

Lecture 2 PSYC 200
January 11th

RESEARCH DESIGNS IN PSYCHOLOGY

why do we need scientific methods?

psychology studies personal experience

ex: imagine you believe that boys are more aggressive than girls, you would believe this because of experiences growing up, this is personal experience and is a **false source of data**, it may or may not apply to everyone

we are limited by the boundaries of our own experiences, limited by our memories (memories are not perfect, they are reconstructive, it changes from one instance to the next), our own personal bias/beliefs

Hindsight bias

the belief that you knew something all along, reinforcing beliefs you already had

False consensus effect

we believe that everyone probably thinks or acts just like us

ex: choosing political candidate, you will try to make everyone else believe what you believe you can avoid this effect by discussing with a larger group of individuals to see what they believe, broaden your narrow mind by discussing with a variety of informations different to your own

we are studying humans and animals/living beings

it is difficult to study living being because **we are complex** (we do not automatically respond to our environments, we have thoughts and feelings and behaviours, one person's response may not be the same as another's), **we are different** and **we react to situations differently** (our responses are based on past experiences)

Hans the horse: he could spell and do math by tapping his hooves
his owner would help him, he would be using very subtle clues from his owner to answer questions

what we can learn from hans?

Be skeptical: don't believe what you see or hear, ask lots of questions

Observe carefully in controlled conditions: minimize factors that will influence your results

Be aware of observer-expectancy effects: do not influence the response of the participants (like hans was doing)

Types of Research Strategies

Research design: the experiment

Variables: factors that are manipulated or measured, there are two types: independent and dependant

-independent variables: it is manipulated and under the control of the researcher (i.e. drug dosage), we often manipulate independent variables so that we could observe their effects on the dependant variables

-dependant variables: not under control of the researcher

Participants: people taking part in your study

Confederate: act like a participant but are actually in on the study, they are helping out the researcher (we will change our answers in order to fit in with every one else in the study group even if they are confederates)

Random Assignment: it is better to randomly assign places to participants

Types of Research Strategies: Between Group Experimental Design

study how red bull affects memory

go and get 20 participants

will have real red bull and fake red bull

Red bull: independent variable

Memory: dependent variable

drink and memorize words, after 30 minutes they are asked to recall as many words as they can

control group is fake red bull and experimental group is real red bull

need minimum 20 people to do a between group experiment

If you don't have 20 people, you can do another type of research: **Within Subjects**

Experimental Design

participants are exposed to all levels of the independent variable

10 people in study: all are given real red bull and a list of words to memorize and they have to recall

then, you wait one week and you bring the same 10 people into the lab, make them drink the fake red bull and repeat the experiment

each participant is acting as they own control

Types of Research Strategies: Research Design: The correlational study

no variables are manipulated in this study but there is huge disadvantage

just because you see two things are related, it doesn't mean that there is a true cause and effect relationship

correlation doesn't apply causation

one study indicates that as crime rate grows, the number of churches increases

it doesn't mean that as number of churches grows, crime rate grows too

POPULATION DENSITY is a factor to the number of crimes and the number of churches: this factor affects both of the variables

The descriptive study

you're manipulating variables, looking for cause and effect relationships when using descriptive design

naturalistic observation: advantage is that you can observe behaviour in a naturally occurring situation, not a forced one, you can describe behaviour but you can't explain it

disadvantage: observer bias (observer expectancy effect): only end up looking for things that you want to know

another disadvantage: participant bias (participant/subject expectancy effect): you know you're being watched therefore you will change your behaviour to comply with how you think the researcher wants you to behave

laboratory observation: observing people in a highly controlled and unnatural setting

case studies: you study one or two particular individuals in depth, you obtain a very detailed description

in addition to the mentioned disadvantages, another one is that you cannot generalize the results as you are only testing one person, you can only generalize results to someone who has the same deficit as your participant

survey: series of questions to evaluate behaviours and opinions of large group of people

advantage: you can test a large group

wording effect (disadvantage): how you word a question can influence the answer

another disadvantage: people lie

another disadvantage: sample. if you want survey to accurately reflect population you are interested in, the sample has to reflect the population to which you want to generalize the survey results, best way for your sample to represent your population is through random sample, which means that everybody in your population has a chance of taking part in the survey (people shopping in the mall at 11am on Tuesday morning are not adequate for a generalization to the rest of the population because they are either retired or unemployed)

Data collection methods

self report method and observational methods

Biases in psychological research

everybody in a study should respond in the same way to a treatment but they don't and this is called error. as a researcher, we are to reduce this error

participant expectancy effect: your behaviour will change if you are being watched throughout a study

bias: observer bias is when researcher is looking for something that can reinforce their beliefs

sampling bias is when the groups are not equivalent (age is an important variable, one group can't be 20 years old and the other 70, they differ on a very important factor), avoided through random assignment

measurement bias: 1) make sure that the tools that you are using (tests, questionnaire) are reliable and valid

Avoiding observer and subject expectancy effects

single blind experiment: participant doesn't know what type of treatment they are getting, reduces participant bias

double blind experiment: both researcher and participant don't know what treatment is occurring, reduces both effects

another way is to use placebo: looks like treatment but has no effect (fake red bull). only downside is the placebo effect, participants actually react to placebo the same way they react to the actual experiment

Minimizing measurement bias in research

Reliability: is a test reliable? consistent results from a particular test indicate reliability

Validity: is a test measuring what it is supposed to measure?

Ethical issues in research

Research with humans: need to follow APA's ethical guideline for human participants

The right to privacy: you cannot share their info with anyone outside of the study, cannot name

by name or give out information, like attorney-client privilege, there has to be a form of consent given beforehand, younger than 18 years old then you need consent of their caretakers

Minimize possibility of discomfort or harm: never do something to someone that you wouldn't want done to you

The use of deception: you need to keep lying and deception to a minimum, when a person signs consent form, they are made aware of what they are gonna to be doing in the study, you can't change it after that

VIDEO: PSYCHOLOGICAL RESEARCH CRASH COURSE PSYCHOLOGY #2

