Apologetics Wednesdays

LESSON 4 – ARGUING FOR GOD'S EXISTENCE

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DEFENDING YOUR FAITH – OUTLINE OF LESSONS

Apologetics Wednesdays with Noel R. Vincent			
Week	Date	Topic	Issues & Questions Addressed
1	23-Mar	Theodicy: The Problem of Evil Part I	Did God create evil?
			Understanding the Skeptic's #1 Argument
			Why does God allow evil?
2	30-Mar	Theodicy: The Problem of Evil Part II	Can any good come from pain and suffering?
			Why do bad things happen to good people?
			Why do we suffer for Adam's sin?
3	06-Apr	Doctrine of Hell & Eternal Punishment	What exactly is hell: Divine Principle or Brutal Reality?
			Can a good God really punish people forever?
			What about people who have never heard the Gospel?
4	13-Apr	Arguing for God's Existence	Big Bang Cosmology: Why does anything exist at all?
			C. S. Lewis's Moral Argument
			Intelligent Design: Theory or Evidence of a Divine Creator?
5	20-Apr	Doctrine of the Trinity	Can anyone really understand trinitarianism?
			Defending the Triune Godhead
			Defeating False Gods
6	27-Apr	The Real Jesus: Historicity, Nature, & Existence	Hypostasis: Understanding the God-Man
			Refuting False Resurrection Hypotheses
			Do credible, non-biblical, historical accounts of Jesus exist?

Lesson 4: Arguing for God's Existence

Session 4.1 – Logical Argumentation: Validity & Soundness

A. **Formulating an Argument:** An argument is based upon a premise, which must actually be true, an observation (or second premise), which cannot be denied, and a conclusion, which is logically deducted from the premise and observation (or second premise). For example:
   1. (T) Premise: Fish can breathe in water.
   2. (T) Observation: Cats drown in water (if held under a while).
   3. (T) Conclusion: Cats are not fish.

   This argument is both <u>sound</u> and <u>valid</u>. It is sound because its premises are true (memory key: *sound foundation*). It is valid because its conclusion is logically deducted from its premise and observation (memory key: *valid deduction*).

B. **Validity of an Argument:** An argument is **valid** only if its **conclusion** is logically deducted from its premise and observation (or second premise). For example:
   1. (F) Premise: All men are married.
   2. (T) Observation: Some dog owners are not married.
   3. (T) Conclusion: Some dog owners are not men.

   <u>Is the argument valid</u>? **Yes**, since the conclusion follows its premise and observation. <u>Is the argument sound</u>? **No**, since its premise "all men are married" is false.

C. **Soundness of an Argument:** An argument is **sound**, only if it's **premise** and **observation** (or second premise) are both true. If either the premise or the observation is false, the argument is unsound. For example:
   1. (T) Premise: Catfish are fish.
   2. (T) Observation: Catfish have whiskers.
   3. (F) Conclusion: Cats are fish.

   <u>Is the argument valid</u>? **No**, since the conclusion is not a logical deduction from its premise and observation. <u>Is the argument sound</u>? **Yes**, since its premise and observation are both true.

D. **Analyzing a False Argument:** One must be careful not to readily accept the premise, observation, and conclusion of an argument without first carefully scrutinizing each component of the argument for validity and soundness.

Session 4.2 – Arguments for the Existence of God

INTRODUCTION: <u>How would you answer someone who said there is no god</u>?

A. **Intelligent Design: Theory or Evidence of a Divine Creator?**
   1. **Background of the <u>Teleological Argument</u>:**
      a. Also known as the *Argument* from *Design* (or *Intelligent Design Theory*) It was first introduced by the great philosopher, Socrates, in the 5th century B.C.
      b. It was advanced by Cicero in his *De Natura Deorum* in the 1st century B.C., later by Thomas Aquinas in his *Summa Theologica* in the 13th century A.D., and then by William Paley in his *Natural Theology* in the 19th century A.D.
      c. The Greek word telos (as in teleo-logical) means goal or purpose. The universe appears to be designed for a purpose, filled with complex systems that serve various ends, and fine-tuned for very precise outcomes or goals, such as hosting carbon-based life.
      d. The Apostle Paul wrote that there is not only obvious evidence of God having created the universe, but the evidence is reasonably sufficient to warrant logical belief in God . *"For since the creation of the world His invisible attributes, that is, His eternal power and divine nature, have been clearly perceived, being understood by what has been made, so that they are without excuse."* Rom 1:20.
   2. **Paley's Watchmaker:** This is a paraphrase of William Paley's argument that a watch bears evidence of design and, thus, implies it was created by a designer – a watchmaker.
      Suppose I stumbled upon a stone that happened to be lying on the ground, and I were asked how it came to be there. I might reply that, for all I knew, it had been there forever, and it would be difficult for anyone to demonstrate absurdity in my explanation. However, suppose I came upon a watch on the ground, and I were asked how the watch came to be there. I would not have been able to give the same reply I offered concerning the stone. The evidence of design in the watch shows it had an original purpose, and if a purpose, a designer who created it for its purpose. Now, compared to nature,

the watch is not nearly as complex. Thus, nature's Creator must be greater than the creator of the watch.

3. **Fine-Tuning and The Anthropic Principle:** Briefly stated, the universe seems to be fine-tuned so as to support carbon-based life. Examples of this fine-tuning include:
    a. If the strength of the Big Bang explosion had varied by as little as 1 part in 10 to the 60th power, the universe would have either collapsed on itself or expanded too quickly for stars to form. Life could not have been possible in either circumstance.
    b. If the strong nuclear force that binds together the protons and neutrons of an atom had been either stronger or weaker by just 5%, life could not have been possible.
    c. If gravity had been stronger or weaker by 1 part in 10 to the 40th power, stars like the sun could not have formed and life could not have been possible."

4. **Multiverse Theory:**
    a. Secular scientists argue that the universe only appears fine-tuned, since only in a universe capable of sustaining human life could such apparent fine-tuning phenomena be observed.
    b. They suggest that the universe is only one of many (Multiverse Theory), and thus random and not designed by an uncaused cause.
    c. It is ironic that secular scientists argue for a multiverse, which exists only in theory and has never been proven, but reject a creator God which, on their methodology, is no less an unproven theory, yet a much more plausible explanation.
    d. Modern Science appears to have an *anti-supernaturalist* bias (denial of the spiritual realm) in favor of *naturalism* (the belief that only the physical world exists).

5. **The Argument:** The argument reasons that since there is evidence of purpose in the universe, an agent of purpose is implied. Or, put another way, since there is evidence of design in the universe, a designer is implied. The argument may be formulated as follows:

       a. In the universe, there are observable phenomena of complex systems with precise fine-tuning that bear evidence of purposeful design.

       b. Evidence of purposeful design in the universe implies the existence of a purposeful designer with the attributes necessary to create the universe.

       c. The best explanation of these phenomena is the existence of a designer God.

B. **Big Bang Cosmology: Why does anything exist at all?**

   1. **Background of <u>the Cosmological Argument</u>:**

       a. The argument was first formulated in the <u>4th century B.C.</u> by Greek philosophers, *Plato* and *Aristotle*.

       b. It has been refined through the ages and several forms are *extant* today, including an Islamic version (*Kalam* = talk) developed in the <u>9th century A.D.</u> by Arabic philosopher, Al-Kindi, in his book, *On First Philosophy*.

       c. The most well-known version of the argument <u>today</u> is the *Kalām Cosmological Argument*, as formulated by Dr. William Lane Craig, one of my Talbot Seminary professors at Biola.

       d. The argument deals with the questions: *Why does anything exist at all? Why is there something rather than nothing? How did the universe get here? Did it always exist, or did it have a beginning? If so, what caused it to begin to exist?*

   2. **The Big Bang Theory:**

       a. Today, science is largely unified in the belief that the universe began to exist at The Big Bang: the moment at which all matter was originally located at a single point, exploded with intense heat, expanded to create the known universe, and then cooled over time.

       b. Since the universe appears to be expanding and cooling, cosmological modeling shows that, as the universe is traced backward in time, matter is closer together and hotter. At some point in the past, which modern scientists believe to be around 13.8 billion years ago, all matter was densely assembled at a single point.

c. The 13.8 billion year age of the universe does not take into account the recent discovery of the potential degradation of the speed of light. If the speed of light (186k mi/sec) is slowing, it may have been much faster previously, thus making possible (from the standpoint of physics) a much younger universe.

d. If the speed of light is slowing down, it would likely be due to <u>entropy</u> (2nd Law of Thermodynamics), which states *if any system is left to itself it will go on to randomness or disorder*. Thus, everything in the universe is decaying, winding down, wearing out. Things tend to move from order to chaos – just clean out any closet.

   1. **(Ps 102:25-26)** *"Of old You founded the earth, And the heavens are the work of Your hands. Even they will perish, but You endure; And all of them will <u>wear out like a garment</u>; Like clothing You will change them and they will be changed."*

   2. **(Rom 8:19-22)** *"For the anxious longing of the creation waits eagerly for the revealing of the sons of God. For the creation was subjected to futility, not willingly, but because of Him who subjected it, in hope that the creation itself also will be <u>set free from its slavery to corruption</u> into the freedom of the glory of the children of God. For we know that the <u>whole creation groans and suffers</u> the pains of childbirth together until now."*

e. It seems that entropy may regard even the laws of physics, which heretofore have deemed constants in the universe. This is also a problem for Darwinian Evolutionary Theory, which argues the opposite – that systems tend to run from *chaos* to *order*.

f. The explosion of this matter produced light and heat in the universe. The biblical account of creation is consistent with The Big Bang Theory (Ge 1:1-3). "1 In the beginning God created the heavens and the earth. 2 The earth was formless and void, and darkness was over the surface of the deep, and the Spirit of God was moving over the surface of the waters. 3 Then God said, "Let there be light"; and there was light."

g. "Kosmos" (Gr.) means *order*, and is the word from which we get "cosmetics", which is designed to bring *order* out of *chaos*.

3. **The Kalām version of the Cosmological Argument:** It argues that the universe began to exist and that something uncaused caused it to come into existence. It uses deductive reasoning in which a conclusion is deduced from the combination of a major and a minor premise. Thus, the *Kalām Cosmological Argument* is presented in two logical steps of deductive reasoning, known as <u>syllogisms</u>, or steps in the argument.
    a. **<u>Step One</u>:**
        1. Everything that begins to exist has a cause.
        2. The universe began to exist.
        3. Therefore, the universe has a cause.
    b. **<u>Step Two</u>:**
        1. The universe has a cause.
        2. The cause of the universe must itself be uncaused.
        3. Therefore, an uncaused cause of the universe exists.
4. **The God of the Bible:** From these two syllogisms, a further set of conclusions may be deduced. The necessary attributes of an uncaused cause capable of bringing the universe into existence *ex-nihilo* (out of nothing) are consistent with the description of God expressed in the Bible. The uncaused cause itself must necessarily be:
    a. <u>Personal</u> – as impersonal things do not create.
    b. <u>Beginningless</u> – otherwise it would require a cause, and that cause would need a cause, and so on, leading to an infinite regress, which is illogical and impossible.
    c. <u>Changeless</u> – because mutability pertains to finite things.
    d. <u>Immaterial</u> – as matter did not exist prior to the creation event.
    e. <u>Timeless</u> – as time did not exist prior to the creation event.
    f. <u>Spaceless</u> – as space did not exist prior to the creation event.
    g. <u>Powerful</u> – the ability to create ex nihilo requires a self-sufficient and self-existent power source.

C. **C. S. Lewis's <u>Moral Argument</u>:** Why do Humans Have a Universal Sense of Morality? Murder and lying, for instance, seem to be universally immoral.
    1. **Background:** The Moral Argument for the existence of God is from modern times. It was first postulated by German philosopher, Immanuel Kant, an agnostic, in his work, *Critique of Pure Reason*. Kant published *Critique* during the Enlightenment in 1781.

2. **Lewis's Version:** However, it's most popular form was developed by 20th century apologist, C. S. Lewis, in his book, Mere Christianity. He argued that people have a general agreement on what is morally right or wrong. When people are caught transgressing the moral law, they do not deny the existence of it, but rather make excuses as to why their transgression of it is acceptable in the present circumstance. The absence of an objective, universal and absolute moral law makes moral arguments baseless (no matter which side one is on) and moral judgments meaningless.

3. **The Argument:** Just as in the Intelligent Design Argument, evidence of design in the universe implies a designer, so in the Moral Argument, evidence of human knowledge of a moral law that transcends humanity implies a lawgiver. This lawgiver must be prescriptive of, and concerned with, human behavior, and thus personal. In order for this lawgiver to prescribe what is morally right, this lawgiver must be good. Thus, there must be a good, personal moral lawgiver, and he is God. This is a summary of the argument's main points:
   a. A human experience of morality is observed.
   b. God is the best explanation for this moral experience.
   c. Therefore, God exists.

D. **Combined Weight of Arguments:** The skeptic and critic must not only formulate their own arguments for the existence of the universe, the evidence of design, and the presence of universal moral standards, but they must also defeat each of the arguments presented above. The combined weight of all of the arguments, and the difficulty of refuting and replacing them with more powerful and logical arguments, makes belief in God the best response.

E. **Précis on the Ontological Argument:**
   1. In his book, Reasonable Faith, Dr. William Lane Craig lays out the Ontological Argument for the Existence of God. The argument was first formulated by Anselm in the 11th century, and it has been defended by Descartes and Plantinga, among others. It was born out of Anslem's search for an argument that would not only prove the existence of God, but would also showcase the biblical attributes of deity, namely God's utter supremacy to anything, real or imagined.
   2. The very concept of God is that of the Supreme Being, who is superior in every way to any and every other possible being. To conceive of God is to commit to three positions.

a. The first commitment is that God as the Supreme Being is superior to any other conceivable being. Any concept of God which can be improved upon has not yet reached the level of "supreme," and is thus not God.

b. The second commitment is that to conceive of the Supreme Being is to recognize His actual existence, since a God that truly exists is superior to a God which is only imaginary. Stated another way, a painting that is completed is superior to one that has not yet begun and exists only in the mind of the artist.

c. The third commitment is that to conceive of the existence of God as the Supreme Being is to admit that it is inconceivable that He does not exist.

3. Commitments two and three, while connected, are not identical. The former regards the superiority of a being that actually exists versus one who does not. Existence is superior to non-existence. The latter regards the superiority of a being whose non-existence is inconceivable versus one whose non-existence is conceivable. A being whose non-existence is inconceivable is superior one whose non-existence is conceivable. Commitment two seems to be more of an ontological consideration while commitment three seems to be more of an epistemological consideration.

4. The Ontological Argument is difficult to understand and to accept. It lack sufficient persuasive power. The argument rests on the definition of the word "God." If the word "God" is defined as the Supreme Being in existence, how does it follow that such a definition is self-proving? The skeptic or atheist could simply deny the definition, positing that "Hinduism argues for millions of Gods, each of whom cannot be superior to all the others, for this would be illogical." Moreover, human conceptions of God are flawed, even those of the most world renowned theological scholars, since none has a perfect knowledge. Thus, it could be argued, any human definition of God is flawed, at least to some degree, and thus cannot represent the ultimate superiority in Godness. For all the atheist knows, the definition of God as the Supreme Being may just be nothing more than a human construct.

5. A second problem is the notion that God exists because it is inconceivable that He does not. Couldn't one argue, "Since the concept of multiverse is superior to the concept of a universe, and since I cannot conceive of any space-time realm that would be superior to a multiverse, and since I cannot conceive of a multiverse not existing (because I have sensory perception that I live in it), a multiverse must exist."

I am a born again Christian with three degrees in theology. I witness. I teach. I read my Bible and pray regularly, live a Christian life, serve in missions, and fully believe in God. I understand and accept the Teleological, Cosmological, and Moral arguments for the existence of God. I just cannot see the logic of the Ontological argument as sufficiently persuasive for a Christian, much less an atheist. I am in good academic company, and suggest it not be used.

Appendix #1: Common Fallacies in Argumentation

(Sourced from AcademicInfluence.com)

Ad Hominem	Causal Fallacy	Genetic Fallacy
Affirming the Consequent	Circular Argument	Hasty Generalization
Affirming the Disjunct	Conjunction Fallacy	Loaded Question Fallacy
Appeal to Authority	Denying a Conjunct	Masked-man Fallacy
Appeal to Ignorance	Denying the Antecedent	Non-Sequitur Fallacy
Appeal to Pity	Equivocation	Post Hoc Fallacy
Appeal to Popular Opinion	Existential Fallacy	Red Herring Fallacy
Appeal to Probability	Fallacy of Sunk Costs	Slippery Slope Fallacy
Appeal to the Stone	Fallacy of Undistributed Middle	Strawman Argument
Argument From Fallacy	False Dilemma	Tu Quoque

Common Informal Fallacies

1. **Ad Hominem -** An abbreviated phrase meaning "to the person," *argumentum ad hominem* refers to an argument which relies on an attack directed at the speaker rather than the substance of the speaker's argument. This rhetorical strategy is often fallacious in nature, employing an approach designed to discredit the character, substance or motive of a person in lieu of deconstructing the person's claims.
    Example 1 - Speaker 1: I think the idea of a moral law requires the existence of a lawgiver (i.e. God). Speaker 2: Of course you would say that. You're a Christian. Why should we listen to you?
    Example 2: Speaker 1: I think marijuana should be legalized. It would be better for the country if we didn't have this drug war. Speaker 2: Of course you think that. You're a pothead.
    Example 3: Speaker 1: No fault divorce has proven to be detrimental to society and the family. Speaker 2: You didn't seem to think that when you got divorced.
    Example 4: Speaker 1: We should have single payer, government funded health care. That would be the best solution to the health care crisis in our country. Speaker 2: You voted for Bernie Sanders. You're probably a communist.
    Fun Fact: An ad hominem observation is not always fallacious. If the qualities attributed to the speaker are provable and relevant to the argument, an ad hominem observation may be a useful point of strategy. For instance: Speaker A: Private health insurance is the only way to ensure the equal distribution of resources to the public. Speaker B: As a former CEO of a private **health insurance company** who was convicted for falsifying performance reports, you can't be trusted on this issue.

2. **Appeal to Authority -** The *argumentum ad verecundiam*, sometimes also called an "argument from authority," describes an argument in which a speaker claims that their view is endorsed by a relevant authority figure. This claim of endorsement is presented as a sufficient argument unto itself, relieving the speaker of presenting any additional evidence to further their case. An alternate form of this fallacy is sometimes called the appeal to false or unqualified authority. In this case, the speaker might cite an individual with some measure of clout, but generally in an area outside the subject of the given argument. For instance, one might fallaciously cite a medical doctor's opinion about politics simply because she is a very smart doctor.

Example 1: My philosophy professor believes in ghosts and goes to séances. She's an intelligent, educated, person, so ghosts must be real, and spiritualism must be true.
Example 2: My minister says the Covid vaccine will cause genetic mutations. He has a college degree, and is a holy man, so he must be right.
Example 3: Aristotle thought women were inferior to men. Aristotle is one of the smartest men who ever lived, so he must be right about this.
Fun Fact: If both parties in a debate agree that the cited individual is a relevant authority figure, and that the facts stated in reference to this figure are accurately attributed, this appeal may not be fallacious. For this reason, there is some debate about whether or not the appeal to authority is always fallacious. However, in contexts such as science, where authority must be challenged in order for new findings to be yielded, any such appeal that comes without the support of empirical evidence should be dismissed as fallacious.

3. **Appeal to Ignorance -** *Argumentum ad ignorantiam*, also sometimes referred to as an "argument from ignorance," occurs when a speaker presents an argument as fact simply because there is no readily available evidence to prove the contrary. This fallacy is based on a false dichotomy which posits that what we don't know must not be true. This strategy incorrectly assumes that a lack of sufficient evidence is concrete proof that something can't be true, a position which precludes the possibility that things may be unknown or even unknowable.
    Example 1: No one has proven God exists, so He doesn't.
    Example 2: You can't prove God doesn't exist, so He does.
    Example 3: We haven't proven aliens didn't create life on earth, so aliens created life on earth.
    Example 4: We haven't found life on other planets, so there's no life on any other planet, anywhere.
    Example 5: We haven't found the ruins of Troy, so the city of Troy didn't really exist.
    Example 6: We haven't found King David's tomb, so King David didn't really exist.
    Fun Fact: Philosopher **John Locke** is sometimes credited with first coining **the phrase in his 1690 text** "On Reason." Here, he explains that one way "men ordinarily use to drive others and force them to submit to their judgments, and receive their opinion in debate, is to require the adversary to admit what they allege as a proof, or to assign a better."

4. **Appeal to Pity**
    The *argumentum ad misericordiam* is a strategy in which one speaker appeals to the emotions of another by exploiting their feelings of guilt or pity. This strategy of debate seeks to validate one's argument by playing on the sympathy or sensitivity of the other. The aim is to invoke an array of emotions that might cloud the individual's ability to approach the argument in a rational way. It should also be noted though that the invocation of empathy is not by itself evidence that a fallacy has occurred. If we take, for instance, commercials which feature starving people in developing countries, the goal of invoking our pity is not to deceive but to connect real human emotion with a call to action. An appeal to any type of emotion is not by itself fallacious, but becomes fallacious when combined with a faulty premise.
    Example 1: You should give me a promotion. I have a lot of debt and am behind on my rent.
    Example 2: You can't give me a C. I'll lose my scholarship.
    Example 3: I can't take home a B in this course. My parents will be angry with me.
    Example 4: If you don't give me a passing grade, I won't get accepted to medical school. That will break my grandmother's heart.
    Example 5: You should marry me. I know we're not compatible, but I only have a year to live, and you're my last chance.
    Fun Fact: The appeal to sympathy is sometimes also referred to as the **Galileo** argument, so-named in honor of the Italian astronomer who lived out his final decade under house arrest for scientific claims that were deemed heretical by the Catholic Church. Presumably, what is meant by this attribution is that one's sympathy for Galileo's ordeal does not necessarily confer agreement with Galileo's theories. There is no recorded instance in which the pioneering astronomer employed such a rhetorical strategy on his own behalf.

5. *Appeal to the Stone*

The *argumentum ad lapidem* is a logical fallacy in which one speaker dismisses the argument of another as being outright absurd and patently untrue without presenting further evidence to support this dismissal. This constitutes a rhetorical effort to exploit a lack of readily available evidence to support an initial argument without necessarily presenting sufficient evidence to the contrary. By its very nature, Appeal to the Stone preempts further debate. It insulates itself against counter-argument by declining to present sufficient evidence to be rebutted. A fallacy relying on inductive reasoning, appeal to the stone is a particularly vulnerable fallacy in contexts where new evidence may eventually reveal itself.

Example 1:
- Speaker 1: Humans share a common ancestor with the chimpanzee.
- Speaker 2: No they don't. Don't be ridiculous.
- Speaker 1: Why am I ridiculous?
- Speaker 2: Evolution is absurd.
- Speaker 1: Why do you say that?
- Speaker 2: Well, it just obviously is. Look at apes, and then look at us. It's just obviously an absurd theory.

Example 2:
- Speaker 1: Race is a social construct.
- Speaker 2: No, it isn't. Don't be absurd.
- Speaker 1: What's absurd?
- Speaker 2: The idea that race is a social construct.
- Speaker 1: What's absurd about it?
- Speaker 2: It just is.

Fun Fact: This fallacy is drawn from a pretty entertaining origin story. 18th century English writer **Dr. Samuel Johnson** and his future biographer, Scottish-born **James Boswell** , discussed a theory offered by Church of Ireland bishop, **George Berkeley** . Berkeley had claimed, through the concept of subjective idealism, that reality and material objects are dependent upon an individual's perceptions. Both Johnson and Boswell were firm in their shared rejection of this idea. However, according to Boswell's biography of **Johnson**, "I observed, that though we are satisfied his doctrine is not true, it is impossible to refute it. I never shall forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, till he rebounded from it, 'I refute it thus.'"

6. *Appeal to Popular Opinion*

The *argumentum ad populum*, also sometimes referred to as the common belief fallacy, refers to an instance in which a speaker asserts that something is true because many people believe it to be so. This is a fallacy in which the speaker, in lieu of providing evidence to support an argument, asserts that something is demonstrably true only because a majority of people believe it to be the case. Another form of this fallacy is called the bandwagon fallacy, so named for its implication that one should adopt a view or opinion (i.e. join the bandwagon) because so many others believe it to be so. One more variation, the appeal to elite status, suggests that you might want to share a view or position because it is held by an elite set of individuals. For instance, a well-known recruitment slogan "The few. The proud. The Marines." both conferred elite status upon the Marines and in doing so, implied that you might want to join this select group.

Example 1: Most people think the world is flat, therefore it is flat.

Example 2: Most actors in Hollywood were against the war in Iraq, therefore the war in Iraq was wrong. *(This is a subsection of ad populum: snob appeal. In this case, the opinion is outside the expertise of the people appealed to.)*

Example 3: Most wealthy women wear Gucci, therefore Gucci items are beautiful, and worth the price. (Snob appeal: appeal to the elite.)

Example 4: Throughout history, most philosophers thought men were more rational than women, therefore this is true.

Example 5: Most people don't think it's wrong to eat meat, so it's not.

Example 6: Most people believe in ghosts, so ghosts are real.

Example 7: Slavery is accepted by just about everyone in our society, so it's ethical to keep slaves.
Fun Fact: If an argument is actually centered on matters of public or democratic interest, the appeal to popular opinion may be a logically sound strategy. For instance, if provable, you may argue that because 9 of 10 dentists recommend Crest toothpaste, your dentist is likely to view Crest as a superior brand of toothpaste. This would not be a fallacy.

7. *Causal Fallacy*
   Also sometimes called the fallacy of the single cause, or causal reductionism, this is a logical fallacy in which the speaker presumes that because there is a single clear explanation for an effect, that this must be the only cause. This fallacy makes the incorrect and reductive assumption that one cause precludes that possibility of multiple causes. This is a false dilemma, one which requires the speaker to ignore the possibility of other overlapping explanations and to consequently draw an unwarranted connection between a perceived cause and effect.
   Example 1: I go to my front porch every morning and yell, "May no tigers enter this house!" and for 20 years, not a single tiger has entered my house. My tiger prevention strategy clearly works. .
   Example 2: It's cold on a summer day. Global warming is a hoax.
   Example 3: I've never had the flu because I take my vitamins everyday.
   Fun Fact: In essence, causal fallacy is the technical term for the exceedingly common phenomenon of "jumping to conclusions." This is simply worth noting because it is, in many ways, a natural human behavior to which we are all predisposed at one time or another—as you await the results of a medical test; ponder the whereabouts of your missing wallet; or question the reasons somebody hasn't texted you back even though you can clearly see that the message was delivered. In other words, uncertainty and human emotion make us all vulnerable to the occasional logical fallacy.

8. *Circular Argument*
   Circulus in probando in Latin, this logical fallacy occurs when the premise of an argument is dependent upon acceptance of the conclusion, and the conclusion is dependent upon acceptance of the argument. In other words, both the argument and the conclusion are left wanting further proof. In circular reasoning, the originating premise lacks grounding in independent evidence, and therefore brings to the discussion no further proof to support the conclusion.
   Example 1:
   - Speaker 1: You should trust the Bible because it's the Word of God.
   - Speaker 2: How do you know it's the Word of God?
   - Speaker 1: Because God tells us it is.
   - Speaker 2: Where does God tell us this?
   - Speaker 1: Right here, in the Bible.
   Example 2:
   - Speaker 1: Jesus was not really crucified.
   - Speaker 2: How do I know that's true?
   - Speaker 1: Because the Koran says so.
   - Speaker 2: How do I know the Koran is correct?
   - Speaker 1: Because the Koran is the Word of God, and everything it says is true.
   - Speaker 2: How do I know that's true?
   - Speaker 1: Because God tells us so, here in the Koran.
   Fun Fact: Circular reasoning forms the basis for the famous literary phrase "Catch-22," which is drawn from the **Joseph Heller novel** of the same name. According to the satirical novel, the military maintains a policy of discharging soldiers who can demonstrate insanity. However, the military also recognizes that any sane person would desire a discharge to avoid the horrors of war. Therefore, any person seeking a discharge on the grounds of insanity is logically too sane to be eligible for discharge. This absurd contradiction is what is known, according to the author, as a "Catch-22."

9. *Equivocation*

Sometimes called the Motte-and-Bailey fallacy, this is a logical fallacy in which a speaker blurs the line between two distinct positions which have some overlapping qualities. By blurring this line, it becomes possible to create an association between one position which is modest (Motte), and therefore easily defended, and a position which is likely to be more extreme (Bailey), and which is therefore more difficult to defend. By equating these positions, the speaker is presenting a false equivalence, thus forcing the other speaker to move to the defense of a position which is more difficult to defend.

Example 1:
- Speaker 1: Did you torture the prisoner?
- Speaker 2: No, we just held him under water for a while, and then did a mock hanging.

Example 2: According to the Supreme Court, we have a right to abortion. Therefore, it is right to have an abortion. (Legal right v. morally correct)

Example 3: A slight variation on equivocation occurs when common terms are used in an argument but with different meanings. For instance:
- Speaker 1: We are using thousands of people, who are going door to door to help us spread the word about social injustice and the need for change.
- Speaker: Well then, I can't be a part of this because I was always been taught that it's wrong to use people.

Example 4:
- Abbott & Costello–
- Motte & Bailey Fallacy (Subset of equivocation)
  - Motte (easily defensible): Different cultures and individuals have different opinions on morality.
  - Bailey (more controversial/radical): Morality is completely subjective, and only a matter of opinion. There is no objective morality.

Fun Fact: The Term **Motte-and-Bailey** was coined by philosopher **Nicholas Shackell** , who described the phrase as a reference to medieval castle defense systems, explaining that "A Motte and Bailey castle is a medieval system of defence in which a stone tower on a mound (the Motte) is surrounded by an area of land (the Bailey) which in turn is encompassed by some sort of a barrier such as a ditch…the Bailey, represents a philosophical doctrine or position with similar properties: desirable to its proponent but only lightly defensible. The Motte is the defensible but undesired position to which one retreats when hard pressed."

10. *Fallacy of Sunk Costs*

The sunk cost fallacy proceeds from the faulty logic that the expenditure of past resources justifies the continued expenditure of resources. This fallacy contradicts rational choice theory, which holds that in economics, the only rational decisions are those which are made based on future expenses, rather than past expenses. In a broader sense, this fallacy can apply to a wide range of scenarios including the sunk cost of having remained in an unhappy relationship, having engaged in a failed war, or having dedicated years to an unsatisfying job. In each case, one might commit a fallacy by determining that past commitment to any of these scenarios necessitates a continuation of the status quo.

Example 1: Our marriage is terrible, but we've been together so long we might as well stay together. If we get divorced, I will have wasted 30 years.

Example 2: I hate this book. It isn't very good. I've started reading it, though, so I should finish it. If I don't finish it, I will have wasted 8 hours of my life.

Example 3: Our country has been in this war for 10 years. We're not winning, but we continue to invest time, money, and soldiers in it because of past expenditures.

Fun Fact: A "sunk cost" is essentially the opposite of "cutting one's losses." For instance, in a hand of poker, a player may determine that while he is likely to lose based on his cards, he has already spent too much money on the hand to fold. This is a demonstration of the sunk cost fallacy. By contrast, the same player may recognize that while he has already spent a sum of money on this losing hand, he can still fold and hold on to his remaining funds. This is called cutting one's losses.

11. *False Dilemma*

Also sometimes referred to as a "false dichotomy," this is a fallacy in which one incorrectly places limitations on one's possible options in a given scenario. This fallacy rests on the false premise that one is faced with a binary choice when it's possible that multiple options are available. In essence, this occurs when one reduces the array of available options and alternatives to a simplified either-or condition.

Example 1: If you aren't a capitalist, you must be a communist.
Example 2: Either God created the world or evolution is true.
Example 3:
- Speaker 1: I'm against the war.
- Speaker 2: You must hate our troops.

Example 4: You can either support our police or Black Lives Matter.

Fun Fact: The false dichotomy conflates "contraries" with "contradictories." With contradictories, it is true that one or the other must be true. For instance, if we say somebody is alive, it means they must not be dead, and vice versa. By contrast, contraries are statements in which, at most, one such statement must be true, but in which it is also possible that neither statement is true. For instance, if we say that somebody "is not here," we can't definitively conclude that the person must be at home. It's possible that the person is at home, at the supermarket, or aboard the international space station. We don't know. From the statement, all we can conclude is that the person is not here. The false dichotomy overlooks the full array of possibilities.

12. *Genetic Fallacy*

Also sometimes referred to as the fallacy of origins, this is a fallacy which presumes that an argument holds no merit simply because of its source. In this instance, the history or origin of the source is used to dismiss an argument, in lieu of using actual rhetoric to address the substance of the argument.

Example 1:
- Speaker 1: That scientist gave a report last week on the relationship between fossil fuel and global warming. He says burning fossil fuels contributes to global warming.
- Speaker 2: He belongs to the Sierra Club and owns stock in a solar energy company. What he says cannot be true.

Example 2: Primitive people believed in gods to explain natural phenomena. We have science, and are not primitive anymore. Therefore, there is no God.

Example 3:
- Speaker 1: Dr. Singh says meat eating is bad for the environment.
- Speaker 2: He's a Sikh. They don't eat meat. Of course he would say that. He can't be telling the truth.

Fun Fact: In one of the earliest recorded cases of usage, author Mortimer J. Adler characterized this fallacy as "the substitution of psychology for logic."

13. *Hasty Generalization*

Also sometimes called a faulty generalization, this is a form of argument which arrives at a conclusion about numerous instances of a phenomenon based on evidence which is limited to only one or a few instances of said phenomenon. This denotes that one might attempt to generalize the explanation for an occurrence based on an unreliably small sample set.

Example 1: My grandmother smoked for 80 years and died at 100. Obviously, smoking isn't harmful.
Example 2: I know five people from Kentucky. They are all racists. Therefore, Kentuckians are racist.
Example 3: My neighbor's child was kidnapped while playing alone in her yard. My city must be a dangerous place for children.
Example 4: I know four poor families. They are lazy drug addicts. Therefore, all poor people are lazy drug addicts.

Fun Fact: The hasty or faulty generalization is the fallacy which is most at play when we apply stereotypes to full demographic groups based on anecdotal evidence or limited interaction with only select representation from that group. For instance, a person who owned a pet cat with a bad temper might make the stereotypical generalization that all cats have bad tempers.

14. *Loaded Question Fallacy*

A loaded question is one in which the speaker has employed rhetorical manipulation in order to limit the possible array of answers that another speaker can rationally provide. The fallacy is couched in the phrasing of such a question, which presupposes certain facts that may not be true or proven, within the content of the question. The fallacy occurs when that question is underscored by a presupposition which is not agreed upon by the person to whom the question is posed.

Example 1: Have you stopped beating your wife?
Example 2: Why did you steal my keys?
Example 3: Are you one of those stupid religious people that reject science?

Fun Fact: This form of fallacy is distinct from "begging the question," which presumes the conclusion before the question is answered. By contrast, this strategy traps the respondent into admitting a fact which is implied by the question. Simply by virtue of answering the question, the respondent has unwittingly conceded the point.

15. *Post Hoc Fallacy*

In full Latin phrasing, *Post hoc ergo propter hoc* means "after this, therefore because of this." Instances of this fallacy occur when one incorrectly attributes a cause and effect relationship between two phenomena in the absence of proof that one causes the other. The flaw in this strategy is that it draws a singular relationship between a premise and a conclusion without considering an array of variables that might disqualify the possibility of such a relationship.

Example 1: Every time we sacrifice virgins, it rains. Therefore, sacrificing virgins causes it to rain.
Example 2: Violence among teens has risen the last five years. Video game playing among teens has also risen the last five years. Therefore, playing video games causes teens to be violent.
Example 3: Every time I wear this necklace, I pass my exams. Therefore, wearing this necklace causes me to pass my exams.
Example 4: Every person who has ever drunk water has died. Therefore, drinking water causes death.

Fun Fact: A famous phrase often used as a counterpoint to the Post Hoc fallacy is that "correlation does not equal causation." This denotes that just because two phenomena sometimes, or even frequently, appear in connection with one another does not mean that one causes the other.

16. *Red Herring Fallacy*

The red herring fallacy refers to an instance in which one speaker attempts to divert the attention of another speaker from the primary argument by offering a point which may be true, but which does not actually further the substance of a counterargument. So named for the implication that the odoriferous fish in question might "throw one off the scent" of the actual argument itself, the red herring will typically support a conclusion with a fact which does not actually provide substantive support.

Example 1:
- Child: This fish tastes funny. I don't want to eat this.
- Parent: There are children starving in Africa. Eat your dinner.

Example 2:
- Speaker 1: I think it's terrible that a game hunter killed Cecil the lion.
- Speaker 2: What about all the babies that are killed every day by abortion?

Example 3:
- Speaker 1: I really think we need to do something about the rising levels of poverty and homelessness in our country.
- Speaker 2: Why are you worried about poverty? Look how many children we abort every day.

Fun Fact: While the red herring can take the form of a logical fallacy, it is also a familiar literary and cinematic device which can be employed to misdirect the attention of the reader or viewer. This is a commonly employed tactic in mysteries, suspense thrillers, and other narratives that conclude with unexpected plot twists. For instance, in a murder mystery, the author might offer a number of clues implying that an innocent character is the killer while the actual killer hides in plain sight.

17. *Slippery Slope Fallacy*

Sometimes also called the continuum fallacy, this fallacy occurs when a speaker claims that a single step taken in a particular direction will inevitably lead to a series of subsequent and unintended events. This argument is used to draw a series of unforeseen and unprovable conclusions based on a single provable premise. The flaw in the slippery slope argument is that it typically forecasts an extreme range of likely subsequent events, thereby excluding the possibility that a series of more moderate events might play out instead.

Example 1: You smoke pot? If you keep doing that, you'll be a heroin addict within two years.

Example 2: If we legalize pot, the next thing you know people will want to legalize meth and heroin.

Fun Fact: In the literary context, "slippery slope" is sometimes referred to as "the camel's nose." This refers to a metaphor taken from an allegory published by Geoffrey Nunberg in 1858, which tells the story of a miller who allows a camel to stick its nose through the doorway of his bedroom. Bit by bit, the camel moves other body parts into the room until he is entirely inside. Once this occurs, the camel refuses to leave.

18. *Strawman Argument*

The strawman fallacy occurs when a speaker appears to refute the argument of another speaker by replacing that argument with a similar but far flimsier premise. In essence, the speaker is "setting up a straw man" which can then be easily knocked down by a counterargument. The flaw in this rhetorical approach is that it fails to actually engage the original argument, in essence changing the subject so as to face a more manageable argument.

Example 1:
- Speaker 1: I think we should lower the age of sexual consent to 16.
- Speaker 2: 16 year olds are children. So, you think it's OK for children to have sex? No, we shouldn't lower the age of consent.

Example 2:
- Speaker 1: I think we should have single payer, universal, health care.
- Speaker 2: Communist countries tried that. We don't want America to be a communist country. We shouldn't have single payer health care.

Example 3:
- Speaker 1: I think we should have an expanded social safety net for the poor in our country.
- Speaker 2: So, you think we should just throw money at lazy people who don't want to work and think they are entitled to be kept up by other people, right?

Fun Fact: In the U.K., the strawman argument is also sometimes referred to as "Aunt Sally," so named for a pub game in which competitors will hurl sticks at a "skittle" balanced atop a post. The individual who knocks this precariously balanced object from its post is the winner.

19. *Tu Quoque*

Tu quoque, which translates to "you also," is a fallacy in which one speaker discredits another by attacking their behavior as being inconsistent with their argument. This is a specious attack line because it seizes on certain characteristics presented by the speaker rather than on the merits of the speaker's actual argument. Similar to ad hominem in that it resorts to a personal line of attack rather than a rhetorical argument, the primary distinction is that this personal attack is framed as having a direct connection to the argument itself. This framing is not designed to disqualify the speaker for who they are (as with ad hominem) but for how they act, and consequently, how this action appears to diverge from the premise of the speaker's argument.

Example 1:
- Speaker 1: No fault divorce is really harmful to the family and the larger society.
- Speaker 2: Well, you must not really think that since you're divorced yourself.

Example 2:
- Parent: I really don't want you to smoke pot. It's still illegal, and could get you into trouble.
- Child: Didn't you smoke pot when you were my age? You must not think it's a big deal.

Example 3:
- Speaker 1 *(Democrat)*: "Donald Trump is a known adulterer. It reflects badly on his character, and suggests he might not be trustworthy."
- Speaker 2 *(Republican)*: "What about Bill Clinton? You didn't seem to care when he cheated."

Fun Fact: The high level of polarization in today's American political discourse leads frequently to a form of the tu quoque fallacy referred to as "whataboutism." This form of the fallacy occurs when one speaker, in lieu of responding directly to an argument, accuses another speaker of taking a hypocritical position. Take, for instance, a **debate over gun control** between a Republican and a Democrat:

- Democrat: Republicans support fewer regulations on gun ownership, which leads to more gun-related deaths in America.
- Republican: Well what about how Democrats support drug legalization, which leads to more drug-related deaths in America?

Common Formal Fallacies

20. *Affirming the Consequent*

Sometimes also referred to as a converse error, this is a fallacy which occurs when one assumes that, because a conditional statement is true, then the converse of that statement must also be true. In such instances, this assumption is based on a failure to consider other possible antecedents which might also be used to offer true conditional statements. In other words, the speaker has failed to consider the full range of possible conditions for that which is consequent.

Example 1: If Hunter was human, he would be mortal. Hunter is mortal. Therefore, Hunter is a human.*(Hunter may actually be my cat.)*

Example 2: If it was raining outside, it would be dark. It's dark outside, so it must be raining. *(It might be 10PM.)*

Example 3: If I'm psychic, I will be able to see dead people. I see dead people, therefore I'm psychic. *(I might actually just be insane.)*

21. *Affirming the Disjunct*

In the case of Affirming the Disjunct, also sometimes referred to as the false exclusionary disjunct, it is incorrectly presumed that an "or" condition excludes the possibility that "either/or" could be true. In other words, when a speaker makes a statement indicating "A or B," the fallacy occurs when the responding speaker assumes "A, therefore, not B." This is a fallacy of equivocation in which one assumes that because one disjunct is true, the other must be untrue.

Example 1:
- Gus is Christian or Gus is politically liberal.
- Gus is a Christian.
- Therefore, Gus is not politically liberal.

Example 2:
- Either God created the world or evolution happened.
- Evolution happened.
- Therefore, God did not create the world.

Fun Fact: Whereas Affirming the Disjunct is a logical fallacy, it should not be conflated with the disjunctive syllogism which is actually a valid form of argument. An example of an accurate disjunctive syllogism states the following:
- Bruce is American, or he is not from New Jersey.
- Bruce is not American, therefore, he is not from New Jersey.
This is a valid form of inference.

22. *Appeal to Probability*

The *possibiliter ergo probabiliten* refers to a fallacy in which one conflates possibility with probability, or in which one conflates probability with certainty. At the heart of this inductive fallacy is the error in presuming that because there is evidence that a thing is possible, one can take for granted either its probability or its certainty.

Example 1: It is possible aliens built the pyramids. Therefore, aliens built the pyramids.

Example 2: It is possible to fake the moon landing through special effects. Therefore, the moon landing was a fake using special effects.

Example 3: It's possible to pass the class without attending regularly. Therefore, you will pass even if you don't attend regularly.

Fun Fact: Murphy's Law famously states that anything which can go wrong, will go wrong. This is a playful and purposeful manifestation of the Appeal to Probability Fallacy.

23. *Argument From Fallacy*
   Also redundantly known as the fallacy fallacy, this fallacy occurs when one speaker identifies a fallacy in the argument of another and uses it in order to assert that the conclusion must be false. This fallacy incorrectly assesses that a fallacy within the argument of another necessarily precludes the possibility that the argument's conclusion is correct.

   Example 1:
   - Speaker 1: If Hunter was human, he would be mortal. Hunter is mortal. Therefore, Hunter is a human.
   - Speaker 2: You just committed the fallacy of affirming the consequent. Therefore, Hunter is not a human.

   Example 2:
   - Speaker 1: Single payer health care would be the fairest and most efficient way of giving medical care to our citizens.
   - Speaker 2: You must be a communist.
   - Speaker 1: You just committed the ad hominem fallacy. Therefore, I'm not a communist.

   Fun Fact: This fallacy is a special form of the formal "Denying the Antecedent" fallacy. (See below.)

24. *Conjunction Fallacy*
   In a conjunction fallacy, one assumes that a set of specific and combined conditions is likelier to be true than a single condition, without concrete evidence that either is true. In this instance, the specific set of conditions may appear to be more true because it seems to represent certain facts that seem likely to connect with the premise. However, because these conditions are more specific and because these conditions combine multiple factors which must all be true in order for the entire statement to be true, it is mathematically less likely that the statement is true than would be a simpler proposition.

   Classic Example: The Linda Problem - Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Which is more probable?
   - 1. Linda is a bank teller.
   - 2. Linda is a bank teller and is active in the feminist movement.

   If you chose #2, you have committed the conjunction fallacy. The probability of them both being true is less than or equal to the probability of only one being true. We do not know, in fact, whether either of them is true.

   Fun Fact: This fallacy is sometimes called the "Linda problem," following from the **first known example** supplied by psychologists **Amos Tversky** and **Daniel Kahneman** .

25. *Denying the Antecedent*
   Sometimes also referred to as the fallacy of the inverse, denying the antecedent occurs when one deduces that because a valid premise leads to a valid conclusion, that the inverse can't be true. In this case, the fallacy occurs when an individual presumes that because a premise and conclusion are true, the opposite of that premise must inherently mean that the conclusion is not true. In other words, one may make the valid statement that "If A, then B." It would be a fallacy to determine that "If not A, then not B."

   Example 1:
   - If you live in Kentucky, you love horses.
   - You don't live in Kentucky.
   - Therefore, you don't love horses.

   Example 2:
   - If you're a hippie, you smoke weed.
   - You are not a hippie.
   - Therefore, you don't smoke weed.

Example 3:
- If you are a communist, you believe in socialized medicine.
- You are not a communist.
- Therefore, you do not believe in socialized medicine.

Fun Fact: An argument based on denying the antecedent may actually be valid if the biconditional terminology is added to indicate "if and only if." For instance:
- If and only if tomatoes grow on trees, then tomatoes must be fruit.
- Tomatoes don't grow on trees. Therefore, tomatoes are not fruit.

26. *Denying a Conjunct*

This fallacy occurs under the condition that two premises cannot both be true at the same time. Under said condition, it is incorrect to presume that because A is not true, then B must be true. The primary flaw in this presumption is the preclusion of the possibility that neither premise is true.

Example 1:
- It isn't both sunny and raining.
- It isn't sunny.
- Therefore, it's raining.

Example 2:
- Teena is not both a hippie and a communist.
- Teena is not a hippie.
- Therefore, Teena is a communist.

Example 3:
- I can't be a pothead and get a job at the factory.
- I'm not a pothead.
- Therefore, I can get a job at the factory.

Fun Fact: The conclusion of the sequence need not be false in order for Denying a Conjunct to be a logical fallacy. In the example above, it is possible that the speaker could get a job at a factory. But we can't presume that this is the case simply because the speaker isn't a pothead. It's possible, for instance, that regardless of whether or not the speaker smokes pot, this individual lacks the training to be hired as a factory worker.

27. *Existential Fallacy*

Also sometimes called existential instantiation, this fallacy occurs when one makes an argument about a category without first presenting any proof that such a category exists. In other words, it is not logical to attribute characteristics to that which doesn't exist. Therefore, an argument which simply assumes existence while attributing such characteristics is based on an unproven premise.

Example 1:
- All sea creatures live in the water.
- All mermaids are sea creatures.
- Therefore, some mermaids live in the water.

(The problem here is that you may have a category of things that actually do not exist. What if there are no mermaids?)

Example 2:
- All cats are aliens.
- All aliens are dangerous.
- Therefore, some cats are dangerous. *(What if cats didn't exist?)*

Fun Fact: "All trespassers will be prosecuted" is an oft-used existential fallacy, one which fallaciously assumes without evidence that there are trespassers even though we can't presume the existence of trespassers based on the information provided in the statement. This fallacy can be readily corrected when one adds the condition "if such-and-such exists." Thus, while it would not fit so elegantly on a posted sign, it would not be a fallacy to say, "If trespassers are found on my property, they will be prosecuted."

28. *Fallacy of the Undistributed Middle*

Referred to in Latin as *non distributio medii*, this fallacy is considered a syllogistic fallacy. A syllogism is a kind of argument which occurs when two propositions are asserted to be true and, therefore, may allow one to arrive at a particular conclusion through deductive reasoning. A syllogistic fallacy occurs when there is a logical flaw in either or both propositions which prevents one from deducing this conclusion. With the undistributed middle, a fallacy occurs when a "middle term," which is needed to reach the desired conclusion, is not included in either of two propositions.

Example 1:
- All students carry backpacks.—(Z is B)
- My grandfather carries a backpack.—(Y is B
- Therefore, my grandfather is a student.—(Y is Z)

A valid form of this argument would be as follows:
- All students carry backpacks.—(Y is B)
- My grandfather is a student.—(Z is Y)
- Therefore, my grandfather carries a backpack.—(Z is B)

Fun Fact: Technically, all fallacies of the Undistributed Middle are actually fallacies of either Affirming the Consequent or Denying the Antecedent. The primary distinction is that the fallacy of the undistributed middle may actually be corrected by distributing the middle, as it were. For instance, the following would be considered a fallacy:
- All billionaires are astronauts.
- Jeff Bezos is an astronaut.
- Therefore, Jeff Bezos is a billionaire.

However, we can correct the fallacy above by presenting the argument as follows:
- All billionaires are astronauts.
- Jeff Bezos is an astronaut.
- Everyone who is an astronaut is a billionaire.
- Therefore, Jeff Bezos is a billionaire.

By adding the third statement in this sequence, we have provided the "middle term" which may then be distributed to the conclusion.

29. *Masked-man Fallacy*

Sometimes also called the epistemic fallacy, this occurs when one assumes that because one object has a certain property, and the other does not have this property, that they cannot be the same thing. This is a fallacious assumption because it concludes that one's knowledge of the object is equivalent to the object itself. It erroneously precludes the possibility that the object in question has some properties which are unknown to the subject.

Example 1:
- I know who my father is.
- I don't know who the masked man is.
- Therefore, the masked man cannot be my father.

Example 2:
- I know who my husband is.
- I do not know who the robber is.
- Therefore, my husband cannot be the robber.

Fun Fact: The Masked-man Fallacy is actually an illicit use of Leibniz's law. According to the law proposed by the German logician, if A is the same as B, then A and B share the same properties and are therefore indiscernible from one another.

30. *Non-Sequitur Fallacy*

Technically, a non sequitur is any invalid argument where a given premise does not logically support the given conclusion. In this way, the phrase non sequitur is practically synonymous with the word fallacy. However, in the context of a discussion on formal fallacies, a non-sequitur is a statement in which the premise has no apparent relationship with the conclusion, and therefore cannot be used to ascertain that this conclusion is true.

Example 1: I dated a lawyer. All he talked about was work. Lawyers are boring.

Example 2: My last boyfriend was really mean to me. All men are abusive.

Example 3: People like to walk on the beach. Beaches have sand. We should put sand on the floor in our living room.

Fun Fact: A non sequitur is also a commonly used device in literature and especially comedy. Here, by pairing an expected premise with an unexpected and technically fallacious conclusion, a comedian may offer an absurd and humorous observation. Take, for example, this observation from stand-up comedian Steven Wright: "I saw a sign: 'Rest Area 25 Miles.' That's pretty big. Some people must be really tired."