

# Beating Temptation with BATS: The Biblical Alternative Thinking Skills

## Lesson 2

### Thinking and Logic

# Thinking

- "Beware lest anyone take you captive through philosophy and empty deceit, according to the tradition of men, according to the basic principles of the world, and not according to Christ" (Colossians 2:8).

# Thinking & Reasoned Arguments

- In logic, an argument is defined as a sequence of statements comprising premises that are claimed to support a conclusion.
- Scripture teaches that Christians are to argue in this sense.
- This is not the same as being argumentative, or arguing just for the sake of arguing.

# Thinking & Reasoned Arguments

- Arguments can be either deductive or inductive.
- Deductive reasoning is reasoning from the general to the particular.
- Inductive arguments reason from a finite set of examples to a general rule.
- Deductive arguments are the most important, so we will concentrate on them.

# Thinking & Reasoned Arguments

- A syllogism is a common type of deductive argument with two premises and a conclusion.
- 1) Validity
- A valid argument is one where it is impossible for the premises to be true and the conclusion false, i.e. the conclusion follows from the premises.
- Note that validity does not depend on the truth of the premises, but on the form of the argument.

# Thinking & Reasoned Arguments

- **Logical Fallacies**
- *An Encyclopedia of Errors of Reasoning*
- The ability to identify fallacies in the arguments of others, and to avoid them in one's own arguments, is both valuable and increasingly rare.
- Fallacious reasoning keeps us from knowing the truth, and the inability to think critically makes us vulnerable to manipulation by those skilled in the art of rhetoric [the ISNA].

# Thinking & Reasoned Arguments

- **What is a Fallacy?**
- A fallacy is, roughly speaking, an error of reasoning. When someone adopts a position, or tries to persuade someone else to adopt a position, based on a bad piece of reasoning, they commit a fallacy.
- I say “roughly speaking” because this definition has a few problems, the most important of which are outlined below. Some fallacies are more common than others, and so have been named and defined. When people speak of logical fallacies they often mean to refer to this collection of well-known errors of reasoning, rather than to fallacies in the broader, more technical sense given above.

# Thinking & Reasoned Arguments

- *Formal Fallacies (Deductive Fallacies)*
- Philosophers distinguish between two types of argument: deductive and inductive. For each type of argument, there is a different understanding of what counts as a fallacy.



# Thinking & Reasoned Arguments

- Deductive arguments are supposed to be watertight.
- For a deductive argument to be a good one (to be “valid”) it must be absolutely impossible for both its premises to be true and its conclusion to be false.
- With a good deductive argument, that simply cannot happen; the truth of the premises entails the truth of the conclusion.

# Thinking & Reasoned Arguments

- The classic example of a deductively valid argument is:
  - (1) All men are mortal.
  - (2) Socrates is a man.
  - Therefore:
    - (3) Socrates is mortal.
- It is simply not possible that both (1) and (2) are true and (3) is false, so this argument is deductively valid.

# Thinking

- One example of a valid argument with true premises is:
  - 1) All whales have backbones;
  - 2) Moby Dick is a whale;
  - ∴ Moby Dick has a backbone.
- An example of a valid argument with a false premise and false conclusion is:
  - 1) All dogs are reptiles;
  - 2) All reptiles have scales;
  - ∴ All dogs have scales.

# Thinking

- An invalid argument with a true premise and true conclusion is:
- The sun is larger than the earth;  
∴ polytheism contradicts the Bible.
- This is invalid because the conclusion contains terms not contained in the premise.
- It is important to recognize valid forms of argument, and use them.

# Thinking

- Many invalid arguments can be found in false belief systems:
- 1) Angels are Spirit Beings.
- 2) Jesus is a Spirit Being.
- ∴ Jesus is an Angel
- That is like saying:
- 1) My cat has four legs;
- 2) My dog has four legs;
- ∴ My dog is my cat.

# Thinking

- 2) Soundness
- A sound argument is a valid argument with true premises.
- The conclusion of a sound argument must be true.
- So, to prove the conclusion of a valid argument, it is sufficient to prove all premises are true.
- For example:
- 1) I am a sinner.
- 2) Jesus died for sinners.
- ∴ Jesus died for me.

# Thinking

- 3) Contradiction
- A contradiction is defined as the conjunction of the affirmation and denial of a premise, in the same time, place, and sense (i.e.  $p$  and not- $p$ , or in symbolic form,  $p \sim p$ ).
- For any pair of contradictory premises, one must be true and the other false.

# Thinking

- The Law of Non-Contradiction prevents both premises being true, while the Law of Excluded Middle points out that a pair of contradictory premises exhausts all possibilities.
- Another way of putting it is: a proposition must be either true or false—not both true and false, nor in some limbo state in between truth and falsity.
- This can be useful in listing all possible alternatives and refuting all of them but the correct one.



# Thinking

- An important aspect of contradiction is self-refutation.
- Many statements by anti-Christians might appear reasonable on the surface, but when the statement is turned on itself, it refutes itself.
- Some common examples are:
- ‘There is no truth’—this would mean that this sentence itself is not true.
- ‘We can never know anything for certain’—so how could we know that for certain?

# Thinking

- ‘There are no moral absolutes, so we should to be tolerant of other people’s morals’—but ‘should’ implies a moral absolute that toleration is good.

# Thinking & Reasoned Arguments

- Any deductive argument that fails to meet this (very high) standard commits a logical error, and so, technically, is fallacious.
- This includes many arguments that we would usually accept as good arguments, arguments that make their conclusions highly probable, but not certain.
- Arguments of this kind, arguments that aren't deductively valid, are said to commit a "formal fallacy".

# Thinking & Reasoned Arguments

- *Informal Fallacies*
- Inductive arguments needn't be as rigorous as deductive arguments in order to be good arguments.
- Good inductive arguments lend support to their conclusions, but even if their premises are true then that doesn't establish with 100% certainty that their conclusions are true.
- Even a good inductive argument with true premises might have a false conclusion; that the argument is a good one and that its premises are true only establishes that its conclusion is probably true.

# Thinking & Reasoned Arguments

- *Informal Fallacies*
- All inductive arguments, even good ones, are therefore deductively invalid, and so “fallacious” in the strictest sense.
- The premises of an inductive argument do not, and are not intended to, entail the truth of the argument’s conclusion, and so even the best inductive argument falls short of deductive validity.

# Thinking & Reasoned Arguments

- Because all inductive arguments are technically invalid, different terminology is needed to distinguish good and bad inductive arguments than is used to distinguish good and bad deductive arguments (else every inductive argument would be given the bad label: “invalid”).

# Thinking & Reasoned Arguments

- The terms most often used to distinguish good and bad inductive arguments are “strong” and “weak”.
- An example of a strong inductive argument would be:
  - (1) Every day to date the law of gravity has held.  
Therefore:
  - (2) The law of gravity will hold tomorrow.

# Thinking & Reasoned Arguments

- Arguments that fail to meet the standards required of inductive arguments commit fallacies in addition to formal fallacies.
- It is these “informal fallacies” that are most often described by guides to good thinking, and that are the primary concern of Logical Fallacies.



# Thinking & Reasoned Arguments

- *Logical and Factual Errors*
- Arguments consist of premises, inferences, and conclusions.
- Arguments containing bad inferences, i.e. inferences where the premises don't give adequate support for the conclusion drawn, can certainly be called fallacious.
- What is less clear is whether arguments containing false premises but which are otherwise fine should be called fallacious.

# Thinking & Reasoned Arguments

- If a fallacy is an *error of reasoning*, then strictly speaking such arguments are not fallacious; their logic is sound.
- However, many of the traditional fallacies are of just this kind.
- It's therefore best to define *fallacy* in a way that includes them; we will therefore use the word *fallacy* in a broad sense, including both formal and informal fallacies, and both logical and factual errors.

# Thinking & Reasoned Arguments

- Taxonomy of Fallacies
- Once it has been decided what is to count as a fallacy, the question remains as to how the various fallacies are to be categorized.
- The most common classification of fallacies groups fallacies of relevance, of ambiguity, and of presumption.
- Arguments that commit fallacies of relevance rely on premises that aren't relevant to the truth of the conclusion.
- Appeals to consequences and personal attacks are both fallacies of relevance.

# Thinking & Reasoned Arguments

- Arguments that commit fallacies of ambiguity manipulate language in misleading ways. Straw man arguments commit a fallacy of ambiguity.
- Arguments that commit fallacies of presumption contain false premises, and so fail to establish their conclusion.
- Arguments based on false dilemmas and circular arguments both commit fallacies of presumption.

# Thinking & Reasoned Arguments

- These categories have to be treated quite loosely.
- Some fallacies are difficult to place in any category; others belong in two or three.

# Thinking & Reasoned Arguments

- ***Argumentum ad antiquitatem* (the argument to antiquity or tradition).**
- This is the familiar argument that some policy, behavior, or practice is right or acceptable because "it's always been done that way."
- "Every time I try to be nice to him, he always takes advantage."

# Thinking & Reasoned Arguments

- ***Argumentum ad hominem* (argument directed at the person)**. This is the error of attacking the character or motives of a person who has stated an idea, rather than the idea itself.
- “You should not be vengeful, but she is such a witch, she deserves it.”

# Thinking & Reasoned Arguments

- ***Argumentum ad ignorantiam* (argument to ignorance)**. This is the fallacy of assuming something is true simply because it hasn't been proven false.
- “You don’t know that doing \_\_\_\_\_ is specifically prohibited in the Bible.”



# Thinking & Reasoned Arguments

- ***Argumentum ad logicam* (argument to logic)**. This is the fallacy of assuming that something is false simply because a proof or argument that someone has offered for it is invalid.
- “The preacher said it was a sin to do \_\_\_\_\_, but the verse he used wasn’t even talking about that.”

# Thinking & Reasoned Arguments

- ***Argumentum ad misericordiam*** (argument or appeal to pity). The English translation pretty much says it all.
- “If you don’t kill that abortion doctor, think of all the suffering babies.”

# Thinking & Reasoned Arguments

- ***Argumentum ad nauseam* (argument to the point of disgust; i.e., by repetition).**
- This is the fallacy of trying to prove something by saying it again and again. But no matter how many times you repeat something, it will not become any more or less true than it was in the first place.
- “It doesn’t matter, it always happens like this.”

# Thinking & Reasoned Arguments

- ***Argumentum ad numerum* (argument or appeal to numbers)**. This fallacy is the attempt to prove something by showing how many people think that it's true. But no matter how many people believe something, that doesn't necessarily make it true or right.
- “All the Christian’s I know listen to Rap Music.”

# Thinking & Reasoned Arguments

- ***Argumentum ad populum* (argument or appeal to the public)**. This is the fallacy of trying to prove something by showing that the public agrees with you.
- “Barna Research shows that most Christians believe it’s okay to tell white lies.”

# Thinking & Reasoned Arguments

- ***Argumentum ad verecundiam*** (argument or appeal to authority). This fallacy occurs when someone tries to demonstrate the truth of a proposition by citing some person who agrees, even though that person may have no expertise in the given area.
- “The Priest on TV said homosexuality isn’t a sin, just an alternate lifestyle.”

# Thinking & Reasoned Arguments

- ***Circulus in demonstrando* (circular argument)**. Circular argumentation occurs when someone uses what they are trying to prove as part of the proof of that thing.
- “Everyone in church talks about her and they’re all good religious people, so gossiping about bad people is good because it helps us avoid those people.”

# Thinking & Reasoned Arguments

- **Complex question.** A complex question is a question that implicitly assumes something to be true by its construction, such as "Have you stopped beating your wife?" A question like this is fallacious only if the thing presumed true (in this case, that you beat your wife) has not been established.
- "Well, isn't she in punitive suffering, so isn't it okay to tell her husband what she did?"



# Thinking & Reasoned Arguments

- ***Cum hoc ergo propter hoc* (with this, therefore because of this)**. This is the familiar fallacy of mistaking correlation for causation -- i.e., thinking that because two things occur simultaneously, one must be a cause of the other.
- “As soon as that pastor started zeroing in on his little pet peeves about me, he got sick and we need to get a new pastor.”

# Thinking & Reasoned Arguments

- **Nature, appeal to.** This is the fallacy of assuming that whatever is "natural" or consistent with "nature" (somehow defined) is good, or that whatever conflicts with nature is bad.
- “All the animals have multiple sex partners, it’s only natural; it can’t be a sin.”

# Thinking & Reasoned Arguments

- ***Tu quoque*** ("you too"). This is the fallacy of defending an error in one's reasoning by pointing out that one's opponent has made the same error. An error is still an error, regardless of how many people make it.
- “She did it to you, you can do it to her”

# Thinking & Reasoned Arguments

- **Straw man.** This is the fallacy of refuting a caricatured or extreme version of somebody's argument, rather than the actual argument they've made. Often this fallacy involves putting words into somebody's mouth.
- “Oh yeah, like I should NEVER miss church, that’s ridiculous – sometimes I have to. He’s a legalist!”

# Thinking & Reasoned Arguments

- **Slippery slope.** A slippery slope argument is not always a fallacy. A slippery slope fallacy is an argument that says adopting one policy or taking one action will lead to a series of other policies or actions also being taken, without showing a causal connection between the advocated policy and the consequent policies.
- *“If you don’t get people to take a stand against him now, he’ll just get worse and worse.”*

# Thinking & Reasoned Arguments

- **Hasty Generalization**
- So far I have discussed deductive reasoning.
- Inductive arguments reason from a finite set of examples to a general rule.
- The reason they are less important is that they don't guarantee the truth of the conclusion—they are formally invalid by the definition of validity in logic.

# Thinking & Reasoned Arguments

- For example, just because we find that 1000 crows are black, it does not follow that the 1001st crow will not be an albino.
- Science by its nature is inductive, not deductive. Science always uses a finite number of measurements, each of which has an uncertainty, so science can never give a complete picture of reality.
- Hence, although science can be useful, it can never be a threat to the Christian Faith.

# Thinking & Reasoned Arguments

- The basis for logic
- A final question is, why should logic work at all?
- Not only can unbelievers not make a sound case against Christianity, but an atheistic world-view attacks the very basis of reasoning itself.



# Thinking & Reasoned Arguments

- This was realized by the famous Communist evolutionist biologist, J.B.S. Haldane:
- ‘If my mental processes are determined wholly by the motions of atoms in my brain, I have no reason to suppose my beliefs are true ... and hence I have no reason for supposing my brain to be composed of atoms.’ [33]

# Thinking & Reasoned Arguments

- The famous Marxist paleontologist Stephen Jay Gould claimed that the mind was an illusion produced by the brain. [36]
- So why should we trust anything Gould says, if his thoughts are illusions?
- This only shows that many atheistic theories actually refute themselves.

# Thinking & Reasoned Arguments

- Thus there is no need for independent empirical tests for them.
- Conversely, the Christian doctrine that we are created in the image of a logical God is an excellent explanation for our logical faculties.

# Thinking & Temptation

- Why is it important to know fallacies in dealing with temptation?
- Recognizing a logical fallacy is a way of *removing an argument from the temptation* rather than just weakening it.
- Much of the time, we will respond to a temptation by simply stating a counterargument showing why the original argument is not terribly significant in comparison to other concerns, or shouldn't be taken seriously, or whatever.

# Thinking & Temptation

- That kind of response is fine, except that the original temptation still remains in the debate, albeit in a less persuasive form, and the ISNA is free to mount a rhetorical offensive saying why it's important after all.
- On the other hand, if you can show that the original temptation is a logical fallacy, you put the ISNA in the position of justifying why the original temptation should be considered *at all*.
- If the ISNA can't come up with a good reason, then the temptation is actually removed from the Appraisal Process.