

1.8.1. Argument Evaluation Problems

“If you are able, refute me;
Draw up your arguments and take your stand.”

Job 33:5

A. For the following argument, and possible situations listed below it, **circle the letter** of each possible situation that would count as a **validity counterexample** for this argument. Based on your answers about these situations, state whether you think the argument is **valid** or **invalid**.

Argument:

1. 10 Surf Club members showed up for the Logic exam.
 2. 10 Chess Club members also showed up for the Logic exam.
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∴ 3. All the students in the class showed up for the Logic exam.

Possible Situations:

Situation A. There are 20 students in the class – 10 Surf Club members and 10 Chess Club members – and they all showed up for the Logic exam.

Situation B. There are 30 students in the class – 10 Surf Club members, 10 Chess Club members, and 10 anarchists who are opposed to all clubs; and only the anarchists skipped the Logic exam.

Situation C. There are 20 students in the class – 10 Bonsai Gardening Club members and 10 Civil War Re-enactment Club members – and they all showed up for the Logic exam.

Situation D. There are 30 students in the class – 20 Surf Club members and 10 Chess Club members – and everyone showed up for the exam except 10 of the Surf Club members.

(Feel free to use a calculator to answer D.)

B. Put the following argument in **standard form**. Then state, for each of the four possible situations listed below, which (if any) qualify as a **validity counterexample** for this argument.

Argument:

Who rigged the ballot on the “No Bowling” referendum? Well, Letitia is outgoing and always dresses in white. On the other hand Lucretia is quiet and always dresses in black. And everyone in Letitia’s sorority says she could never do something as dishonest as rigging the ballot. So Lucretia must have rigged the ballot.

Possible Situations:

Situation A. Letitia is outgoing and dresses in white, whereas Lucretia is quiet and dresses in black. But even though Letitia’s sorority sisters swear she could never do such a thing, in fact she rigged the ballot in exchange for a cash payment from the bowling lobby.

Situation B. Letitia is outgoing and dresses in white, whereas Lucretia is quiet and dresses in black. And Letitia’s sorority sisters swear she would never rig a ballot. And in fact she didn’t – it was Lucretia who rigged the ballot, because goths and bowlers are sworn enemies.

Situation C. Both Letitia and Lucretia are quiet and dress in black. But even though Letitia’s sorority sisters swear she could never do such a thing, in fact she rigged the ballot because Dr. Slim was blackmailing her.

Situation D. Letitia is outgoing and dresses in white, whereas Lucretia is quiet and dresses in black. Moreover, Letitia’s sorority sisters swear she would never rig a ballot. And in fact Deacon rigged the ballot, as a symbolic way of sticking it to the man.

C. Put the following argument in **standard form**. Then state, for each of the four possible situations listed below, which (if any) qualify as a **validity counterexample** for this argument.

Argument:

The home wireless network was down all afternoon, but now it's working again. Now, Jake said earlier that he'd fix the problem. And he was home all afternoon. That shows that Jake must have fixed the wireless network.

Possible Situations:

Situation A. The home wireless network was down all afternoon, and Jake said he'd fix the problem. Now the network's working again. But Jake hung out in the house all day reading surfing magazines while Lucretia fixed the wireless network.

Situation B. The home wireless network was down all afternoon, and Jake said he'd fix the problem. Now the network's working again. And in fact Jake stayed home all afternoon working on the problem until he had it fixed.

Situation C. The home wireless network was down all afternoon, and Jake said he'd fix the problem. Now the network's working again. But Jake was off surfing all afternoon with Neko and Jack, and forgot about the network. Fortunately the problem was with the internet company, and they fixed it on their end.

Situation D. The home wireless network was down all afternoon, but now it's working again. But even though Jake didn't say he'd fix it, he stayed home all afternoon working on it and finally did fix it.

D. Put the following argument in **standard form**. Then state, for each of the four possible situations listed below, which (if any) qualify as a **validity counterexample** for this argument.

Argument:

Jack speaks French fluently. Moreover, he buys baguettes, those long French loaves of bread. Now, people from France speak French fluently and regularly buy baguettes. Hence Jack must be from France.

Possible Situations:

Situation A. Jack speaks French fluently and buys baguettes. And both of these activities are common to people from France. And Jack is indeed from France.

Situation B. Jack does speaks French fluently and buy baguettes – both activities common to people from France. But Jack is from Thailand and does regular business in France, whose language and bread he enjoys.

Situation C. Both French-speaking and baguette-buying are common to the French people. But Jack is from Thailand, speaks only Thai and a bit of Japanese, and hates baguettes so much that he never buys them.

Situation D. People from France do speak French fluently and regularly buy baguettes. And while Jack is from France and speaks French fluently, he doesn't buy baguettes because he's avoiding carbohydrates.

E. For each of the following arguments, put the argument into **standard form**; then try to think up a **validity counterexample** for that argument.

1. Dr. Slim has had a runny nose for the last couple of days. His eyes have also been watery, and his throat has been sore. So he must have some sort of allergy.

2. Whoever broke into the cafeteria stole a ham and 10 pounds of shrimp. So Jake can't be the burglar, given that he's allergic to shrimp.

3. I don't care what you say – I really think Josie is in love with Juan. Why? Because she always wants to talk about him. And she gets very excited when he is due for a visit. She even blushes when you ask her about him.

– Trudy Govier, **A Practical Study of Argument** Third Edition p. 10

4. The atmosphere of Mars has only trace elements of oxygen. But since humans and all other vertebrates require oxygen to live, this shows that there cannot be life on Mars.

5. Elvis said that he lost his suit. So he must have sued someone but lost in court.

6. Dr. Slim has calculated that the charity could save 5% on expenses if it watered down the soup it serves in its soup kitchens, and he recommends making the change immediately. But Barbie says this recommendation is wrong. So if what Barbie says is true, Dr. Slim must have made an error in his calculations.

7. Suki said she loves fish, so she'll enjoy a visit to the aquarium

8. Every logic book I have ever read was written by a woman. And that means all logicians are women.

– Trudy Govier, **A Practical Guide to Argument** Third Edition p. 36

9. The law forbids murder, except in cases of self-defense. So since Jack killed a housefly that wasn't hurting him, what he did was illegal.

F. We listed two requirements for an argument to be convincing:

1. The premises of the argument must be **true**.
2. The argument must be **valid**.

So an argument failing either requirement will be *unconvincing*. An argument can therefore be accused of being unconvincing because (1) **one or more premises are false**, or because (2) **the argument is invalid**, or (3) because of both of these. And recall that the evidence for an argument being invalid will be presenting a **validity counterexample** – a possible way of having the premises true, but the conclusion still false.

In each of the following examples, an argument is accused of being unconvincing. For each case, **decide if the argument is being criticized for (i) having a false premise, (ii) having a validity counterexample, or (iii) both**.

1. **Aquinas:** Look, ordinary objects in the universe can't cause themselves to come into existence: people need parents to exist, chairs need carpenters, new drugs need chemists, dents require collisions, and so on. And every single ordinary thing does require *some* cause – it can't just come into existence out of nowhere. But this chain can't just trace back forever. Thus there had to be some original cause, outside of ordinary things, that started the whole chain of objects to exist – what we call "God".

Barbie: That's not a good argument. Whose says the chain can't just go back forever? I think it's perfectly possible for that to happen. Likewise, for all we know ordinary things may sometimes just randomly come into existence, without any cause.

The argument is being criticized for:

- ☐ having one or more false premises
- ☐ having a validity counterexample (being invalid)
- ☐ both (false premise and invalid argument)

2. **Abelard:** Surely God must exist. After all, the world exhibits a high degree of order, and order requires a designer.

Barbie: No way! It's simply not true that order always requires a designer. Look, somebody's going to draw a royal flush at the casino this week, but it will have come about entirely by chance.

The argument is being criticized for:

- ☐ having one or more false premises
- ☐ having a validity counterexample (being invalid)
- ☐ both (false premise and invalid argument)

3. **Jack:** Jake is a scruffy goof who hasn't had a job in months. Now we know that whoever broke into the cafeteria stole professional equipment worth several hundred dollars – enough money to buy a slacker several weeks' worth of drugs and Twinkies®! Clearly it was Jake who committed the break-in.

Kitty: Just because Jake would stand to benefit from a burglary doesn't mean he actually did it. For instance, Letitia would have profited from stealing that equipment just as much as Jake. It could be that she paid for her fancy new tanning bed by stealing and selling the cafeteria equipment, and Jake was an innocent bystander who happens not to have had a job or a shave recently.

The argument is being criticized for:

- ☐ having one or more false premises
- ☐ having a validity counterexample (being invalid)
- ☐ both (false premise and invalid argument)

4. **Mishima:** This coin conducts electricity. And all silver objects conduct electricity. So that shows that the coin must indeed be made of silver.

Neko: Sheesh – my gerbil could make a better argument! You *say* the coin conducts electricity, but you provide no evidence; I'll bet it doesn't conduct electricity at all. Anyway, even if it *does* conduct electricity, that doesn't show that it's silver – because silver is only one of many things that conduct electricity. Maybe it's made of copper, and *that's* why it conducts electricity.

The argument is being criticized for:

- ☐ having one or more false premises
- ☐ having a validity counterexample (being invalid)
- ☐ both (false premise and invalid argument)

5. **Rex:** Inflation and unemployment are inversely related – that is, whenever unemployment is low, inflation is high, and whenever unemployment is high inflation is low. So, given that unemployment looks to remain high for the foreseeable future, we can safely conclude that inflation will stay low.

Dr. Slim: I'm not convinced. As the stagflation of the Seventies showed us, inflation and unemployment can both go up; so they're not **always** inversely related.

The argument is being criticized for:

- ☐ having one or more false premises
- ☐ having a validity counterexample (being invalid)
- ☐ both (false premise and invalid argument)

6. **Suki:** You ought to drop what you're working on and do my homework for me right now. After all, it's a principle of ethics that if you can do something to make another person's life better, then you are morally obliged to do it. And doing my homework for me would definitely make my life better.

Trixie: Nice try, Suki! If you really believed there was an ethical requirement to do anything that makes someone's life better, you'd believe that you should donate your liver and heart right now to people who need transplants. But you don't believe you're required to do that. So you have to admit, it's **not** an ethical requirement to do anything whatsoever that would improve another person's life.

The argument is being criticized for:

- ☐ having one or more false premises
- ☐ having a validity counterexample (being invalid)
- ☐ both (false premise and invalid argument)

7. *Background: people arguing for **innate knowledge** – knowledge built into the mind, not learned from experience – sometimes support their view by noting that certain claims are agreed to by everyone. John Locke (1632-1704) here criticizes this 'universal consent' argument for innate ideas.*

“There is nothing more commonly taken for granted than that there are certain principles... universally agreed upon by all mankind: which therefore, they argue, must needs be the constant impressions which the souls of men receive in their first beings, and which they bring into the world with them, as necessarily and really as they do any of their inherent faculties.

This argument, drawn from universal consent, has this misfortune in it, that if it were true in matter of fact, that there were certain truths wherein all mankind agreed, it would not prove them innate, if there can be any other way shown how men may come to that universal agreement, in the things they do consent in, which I presume may be done.

But, which is worse, this argument of universal consent, which is made use of to prove innate principles, seems to me a demonstration that there are none such: because there are none to which all mankind give an universal assent.”

– John Locke, **An Essay Concerning Human Understanding** (1690), Book I Chapter 2; reprinted in Beakley and Ludlow, eds., **The Philosophy of Mind**: Classical Problems/ Contemporary Issues, 2nd Edition, p. 705

The argument is being criticized for:

- ☐ having one or more false premises
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