

Working with Humans

Effects and Ethics

Some effects to be aware of when doing human-subjects research.
The role of ethics in evaluating interfaces with the help of human subjects.

Hawthorne Effect

The basic idea behind the Hawthorne Effect (sometimes called the observer effect) is that the act of studying people can alter their behavior.

- The name comes from the Hawthorne Works factory and a study to look at the impact lighting changes (among other things) could have on worker productivity.
- It is felt that the increased productivity was more a result of workers being motivated by the attention being paid to them.

Pygmalion Effect

The basic idea behind the Pygmalion Effect (or a self-fulfilling prophecy) is that if you increase the expectations imposed on a group, you can increase the average performance.

- There is a corollary effect where decreasing expectations risks a decrease in performance.



http://art.rmngp.fr/fr/library/artworks/jean-baptiste-regnault_l-origine-de-la-sculpture-pygmalion-amoureux-de-sa-statue-priant-venus-de-l-animer_huile-sur-toile_1786

Clever Hans Effect

The basic idea behind the Clever Hans Effect (or observer-expectancy) is that the biases of the research can influence the participants of a study via things like body language.

- This is a major reason for double-blind studies.



<https://www.britannica.com/topic/Clever-Hans>

Von Restorff effect

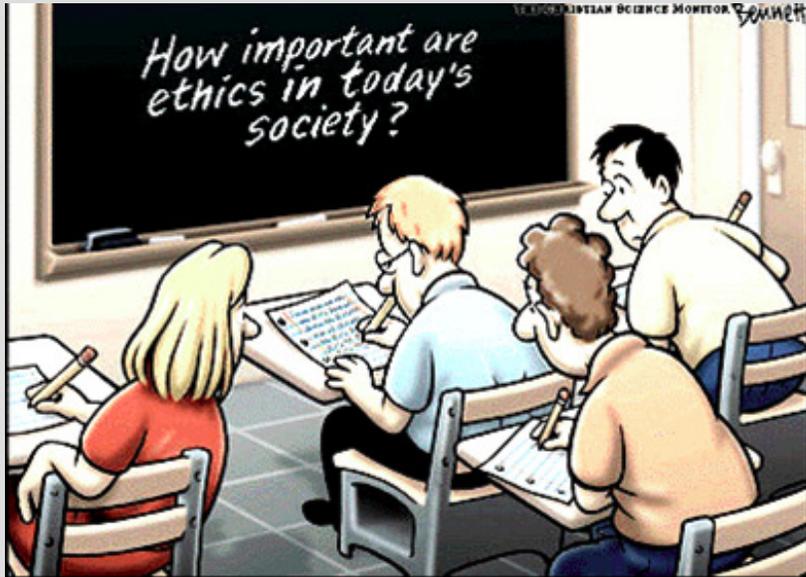
Do you think any of the items in this list would stand out in your memory tomorrow?

- Desk
- Chair
- Bed
- Squirrel
- Dresser
- Couch

Effect Example: Education Research

These effects can all impact education research. A faculty member trying a new technique might see improvements because of things like:

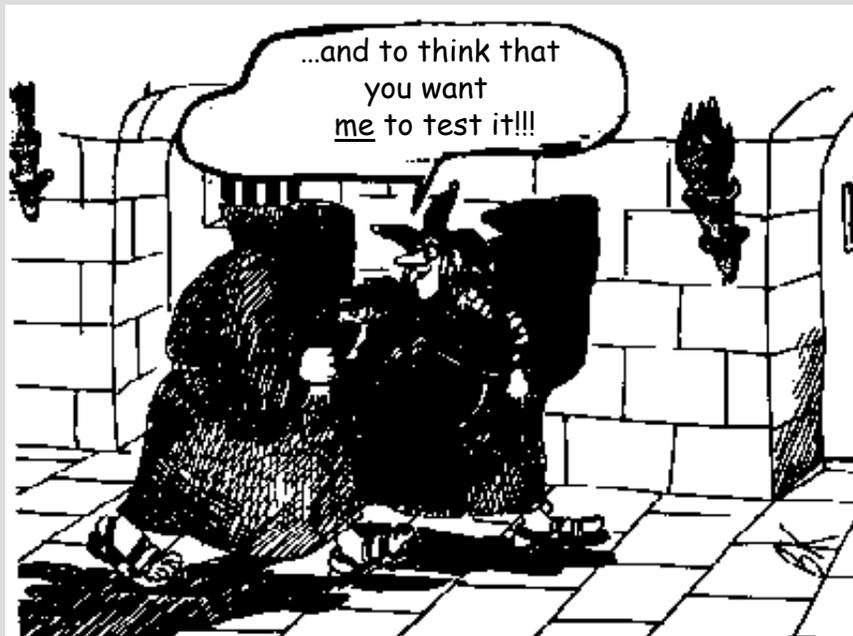
- The students sensing the faculty member's enthusiasm.
- The faculty member is pushing harder for the students more to succeed.
- The faculty member improves their core teaching approach as they prepare lessons using their new technique because they want it to succeed.



from Christian Science Monitor



<http://dilbert.com/strips/comic/2011-09-05/>



“Doctor” Sid finds yet another subject for his electric-chair experiments

from Saul Greenberg

Milgram Experiment

1960s experiments to understand authority figures and obedience.

- Very controversial study and a classic example that is often given of what NOT to do in experimental design.
 - It has actually been REPEATED over the years!

A similar experiment was done at Stanford in the 1970s using the prisoner/guard model and also later seen as unethical.

Institutional Review Boards

IRB Committees review experimental designs and request changes if elements of the design raise concerns.

- There are exemption categories, but they are very narrow.
- While biomedical and socio-behavioral studies are the main types that motivated this, any systematic study with humans is typically subject to review.

Stress Happens

Taking part in **any** type of testing can be stressful to the participant.

- Performance anxiety even if they are testing their product, not you.
- Feeling foolish or uninformed even if the real cause is what you are testing hasn't been built well.
- Thinking about whether others have done things faster or better or different than you.

Bang
Head
Here

R-E-S-P-E-C-T

The NUMBER ONE RULE is to always treat your participants with respect! We talked about this briefly earlier in the semester, but as we prepare to work more with people it's well worth discussing it again!

Remind participants that they can pause or stop any time they want. If they do, you cannot show any sign of disappointment; just thank them for their time and allow them leave.

Actually, either way be sure to thank them for their time and help at the end!

Respect...

...their time by having everything prepared and tested and set up before they arrive and not having them doing things that you don't care about.

- if something does go wrong, let your participant know that (and take responsibility for it) and if you plan to try to fix it on the spot let them know how long it might take...

...their curiosity by keeping them informed of what's going on, answering questions they might have, etc.

If something does goes wrong, try to conceal emotions which may make the participant think they did something wrong and remind them that they aren't being tested, you are 😊

Comfort and Privacy Count!

Make sure they have a comfortable working space (comfy chair, fresh air/circulation, a clean space, rest breaks).

Privacy isn't just keeping data confidential, it's also avoiding testing or discussing the experiment with them in public spaces. When writing papers making sure any anecdotes you use can't end up allowing a friend, etc. identify the participant.

Before an experiment begins...

- Prepare so you don't waste the user's time
 - use pilot tests to debug experiments, questionnaires, etc.
 - have everything ready before the user shows up
- Make users feel comfortable
 - emphasize that it is the system that is being tested, not the user
 - acknowledge that the software may have problems
 - let users know they can stop at any time
- Maintain privacy
 - tell user that individual test results will be kept completely confidential
- Inform the user
 - explain any monitoring that is being used
 - answer all user's questions (but avoid bias)
- Always let users stop the test
 - user must sign an informed consent form

During an experiment...

- Continue to not waste the user's time
 - never have the user perform unnecessary tasks
- Continue to make users comfortable
 - try to give user an early success experience
 - keep a relaxed atmosphere in the room
 - coffee, breaks, etc.
 - hand out test tasks one at a time
 - never indicate displeasure with the user's performance
 - avoid disruptions
 - stop the test if it becomes too unpleasant
- Continue to think about maintaining privacy
 - do not allow the user's management to observe the test
 - if you are going to record the session, make sure you have their permission and try to conceal their identity

(note: we will discuss recording sessions in more detail next session)

After an experiment concludes...

Complete the process of making the users feel comfortable

- state that the user has helped you find areas of improvement

Inform the user

- answer particular questions about the experiment that could have biased the results before

Continue to maintain privacy

- never report results in a way that individual users can be identified
- only show videotapes outside the research group with the user's permission

Informed Consent

There are consent (and for minors, assent) forms required to make sure participants are well-informed, and some situations where such a form can be waived. <https://research.umd.edu/irbforms#consentform>

Participant Selection

An important ethical consideration is embedded in how you recruit/screen/select your participants.

- This is discussed within the Belmont Report in the context of human-subjects research.
- Resources such as Amazon Mechanical Turk (AMT) matches “workers” to “requesters” but how does that connect to research ethics? Who are your participants? Where are they from? Why are they participating? Can we trust them?
- How do ideas like bots-as-test-users complicate things? What if someone writes a bot to “be” them on AMT?

Facebook, News Feeds, and Emotions

A few years ago researchers at Facebook published outcomes of a study that looked at how emotions of one user can influence the emotions of their friends. As part of this they manipulated over half a million news feed (some to show more positive posts and some to show more negative posts).

What do you think about this type of study in terms of Internet research, informed consent, and ethics?

Ethics Readings (Before Stage 3)

Belmont Report (required reading)

- <https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/read-the-belmont-report/index.html#xbasic>

UMD Research Ethics Overview (suggested reading)

- <http://www.ugresearch.umd.edu/current-whatwhenwhy.html>

When is an IRB Required? (suggested reading)

- <https://research.umd.edu/irbforms#hsrdf>

Consent Form guidance (I'll post a model for Phase 3)

- <https://research.umd.edu/irbforms#consentform>

AMT Reading

Researchers Investigate Problems with MTurk Data

<https://www.psychologicalscience.org/publications/observer/online/researchers-investigate-problems-with-mturk-data.html>