

STAT 1350, 1/29 Discussion Questions

1. What are the basic ethical requirements for any study of human subjects?

institutional review board, informed consent, confidentiality

2. Studies with human subjects must be approved in advance by an institutional review board. What is the board's main purpose?

protect the rights & welfare of human subjects

3. List three ethical standards for randomized, controlled clinical trials.

ethics reviewed by IRB
informed consent
confidentiality of personal information

4. The General Social Survey (GSS), conducted by the National Opinion Research Center at the University of Chicago, is a major source of data on social attitudes in the United States. Once each year, 1500 adults are interviewed in their homes all across the country. The subjects are asked their opinions about sex and marriage, attitudes toward women, welfare, foreign policy, and many other issues. The GSS never releases any individual responses, only percents and averages for large groups of people. What is this policy called?

Confidentiality

5. Suppose you want to survey students to find out what proportion have illegally used prescription drugs. In order to maximize the number of truthful responses, your survey should be confidential, anonymous, both or neither?

both

6. A professor asks each of his students to stand up one at a time and report how many pets they have. The students do not state their names. This survey is considered to be confidential, anonymous, both or neither?

neither

7. Attached is an article about a study conducted by Facebook on its users. Give at least one reason why the study was considered to be of questionable ethics, and one way Facebook could have conducted the study without these ethical questions. (The article can be found online at <http://www.sciencedaily.com/releases/2014/09/140915140913.htm> .)

lack of informed consent
Facebook has millions of users? They could have added an opt-in option informing people of the study. They would (or opt-out) still have gotten a large sample size even if only a small percentage participated.

STAT 1350, 2/3 Discussion Questions

1. In one of the first attempts to discover the speed of light, Simon Newcomb in 1882 made 66 measurements of the time light takes to travel between the Washington Monument and his laboratory on the Potomac River. Why did Newcomb repeat his measurement 66 times and then take the average of the 66 as his final result?

reduce variability

2. You might try to measure how rich a person is by looking at the car they drive. In fact, driving a fancy car has little to do with income (most luxury cars are leased). In statistical terms, measuring income by car model is considered what?

invalid

3. When I set my TV video recorder to record at 9:00 PM, it starts recording 10 minutes late every time. This is an example of what statistical term?

bias

4. A measurement process that does not systematically overstate or understate the true value of the quantity being measured is called what?

Unbiased

5. A local police department gives everyone who applies for a job a test of their knowledge of modern popular music. Experience shows that those who score well on this test tend to become very poor police officers. As a measure of future job performance, the music test scores, are they valid or invalid? Reliable or unreliable?

invalid, reliable (note: such a hiring practice is probably racist)

6. When repeated measurements each have a systematic error in the same direction, we say that the measurements contain what?

bias

7. All statistical studies should follow the principle of confidentiality. What does this mean?

personal information should not be kept w/ the data or released.

8. Studies with human subjects must be approved in advance by an institutional review board. What is the board's main purpose?

ensure ethical practices are followed in conducting experiments

9. A Census Bureau report on the income of Americans says with 90% confidence the median income of all California households in 2007 was \$67,484 with a margin of error of $\pm \$375$. The Census Bureau never shares information about individuals with the IRS. To do so would violate a basic requirement of data ethics. What is that principal called?

Confidentiality

As an aside: What is the confidence interval for median income in California according to this survey?

(67,109, 67,859)

10. Any statistical study that uses human subjects requires *informed consent*. What does that mean?

Subjects must be made aware of any risks associated w/ the experiment and they must willingly consent to participating

11. Suppose you want to survey students to find out what proportion have illegally used prescription drugs. In order to maximize the number of truthful responses, your survey should be anonymous, confidential, both or neither?

both

12. What is the main theme of Chapter 9? Why is it important?

do a logic check!

it's important because you can often catch computational errors, fraud or deception, or other types of problems