Philosophy
A Science Matter

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Confucius: To get things straight, the first step is to get the names straight. 名不正, 則言不順; 言不順, 則事不成。
## Relevance of “Philosophy” Today

<table>
<thead>
<tr>
<th>West</th>
<th>China</th>
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<tbody>
<tr>
<td>Mostly about intractable, very difficult questions (“truth”, “reality”…)</td>
<td>Confucianism</td>
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<tr>
<td>But also some pressing, relevant questions such as “justice”—related to “maintaining social stability”</td>
<td>because there is a vacuum in ethics/morality to fill;</td>
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<td></td>
<td>in West, filled by Christianity</td>
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<tr>
<td>US invented <em>Pragmatism</em></td>
<td>China invented <em>Huyouism</em></td>
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<td></td>
<td><em>Huyou (忽悠)</em> is a neutral (nonjudgmental) word</td>
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<tr>
<td>Ordinary people in the West don’t care much about philosophy</td>
<td>Care</td>
</tr>
<tr>
<td>except in France where high school students still have to pass a philosophy exam before graduation, laid down by Napoleon</td>
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- **West** = Europe + USA + Canada (each country is like a province in China, same cultural system)
- **World cultures**: West, China, India, Middle East, Japan…
Timeline of Ancient Philosophers

Classical period of Greek philosophy

-Heraclitus-] [Socrates] [---Pythagoras---] [---Plato------] [---Aristotle-----] [---Euclid----] [---Epicurus ---]

600 B.C. 500 B.C. 400 B.C. 300 B.C. 200 B.C.

---Confucius------] [---Moi------] [---Yang Zhu ------] [---Han Feizi--------] [---Qin dynasty begins

Classical period of Chinese philosophy

---Xunzi ----------------] [---Zhuangzi ---------------] [---Shen Dao--------------]
## Approach in Ancient Philosophy

<table>
<thead>
<tr>
<th>Europe</th>
<th>China</th>
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<tbody>
<tr>
<td>About anything</td>
<td>Mostly about social harmony/stability</td>
</tr>
<tr>
<td><strong>Freedom of speech</strong></td>
<td><strong>Lack of freedom of speech</strong></td>
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<tr>
<td>Supported by slavery</td>
<td>“Feudal” kingdoms</td>
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<tr>
<td><strong>Analytical</strong></td>
<td><strong>Fuzzy/circular arguments</strong> (<em>huyou</em>, mislead intentionally)</td>
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<tr>
<td>Philosopers never wrote clearly or argued convincingly</td>
<td></td>
</tr>
<tr>
<td><strong>Debate</strong></td>
<td><strong>No (or not much) debate</strong></td>
</tr>
<tr>
<td>Socratic method</td>
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Ancient Philosophers
Ancient Greek Philosophers

Milesian school: Thales, Anaximander, Anaximenes

Greek: Socrates, Plato, Aristotle, Democritus

Thales (c 624-c 546 BC)

If a cone is divided by a plane parallel to its base, are the surfaces of the segments equal or unequal? If they are equal, then the cone becomes a cylinder; if they are unequal, then the surface of the cone must be stepped.

Democritus (c 460-c 370 BC)

Democritus’ cone

Aristotle (383-322 BC)

All matters were composed of small indivisible particles called atoms.
• Ancient Greek philosophers didn’t need a regular job and live in a democracy, and so were free in picking topics in pursuing acknowledge.

• Ancient Greek philosophers care about everything in daily life (and the Universe) and want to understand (analytically) and solve problems.

• In ancient Greece, philosophy was the only discipline of learning which actually is very successful (all disciplines today branched out from it).
Ancient Chinese Philosophers

Spring and Autumn period + Warring States period

Confucius  551-479 BC

A political scientist (at the empirical level), concentrating on ethics/morality, aiming at “maintaining social order”

• "What you do not wish for yourself, do not do to others."

• Officials obey the emperor (absolutely); sons obey fathers (absolutely).

• Tian (天) in Tian Min (from Shang dynasty) is a supernatural since it somehow knows how the emperor rules and punishes him (the country, in fact) by administering flood/famine

• With supernatural and rituals, Confucianism is a religion
"Try to change it and you will ruin it. Try to hold it and you will lose it."

"Those who know do not say. Those who say do not know."

"The Way that can be told of is not an unvarying way; The names that can be named are not unvarying names. It was from the Nameless that Heaven and Earth sprang; The named is but the mother that rears the ten thousand creatures, each after its kind."

-- Laozi, *Daodejing*
Mozi  c. 470 – c. 391 BC

- Peasant and carpenter (skilled in creating devices)
  Mechanical birds to wheeled,
  Mobile "cloud ladders" used to besiege city walls

- Pioneer of optics
  Still good today; see Mo Jin

- Universal love (兼愛)
  "We begin with what is near".

- Keep asking “how” and “why”

- Not a rebel. Like Confucius, he aimed to improve and preserve the kingdom.
  Proposed that every level of officials collect people’s thinking and pass it up one level, eventually to the King so he can make the wise decision (the way in practice today)

- Mohism was a strong contender/competitor against Confucianism
  Suppressed in Qin; died out in Han

- While politically conservative, Mozi is incisive and creative—a successful innovator in science and technology.
- His approach to the world is rational-empirical—very modern.
- Mozi is most relevant to China today!
Zhuangzi  
**c. 369 – c. 286 BC**

- **Skepticism**
  Life is limited and knowledge to be gained is unlimited

- **Relativism** (in systems of value)

- **Anarchism**
  “Good order results spontaneously when things are let alone“
  The mechanism behind this is self-organization.

- **Interdependence of things**
  Foreshadowing modern ecological thinking

- **Playfulness**
  Butterfly in dream
  Drumming after wife died

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The authority for ethical judgments comes from dao (道) and not from tiān (天).
Summary: Ancient Chinese Philosophies

- In ancient China, unlike in Greece, philosophy was not conducted analytically. They are more like Buddhist verses or “chicken soups” (called “Chinese wisdom” by others).

- The philosophers, unlike the Greeks, never wrote clearly or argued convincingly.

- When pressed, they will appeal to the will of Tian (“heaven”) or the good old ways of the (barely existent) ancient dynasties.

- All, except Zhuangzi, concentrated in ethics/morality issues because that was the way to find a (government) job, unlike the ancient Greeks who didn’t need a job.

- Mozi (not Confucius) is most relevant to China today.

- Ancient Chinese philosophy is *huyouism* (忽悠主义), aiming to maintain social harmony/stability instead of finding out the “truth” or advancing knowledge.

- But it is “useful” to a certain extent (the longest dynasty—Tang from AD 618–907, lasts 289 years).
• Zhouyi (周易·乾卦): “夫大人者, 与天地合其德 ...”

• Zhongzi: "Heaven, earth and I are born of one, and I am at one with all that exists". (天地與我並生，萬物與我唯一)

• Dong Zhongshu (West Han Confucian) elevated “Heaven-Man Oneness” (天人合一) to philosophy.

• Oneness: Heaven and man share the same principles and can influence each other — two of the one thing.
The Needham Question

Joseph Needham 1900-1995

- Cambridge University biochemist turned sinologist
  Prompted by Lu Gwei-Djen (鲁桂珍), graduate student in 1937

- Author/editor of *Science and Civilisation in China*
  27 volumes, starting 1954

- **Needham Question:** Why modern science didn’t arise from China despite its past success in science/technology?

**My answer:**

- **Analytic thinking and debate** (essential to scientific enquiry) not encouraged in China (since Confucius)

- **Despite “Heaven-Man Oneness”** (implying universal principles shared by human and nonhuman systems), ancient Chinese picked the human system—a complex system—to study (while modern science’s breakthrough was through simple systems)
The Scimat Perspective
Empirical Level

Philosophy is built upon or be consistent with the available scientific knowledge.

**Immanuel Kant** 1724-1804

In Kant’s days, the science is Newton’s deterministic mechanics. Thus

1. He first assumed, incorrectly, that science belongs to the deterministic domain;
2. He also realized, correctly, that morality is nondeterministic and belongs to the “freedom” domain (i.e., humans have freedom of choice in morality matters).
3. Then he asked: If everyone is free to choose what he or she wants or does, how can we guarantee that world is rational and meaningful?
4. To solve this problem, he claimed: We need “religion” (or a higher principle), which will govern morality matters and bring meaning to our lives.

This series of arguments is full of hidden presumptions. It is no longer valid, judging from what we know about science today. Kant’s philosophy, at least this part, is outdated.

- **Robin Collingwood** (1889-1943): “So long as he confines himself to drawing the distinction between philosophical method and mathematical, his touch is that of a master; every point is firm, every line conclusive. But when he turns to give a positive account of what philosophy is, his own distinction between a critical propaedeutic and a substantive metaphysics, hardened into a separation between two bodies of thought, becomes a rock on which his arguments splits”.
- **Bertrand Russell** (1872-1970): “Immanuel Kant is generally considered the greatest of modern philosophers. I cannot agree with this estimate, but it would be foolish not to recognize his great importance”.

- **1st part**: history of the science of nervous systems; general introduction to neurophysiology, neuroanatomy, and neuropsychology.

- **2nd part**: Place the mind-body problem within the wider context of the philosophy of science; inter-theoretic reduction explained; reductionist strategy developed; traditional objections from dualists and other anti-reductionists answered.

- **3rd part**: discussion of most promising theoretical developments in functional neurobiology and in the connectionist models within artificial intelligence research.
Experimental Philosophy

- A **new movement** seeking to return the discipline of philosophy to a focus on questions about **how people actually think and feel**.

- **Conduct systematic experiments** to understand people's intuitions about philosophically significant questions.

- It succeeds in **challenging a number of cherished assumptions** in both philosophy and cognitive science.
More
Zeno’s Paradox

**Zhuangzi** (c. 369-286 BC): A one-foot long stick, take half each day, and you will never exhaust it.

**Zeno** (c. 490-430 BC): A man could not move from point A to point B because, starting from point A, he had to move to the half point first, then the half point of the rest distance, ad infinitum; and because there is an infinite number of steps, he could never reach point B.

Both did not know that a stick is made up of discrete atoms and viewed it as a continuous body.

\[ t = t_1 + t_2 + t_3 + \ldots \quad (v = \text{velocity}) \]

\[ t_1 = \frac{1}{2} \frac{L}{v}, \quad t_2 = \frac{1}{4} \frac{L}{v}, \quad \text{etc.} \]

\[ t = \frac{L}{v} \left( \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \ldots \right) = \frac{L}{v} \]

- The total time of travel is a finite number, even though there is an infinite number of terms in the equation. Zeno’s mistake is that he thought that the sum of an infinite number of terms must be infinite \((t = \infty)\).

- Zeno was already wrong at the mathematical level. Zeno’s procedure can’t be carried out in practice because real objects are made of atoms of finite size.
Active walk modeling

- Landscape can be modified by walker’s action or external force.
- Western approach tends to rely on walker’s action.
- Chinese huyou approach is to minimize immediate action and wait for the landscape to change favorably later (giving the impression of inaction or burying the contradictions).

**Huyouism** (as a philosophy and management style of more than 2000 years) should be taken seriously and studied scientifically, especially by the Chinese!

**Possible questions**: How, when and why it works? How long to wait before seeing it works? When it will fail?
We concur with Bertrand Russell when he writes in *The History of Western Philosophy* (1912):

Most philosophers...profess to be able to prove, by a priori metaphysical reasoning, such things as the fundamental dogmas of religion, the essential rationality of the universe, the illusoriness of matter, the unreality of all evil, and so on....This hope, I believe, is vain.

But we disagree when he claims that

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This was definitely not the attitude of the ancient Greek philosophers, the pioneers, nor the late comers like Kant, even though it could be the attitude shared by many contemporary “philosophers” when they are left to deal with the most difficult problems not yet hijacked by “natural science”.

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**Philosophers on “Philosophy”**

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Conclusion

- “Philosophy” today is a small subset of Ancient Greek’s Philosophy; this distinction must be made.

- Ancient Western and Chinese philosophies differ in their choice of topics and research methods.

- Philosophical concepts/constructions are or should be built upon the “best” scientific knowledge available at that time.

- Thus, contemporary philosophers have to be aware of the current scientific results.

- Students in philosophy should have some scientific training.

- Philosophers are strongly urged to collaborate with others in natural science or medical science.