

Exercise 5.1

(A)

1. Yes, housesitter did not water the plants, causing them to die.
2. No.
3. No.
4. Yes. Me scratching poison ivy rash causes them to spread.
5. Yes. The boy causes the balloon to burst.
6. Yes. Drinking coffee causes me to be happy.
7. No. (Just explaining the facts, doesn't indicate any causality between germs and sickness, even though there might be such relation)
8. Yes. Me trying to handle that hornet's nest causes me to get stung all over the face and hands.
9. Yes. The politician's smug demeanor causes us all want to punch him in the neck.
10. No.
11. No. (Just describing the facts)
12. No.

(B)

1. If the house sitter had watered the plants, they would not have died.
2. No.
3. No.
4. Had I not scratching poison ivy rash, they would not have spread.
5. If the boy hadn't try to burst the balloon, the balloon would not have burst.
6. Had I not drinking coffee, I would not have been happy.
7. No.
8. Had I not trying to handle that hornet's nest, I would not have gotten stung all over the face and hands.
9. Had the politician not showing smug demeanor, we would not have wanted to punch him in the neck.
10. No
11. No
12. No

(C)

1. No. Writing 'rr' is part of writing 'referred'
2. Yes. Eating big slice of cake and getting sick is non-overlapping events.
3. No. Being kind is one part of Paul's good character.
4. No. "Painting the front of the house" is part of "Painting the entire house"
5. No. Lose of various territories is the same as saying "reducing in size"

Exercise 5.2

1. Context: you thought you got a B, the professor explain to you that you got an A because you got the right answer on 9 out of the 10 questions. Other relevant causes: the A cutoff is 90%.
2. Context: you and your brother take the same class, you get an A but your brother get an B. Your parents explain to you and your brother. Other relevant causes: you cheated on the exam so that you could get an A.
3. Context: your friends in different section complains to you that you could get an A because you have a good teacher. Other relevant causes: you are actually hardworking so get a good score.
4. Context: one of classmates question your score by thinking that the professor made a mistake in grading. Other relevant causes: you will get an A because of you have high quality homework (so that even if perform bad on exam, it will still be an A)
5. Context: You explain to your parents that the reason why you get a failing grade. Other relevant causes: you simply didn't work hard enough to learn all the relevant materials covered.
6. Context: The teacher in the introductory physic courses explain one hypothesis of the formation of the universe. Other relevant causes: the god created the universe.
7. Context: Your neighbor explains why some shingles blew off the roof. Other relevant causes: The shingles naturally goes off the roof since the roof is old.
8. Context: A conversation about what makes a successful business person. Other relevant causes: she has good education.
9. Context: A conversation about what makes a successful business person. Other relevant causes: she is smart.
10. Context: Discussion about crimes, jails, and legislations. Other relevant causes: People go to jail because of political prosecution.
11. Context: Discussion about why people commit crimes. Other relevant causes: People have to commit crime otherwise they cannot survive (basic food / water / etc.)
12. Context: Discussion about why people commit crimes. Other relevant causes: People have to commit crime otherwise they cannot survive (basic food / water / etc.)

Exercise 5.3

2. I could find all the children that display certain symptom of lead poisoning, and investigate the toys the used, the water they drink, and whether their house uses lead paint to see if there are anything in common. (Method of agreement). If after the contaminated water has been eliminated, there are still lead poisoning, that means the contaminated water is not only the sole cause of the lead poisoning in this area.
5. Use the player with a different new DVD. If this DVD plays, then it's probably the DVD's fault (method of difference), otherwise it's probably the player's fault. (Method of agreement). We could put original DVD into different player, if it plays, then it's probably the player's fault (method of difference), otherwise it's probably the DVD's fault (method of agreement).

Exercise 5.4

(A)

1. Ice cream sales causes murders. Confounds: High temperature causes the increase of ice-cream sales and more violence, hence murders.
2. Being a math major students causes high GRE quantitative score. Confounds: People with better quantitative ability will choose to study math and get a better GRE quantitative score.
3. Watching violent television in childhood causes people to be more violent as they grown up. Confounds: people who are genetically predisposed to be violent will more likely to watch violent television in childhood and become violent when they are adult.
4. Owning guns causes increased likelihood of being shot. Confounds: people who do illegal activity are more likely buy guns, and also more likely being shot in these activities.
5. Teaching 'abstinence-only' sex education causes higher rates of teen pregnancy. Confounds: Higher rates of teen pregnancy causes the counties to teach 'abstinence-only' education.
6. Coffee consumption causes insomnia. Confounds: People who have to sleep irregularly due to work usually drinks coffee, and more likely to get insomnia.
7. Work-related stress causes insomnia. Confounds: People drinks coffee will have more work-related stress and will get insomnia.
8. Anti-depressant X causes improved mood in patients. Confounds: Placebo effects. People who receives just receive 'placebo' treatment will also achieve effect.
9. Success in math in kindergarten causes success in math in high school. Confounds: People who have better reasoning ability will success in both kindergarten and high school.
10. Lung cancer rates are correlated with smoking. Confounds: People working hard has higher cancer rates (therefore lung cancer rates) and will usually get addicted to smoking.
11. Higher mean income in the school district causes increased academic success rate. Confounds: Parents who are more successful economically (more income) generally tends to have more time to spend with their children so that they could perform better.
12. Heavy alcohol consumption causes hangover. Confounds: People who are more likely to get addiction to alcohol are genetically predisposed to have lower resistance to alcohol. So that they will drink more alcohol, and also will more likely get hangover when they drink alcohol.
13. Higher level of education in parents causes improved academic performance. Confounds: Parents who have better parenting methodology, which could teach their children to perform better academically, generally have high level of education.
14. Higher human-caused carbon emissions will cause higher global average temperature. Confounds: It's a coincidence. There is a cycle in the Earth's temperature that cause the global average temperature goes up and down. Human-caused carbon emission increased along with the Earth's temperature cycle (which is in it's 'up' interval).
15. Traffic congestion around large arena or stadiums causes national alcohol sales. Confounds: National alcohol sales cause increased traffic to buy the alcohol, and this causes traffic congestion.

(B)

1. Death penalty does not cause decrease in crime rate. Observational Study without controls (Retrospective). It's relatively weak. We need to see the serious crime rates, and maybe the jurisdiction system and more thorough data about all different kinds of crime.
2. Aspartame causes precancerous tumors. Interventional study (method of difference). It's relatively strong. We probably need more sample to be collected, 22 + 23 is not a convincing amount of data.
3. DEET is better mosquito repellants than picaridin. Interventional study. It's weak, there is only one person being tested. Also, the situation on left-arm might be different than right-arm (the speaker uses his right arm more so that it attracts more mosquito). So more test on different people is needed (more data)
4. DEET is better mosquito repellants than picaridin. Interventional study. It's also weak, changing from one person to two people doesn't help. The sample size is too small. We need more data.
5. A Mediterranean diet might reduce your risks of heart disease. Observational study with controls (Retrospective). It's relatively weak. There might also be other condition that needs to be considered like climate, local environment, and so on. We need more information on that (and find data where they are the same) to determine the hypothesis.

Exercise 5.5

1. (i) your children might get depressed if your pressure them to hard, and in this case they will not have a happy life. (ii) Getting straight A doesn't mean they will get into a very good college. Graduate doesn't guarantee they will find a good job. Successful in getting a good job doesn't mean they will have a happy life. The job they find might stress themselves out. (iii) This paragraphs has 4 causations, and they are not very plausible as I pointed out.
2. (i) Spending more money are goods and services might cause inflation, and that might cause the average people change their currency into assets, and the money circulating in the economy will not increase, and the economy will not become better. (ii) Having more money doesn't mean people will spend it. If people are pessimistic about the future of the economy and the country, they will try to save their money rather than spending it. (iii) This paragraphs has 6 causations, and they are not very plausible as I pointed out.
3. (i) Raise taxes on the rich might cause them to flee the country with their money, this could decrease the money in the economy, which make it worse. (ii) Making infrastructure better does not cause the economy to become better directly, this needs some professional knowledge to answer. (iii) It has few causations, and they are not very plausible as I pointed out.
4. (i) You might hurt yourself if there is a gun in your house (ii) Showing the gun might not scare them off, if they also have guns. (iii) It has few causations, and they are somewhat plausible, but it needs more scrutiny.