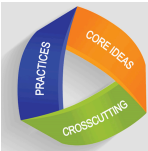


Overlapping Naturalistic and Islamic Epistemologies

REASONING EXERCISES IN ISLAM & SCIENCE



NGSS Instructional Outcomes

Next Generation Science Standards

Science and Engineering Practices:

Engaging in Argument from Evidence: Students will engage in discussions about the validity of different types of judgments in naturalistic and Islamic epistemologies.

Obtaining, Evaluating, and Communicating Information: The lesson includes evaluating different sources of knowledge and communicating the distinctions between naturalistic and Islamic perspectives.

Crosscutting Concepts:

Cause and Effect: Understanding the influence of different epistemological beliefs on the interpretation of scientific and religious knowledge.

Systems and System Models: Exploring how different systems of thought (naturalistic and Islamic) process and interpret information.



CCSS Instructional Outcomes

Common Core State Standards

English Language Arts (ELA) Standards for Literacy

CCSS.ELA-Literacy.RST.6–8.2 and 9–10.2: Determine the central ideas or conclusions of a text; providing an accurate summary of the text distinct from prior knowledge or opinions.

CCSS.ELA-Literacy.RST.6–8.8 and 9–10.8: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

English Language Arts Standards for Speaking and Listening

CCSS.ELA-Literacy.SL.9–10.1 and 11–12.1: Initiating and participating effectively in a range of collaborative discussions with diverse partners on various topics and texts, integrating diverse perspectives.

History/Social Studies Standards

CCSS.ELA-Literacy.RH.6–8.2 and 9–10.2: Provide a summary of a text distinct from personal opinions or judgments, especially relevant when discussing historical figures like Karl Popper and their philosophical contributions.

Content Learning Outcomes:

- Define, provide examples, and explain the relationship between the three types of propositions/judgments (rational, revelatory, empirical).
- Demonstrate the position of scientific propositions in an Islamic epistemological framework.
- Explain the difference between Islamic epistemology and Naturalistic epistemology and how each views the various judgments.

Materials:

- Instruction/Teacher Facilitation: Slides 1.28–1.39
- Triple-Entry Vocabulary Journal Instructions Teacher-led
- YouTube video: “Karl Popper and the Logic of Falsification”
- Lesson 1.3 Assessment

Instruction/Teacher Facilitation: Slides for Lesson 1.3

- **Slide 1.28.** Naturalism
- **Slide 1.29–1.33.** Islamic Epistemology versus Naturalistic Epistemology
- **Slide 1.34.** Activities
- **Slide 1.35.** Conflicts and Overlap
- **Slide 1.36.** Karl Popper—Science is the only way to the truth
- **Slide 1.37.** Verification Principle
- **Slide 1.38.** Discussion
- **Slide 1.39.** Connecting Back

Instruction/ Teacher Facilitation



Review

Begin by reminding students/asking students about the sources of knowledge, and the levels of certainty from the previous lesson.

Use one of the examples/scenarios students have come up with in Lesson 1.2 from the Sources of Knowledge Graphic Organizer Activity and have the Spectrum of Certainty posted in a visible place in the classroom.

Sources of knowledge

- The five senses (*al-ḥawāṣṣ al-khams*)
- The intellect (*al-'aql*)
- True reports (*al-khabar aṣ-ṣādiq*)
- Inspiration (*ilhām*)

The Spectrum of Certainty

- Certain it is true (*yaqīn, qaṭʿ*) 100 percent true (verified or guaranteed).
- Probable (likely) to be true (*ẓann rājiḥ*) 51–99 percent true.
- Doubt (*shakk*) 50 percent true, that is, 50/50 chance that it is true or it is false.
- Improbable (unlikely) to be true (*ẓann marjūḥ*) 1–49 percent true.
- Certain it is false (*bāṭil*) 0 percent true or 100 percent false.

So we need to analyze the information or knowledge we are presented with and judge its level of truth. We also need to look at what type of judgment is being made.

Review/orally quiz students on the three judgment types (from Lesson 1.2)

- Revelatory Judgment: these are statements that are only known from Allah (swt) and His Messenger (pbuh).
- Rational Judgment: these are statements we know which do not require our senses nor revelation.
- Empirical Judgment: these are statements we know only from our five senses.

Slide 1.28: Naturalism

Naturalism

- The belief that everything arises from natural properties or causes
- Science is the study of natural properties and causes.
- Therefore, science can discover everything.

A philosophical school which maintains “that reality is exhausted by nature, containing nothing “supernatural,” and that the scientific method should be used to investigate all areas of reality, including the “human spirit” (Stanford Encyclopedia of Philosophy)

Overlapping Epistemologies

Introduce **Naturalism**:

A philosophy/philosophical school that maintains the idea that *only* natural laws and forces operate in the universe and reality is *explainable* through nature and natural laws; it denies supernatural influence.

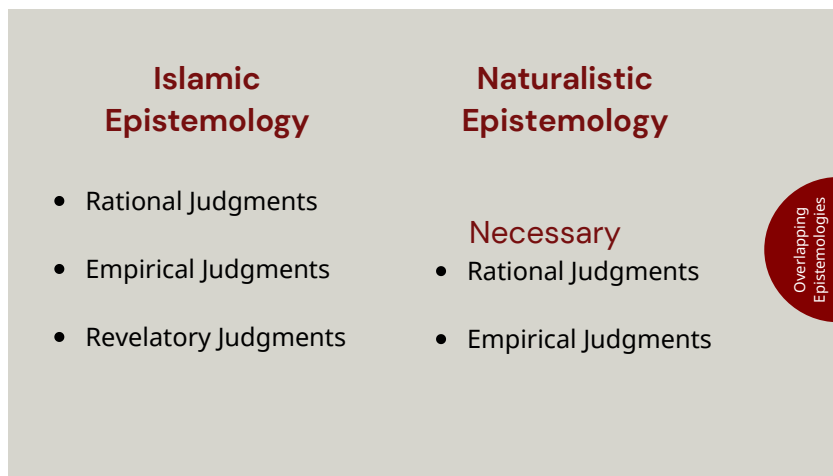
- A belief that everything arises from natural properties or causes.
- Science is the study of natural properties and causes.
- Therefore, science can discover everything.



Slides 1.29–1.30: Islamic Epistemology versus Naturalistic Epistemology

Islamic Epistemology	Naturalistic Epistemology
• Rational Judgments • Empirical Judgments • Revelatory Judgments	• Rational Judgments • Empirical Judgments

Overlapping Epistemologies



Out of the three different types of judgments, the naturalistic epistemology accepts empirical (mainly) and rational judgements as sources of knowledge.

- The assumption for the naturalist is that this is reality. His empirical judgments are necessary because he has no other source of knowledge. As a result, he is limited in his sources, and therefore, limited in his knowledge.
- In contrast, Islamic epistemology makes use of all three judgments: rational judgments, revelatory judgments, along with empirical judgments. We can also say that empirical judgments are not always necessary due to the fact that we have other sources of judgment.

■ Q: How do naturalists answer the question about God or God's existence?

A: For the naturalist, there is no supernatural God who creates nature. Naturalism rejects God, the supernatural, and life after death because these beliefs cannot be proven by the scientific method. Science is all about empirical observations and associations (e.g., Pavlov's conditioning the salivating dog).

Slide 1.31: Islamic Epistemology versus Naturalistic Epistemology

Islamic Epistemology	Naturalistic Epistemology
- Rational Judgments - Empirical Judgments - Revelatory Judgments	Necessary - Rational Judgments - Empirical Judgments → Superstition

Overlapping Epistemologies

How do naturalists view revelatory judgments?

■ Naturalists view revelatory judgments as superstitions.

Slide 1.32: Islamic Epistemology versus Naturalistic Epistemology

Islamic Epistemology	Naturalistic Epistemology
- Rational Judgments - Empirical Judgments - Revelatory Judgments	Necessary - Rational Judgments - Empirical Judgments → Superstition

Overlapping Epistemologies

How would a Muslim answer the question about God or God’s existence?

■ As discussed earlier, the existence of God is a rational judgment.

■ **Contingency Argument** - there is a need for a cause or beginning, an “initial mover.”

- For example, line of leaning people must have something at the beginning to hold them all up. That beginning must be unique compared to the rest of the line (composed of all leaning people, the beginning cannot be leaning).
- $A \rightarrow B \rightarrow C \rightarrow D = B, C, \text{ and } D$ are contingent (dependent)



Dependency can then only be fulfilled by an independent element at the beginning (A), that is, the universe is dependent, and God is independent. This is why God’s existence is a rational judgment. There is a rational thought behind it.

Slide 1.33: Islamic Epistemology versus Naturalistic Epistemology



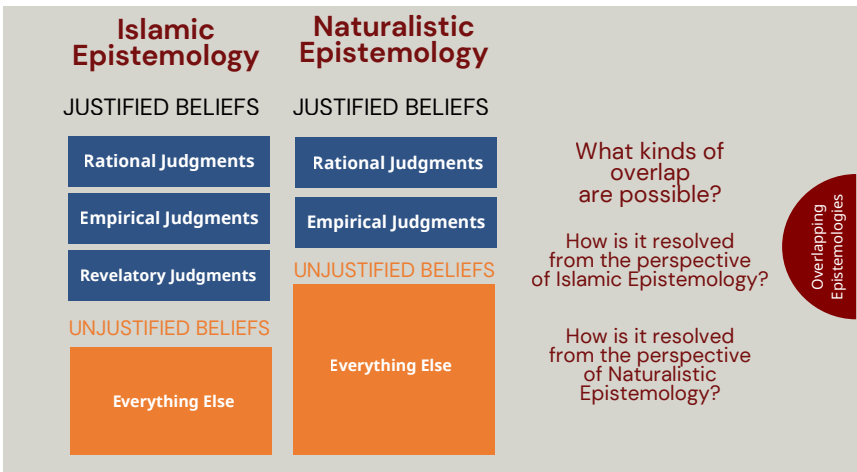
Islamic epistemology is not as limiting as the naturalistic view.

- Islam/Muslim scholars make use of all established sources of knowledge as evidence for a claim.
- Justification for a claim can and usually goes beyond the empirical. Therefore, an Islamic epistemology has a more vast knowledge base.



Comparing and Contrasting the Two Epistemologies: Activity

Slide 1.34: Activities



Critical Thinking Questioning (Whole-group activity):

- **Q:** What kinds of overlap are possible?
- **A:** Overlap is with empirical judgments, accepted truths.

Slide 1.35: Conflicts and Overlap

Conflicts and Overlap

- Are miracles possible?
- Is revelation a source of knowledge?
- How do we resolve conflicting information from revelation and science?

Overlapping Epistemologies

- **Q:** Where does the conflict arise between the two epistemologies?
- **A:** Concepts of the unseen; for example, miracles—definition of a miracle (from a religious perspective) is when the common association that “God created” does not happen, with or without an empirical cause.
- **A:** Conflicts will arise whenever scientists use their naturalistic epistemology to state something as true or false, and Muslims use their Islamic epistemology to state something as true or false.
- **A:** Most Muslim theologians say yes, miracles are possible, Naturalists say no, miracles are not possible.

Slide 1.36: Karl Popper—Science is the only way to the truth

Karl Popper—Science is the only way to the truth

Falsification Principle

- A scientist's job is to be critical of any, and all, claims.
- A scientist should set out to disprove a hypothesis.
- Only deduction can be used

Issues of Popper's falsification principle

- We must use induction due to limited observations
- Must agree on accepted principles
- Limited to observational/empirical data only (ignores rational and revelatory judgments)
- Popper never believed in attaining certainty, so even science is not a way to certainty

Anthony Flew—His own words can be used to refute his argument.

Delving further into how the topic of *ghaib*/unseen, revelation, and God/religion are addressed by scientists, let us look at the views of Karl Popper, one of the 20th century's most influential philosophers of science.

Karl Popper and the *Ghaib*/Unseen

- Karl Popper investigated the nature of knowledge.
- He was critical of everything in science. He looked at ways we could test science, and challenge its claims.
- Well-known for his **Falsification Principle** which states that a theory or idea should not be considered scientific unless it could, in principle, be proven false. "It is easy to obtain confirmations, or verifications, for nearly every theory if we look for confirmations," Popper said. But if we want to be scientific, our mission would not be to look for the confirming evidence but to refute/falsify evidence instead. He said that real scientists should always be looking at what would make their claim false, because that is the actual job of a scientist, to be critical of any claim.
- For example, a scientist observes: "I've always seen white swans, therefore, all swans must be white."

- Hypothesis: All swans are white
- Testing it out entails searching everywhere for a different colored swan.
- But just because the scientist never finds a different colored swan does not mean the theory is true, it just means that it is true right now, until someone finds a different colored swan to falsify the theory.
- Popper believed that true scientists do not set out to prove a hypothesis, but should set out to disprove it. And that scientists should only use deduction, and never use induction. (Cannot use any previously claimed principles in their hypotheses because you cannot know if it is actually true. Popper even said that scientists cannot even say that a claim is “probable” or “likely to be true.”)

This obviously comes with many issues: The major disadvantage of falsifiability is that it does not take into account the contributions of sciences that are observational and descriptive.

- We already have a limited amount of observations, so scientists must draw conclusions based on these limited observations. This means scientists must use induction.
- Most philosophers of science agree that Popper was wrong. We must agree on some basic accepted principles and cannot base everything on deduction alone.
- The reason Popper is wrong is that there must be a theoretical perspective that guides your thinking (otherwise, you cannot do induction, nor can you do falsification either!) We cannot work within a scientific realm without induction.
- Popper’s falsification principle limits science to only observational and empirical data as a way of seeking truth. He also mentioned real scientific theories must be testable. If it cannot be tested, it is not scientific.
- Modern scientific thinking says: Testable means refutable/falsifiable. For Popper, knowledge was about probability and contingency. This means we are justified in believing what seems most probable given our current data, and we should be willing to revise beliefs in the light of new evidence (empirical evidence). In other words, our belief should be contingent/dependent on the data themselves. Popper never believed in certainty; even science is not a way to certainty.

This makes sense because empiricism is limited to begin with and can never attain truth/certainty on its own. Therefore, you NEED other sources of knowledge.

Anthony Flew (philosopher and evidentialist) stated that “All statements are meaningful only if they can be empirically verified.”

Q: Can this statement itself be empirically verified?

A: NO, therefore, this statement is a self-refuting claim. (His own words can be used to refute his argument.)

Karl Popper
and
Falsification



Teacher Resource: Video on Popper’s Understanding and why it is not accepted - [[Chapter 1.4: Karl Popper and the logic of falsification](#)]

Slide 1.37: Verification Principle

Verification Principle

Verification Principle

- A scientist’s job is to empirically prove any, and all, claims.
- A scientist should set out to disprove a hypothesis.
- Aimed to eliminate metaphysical and speculative assertions that could not be tested through empirical observation or logical analysis.

Issues with the verification principle

- Excludes many statements that are considered scientifically meaningful but are not directly verifiable (e.g., universal statements)
- Limited to observational/empirical data only (ignores rational and revelatory judgments)

Verification Principle: all statements must be empirically proven to be considered scientific.

Verifying means that a scientist finds evidence to corroborate a theory’s truthfulness.

This principle asserts that a proposition is meaningful *only* if it can be empirically verified or is analytically true (true by definition). In other words, for a statement to be considered meaningful, there must be some possible observation or set of observations that can confirm it is truth. This principle aims to eliminate metaphysical and speculative assertions that could not be tested through empirical observation or logical analysis.

■ This principle faces criticism for being too strict and for excluding many statements that are considered scientifically meaningful but are not directly verifiable (e.g., universal statements and theoretical entities in physics).

■ The verification principle is the opposite of the falsification principle. Both represent two different approaches in the philosophy of science and epistemology regarding how to demarcate meaningful or scientific statements from nonscientific ones.

■ Verification Principle focuses on the positive *confirmation* of theories. It suggests that a statement is meaningful if it can be *empirically* verified or is true by definition.

- Falsification Principle emphasizes the ability to disprove theories. It suggests that a statement is scientific if it can be potentially falsified through empirical observation.

Slide 1.38: Discussion

How Would Karl Popper Analyze these Propositions?

- Water boils at 100° Celsius
- An unseen realm of angels exists
- God exists

How Would a Muslim Analyze these Propositions?

Karl Popper

Culminating Discussion:

Discuss the following questions with the class.

■ **Q:** How would Karl Popper analyze these propositions?

■ **A:** Water boils at 100°C - cannot be known with certainty. This is probable for now; what if a condition comes, or we develop a tool that allows water to boil at 110°C instead? Therefore, subject to the falsification principle, we still need to be critical in accepting this as truth.

■ **A:** An unseen realm of angels exists - cannot be proven or analyzed empirically.

■ **A:** God exists - cannot be proven or analyzed empirically.

■ **Islamic epistemology is not limited to the empirical.**

- What do we do with ethical statements? Popper would say they are meaningless statements because cannot be empirically proven, or more specifically, they cannot be proven false.

[NOTE: The highest level of certainty, *qaṭʿī* does not exist for Popper/Falsification principle. There is no way of attaining actual truth, only contingent truth or probability (i.e., everything is *ẓannī*).]

■ The basic understanding is that we have other ways of verifying knowledge beyond empirical verification. Empirical verification can be used, along with rational/intellectual verifications, and true reports.

■ **Islamic epistemology is not limited to the empirical.**

- Water boils at 100°C: empirical evidence
- An unseen realm of angels exist: revelatory evidence
- God exists: rational judgment and revelatory evidence

Keep in mind: As Muslims or Muslim scientists...

■ As long as you bring evidence, an Islamic Epistemology will help you evaluate it.

■ We recognize there can be more than just the evidence that is brought.

■ Our thought, as Muslims, is not purely faith-based; we do ask for evidence. And we take/accept all three sources of knowledge as evidence, which makes our paradigm more vast and comprehensive.

Slide 1.39: Connecting Back

Connecting Back:

How Would Muslim scholars have responded to Galileo?



Connecting back to Lesson 1.1

- How would Muslim scholars respond to Galileo's claims?
- Muslim scientists would have looked at his claims and examined the evidence for his claims; looking at the source of that evidence and categorizing it based on its level of truth (*qaṭʿ* or *ẓannī*).