

## Methods of Deduction (i.e., Proofs)

7.16

Before getting into the meat of it, let's cover 3 laws of thought which are necessary and sufficient conditions for logical thinking:

1. *The law of identity:*
    - a. 'A is A' i.e., "Anything is itself"
    - b. Should a statement be true, then it's true.
      - i.  $p \rightarrow p$
    - c. Objections:
      - i. What about the world of constant change?
      - ii. Distinction b/t logical identity and physical identity.
      - iii. The statement "X has changed" & continuity of referent in discourse
  2. Law of excluded middle
  3. Law of contradiction.
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*Important points regarding Arguments:*

*\*Does the conclusion "follow" from the premises (regardless if the premises are true or false)? If so, then it's a valid argument.*

*\*Now if the argument is valid, try confirming whether the premises are true. If so, then the argument is sound, **and the conclusion must be true...***

*Motifs of Deduction:*

1. *In a valid argument, it is not possible for all the premises to be true, and the conclusion to be false.*
2. *(said another way), No valid argument will have true premises and a false conclusion.*
3. *An argument is either valid or invalid (exclusively, so).*
4. *(what can you conclude from motifs 1 or 2, and 3?....)*

*If an argument has true premises and a false conclusion, then it is invalid. ... in fact*

***\*\*A truth-functional argument is invalid if and only if there are 1+ rows in its truth table in which all the premises are true, and the conclusion is false.***

***\*\*i.e, a truth-functional argument is **valid** if and only if there is no row in its truth table in which all the premises are true, and the conclusion is false.***

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\*\*It should be noted that for some more involved/lengthy truth-functional arguments, the truth table can become rather large (since its rows increase at a rate of  $2^n$ , where 'n' is the number of 'truth functors' /simple statements.) So, it has become convenient to rely on what are called *Rules of Inference of elementary valid arguments*. We will detail such rules below. Here is a vital point regarding these rules:

*\*\*A truth-functional argument is valid if and only if we can derive the conclusion from the premises by means of these rules of inference of elementary valid arguments.*

*\*Some Rules of inference of elementary valid arguments:*

1. Modus Ponens (M.P.) $p \rightarrow q$ <u>P</u> Q	2. Modus Tollens (M.T.) $p \rightarrow q$ <u><math>\sim q</math></u> $\sim p$	3. Hypothetical Syllogism (H.S.) $p \rightarrow q$ <u><math>q \rightarrow r</math></u> $p \rightarrow r$	4. Disjunctive Syllogism (D.S.) $P \vee q$ <u><math>\sim q</math></u> P	5. Constructive Dilemma (C.D.) $(p \rightarrow q) * (r \rightarrow s)$ <u><math>p \vee r</math></u> $q \vee s$
Destructive Dilemma (D.D.) $(p \rightarrow q) * (r \rightarrow s)$ <u><math>\sim q \vee \sim s</math></u> $\sim p \vee \sim r$	6. Addition (add) <u>P</u> $P \vee q$	7. Simplification (simp.) <u><math>p * q</math></u> p	8. Conjunction (Conj.) P <u>Q</u> $P * q$	<i><u>A few more to be added shortly...but these 9 listed here are probably more important.</u></i>

\*\*A note on Fallacies:

Fallacies are mistakes in reasoning. (refer to my "thoughts on claims and fallacies" thread online)  
Fallacies can be broken down into 2 categories:

Formal & Informal fallacies; (and there are further divisions within Formal and Informal, which we'll address later )

*Formal fallacies deal with errors in the form of an argument. Such errors can be symbolically diagrammed with variables and don't require an understanding of the actual content of the argument. See examples in previous lecture notes of fallacies like "Affirming the Consequent"/"Denying the*

*Antecedent”, etc, where we could diagram the fallacy structure using “p” and “q”, and no actual content to the argument. Formal fallacies are generally found in attempts at deductive arguments. Some of the more common Formal fallacies that we’ll discuss in time are:*

- *Denying the Antecedent*
- *Affirming the Consequent*
- *Affirming the Disjunct (i.e., Denying the Alternative)*
- *False Conversion (we’ll cover this)*
- *Undistributed Middle Term (we’ll cover this)*
- *Illicit Distribution of an end term (we’ll cover this)*

*Informal Fallacies are flaws in arguments due to reasons not pertaining to the structure. Such fallacies generally require us to examine the argument’s content. We generally associate such fallacies with attempts at inductive arguments. Most of the fallacies in “Stephen’s Guide...” are informal fallacies.*

Consider the following arguments, and try to derive a proof of their validity (by using the rules mentioned in the above chart) or invalidity (by exposing & defining the fallacy), and also classify them as sound or unsound, and why—Note: some arguments may involve fallacies from “Stephen’s Guide to Logical Fallacies” ...:

1.If God is loving, then if he condemns sinners to eternal damnation, God is unjust. But God is loving. He is not unjust. Therefore he does not condemn sinners to eternal condemnation.

2. If God created the universe then the universe will be perfect. If the universe is perfect then there will be no evil. So if God created the universe there will be no evil. But we see evil, so God mustn’t have created it.

3.We know that God exists, because it says so in the Bible. And we can trust the Bible on this matter because it’s the Word of God, and so must be correct.

...more to come

### 8.3 -8.4 Direct Proof, Reductio Ad Absurdum (Contradiction Proof), and Contrapositive Method of Proof.

Proof by construction is a "direct" proof. You construct the conclusion from the premises and application of the known valid theorems of logic. For example, proving that P implies S, you'd proceed as follows:

from the premises P implies R, & R implies S (or some chain of direct reasoning similar to that).

#### **Examples of direct proofs/"progressions":**

Claims of deity can only fall into 3 possible categories:

Liar, lunatic, truth. (i.e, intentional deceit, unintentional deceit, intentional truth. Note, unintentional 'truth' is quite an impossibility. For we shall examine some statistics showing that the miniscule probability that Christ fulfilled all prophecies & was who he said he was by mere human means/by chance.)

→ Show reasons against why early Christians would intentionally deceive by crafting myths

→ Show reasons supporting the sanity and reasonableness of early Christians (i.e., eye-witness Christian writers)

--If one agrees that the claims to Christ's Deity *aren't* those of an intentional liar or an unintentional liar (lunatic), then the claims *must* be true (via disjunctive syllogism). This type of reasoning can pin those who say "Jesus was a good teacher...noble & sane...morally good man ...of utmost character..etc", and they should probably hold the bible in 'high esteem', or as true, but deny His deity as true—such people don't believe the bible, even though they say they do, and should be confronted about this cognitive disconnection. They think the veracity of the claims of Christ resulted from intentional deceit or lunacy on the part of Christ and/or the early Christians writers.

To those who say that He was a good person yet deny the truth of Scripture pertaining to His deity—based on what do they conclude that he was a good person?

To those who say that He & the Christian writers did not make claims out of intentional deceit or lunacy, then, by logical necessity, must conclude that He is the Son of God, or else the burden of proof is upon them to demonstrate an alternate possibility that would make the "Liar, lunatic, or Deity" trilemma a false one. What if they say, "oh, that's just your interpretation"...We shall equip you on how to substantiate that claim that He is the Son of God, such that it will require extreme and *unreasonable* acrobatics on their part to squirm out of the doctrine's truth.

In short, this direct proof is as follows:

P v q v r      3 possibilities: Claims of Christ are intentional deceit, lunacy, or true.

~p -not intentional deceit (substantiated by demonstrating consequences of making such claims, and the aim/interests/character of the Christ/Christian doctrine)

~g -not lunacy: (Substantiated via demonstrating the reasonableness of the Christ/early Christian writers)

R By reason/elimination, His claims are substantiated/credible.

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Consider the following:

Premise 1. Christ is either dead, alive, or never existed.

Premise 2. Jesus Christ was a good man of noble character. (a commonly held premise)

Conclusion: Jesus Christ was a good man of noble character who is still deceased.

This conclusion is a logical/theological impossibility. This is a belief held by many unbelievers. For Christ to have made the deity claims that He did about himself (and let's say, hypothetically, that those claims were false), He would have deserved to die due to His own sin. The unbeliever's question then becomes, "When did he ever claim to be deity?"... And here is an opportunity for us to show /equip you with deity proofs of our Lord Jesus Christ. The magnitude of His claims portray him as a great savior, or a great deceiver.

So, we see that noble character + dead Christ= illogical;

Also, noble character + alive Christ = logical; and noble character + never existent Christ=impossibility.

The direct proof here is "If you agree that Christ was a noble man, then his words are instructive. If His instructive words deal with claims about his identity, then we should listen and belief these claims (that He's God)."

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Consider the following claim:

If there is a God, we can know nothing about him.

Don't be deceived by this self-refuting statement. If God exists, we know at least 1 thing about Him—that He isn't knowable. Such dogmatism entails that you would have had to know *this about* him--an existent God. Also, the means whereby we've come to that realization may tell us more information about Him.

\*If we've realized his existence via creation, we've come to understand him as a powerful Creator. (Design Argument)

\*If...via logic, we've come to understand him as eternal.

...which brings me to my next direct proof, *The Cosmological Argument*, for the existence of God...(which I'll post at some point).

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#### 8.4 Reductio ad Absurdum: (proof by contradiction) "*Reduction to absurdity*"

Proof by contradiction is an "indirect" proof, in we aren't reasoning in a linear-like fashion from point A to conclusion. Rather, you start with a hypothesis (or "assumption") you believe to be false, then derive (via logic) a statement that is known to be false, absurd, or some *contradiction*. Now because the rules of logic won't permit the derivation of false conclusions from true premises, the derivation of a statement that is known to be false proves that the NEGATION of your initial assumption is true. Some biblical examples of what I believe are *Reductio ad Absurdum*.

*Example 1.*

*Claim: The dead do not rise = F*

*1 Cor 15. Paul seeks to prove that the dead do rise, thus trying to prove  $\sim F$*

*Hypothesis/Assumption: Suppose the dead do not rise = F (which is opposite of  $\sim F$ )*

*-->(implies) that Christ, who died, did not rise =m*

*→(implies) we are liars & are of all men most pitiable & your faith if futile & you are still in your sins =n*

AND

*Yet we are not liars, you are not most pitiable of all men & your faith is not futile & you are not still in your sins = ( $\sim n$ )*

**Conclusion:  $\sim F =$  the dead do rise**

*Example 2.*

*Enemies of the Christ blaspheme the Holy Spirit by attributing His work to Satan.*

*Claim: & You cast out demons by Beelzebub = F*

*Christ seeks to logically prove that He cast them out by the Spirit of God/finger of God, so his argument is: IF I cast out demons, I do it by the Spirit of God. ( $P \rightarrow Q$ )*

*Hypothesis/Assumption:  $\sim(P \rightarrow Q) = P \wedge \sim Q =$  I cast out demons and it's not by the Spirit of God.(i.e., by Satan, assuming there are only 2 spiritual forces).*

*→Well Satan is against his own kingdom, so it shouldn't stand = n*

*But Satan's kingdom currently thrives and does stand =  $\sim n$*

**Conclusion:  $\sim(\sim(P \rightarrow Q)) = P \rightarrow Q =$  If I cast out demons, I do it by the Spirit of God.**

*(We shall cover more proof methods & proofs for biblical preservation/credibility in future installments*