

Introduction to Logical Reasoning

Problem Set #3: Diagramming Arguments

Although I strongly suggest that you write out answers to all these problems, you do *not* have to turn in any written responses. You do, however, need to be prepared to do these types of problems, for questions on the weekly quizzes and exams will primarily be drawn from the problem sets. The solutions to these problems will be provided, so you can check your own work and seek help from me as necessary.

We will devote considerable time to these types of problems during the next in-class workshop. In order to make that workshop productive, please make a solid start on them. That way you can use the workshop to address the difficulties you are facing.

If you do the extra credit logic puzzle, you must email me your solution by Sunday, September 15th at 12:00PM (noon). Late extra credit will not be considered, no exceptions.

Instructions

Each of the following problems presents an argument. For each argument, (1) circle and denote with a C the argument's main conclusion; (2) underline and number each premise and sub-conclusion (if any); and (3) arrange these into an argument map that faithfully represents the argument as given. It is okay if you just put a label into each box and not write out the full statement.

For each argument map, put boxes around the statements and use arrows to indicate inferential support, arranging these in a clear way that is visually easy to follow. Remember that there is a difference between (A) *dependent* claims that *together* support another claim and (B) *independent* claims that *separately* support another claim.

Problems

- I shouldn't take physics this semester. My course load is already too heavy. There's no room for the course in my schedule. And I don't like physics.
- The president is soft on the environment. He has weakened clean-air regulations and lifted restrictions on logging in the West.
- Congressman Porkbarrel is either dishonest or incompetent. He's not incompetent, though, because he's expert at getting self-serving legislation through Congress. I guess he's just dishonest.
- If an individual in a coma is no longer a person, then giving him a drug to kill him is not murder. Such an individual is in fact not a person. Therefore, giving him the drug is not murder.
- "The City Council deserves the gratitude of all New Yorkers for introducing a bill to ban the use of cell phones in places of public performance. . . . These rules may be hard to enforce, but so are bans on littering, auto horn honking and other quality-of-life offenses. By changing the law, the city will send a clear message that cell phone abuse is not just an etiquette issue but robs audience members of their right to enjoy the performance they paid for." [Letter to the editor, *New York Times*, November 28, 2002]
- If Marla buys the house in the suburbs, she will be happier and healthier. She is buying the house in the suburbs. So she will be happier and healthier.
- If you gain too much weight, your blood pressure will increase. If your blood pressure increases, your risk of stroke or heart attack rises. Therefore, gaining too much weight can increase your risk of stroke and heart attack.
- "Grow accustomed to the belief that death is nothing to us, since every good and evil lie in sensation. However, death is the deprivation of sensation. Therefore . . . death is nothing to us." [Epicurus]
- "A cause-and-effect relationship is drawn [by those opposed to pornography] between men viewing pornography and men attacking women, especially in the form of rape. But studies and experts disagree as to whether any relationship exists between pornography and violence, between images and behavior. Even the pro-censorship Meese Commission Report admitted that the data connecting pornography to violence was unreliable." [*Free Inquiry*, Fall 1997]
- The existence of planets outside our solar system is a myth. There is no reliable empirical evidence at all showing that planets exist outside our solar system.
- If Li Yang gets a high score on her test, she will have a perfect grade point average. If she gets a low score, she will drop out of school. She will get a high score on the test, so she will have a perfect grade point average.
- Most atheists are liberals, and George is an atheist. Therefore, George is probably a liberal. Therefore, George is probably in favor of increased welfare benefits because most liberals are in favor of increased welfare benefits.
- Bill is a student at Yale. No student at Yale has won the Nobel Prize. Therefore, Bill has not won the Nobel Prize.
- "An international agreement proscribes the use of gas and so germ warfare must be developed." [Germaine Greer, *The Female Eunuch*]
- The only valid reasons for dishonorably discharging someone from the Army are health problems and violations of Army regulations. So if Amal says that he was dishonorably discharged for simply being gay, he is lying or is mistaken. He is not lying. So he is mistaken.
- "It is clear that archaeologists have not yet come to terms with dowsing [the alleged ability to detect underground water or treasure by paranormal means]. Where it has been the subject of tests, the tests have been so poorly designed and executed that any conclusion whatsoever could have been drawn from them. The fact that such tests are usually carried out only by researchers with a prior positive view of dowsing means that the conclusions will likely also be positive. The normal processes of peer review and scholarly discussion have also failed to uncover the lack of properly controlled test conditions in such studies as those of Bailey et al. and Locock, causing a generation of students and general readers in the United Kingdom, at least, to remain under the impression that the reality of archaeological dowsing had been all but confirmed by science." [*Skeptical Inquirer*, March/April 1999]
- There are at least two main views regarding the morality of war. Pacifism is the view that no war is ever justified because it involves the taking of human life. Just-war theory is the view that some wars are justified for various reasons—mostly because they help prevent great evils (such as massacres, "ethnic cleansing" or world domination by a madman like Hitler) or because they are a means of self-defense. I think that our own moral sense tells us that sometimes (in the case of World War II for example) violence is occasionally morally justified. It would be hard for anyone to deny that a war to prevent something like the Holocaust is morally right.

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18. Some say that those without strong religious beliefs—nonbelievers in one form or another—cannot be moral. But millions upon millions of people have been nonbelievers or nontheists and yet have produced some of the most noble and most morally principled civilizations in history. Consider the Buddhists of Asia and the Confucianists of China. Consider also the great secular philosophers from the ancient Greeks to the likes of Bertrand Russell and John Searle of the twentieth century.
19. Either Maggie, Jose, or Ling broke the window. Jose couldn't have done it because he was studying in his room and was observed the whole time. Maggie couldn't have done it because she was out of town at the time and has witnesses to prove it. So the thief had to be Ling.
20. The picnic will probably be spoiled because there is a 90 percent probability of rain.
21. The Golden Gate Bridge will probably be attacked by terrorists within the next two years. The latest intelligence reports from the Justice Department confirm this prediction. Plus terrorists have already stated publicly that they intend to destroy various symbolic structures or monuments in the United States, including Mount Rushmore and the Golden Gate.
22. We shouldn't pay Edward an allowance because he never does any work around the house, and he will probably just waste the money because he has no conception of the value of anything.
23. The dominant characteristic of sprawl is that each component of a community—housing, shopping centers, office parks, and civic institutions—is segregated, physically separated from the others, causing the residents of suburbia to spend an inordinate amount of time and money moving from one place to the next. And since nearly everyone drives alone, even a sparsely populated area can generate the traffic of a much larger traditional town.
24. "At any cost we must have filters on our Ypsilanti Township library computers. Pornography is a scourge on society at every level. Our public library must not be used to channel this filth to the people of the area." [Rob. J. and Joan D. Pelkey, *The Ann Arbor (Michigan) News*, 3 February 2004]
25. "At his best, Lyndon Johnson was one of the greatest of all American presidents. He did more for racial justice than any president since Abraham Lincoln. He built more social protections than anyone since Franklin Roosevelt. He was probably the greatest legislative politician in American history. He was also one of the most ambitious idealists. Johnson sought power to use it to accomplish great things." [Alan Brinkley, "The Making of a War President," *The New York Times Book Review*, 20 August 2006]
26. Married people are healthier and more economically stable than single people, and children of married people do better on a variety of indicators. Marriage is thus a socially responsible act. There ought to be some way of spreading the principle of support for marriage throughout the tax code. [Anya Bernstein, "Marriage, Fairness and Taxes," *The New York Times*, 15 February 2000]
27. "Vacuum cleaners to insure clean houses are praiseworthy and essential in our standard of living. Street cleaners to insure clean streets are an unfortunate expense. Partly as a result, our houses are generally clean and our streets generally filthy." [J. K. Galbraith, *The Affluent Society*, 1960]
28. "The argument is simple. We are part of Europe. It affects us directly and deeply. Therefore we should exercise leadership in order to change Europe in the direction we want." [Tony Blair, reported by Alan Cowell in the *The New York Times*, 9 December 2001]
29. "California's 'three strikes and you're out' law was enacted 10 years ago this month (March, 2004). Between 1994 and 2002, California's prison population grew by 34,724, while that of New York, a state without a 'three strikes' law, grew by 315. Yet during that time period New York's violent crime rate dropped 20 percent more than California's. No better example exists of how the drop in crime cannot be attributed to draconian laws with catchy names." [Vincent Schiraldi, "Punitive Crime Laws," *The New York Times*, 19 March 2004]
30. "No one means all he says, and yet very few say all they mean, for words are slippery and thought is viscous." [Henry Adams, *The Education of Henry Adams*, 1907]
31. "The first impression becomes a self-fulfilling prophesy: we hear what we expect to hear. The interview is hopelessly biased in favor of the nice." [Malcom Gladwell, "The New-Boy Network," *The New Yorker*, 29 May 2000]
32. "No government can ever guarantee that the small investor has an equal chance of winning. It is beyond dishonest to pretend that rules can be written to prevent future financial scandals. No set of regulations can insure fairness and transparency in the [securities] markets." [Lester Thurow, "Government Can't Make the Market Fair," *The New York Times*, 23 July 2002]
33. "An outstanding advantage of nuclear over fossil fuel energy is how easy it is to deal with the waste it produces. Burning fossil fuels produces 27,000 million tons of carbon dioxide yearly, enough to make, if solidified, a mountain nearly one mile high with a base twelve miles in circumference. The same quantity of energy produced from nuclear fission reactions would generate two million times less waste, and it would occupy a sixteen-meter cube. All of the high level waste produced in a year from a nuclear power station would occupy a space about a cubic meter in size and would fit safely in a concrete pit." [James Lovelock, *The Revenge of Gaia: Earth's Climate Crisis and the Fate of Humanity*, 2006]
34. "Why decry the wealth gap? First, inequality is correlated with political instability. Second, inequality is correlated with violent crime. Third, economic inequality is correlated with reduced life expectancy. A fourth reason? Simple justice. There is no moral justification for chief executives being paid hundreds of times more than ordinary employees." [Richard Hutchinsons, "When the Rich Get Even Richer," *The New York Times*, 26 January 2000]
35. "Genes and proteins are discovered, not invented. Inventions are patentable, discoveries are not. Thus, protein patents are intrinsically flawed." [Daniel Alroy, "Invention vs. Discovery," *The New York Times*, 29 March 2000]
36. "A growing number of Japanese don't want to eat whale meat. And if they won't eat it they won't buy it. And if they won't buy it, say goodbye to Japanese whaling." [Reported in *Asahi Shimbun*, April 2002]
37. "Sin memoria, no hay justicia. Sin justicia, no hay futuro." [*Consejo Juvenil Sionista Argentino*, 18 July, 2002]
38. "Since Grover Cleveland has a terrific public record, but a blemished private life, and since his opponent, James G. Blaine, has a storybook private life but a checkered public record, why not put both where they perform best—return Blaine to private life, keep Cleveland in public life." [Cleveland's "spin doctor", 1884]

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39. "Wars don't solve problems; it creates them," said an Oct. 8 letter about Iraq. World War II solved problems called Nazi Germany and militaristic Japan, and created alliances with the nations we crushed. The Revolutionary War solved the problem of taxation without representation, and created the United States of America. The Persian Gulf War solved the problem of the Iraqi invasion of Kuwait. The Civil War solved the problem of slavery. These wars created a better world. War is the only way to defeat evil enemies with whom there is no reasoning. It's either us or them. What creates true peace is victory." [Keith Kraska, "Necessary Wars," *The New York Times*, 15 October 2002]
40. "He who disobeys us is, as we maintain, thrice wrong; first, because in disobeying us he is disobeying his parents; secondly, because we are the authors of his education; thirdly, because he has made an agreement with us that he will duly obey our commands." [Plato, *Crito*]
41. "The reality is that money talks. Court officers, judges and juries treat private lawyers and their clients differently from those who cannot pay for representation. Just as better-dressed diners get prime tables at a restaurant, human nature dictates better results for those who appear to have money." [Desiree Buenzle, "Free Counsel and Fairness," *The New York Times*, 15 January 2007]
42. "The town of Kennesaw, GA passed a mandatory gun ownership law, in 1982, in response to a handgun ban passed in Morton Grove, IL. Kennesaw's crime rate dropped sharply, while Morton Grove's did not. Criminals, unsurprisingly, would rather break into a house where they aren't at risk of being shot. . . . Criminals are likely to suspect that towns with laws like these on the books will be unsympathetic to malefactors in general, and to conclude that they will do better elsewhere. To the extent that's true, we're likely to see other communities adopting similar laws so that criminals won't see them as attractive alternatives. [Glenn Reynolds, "A Rifle in Every Pot," *The New York Times*, 16 January 2007]

Note: There may a lot of exercises here. Do not feel obligated to do all of them. I often assign many exercises so that you have plenty of opportunities to practice the skills these exercises are trying to impart. I suggest doing just enough of them so that you are confident that you could use these skills on a quiz or an exam.

Extra Credit Logic Puzzle

On September 1, 2013, there was a murder on the Qatar Airways flight to Washington, D.C.! This was a training flight, so the only people on the plane were the flight crew, consisting of Rayhan, Mohammed, Ayah, Hafsa, and Reema. Today it is September 16, 2012. The following statements are known to be true:

1. One member of the flight crew shot and killed one of the other four.
2. The murderer is Reema's twin. They were born in Doha and grew up together there.
3. Last year, Hafsa smoked sheesha every weekend.
4. Yesterday, Ayah asked Rayhan if she could fly the new airplane Rayhan bought five days ago.
5. Mohammed considered being a falcon breeder in North Africa before he moved to Doha from Egypt four months ago.
6. The murderer had his or her leg amputated two days ago.
7. Rayhan met Reema for the first time one month ago.
8. Rayhan and Ayah once flew Rayhan's old plane together.
9. Reema has been in seclusion since the crime.
10. Hafsa biked from Doha to Dukhan back to Doha yesterday with one of the innocent persons.

Question: Which one of the group committed the murder? Which one was the murder victim?

To receive full credit you must justify your answer with a logical argument showing why you are 100% right. That is to say, this question has a definitive answer that can be justified without *any* guessing on your part.