James w. kalat intro. to psychology chapter 2



OperationalizePsychological phenomena need to be defined in ways that can be reliably and consistently measured. Scientific Method in PsychologyEvaluation of specific predictions (hypotheses) and of more comprehensive explanations (theories) of behavior.

-Replicability is essential in scientific method

FalsifiableMakes precise and consistent predictions for which we are able to think of evidence that would confirm or contradict the theory. ParsimoniousRelying on the smallest number of underlying assumptionsOccam's Razor" It is vain to do with more what can be done with less." - William of OccamConfirmation biasSelective memoryEmpiricalDerived from observation or experimentPopulation sampleA small number of subjects that is representative of the entire population. Convenience sampleA group chosen because of its ease of availability and study

-Being stopped at the mall to take a survey

-Telephone caller asks you to take a survey

Representative sampleResembles the population

- -Percentage of males and females
- -Ethnic or racial groups
- -Age levels

Random sampleOne in which every individual in the population has an equal chance of being selected. Cross-cultural sampleOne that contains groups of people from at least two distinct cultures. ExperimentA study in which the investigator manipulates at least one variable while measuring at least one other variable. Observational study(Correlation or Descriptive) are used when little control exists.

-Different than experiment because you cannot control all the variables.

Descriptive studiesMade over a period of time in either a naturalistic setting or of participant observations. Correlational studiesExamine the relationship between two variables without exerting control over either one.

-Measures the relationship between two variables

-Close to -1 or +1 = strong relationship

-Close to 0 = weak/no relationship

Naturalistic observationCareful monitoring and examination of what people and animals do under more or less natural circumstances.

-Observer goes into natural habitat of the subject that is to be studied.

-Usually done with non-human animals

Case historyA thorough observation and description of a single individual.

-Appropriate only when done under an unusual condition or circumstance.

-Lycanthropy ---> The belief that you are a werewolf

SurveyA study of the prevalence of certain beliefs, attitudes, or behaviors based on people's responses to specific questions (opposite of case history).

-Not very reliable as subjects may lie and answer questions without knowing about the topic.

-Be careful on how to word the questions in order not to influence the

answers.

-Ex: Google saves your search history to provide personalized ads when using the internet.

Correlation coefficientThe mathematical estimate of the strength and direction of a correlation. Scatter plotsDisplay the relationship between two variables.

-The higher the absolute value, the stronger the relationship regardless of direction.

-Positive correlation (+): as one variable increase, so does the other.

-Negative correlation (-): as one variable increases, the other decreases.

Zero or near zero correlationThe variable have no relationship to one another.

-Changes in one are not related to any type of change in the other.

Correlation does not equal causationTwo conditions may appear together but not cause each other.

-Possible presence of a third underlying variable. Experiment designsAre preferred, but they can only be used when a great deal of control can be exerted in the methods used to address the research question. Independent variableThat which is controlled by the experimenter.

-Cause

Dependent variableThe measure taken during the experiment.

-Measure, outcome, effect

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that the experiment is designed to test.

Experimental groupThe set of individuals who receive the treatment that the experiment is designed to test. Control groupThe set of individuals who are tested in the same way as the experimental group, except for the procedure

-Placebo

Random assignmentA selection method in which the experimenter assigns subjects to either the experimental or control group using a procedure based on chance. Blind observerDoes not know which group a person was part of so they cannot have bias for the results they are observing. Demand characteristicsCues that tell a subject what is expected of him or her, and what the researcher hopes to find.

-If the subject knows that the drug being tested is supposed to improve mood, s/he may " feel better."

Experimenter biasKnowledge of hypothesis can influence experimenter's conduct of the experiment.

-Remedy is the single blind of double blind studies.

Single blind studyBlind observers are used to reduce demand characteristics. Double blind studyExperimenters and participants don't know which group the participants are in.

-Reduces experimenter bias.

Descriptive statisticsMathematical summaries of results.

-Measurements of the central score (mean, median, mode)

-Measurement of variation or dispersion.

Inferential statisticsThe mathematical procedures used to make statements about a large population based on an inference from a small sample.

-Is the difference between groups due to the independent variable?

-Is the difference between groups due to chance?

Normal distributionBell shaped, bilateral symmetry.

-Mean, mode, median are the same.

Standard deviationA measurement of the amount of variation among scores in a normal distribution.

-If SD large = lots of variability

-If SD small = not much variability

-If SD is 0 = no variation

Formula to standardize a test score(Test Score - Mean Score)/ SDP ValueProbability value. Probability that the difference observed between groups is due to chance.

P < 5% = Good = Probably not due by chance P > 5% = Bad = Could have been chance

Statistically significant-Large difference between groups studied

-Large number of individuals tested

-Small differences among individuals within each groupNot statistically

significant-Little differences between groups studied

-Small number of individuals tested

-Large differences among individuals from each group ONJAMES W. KALAT

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