

Epistemology

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Organization

- 1. Informal presentation of knowledge.
(it correspond to the slides of my class about knowledge in my subject “Logic and reasoning”)
- 2. Theory of Knowledge
- 3. A paper "*Formal Epistemology and Logic*"
Horacio Arlo-Costa and Eduardo Ferme
Companion to Latin American Philosophy by
Schutte, Ofelia, Bueno, Otavio and Nuccetelli,
Susana eds. John Wiley and Sons Ltd. December
2009.

1

An informal presentation of knowledge

Adding confusion to our minds

What is Knowledge?

- Thousands of answers.
- A capability (and a necessity) inherent to the human being

What is Knowledge?

- This question has been pondered from ancient Greece and still continues to be formulated in many areas such as philosophy (epistemology), AI, Software Engineering, Psychology, Educational Sciences, Sociology, etc...
- There is no agreed definition of what is knowledge .
- Although people intuitively know what is knowledge, and recognize its presence, the opinions on this topic vary according the different areas and are not consensual.

What is Knowledge?

- Depending on the area, there are views more analytical that, for example, differentiate:
 - ☞ Data - information - knowledge;
 - ☞ Implicit knowledge - explicit knowledge;
 - ☞ *Soft* knowledge (what people know and can not be articulated) *hard* knowledge (what people know and can be articulated.);
 - ☞ Common knowledge - distributed knowledge , from the point of view of existing knowledge in a group of agents that interact;
 - ☞ Internal knowledge - external knowledge, from the point of view of epistemological analysis of knowledge as a relationship between a cognitive subject and real world;
 - ☞ Canonical knowledge non-canonical knowledge.

What is Knowledge?

- The more holistic views, especially in business world treat the issue of knowledge as integrated in processes to acquire sustainable competitive advantage and responsiveness to changes in the environment.
- We have also knowledge as result of social practices in communities of practices

What is Knowledge?

- Here We will not give the answer here, but we will explore the idea about what we consider knowledge.
- One way to understand the question is to observe the use of the term knowledge in our daily life.

What is Knowledge?

→ When we say:

“John knows that ...”

the phrase can be completed with a declarative sentence (proposition) as: :

"Mary will go to the party"

forming the phrase:

"John knows that Mary will go to the party"

→ This suggests, among other things that knowledge is a relationship between the knower and that which is known.

What is Knowledge?

→ We can say then that is a relationship that involves 3 elements::

☞ The subject

☞ The Object

☞ The image of reality.

Theory of Knowledge

- Theory of Knowledge is the branch of philosophy concerned with the nature and scope (limitations) of knowledge. It addresses the questions: What is knowledge? How is knowledge acquired?, etc ...
- We can define Theory of Knowledge as the theory of as the theory of *true thought* , as distinct from logical theory that concerns *right thought*.

The five main problems of the theory of knowledge are: :

- The possibility of human knowledge:
 - ☞ can the subject really learn the object?
- The origin of knowledge:
 - ☞ is the reason or the experimentation the source of human knowledge?

The five main problems of the theory of knowledge are:

- The essence of human knowledge:
 - ☞ is the object who determines the subject or is the opposite?
- The forms of human knowledge:
 - ☞ Knowledge is just rational or it may be intuitive?
- The criterion of truth:
 - ☞ How do we know if our knowledge is true?

Some ways of knowing the world

- Myth
- Common Sense
- Art
- Science

Myth

- Myth was one of the earliest forms of knowing the world
- Its purpose is to accommodate human beings in a world that can not control/understand.

Myth

- In ancient times it was attempted to explain the whole world (how life began, who we are, where we came from, where we are going...). Today divide spaces with other forms of knowledge, especially the rational knowledge of science.
- The main feature that sets the myth as such is its dogmatic character. It does not need to be proved, it can not be disputed and to believe in it is just enough to believe or not.

Myth

- For that reason a religion is a kind of myth, because it deals with issues that can not be proven.
- Myths therefore relate to things that people actually believe. Bigfoot or Werewolf, for example, there are not myths since people do not believe in its existence. Thus, they belong to the field of folklore.

Common Sense

- It is our everyday knowledge, simply and without much reflection.
- Usually reproduces prejudices and who are not bothered to think.

Common Sense

- A major challenge for us is to develop common sense, that is, even without being scientists or philosophers, understand the world and critically reflect about our values.
- Common sense is a challenge because it brings us security and we have difficulty to change it.

Art

- Art is a peculiar way of knowing the world.
- Its importance does not lie in its objectivity or even in its contents.

Art

- The artwork is an interpretation built by the person who produces the work.
- The knowledge presented by the art, therefore, is a world interpreted and transmitted by the sensitivity of the artist.

Science

- Science is the most elaborate way to knowing.
- What characterizes something as a science?
 - 👉 **Method**
- Using reason to understand the world
- The rejection of religious explanations

Scientific Knowledge

→ Contexts

- ☞ Discovery: How a scientific reach a conjecture.
- ☞ Justification: Validation of knowledge produced/acquired
- ☞ Application: study of the problems that arise from pragmatic situations of using knowledge generated and validated.

Scientific Method

→ it really exist?

2 positions:

- ☞ The first one claim the necessity of a general method for all sciences (ex. neo-positivism)
- ☞ The second one claim that this is impossible and that there are as many methods as sciences.

Scientific Method

→ Can a scientific method be non deductive?

☞ Inductive Method

☞ Hypothetico-deductive method

→ Great fights: Hume, Popper, Vienna Circle

Scientific Knowledge in Social Sciences

→ It is possible?

☞ This is the largest source of struggle in all Universities of the World!

☞ Community of Exact Sciences

- IT DOESN'T EXIST
- It's just another form of art

☞ Community of Exact Sciences

- IT IS OBVIOUS THAT EXISTS!
- It is similar to the natural sciences (biology, chemistry, etc.), But has its own characteristics

So?

→ We have just seen the tip of the ball ...



... for a long way



2

Theory of Knowledge

The epistemologist ask what
we know, the metaphysician
what is real.

from "Theory of Knowledge" – Keith Lehrer.

Different uses of the term “knowledge”

- Knowledge by acquaintance.
 - ☞ I know my friend John very well.
 - ☞ I know Dr. Bullock.
- Knowledge how
 - ☞ I know how to ride a bicycle
 - ☞ I know my A, B, C's.
- Knowledge that (propositional knowledge)
 - ☞ I know that it is cold outside.
 - ☞ I know that he would not lie.

Philosophers have tended to focus on “knowledge that,” propositional knowledge.

Defining “to know”

- “to know” means to have some special form of competence.
- Is a person is said to know how to do something, it is this competence of “know” that is usually involved.

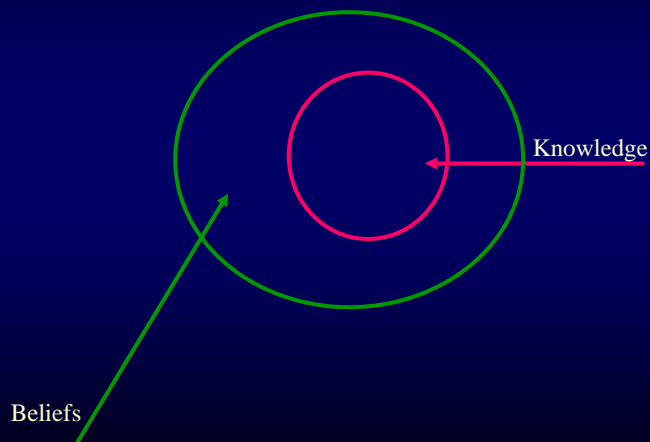
Defining “to know”

→ In order to know something, one must believe that it is true.

☞ One can't know something that one does not believe. (Believing is a necessary condition for knowing.)

☞ One can believe something that one does not know. (Believing is not a sufficient condition for knowing).

Belief is a necessary, but not a sufficient condition for knowledge:



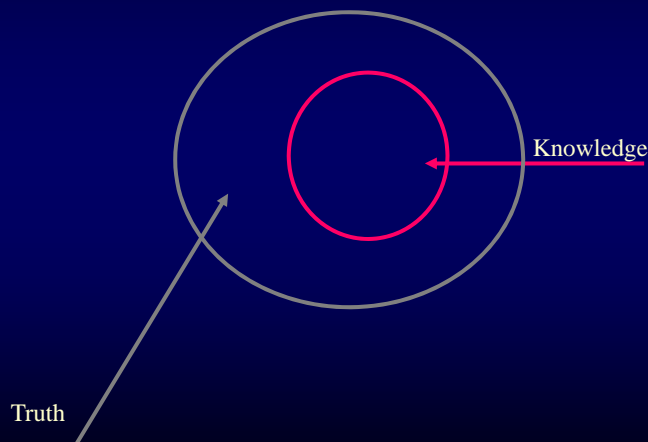
Defining “to know”

→ In order to know something, the thing I know must be true.

☞ One can't know something that is false. (The truth of the proposition known is a necessary condition for knowing.)

☞ A proposition can be true without my knowing it. (The truth of a proposition not a sufficient condition for knowing it.)

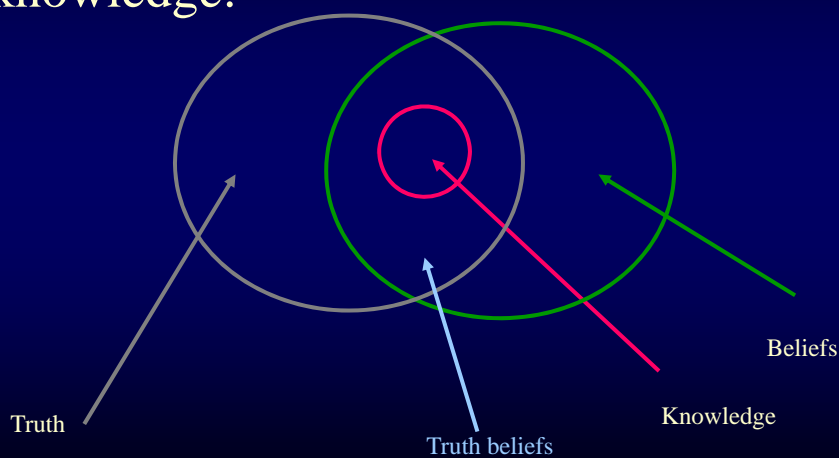
Truth is a necessary, but not a sufficient condition for knowledge:



Defining “to know”

- True beliefs may not be knowledge:
 - ☞ For example: I believe that exists life in Ganimedes.
 - ☞ Imagine that, in fact, there exists life in Ganimedes.
 - ☞ Did I know I would?
 - My belief is true, but it is not knowledge.

Truth and belief are necessary, but not a sufficient condition for knowledge:



Defining “to know”

→ True beliefs may not be knowledge:

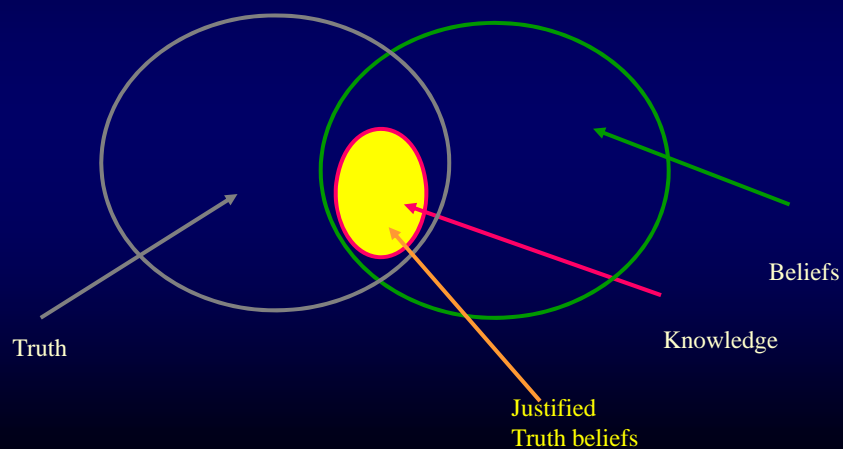
☞ For example: I believe that exists life in Ganimedes.

☞ Imagine that, in fact, there exists life in Ganimedes.

☞ Did I know I would?

- My belief is true, but it is not knowledge.
- **The problem is, I did not have a good reason for my belief, I wasn't “justified” in my belief.**

Only **justified**, true beliefs are cases of knowledge:



Now we have new problems ...



what is truth?

Now we have new problems ...



what does it mean to say that
a belief is justified?

What is truth?

What does it mean for a set of beliefs to **be true**? What kinds of truth are there?

- Traditionally, there are two kinds of truth
 - ☞ (1) Necessary
 - ☞ (2) Empirical (or Contingent)

Necessary Truths

- A statement expressing a necessary truth cannot possibly be false. Examples:
 - ☞ All triangles have three sides.
 - ☞ No one who believes that God exists is an atheist.

Necessary Falsehoods

- We can say similar things about necessary falsehoods.
 - ☞ Impossible to be true
 - ☞ Their falsity does not depend on what the facts are like; necessary falsehoods are always false no matter what

Necessary Truths = a priori truths

- *A Priori* = prior to experience or **independent of any experience** of facts or states of affairs in the world.
- Necessary truths are often said to be true *a priori*, true independent of any particular facts.

Empirical (or Contingent) Truths

- Empirical = having to do with experience
Contingent = depending on experience
- A statement expressing an empirical truth is true **in virtue of the facts**. An empirical statement is empirical because its truth value (whether it is true or false) depends on what the world is like.

Empirical (or Contingent) Truths

- Empirical Statement: Oswald killed Kennedy.
- Empirical truth: Kennedy is dead.
- Empirical falsehood: Kennedy is alive.

Empirical Truths = a posteriori truths

- A posteriori = with experience or depending on experience of the facts
- Empirical truths are sometimes called “a posteriori” because empirical truths depend on the facts.
 - ☞ In the example “Kennedy is death” became true after his death.

What does it mean to say that a belief is justified?

- Justification is the reason why someone properly holds a belief, the explanation as to why the belief is a true one, or an account of how one knows what one knows.

Theories of justification

- There are several different views as to what entails justification, mostly focusing on the question "How sure do we need to be that our beliefs correspond to the actual world?"
- Different theories of justification require different amounts and types of evidence before a belief can be considered justified.

Theories of justification

- **Skepticism** - A variety of viewpoints questioning the possibility of knowledge.
- **Foundationalism** - Self-evident basic beliefs justify other non-basic beliefs.
- **Infinetism** - A belief is justified by an infinite chain of beliefs.
- **Coherentism** - Beliefs are justified if they cohere with other beliefs a person holds, each belief is justified if it coheres with the overall system of beliefs.
- **Externalism** - Outside sources of knowledge can be used to justify a belief.

Skepticism

- We don't have any knowledge at all.
- Origin: *Outlines of Pyrrhonism* from Sextus Empiricus

Skepticism

- 1) We have knowledge only if our beliefs are justified.
- 2) 'justification' can take three possible forms:
 - A) We justify our total belief set by reference to some foundational belief or set of such beliefs, which are not themselves justified by any further beliefs.
 - B) Our beliefs mutually justify one another.
 - C) There is an endless regress of justifying reasons.
- 3) Not A: A foundational belief could not justify other beliefs unless it were itself justified.
- 4) Not B: Circular justification is no justification at all.
- 5) Not C: An endless regress of reasons could not provide justification for our first-level beliefs.
- 6) Therefore, we don't have knowledge.

Foundationalism

→ Knowledge and justification are based on some sort of foundation, the first premises of justification.

☞ The premises provide use with basic beliefs that are justified in themselves, or self-justified belief, upon which the justification for the other beliefs.

Foundationalism

Infallible Foundations (Cartesian) vs. Fallible Foundations (Modest)

Cartesian Foundationalism: The view that justification (and knowledge) is based on “foundations” that could not possibly be false (are indubitable, infallible, etc.)

Modest Foundationalism: The view that justification (and knowledge) can be based on reasons that provide evidence, yet could be mistaken (fallible, etc.)

Cartesian foundationalism has been rejected by most contemporary philosophers, but modest foundationalism is still defended by some.

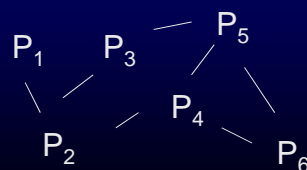
Infinitism: The Eternal Pyramid

- A) All nodes below a node directly serve jointly to support it.
- B) Each node must be a proposition that S is justified in believing at t.
- C) Every node must have successors.
- D) No branch of the epistemic pyramid terminates.



Coherentism: The Raft

- Any part of the boat can be fixed (but not all at once).
- Any part of one's set of beliefs can be justified (but not all at once).



The Relation of Coherence

- logical consistency;
- the extent to which the system in question is probabilistically consistent;
- the extent to which inferential connections exist between beliefs, both in terms of the number of such connections and their strength;
- the inverse of the degree to which the system is divided into unrelated, unconnected subsystems of belief; and
- the inverse of the degree to which the system of belief contains unexplained anomalies.

Externalism

- I have justification when my beliefs are properly formed (e.g. caused by a reliable process) even though I may not be aware of this.

Externalism

- The externalist account has two virtues.
- It provides a plausible account of what makes perceptual beliefs into knowledge.
- It provides a way out of skepticism. I do not have to know I know in order to know.
- *However these virtues are of limited value.
 - ☞ Much knowledge has nothing to do with perception. And the externalist account fails to make an important distinction.
 - ☞ We must distinguish having true information from knowing. Naturalist externalism fails to do this.

Sources

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- Knowledge: Readings in contemporary epistemology
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