

Teaching Debate in Japan

Part Three

Teaching logic and reasoning

日本におけるディベート教育

第三部

論理と推論

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Summary : The basic premise of academic debate is to use logic and reasoning to make the best possible decision. Japanese schools do not as a general rule teach these concepts to their students. The philosophical differences between Confucian based societies and Greek based societies tend to minimize the importance of logic based decision making in Japan. Therefore it is necessary for teachers in Japan to introduce students to the basis concepts of logic and reasoning: deductive and inductive reasoning, fallacies and the basic types of reasoning. These are essential if the students are to effectively master debate.

Key words : Debate, Teaching, Logic, Reasoning, Fallacies

Logical Fallacies are flaws in arguments that may be intentional or inadvertent. There are two main types of arguments the deductive and the inductive. Both deductive and inductive arguments contain a premise and a conclusion. The premise is a statement to support the conclusion.

Deductive arguments appear to provide complete support for their conclusions while Inductive arguments only appear to provide less than complete support. A valid argument is one that provides sufficient support for a reasoned conclusion. For an argument to be valid there must be sufficient true premises to support a reasoned conclusion.

If in Inductive argument is cogent and strong it reaches the point where if all the premises are true it is more likely than not that the conclusion is also true and well-reasoned.

When people attempt to approach a situation in order to arrive at a logical reasoned conclusion, there are certain methods that they customarily utilize, and fallacies that are inherent to these approaches.

The fifteen most common fallacies are:

1. Ad Hominem
2. Appeal to Authority
3. Appeal to Emotion
4. Appeal to Popularity
5. Appeal to Tradition
6. Band Wagon

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7. Begging the Question
8. Equivocation
9. False Dilemma
10. Genetic Fallacy
11. Hasty Generalization
12. Red Herring
13. Slippery Slope
14. Straw Man (common among Creationists)
15. Post hoc, propter hoc (Gulf Coast State College, 20013)

The Ad Hominem fallacy occurs when the response to an argument is based solely upon a characteristic or belief of the person making the statement rather than addressing the substance or providing evidence of the argument or claim. The Latin term translates to "Argument against the man" (Fallacy Files, 2013).

An example of this is discounting a person's stance on the argument based only upon their religious creed or beliefs without further examining any other arguments or facts they may present. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013). An example of this would be discounting a Catholic person's stance on abortion solely based upon their religious beliefs without hearing him or her out.

An Ad Hominem Fallacy can be Abusive or Circumstantial. In an Abusive Ad Hominem a personal character of the opposition is used to distract from the validity of the argument. The subject of the attack then is diverted into a personal defense instead of pursuing the true argument. This is similar to a Red Herring where an irrelevant issue is introduced to distract from the true subject at hand.

A Circumstantial Ad Hominem is when some irrelevant personal circumstance is considered as evidence. This is frequently used in the case of paid celebrity endorsement advertisement where the person endorsing the product receives monetary compensation. (Fallacy Files, 2013).

Both Abusive and Circumstantial Ad Hominem Fallacies are frequently used to discredit criminals who testify against their co-conspirators. These persons are subject to attack because of their own criminal behavior and because they stand to receive lighter sentences or other considerations because of their testimony.

The Fallacy Files cites the introductory phrase "Of course, that's what you'd expect them to say." as a test to see if the fallacy of Ad Hominem is being entertained. (Fallacy Files, 2013).

When the fallacy of an Appeal to Authority is committed false reliance is placed on a person as an authority when in fact their credentials do not support the argument that they are in fact not a legitimate authority on the subject. Like the ad hominem fallacy, this type of fallacy can occur by not looking at the person's qualifications, arguments and facts. For example an individual might be better informed because they hold a higher educational degree. However, that does not necessarily hold true if they are not educated about the topic under examination. In an increasingly complex world, experts provide valuable insight into technical facts.

There are inherent problems with this however. Four of the major ways an Appeal to Authority is most likely to create a fallacy is when: It is unnecessary or impossible; The Authority is not an expert on the issue; The Authority is an expert but not disinterested; The Authority is an expert but the opinion rendered is contrary to or unrepresentative of expert opinion on the subject. (Fallacy Files, 2013).

In the cases where an authority is either unnecessary or impossible the question does not require expert opinion because the question can be answered by more reliable direct evidence, or direct evidence is necessary there are no experts who are sufficiently schooled in that discipline so that their opinion carries more weight than that of any one else who examined the facts. As an illustration of when the authority is not an expert on

the topic the Fallacy Files uses an old television in which an actor states, "'I'm not a doctor, but I play one on TV..." The actor then proceeded to recommend a brand of medicine. (Fallacy Files, 2013).

In some cases the authority is an expert on the topic and that may shade the opinion. Not all experts agree and some range far afield from the general consensus of the other experts in their field, this could be because they are in advance of the common knowledge, or just plain wrong. Expertise does not substitute for examining the facts or seeking additional expert opinions. (Fallacy Files, 2013)

The fallacy of an Appeal to Emotion is when emotions are substituted for reasoning. When debating a topic this is sometimes referred to as "pathos." While it is a useful tool in presenting an argument it cannot be substituted for all logic and truth. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013). The Fallacy Files uses the logic of Mr. Spock as a reference to illustrate this fallacy as how emotions can subvert logical thought when arriving at a conclusion. (Fallacy Files, 2013).

Emotional Appeals can be used to motivate and persuade. When intended to sway opinion, Appeals to Emotion are always considered fallacies. However, Appeals to Action may be true or false, this is dependent upon the facts not the emotions. An example of this is fundraising, the advertisements that show starving children and abused animals with the intention of soliciting donations. The donations do not benefit the individuals in the photographs, they may help others in similar circumstances or they may be used to solicit additional donations or to the people who work for the charity.

To determine if this type of appeal is a fallacy there needs to be a causal connection drawn between the action and the circumstances. In the above illustration this causal connection would be if the donation, or at least the majority of the donation will be used to directly benefit children and animals in pitiful circumstances. If it goes to the intended recipients it is not a fallacy. If the majority portion of the donation is used for the charity infrastructure and to the benefit of the individuals it employs it is an Emotion Appeal Fallacy. (Fallacy Files, 2013).

An Appeal to Popularity sometimes called the Authority of Many or Argument by Consensus. . in Latin was referred to as Argumentum ad Populum

The Popularity of an idea does not necessarily make it true or false. It may even be an indicator that it is true. The fallacy occurs when the general consensus of a group is accepted in absence of, or contrary to the facts. An example of this is when the majority of the European population believed that the earth was flat. That did not make the people who knew the earth was a sphere wrong even though their knowledge flew in the face of the general wisdom of their time. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013) (Fallacy Files, 2013).

To examine a Popular Fallacy to determine if it is true it is necessary to consider a reasoned Argument consists of a Premise and a Conclusion. While the popularity of an idea indicates that it might be true it does not guarantee it. Therefore there must be reliable direct evidence and facts to support the conclusion. (Fallacy Files, 2013). In this scenario the general wisdom of "what everyone knows" may not be necessarily true.

An Appeal to Tradition is similar to an Appeal to Popularity however it also involves how a practice or belief achieved legitimacy because it existed over a long frame of time. It acquires its legitimacy because it is traditional, and always has been done.

Although proven past practice is a method of showing that a particular practice may be effective and has "stood the test of time" that is not sufficient to prove that it is indeed true. There are many past practices that later proved to be ineffective or fallacious. An Appeal to Tradition should be accompanied by facts that prove it to be correct and the most effective approach. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013), (Fallacy

Files, 2013).

In the legal system this is what forms the basis of the “common law” body of laws that were the standards that existed before laws were formally codified. The reverse of this is the Appeal to Novelty that assumes that new equates to improved. While, in fact neither argument is, in itself proof. Practices that have “stood the test of time” can still be inherently untrue, just as a novel way of looking at a situation may be flawed as well. Therefore, Tradition in itself is not proof sufficient to support a conclusion. (Fallacy Files, 2013)

Band Wagon is similar to the Appeal to Popularity and the Appeal to Tradition in that it relies upon a group consensus and course of action rather than logic and reason to determine the truth and correct course of action in a given scenario. This may be based upon general knowledge and tradition or may be the result of a Zeitgeist or spirit of the times. In this argument peer pressure is taken instead of logic and reason as evidence. This is the type fallacy parents are trying to dissuade their children from when they make the statement “... and if everybody else jumped off a bridge would you do that too?” (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013), Using the origin of the term Jumping on the Bandwagon as an example the assumption that a specific politician is the best candidate because of popularity is incorrect. Never the less, the notion of democracy is that most people will come to the correct conclusion. Therefore it is necessary to assess each candidate’s credentials along in order to determine if they indeed are the best suited for the office. (Fallacy Files, 2013).

The fallacy of Begging the Question is when conclusion occurs as one of the premises. This is sometimes also called Circular Reasoning, a Vicious Circle and *Petito Principii*. Aristotle described Begging the Question as proving what is not self-evident by means of itself. His test of this fallacy was to establish if the predicates that are identical belong to the same subject or if the same predicate belongs to identical subjects. (Aristotle & Jendinson, 350 BCE - 2013 CE), (Fallacy Files, 2013).

The Fallacy Files cites this “Misrule of Thumb” as a test to see if the fallacy of Begging the Question is being entertained. “Begging the question is a fallacious form of argument. Therefore, to beg the question is to argue fallaciously.” (Fallacy Files, 2013). Begging the Question typically takes the form in which the truth of the premise is assumed either directly or indirectly and therefor the conclusion is presumed to be true as well.

A Circular Argument is not necessarily invalid if one of it premises can be independently proven as true. However, once again this requires additional supporting evidence. In some cases there is a suppressed statement that supports and connects the premise and the conclusion that creates a Circular Argument without the appearance of doing so.

The Fallacy Files uses the statement of Murder is morally wrong, therefore abortion is wrong as an example of a suppressed statement. The assumption is that abortion is murder and substitutes that for the more morally neutral word killing. Some killings such as those committed in self-defense are not considered to be wrongful as so not seen as murder. The suppressed statement then would be that all abortions are wrongful killings and therefore are murders. Thus the loaded language of the word murder creates the Vicious Circle. (Fallacy Files, 2013)

Equivocation, also known as Doublespeak, is a fallacy that assumes the wrong definition of a word instead of the meaning intended. This can easily happen when the meaning of a word evolves over time, as happened with the word “gay.” Originally the meaning of gay was cheerful and happy. When Zorro was described as a “gay blade” it meant that he was a cheerful swordsman, it did not mean that he was a tall slender homosexual. Although that is a meaning that is relevant today it is not the same as that which was common during Gold Rush Era California when his legend was created. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013),

The Fallacy Files cites this example of Equivocation “The elements of the moral argument on the status of unborn life...strongly favor the conclusion that this unborn segment of humanity has a right not to be killed, at least. Without laying out all the evidence here, it is fair to conclude from medicine that the humanity of the life growing in a mother's womb is undeniable and, in itself, a powerful reason for treating the unborn with respect.” (Fallacy Files, 2013).

A False dilemma occurs when only two alternatives are considered essentially creating a true or false alternative statement when actually there are other options. Sometimes this is called a Black and White Fallacy, an Either/ or Fallacy and Bifurcation. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013), (Fallacy Files, 2013).

Contemplating the weather can serve as an inappropriate example of reducing a situation to a black or white question when there are other alternatives available. Asserting that the temperature is either hot or cold ignores the middle ground of the weather being warm, chilly or perfect. This fallacy confuses contrary with contradictory propositions ignores the fact that exactly one might be true when in fact neither might be true. (Fallacy Files, 2013).

The Genetic Fallacy is when there is a flaw in the origin of a claim or thing is taken to be evidence that discredits the claim or thing itself which might be true. This can also be when the origin is flawed and yet is taken as reliable evidence for a false statement however it is taken as a reliable reference for a false statement. In either event the claim is determined to be correct or incorrect because of its source without consideration of outside information.

“Difficult as it may be, it is vitally important to separate argument sources and styles from argument content. In argument the medium is not the message.” (Waller, 1998, p. 5). The degree of expertise of the origination of a claim is relevant. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013),

When a Hasty Generalization is made a conclusion is drawn about a group or population based on a sample that is not large enough. These conclusions often are the basis for prejudicial statements where the actions of a few people are taken to be representative of those of their race or society as a whole. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013),

A formula illustrating this would be “X% of all observed A's are B's. Therefore X% of all A's are Bs” (Fallacy Files, 2013). While random samples and surveys are considered valid forms of research a great deal of care must be taken to procure an unbiased broad sample before general assumptions can be made. (Fallacy Files, 2013)

A Red Herring fallacy is an irrelevant topic that diverts attention from the original issue. The form of this fallacy is that the original topic is abandoned in pursuit of another that is introduced as relevant but in fact is not. The origin of this is from hunting with scent hounds. If a red herring was dragged across the trail and off in another direction the dogs would follow the smell of the fish instead of the scent of the original quarry. This is generally done intentionally to create a diversion, and that is how the term is understood. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013),

A Slippery Slope is when an event that might occur is taken as the inevitable result of entertaining an option instead of being presented as just one of the possible end results of that train of thought. It is similar to a False Dilemma where only two options are recognized when in fact there are other options. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013), however, it differs from a False Dilemma in that it presumes an outcome instead of a relationship.

A humorous example of a Slippery Slope is the following excerpt for Thomas de Quincey's Second Paper on Murder. “...once a man indulges himself in murder, very soon he comes to think little of robbing; and from

robbing he comes next to drinking and Sabbath-breaking, and from that to incivility and procrastination. Once begin upon this downward path, you never know where you are to stop. Many a man has dated his ruin from some murder or other that perhaps he thought little of at the time.” (de Quincey, Authorma - 2013) The humor in this example makes clear the fallacies inherent in the Slippery Slope Fallacy.

A Straw Man fallacy substitutes a distorted, exaggerated or misrepresented version of a position instead of a person's actual position. In this fallacy a person expresses an opinion. Another person presents a distorted version of that position that is over blown and inaccurate. Then the second, distorted position is attacked and proven to be wrong and this is taken as evidence that the original is also wrong. This often provokes a response of “but I never said that.” The origin of this goes back to practices where an effigy of a person such as a straw or wax man, would be destroyed in an effort to hurt the human it was created to represent. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013),

The Latin words Post hoc, propter hoc translate to "After this, therefore because of this" and assumes that one event causes another simply because the alleged cause occurred before the effect when in fact there is no direct relationship. This is the type of fallacy that gives rise to Old Wives Tales such as bad luck resulting from such events as black cats, broken mirrors and walking under ladders. (Gulf Coast State College, 20013), (Labossirere, 1995 - 2013).

This is the line of reasoning used in a Court of Law to determine the near and proximate cause of a loss. An example of this would be a multi-car accident where one driver stops quickly to avoid a vehicle making an illegal lane change. The next the vehicle immediately behind stops and avoids contact with the first. The third driver does not stop in time. That driver is held responsible and cannot claim the first driver or the driver who made the illegal lane change as the cause.

The following tests determine the validity of a Post Hoc, Propter Hoc argument.

- What is the certainty or strength of the relationship?
- Are there alternate causes?
- Are there alternate effects?
- Is the relationship overly simplistic, or too complex?
- Is the cause necessary and/or sufficient?-
- (University of Pittsburg, 2013)

By applying the above tests to the argument it is possible to determine if the action was the true near and proximate cause of the effect. This Fallacy is closely related to the causal line of reasoning in which the next item in the sequence is determined by looking at other related events.

Causal reasoning uses a past sequence of events to determine the net item or event in the sequence. The Casual Fallacy is when unrelated factors are introduced and taken as Casual elements. (Philosophical Dictionary, 2013) Arguments by Example look at sample data to determine generalities about a larger group. This is the manner most population trends are determined by survey samples. It can also lead to the Fallacy of a Hasty Generalization if the sample data is not broad enough to support a valid conclusion. It is also the line of reasoning that can lead to prejudice by attributing the qualities of a small group to the larger class of a race, nation or other demographic group. (AuthorSTREAM, 2013)

In reasoning by example is the line of reasoning commonly pursued by computer programmers working in Artificial Intelligence and Prolog programming. Logic Programing is the programing paradigm developed as a step-by-step description of an algorithm. It differs from the procedural specification of how to solve a problem. Instead, reasoning by example looks at a declarative specification of what the program is. In that manner it

uses the concept of a program variable. It is a form of deductive reasoning that follows an if/then and either/or format.

The formula statement would read: If A is true then either B or C is true. A is true and B is not true so C must be true. This reasoning process is particularly adaptable for computer systems as it provides a logical two-step process to arrive at a conclusion.

It differs from the black and white fallacy in that it is only applicable in situations where a true either or reasoning pattern can be determined. (Schechter, 2013) (Flach, 2013)

An argument by Evidence can also be one in which a sample group is surveyed or examined to determine the qualities or likely behavior of a larger demographic. An example of this is the way medications are tested before offering them to the general public. To test an argument by evidence it is necessary to determine if the sample base is broad enough to draw a reasonable conclusion. (AuthorSTREAM, 2013)

In reasoning by Analogy it is necessary to look at the relationships to determine likeness and sequence. It seeks to determine relationships between one or more cases that otherwise seem to be dissimilar. (AuthorSTREAM, 2013) This line of reasoning relies upon predicates to determine the next most predictable result. To determine this each element must be examined then related to the next element in the sequence.

In the visually based tests for Reasoning by Analogy the subjects are often given a series of geometric objects that change in a sequence and the subject must determine what comes next. The verbal tests follow the formula of _____ is to _____ as _____ is to _____. (Internet Encyclopedia of Philosophy, 2013) Care must be taken in evaluation by Analogy to determine that the subjects are related in a meaning way before drawing a conclusion. (AuthorSTREAM, 2013)

In Causal Reasoning relationships are determined based on a cause and effect. Mill's method is based upon John Stuart Mill's *Cause and Effect* and uses a series of residues so that ...

"If portions of a complex phenomenon can be explained by reference to parts of a complex antecedent circumstance, whatever remains of that circumstance may be inferred to be the cause of the remainder that phenomenon."

(Philosophical Dictionary, 2013).

Causal Reasoning is also the foundation for Moral responsibility in that if you cause an effect you should be justly rewarded or punished. (Philosophical Dictionary, 2013). It follows the religious lines of thinking in "As ye sow so shall ye reap" and the law of Karma.

Casual relationships are also examined when looking at social phenomena.

One of the issues that can serve as an example of Causal Reasoning is tying in together violence on the television, in movies and in video games with real time criminal violence.

The following test is used to determine Casual Relationships:

Is the association between cause and effect consistent?

Is the association a strong one?

Does it follow a predictable time sequence?

Positive answers to these questions are arguments for Causal Correlation (AuthorSTREAM, 2013)

Reasoning by Sign assumes that the presence of one factor is a reliable indicator of another. A classic example of this is the saying "where there is smoke there is fire" This is the type of reasoning a doctor would use to determine an illness. In that scenario the doctor would look at the symptoms and determine what possible illnesses could cause them. Then he would go through the list and determine if there was additional information that could eliminate one or more potential illness to make preliminary diagnoses. Once a preliminary diagnosis

is made additional tests might be necessary to determine which of the remaining illnesses are causing the symptoms.

The logical formula would read A, B, and C, are symptoms of X, Y, or Z if Z is the cause then symptom D should also be present. D is not present so the illness is most likely for X or Y. Tests should be run to determine if the illness is caused by either X or Y or both X and Y.

A simple breakdown is in the "...relationships between two variables, presence/absence of one=presence/absence of the other." (Funnel Brain, 2013).

Reasoning comes in many different forms, and so do fallacies. There are also different ways of avoiding fallacies and testing the premises in an argument will help avoid them. A fallacy is generally assumed to mean that the conclusion is not true. This is not necessarily the case. Sometimes the premise can be flawed yet still lead to a correct conclusion.

There are two separate types of fallacies, the formal and the informal. In the case of a formal fallacy the Premise may be true and the Conclusion may also be correct, however they are not related. Therefore the deductive argument is invalid because the one does not follow from the other. Informal fallacies have an intrinsic flaw that renders them invalid. All reasoning must be fully examined to prevent fallacies and therefore mistakes in logic.

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