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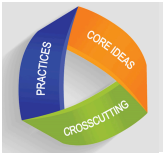
Unit: 3
Lesson: 1

Time Length: 45–50 min

An Islamic Concept of the Souls and Neuroscientific Reductionism

Neuroscience, Artificial Intelligence, and the Soul



NGSS Instructional Outcomes

Next Generation Science Standards

HS-LS1–2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. Exploration of the soul and its different stages of existence, including its connection to the body.

HHS-PS2–6: Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. Discussion of neuroscientific reductionism and the emphasis on the physical aspects of human existence, particularly the brain.

CCSS Instructional Outcomes

Common Core State Standards

English Language Arts Standards for High School

ELA-Literacy.RST.11–12.1: Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

ELA-LITERACY.RI.11–12.8: Delineate and evaluate the reasoning, which is key when discussing challenges to the Islamic concept of human nature.

ELA-LITERACY.W.11–12.1.B: Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases.

Content Learning Outcomes:

- Describe an Islamic concept of the soul and personal identity.
- Define consciousness and discuss how this experience cannot be reduced to physical processes.
- Discuss what neuroscience leaves out about consciousness.
- Expand conceptual vocabulary for relevant discussions at the junction of theology and bioscience.
- Demonstrate how an Islamic view of the world and the soul provides a comprehensive worldview that is lacking in scientism.

Materials:

- Instruction/Teacher Facilitation: Slides 3.1–3.9
- Triple-Entry Vocabulary Journal (Student responsibility)
- Supplemental Material: Science and Epistemology
- Lesson 3.1 Assessment

Instruction/Teacher Facilitation: Slides for Lesson 3.1

- **Slide 3.1.** Key Terms
- **Slide 3.2.** Being Human and the Purpose of Life
- **Slide 3.3.** You are Still Human after You Die
- **Slide 3.4.** You are Still Human after You Die
- **Slide 3.5.** Four General Stages of Our Souls
- **Slide 3.6.** Rational Evidence for the Existence of the Soul
- **Slide 3.7.** Science and Human Nature
- **Slide 3.8.** What is the Natural World Made of?
- **Slide 3.9.** Neuroscientific Reductionism versus Holistic Worldview

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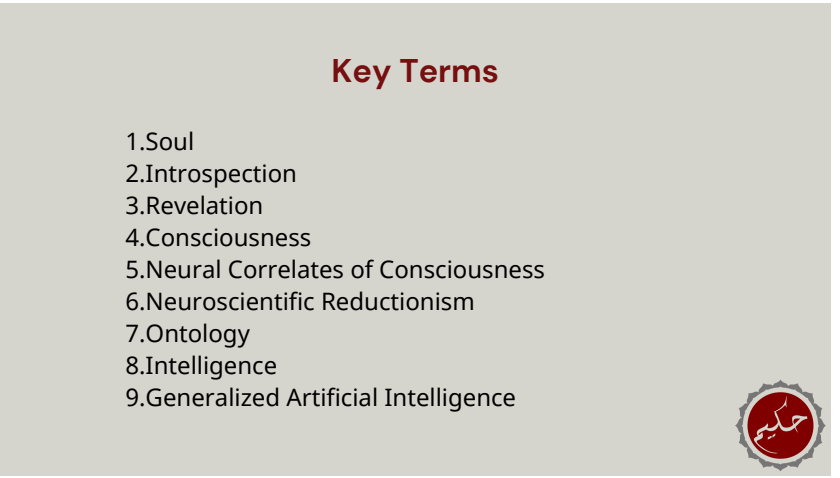
Instruction/ Teacher Facilitation

In this unit, we will be discussing what it actually means to be human. Also, how “human” is defined and characterized by different ideological groups, particularly in Islamic theology versus science, and the new realm of artificial intelligence.

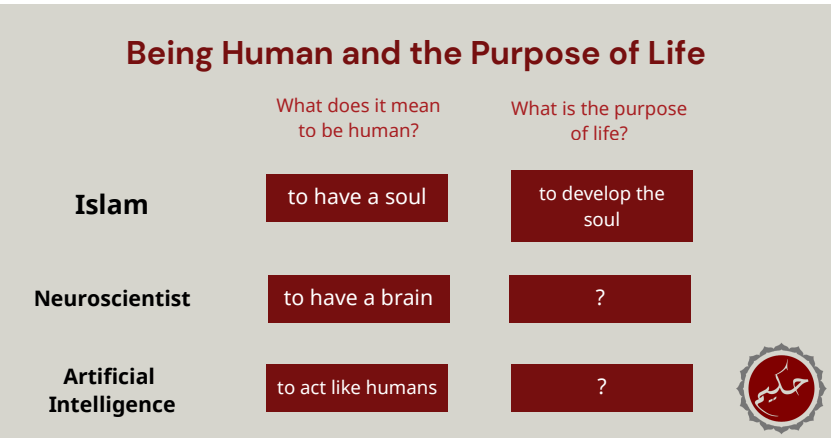
Slide 3.1: Key Terms



There will be a lot of new vocabulary in this lesson for students to take note of, and they should be able to effectively define them in order to comprehend this nuanced discussion.

Ask the students to add key terms in their triple-entry journals.

Slide 3.2: Being Human and the Purpose of Life

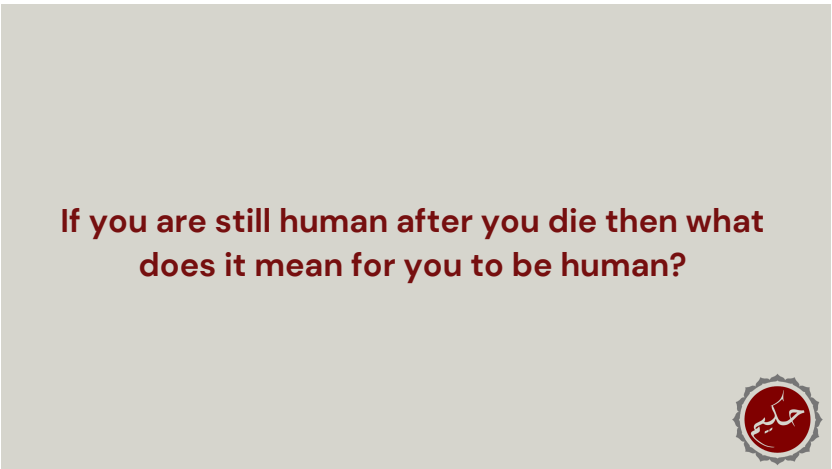


So the first question that we need to address is "What does it mean to be human?" And along with that comes by default, the connected question of "What is the purpose of life?"

> Looking at three viewpoints, from the perspective of Islam, from the lens of neuroscience, and finally, how being human would even fit in with artificial intelligence, let us examine the concept of the soul (highlighting the potential conflict that exists between these fields and the Islamic concept of the soul).

- **In Islam:** What does it mean to be human? To have a soul.
  What is the purpose of life? To develop the soul.
- **Neuroscientists:** What does it mean to be human? To have a brain (to have just a physical body).
  What is the purpose of life? We would not be able to derive a purpose of life from just a mere body deduction.
- **Artificial Intelligence:** What does it mean to be human? To act like a human.
  What is the purpose of life? No real purpose if AI is only here to mimic human behavior.

Slides 3.3–3.4: You are Still Human after You Die



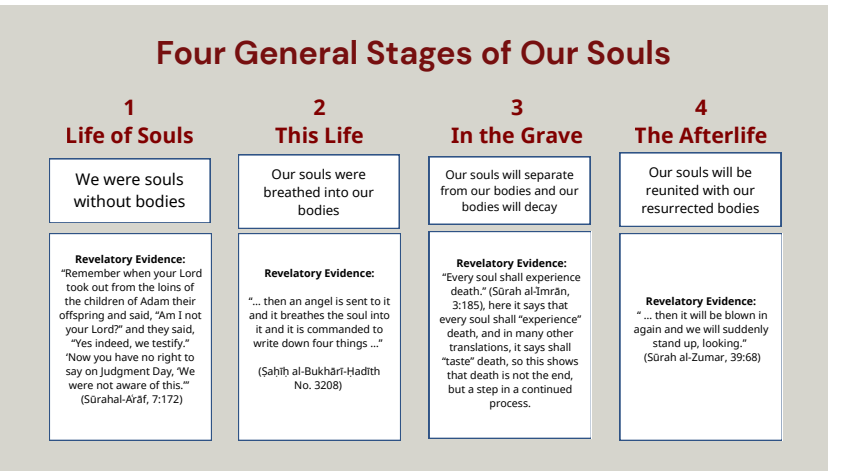
In this lesson, we will focus on how Islam defines a human and how the purpose of a human being is then derived from that definition. According to Islamic doctrine, you are still a human even after you die. And if you are still human after you die, then what does it mean for you to be human?

Think about what we believe in Islam about our life and soul. We technically survive death; our soul survives because it moves on. Our journey does not end with death; we have an afterlife.

Personal identity is related to the soul:

- An identity that exists beyond this world and that carries through into the next life (not limited to the bodily identity).
- Me/I: in order to talk about myself and my identity individually, there needs to be a "me" that exists (mental states).
- We still continue to exist as human beings in the afterlife. The difference would be that, in the afterlife, we are a soul.

Slide 3.5: Four General Stages of Our Souls



We know that our soul goes through various stages (four general stages):

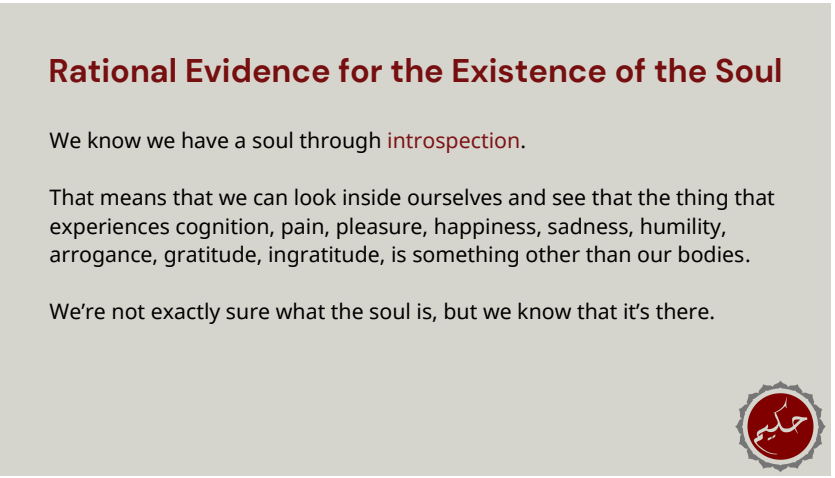
1. ***Life of Souls:*** We were souls without bodies.
   Revelatory Evidence: "Remember when your Lord took out from the loins of the children of Adam their offspring and said, 'Am I not your Lord?' and they said, 'Yes indeed, we testify.' 'Now you have no right to say on Judgment Day, 'We were not aware of this.'" (Sūrah al-Aʿrāf, 7:172)

2. ***This Life:*** Our souls were breathed into our bodies.
   Revelatory Evidence: "then an angel is sent to it and it breathes the soul into it and it is commanded to write down four things." (Ṣaḥīḥ al-Bukhārī)

3. ***In the Grave:*** Our souls will separate from our bodies and our bodies will decay, as our soul moves on.
   Revelatory Evidence: "Every soul shall experience death." (Sūrah Āl ʿimrān, 3:185)—here it says that every soul shall "experience" death, and in many other translations, it says shall "taste" death, so this shows that death is not the end, but a step in a continued process.

4. ***The Afterlife*:** Our souls will be reunited with our resurrected bodies.
   Revelatory Evidence: "then it will be blown in again and we will suddenly stand up, looking." (Sūrah al-Zumar, 39:68)

Slide 3.6: Rational Evidence for the Existence of the Soul



Now that we have looked at an Islamic perspective and revelatory evidence for it, let us look at the rational evidence for the existence of the soul.

We know we have a soul through **introspection**.

> That means that we can look inside ourselves and see that the thing that experiences cognition, pain, pleasure, happiness, sadness, humility, arrogance, gratitude, and ingratitude, is something other than our bodies.

> We are not exactly sure what the soul is, or where it is located, but we know it is there.

Examining the revelatory and rational evidence, it seems clear that this would be an accepted view. Yet, that is not the case. There are challenges to the Islamic paradigm of a "human."

Slide 3.7: Science and Human Nature

Challenges to an Islamic Concept of Human Nature (Ontology):

Neuroscientific view of Consciousness: with which we will discuss the following points:

- What is Consciousness?
- Neural Correlates of Consciousness
- Mary and Color Thought Experiment

Artificial Intelligence: with which we will discuss the following points:

- What is Intelligence?
- Artificial Generalized Intelligence
- Chinese Room Thought Experiment

The basic challenge or opposing premises are that:

- We are nothing but our brains
- Consciousness is an illusion
- Human life has no purpose

Before we go further, let us define "ontology." **Ontology** is the study of existence; it deals with the nature of "being" or the nature of the world.

Slide 3.8: What is the Natural World Made Of?

What is the Natural World Made Of?

Group Activity

Group Discussion:

The question then becomes: "What does the world consist of?"

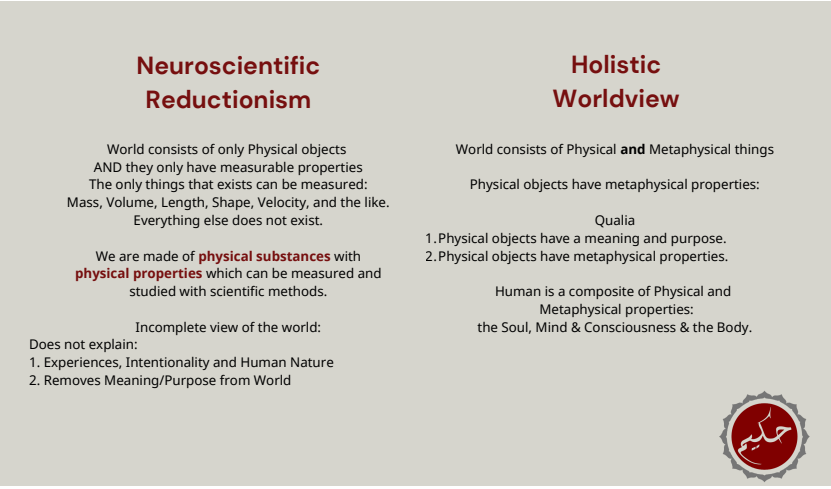
- Ask students what they think the world is made of.
- Take an apple for example: How would we describe this apple to someone who has never seen or eaten an apple before?

  Modern science measures matter/physical qualities. Mathematics is the language of natural science.

  - We could measure its size, shape, mass, and volume. But an apple is not limited to those things.
  - What about its taste and smell? How would I describe that in quantitative terms?
    - It has to be experienced for one to be able to fully grasp or comprehend an apple.
    - The problem is that sensory qualities (known as **qualia**) cannot be quantified.
    - The solution to this problem is that to describe the apple more completely, one has to move to the mind/soul to grasp it.
    - The problem here is that science cannot explain the mind or the soul.

  Modern science does not have the tools to fully explain all natural phenomena. It can only explain those which can be mathematically represented and quantified. It places qualitative experiences in the mind and does not have the tools to explain the mind.

Slide 3.9: Neuroscientific Reductionism versus Holistic Worldview



Let us compare and contrast an Islamic ontological view versus the Neuroscientific ontological view, which is called **Neuroscientific Reductionism.**

According to Neuroscientific Reductionism:

- The world consists of only physical objects which have measurable properties.
- Only things that are measurable exist: mass, volume, length, shape, velocity, and the like. All of these are required to explain natural phenomena.
- Everything else does not exist! (Actually, the view would say that there is no 'proof' that these things exist.)

In this view, there is no room left for subjective experiences, the soul, the self, or consciousness. The issue with this view is that it is incomplete. There is a lot that must be ignored, or left unexplained:

- Does not explain the varied human experiences (e.g., pleasure or satisfaction).
- Removes meaning/purpose from the world (no higher purpose, no afterlife, no metaphysical aspects).
- The question then arises, "Why are we alive or why do we exist in this world?"

According to an Islamic Worldview:

- The world consists of physical and metaphysical things.
- Physical objects have metaphysical properties: physical objects have a meaning and purpose.
- A human is a composite of physical and metaphysical properties: the soul, mind, and body.

Going back to the question of "What is the world made of?" The neuroscientific reductionist view would answer this question as:

- The world can be reduced to mere matter.
- It can be explained by physics and expressed by mathematics (everything that exists can/should be mathematically measurable.)
- This is the reason why there has been tremendous success of modern science; it is straightforward and gives you calculated results.

BUT, when neuroscientific reductionism is faced with the idea of consciousness or the human mind...

- The reality is that there are certain things that science can explain and many other things that science cannot explain. [For more details, see **Supplemental Material: Science and Epistemology** on p.168.]
- Not everything can be reduced to the physical or brain functions.
- Some neuroscientists believe consciousness is an illusion. Science can observe and measure the function of our brains and what is physically present. Since we cannot measure the activities of the human mind, some argue that consciousness does not exist.

Ask students about their understanding (their feelings and thoughts) regarding this matter.

- This can be done formally, through an exit ticket type written assignment, where students write out where they stand in this discussion.

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Islamic Studies Connection

Extensive discussion on ensoulment can be enhanced here, where the full traveling of the soul is outlined, along with the various stages of the soul mentioned here.

Biology Connection

See the chapter on the Nervous System in a Biology Textbook; study of neurons and the nervous system, neurons communicating at the synapses, neurotransmitters, and the like.