Preamble to Ch. 3: Knowledge and Opinion

When a speaker in everyday conversation gives an argument, they are trying to convince their audience by offering reasons that support a conclusion. The audience would not and should not change their mind by hearing mere opinion.

Dfn 0.1. **Opinion**: A person has an opinion that q just in case they believe q on the basis of little or no evidence i.e. they can not give a **sound** or **cogent** argument for their belief

1. On this day, two years from now, the temperature will be exactly 78F.
2. Miami Heat will win seven basketball championships.
3. Aliens have visited the Earth.
4. Vanilla ice cream is better than chocolate.

There is very little, if any, evidence for these beliefs, and that's why they are mere opinions. However, there are some differences between them. The first three express objective facts, while the fourth does not. For example, even though I don't have evidence about the exact temperature on this day two years for now will be, there is still a fact of the matter that determines whether my opinion is true or false. The fact that the temperature will (say) 85F makes my opinion false. On the other hand, there is no fact of the matter that settles whether vanilla ice cream is a better flavor than chocolate. This belief is a subjective preference, and so it is not even true or false.

If a person has an objective belief, and that belief is true, and in addition can provide evidence in support of that belief then that person knows. that is to say by a sound or cogent argument, is a belief that is known.

Dfn 0.2. **Knowledge**: a person P knows that q just in case
i) P believes that q
ii) q is true
iii) P has a reason for q i.e. P can give a **sound** or **cogent** argument for q

Examples

1. I know that I have been on campus every weekday this past week.
2. I know that I had pizza last night.
3. I know that $a^2 + b^2 = c^2$
4. I know that global temperatures are rising.

Kinds of Evidence

1. by direct observation (inductive arguments)
2. by appeal to experts, for example, scientists, doctors (inductive argument)
3. by appeal to mathematical proof (deductive), a.k.a. 'a priori' knowledge
4. by appeal to definition (deductive)

Each of these kinds of evidence appears as a premise in an argument. So, in order to get knowledge, we have to have an argument, which identifies reasons that support the conclusion, where the premises are based on any one of these types of evidence. But, we would not be satisfied with just any valid argument. Rather, what we need is a sound argument — a valid argument with true premises — or a cogent argument — a strongly inductive argument with true premises — that ensures that the conclusion is either true or probably true.

Are moral belief mere opinion or knowledge?

1. It is morally wrong not to save a drowning baby for the sake of your clothes
2. This situation is analogous to the tradeoff between spending money on clothes and donating to a charity that saves the life of a child
3. So, it is morally wrong not to give money to charity

Although this is somewhat controversial, the above argument shows that we can indeed come to moral conclusions by reasoning. If the argument is a good one then the premises of that argument will provide reasons for the conclusion, and hence the moral belief – it is morally wrong not to give to charity – will be properly supported and, so count as moral knowledge.

Commitments of Accepting or Rejecting Arguments

- There may be more than one argument that supports a conclusion
- If we reject an argument as **invalid** or **inductively weak**, we do not thereby show that the same conclusion cannot be supported by a different argument.
- If we reject an argument, it does not mean that we support the opposite view.
- Rejecting an argument only means that that argument does not work.
- If an argument is **sound** or **cogent** then the conclusion **must be** accepted.

Example

1. If God existed then he would prevent evil.
2. But, there is evil in the world (e.g. Hitler, Tsunamis, etc.)
3. So, God does not exist.

If by examining this argument you think that the premises are true, and the argument is valid, then you must buy the conclusion. It would be inconsistent (and irrational) if you believe all the premises, believe that the conclusions follows from the premises and at the same time believe that God does exist. Rationally, you must give up the belief that God exists or reject the argument: either the premises of the argument are false or it is not valid.

On the other hand, if you find that the premises are false or the argument is invalid, then what you have shown is **only** that the argument does not work. You have neither shown that the view that God does not exists is false, because there are other arguments that establish it, nor have you shown that God does exist.

1 | Fallacies in General (Ch. 3.1)

Unfortunately, most arguments are not sound or cogent and so our first task is to identify and criticize bad arguments.

Dfn **1.1.** *Fallacy: a defect in an argument that consists in something other than false premises alone. A mistake in reasoning or the creation of an illusion that makes a bad argument appear good.*

Dfn **1.2.** *Formal Fallacy: a fallacy that can be identified by merely examining the form or structure of an argument*

Dfn **1.3.** *Informal Fallacy: a fallacy identified by examining the content (and not the form) of the argument*

- **Eg. 1**: If plastic guns are sold to the public, then terrorists will carry them aboard airliners undetected. If plastic guns are sold to the public, then airline hijackings will increase. Therefore, if terrorists carry plastic guns aboard airliners undetected, then airline hijackings will increase.(Ex. 3.1.10, formal fallacy)
- **Eg. 2**: Renowned violinist Zuckerman has said, "When it comes to vodka, Smirnoff plays second fiddle to none." We must therefore conclude that Smirnoff is the best vodka available.(Ex. 3.1.5, informal fallacy)

2 | Fallacies of Relevance (Ch. 3.2)

Dfn **2.1.** *Fallacy of Relevance: an argument whose premises are logically irrelevant to the conclusion.*

- All fallacious arguments are invalid and weakly inductive
- Fallacies of relevance are not sound and not cogent, their premises are not even relevant to the conclusion. Even so, fallacies of relevance are often persuasive
- The fallacies in ch. 3.2 are all fallacies of relevance.

Dfn **2.2.** *Appeal to Force: fallacy that always involves a threat by the arguer to the physical or psychological well-being of the listener or reader who may be a single person or a group of persons*

- **E.g. 1**: Secretary to boss: I deserve a raise in salary for the coming year. After all, you know how friendly I am with your wife, and I'm sure you wouldn't want her to find out what's been going on between you and that sexpot client of yours.

Dfn **2.3.** *Fallacy to Pity: an arguer attempts to support a conclusion by merely evoking pity from the audience*

- **E.g. 1**: Taxpayer to judge: Your Honor, I admit that I declared thirteen children as dependents on my tax return, even though I have only two. But if you find me guilty of tax evasion, my reputation will be ruined: I'll probably lose my job, my poor wife will not be able to have the operation that she desperately needs, and my kids will starve. Surely I am not guilty.

Dfn **2.4.** *Appeal to People (Ad Populum): an argument that uses the audience desire to be accepted by other people to accept the conclusion*

- **E.g. 1**: Acupuncture has been used for a thousand years in China. It must work. [Fallacy Ad Populum]
- **E.g. 2**: Almost all people worldwide (90%) believe in a higher power. So, there must be a God. [Fallacy Ad Populum]

Contrast: a Sound Argument from Authority

1. Almost all scientists believe that global temperatures are rising
   ———
2. So, global temperatures are rising

- This is a good (cogent) argument because scientists are *experts* i.e. they could produce a cogent or sound argument that global temperatures are rising. By comparison, practitioners of acupuncture would not be able to do that.

Dfn **2.5.** *Argument Against the Person (Ad Hominem): This fallacy involves two arguers. One of them advances an argument, and the other then responds by directing the attention not to the argument but to the person giving the argument. The person responding commits the ad hominem fallacy.*

- **Tu quoque** ("you also" or "you too"): points to hypocrisy or corrupt nature of first arguer to discredit the argument presented

    Video Reference (3:29): http://www.youtube.com/watch?v=xVfaZzPCSFs; Al Gore is invited to talk about his book on Global Warming. Instead of examining the argument of his book, the interviewer (Matt Lauer) accuses Al Gore of hypocrisy: Al Gore profited from selling his company to Al Jazeera which is funded by oil companies but in his book he condemns all news networks including Al Jazeera for being funded by oil (at 4:20 Al Gore's hypocrisy is pointed out). Matt Lauer committs the tu quoque fallacy by directing the attention away from the argument of the book to Al Gore's own practices. This is a fallacy because whether or not Al Gore lives up to his views does not change the cogency or soundness of the argument in the book.

- **abusive**: uses verbal abuse, slander to attack arguer; E.g. Arguer: Abortion is permissible, because women should have control over their own bodies. Response: Abortion is wrong, you're an evil, evil, murderer!
    Note that to verbally abuse someone is not to physically force them or to psychologically compel them to act. The latter are used in an appeal to force.
- **circumstantial**: directs attention to the special circumstances that might cause the first arguer to take such-and-such a position: the causes or motivation of the arguer do not change the soundness/cogency of his arguments.
    E.g. The Dalai Lama argues that China has no business in Tibet and that the West should do something about it. But, the Dalai Lama just wants the Chinese to leave so he can return as leader. Naturally, he argues this way. Therefore, we should reject his arguments.

Dfn **2.6.** *Accident Fallacy: misapplication of a general rule that the particular case does not fit*

- **E.g. 1**: It is good to return things you have borrowed. Therefore, you should return this automatic rifle from the madman you borrowed it from.
- **E.g. 2**: Thou shalt not kill; therefore, you should not try to control termites in your home or fight for your country.
- The commandment "Thou shalt not kill" as used in the Bible was clearly not intended as a prohibition against all killing (e.g. in self-defense, during war, killing of animals). E.g. 2 is an attempt to justify a conclusion by extending the rule so as to include more cases then were intended.

Dfn **2.7.** *Strawman Fallacy: an argument that misrepresents an argument to more easily attack it*

Dfn **2.8.** *Missing the Point (ignoratio elenchi): the premise of an argument supports one conclusion, but a different conclusion is actually inferred.*

- **E.g. 1**: Crimes of theft and robbery have been increasing at an alarming rate lately.

The conclusion is obvious: we must reinstate the death penalty.

- To identify this fallacy, it must be possible to infer from the argument the *correct* conclusion and show that it is different from the one actually inferred
- In the example, crime increase is not a measure of the severity of crime, yet this argument draws a conclusion about the latter from an observation of former. So, it misses the point. A reasonable (correct) conclusion to infer from the premise might be that we need more police presence or a prison system that focuses on rehabilitation.

Dfn **2.9.** *Red-herring: changing the subject/central point entirely without the reader/listener noticing*

- **E.g. 1**: I should not pay a fine for reckless driving. There are many other people on the street who are dangerous criminals and rapists, and the police should be chasing them, not harassing a decent tax-paying citizen like me.

- Note distinction between straw man and red herring: a red herring is not a criticism of a distorted or misconstrued argument - it is a leading away from the original topic.

3 | Fallacies of Weak Induction (Ch. 3.3)

Dfn **3.1.** *Fallacies of Weak Induction: an argument whose premises are not strong enough to support the conclusion*

- In this section, we introduce another broad category of fallacies — fallacies of weak induction — and a number of sub-categories.

Dfn **3.2.** *Appeal to an Unqualified Authority: an argument that appeals to authority that lacks credibility (expertise)*

- **E.g. 1**: Dr. Bradshaw, our physician, thinks that the parallel universe interpretation of quantum mechanics is the best one. Because of his expertise, he must be right.
- **E.g. 2**: Old Mrs. Furguson (who is practically blind) has testified that she saw the defendant stab the victim with a bayonet while she was standing in the twilight shadows 100 years from the incident. Therefore, members of the jury, you must find the defendant guilt.

Dfn **3.3.** *Appeal to Ignorance(Argumentum ad Ignorantium): when the premises of an argument state that nothing has been proved one way or the other about something, and the conclusion then makes a definite assertion about that thing.*

- **E.g. 1**:
    1. People have been trying for centuries to provide conclusive evidence for the claims of astrology
    2. No one has ever succeed.
    3. So, astrology is a lot of nonsense.
- **E.g. 2**:
    1. People have been trying for centuries to provide conclusive evidence for the claims of astrology
    2. No one has ever succeed.
    3. So, the claims of astrology are true

Note: the fallacy holds because we are not told who the people are; if they are scientists who have attempted to get answers and have not found any relationships between planets and personality and personal events then there is some reason to think that the belief is false, but not when it's just anyone.

Dfn **3.4.** *Hasty Generalization: an argument that is based on too small a sample or a non-random sample i.e. there is a reasonable likelihood that the sample is not representative of the group*

Three questions are relevant here:

1. Is the sample large enough?
2. Is it likely that the sample generalizes?
3. Is the sample randomly chosen?

- **E.g. 1**: "Before the last election, three residents of Harlem were quoted as saying they supported Barack Obama even though they knew nothing about his policies. Obviously the issues played no role in the outcome of that election."
  this is too small sample size, so this is a hasty generalization.
- **Contrast**: "On three separate occasions I drank a bottle of Figowitz beer and found it bitter. Probably, I would find every bottle of Figowitz bitter."
  This is a small sample size, but it's likely to that this sample generalized because it's likely that all bottles of beer are produced in the same way, so this argument is **not** fallacious.
- **E.g. 2**: "One hundred voters from Orange County, California were surveyed on their choice for Governor and 68 percent said they intend to vote for the Republican candidate. Clearly the Republican candidate will be elected."
  The Orange County sample is not random sample, so the argument is a hasty generalization

Dfn **3.5.** *Weak Analogy: analogy is not strong enough to support the conclusion*

An argument by analogy usually has a structure that looks something like this.

1. A and B are similar.
2. A has a certain characteristic.
   ———————
3. So, B probably has that characteristic too.

- **E.g. 1**: No one would blame a bartender for having a few drinks on the job, but an airline pilot is no less a human being than a bartender. So, no one should blame an airline pilot for having a few drinks on the job.

Dfn **3.6.** *False Cause: The link between premises and conclusion depends on some imagined causal connection that probably does not exist.*

- **E.g. 1**: Successful business executives are paid salaries in excess of $100,000. Therefore, the best to ensure that Ferguson will become a successful executive is to raise his salary to at least $100,000.
- **E.g. 2**: The quality of education in our grade schools and high schools has been declining for years. Clearly, our teachers aren't doing their jobs well.
- **E.g. 3**: **Gambler's Fallacy**: A fair coin was flipped five times in a row, and each time it came up heads. Therefore, it is extremely likely that it will come up tails the next flip.
- Note on E.g. 3: The gambler in this example believes that the probability of a coin flip increases if he has been unlucky in the past. But, this is an error - none of the coin flips affect any other future coin flip, and we know that on average there is a 50% chance of getting heads or tails. The chance of getting heads on the next coin flip is 50% even if tails have come up the last 100 times.

Dfn **3.7.** *Slippery Slope: the conclusion rests on an alleged chain reaction and there is not sufficient reason to think that the chain reaction will actually take place*

- **E.g. 1**: I oppose all gun laws. If we had laws prohibiting guns in the workplace, this will inevitably lead to prohibitions against using guns for hunting, and even for self-defense.
- **E.g. 2**: We absolutely must not lose the war in Vietnam. If South Vietnam falls to the communists, then Thailand will fall to them. If Thailand falls to them, then South Korea will fall to them. And before you know it, all of Southeast Asia will be under communist control.
- This is a fallacy because there is no reason to think that laws prohibiting guns in the workplace would lead to adoption of other stronger gun laws.

4 | Exercises - Is there a fallacy in the argument? If so, identify the fallacy.

- **E.g. 1**: The vast majority of Americans believe that the Iraq war is morally justified. So, the Iraq war is morally justified.
  Appeal to People

- **E.g. 2**: No one has shown that ghosts are real, so they must not exist.
  Appeal to Ignorance

- **E.g. 3**: It's clear that God does not exist because science has not proven that he does.
  Appeal to Ignorance

- **E.g. 4**: Animal rights activists say that animals are abused in biomedical research labs. But consider this: Pets are abused by their owners every day. Probably 25 percent of pet owners should never get near animals. Some cases of abuse are enough to make you sick.
  Red Herring

- **E.g. 5**: Actress Annie MacDowell says that it is healthy to drink milk. But the dairy industry pays MacDowell thousands of dollars to make these ads. Therefore, we should not take her testimonials too seriously.
  Ad Hominem - Circumstantial

- **E.g. 6**: People are obligated to keep their promises. When Jessica married Tyler, she promised to stay with him for life. Therefore, she should stay with him now, even though he has become an abusive spouse addicted to gambling and drugs.
  Accident Fallacy

- **E.g. 7**: Professor Pearson's arguments in favor of the theory of evolution should be discounted. Pearson is a cocaine-snorting sex pervert and, according to some reports, a member of the Communist party.
  Ad Hominem - Abusive

- **E.g. 8**: Suppose Albert's doctor, Ana, says that because of Albert's age he is at a higher risk of heart disease if he smokes, so he should stop smoking. Earlier that day Albert saw Ana smoking and she happens to be of the same age as him. He responds, "how can you tell me to stop smoking when you smoke? I don't think I'll take your advice."
  Ad Hominem - Tu Quoque

- **E.g. 9**: At a senate hearing on global warming, Al Gore is invited and presents a long argument that global warming is occurring and that it is man-made. In response, a senator says, "How do you account for the fact that you drove down to the hearing in an SUV (a gas guzzler)?"
  Ad Hominem - Tu Quoque

- **E.g. 10**: Mickey has testified that he saw Freddy set fire to the building. But Mickey was recently convicted on ten counts of perjury, and he hates Freddy with a passion and would love to see him sent to jail. Therefore, you should not believe Mickey's

testimony
No Fallacy: a strong inductive argument

- **E.g. 11**: **Video Reference Obama vs. Keys on Homosexuality**: http://www.youtube.com/watch?v=hGOXJI-fZmQ; there are several fallacies in this video.

- **E.g. 12**: Psychology majors are incredibly ignorant about human psychology. Believe me, I know what I'm talking about: my best friend is a psych major. What an ignoramus?

- **E.g. 13**: It is clear that God doesn't exist because science has not proved that he does.
  Appeal to Ignorance

- **E.g. 14**: We absolutely must not lose the war in Vietnam. If South Vietnam falls to the communists, then Thailand will fall to them. If Thailand falls to them, South Korea will also. And before you know it, all of southeast Asia will be under communist control.
  Slippery Slope

- **E.g. 15**: The New York Times reported that one-third of Republican senators have been guilty of Senate ethics violations. But you know that's false - the Times is a notorious liberal rag.
  Ad Hominem — verbal abuse/slander

- **E.g. 16**: People who have to have a cup of coffee every morning before they can function have no less a problem than alcoholics who have to have their alcohol each day to sustain them.
  Weak Analogy: although coffee and alcohol are similar in some respects i.e. they are both substances we drink. They are not relevantly similar because to establish that necessity for a substance in the morning is a harmful addition the substance has to be harmful. But, coffee is not harmful, so it is not relevantly similar to draw the conclusion that needing coffee in the morning is bad for you.

- **E.g. 17**: In the Vietnam War, the United States had not articulated a clear rationale for fighting there, and the United States lost. Likewise, in the present war the United States has not articulated a clear rationale for fighting. Therefore, the United States will lose this war too.
  There is no fallacy: The analogy is good because although the Vietnam and Iraw wars are different, the characteristic compared is relevant to drawing the conclusion about the outcome of a war — and in so in this relevant aspect the two wars are closely related.