

Aristotle's *Categories* and *Physics*

G. J. Matthey

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Aristotle as Metaphysician

- Plato's greatest student was Aristotle (384-322 BC).
- In metaphysics, Aristotle rejected Plato's theory of forms and proposed his own theory of what makes things the kind of things they are.
- Most importantly, he rejected Plato's claim that forms are distinct from the things that "share" in them.
- As a result, Aristotle gave natural science a central role in his philosophy and linked his metaphysics closely to the investigation of nature.
- Aristotle was the first practitioner of logic, which also had a deep influence on his metaphysical theory.
- In this segment, we will investigate two of Aristotle's works:
 - *Categories* (logic)
 - *Physics* (natural science)

Plato's Account of Kinds

- Plato's general account of how a thing is of a kind:

Form
<i>causes</i>
Quality in Thing

- An example of how a thing (some wine in a goblet) is of a kind (cold):

Coldness itself
<i>causes</i>
The wine's coldness in The wine

Aristotle's Basic Account of Kinds

- Aristotle's general account of how a thing is of a kind:

	Something
	<i>said of</i>
Being	<i>in</i> Subject

- So in the above example:

	Cold
	<i>said of</i>
The wine's cold temperature	<i>in</i> The wine

- We will go through the new features of Aristotle's account one-by-one.

In a Subject

- While Plato said that a "quality" is in a subject, Aristotle says that "a being" is in a subject because beings other than qualities can be in a subject, including:
 - Quality (white),
 - Quantity (two feet long),
 - Relative (larger),
 - Where (in the Lyceum),
 - When (yesterday),
 - Being in a position (sitting),
 - Having (has shoes on),
 - Acting on (cutting),
 - Being acted on (being cut).
- A being which is in a subject:
 - Is not part of the subject (as a hand is part of a man),
 - Cannot exist separately from the subject it is in.

Said of a Subject

- We discover from grammar what is said of (or "predicated of") a subject.
- The general schema for being said of a subject is: x [some verb] _____.
- The standard case is where we say something of a subject because of what is in it.

- A cold temperature is in the wine, so we say,
- “The wine is cold,”
- And “cold” is said of the wine.
- We may also say something about what is said of something.
 - “Man” is said of Socrates,
 - Man is an animal,
 - So, “animal” is said of man.
 - And “animal” is also said of Socrates.

Genus and Species

- We may schematize the last example.

	Animal
	<i>said of</i>
	Man
	<i>said of</i>
Socrates’s rationality and locomotion	<i>in</i> Socrates

- “Man” can be said of many individual things, and it will be called a “species.”
- “Animal” can be said of many species, and it will be called a “genus.”
- Species and genera are distinguished from other species and genera, respectively, by “differentia.”
- Man is an animal which is different from all other animals by being rational, so rationality is the differentiating feature of man.

Substance

- Substance is that which is not in a subject.
- Thus substance applies to:
 - Individual, Socrates,
 - Species, man,
 - Genus, animal
- What is also not said of any subject is *primary* substance: individual things.
- The species or genera said of a primary subject are *secondary* substance.
- Other things said of a primary substance are not substance, because they do not reveal what it is.
- Since all other things are either in or said of primary substance, none would exist without primary substance.

Features of Substance

- Substances seem to be “thises,” and primary substances certainly are “thises.”
 - This is Socrates.
- Substances have no contraries and only individual substances can receive contraries.
 - A pale color can never become dark,
 - But Socrates can be pale and become dark.
- Substance does not admit of degrees.
 - Man is never more or less man.
- An individual substance has a *nature*, which is an internal principle of change and stability.

The Nature of a Thing

- The nature of a thing may be conceived in two ways:
 - As the matter that makes it up.
 - * The flesh and bones of an animal.
 - As its form.
 - * The soul of an animal.
- The form is more the nature than is the matter.
- We call a thing the kind of thing it is when it actually has the form, not when it potentially does.
 - What is potentially flesh and bone is not an animal unless it acquires the form that makes it flesh and bone.

How to Study Nature

- The mathematician studies pure quantities.
- The student of nature studies matter, and uses mathematics to understand mathematical “coincidents” of matter.
 - The student of astronomy studies the shapes of the heavenly bodies, e.g., whether they are spherical.
- Form must also be studied by the student of nature, just as it is studied by the craftsman.
- In the crafts, we study the means that bring about certain ends, and by analogy the study of nature will concern means and ends.

The Four Causes

- In inquiring about natural change, we ask four kinds of questions about causes:
 - What is the matter from which it arises? (“material cause”)
 - What is the form that constitutes its nature? (“formal cause”)
 - What agent produced it? (“efficient cause”)
 - What is its end? (“final cause”)
- In many cases, the same thing may answer more than one of the questions.
 - What something is for (the end) is the same as what kind of thing it is (the form).

Teleology and Necessity

- Aristotle claims that nature acts for a purpose, rather than from blind necessity.
- If nature did not act for a purpose, its ends would be brought about by chance.
 - The specialized functions of the parts of animals would be the products of chance.
- But to be brought about by chance is to be unusual, which the products of nature are not.
- Nature works *teleologically*, as do crafts: there is an end (*telos*) which nature has the means to bring about.

In Defense of Teleology

- Apparent irregularities in nature can be explained as the result of failure to achieve the end, rather than by chance.
- Moving toward an end does not require deliberation, so nature does not need to deliberate in order to achieve its ends.
 - The causes that are needed for the production of a thing need only be material.
- Necessity is found in the end, rather than in the antecedent conditions that produce something.