

1 **Logic: The Rules of the Road**

- Module: Philosophy
- Lesson 8

2 **What Is Logic?**

- Logic is how we describe and think about reality.
- It is a very involved subject. We will only address some basic and essential issues.
- When we “use” logic, we are employing the principles of logic to get from one point of knowledge or understanding to another, or to assist someone else in that journey.

3 **An Illustration:**

- Imagine that persuading someone is like a road trip in which you are taking someone from place A to place B.
- Argumentation (last week’s subject) is the route you choose to take. There may be several routes from which to choose. (e. g. deductive, inductive, abductive)
- Logic is the set of highway rules you must follow in order to successfully move the person to the destination along your chosen route.
- Violating the highway rules may mean you must go back to the beginning and start over. (Like in the children’s game of Chutes and Ladders.)

4 **FOUNDATIONAL LAWS OF LOGIC**

- All truth conforms to three fundamental laws of logic. (These laws are a description of reality.)
- These laws are unavoidable. One cannot reason or communicate w/o employing these laws. Even the attempt to deny or counter these laws requires their use.
- Like the laws of nature, observed and described by scientists, these laws existed before they were “discovered”, or formulated by Aristotle.
- The Laws of Logic describe the way reality is. Since God is ultimate reality, they describe the way God is. So unlike the Laws of Nature, which have to do with something external to God, God himself cannot alter or supersede the Laws of Logic without ceasing to be God, which he cannot do.

5 **Is Aristotelian Logic Only A Western Construct?**

- Some assert that there is a “Western” and “Eastern” logic, and that the Law of Non-contradiction (LNC) does not hold in so-called “Eastern Logic.”
- The assertion is based on the assumption that Aristotle created the laws of logic, which Western civilization subsequently followed, and that contradictions are embraced in “Eastern logic”.
- But Aristotle merely observed or “discovered” the laws of logic.
 - Like the law of gravity (“discovered” by Isaac Newton), they are universal and existed prior to their articulation by Aristotle.

- The truth of the laws is independent from the linguistic style with which they are expressed or the social process through which they were derived.
- One must employ the LNC in order to deny the LNC.

6 Three Laws of Logic

- Law of Identity (LOI)
- Law of Non-contradiction (LNC)
- Law of the Excluded Middle (LEM)
- (These “laws” describe reality, they are not a description of how we think or ought to think.)

7 1. The Law of Identity

- The most basic law upon which the others rest.
- P is identical to itself and different from other things.
“Everything is itself and not something else.” -J. P. Moreland-
 - Each thing is composed of it’s own set of characteristics or features, which Greeks referred to as its essence.
 - A definition is the expression of the characteristics (essence) by which a thing identified. It is through its definition that the identity of a thing is discovered.
 - Violations of the Law of Identity result in the informal logical fallacy referred to as equivocation.

8 1. The Law of Identity

- Everything that exists has a specific nature (essence). Identity refers to this aspect of existence.
 - To have an identity means to have a single identity. An object cannot have two identities.
 - An object can have more than one characteristic (attribute), but any characteristic it has is part of its identity.

9 1. The Law of Identity

- “The concept of identity is important because it makes explicit that reality has a definite nature. Since reality has an identity, it is knowable. Since it exists in a particular way, it has no contradictions.”
(http://www.importanceofphilosophy.com/Metaphysics_Identity.html)
 - This reality is both material (e.g. trees) and non-material (e.g. spiritual beings).
 - This reality is both concrete (e.g. cosmos) and abstract (e.g. numbers, propositions, relations).

10 1. The Law of Identity

- This law is relevant to at least three fundamental issues in Christian belief that non-Christians often question.
 - The nature of reality (is it an illusion?)
 - The nature of God—the Trinity (three persons, one essence)

- The nature of man—existence of a soul

11 2. The Law of Non-contradiction

- P cannot be both P and not P in the same way at the same time. (Something cannot be both true and false in the same way at the same time.)
 - e.g. A mother cannot be both a mother and not a mother in the same way at the same time.
- “Truth, by definition, is exclusive. The moment you affirm something, you exclude anything that challenges that.”
-Ravi Zacharias-

12 3. Law of the Excluded Middle

- P must be either true or false, there is no middle ground.
- For any proposition P, either it is true, or its negation is true. There is no other possibility.
- Note: LNC—a proposition cannot be both true and false
LEM—a proposition must be either true or false

13 Logical Fallacies

14 Two Kinds of Fallacy

- Formal fallacies: Where the form or structure of the argument is faulty. (e. g. non sequitur: does not follow, or affirming the consequent)
- Informal fallacies: Takes into account the content of the argument.

15 Some Common Informal Fallacies

- Ad Hominem (also called “poisoning the well”)
 - Latin for: against the man. A criticism or verbal attack against the person rather than against the argument or position the person holds.
 - Example: “That Christian is a hypocrite, so Christianity isn’t true.”
- Appeal to ridicule
 - Ridicule is directed at the claim rather than offering a substantive argument.
 - Example: “Intelligent Design proponents are just modern flat-earthers and science deniers.”

16 Some Common Informal Fallacies

- Begging the Question (Also called circular reasoning)
 - An argument in which one of the premises assumes the conclusion is true.
 - Example: “I know God exists because the Bible says so and God wrote the Bible.”

- Burden of Proof
 - The burden of proof is shifted to the wrong side. Generally, the burden of proof rests on the person making a claim or assertion.
 - Example: "God does not exist because you can't prove to me that he does exist." (The atheist is making the assertion that God doesn't exist, therefore the burden of proof rests on him or her.)

17 **Some Common Informal Fallacies**

- Category Mistake
 - A confusion of categories in which issues relevant to one category are confused with those relevant to another category. (Sometimes referred to as mixing apples and oranges.)
 - Example: "If the universe had to have a cause, what caused God?" (This is one of Richard Dawkins' arguments.)
- Equivocation
 - Using the same word in the same discourse while having it mean different things. (Violating the Law of Identity)
 - Example: Since I have the right of free speech, it is right for me to say anything I want.
 - (In the first case "Right" is used to identify a legal entitlement, but in the second case it identifies moral or ethical correctness. The person has equivocated on the identity of what they are discussing.)

18 **Some Common Informal Fallacies**

- False Analogy (Also called faulty or weak analogy)
 - Two things that are similar in one respect are claimed to be the same in another respect in which they are actually dissimilar. (Superficial similarities are stressed, while essential dissimilarities are overlooked.)
 - Example: "All religions are the same because all religions teach us to do good and love our neighbor."
- False Dilemma (Also called the "either/or fallacy")
 - An argument in which only two alternatives are given, although at least one other alternative also exists. (Frequently used to force someone to admit one of two unacceptable positions when others are available.)
 - Example: "Have you stopped beating your wife?"

19 **Some Common Informal Fallacies**

- Genetic Fallacy
 - The origin of a belief or claim is taken as evidence for or against it.
 - Example: "You only believe in Christianity because you were born in America. If you'd been born in India you'd be a Hindu."
 - The origin [genesis] of a belief is not germane to its truth or falsehood.
 - The origin of one's Christian faith (they learned it from their Christian parents) is neither an argument for or against the truth of Christianity.

- Red Herring
 - Changing the subject to an irrelevant topic to divert the discussion.
 - Example: "You claim there is a God, but I know atheists who are really good people, and I know a lot of Christian hypocrites."

20 **Some Common Informal Fallacies**

- Straw Man
 - A person's or group's position is misrepresented, exaggerated, or distorted, and then the misrepresented position (the straw man) is attacked rather than the person's or group's actual position.
 - Example: "If you believe abortion should be outlawed then you want to throw every woman who has an abortion into jail. How can you be so unfeeling?"
- Special Pleading
 - Applying rules or standards to another's argument or position, while exempting one's own argument from the same standard.
 - Example: "The theist must prove God exists, but as an atheist I don't need to prove God doesn't exist, after all, you can't prove a negative."

21 **Next Week: The Existence of God**