• By now, you should have read all of Chapter 2 (carefully!). And, after today’s lecture, you should start reading chapter 3.

• HW #1 is due today. HW #2 has been posted.

• Our first quiz is next Thursday. It will be on Chs. 1&2 (fill-in-the-blank & and short answer Q’s). More next week…

• I’ve posted a handout on “3 Causes of Irrational Belief”.

• Today: more on Rational (and Irrational) Belief
  • Reasons for belief (i.e., evidence)
  • Three possible causes of irrational belief (handout)
  • Rationality, Relativity, and Objectivity
  • Next: Chapter 3 — Well-Formed Arguments

• In the above picture, the evidence against $p$ slightly outweighs the evidence in favor of $p$. The rational attitude to have here toward the proposition $p$ is one of belief — to a slight degree.

• In the above picture, the evidence against $p$ slightly outweighs the evidence in favor of $p$. The rational attitude to have here toward the proposition $p$ is one of disbelief — to a slight degree.

• Remember, this is just one of the several ways in which suspension can be the rational attitude to have toward $p$.
  • [Note, also, that suspension does not come in degrees.]
### Rational Belief XVI

- **Fallibilism**

  - It is very important to note that our evidence can be **misleading**. That is, it can sometimes be rational to believe something which happens to be **false**. This is called **fallibilism**.

### Rational Belief XVII

- **Fallibilism**

  - In this case, it would have been **rational** for the average person (when they went to bed on the night of the 1948 presidential election) to believe the following proposition:

    1. (†) Dewey won the 1948 presidential election.
    2. All the information available the night before all the election results were in pointed to (supported) a Dewey victory.
    3. As it turned out, Truman had actually won the election.
    4. But, the evidence available the night before strongly supported the opposite conclusion – that (†) was false.

    **Moral:** inconclusive evidence can be misleading!

### Rational Belief XVIII

- **Conclusive Evidence**
  - Sometimes, however, our evidence is **conclusive**.

  - That is, in some cases, our evidence in favor of a proposition p is **so strong** that it leaves no room for the falsity of p.

  - When this happens, we say the evidence for p is **conclusive**.

  - But, it is actually **quite rare** that we are in possession of conclusive evidence for p (discuss!). As a result, it would be a mistake to require conclusive evidence for rational belief.

  - If we required conclusive evidence for rational belief, then it would **almost never** be rational to believe (or disbelieve!) **anything**. We’d end-up suspending judgment on everything.

    **Remember:** beliefs come in degrees, and so does evidence!

### Rational Belief XIX

- **The Principle of Proportional Belief (PB)**

  - It is important to remember that belief comes in degrees, and that evidential support also comes in degrees.

#### Example 2.4

Jim Shortz teaches a physical education class of 100 students. He knows that there are 51 freshmen and 49 sophomores in the class. After class one day he finds that one student left a book in the room. He has no reason at all to think that either freshmen or sophomores are more likely to leave a book behind. Knowing that there are more freshmen than sophomores in the class, Jim believes that the book belongs to a freshman.

- Consider the following proposition:

  1. (F) The person who left the book behind is a freshman.

  2. Is it rational for Jim to believe (F)? **Yes!** His evidence (slightly) favors (F), and so he should (weakly) believe that (F) is true.
Rational Belief XX

- **The Principle of Proportional Belief (PB)**
  - This basic idea leads us to the following principle, which we will call the **Principle of Proportional Belief**:

  - *(PB)* It is rational to proportion the strength of one's belief to the strength of one's evidence. The stronger one's evidence for \( p \) is, the stronger one's belief in \( p \) should be.

  - In the previous example, Jim's belief that (F) should only be very weak. But, he should slightly favor (F) over not-(F).

  - Of course, it would probably be unwise for Jim to take any important actions on the basis of his belief in (F).

  - But, that *(practical consideration)* does not threaten the epistemic rationality of Jim's *(weak)* belief that (F) is true.

Rational Belief XXI

- **Three Causes of Irrational Belief (see my handout)**
  - (a) **Misevaluation of Evidence.** Sometimes, we fail to properly evaluate or assess the weight of some evidence. E.g.:

    - **Anecdotal Evidence.** We often hear vivid and compelling examples or cases. For instance, we may be told about a *particularly bad case* of welfare fraud. And, we may conclude that the welfare system is *(generally)* corrupt.

    - The news coverage nowadays tends to include a lot of *anecdotal* or "worst case" evidence *(and colorfully presented!)*, which can cause us to exaggerate *(or downplay)* evidence.

    - More generally, **rhetorically powerful presentation** of evidence can cause us to mis-evaluate that evidence.

Rational Belief XXII

- **Three Causes of Irrational Belief**

  - (b) **Misidentification of the Total Evidence.** Sometimes, we are mistaken about what our *total* evidence is.

  - Sometimes, we focus only on *part* of our (total) evidence. And, while we may correctly assess the weight of *that part* of our total evidence, we may fail to include relevant evidence.

  - For instance, going back to the Jim Shortz example. Suppose Jim also notices that the book was a textbook for an upper-level math course that *almost no freshman ever take.*

  - Jim still has *some* evidence in favor of the book belonging to a freshman *(i.e., that 51/100 of his students are freshman)*. But, he now has *additional* evidence that undermines that evidence.

Rational Belief XXIII

- **Three Causes of Irrational Belief**

  - Even if we manage to avoid errors of type (a) and (b), we can still be led to irrational beliefs, *if* we allow ourselves to be moved to belief by *motivational* or *pragmatic* factors.

  - (c) **Motivational Errors.** Sometimes our hopes and fears *(& other emotions)* can lead us to irrational beliefs.

Example 2.5

Opto Mist is planning a picnic for Saturday. He has been working very hard lately, good friends are coming into town for the day, and he has a wonderful place picked out for the picnic. Opto very much wants to go on this picnic. The weather forecast for Saturday is quite tentative. The forecaster says that there is a 50 percent chance that it will be sunny and a 50 percent chance that it will rain. It all depends on which direction a storm system goes, and it is too early to tell which way it will go. Because Opto wants so much for it to be nice, he believes that it will be sunny on Saturday.
Rational Belief XXIV

- Three Causes of Irrational Belief
- (c) Motivational Errors (cont’d)

⇒ Even if believing \( p \) has good consequences for us, this does not make it epistemically rational for us to believe that \( p \).

- Example:
  - It may be beneficial for a baseball player (S) to believe that
    \[ (p) \text{ S will get a base hit when he comes up to bat.} \]

  But, this does not make it epistemically rational for S to believe that \( p \) (unless this makes \( p \) more probable than not).

- Note: it may be all things considered “reasonable” for S to believe \( p \) — even if it is not epistemically rational for S to believe \( p \). We are interested in (purely) epistemic reasons for belief.

Rational Belief XXV

- Irrational Belief and our Beam Balance Analogy

  - The three causes of irrational belief we have just seen can be understood in terms of our beam balance analogy.

    - (a) Misevaluation of evidence. In this case, we are weighing a piece of evidence \( E \), but our “scale is broken” — our “beam balance” does not reflect the true weight of \( E \).

    - (b) Misidentification of our total evidence. Even if we weigh some of our evidence correctly, we may fail to put all of our evidence on the scale — some evidence is left out.

    - (c) Motivational errors. Even if we weigh our total evidence correctly, we may be influenced by non-evidential (non-epistemic) factors like hopes, fears, consequences, etc.

Rational Belief XXVI

- Rationality, Relativity, and Objectivity
  - The truth of a person’s belief is not relative — that is, a proposition/belief can’t have one truth-value for one person, and a different truth-value for another person.

  - But, the rationality of a belief can vary from person to person, because different people can have different evidence.

Rational Belief XXVII

- Rationality, Relativity, and Objectivity
  - Consider the following proposition:

    Heza Thief robbed the bank.

  - In this case, your evidence does not support this proposition. So, it is not rational for you to believe it.

  - But, consider whether it would be rational for Heza himself to believe this proposition. Suppose he vividly and clearly remembers robbing the bank, etc.

    - Here, it is rational for Heza to believe that he robbed the bank, while it is not rational for you to believe this.

    - In this sense, rationality is relative to the total evidence available.
Rational Belief XXVIII

• Rationality, Relativity, and Objectivity

• Remember back to our example of the proposition:

  • The earth is flat.

• At one time, almost everybody believed that this proposition was true. Nowadays, almost nobody believes this.

• While the claim is (in fact) false, this does not prevent both sets of beliefs from being rational. This is because:

  • The evidence available at that time supported the claim that the earth was flat. But, since then, we have obtained new evidence which overturns that verdict, and supports the falsity of the claim. So, both sets of beliefs are rational.