

Lecture 2/Chapter 2

- Definitions
- 7 Critical Components (Utts)
- 7 Examples
- Considering Components in a Single Article

Definitions

- **Data:** pieces of information that have number or category values
 - **Survey:** particular type of observational study in which data values tend to be self-reported, as in a questionnaire or opinion poll
- Observational studies, surveys, and experiments produce data, and articles or news reports usually have processed the data for us, summarizing values and drawing (or suggesting) conclusions.
- Components help us focus on relevant details...

7 Critical Components

1. Source of research and funding
2. Researchers who had contact w. participants
3. Individuals studied, how they were selected
4. Variables studied [measurements, questions]
5. Setting (time, place)
6. Confounding variables [extraneous differences] if groups are compared
7. Magnitude of claimed effects or differences

Example: *Source of research/funding*

- **Background:** Consider oatmeal report.
- **Question:** Who funded the study?
- **Response:**

Example: *Researchers' contact with participants*

- **Background:** Consider sugar article: “Then they monitored the children for changes in behavior. The children or their families did not know which diets they were receiving...”
- **Question:** Does it matter if the researchers knew who got what diet?
- **Response:**

Example: *Individuals studied, how selected*

- **Background:** Consider the oatmeal study.
- **Question:** How were participants chosen?
- **Response:**

Example: *Individuals studied, how selected*

- **Background:** Consider *Music and math scores*: “2nd grade students who took piano lessons for 4 months scored significantly higher on math than children who did not...”
- **Question:** Did they use students/parents who initiated the piano lessons themselves?
- **Response:**

Example: *Variables & Their Assessment*

- **Background:** Consider sugar article: “There were no significant differences in the behavior or mental abilities of any of the children.”
- **Question:** How did researchers assess behavior or measure mental ability?
- **Response:**

Example: *Setting [time/place of assessment]*

- **Background:** Consider *Couch potato nation*: “A new report by the FCDCP finds that physical inactivity plagues all areas of the US. The study analyzed responses from 119,000 people...about their physical activity during the month prior to the survey.”
- **Question:** How could time of year affect results?
- **Response:**

Example: *Confounding variables*

- **Background:** Consider *Family dinners benefit teens*: “Adjusted teens ate with their families an average of 5 days a week; non-adjusted teens ate with their families only 3 days a week...”
- **Question:** Is eating dinner with family the only difference between the 2 groups compared?
- **Response:**

Example: *Magnitude of effects/differences*

- **Background:** *Tall tale?* “Spring babies were taller, by 0.23 of an inch, than those born in the fall. If parents want their offspring to be taller than they might otherwise be, they’ll have to plot their Happy Birthdays for the spring. But we doubt that even parents with their eye on the NBA will care about an extra 1/4 of an inch.”
- **Question:** What is the magnitude of the diff.?
- **Response:** [Note: “magnitude” quantifies...]

7 Critical Components: *Applicability*

- Most articles/reports mention several of the components adequately. Often, at least one is problematic or warrants further inquiry.

Example: Relevance of 7 Components

- **Background:** *Men, beer, and lung cancer*
- **Questions:** What do we know about the 7 Components; which should concern us most?
- **Response:**
 1. Source:
Funding:
 2. Researchers having contact:
 3. Individuals:
Were they smokers?

Example: Relevance of 7 Components

- **Background:** *Men, beer, and lung cancer*
- **Questions:** What do we know about the 7 Components; which should concern us most?
- **Response:**
 4. Variables/assessment:
 5. Setting of assessments:
 6. Confounding variables:
 7. Magnitude:
Most important? ___ (often the case w. observational study)

Example: More on 7 Components

- **Background:** *The chocolate headache myth.*
- **Question:** Discuss the 7 Components here.
- **Response:**
 1. Source:
 2. Researchers w. contact:
 3. Individuals:
 4. Variables:
 5. Setting:
 6. Confounding variables:
 7. Magnitude:

EXTRA CREDIT (Max. 5 pts.) From the internet or a newspaper or magazine, find an article with statistical information. Write a paragraph or two discussing how the 7 Critical Components (pp. 18-19) apply.

Read this and remaining pages before next lecture.

Final Pre-Election Poll

Field Date: 10/31/2008-11/02/2008

Population: National Adults

Number of Questions: 66

Sponsor: USA Today/Gallup Poll

Methodology: Outbound Phone(Landline and Cell phone)

Questions 1 through 10 [NEXT](#)

Question P62

How much thought have you given to the upcoming election for president -- quite a lot, or only a little?

Mean: *	%	N	Total N: *
Quite a lot	*	*	*
SOME (vol.)	*	*	*
Only a little	*	*	*
NONE (vol.)	*	*	*
DON'T KNOW	*	*	*
REFUSED	*	*	*

Question P17

Are you now registered to vote in your precinct or election district, or not?

Mean: *	%	N	Total N: *
Yes, registered	*	*	*
Plan to/ Don't need to register (Vol.)	*	*	*
No, not registered	*	*	*
DON'T KNOW	*	*	*
REFUSED	*	*	*

Question P63

How often would you say you vote -- always, nearly always, part of the time, or seldom?

Mean: *	%	N	Total N: *
Always	*	*	*
Nearly always	*	*	*
Part of the time	*	*	*
Seldom	*	*	*
NEVER (vol.)	*	*	*
DON'T KNOW	*	*	*
REFUSED	*	*	*

ADOLESCENT BEHAVIOR, DRUG USE, AND VIOLENCE: INCREASED REPORTING WITH COMPUTER SURVEY TECHNOLOGY

Surveys of risk behaviors have been hobbled by their reliance on respondents to report engaging in behaviors that are highly sensitive and may be illegal. An audio computer-assisted self-interviewing (audio CASI) technology for measuring those behaviors was tested... The respondents were randomly assigned to answer questions using either audio-CASI or a more traditional self-administered questionnaire. Estimates of the prevalence of male-male sex, injection drug use, and sexual contact with intravenous drug users were higher by factors of 3 or more when audio-CASI was used. Increased reporting was also found for several other risk behaviors.

Never have
10 or younger

11
12
13
14
15
16
17 or Older

How old were you when you first began drinking alcoholic beverages regularly, that is, at least once or twice a month?

Never have
10 or younger

11
12
13
14
15
16
17 or Older

How old were you when you first got suspended from school?

Never have
10 or younger

11
12
13
14
15
16
17 or Older

How old were you when you first got arrested?

Never have
10 or younger

11
12
13
14
15
16
17 or Older

PARENTS FEAR SCHOOL SURVEY COULD LEAD TO

TROUBLE Nancy Nelson didn't think much about it when she received a letter recently from Dorseyville Middle School that said the school would be participating in the statewide Pennsylvania Youth Survey. The questionnaire, given every two years since 1989 by the Pennsylvania Commission on Crime and Delinquency, attempts to measure drug use and attitudes among kids in grades six through 12. "I remember receiving the letter, but I really didn't read it very carefully," said Nelson, of Fox Chapel. "I trusted the district knew what they were doing." But when her eight-grader came home from school a week and a half later and "proceeded to tell me about this really strange, terrible test" she'd taken, the red flags started flying. "...Instead of asking pupils 'if' they had ever tried a certain drug, the survey wanted to know 'on how many occasions' they had used everything from cigarettes and marijuana to LSD and crack cocaine. Nelson believes that approach can give nonusers ideas and plants the notion that drug use is inevitable..."