

Rational thinking and creative ideas



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Rational Thinking & Creative Ideas Erroneous Reasoning: Fallacies 1.

Fallacies are simply mistakes or defects that occur in arguments. They are incorrect inferences. Fallacious arguments may superficially be persuasive, but logically incorrect. Fallacies can be committed in many ways, but usually they involve either a mistake in reasoning or creation of some illusion that make a bad argument appear good. Understanding fallacies and knowing why some inferences are incorrect could help us to improve our way of rational thinking and reasoning. - Two kinds of fallacies: formal and informal. Formal fallacies occur when we misapply a valid rule or form of inference or else follow a rule which is invalid. Informal fallacies are any errors in reasoning not related to the form (but content) of the arguments. 2. Informal fallacies: Some fallacies that people frequently committed are introduced and illustrated: (i)Hasty generalization draws a conclusion about a class based on too few or atypical cases. We commit this fallacy when move carelessly and quickly from few particular cases to a generalization. Example 3: I know that John Lee is bald but rich. Therefore, all bald persons are rich. - Only one particular case of being bald and rich is far from enough to support the conclusion that all bald persons are rich. The conclusion is likely to be false. So, it is a fallacy of hasty generalization. Example 4: Last Friday, I broke my arm. The Friday before that I failed the driving test. Oh, God, bad things always happen to me on Fridays. - The probability of the conclusion is extremely low. Two bad things on two Fridays are hardly adequate to support a general conclusion about all Fridays. It is thus a hasty generalization. (ii)Accident is the reverse of hasty generalization. When we apply a generalization to individual particular cases that it does not properly govern, we commit the fallacy of accident. In morality, rules or principles

that are sound in general sometimes have very special exceptions. We have the moral rule that " we should not lie". In some special circumstances, this rule may not be applicable, say, lying to a dying friend and comfort her that she is going to recover from illness. Example 5: Of course, Ah Ming can play his guitar with his band at mid-night. Our freedom of speech and expression is a guaranteed right. - We have the right of speech and expression. But we cannot exercise our right at any time as we wish. If in exercising our right, we violate other person's right or harm others, it is improper for us to do so. Ah Ming has the right, but it is improper for him to play guitar with his band at mid-night, making a lot of noises and disturbing others. (iii)False cause: Any reasoning that relies on treating as the cause of some thing or event what is not genuinely its cause must be seriously mistaken. Fallacy of false cause mistakes temporal succession for causal sequence. That is, one assumes that because two events are associated in time, one must have caused the other. Example 6: John Dum, a middle-aged man, raped and killed an old lady after seeing a class-III film. " Had it not been for pornography, " a conservative legislator claimed, " John Dum would not have committed the crime. " - Two events happened one after the other: " John Dum watched a pornographic film", " he committed the crime". But the legislator jumped to the conclusion that these two events have causal relation. Though two events happened one after the other, they might not have causal relation. Example 7: David Lee is a champion runner. He has been living in Tuen Mun since he is born. Hence, living in Tuen Mun helps to make David Lee a champion runner. - We have a correlation of two events, " living in Tuen Mun" and " being a champion runner", but there is no evidence to indicate that the correlation is causal. Given the premises, the probability

of the conclusion is quite low. The argument thus commits the fallacy.

(iv) Slippery slope argument is often used by those who wish to argue against or object to something on the grounds that if it is done, something else will happen as a result, and then something else, and then something else, right down the 'slippery slope' to a situation that is obviously undesirable. The reasoning is faulty because there are not sufficient justifications and evidence to support that the chain of events could take place. It focuses attention on some gruesome end result and fails to show that such a horrible result will actually follow. Example 8: Look, what has Donald Tsang done to HK? He has turned down HK people's request for universal suffrage recently; he has used more-than-necessary forces to suppress the demonstrators and detained some Koreans during the WTO conference. Next, he will increase the power of police and limit our freedom of demonstration and protest; he will then set up a Press Monitoring Board or will initiate the legislation of the National Security Law in order to limit our freedom of speech and publication; and next he will then outlaw Fa Lun Gong. He is consequently leading HK to a totalitarian society without freedom of expression, and our human rights unprotected. - We may doubt that all the events are connected. It is also doubtful that the chain of events could happen as a resulting sequence of one after another and finally lead to an undesirable situation of 'totalitarian society'. Since there are no support or evidence that the chain of events could happen one after the other, so the conclusion "He is leading HK to a totalitarian society without freedom of expression and our human rights unprotected" is not warranted.

(v) Black and white thinking occurs when one concludes that denying one extreme means affirming the other extreme, when the truth may lie somewhere in between or in third

alternative. There is a third alternative to the "either A or B" proposition. The key to avoid the fallacy is simply to find the third or other alternatives.

Example 9: Either you put the murderer to death or let him go free. If you put the murderer to death, then you kill one more person. If you let him go free, then he will only kill again. Therefore, someone will be killed. - To challenge the argument, we challenge the disjunctive premise. "Putting the murderer to death or letting him free" are not the only two alternatives we can deal with criminals. Life-imprisonment or reform and rehabilitation of the offenders could be the alternatives.

Example 10: Either we have a balanced budget, or we let deficits ruin us. - Are these the only two alternatives? No, there are other alternatives. We could run deficits this year, or next year, or for some years. But the deficits are of more manageable size, and we have a large amount of reserve to back up deficits.

(vi) Begging the question occurs when an argument assumes its own conclusion. Question-begging arguments are usually disguised, either by restating one of the premises in different words as the conclusion or by keeping one of the statements implicit. Consequently, the conclusion (which is to be proved) has not been proved.

Example 11: Since it is perfectly legitimate to punish certain criminals by putting them to death, therefore, capital punishment is justified. - It argues for the conclusion that capital punishment is justified by assuming that it is legitimate to punish criminals to death. Conclusion and premise say the same thing, so the argument begs the question, no proof for the conclusion.

Example 12: The soul is immortal because it lives forever. - 'Immortal' means 'live forever'. Conclusion and premise thus say the same thing. Arguments are supposed to give us reasons for believing the conclusion. But you cannot support the conclusion by using the conclusion.

(vii) Complex question is not a simple question. A question is complex when it assumes an answer to the logically prior question. It is asking a question in such a way as to presuppose the truth of some conclusion buried in that question. Example 13: Have you stopped beating your wife? - This complex question presupposes an affirmative answer to a prior question " Did you ever beat your wife? " But if this implicit question has not been answered affirmatively, the complex question is illegitimate because it presupposes what has not been established, namely, that the person being questioned has beaten his wife. (viii) Composition: erroneous arguments assume that what is true of the parts (or the elements) must also be true of the whole. It is the fallacy of inferring that a particular complex entity has a specific property because its parts or elements have the property. Example 14: Since it is made up of better players, so the all-star team must be better than the Manchester United. - Football players are members of a football team (parts of the whole). The all-star team consists of excellent players. But it does not mean that the whole team must be also excellent. Example 15: Each atom in this piece of chalk is invisible. Therefore, the chalk is invisible. - The attribute ' invisible' is transferred from the parts onto the whole. But the transference is illegitimate. An atom is invisible, but a piece of chalk is visible. The argument is thus fallacious. (ix) Division is the fallacy of composition in reverse. It assumes that what is true of the whole is true of the parts. It is the fallacy of inferring that parts of a complex entity have a particular property because the complex entity as a whole has that property. Example 16: This engine is very heavy indeed. So, a screw of it must be very heavy. - The whole engine is very heavy. But a screw of it is not heavy. Example 17: The Hong Kong Jockey Club is over 100 years old. John Lee is a member of the HK

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Jockey Club. Therefore, John Lee is over 100 years old. - The attribute ' over 100 years old' is illegitimately transferred from the whole (HK Jockey Club) onto the parts (members of the Club). It is a fallacy of division. (x) Straw man fallacy comes from the idea that if you set up a straw man, it is easier to knock down than a real man. This fallacy avoids dealing with the real issues by changing and twisting the opposition's view or by drawing a false picture of the opposing argument. Fallacy of straw man then attacks a weakened form of an opponent's argument or an argument the opponent did not advance. Example 18: Legislator Mr. Lee who is a unionist advocates minimum wage for workers. It is regrettable that the unionist finds it necessary to advocate socialism. Socialism defeats initiative, takes away deserved rewards, and leads directly to inefficiency and big government. It was tried for years in Eastern Europe, USSR, and China, but failed miserably. Clearly, socialism is no good. - You are opposing minimum wage for workers. You don't construct a strongest case for your position, but you make a weakest case or draw a false picture for the opposing position. The opposition's point is to set " minimum wage for workers" in law, not to advocate socialism. But you construct Mr. Lee's ideas as socialism—a ' straw man' that can be easily defeated. You thus committed straw man fallacy by making the opposing position appear weaker or even ridiculous. - It is much easier to win a fight with a straw man than a real man. It is easier to attack a weak substitute for an argument than the genuine one. Straw man fallacy consists of distorting, and thus weakening an opponent's argument or view and then attacking the weaker position rather than the real one. (xi)Appeal to force seeks to persuade others by force. It simply says, " accept this, or I'll beat you up. " It is a threat, reasoning through blackmail, arguing by

intimidation. The use of force or threat to coerce opponents might be a last resort, but it cannot replace rational thinking or arguments. Example 19: You should better believe that Buddhism is true or else you'll go to hell and get burnt. - Not to argue for the truth of Buddhism but persuade others by threat. Coercion, force, threats, and intimidation may be useful and effective in some situations, but they have no place in rational argumentation. (xii)

Appeal to pity seeks to persuade others with sentimental appeal. " Accept this because you should feel pity for me. " It is an appeal to emotion and mercy. It replaces the task of presenting reason and argument with emotional language to excite a pitying heart. Example 20: I am qualified for the job. I have a little experience in the area. But I have been out of work for ten months, and I have four children and an old mother to feed. So, I really need the job and money. - Why are you qualified for the job? Because of good experience or excellent qualifications? No. Instead, you ask for sympathy. But the appeal is clearly irrelevant. You do not persuade others with reasons, but sentiment. (xiii)

Appeal to unqualified authority simply means " accept this because some authority said it". We often doubt a statement because there is some thing wrong with the person who makes it, or give additional credit to a statement because a famous or highly admirable person makes it. But as we know, 'authorities' can be wrong, and there are conflicting authorities. Which one should I accept? The mere appeal to authority should never be substituted for evidence or a good argument. Especially the authority we cited is an inappropriate one or not trustworthy. Example 21 David: " Through my telescope, I can see there are some black spots on the Sun. They change from time to time. " John: " What you are seeing must be illusion. According to Professor Lee, an expert in

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sociology, the heavenly bodies are perfect and not subject to change. " - John is appealing to unqualified authority. He does not bother to look at the black spots on the Sun through telescope. He simply rejects David's claim by appealing to an inappropriate authority's view—Professor Lee is an expert in sociology, but not in physics. (xiv) Attacking the person: This kind of fallacious arguments tries to discredit a claim or argument by attacking its proponents instead of offering a critical examination of the argument itself. It attacks a person's personality and character. But the character of a person is not logically relevant to the truth or falsehood of what that person says. Thus premises are irrelevant, though they may be psychologically persuasive. - If former US President Bill Clinton argued that USA should improve her trade relations with China, then we must evaluate Clinton's argument on its own merits; to claim that the moral flaws in Clinton's character weaken his argument is to commit this fallacy. Example 22: Mr. Blackhart says " we should come back to basic family values. " You cannot trust anything this man says. He is absolutely a bastard, a man of no morality. He never stops beating his wife, and he dumped one of his children in orphanage. - Even if Mr. Blackhart is really in some aspects, morally bad, this has no bearing on his ideas or argument about " we should come back to basic family values". Morally we do not require everyone to be a saint. To reject his view simply because he is reprehensible is attacking the person. This fallacy does not offer a critical examination of Blackhart's ideas, it attacks Blackhart's personality instead. (xv) Argument from ignorance or Appeal to ignorance: this type of reasoning assumes that something should be believed until it is shown to be false. It reasons in this way: " Accept this because you can't prove it isn't true. " This fallacy has two forms: 1. It has not been proved that

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Q. 2. It has not been proved that $\sim Q$ Therefore, $\sim Q$. Therefore, Q. - On reflection, many false propositions have not yet been proved false and many true propositions have not yet been proved true—thus our ignorance of how to prove or disprove a proposition or belief does not establish either truth or falsehood. - In the absence of proof, the rational approach is to assess the available evidence. If the available evidence favours one conclusion, then adopt that conclusion tentatively. And if the available evidence is not sufficient to favour a tentative conclusion, it is best simply to suspend our judgment. Example 23: Researchers have spent many years to prove that ghosts do not exist, but they have so far not succeeded. Therefore, ghosts exist. - This is an appeal to ignorance of the second form. Example 24: No one has ever proved that God exists. Hence, God does not exist. - This is an argument from ignorance of the first form. (xvi)Appeal to the people is the fallacy of accepting a claim or deciding truth by public opinion. It appeals to popular attitudes instead of presenting relevant material. As Bertrand Russell pointed out: " The fact that an opinion has been widely held is no evidence whatever that it is not utterly absurd; indeed, in view of the silliness of the majority of mankind, a wide-spread belief is more likely to be foolish than sensible. " Example 25: Can't you see premarital sex is wrong. Your parents and friends believe, everyone in this society believes that premarital sex is wrong. - The public opinion may or may not be justified, but the speaker who makes her case depend solely upon it is guilty of appealing to the people. - When an opinion is inferred as true only because many people think that it is true, it is a piece of incorrect reasoning. Whether something or a statement is true or not does not depend on the number of people who agree or disagree with it. (xvii)Missing the point (Irrelevant conclusion): This fallacy is

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committed when an argument purporting to establish a particular conclusion is instead directed to proving a different conclusion. Since the premises miss the point, they contribute nothing to an argument, though they may mislead the audience into thinking otherwise. This fallacy enables those who use it to mask other defects hampering an argument, and thus to evade the real issue. Example 26 Reporter: " A survey about university students' English shows that most students' English is far below the required standard. Can you say something about this? " Secretary for Education: " Our government has put a lot of money on tertiary education. This year, an extra 3% of our total spending was allocated to all universities to equip with first-class computers. As you all know, some colleges were upgraded and named as university recently. In the next five years, spending on tertiary education will be increasing to 25% of total public spending. Therefore, I don't think that university students' English is far below the required standard. " - The secretary is supposed to argue for or against the claim that most university students' English is far below the required standard. But he started talking and arguing, and diverted reporter's attention to other tertiary educational matters, which are irrelevant to the standard of students' English. Finally, he came to the conclusion that I do not think that university students' English is far below the required standard. It is an irrelevant conclusion. What we can conclude from the premises is that our government put tertiary education as the first-priority work. The premises miss the point and thus, the secretary of education committed the fallacy of irrelevant conclusion. (xviii)Equivocation (or ambiguity) occurs when a word or phrase is used with two or more meanings. Equivocal use of words is fallacious because it invites us to transfer what we are prepared to accept about one concept onto another

one which happens to have the same name. Example 27: If all men are created equal, then why basketball players so tall? - The phrase 'created equal' could mean 'the same height, or physically the same', or 'with equal moral and political rights'. Example 28: It is silly to fight over mere words. Discrimination is just a word. Therefore, it is silly to fight over discrimination. - In this context, 'discrimination' can have one of two meanings: (i) action or policy based on prejudice or partiality, or (ii) the word 'discrimination' itself. It seems that the arguer intended 'discrimination' to mean the word itself in the premise but 'the action or policy' in the conclusion. In that case, the premises are true, but they are irrelevant to the conclusion and the argument is thus invalid. (xix) Amphiboly is ambiguity at the level of sentence structure, i. e., ambiguity due to the way the words are assembled (the grammatical construction). Example 29: Save soap and waste paper. - Is 'waste' an adjective or a verb? Two different interpretations of the sentence resulted from two different uses of 'waste'. Example 30: When we compare the danger of spreading AIDS with the incursion of privacy involved in widespread AIDS testing, we have to admit that it is a risk we have to take. - Is 'it' the spread of AIDS or the incursion of privacy? Thus the whole sentence is ambiguous in two different ways. Example 31: David told Martin that he had made a mistake. It follows that David has at least the courage to admit his own mistakes. - The pronoun 'he' has an ambiguous antecedent; it can refer either to David or Martin. Perhaps David told Martin that Martin had made a mistake. Last few words: For every right way to reasoning and rational thinking there is at least one wrong way, so there is no end for the list of fallacies. The strange thing is that the wrong ways seem to often sound more persuasive. This is the power of sophism. But not to be trapped

in the persuasive pit of these fallacies, practice in recognizing them is necessary. Suggested readings: 1. Madsen Pirie, *The Book of the Fallacy*. Routledge & Kegan Paul, 1985. 2. J. Cederblom & D. W. Paulsen, *Critical Reasoning*, Chapter 6. Wadsworth, 1991. 3. Irving M. Copi, Carl Cohen & Kenneth McMahon, . *Introduction to Logic* (14th edition), Chapter 4. Prentice Hall, 2011. 4. *Identifying Logical Fallacies*, McGraw-Hill Education, 2005. Exercises

Identify the fallacy committed in each of the following arguments, and explain briefly for your answer.

- Happiness is the end of life. The end of life is death; therefore, happiness is death.
- If these books merely repeat what is in Koran they are superfluous; if they are in disagreement with the Koran they are pernicious. But they must either merely repeat what is said in the Koran or they are in disagreement with it. Therefore, they are either superfluous or pernicious, and they should be burned.
- God exists. Since everything in the Bible is true, and God wrote it; furthermore, the Bible says God does exist.
- Since many people do not like Picasso's paintings and they think that his paintings are bad, so Picasso's paintings must be bad.
- You shouldn't give me a parking ticket, sir. Look, my baby here was crying for some candy and I took her to the candy shop before I came back to my car.
- Advertisement: FOR SALE: Car by elderly lady with new body and spare tyre.
- Since we are purposeful creatures and we are parts of the universe, so the universe must be purposeful as well.
- All factories are plants. Therefore, every factory needs fresh air, since all plants need fresh air.
- You should stop protesting against Chinese government's violation of human rights. You know, there are a lot of secret agents from China in Hong Kong. They could do things secretly, say, put you onto a black-list, or even

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make you disappeared in this world unnoticed. I'd think twice if I were you.

10. No one has ever proved that the human fetus is not a person with rights.

Therefore, abortion is morally wrong. 11. Michael Chang recommends

Rejoice shampoo. He is a very popular tennis player. Therefore, I ought to

change my shampoo to Rejoice. 12. Anyone who supports revolution has a

vision of the future, for the reason that if a person has no vision of the future

he/she could not possibly support revolution. 13. There are more laws on the

books today than ever before, and more crimes are being committed than

ever before. Therefore, to reduce crime we must eliminate the laws. 14. All

university lecturers are entirely hypocrites, just look at Professor Fox. 15. We

already have the law that requires motorcyclists to wear helmets, and the

law that requires all front passengers to wear belts. The government is now

proposing law to prohibit smoking in public areas. I don't think we should let

government step in and take away our rights. Once they get started, you

never know where they will stop. Are we going to let the government have

complete control of our lives?