

UCSD Spring 2014
PHILOSOPHY 210: Seminar on Greek Philosophy
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Aristotle's Philosophy of Science: the *Posterior Analytics*

Aristotle's *Posterior Analytics* is the first systematic work on scientific method in the history of philosophy, and is probably the most influential work on scientific method of all time, having been apparently influential on, among other works, Euclid's *Elements*, the most important work of Greek mathematics and science. And yet the interpretation of the work remains controversial, as does even its overall purpose, unity, relationship to other works of Aristotle's so-called *Organon*, and relationship to other works in the Aristotle Corpus, especially the works of theoretical science.

The purpose of this seminar is to get a solid overview of Aristotle's philosophy of science, and to develop a research project focused on a special science in relation to it. Seminararians are encouraged to relate their own area of interest (e.g. logic, philosophy of physics, ethics, social-political philosophy, the philosophy of Kant, etc.) to Aristotle's views, and try to see how Aristotle's theory and practice of science relates to contemporary concerns in philosophy and science.

The first meeting of the seminar will consist of an overview of the Aristotle Corpus and the place of the *Posterior Analytics* in it, as well as an introduction to the major problems surrounding the translation and interpretation of the text. The next five meetings will consist of a close reading of the *Posterior Analytics* from beginning to end. The seventh meeting will be a guest lecturer and discussion by an expert translator and interpreter of the text, Professor Richard McKirahan (Professor of Classics and Philosophy at Pomona). In the last three meetings, the seminararians will present their own interpretation of the work in terms of its relation to their own research, and will critique each other's research.

Provisional Schedule

1. April 2. Overview and review of Aristotle's works, especially the *Organon*. The division of philosophy into arts and sciences. The theory of the syllogism in the *Prior Analytics*.

- Crivelli, P. "Aristotle's Logic", chapter 6 of C. Shields (ed.), *The Oxford Handbook of Aristotle*. (Oxford 2012)
- Keyt, D. "Deductive Logic" chapter 3 of G. Anagnostopoulos (ed.), *A Companion to Aristotle*, pp.31-50. (2009)
- Leszl, W. "Aristotle's logical works and his conception of logic", *Topoi* 23 (2004), 71-100.
- Smith, R. "What Use Is Aristotle's *Organon*?" *Proceedings of the Boston Area Colloquium in Ancient Philosophy* 9 (1993): 261-285.
- Smith, R. "Logic," Chapter 2 in Jonathan Barnes, ed., *The Cambridge Companion to Aristotle* (Cambridge 1995).

2. April 9. Conditions of Demonstrative Science. *Posterior Analytics* 1.1-6.

- Detel "Aristotle's Logic and Theory of Science", chapter 14 of M. L. Gill and P. Pellegrin (eds.), *A Companion to Ancient Philosophy*. (2006)
- Hankinson, J. "Philosophy of Science", chapter 4 of J. Barnes, *The Cambridge Companion to Aristotle*. (1995)
- McKirahan, R. *Principles and Proofs: Aristotle's theory of demonstrative science* (Princeton 1992), pp.1-49.
- Smith, R. "Aristotle's Theory of Demonstration" chapter 4 of G. Anagnostopoulos, *A Companion to Aristotle*, pp.51-65. (2009)
- Wians, W. "Aristotle, Demonstration, and Teaching", *Ancient Philosophy* 9 (1989), 245-253.

3. April 16. Architectonics of Demonstrative Science and Critique of the Unity of Science. *Posterior Analytics* 1.7-13.

- Hankinson, J. "Aristotle on Kind-Crossing". In R. W. Sharples (ed.), *Philosophy and the Sciences in Antiquity* (Aldershot and Burlington, VT, 2005), 23-54.
- Johnson, M. R. "Aristotelian Mechanistic Explanation". In J. Rocca (ed.), *Teleology in the Ancient World* (Cambridge, forthcoming).
- Johnson, M. R. "The Aristotelian Explanation of the Halo". *Apeiron* 42 (2009), 325-357.
- Johnson, M. R. "Aristotle's Architectonic Sciences", unpublished manuscript, 2014.
- Jope, J. "Subordinate Demonstrative Science in the Sixth Book of Aristotle's *Physics*", *Classical Quarterly* 22 (1972), 279-292.
- Lennox, J. G. "Aristotle, Galileo, and 'Mixed Sciences'". In W. A. Wallace (ed.) *Reinterpreting Galileo* (Washington, D.C. 1986), 29-51.
- McKirahan, R. D. Jr. "Aristotle's Subordinate Sciences". *The British Journal for the History of Science* 11 (1978), 197-220.

4. April 23. Structural Features of True, Prior, and More Accurate Demonstrative Sciences. *Posterior Analytics* 1.14-34.

- Secondary reading recommendations TBD.

5. April 30. Definition in Demonstrative Science. *Posterior Analytics* 2.1-10.

- Secondary reading recommendations TBD.

6. May 7. Causes and Principles in Scientific Explanations. *Posterior Analytics* 2.11-19.

- Secondary reading recommendations TBD.

7. May 14. Guest Lecturer: Professor Richard McKirahan (Professor of Classics and Philosophy Pomona College) "on *nous* in Aristotle, which takes a new approach to the question of the kind of grasp we have of scientific principles"; and "about Aristotle's three types of scientific principles and how they are related to earlier and later Greek mathematics and how Philoponus treats them (maltreats them, rather)".

- McKirahan, R. *Principles and Proofs: Aristotle's theory of demonstrative science* (Princeton 1992), pp. 235-272.
- McKirahan, R. "The Place of the *Posterior Analytics* in Aristotle's thought, with particular reference to the *Poetics*", in J. Lesher (ed.), [From Inquiry to Demonstrative Knowledge: new essays on Aristotle's Posterior Analytics / Apeiron](#) 43 (2010), 75-104.
- Reeve, C. D. C. "Comments on McKirahan <supra>". *Ibid*, 105-114.

8. May 21. Student presentations.

- Primary and secondary reading recommendations TBD.

9. May 28. Student presentations.

- Primary and secondary reading recommendations TBD.

10. June 4. Student presentations.

- Primary and secondary reading recommendations TBD.

Bibliography

Greek Editions:

Aristotelis Opera (Aristotelis Opera ex recensione Immanuelis Bekkeri edidit Academia Regia Borussica accedunt fragmenta scholia index aristotelicus). Edited by I. Bekker. 2 vols. Berlin, 1891. Volume I contains *Analytica Posteriora*, pp. <This is the standard modern edition which sets the pagination for all subsequent editions and translations.>

Aristotelis Analytica Priora et Posteriora. Edited by W. D. Ross, with preface and appendix by L. Minio-Paluello. Oxford Classical Texts 1964. <Major critical edition.>

English Translations and Commentaries:

Philoponus. Commentary on Aristotle's Posterior Analytics. 1.1-8 (tr. R. McKirahan 2008); 1.9-18 (tr. R. McKirahan 2012); 1.19-34 (tr. O. Goldin & M. Martijn 2012); 2 (tr. O. Goldin 2014).

Thomas Aquinas, *Commentary on the Posterior analytics of Aristotle*. Translated by F. R. Larcher. Albany, N.Y. : Magi Books, 1970.

The Works of Aristotle Translated into English under the Editorship of W. D. Ross, ed. J. A. Smith and W. D. Ross. 11 vols. Volume I contains *Analytica posteriora* (tr. G. R. G. Mure). Oxford 1928. <Contains an outline of the work, running notes, diagrams and indices.>

Aristotle: Prior and Posterior Analytics. D. Ross. Oxford, 1949. <Contains a critical Greek text and translation with introduction and full-scale commentary.>

Aristotle in 23 Volumes. Volume 2 contains *Posterior Analytics* (tr. H. Treddenick), *Topica* (tr. E. S. Forster). Harvard and London, The Loeb Classical Library, 1960. <Contains an introduction, facing Greek and English, and sparse notes.>

Aristotle's Posterior Analytics. Translation with commentaries and glossary by Hippocrates G. Apostle. Grinnell, Iowa, 1981.

Aristotle: Posterior Analytics. Translated by Jonathon Barnes (Oxford 1975; 2nd ed. 1994). Clarendon Aristotle Series. <Contains short introduction, translation, commentary, and glossary.>

The Complete Works of Aristotle: The revised Oxford Translation. Edited by J. Barnes. Volume I contains *Posterior Analytics* (tr. J. Barnes). Princeton, 1984. <Contains a stripped-down, minimalistic translation. A revision of *supra*.>

Essay Collections:

Aristotle on Science: the Posterior Analytics: proceedings of the eighth symposium aristotelicum. Edited by E. Berti. Padova 1981.

Aristoteles als Wissenschaftstheoretiker: Eine Aufsatzsammlung. Edited by J. Irmscher and R. Müller. Berlin, 1983.

From Inquiry to Demonstrative Knowledge: new essays on Aristotle's Posterior Analytics, ed. J. Lesher. Kelowna, BC, 2010.

Interpreting Aristotle's Posterior analytics in late antiquity and beyond. Edited by F.A.J. de Haas, M. Leunissen and M. Martijn. Leiden Boston 2010.

Monographs:

Goldin, O. *Explaining an Eclipse: Aristotle's Posterior Analytics 2.1-10.* Ann Arbor 1996.

Harari, *Knowledge and Demonstration: Aristotle's Posterior Analytics.* Dordrecht 2004.

McKirahan, R. *Principles and Proofs: Aristotle's theory of demonstrative science.* Princeton 1992.