

WHY TEACH LOGIC?

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Experience seems to indicate that first- or second-year college students have had little practice and less training in reasoning out solutions to serious, complex problems. Furthermore, they see little need to learn such skills. If they need to solve a problem, they can look it up in the handbook, ask the teacher, or call the technical support hotline. Many of them seriously question the practicality of studying formal logic in a class. Their attitude is augmented by faculty members who say, “I didn’t study logic, and I have a respectable job with an adequate salary.”

One need only turn on the television to one of the news stations to discover that college students are not the only ones who are clueless about the process of sound reasoning. Frequently, some person holding a high position in government or a high degree from a respected institution can be heard using some of the standard, logical fallacies: Contradictory Premises,¹ Ad Hominem,² Dicto Simpliciter,³ and Evading the Issue,⁴ just to name a few. For example:

Interviewer: “So, Senator, do you or do you not believe that affirmative action is constitutional?”

Senator: “Let me first say this. Last week, when I was in Poughkeepsie...”

During the next forty-five seconds, the viewer learns that the senator is for family values and against cannibalism in most instances, and then the subject changes without ever turning back to affirmative action.

The sad part about it is that neither the interviewer nor the person representing the opposite point of view ever seems to notice the errors, but they proceed to commit equally serious errors themselves. Each side senses something wrong with the other side, but, since neither knows exactly what is wrong, the debate becomes a shouting match, and may the loudest voice win. A small amount of television viewing will verify these facts. On the other hand, the viewer will probably never see a calm, rational debate between two parties interested only in arriving at the truth in which one says, “No, Mr. Simmons, your conclusion is not acceptable because you have based your argument on a Hasty Generalization,⁵ and you have invalidated your logic by confusing the warrant with the evidence.”

It is true that most people learn a few reasoning skills in the same way they learn their native language, but just as that does not make everyone an accomplished orator, so it does not make everyone a competent logician. Failure on the part of many to understand this has resulted in various kinds of incorrect thinking that are largely promoted by the educational system and carried by students through high school and often all the way

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through college. Three of the most obvious kinds of incorrect thinking are these.

1. Whatever is written by a famous person is true.
2. Whatever is said by someone with a high degree or position is true.
3. Whatever is believed by a large number of people is true.

Those who have studied logic will recognize that the first and second display the Appeal to Authority Fallacy⁶ and that the third illustrates the Bandwagon Fallacy.⁷ Those who have tried to get students to use their reason when analyzing texts or doing research have discovered that most students are thoroughly convinced that all three statements are true. One student put it quite succinctly when he said, “So Henry David Thoreau used a lot of logical fallacies in his essay ‘On the Duty of Civil Disobedience’—if he was a successful writer, why does it matter?” For the student, being a successful writer validated the arguments the writer made; the arguments the writer made did not validate his success as a writer. In other words, whatever is written by a famous person is true or at least acceptable.

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The fact that Thoreau is a very articulate and influential writer does not mitigate the fact that he employs at least a dozen identifiable, logical fallacies in his essay. The Contradictory Premises Fallacy is fairly easy to spot. For instance, Thoreau writes:

Witness the present Mexican war, the work of comparatively a few individuals using the standing government as their tool; for, in the outset, the people would not have consented to this measure... [The American government] has not the vitality and force of a single living man; for a single man can bend it to his will.

Then, on the next page, he says:

But a government in which the majority rule in all cases cannot be based on justice, even as far as men understand it. Can there not be a government in which majorities do not virtually decide right and wrong, but conscience?... Why has every man a conscience then?

These statements, being separated by several paragraphs, may never be compared by the unwary reader. However, the two arguments contradict each other and, therefore, both cannot be true. The arguments can be summarized thus:

A. The government is manipulated by a minority against the will of the people (the majority), and this is wrong.

B. The government is run by the majority, which cannot be just because the majority cannot judge correctly, and this is wrong.

Obviously, it cannot be both ways. In addition to the contradiction, Thoreau personifies *conscience*, committing the fallacy of Hypostatization.⁸ *Conscience* is an abstract idea and cannot decide anything. People decide

things. The argument also implies that every individual has a conscience, but the majority of individuals have no conscience (or, if they agree on something, they cannot be exercising that individual conscience), leaving the reader to wonder how the conclusion can be drawn from the premises. This is the Non Sequitur Fallacy.⁹ A logical conclusion that can be drawn from this example, however, is that an argument written by a famous person is not necessarily a sound argument.

A sound argument has two characteristics. It is both TRUE and VALID. That means that all of the premises are true and that the conclusion(s) can be drawn logically from the premises. A conclusion drawn from a false premise through a valid argument is assumed to be false. A conclusion drawn from true premises through invalid logic is assumed to be false. The real question, then, is whether the reader wants truth or is willing to accept falsehood.

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The second kind of incorrect thinking is whatever is said by a person in a high position is true. This kind of thinking has been around since very ancient times. An example of this can be found in the *Book of Mormon* as the people of Ammonihah gather to cheer on their most clever lawyer, Zeezrom, against Alma and Amulek. Zeezrom interrogates Amulek in the following manner, attempting to make him say something worthy of accusation:

And Zeezrom said unto him: Thou sayest there is a true and living God?

And Amulek said: Yea, there is a true and living God.

Now Zeezrom said: Is there more than one God?

And he answered, No.

Now Zeezrom said unto him again: How knowest thou these things?

And he said: An angel hath made them known unto me.

And Zeezrom said again: Who is he that shall come? Is it the Son of God?

And he said unto him, Yea.

And Zeezrom said again: Shall he save his people in their sins? And Amulek answered and said unto him: I say unto you he shall not, for it is impossible for him to deny his word.

Now Zeezrom said unto the people: See that ye remember these things; for he said there is but one God; yet he saith that the Son of God shall come, but he shall not save his people—as though he had authority to command God.

Now Amulek saith again unto him: Behold thou hast lied, for thou sayest that I spake as though I had authority to command God because I said he shall not save his people in their sins.

And I say unto you again that he cannot save them in their sins; for I cannot deny his word, and he hath said that no unclean thing can inherit the kingdom of heaven; therefore, how can ye be saved, except ye inherit the kingdom of heaven? Therefore, ye cannot be saved in your sins. (Alma 11:26-37)

Zeezrom, knowing that the people respect his position and academic training, appeals to the people to remember three things:

1. Amulek said there is but one God, yet he says the Son of God will come. (The implication is that Amulek has contradicted himself by first saying there is one God and then saying there are two.)

2. Amulek said that the Son of God shall come but shall not save his people.

3. As can be seen from the first two statements, Amulek speaks as though he had authority to command God.

Zeezrom, having been trained in the use of logic, has a perfect knowledge of his fraud, which may be seen later in the account. The people of Ammonihah, however, accept it without question. Whether they are as well informed as Zeezrom and do this knowingly is not clear. One may imagine, though, that some of the people believe Zeezrom because they are intellectually lazy and are willing to let someone with more authority and training do their thinking for them.

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Amulek immediately sees through the logical fallacies presented by Zeezrom and replies appropriately. First of all, he takes care of the Non Sequitur, saying that Zeezrom has lied by attempting to draw the conclusion that Amulek thinks he has authority to command God from the two premises presented. Obviously, the third statement cannot logically be derived from first and second. Zeezrom knows that but has pretended to draw the conclusion logically so he can plant it in the minds of the people. If he repeats it often enough, they will believe it is true.

Second, Amulek corrects the Straw Man Fallacy.¹⁰ Zeezrom has altered Amulek's argument slightly to make it easier to attack, mainly by leaving out part of it. Amulek did not say, "He shall not save his people," but "He shall not save his people in their sins." These two versions differ greatly in their meaning. Naturally, Zeezrom's version is easier to oppose.

Saving the more lengthy explanation of the nature of God for later, in verse 36 Amulek presents a true and valid syllogistic argument explaining the doctrine of Christ. It can be diagrammed as follows.

The word of God cannot be denied.

This is his word.

I cannot deny it.

No unclean thing can inherit the kingdom of heaven.

A person with sins is unclean.

A person with sins cannot inherit the kingdom of heaven.

You must inherit the kingdom of heaven to be saved.
A person with sins cannot inherit the kingdom of heaven.
A person cannot be saved in his sins.

Obviously, Amulek had learned some logic himself. To think that such sound reasoning was put into a mind devoid of preparation is ludicrous because the Holy Ghost does not work that way. The Lord told Oliver Cowdery, “Behold, you have not understood; you have supposed that I would give it unto you, when you took no thought save it was to ask me” (*Doctrine & Covenants* 9:7). Oliver was then told to study a matter out in his mind before asking the Lord for confirmation. To study something out in one’s mind requires more than just gathering facts; it requires reasoning out the logical relationships among the facts. Orson Pratt, in one of his discourses, implies that spiritual knowledge is imparted best by a mind trained in the use of language, reflection, and system.

A man of God might have the heavens opened to him, and might gaze upon the glories of the celestial worlds, and might understand things great and marvelous, and yet, through the imperfection of his language, be feebly qualified to impart this great information intelligibly to others; whereas, if he had instructed himself in the use of language; it would prove a powerful medium of communication, to those whose minds are lighted up by the Spirit of Truth... The mind should be trained to study, to reflection, to system. At first mental discipline may prove irksome; but after a little exertion and practice, the mind becomes habituated to this new kind of labor, which if continued, will eventually yield fruits satisfactory to itself, and useful in the salvation of others.¹¹

The third kind of incorrect thinking asserts that whatever is believed by a large number of people is true. Thus, we are urged to get on the bandwagon and conform to everyone else’s opinion. In our high-tech society, where public opinion polls are so easy to acquire and disseminate, they have become a driving force in decision-making. Public opinion has had a great deal more influence in some areas than sound reasoning.

If the minds of the public have become flaccid from lack of effort or obstinate because of sin, then it can become a tool of destruction, as it was among the people of Ammonihah. That is the time a subtle deceiver like Zeezrom can craft a phrase in delicious language and offer it to the appetite of a craving crowd, making it become public opinion through popularity.

One such assertion has become so well accepted in our society that even its opponents hardly dare confront it. This is the statement: “A woman has a right to do whatever she wants to with her own body.” Since individual rights are highly respected in this country, the statement has a ring of credibility and a certain emotional appeal. If it is regarded as ultimate truth, ignoring any higher law or the implications of universal

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application, then it becomes a force for action. Using it as a premise, a person can say, “Since a woman has a right to do whatever she wants with her own body, she has a right, in the case of an unwanted pregnancy, to subject her body to an abortion.” The logic is certainly valid, and, if the conclusion suits the desires of the individual, can be taken as justification for the act of abortion. Minds that are willing to overlook all of the logical implications or are unwilling to study the matter can be swept away by such platitudes. The young, the ignorant, and the untrained are particularly susceptible.

Analyzed carefully in terms of logic, the major premise of this argument breaks down quickly. In the first place, the original statement equivocates with the word “right,” using it where the word “privilege” ought to be used. A “right” is something that is due to a person by law, tradition, or nature—something to which the person has a just or legal claim or title. Since exercising a right is always justified, there is never any legal or moral penalty for it. According to scripture, nobody has a “right” to do just anything he or she pleases with the physical body that really belongs to God. Those who defile the temple of God, the body, by the use of harmful substances or fornication for example, will be destroyed (1 Corinthians 3:16-17). There is a penalty because the offender has no right, and the action is not justified. The “privilege” (permission) to do whatever one wants with one’s physical body is granted as a matter of agency, but there may be punishment for breaking relevant laws. Elder Russell M. Nelson explains:

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Another contention raised is that a woman is free to choose what she does with her own body. To a certain extent this is true for all of us. We are free to think. We are free to plan. And then we are free to do. But once an action has been taken, we are never free from its consequences.¹²

Aside from the religious aspect, there are biological and legal implications in the premise that a woman has a right to do whatever she wants with her own body when that premise is applied to abortion. If a DNA test were performed on the fetus, would it prove to be part of the woman’s own body? Evidence indicates that the fetus is formed by the combination of twenty-three chromosomes from the father and twenty-three chromosomes from the mother; therefore, it has its own unique genetic code and could not be construed to be part of the mother’s body. Whether the fetus is “viable” (capable of living outside the womb) is not an issue. If an explosion occurred, and only two small samples of tissue were found, one from the mother and one from the fetus, a DNA test would show that two individuals had been killed. The body in embryo belongs to an individual separate and distinct from the mother, whether or not that individual is capable of living outside of the uterus. To fully

justify abortion, the premise could be changed to say, “A woman has a right to do whatever she wants with the body of another individual, dependent upon her for life, whom she finds to be an inconvenience at the moment.” This premise, used as the basis for argument, could have serious implications for children already born, or even for her husband. No matter how many people may agree with the notion, force of numbers does not make it right.

Such ignorance and inability to reason may be excusable in students, but it is a shame among those who profess to be learned. The Pharisees were the doctors of the law, the theologians, and the politicians of their day. The people held them in high esteem and looked to them for guidance; nonetheless, it is instructive to observe the kind of logic they used in an attempt to justify their unrighteous actions. Their reasoning was based upon an eyewitness account from those who had seen Jesus raise Lazarus from the dead.

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And when he thus had spoken, he cried with a loud voice, Lazarus, come forth.

And he that was dead came forth, bound hand and foot with graveclothes: and his face was bound about with a napkin. Jesus saith unto them, Loose him, and let him go.

Then many of the Jews which came to Mary, and had seen the things which Jesus did, believed on him.

But some of them went their ways to the Pharisees, and told them what things Jesus had done.

Then gathered the chief priests and the Pharisees a council, and said, What do we? for this man doeth many miracles.

If we let him thus alone, all [men] will believe on him: and the Romans shall come and take away both our place and nation.

And one of them, [named] Caiaphas, being the high priest that same year, said unto them, Ye know nothing at all,

Nor consider that it is expedient for us, that one man should die for the people, and that the whole nation perish not. (John 11:43-50)

The Pharisees were not at all ignorant of the things Jesus did. They agreed that “this man doeth many miracles.” That is the basis of their argument, which may be expanded to something like this. *Here is a man who can produce, from a few loaves and fishes, enough food to feed five thousand—who can avoid being taken by his enemies by passing through the midst of them unseen—who can command the wind and the waves to be still—and who can raise the dead. Obviously, these signs indicate that he is really who he says he is. So, if we leave him alone, all men will naturally*

believe in him. If everyone believes in him, the Romans will come and destroy our nation, so he must be killed.

It is hard to see how the conclusion can be derived from the premises. If Christ could control the elements and even life itself, and if he had the armies of Israel behind him, why would the Jews have to worry about the Romans? Clearly, the assertion, *The Romans will come and destroy our nation*, is an ill-chosen substitute for the real conclusion/premise: *We will lose the wealth and praise of the world*, a statement that actually fits into the line of logic. As Pilate later perceived, the Pharisees' conclusion was based upon envy rather than reason (Mark 15:10).

These examples clearly illustrate the roots of the evil: pride, self-sufficiency, indifference, and torpor of mind. These have existed from the beginning and are not unique to our time, yet they are relevant to our time. The proud despise reason because it destroys their craft. The indifferent slip into mental lethargy and accept the guidance of the proud because that is the easiest road to follow. It takes a combination of humility and strenuous effort to avoid falling into one of those tar pits. Logic, like language, must be studied and understood in order to be used effectively. Logic as well as language ought to be part of a university curriculum.

Logic based upon false premises, of course, yields ineffective, unsatisfactory results. That is all the more reason for us to make certain that the process of sound reasoning is taught at BYU-Idaho. Here young people (and old alike) can learn to draw conclusions from reliable premises—There is a God—Jesus Christ is the Son of God—Joseph Smith was a true prophet of God—*The Book of Mormon* is true—rather than from premises that have been concocted by atheists to satisfy the lusts of the carnal mind. At the very least, if students are taught to reason correctly, they will have the ability to make well-informed, sound decisions. They will be aware of the subtle sophistries of sin and have skill to counter the arguments of the Zeezroms of the world. Even Zeezrom was glad, in the long run, that Amulek had such skill. ☺

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NOTES:

1. *Contradictory Premises*—arguing from premises that contradict one another and thus cannot both be true.
EXAMPLE: The government really has no power to do anything. On the other hand, it is responsible for all the poverty and misery in this country.
COMMENTS: In a real argument these contradictory statements will probably not be set next to each other where the contrast is so apparent. Nonetheless, even if they are separated by several paragraphs, the existence of both in the same argument still constitutes a fallacy. Since a writer may use a lot of fancy rhetoric to make the contradictory statements seem compatible, this fallacy is difficult to detect, but it is far more common than one might think.

2. *Ad Hominem*—attacking the person who argues rather than the argument.
EXAMPLE: You can't expect Sue to understand politics. She is just a cowgirl from Montana.
COMMENTS: This statement contains more than one indiscretion, but the ad hominem argument is certainly a major one. How a person grew up, where she lives, and what she does for a living have no bearing on the validity of her arguments. An attack on circumstances or character is a smoke screen and cannot invalidate a person's opinions.
3. *Dicto Simpliciter*—promoting an argument based on an unqualified generalization
EXAMPLE: Antibiotics cure disease; therefore, everybody who has a disease should take antibiotics.
COMMENTS: Antibiotics cure some diseases but not all. For example, they do not cure cancer or AIDS. In addition, doctors warn against the overuse of antibiotics because it can cause the patient to become immune to antibiotics. The statement should be qualified. One might say, "Antibiotics can provide an effective cure for a number of diseases when used properly."
4. *Evading the Issue*—ignoring all or part of an issue when a response is required.
EXAMPLE: "A candidate for public office is asked whether she thinks government employees should have the right to strike. Her answer: 'The right to strike is not really a political decision. It is something that needs to be thrashed out between labor and management. In the case of public employees, of course, management is the government. So, in answer to your question, I'd say that federal employees, through their representative bodies, need to resolve this issue with government officials'" (Vincent Barry, *Good Reason for Writing* [Belmont, CA: Wadsworth, 1983], 260).
COMMENTS: The speaker has talked about the subject, but has never answered the question. If the speaker talks long enough, the questioner is likely to forget what the question was, and that may be the goal of the speaker.
5. *Hasty Generalization*—using too few instances to support the conclusion.
EXAMPLE: Chinese food always makes me sick. I know, because I tried it once.
COMMENTS: One experiment does not provide enough evidence to produce a reliable, scientific theory, nor does one experience, like the one above, justify changing one's life style. Obviously, factors other than food could have caused the speaker to become ill. A virus, a ride on a roller coaster, or the news of a \$100,000 loss in the stock market, experienced near the time of the meal, could have caused the speaker's stomach to react unpleasantly to the chow mein. More evidence is needed to make a conclusion.
6. *Appeal to Authority*—assuming that an assertion is true just because someone in authority said it.
EXAMPLE: Professor Garcia from Harvard says that stem cell research is OK, so I guess that settles the matter.
COMMENTS: Even professors need to provide evidence to support their opinions. We need to examine Professor Garcia's argument to see if it is sound before accepting it. His academic rank does not validate every argument he makes.

7. *Bandwagon*—assuming that an assertion is made true by popularity.
EXAMPLE: Almost everybody in Fremont County uses Dr. Fudd’s Herbal Brain Enhancer, so that proves the medication works.
COMMENTS: Does this really need an explanation?
8. *Hypostatization*—personifying ideas, concepts, or objects for the sake of argument
EXAMPLE: Education demands difficult and challenging questions on examinations.
COMMENTS: Teachers may not be able to see the fallacy in this one; nonetheless, students will recognize the fallacy of hypostatization. Personification may make a poem better, but, used in this way, it makes an argument worse. Education is an abstract concept that can demand nothing of itself. Actually, teachers demand difficult and challenging questions on examinations. Now you know.
9. *Non Sequitur*—the conclusion or inference does not follow from the premises
EXAMPLE: Going to college just to get married is unwise, and Sally came to college just to get married; therefore, Sally will not do well in her classes.
COMMENTS: There has been some confusion here between the word “unwise” and the word “stupid.” Also, a necessary part of the argument has been omitted. The only conclusion that can be derived logically from the premises is, “Sally is unwise.” The speaker then assumes that being unwise is the same as being unintelligent and draws the conclusion that, since Sally is unintelligent, she will not do well in her classes. The conclusion obviously cannot be drawn from the premises.
10. *Straw Man*—changing the appearance of the opposing argument making it seem easier to disprove
EXAMPLE: “I cannot for an instant recognize that political organization as *my* government which is the *slave’s* government also.”
COMMENTS: In this statement Henry David Thoreau in “On the Duty of Civil Disobedience” attempts to blame slavery on the government, making it appear that because the United States government of his time allowed slavery to exist that the government approved of and promoted slavery. Students of history will recognize that slavery predated the formation of the government and that the toleration of slavery allowed northern and southern states to be united during the Revolutionary War. This does not mean that the government advocated slavery; nevertheless, the straw man (slavery) is much easier to push over than the real one (government).
11. Orson Pratt, *Masterful Discourses of Orson Pratt*, ed. N. B. Lundwall (Salt Lake City: Lundwall, n.d.), 26-27; also in *Millennial Star* 28:521-2.
12. Russell Nelson M., *Monality* (Salt Lake City: Bookcraft, 1992) *Infobase Library* (CD-ROM 1998).