

A World of Senses Before 1700: Sense Perception in Aristotelianism and Beyond

Seminar Leader: Yuan Tao

Email: y.tao@berlin.bard.edu

Meeting time: Wednesday, 14:00pm-17:15pm

Office Hours: by appointment



A renaissance painting representing sight and hearing.

I. Course Description

This course traces the shifts in the theories of sense perception from the Aristotelian philosophical tradition to early modern mechanical science. By looking at a selection of important authors, such as Aristotle, Plato, Galen, Ibn Al-Haytham, Roger Bacon, Versalius, Descartes and so on, we shall discern the changing practices and methods of philosophy, mathematics and medicine that underly the shifts in the theoretical framework. Students will learn to confidently reconstruct ideas and arguments, as well as analyse them with a historical sentiment, taking into consideration the scientific practices at the time and what the historical actors wished to achieve with their theories. The course does not assume any prior knowledge of classical languages. Some familiarity with Aristotelian philosophy is advantageous but not necessary.

II. Requirements

Each week's reading will consist of one to two primary sources and approximately three pieces of secondary literature that will be uploaded to Canvas one week in advance. The primary sources will form the main focus of our in-class discussions, so please give yourself plenty of time to read them carefully and keep track of the passages that are especially interesting or difficult for you. The secondary literature will help you better grasp the primary sources, introduce you to recent scholarship and give you an anchor point to situate your discussion. You do not have to finish all of the secondary literature but you will be expected to give a summary of at least one secondary work that has been assigned to you and to talk about the questions posted on Canvas for that week.

One of our shared projects, as a group, is to cultivate an inclusive atmosphere and learn to communicate with one another over the course of the semester. While this may not happen immediately given our diverse interests, beliefs, identities, and educational backgrounds, the success of the course depends heavily upon your best efforts and good faith in putting forward the strongest work of which you are capable, both in your individual contributions and in your interactions with your peers. Laptops and tablets should be put away during class discussions.

III. Academic Integrity

Bard College Berlin maintains the highest standards of academic integrity and expects students to adhere to these standards at all times. Instances in which students fail to meet the expected standards of academic integrity will be dealt with under the Code of Student Conduct, Section 14.3 (Academic Misconduct) in the Student Handbook.

IV. Attendance

Attendance at all classes is a crucial part of the education offered by Bard College Berlin. To account for minor circumstances, two absences from twice-per-week courses or the equivalent (e.g. one absence from a once-per-week course) should not affect the participation grade or require documentation.

Bard College Berlin may not offer credit for any course in which a student has missed more than 30% of classes, regardless of the reasons for the absences. The full Bard College Berlin attendance policy can be found in the Student Handbook, Section 2.8.

V. Assignments and Assessment

Your assessment in the course will consist of three components:

1. **In-class participation (30%):** For every class you will be asked to introduce an assigned reading. You will summarise the main ideas of the reading, talk about what interests you and pose two questions for further discussions.
2. **Mid-term (25%) :** On week 5 you will be asked to give a 30-minute presentation on the theory of sense perception of an author of your choice (you have a choice of six). Depending on the enrolment it might be either an individual presentation or a group presentation. A short essay of approx. 2,000 words based on the presentation is due on **March 10**. Important points to cover in the presentation and in the essay will be communicated in the beginning of the course.
3. **Final paper (45%):** For the final paper you can write on the theory of sense perception of any author in the time period we have covered, but it is strongly recommended that you choose from the authors that we have discussed. The amount of words should be around 5,000. Please schedule an appointment with me to discuss your paper topic a few weeks before the deadline so that you will have enough time to adjust your topic if necessary. The due date of the final paper is **May 15**. In the final class each one of you will have the opportunity to present your paper topic and outline to get feedback.

***Important! If you are a graduating student we need to find an earlier submission date for you.**

VI. Policy on Late Submission of Papers

Essays that are up to 24 hours late can be downgraded up to one full grade (from B+ to C+, for example). Instructors are not obliged to accept essays that are more than 24 hours late. Where a professor agrees to accept a late assignment, it should be submitted by the new deadline agreed upon by both parties.

Thereafter, the student will receive a failing grade for the assignment. Grades and comments will be returned to students in a timely fashion. Students are also entitled to make an appointment to discuss essay assignments and feedback during instructors' office hours.

Students receive mid- and end-of-semester grades for their seminar work. Students are entitled to make an appointment with an instructor to discuss

seminar participation, or may be asked to meet with the instructor at any stage in the semester regarding class progress.

VII. Weekly Schedule

Week 1 (01.31): Introduction to the course

Week 2 (02.07): “Form without matter”: Aristotle on sense perception.

Primary readings:

1. Aristotle, *On the Soul. Parva Naturalia. On Breath*, trans. W. S. Hett (Cambridge, MA: Harvard University Press, 1957), Book II, 66-139.

Secondary readings:

1. Stephen Everson, “Proper Sensibles and Secondary Qualities,” in *Aristotle on Perception* (Oxford: Oxford University Press, 1999), 103-138.
2. Thomas Johansen, *Aristotle on the Sense-Organs* (Cambridge: Cambridge University Press, 1998), 20-40; 116-127; 148-156; 178-182.
3. Anna Marmodoro, *Aristotle on Perceiving Objects* (Oxford: Oxford University Press, 2014), 78-124.

Week 3 (02.14): “The fiery eye”: Plato on sense perception

Primary readings:

1. Plato, *Timaeus; Critias; Cleitophon; Menexenus; Epistles*, trans. Robert Gregg Bury (Cambridge, Mass.: Harvard University Press, 1952), 91-177.

Secondary readings:

1. P. Remes, “Plato: Interaction Between the External Body and the Perceiver in the Timaeus,” in *Active Perception in the History of Philosophy*, ed. J. Silva and M. Yrjönsuuri (Cham: Springer, 2014), 9-30.
2. David C. Lindberg, *Theories of Vision from Al-Kindi to Kepler* (Chicago, University of Chicago Press, 1981), 1-17.
3. Olivier Darrigol, *A History of Optics: from Greek Antiquity to the Nineteenth Century* (Oxford: Oxford University Press, 2012), 1-25.

Week 4 (02.21): Anatomy and sense perception: Galen

Primary readings:

1. Galen, *On the Usefulness of the Parts of the Body*, trans. Margaret Tallmadge May (Ithaca, N.Y.: Cornell University Press, 1968), Chapter 6-8, 11.

Secondary readings:

1. Rudolph E. Siegel, *Galen on Sense Perception. His Doctrines, Observations and Experiments on Vision, Hearing, Smell, Taste, Touch and Pain, and Their Historical Sources* (Basel: Karger, 1970), 1-5; 40-78; 132-136; 175-177.
2. Julius Rocca, "Pneuma as a Holistic Concept in Galen." in *Holism in Ancient Medicine and Its Reception*, ed. Chiara Thumiger (Leiden: Brill, 2020), 268-291.
3. R. J. Hankinson, "The Man and His Work," in *The Cambridge Companion to Galen*, ed. R. J. Hankinson (Cambridge: Cambridge University Press, , 2008), 1-31.

Week 5 (02.28): Early experimentalism: Al-Haytham on optics

Primary readings:

1. Sabra, A. I. 1989. *The Optics of Ibn Al-Haytham: Books I-III : on Direct Vision*. London: Warburg Institute, University of London, Vol. I, 1-26

Secondary readings:

1. Ibn Al-Haytham, *The Optics of Ibn Al-Haytham: Books I-III: on Direct Vision*, trans. A. I. Sabra (London: Warburg Institute, 1989), Vol. II, 3-29.
2. Ibn Al-Haytham, *Alhacen's Theory of Visual Perception: a Critical Edition, with English Translation and Commentary, of the First Three Books of Alhacen's De Aspectibus, the Medieval Latin Version of Ibn Al-Haytham's Kitab Al-Manazir*, trans. A. Mark Smith (Philadelphia: American Philosophical Society, 2001), xxv-lvii; lxxx-xciv.
3. S. Knuuttila, "Aristotle's Theory of Perception and Medieval Aristotelianism," in *Theories of Perception in Medieval and Early Modern Philosophy*, ed. S. Knuuttila and P. Kärkkäinen (Dordrecht: Springer, 2008), 1-22.

Week 6 (03.06): Mid-term: group presentation

Week 7 (03.13): The multiplication of *species*: Roger Bacon on sense perception

Primary readings:

1. Roger Bacon, *Roger Bacon's Philosophy of Nature: A Critical Edition, with English translation, Introduction, and Notes of De multiplicatione specierum and De speculis comburentibus*, ed. David C. Lindberg (South Bend, Ind.: St. Augustine's Press, 1998), 1-119; 179-205.

Secondary readings:

1. Roger Bacon, *Roger Bacon's Philosophy of Nature: A Critical Edition, with English translation, Introduction, and Notes of De multiplicatione specierum and De speculis comburentibus*, ed. David C. Lindberg (South Bend, Ind.: St. Augustine's Press, 1998), "Introduction."
2. Yael Raizman-Kedar, "Questioning Aristotle: Roger Bacon on the True Essence of Color," *Journal of Medieval Latin* 17 (2007): 372–85.
3. Jeremiah Hackett, "Experientia, Experimentum and Perception of Objects in Space: Roger Bacon," in *Raum Und Raumvorstellungen Im Mittelalter*, ed. Jan A. Aertsen *et al.* (De Gruyter, 2013), 101-120.

Week 8 (03.20): Renaissance anatomy and the senses: Vesalius

Primary readings:

1. Andreas Vesalius, *The Fabric of the Human Body: an Annotated Translation of the 1543 and 1555 Editions*, trans. Daniel H. Garrison, Malcolm Howard Hast (Basel: Karger, 2014), 1302-1314; 1322-1324.

Secondary readings:

1. Nancy G. Siraisi, *Medieval & Early Renaissance Medicine: an Introduction to Knowledge and Practice* (Chicago: University of Chicago Press, 1990), 78-114.
2. Maria Luisa Garofalo, "Anatomy, Physiology and Teleology: Galen as a Controversial Source for Vesalius's *De Humani Corporis Fabrica*," in *Towards the Authority of Vesalius: Studies on Medicine and the Human Body from Antiquity to the Renaissance and Beyond*, ed. Erika Gielen and Goyens Michèle (Turnhout, Belgium: Brepols, 2018), 125-154.
3. Sachiko Kusukawa, *Picturing the Book of Nature: Image, Text, and Argument in Sixteenth-Century Human Anatomy and Medical Botany* (Chicago: University of Chicago Press, 2012), 229-248.

Week 9 (03.27)

Spring break—no class

Week 10 (04.03): Sense and Reason, Galileo on sense perception

Primary readings:

1. Galilei, Galileo, *Dialogue Concerning the Two Chief World Systems, Ptolemaic and Copernican*, trans. Stillman Drake (New York: Modern Library, 2001), 36-64.
2. Stillman Drake and C. D O'Malley, *The Controversy on the Comets of 1618* (Philadelphia: University of Pennsylvania Press, 1960), 308-314.

Secondary readings:

1. Marco Piccolino and Nicholas J Wade, *Galileo's Visions* (Oxford: Oxford University Press, 2014), 163-186.
2. Maurice A. Finocchiaro, *The Routledge Guidebook to Galileo's Dialogue* (New York: Routledge-Taylor and Francis, 2014), 1-31.
3. Stillman Drake, *Galileo at Work: His Scientific Biography* (Chicago: University of Chicago Press, 1978), 1-49.

Week 11 (04.10): Sensation and dualism: Descartes on sense perception

Primary readings:

1. René Descartes, *The Philosophical Writings of Descartes*, trans. John Cottingham, Robert Stoothoff and Dugald Murdoch (Cambridge: Cambridge University Press, 1984), Vol. 1, 50-62.
2. René Descartes, *The World and Other Writings*, trans. Stephen Gaukroger (Cambridge, UK: Cambridge University Press, 1998), 3-24, 116-139.

Secondary readings:

1. Alison Simmons, "Mind-Body Union and the Limits of Cartesian Metaphysics," *Philosophers Imprint* 17 (2017): 1-36.
2. Margaret D. Wilson, "Descartes on the Origin of Sensation," *Philosophical Topics* 19, no. 1 (1991): 293-323.

Week 12 (04. 17) : Woman philosopher on sense perception: Margaret Cavendish

Primary readings:

1. Margaret Cavendish, *Observations Upon Experimental Philosophy*. trans. Eileen O'Neill (Cambridge: Cambridge University Press, 2001), 1-15; 46-53; 79-90; 108; 137-149.

Secondary readings:

1. Marcus P. Adams, “Visual Perception as Patterning: Cavendish Against Hobbes on Sensation,” *History of Philosophy Quarterly* 33 (2016): 193–214.
2. Colin Chamberlain, “Color in a Material World: Margaret Cavendish Against the Early Modern Mechanists,” *The Philosophical Review* 128 (2019): 293–336.
3. Sarah Hutton, *Anne Conway: A Woman Philosopher* (Cambridge: Cambridge University Press, 2004), 94-115.

Week 13 (04. 24) Methodological reflections

1. Rudolf Schuessler, *The Debate on Probable Opinions in the Scholastic Tradition* (Boston: Brill, 2019), 22-58.
2. Peter Dear, *Discipline and Experience: the Mathematical Way in the Scientific Revolution* (Chicago: University of Chicago Press, 1995), 32-62.
3. Lorraine Daston, “The Coming into Being of Scientific Objects,” in *Biographies of Scientific Objects*, ed. Lorraine Daston (Chicago, University of Chicago Press, 2000), 1-14.
4. David Wootton, *The Invention of Science: a New History of the Scientific Revolution* (New York: Harper, 2015), 310-360.
5. Scott L. Montgomery, “Mobilities of Science: The Era of Translation into Arabic,” *Isis* 109, no. 2 (2018): 313–19.

Week 14 (05.01)

Labour Day—no class

Week 15 (05.08)

Final paper discussion

* There might be minor changes to the readings but everything will be made available in advance.