

15.301/310, Managerial Psychology
Prof. Dan Ariely
Lecture 2: The Validity of Intuitions

Introduction:

We are beginning recitation sections this week. Topic: generating ideas for your project. We have five wonderful TA's, we will assign you randomly: first row with first TA, 2nd row with 2nd TA, etc...

Please go to the server, we will post all of the class information there, including where we are meeting. Friday will be our 1st experimental session. You don't have to come this Friday, but you need to participate in 3 hours of experiments over the semester.

Today: go over the homework, intuitions, data information, what makes a good project, and answer any final questions.

Pluralistic ignorance: when you sit in a big class and you don't understand, you assume everyone else understands when people are quiet. The problem increases with class size. Raise your hand! They are suffering from pluralistic ignorance. Experiments have been done where smoke is piped into a room of people. The bigger the group, the longer it takes for them to leave the room. There are lots of dumb questions, but participate!

New Yorker cartoon. Question: what kind of inferences can we make from data, what are common mistakes?

8 questions: Correct? Incorrect? Why?
(see lecture notes)

Q1: conflicting information

Q2: Uri Geller – how would you test it?

Q4: “hot” if you shoot a basket: There is a sense that the next shot has higher probability of going in. What is going on?

Student responses:

- Player has focus
- Increased confidence having made a shot
- Practice – each try = higher probability
- Placebo effect – if you think you'll do better, you will
- Skill set matches situation

Is it real?

Q5: discrimination

Would you press a class action suit in this case (see slide)? Is it discrimination?
The quality of applicants was the same.

Student responses:

- Need more information – more male than F dorms? Physical constraints
- Not statistically significant difference? (Ariely: yes, it is statistically significant)
- Did women apply to tougher places in Berkeley to get in?

Do you assume discrimination or ask for more information?

Q6: Would you invest your money?

Q8:

There was a NY Times bestseller recently that documented the “bible code”

Using math, methods (for example, taking every 40th letter starting from the back of the book), significant things are spelled. Some people say this proves the Bible was written by God.

How would you check it out?

Student responses:

- check if it is true, check other books

Is the bible more likely to do it than other textbooks?

If you look hard enough you can find things and interpret them.

In one experiment, War and Peace was compared to the bible – War and Peace also predicts a lot of things.

Look at evidence that is presented in scientific papers. (Medical journals are the worst.)
Think about the data, about other people’s research, and about our own research.
What traps can you see? You can’t make reasonable inferences from these.

Correlation and Causation

Correlation does not necessarily imply causation.

Why? Think about our own intuitions:
(see lecture slides)

2. We don’t know, you can make up all kinds of stories.

Do you think it is causal or not? It depends on the stories we can make up. Does it sound plausible?

3. Running may not cause it, maybe it’s the people who choose to be runners.

Student responses:

-runners take less abuse?

4. Student responses:

-breastfeeding parents care more about their kids.

-Milk contains more nutrients for development.

Kids have more contact with parent

5. What is the causal story there?

Student responses:

-if you watch more tv, then you are neglecting the work.

Kids that do terrible in school hate it so much, or can't read, so they find something else to do. Interpretation is often that television is taking up the time that could be used for other things. This is not necessarily true.

(new lecture slide)

1. Women who exercise have fewer miscarriages.

If you start exercising when you are pregnant, it might create damage, we don't know.

We can't infer a prescription.

2. Famous conductors live longer lives. Why?

Student responses:

-love their job more

3. Students that come to class do better. Why?

Student responses:

-pay more attention

-inherently more responsible

Could be many explanations.

Lets talk about the conductors

Student responses:

-Social status = better food, housing, medical.

-Types of people that become conductors are more passionate

-Do it because they love it, happier life

-More fulfillment

-Aerobic job – more fit than average?

- Requires fitness of mind
- How many famous conductors are there? Statistically significant?
(Ariely: there are enough, a very robust number)
- Music! Relax, live whole life listening to music.

Save one statistical answer, all of you gave causal stories, such as the intuitive idea that a conductor lives a happier life

The first thing you want to do is to get sucked in.

It takes a long time to become good conductor

Student responses:

- Average age includes homeless, those that die early, etc

Usually, you need to be at least 60 to be famous conductor, and for those who have already lived to age 60, conductors fit the average life span.

Looking back, how would we find out if we did not know?

Famous conductor leads to being rich leads to longevity? – We can test this by comparing conductors to other wealthy people.

Music lovers live longer?

Living longer means we are more likely to be a conductor?

We don't know the true path of the causal aspect.

(new lecture slide)

Try to be careful not to fall into these traps

Use a control group. Single cells only give us correlation, we don't know the causal relationship.

Uri Geller situation: How could you test it?

Student responses:

- it happened by random chance, people whose clocks started called to report it
- You could tell them to call in the next hour if their clock started.
- Is it actually broken, or maybe they just thought it might be?
- Tell them to bring a nonfunctional clock
- Bring someone w/o these powers to try to start nonfunctional clocks

Conductors – compare with people who are 60 who did not become conductors

Kids watching television and doing bad in school – raise groups with and without television (use a control group). This would be a very long experiment.

In an experiment, we take away people's choice. If people get to choose themselves, we don't know what to attribute the outcome to.

Berkeley was sued for discrimination, but it ended up it was not.

Department A: math, takes everyone, happy to have people

Department B: philosophy, very selective

Look at the individual departments. You see the school did not discriminate. It was self selection.

You could even come up with an example where all the departments discriminate for women, but overall it looks like they discriminate against women.

Who is an EE/CS major? A business major?

Let's say business students get better grades in this class.

The main effect might be that students decided what to major in. There are all kinds of stories when you let people choose into it.

Let's take the 5 year cholesterol study.

That's a long investment in doing research properly

P(death) in placebo and real pills, both 21%

If you split the subjects into those that take the pills regularly and those that do not, the results look good for taking the medication. But you introduced choice!

Look at people who took placebo only, the control group.

Turns out, there were the same results for the placebo – there were good results for regular takers.

OK, I've warned you about the dangers of correlations.

Don't let people choose.

Experiments have downsides

(new slide)

What is a placebo?

Student responses:

-placebo, doesn't do anything but because of your state of mind, situation actually improves

Do you believe you can have something mental that has no chemical effect on your body?

Placebo – we don't know how they are affecting you.

Classic example – dentist chair, inject a person with saline instead of a drug. The person feels better

Turns out it's not really fake. If you give them naloxon (opioid blocker), there is no pain relief

Why do people get high when they smoke grass? (Same with heroin, opium, etc.)

The receptors are ready, we have similar substances internally (naturally). When injected with saline, we create the effect ourselves.

Here is one of my favorite examples:

Long time ago, French person said a worm.... (see slide)

Did it work? It really worked. Does the worm have anything to do with it? Nothing!

Birth control experiment

(SLIDE) placebo II

Side effects reported if warnings included, placebo or not.

People pay more attention.

(SLIDE) placebo III

Use fast.....

(there is the biggest placebo effect when you really believe in it, before data is gathered)

Hawthorne effect - Placebo related

Changes made in the work environment increased productivity at a company – brighter lights, etc.

It turns out employees were happier when someone asked their opinion. Caring about them makes people feel better

Placebo effect is real, strong, important.

If I think I'm getting some pill, I'll expect it.

You know how every morning I say this will be a great class? Why do you think I do that...? ☺

Self fulfilling prophesy:

Teacher told that some students are good, some are bad. They pay more attention to the good ones, and do other things to encourage them (even if they don't know they are doing it).

Smart Hans was a horse. His owner said he could count.

2+3, and he would stamp five times

Never missed a thing.

People started suspecting the owner of the horse.

They watched him very carefully, but couldn't see anything.

But when he stood behind, the horse couldn't do anything.

Turns out it was unintentional, but the owner did something when the horse got to the right answer, and he stopped tapping his foot.

Blind experiments:

Subject doesn't know hypothesis.

Double blind:

Researcher doesn't know hypothesis either

Think critically about evidence

We, as measurement tools, are quite bad. Not very accurate

Therefore we need to do standard research

Summary

There is a supplemental Prayer article posted, a story from Wired

Example of a good project:

Last week we passed out a survey and told you to find the cells that summed to 10

You would get paid 50 cents per correct question (and you will get paid).

Lying: people who took 14.01, know how to work system, economics?

Only a couple people said they got all 20 correct, even if we had no way of knowing!

People who signed the honor code said they got fewer correct than those who actually turned in their sheets!

How would you interpret this?

Student responses:

-We're all skilled mathematically, not a big population

-Honor code people cautious? (more careful, checked answers)

-Honor code – extra time to sign (Ariely: they were told to read before time started)

People cheated, but very little

We don't want to cheat too much, or we'll think of ourselves as cheaters

If people noticed some were not solvable, couldn't guess 20 or grader would know.

Almost everyone cheats sometimes on a problem set, but don't consider themselves cheaters

How many of you have cheated on a problem set?

(some hands raised)

If someone is polite to you, are you likely to be polite later? (smile, open a door for someone, sign a petition?)

General: what creates more or less politeness?

General question is more exciting than a specific question.

Ariely: “If you can, be wrong”

We want you to go through the process, it doesn't matter if you are right or wrong, do good research.

Exercise in ideas – you'll have to do it yourself.

Quiz!

3 front rows stage right – you'll be the people on the left

3 front rows stage left – you'll be the people on the right

(multiple choice, alternating groups)