

LAURENTIAN UNIVERSITY
PSYC 1105EL 06: Introduction to Psychology
2008-2009

Dr. M. A. Persinger, C. Psych., Professor

Primary Words, Phrases and Concepts From the Lectures

(approximate temporal order of presentation)

response (definition)
cumulative records vs strength of response
discerning behaviours and risk factors by inspection of cumulative records of simple responses over time
response aggregates
behaviour
personality
environmental event
stimulus
reinforcement
reinforcer
S-R coupling
temporal increment of observation
space-time contiguity
classical (Pavlovian) conditioning
unconditioned stimulus
conditioned stimulus
reflex
unconditioned response
conditioned response
higher order conditioning
placebo effects
number of pairings required
Conditioned Taste Aversion (CTA)
difference between conditioned response and UCR
secondary reinforcer
negative reinforcement
positive reinforcement
response contingent withdrawal of reinforcement
spontaneous recovery
punishment
shaping
acquisition
fading
intermittent reinforcement
"different space-time patterns of reinforcement presentation generate predictable patterns of behaviour"
Continuous Reinforcement Schedule
CRF extinction and aggression
Fixed Interval

Fixed Ratio
ratio strain and adaptation/sickness
sudden and protracted changes in reinforcement schedules and health
Variable Interval
Variable Ratio
symbolic representations of schedules (operations analysis)
DRL (differential reinforcement of low rates of responding)
superstitious conditioning
reinforcement gradient
parallel vs serial behaviours and superstitious conditioning
predicting satiation
IRT (interresponse time)
predicting satiation from IRT^2 divided by duration of R
avoidance vs escape conditioning
conditioned suppression
anxiety vs fear
magical thinking
intraverbals
mands
implicit chains
reinforcement schedule changes
life style changes and immunosuppression (illness)
self-tacts
self concept
stimulus generalization
response generalization
developing the self concept and implicit chains
stereotypy and prejudice via implicit chains
covert operants
semantic generalization
semantic conditioning
language and the sense of self
acquisition of meaning from abstract words
effects of wording meanings on perceptions and memories
serial vs paired-associate learning
massed vs spaced practice effects
concept formation (subset of stimulus generalization)
the semantic lexicon
thinking and cognition
divergent vs convergent thinking
creativity
syntax vs semantics
language as the representation of experience (implications)
short-term memory
long-term memory
memory as the representation of experience
the egocentric nature of each person's memories
semantic memory

procedural memory
episodic memory
autobiographical memory
illusory or false memories
proactive interference
proactive interference
amnesia
retrograde amnesia vs anterograde amnesia
hypermnesia
hippocampal formation
amygdala
isomorphism
action potentials (digital information)
neuron
soma
axon
dendrite
cerebral cortical storage
dendritic spines
time stored as spatial patterns of dendritic spines
false (illusory) memories
right prefrontal cortex and reconstruction of experience
temporal lobe/ hippocampal formation and consolidation of experience
memory span (7 plus or minus 2)
recall vs recognition
encoding of information and the left prefrontal cortices
reconstruction of information and the right prefrontal cortices
forgetting
extinction
context-dependent memory
state-dependent memory
discriminative stimuli
paradigms
Sd-Sdelta (go/no go) procedures
conflict
conditioned taste aversion
multiple personality disorder and other dissociative states
anxiety and widening of the stimulus generalization gradient
how is experience encoded into memory
short-term memory
electrical ensembles (reverberating circuits)
protein synthesis and memory storage
short-term to long-term memory transfers
the localization vs diffuse storage arguments of memory
distortions of the memory trace
protein basis of memory/ effects of ethanol and other protein synthesis inhibitors
absolute capacity of memory
the hologram (field) metaphor for memory

schemata (how expectations affect what is perceived and remembered)
general organization of the human brain
excitatory vs inhibitory interactions
primary, secondary, and associative regions of the cerebrum
importance of gyrencephalization
hemispheres of the brain
general principles of brain function
"you are only aware of the states of your nerves"
"that region of the brain that is most metabolically active at any given time determines experience"
"positive symptoms are associated with overactive neurons or neurons released from inhibition"
Why the statement "you only use 10% of your brain" is nonsense
general left hemispheric processes
general right hemispheric processes
blood supply: Middle Cerebral Artery, Anterior Cerebral Artery, Posterior Cerebral Artery
prefrontal lobe functions
temporal lobe functions
parietal lobe functions
occipital lobe functions
limbic lobe functions
parahippocampal gyrus
insula (the representation of the internal body)
the synapse as a neuronal interface
memory as the matrix of synaptic patterns
the relationship between dreams and memory consolidation
scale distinctions: nominal-ordinal-interval-ratio
intelligence
measures of central tendency: mean, median, and mode
measures of dispersion (variance, range, standard deviation, standard error of the mean)
standard deviation (procedures for calculation)
standardized (z) scores
normal vs abnormal
the normal distribution curve
verbal intelligence vs performance intelligence
the Wechsler Intelligence Scales
hypothetical constructs
intervening variables
confounding variables
fluid vs crystallized intelligence
how to calculate (from raw scores) a standardized score with a mean of 100 and SD of 15; a mean of 10 and a SD of 3; a mean of 50 and SD of 10
the concept of norm-referenced vs absolute-referenced scores
the issue of normal vs abnormal and good vs bad (morality)
cultural context and normality
racial differences in intelligence
gender differences in intelligence
intelligence as a primary predictor of success and achievement
the actual relevance of "different intelligences"
critiques of intelligence tests as philosophical/ social opinions

reliability
validity
criterion validity
construct validity
face validity
test-retest reliability
correlation vs causation
confounding variables
characteristics of the correlation coefficient
determination of means and distributions
statistically significant differences between means
employing overlaps of standard errors of the mean
probability level; what it implies
rejection/ acceptance of the null hypothesis
coefficients of variation
explained variance: r-squared, eta-squared, omega-squared estimates
coefficients of determination
regression
slope
standard error of the estimate
predictions for groups vs predictions for individuals within groups
the source of atoms, molecules for life forms
DNA as a code for information storage
genetic psychology
XX vs XY chromosome
46 chromosomes
concept of gene
DNA-RNA-cell protein representation
human genome
numbers of genes
estimated 3 billion bases
yeast vs nematode vs mouse vs human kilobase composite
genotype vs phenotype
nature-nurture (Kant-Locke) arguments
the ultimate determinism of genes
the irony of homogeneity of environment ('equality of experience') yields enhanced dominance of behaviour
by genetics
selection
recessive vs dominant gene expression
partial penetrance
male vulnerability
testosterone-oestrogen effects
sexual dimorphism of the brain (independent of experience)
gender vs racial differences in brain size (implications)
the concept that structure dictates all psychological function
selective breeding
historical effects of extermination of peoples and ethnics upon genetic expression
cumulative effects of major plaques upon present viability

the myth of brother-sister breeding and offspring
 iatrogenic selection of humans
 Lamarckian (acquired) genetic influences
 the nature vs nurture issue
 sex chromatin aberrations: XO (Turner), XXY, XXXY (Klinefelter), XYY or XYYY ("Speck Syndrome")
 teratogen
 terad
 prenatal environment
 congenital vs genetic
 instinct
 monozygote vs dizygote twins: advantage of methodology
 schizophrenia and genetics
 personality and genetics
 maturation
 state/point of readiness
 imprinting
 optimal period to learn
 the Carmichel (salamander) study
 progeria
 early social deprivation and long-term consequences
 sex differences in ontogeny
 approximate age onset of ambulation, babbling, speaking
 emergence of sense of self
 Harlow and Spitz studies
 prehensile movement
 contact comfort
 maternal-offspring bonding
 cingulate gyrus
 early deprivation and later psychological depression
 MacLean's Triune Theory of brain evolution
 enriched environments/ effects on cortical thickness and dendritic growth
 influence of bilingualism upon language development
 Piaget's stages of cognitive development
 Erickson's concepts of life stages
 stages of moral development
 geriatric progression
 changes in performance and verbal intelligence with age
 myths of about aging: proficiency vs efficiency (speed)
 chromosome 21 and Down's Syndrome
 chromosome aberrations and senile dementias
 ethology
 innate releasing mechanism (IRM)
 sign stimulus
 hierarchical organization of reaction specific energies
 threshold
 supernormal sign stimuli
 modification of instinct by learning

hypothalamus as the instinct organizer
unocclusion of instinctual behaviours by drugs
release of sex-aggression by subtle alterations of brain connections
aggression
the human being as the most aggressive animal in the history of life forms
curbing aggression: pecking hierarchy, ritualized fighting and exclusion of others as normal group behaviours
female social status dependence upon male mate's social status
aggression in human beings as primarily genetic
the sociologists'/feminists' myths of "environmental determinism of aggression"
sexual-aggression dyad as predictable consequence of amygdaloid connections
the flock vs the group
territorial imperative
territory and aggression
similarities between reptiles and mammals
global geomagnetic activity and intragroup aggression (war)
"terrorism", global communication and homogeneity of thought
consciousness: what is it?
the intrinsic mind-brain(body) dualism: idealism vs materialism
entanglement and quantum mechanics applied to consciousness
neurons and glial cells
neuronal interfaces (synapses)
the action potential
frequency modulation of action potentials as brain language
membrane (liquid crystal phases)
proteins within membranes (ion channels)
resting membrane potentials
action potentials
all-or-none response of the action potentials
the 10^{-20} Joule quantum of thought
membrane potential equivalent of about 1 million volts per meter
absolute refractory period
relative refractory period
sodium gradient
potassium gradient
role of calcium
myelination
saltatory conduction
impedance
capacitance
demyelination (e.g., with multiple sclerosis) and effects on velocity of the action potential
resistance/ conductance (picoSiemens)
current picoAmps
voltage (potential difference)
neurotransmitters
inhibition vs excitation
disinhibition
major types of transmitters

serotonin and median raphe
locus ceruleus and noradrenaline
dopamine and the ventral tegmentum
acetylcholine and the nucleus of Meynert
consequences of excessive activity of neurotransmitters
consequences of diminished activity of neurotransmitters
long-term potentiation and memory
personality as synaptic phenomena
cortical (cerebral) potentials
the electroencephalogram (source from cerebral cortices)
implications of "flat line" and "near death experiences"
all features of near-death experiences are predicted from hypoxic/ischemia gradients of PCA
steady state vs time-varying potentials
the 10-20 EEG montage
delta activity
theta activity
alpha activity
difference between alpha rhythm and alpha activity
beta activity
gamma activity
power spectra
the "40 Hz" coherence of consciousness
relationship between levels of arousal, consciousness and frequency bands
epilepsy as an exaggeration of normal electrical activity
consciousness as recreations of coherent transcerebral waves every 20 msec to 25 msec
alerted states of consciousness
REM (rapid eye movements): correlates
paradoxical sleep
right hemisphere features of dreams
emotional themes/emotional meaning of words rather than syntax or category is the subject matter of dreams
(source of their apparent "irrationality")
SWS (slow wave sleep)
circadian rhythms
diurnal variations
the pervasive 90 min to 120 min cycle
infra- and ultra-radian rhythms
night terrors
bruxism
tachycardia
incubus/succubus nightmares
parasomnias
hypnagogic imagery
sleep spindles and alpha rhythm dropout
conditioning during dream states without waking awareness
state-dependent memory
modifying memory during dreams
dreams as indicators of internal states/ health
PGO (pontine geniculoccipital) spikes

psi phenomena
actual paranormal phenomena vs popular (Hollywood) depictions
paranormal phenomena as distortions in space-time contiguity
telepathy-clairvoyance / Sean Harribance Studies
recurrent spontaneous psychokinesis
poltergeists: characteristics
postmortem apparitions (bereavement apparitions)
haunts
nocturnal geomagnetic activity and telepathy reports
experimental dream telepathy
remote viewing (Stanford Research Institute)
Ingo Swann studies
melatonin
experimental vs correlational results of telepathy studies
plus and minus 3 day effect between experience and event
right hemispheric features of psi
female vs male factors in psi experiences
sensation vs perception
Weber's law
Fechner's law
Method of Limits, Method Constant Stimuli, Method of Average Error
Sensors as transducers of energies to action potentials
basic physics for psychologists
psychophysics
psychological correlates of amplitude and wave length for 400 to 800 nm electromagnetic energy and 20 to 20,000 Hz atmospheric pressure variations
speed of sound vs speed of light
infrared detection
detection of other components of the EM spectrum?
species differences in distributions of taste receptors on body
is the brain a "sensor" for classes of EM stimuli?
unusual sensors, e.g., dermato-optics
physical correlates of the four classes of tastes
diopetre
Planck's constant
vitreous and aqueous humours
presbyopia vs myopia (lens implications)
retina and fovea
central vs peripheral vision
phosphenes/ magnetophosphenes
rods, cones
color vision
photopsin vs rhodopsin
receptor subtypes for three median wavelengths of EM
night vision and red light
dark adaptation
retinal fields and ganglion cells
organization of visual cortex into function-specific columns

simple vs complex cortical cells for line stimuli
autokinetic effect
phi phenomena
critical fusion frequency (CFF)
context and perception
motivation and perception
Gestalt principles: figure-ground, contour, grouping (likeness, nearness, continuation, closure)
perceptual constancies (size, shape, color, brightness)
Depth cues (clearness, linear perspective, interposition, shading, texture gradient)
the nature of illusions (vs hallucinations)
infrasound vs ultrasound
stapes-oval window
cochlea, basilar membrane and Organ of Corti
cellular correlates of pitch and intensity
concept of sound pressure level (SPL), db (decibels) and watts/cm² (power)
10 db=10 microwatts/cm-squared
steady pressure 100 kPa vs complex patterns at mPa levels
aging, diminished hearing threshold and paranoia
primary tastes
taste buds and epithelial cells
thresholds for primary tastes
characteristics of tongue
mediation of gustation by separate cranial nerves
olfactory sense
sensation of motion
time perception: the specious present
subjective time estimation: distortion by hypnosis
homeostasis
sensors for chemical concentrations and types of chemicals
blood (vascular) mediated stimuli for internal states vs skin mediated stimuli for external states
psychophysics of internal stimuli
central vs peripheral factors
hypothalamic control mechanisms
physical correlates of hunger
gastric distention
stomach contractions and hunger pangs
the parabiotic experiments
blood glucose, free fatty acids
cholecystokinin
learned (conditioned) sequences for hunger and satiation
servomechanisms
negative feedback systems vs positive feedback systems
input types: step, ramp and impulse
adaptation of servosystems to different inputs
comparator-set point-compensators
set points and obesity
VMH damage, LH stimulation and hyperphagia
bulimia vs anorexia: role of amygdala and orbitofrontal regions

thirst

physical correlates of thirst

antidiuretic hormone (ADH) or vasopressin

angiotensin

aging and weight gain; metabolic artifacts and learned food consumption

sex differences in adipose distribution

stress and weight loss

ACTH-cortisol and glucocorticoids

pain and nociception

pain as a psychological experience vs tissue damage

anxiety and the intensity of pain experience

law of initial values

types of pain

pharmacological treatments of different pain

headaches-their physiological correlates

depression and pain (relationship to substance P)

intracranial stimulation

reward vs aversive areas within the brain

aversive areas surround reward centers

hedonism

anxiety as the anticipation of pain

differences between pain, fear and phobia

examples of phobias: algophobia, taphophobia, peccatophobia

learning theory and explanation of pain

psychological responses to anxiety ("defense mechanisms")

-avoidance, denial, fixation, regression, somatization and compulsivity

limitations and critique of concept of "defense mechanisms"

weak intercorrelations between constructs of anxiety

relationship between learning and anxiety (Yerkes-Dodson law)

effects of anxiety on behaviour: reduced incidental learning, stereotyped responding, decreased verbal fluency, loss of discrimination

anxiety and guilt

anxiety and daydreaming

anxiety and sensation (thrill) seeking

frustration: aggression, regression, fixation

conflict: approach-approach, avoidance-avoidance, approach-avoidance
thanatophobia

developmental stages of death concept: denial, personification, inevitability

religious ideas as responses to "I will die"

"I will die" as semantic equivalent of anxiety paradigm

the dangers of belief in God, Allah, or the Great Cosmic Ooze: causes of aggression and killing

stages of dying: ignore (continuation), aggression, depression, adaptation

religious beliefs as anxiety reduction for dissolution of self

NDEs (near-death experiences) as responses of the brain rather than proofs of afterlife

stages of NDEs: resistance, review, transcendence

similarities of NDEs cross-culturally only moderate; primarily reflects individual and his culture

parapsychological beliefs as substitutes for religious beliefs

emotions: definition-differentiation from mood

ictal emotions
 Davitz classification
 Plutchik Emotions Profile Index
 Whissell Word Meanings Concept: dimensions of pleasantness and activity
 Cannon-Bard hypothesis
 James-Lange hypothesis
 Schacter-Singer hypothesis
 cognitive expectations and experience of emotion
 temperaments
 physiological correlates of emotions
 personality as aggregates of behaviour
 personality as adaptive response
 optimal adjustment: definition
 characteristics of self-actualized person
 Freud and poet rather than scientist
 historical influences upon Freud's conceptual development
 the tripartite mental apparatus: id, ego, superego
 translation of Freudian terms into behavioral equivalents
 eros vs thanatos
 instinct vs drive (der Trieb)
 Freud's contributions to modern psychology
 solutions to conflict
 Cattell's 16 PF (personality factor)
 MMPI (Minnesota Multiphasic Personality Inventory)
 psychopathology (abnormal psychology)
 concept of normal and abnormal
 legal, psychological and "everyday" definitions
 abnormalities of thought, language, sensation, perception, and memory
 DSM IV (DSM III-R)
 Axis I vs Axis II
 importance of accurate diagnosis for treatment
 schizophrenias
 psychological treatments not effective for schizophrenias
 schizophrenia as an insidious brain disorder/ deterioration
 affective disorders: unipolar depression / bipolar disorders
 brain correlates of depression
 personality disorders: examples
 neuroleptics
 antipsychotic drugs: examples
 drugs for treatment of depression: examples
 the sense of self as a product of brain activity at the synaptic level (hence effects of drugs)
 sexual disorders (defined by society and frequency) - issues of pedophiles, froturists, sadomasochists
 pharmacological interventions for "abnormal" behaviours
 effects of ethanol
 hallucinogens: drugs that affect serotonin, e.g., LSD, psilocybin; noradrenaline, e.g., mescaline, or dopamine,
 e.g., cocaine, pathways or receptors
 benzodiazepines (Valium, Librium)
 stimulants: xanthine, amphetamine

why drugs become addictive
 the antinomian personality
 historical examples
 social change: epidemiological effects on personality
 attitudes
 cognitive dissonance
 implicit personality theory
 prototype
 attribution
 groups and deindividuation
 friendship and love
 love as egocentric selection
 maintaining relationships
 stages of sexual arousal: excitement, plateau, orgasmic, resolution
 Kinsey reports
 male and female similarities
 the six sexual outlets
 exaggeration of male/ female differences in society
 EEG correlates of orgasm
 methods of masturbation
 survival value of sexual behaviour
 irrelevance of the individual

Course Text: The Professor "I am the textbook"

Resources: The Library, The WEB, The Akashic Record

Course Grade:	MidTerm:	40%
	Final:	40%
	Who Am I Essay: Interpretation of your standardized test data?	10%
	Other:	10%

There will be two midterms, during one of the hours on each of the two final Wednesday nights before the Winter Solstice. Your midterm mark will be the highest grade for the two exams. There will be two final examinations. The first will be the last day of classes (2009) while the second will be during the examination week. The highest mark will be the final grade.

If your highest final grade is greater than the highest mid-term grade, then your grade for 80% of the course will be the final grade. If your highest final grade is less than the highest mid-term grade, then the 80% will be the average of your highest mid-term and final grades.

If you do not submit your "Who Am I?" essay and it does not involve interpretation of your own test data according to the principles of measurement, you will receive an incomplete for the course. After one month the INC is replaced by a F.

Examination Format: Multiple Choice and simple answer. Emphasis is upon problem solving and understanding of concepts and facts, not simple recognition. Each exam is about one hour. The answer sheet is submitted and the answers are given for immediate reinforcement. You may keep the exam questions.