

How to Think Straight About Psychology

A Quick and Dirty Overview of
Stanovich's Wonderful Book.

Chapter 1

- Freud problem
 - general public's link of Freud to psychology
 - most psychologists don't find his theory useful/valid
- Diversity
 - field is too diverse to have unifying theories
 - other sciences sometimes too diverse also; doesn't make field unscientific

Chapter 1

- Pop psychology
 - often not based on scientific evidence; goal is to make money, not find truth
- Common sense
 - public tends to think psychology is just common sense; little appreciation for how wrong common sense often is

Chapter 1

- Public (and students) often don't realize how much psychology is a science
- What is science?— 3 elements:
 - Publicly verifiable (Operational definitions)
 - Solvable problems (Falsifiable ideas)
 - Systematic empiricism (Claims tested against reality)

Chapter 1

- What science studies—only things that can be studied scientifically. Leave philosophical questions for philosophers.
- Some questions now unanswerable may become answerable in future (technology)

Chapter 2

- Predictions must be (1) specific and (2) must predict both what will and will not happen
- Why do some people believe unproven alternative medicine claims but are doubtful about standard medicine?

Chapter 2

- Quality of evidence important—not all evidence equally compelling; how well was study designed and carried out, are measures valid
- were data analyzed correctly, are conclusions justified by data
- Many experiments lack proper control groups or procedural control

Chapter 2

- Evidence vs. personal beliefs:
 - scientific approach goes with evidence, even when not what would want to believe
- Scientists can admit uncertainty; many others don't want to show such "weakness" because support of public might decrease (if she doesn't have all the answers, why buy his book?)

Chapter 2

- Theory generation is easy; creating testable hypotheses is difficult
- Falsifying a theory doesn't mean it is completely wrong; often just needs modifying
- Ex.: if parts of evolution theory need modifying, it doesn't weaken overall theory

Chapter 3

- Essentialism—quest to find ultimate explanations in terms of essence of concept
- Ex.: How did the universe begin (ultimate cause); What is essence of intelligence?

Chapter 3

- Operationism—concept must be measurable; linked to behavior
- Essentialists want to define everything first; operationists proceed and research supplies meaning of concept

Chapter 3

- Terminology problem: if use everyday words, common definitions different from how psychologists use same terms
- If use new terms for precision, get criticized for using jargon

Chapter 3

- Operationism & phrasing questions—tendency for people to keep changing operational definition if research gives answer they don't like
- Ex.: can computers think, have emotions; moving target of definition

Chapter 4

- "It is my clinical experience"—subjective, can't disprove
- Case studies—good for ideas, hard to pin down explanations; placebo effects problems; hard to make cause-effect judgments

Chapter 4

- Testimonials—tend to be vivid, thus having more impact than they should; don't prove cause-effect (no controls)
- E.g.: silicone breast implants—are they safe? Testimonials vs. scientific evidence

Chapter 5

- Problems interpreting correlation: 3rd variable and directionality
- Ex.: 3rd var. problems: being in band & good grades; school breakfast & good grades; bad child name & psych. Problems
- Ex.: directionality problems: television violence & aggressive children

Chapter 6

- Necessity of proper controls
- Ex.: Clever Hans, facilitated communication
- Need to properly assess control information; e.g. confirmation bias

Chapter 6

- Folk wisdom—formed from everyday observations; subject to many cognitive errors
- Ex.: moon effects, old sayings

Chapter 7

- Natural observations: can't "pry apart" coincident variables; can't make cause-effect conclusions

Chapter 8

- "Einstein syndrome"—idea that science usually progresses through giant intellectual leaps
- Public may not appreciate slow progress that characterizes normal science
- Connectivity principle—new theories must still explain old findings (but better) along with new phenomena

Chapter 8

- Converging evidence—author used my favorite 2 examples: tv violence & aggression, and smoking and health problems
- Progression from less to more powerful methods (e.g., case study, correlational, field experiment, lab study)

Chapter 9

- Single vs. multiple causation
- Some people prefer one-factor reasoning
- Many people revert to single causation when dealing with strongly held opinion or emotional issue
- Sometimes only interactions can explain effects

Chapter 10

- “person who” evidence— “That can’t be true, because I know a person who ...”
- Ex.: SAT scores can’t predict college grades, because I know (or I am) a person who”
- Public misunderstanding of why scientists make mainly probabilistic statements

Chapter 10

- Human errors in thinking about probabilities:
- Tend to overweight case info and underweight base rate info
- Sample size—tend to overweight diagnostic info and underweight sample size info
- Gambler’s fallacy

Chapter 11

- Tendency to find patterns even in randomness; e.g., illusory correlations
- E.g.: Rorschach test
- Tendency to find causal explanations for correlations; e.g., just world hypothesis

Chapter 11

- Coincidence—specific event vs. all possible coincident events
- E.g., presidential coincidences, personal coincidences
- Role of memory—availability heuristic

Chapter 11

- Actuarial vs. clinical prediction
- Clinicians—tend to use denial when confronted with such evidence
- E.g., “Moneyball” about actuarial vs. managerial decisions in baseball
- People in general overconfident in own predictions, thinking they will beat the averages

Chapter 12

- Psychology's image problems
- Freud problem
- Media representations of psychology—heavy on pop psych & parapsychology
- Self-help literature—not always based on experimental literature; recipe knowledge
- Media—driven not be search for truth, but for what will get a good audience

Chapter 12

- Some psychologists represent the field poorly: non-scientifically based therapies, desire to sell a lot of books, guild focus of clinical psychology (licensure over experimentation)
- APA vs. APS
- Political considerations: people don't want to cede to psychologists option to say what is true about human behavior