

Psyc 101, Pomerantz, Spring 2009

Week 1: Introduction to Psychology

1. Preliminary remarks

- Psychology in everyday life: check today's newspaper
 - Warfare, conflict, terrorism, politics
 - Crime and justice: capital punishment
 - Disease: 50% of healthcare costs attributable to human behavior
 - Work: human productivity, happiness
- Psychology as a science vs. folk psychology
 - Systematic observation vs. causal anecdotes
 - Repeated observations, not just one-shot glances
 - Controlled conditions, inside or outside the lab
 - Explicit measures of behavior (e.g., happiness)
 - E.g. effect of wealth on happiness (very popular today)
 - IV= wealth. How to vary, natural vs. experimental
 - DV=happiness. How measured, self-report, other's report, behavior
 - Graph
 - Modeling and prediction
 - Understanding neural basis for behavior
- Psychology as the Science of the Obvious? The limits of folk wisdom
 - We all observe, interpret, predict human behavior continually
 - But we are often at a loss to predict specifics.
 - Consider folk wisdom:
 1. Absence makes the heart grow fonder.
 2. Look before you leap.
 3. A penny saved is a penny earned.
 4. Haste makes waste.
 5. Turn the other cheek.
 6. Charity begins at home.
 7. Better safe than sorry.
 8. All things come to those who wait.
 9. The grass is always greener on the other side of the fence.
 10. Too many chefs spoil the broth.
 11. Once burned twice shy.
 12. Birds of a feather flock together.
 13. United we stand, divided we fall.
 14. Good fences make good neighbors.
 15. Never put off until tomorrow what you can do today.

“Folk wisdom” is contradictory, confused, and often wrong!
(See the end of this document.)

Cf. gambler’s fallacy, systematic error, naïve physics. Our “folk” understand of probabilities, physics, etc. is often wrong, so perhaps no surprise that we’re similarly wrong on behavior.

Some general rules work, but they are more principles than laws. E.g., rule #1 of human behavior= humans are likely to repeat behaviors that lead to reward and to avoid behavior that leads to punishment. Problem: defining rewards, punishment without circularity.

Predicting human behavior: difficult because of free will or simply because so many factors affect our behavior?

- Cf. physical scientists trying to predict where a dropped feather will land in a wind tunnel.

An example of successful psychology research: Mental Imagery

1. The phenomenon: almost all of us experience mental images in dreams, hallucinations, recollection, problem solving
2. Example: Kekule’s 1865 notion of the benzene ring: "...I turned my chair toward the fire place and sank into a doze. Again the atoms were flitting before my eyes. Smaller groups now kept modestly in the background. My mind's eye sharpened by repeated visions of a similar sort, now distinguished larger structures of varying forms. Long rows frequently rose together, all in movement, winding and turning like serpents; and see! what was that? One of the serpents seized its own tail and the form whirled mockingly before my eyes. I came awake like a flash of lightning. This time also I spent the remainder of the night working out the consequences of the hypothesis."
3. Q: How many windows are there in the home you grew up in?
4. Methodological problem: how to study this scientifically when it seems so hopelessly subjective?
5. Solution via testable hypotheses: what would follow if we did experience actual visual images? Images as spatial representations that have geometrical properties (as opposed to simply logical, propositional properties)
6. Look for confirming / disconfirming evidence
7. A classic experiment by Shepard & Metzler (Science, 1971):

<http://www.owlnet.rice.edu/~psyc351/Images/ShepardMentalRotationStimuli.jpg>
<http://www.owlnet.rice.edu/~psyc351/Images/ShepardMentalRotationData.jpg>

8. **Converging evidence** from other experiments, namely Perky/Brooks; Kosslyn; neuroimaging studies; transcranial magnetic stimulation results.
9. Limits to psychology: Will we ever know what the conscious experience of an image really is? Can we know what goes on in the minds of others?

2. Housekeeping

Syllabus review

Textbook, assignments

Research participation

Dates

Evaluation

Classroom etiquette

Succeeding in this course

3. Overview of course

What is psychology? Definition: the science of mental processes and behavior

Science: *systematic observations under controlled conditions testing predictions from an explicit theory (theory <> hunch, hypothesis)*

Mental processes: *thinking, perceiving, feeling=.*

Behavior: *operational definitions needed; now includes neural responses*

Goals of psychology: prediction, control, understanding

Dissociate all three. E.g., for years we could predict and control w/ aspirin w/o understanding why or how it worked

Three Levels of analysis: Brain, person, group (theme from the textbook)

- Brain: reductionism. Green= certain neurons firing. Hardware vs. software.
- Person: my brain made me do it? Consciousness
- Group: can we predict group behavior from the behavior of single individuals?

History of Psychology

So many schools! Contrasts between them are not always clear!

Structuralism, Wundt (Titchener, Boring, Stevens, Garner, JRP)

Introspection, reductionism

Functionalism (vs. structure). *You could understand all the parts of a computer w/o knowing how the thing actually works. The mind's adaptation, William James, Charles Darwin*

Gestalt school: Wertheimer, Koffka, Kohler. Perception + problem solving, inverting pyramid of circles

Psychodynamic psychology: Freud et al.

Behaviorism: Watson, Skinner

Humanistic psychology

Cognitive psychology: Miller, Neisser

Cognitive neuropsychology

Evolutionary psychology

What psychologists actually do:

Clinical psychologists

Psychotherapists

Clinical neuropsychologists

Counseling psychologists

- Psychiatrists
- Psychiatric social workers
- Psychiatric nurses
- Academic Psychologists
 - Cognitive
 - Experimental/animal
 - Developmental
 - Social, I/O
 - Personality
- Applied Psychologists
 - Human factors psychologists (Bell Labs, etc.)
 - Developmental, biological, social, I/O, sports, educational psychologists

Ethics

Ethics in research: informed consent, IRBs

Ethics in practice: training and competence, confidentiality, abuse of power

Contradictory Aphorisms

1. Absence makes the heart grow fonder, but out of sight is out of mind
2. Look before you leap, but he who hesitates is lost (or strike while the iron is hot)
3. A penny saved is a penny earned, but don't be penny-wise and pound-foolish.
4. Haste makes waste, but a stitch in time saves nine.
5. Turn the other cheek, but an eye for an eye
6. Charity begins at home, but love thy neighbor
7. Better safe than sorry, but nothing ventured nothing gained
8. All things come to those who wait, but the squeaky wheel gets the grease
9. The grass is always greener on the other side of the fence, but there's no place like home
10. Too many chefs spoil the broth, but many hands make light work (or the more the merrier)
11. Once burned twice shy, but if at first you don't succeed then try, try, try again (or, hope springs eternal)
12. Birds of a feather flock together, but opposites attract
13. United we stand, divided we fall, but it's a dog-eat-dog world
14. Good fences make good neighbors, but no man is an island
15. Never put off until tomorrow what you can do today, but let's cross the bridge when we come to it.
16. Seek and ye shall find, but curiosity killed the cat.
17. A rolling stone gathers no moss, but stop and smell the roses.
18. The pen is mightier than the sword, but actions speak louder than words.
19. Don't judge a book by its cover, but the clothes make the man.
20. Half a loaf is better than none, but a miss is as good as a mile.
21. All that glitters is not gold, but where there's smoke there's fire.
22. What's good for the goose is good for the gander, but one man's meat is another man's poison.
23. The best things in life are free, but there's no such thing as a free lunch.
24. You are never too old to learn, but you can't teach an old dog new tricks.
25. Never look a gift horse in the mouth, but beware of Greeks bearing gifts.
26. Slow and steady wins the race, but time waits for no man.
27. Hitch your wagon to a star, but don't bite off more than you can chew.
28. The grass is always greener on the other side of the fence, but there's no place like home.
29. The early bird gets the worm, but better late than never.
30. Variety is the spice of life, but never change a horse midstream.