax: Der Einfluss des Peripatos auf die Sprachtheorie der Stoa 11; Mariano Baldassarri: Ein kleiner Traktat Plutarchs über stoische Logik 33; Jonathan Barnes: Meaning, Saying and Thinking 47; Susanne Bobzien: Chrysippus' Modal Logic and Its Relation to Philo and Diodorus 63; Walter Cavini: Chrysippus on Speaking Truly and the Liar 85; Theodor Ebert: Dialecticians and Stoics on the Classification of Propositions 111;

Urs Egli: Neue Elemente im Bild der stoischen Logik 129; Michael Frede: The Stoic Doctrine of the Tenses of the Verb 141; Gabriele Giannantoni: Die Philosophenschule der Megariker und Aristoteles 155; Karheinz Hülser: Zur dialektischen und stoischen Einteilung der Fehlschlüsse 167; Katerina Ieorodiakonou: The Stoic Indemonstrables in the Later Tradition 187; Fritz Jürss: Zum Semiotik Modell der Stoiker und ihrer Vorläufer 201; Mario Mignucci: The Stoic Themata 217; Luciano Montoneri: Platon, die Ältere Akademie und die stoische Dialektik 239; Luciana Repici: The Stoics and the Elenchos 253; Andreas Schubert: Die stoischen Vorstellungen 271; Gerhard Seel: Zur Geschichte und Logik des *θερηζών* logos 291; Hermann Weidemann: Zeit und Wahrheit bei Diodor 319; Literaturverzeichnis 331; Register 343-361.

57. Drozdek, Adam. 2002. "Lekton. Stoic Logic and Ontology." *Acta Antiqua. Academiae Scientiarum Hungaricae* no. 42:93-104. Summary: "For the Stoics, the *lekton* is as an intermediary between the thought and the object. They do not exist independently of the mind, but, at the same time, the mind does not create them. Due to this status, they guarantee intersubjectivity of the rational discourse. They are incorporeals that do not exist, but subsist and the Stoic Logos-God guarantees their permanent subsistence. The *Iekta* are semantico-syntactic entities. Their role is analogous to the role of an interlingua used as a tool for automated translation of languages."
58. Dumitriu, Anton. 1977. *History of Logic*. Tunbridge Wells: Abacus Press. Revised, updated, and enlarged translation from the Roumanian of the second edition of "Istoria logicii" (1969, 4 volumes). On the Stoics see: Vol. I, pp. 216-253.
59. Dyson, Henry. 2009. *Prolepsis and Ennoia in the Early Stoa*. Berlin: Walter de Gruyter.
60. Ebert, Theodor. 1987. "The Origin of the Stoic Theory of Signs in Sextus Empiricus." *Oxford Studies in Ancient Philosophy* no. 5:83-126.
61. ———. 1991. *Dialektiker und frühe Stoiker bei Sextus Empiricus. Untersuchungen zur Entstehung der Aussagenlogik*. Göttingen: Vandenhoeck & Ruprecht. Inhalt: Einleitung 13; I. Teil: Der Ursprung der stoischen Theorie des Zeichens. Erstes Kapitel: Die stoische Theorie des Zeichens bei Sextus Empiricus 29; Zweites Kapitel: Die stoische Theorie des Zeichens vor dem Hintergrund der Berichte bei Diogenes Laertius 54; Drittes Kapitel: Dialektiker und frühe Stoiker zur Theorie des Zeichens 66; II. Teil: Die Dialektiker bei Sextus Empiricus. Viertes Kapitel: Die Dialektische Klassifikation der Aussagen bei Sextus Empiricus 83; Fünftes Kapitel: Die Dialektische Klassifikation der Aussagen als Vorstufe der stoischen 108; Sechstes Kapitel: Die Dialektische und die stoische Klassifikation der Fehlschlüsse bei Sextus Empiricus 131; Siebtes Kapitel: Die Dialektiker über Trugschlüsse und ihre Auflösung 176; Anhang I zum II. Teil: Diodor und die 'Dialektiker' in AM 10.111 209; Anhang II zum II. Teil: Dialektiker und Stoiker bei Apuleius 213; III. Teil: Der Ursprung der stoischen Theorie des Beweis. Achtes Kapitel: Der frühstoische Charakter der Theorie des Beweises bei Sextus Empiricus 219; Neuntes Kapitel: Übereinstimmungen und Unterschiede in den Referaten des Sextus zur stoischen Beweistheorie und das genetische Verhältnis ihrer Quellen 232; Zehntes Kapitel: Von den Dialektikern zu Chrysipp -- der Weg einer Theorie in der Alten Stoa 287; Schlussbemerkung 303; Anhang: Texte aus Sextus Empiricus zu den Dialektikern und den Stoikern 311; Literaturverzeichnis 326; Register 337-346. English translation of the first part in: T. Ebert, *The Origin of the Stoic Theory of Signs in Sextus Empiricus* (1987).

62. ———. 1993. "Dialecticians and Stoics on the Classification of Propositions." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 111-127. Stuttgart: Franz Steiner.
63. Egli, Urs. 1967. *Zur Stoischen Dialektik*. Basel: Sandoz.
Inauguraldissertation (Universität Bern).
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64. ———. 1983. "The Stoic Theory of Arguments." In *Meaning, Use, and Interpretation of Language*, edited by Bäuerle, Rainer, Schwarze, Christoph and von Stechow, Arnim, 79-96. Berlin: Walter de Gruyter.
Contents: 1. Relevance of the topic; 2. Concepts involved; 2.1 Arguments; 2.2 Simple and logical concepts; 2.3 A hypothesis on Stoic deduction theory; 3. A commentary on Sextus' passage on invalidity [Adv. Math. 8, 292-294]; 3.1 The context; 3.2 The passage; 4. Deductions; 5. Completeness; 6. Conclusion; Appendix: Possible existence of cut free systems; Bibliography.
"1. Relevance of the Topic
The Stoic theory of arguments to my mind illustrates one point: If certain ancient doctrines had been properly understood, the corresponding modern theories would have been developed sooner. We would have had a propositional logic by 1800, we would have had a serious syntax long before transformational grammar. Stoics, in addition, had already something like a speech act theory. In one or two cases modern theories have directly been elaborations of Stoico-Megarian developments: First, Prior's tense logic was influenced by reflections on Diodorus. Second, Kripke's semantics for modal logic was directly influenced by Prior's exposition of the theory of modality of Diodorus Kronos. Compare his truth definition of modal statements with that of Kripke:
p is possible now iff p is true now or will be true later (Diodorus).
p is possible in our world iff p is true in a world accessible from ours (Kripke).
Kripke replaced points of time by possible worlds and the relation "to be now or later" by the accessibility relation. It is not impossible that further study of Stoic theories will contribute in a similar way to modern discussions.
It has been proved by Łukasiewicz and Mates that the Stoic theory of what they called syllogisms contained something we might call propositional logic in modern terms. Mates also brought up the problem of deciding whether
1) Stoics contended that their propositional logic was complete; and whether
2) Stoic logic actually was complete according to modern criteria (Mates 1961, 81-82).
As to the first question, the evidence that Mates adduces is not wholly conclusive, for the passages are little more than consequences of the definition of syllogisms (= valid arguments): According to this definition a syllogism is either a basic syllogism (anapodeiktos) or derived from basic syllogisms by the deductive rules (themata) (DL 7.78). From this definition follows that every syllogism (which is not basic) is derived from the basic ones -- the passages adduced by Mates say just that. If it is not clear whether the Stoics actually held that their propositional logic was complete, Becker's attempt to prove the completeness of Stoic logic by reconstructing the missing pieces of the deductive apparatus may seem futile. He has also been severely criticised by Mueller, Frede and others because it is not clear
(a) whether the Stoic conditional *signei* is to be taken as a truth-functional connective or not,
(b) how the Chrysippean exclusion of arguments with but one premise can be reconciled with Becker's full use of such arguments in

his proofs of semantic completeness,

(c) whether the completeness extended from the part of the system involving only conjunction and negation to other connectives.

I now want to reopen the question by arguing that a kind of completeness is indeed to be found in Stoic passages (though not in those Mates adduced) and that an examination of the sources renders some plausibility to the thesis that the Stoics had a system of deduction rules which can be proved adequate according to modern criteria." (pp. 79-80)

Some material on the same matter is already contained in Egli 1967, 54 and Egli 1977 [Review of Frede 1974. *Gnomon* 49, 1977, 784-790].

65. ———. 1993. "Neue Elemente Im Bild Der Stoischen Logik." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 129-139. Stuttgart: Franz Steiner.
66. Evans, John David Gemmill. 2011. "The Old Stoa ont the Truth-Value of Oaths." *Cambridge Classical Journal* no. 20:44-47.

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