# Logical hylomorphism:
# Its history and prospects

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**Office Hours:** By appointment
**Course location:** SG 122, 17:00-19:00 Mondays

Contemporary logic has as one of its central tasks to explain what makes an argument deductively valid. In general terms, the answer to this question tends to be a point of agreement: An argument is deductively valid if it is an instance of a valid logical form. Yet making precise this notion of "logical form" turns out to be challenging. The contemporary notion of logical form relies on a partition of the vocabulary occurring in an argument into "logical constants" (terms like "and", "if ... then" and "therefore") and non-logical vocabulary (terms like "sits", "flies" and "Socrates"). Serious problems, however, beset attempts to describe a principled way of performing this partition. As a result, there is no widespread agreement among contemporary logicians and philosophers of logic as to how precisely we are to understand the notion of logical form, and no widespread agreement as to what the deductive validity of an argument consists in.

The attempt in contemporary logic to account for validity in terms of logical form may be viewed as one installment in a long and rich history of treating arguments on the model of Aristotelian hylomorphic compounds and analyzing them into form and matter. While the distinction between form and matter has been applied to arguments since the discipline's birth, it has been applied by logicians who rejected many of the assumptions taken for granted in contemporary logic, and who worked with different conceptions of the form-matter distinction, and who identified the form and matter of arguments in different ways. Consequently, an examination of the history of logical form may shed light on the sources of the difficulties with the contemporary notion.

In this course, we will consider the problems faced by contemporary logical hylomorphism, examine the history of logical hylomorphism, and ask whether a distinction between logical form and logical matter is ultimately tenable (and if so, which version(s) of the distinction and which application(s)). We will cover a broad cross-section of the history of logical hylomorphism. Historical readings will include Aristotle, Alexander of Aphrodisias, Boethius, Peter Abelard, Robert Kilwardby, Walter Burley, John Buridan, Augustus De Morgan, and Alfred Tarski. We will see that logic has been analyzed into form and matter in an enormous variety of ways, some striking for how closely they anticipate contemporary logical hylomorphism, others for how little they resemble it. The contemporary notion of logical form will be seen to have descended via Kant and the scholastics from the Greek commentators on Aristotle. Special attention will be paid to a rival tradition, stemming from Aristotle himself, which thinks of the premises of an argument as matter for its conclusion.

## Course requirements

There are two requirements for the course: A class presentation and a final paper.

The class presentation should run for approximately 20 minutes and summarize all of the readings for the week (including any optional reading).

The final paper should be approximately 20 double spaced pages on a topic discussed in advance with the course instructor. It should focus either on issues regarding the notion of logical form in contemporary philosophy of logic or on one of the thinkers discussed in class. The final paper may be in **English or German**.

In addition to these formal requirements, students are expected to participate in class discussions, which will take place in English.

# Course schedule

| Date | Topic | Reading |
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| 01.04 | **Introduction** | John MacFarlane, "Logical Constants" (https://plato.stanford.edu/entries/logical-constants/). |
| | | *Optional:* Stephen Read, *Thinking About Logic*, chapter 2 (pp. 35–63). |
| | | *Optional:* John MacFarlane, *What Does It Mean To Say That Logic is Formal?* (Dissertation), chapter 1 (pp. 1–30). |
| 08.04 | **Contemporary logical hylomorphism** | Alfred Tarski, "What Are Logical Notions". |
| | | Catarina Dutilh Novaes, "The Undergeneration of Permutation Invariance as a Criterion for Logicality". |
| | | *Optional:* John Etchemendy, *The Concept of Logical Consequence*, chapters 3 and 9. |
| 15.04 | **Aristotle's hylomorphism** | Aristotle, *Metaphysics* Z.7–8, H.1–4, H.6. |
| | | *Optional:* M.L. Gill, *Aristotle on Substance: The Paradox of Unity*, chapter 4 (pp. 111–145). |
| | | *Optional:* Charlotte Witt, "Hylomorphism in Aristotle". |
| 24.04 | **Aristotle's logic: Dialectic and the syllogism** Class this week will take place in Seminargebäude 205, 13:00-15:00. Note the unusual day (Wednesday). | Aristotle, *Topics* I.1. |
| | | Aristotle, *Prior Analytics* I.1–2, 4–6. |
| | | Marko Malink, "The Beginnings of Formal Logic". |
| | | *Optional:* James Allen, "The Development of Aristotle's Logic". |
| | | *Optional:* Ben Morison, "What was Aristotle's conception of logical form?". |

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| 29.04 | **Aristotle's logic: Demonstration** | Aristotle, *Posterior Analytics* I.2, 13. |
| | | Plus primary source readings from last week. |
| 06.05 | **Aristotle's logical hylomorphism** | Aristotle, *Physics* II.3. |
| | | Aristotle, *Posterior Analytics* I.23. |
| | | Marko Malink, "Aristotle on Principles as Elements". |
| 13.05 | **Early Greek commentatary and the origins of schematic formality** | Catarina Dutilh Novaes, "The Different Ways in which Logic Is Said To Be Formal". |
| | | Alexander of Aphrodisias, *in An. Pr.* (selections). |
| | | *Optional:* Jonathan Barnes, "Logical Form and Logical Matter", pp. 35–69. |
| 20.05 | **Neoplatonist and other ancient conceptions of logical form** | Jonathan Barnes, *Logical Form and Logical Matter.*, pp. 7–65. |
| 27.05 | **No class** | |
| 03.06 | **Boethius and Abelard** | Boethius, *On Hypothetical Syllogisms* (selections). |
| | | John MacFarlane, "The Origins of Logical Hylomorphism". |
| 10.06 | **Early scholasticism** Class this week at Cafe Kater | Robert Kilwardby, *Notuli libri Priorum*, Prologue. |
| | | Paul Thom, "Robert Kilwardby on Syllogistic Form". |
| | | *Optional:* Sten Ebbesen, "Analyzing Syllogisms". |
| 17.06 | **Later scholasticism** | John Buridan, *Treatise on consequences*, Book I, Chapters 4 and 7. |
| | | Walter Burley, *On the Purity of the Art of Logic*, pp. 167 and 171–3. |
| | | Stephen Read, "Formal and Material Consequence". |
| 24.06 | **Kant** | Immanuel Kant, *Jäsche Logik* and *Critique of Pure Reason* (selections). |
| | | John MacFarlane, *What Does It Mean To Say That Logic is Formal?* (Dissertation), chapter 4, pp. 79–95 and pp. 121–127; optionally pp. 95–121. |
| 01.07 | **Retrospective and conclusion** | Catarina Dutilh Novaes, "Reassessing Logical Hylomorphism". |