

Learning and memory: chapter 1



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Learning The process where changes in behavior arise as a result of

experience interacting with the world Memory The record of our past

experiences, which are acquired through learning ONLEARNING AND

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Now Empiricist Humans are shaped primarily by their experience

(nurture) Which philosophers held an empiricist view? Aristotle and

Locke Associationism Memory depends on forming linkages between pairs of

events/sensations/ideas so that recalling one of the pair elicits a memory of

the other

-defined by Aristotle What are Aristotle's three principles of association? -

contiguity

-frequency

-similarity Explain Aristotle's Rule of Contiguity Experiences near each other in

time/space are associated Explain Aristotle's Rule of Frequency Experiences

repeated often are connected more strongly Explain Aristotle's Rule of

Similarity Experiences similar to one another are associated Nativism Humans

are shaped primarily by their inherited nature Which philosophers held a

nativist view? Plato and Descartes Explain the modern view on nature versus

nurture We are shaped by both nature and nurture

-people are less likely to be strict empiricists or nativists Give an example of

the modern view Mathematical Abilities

-Nature: some people are naturally better at mathematical reasoning

-Nurture: there are certain steps one follows to solve an addition

problem Experimental Psychology Testing psychological theories by

experimentation rather than observation of natural events

-transition of the study of learning from philosophy to a natural

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scienceHermann EbbinghausFirst to study memory scientifically

-empirical: collected data

-experimental: manipulated the IV to observe effects on DV

-quantitate: expressed observations numerically

limit: studies were only on himself

Describe Hermann Ebbinghaus' memory experiments-Studied a list of 3 letter non-sense words (couldn't be real words because he could more easily remember words he was familiar with)

-Put list away

-Came back to list and tried to remember as many as possible

-continued the process until he remembered all words

-collected data on time savingsTime SavingsThe amount of time it took to learn the words the second time minus the original amount of time it took to learn them

-strong if the delay between learning and relearning is short

-as the delay increases, savings decreasesThe Forgetting CurveMost of what we learn, we forget/lose very rapidlyThe Retention CurveHow much information is retained after a specific point in time following

learningDescribe Pavlov's Work-studied animal learning

-developed classical conditioning

-explained extinction and generalizationClassical ConditioningLearn that a specific stimulus predicts an event, causing a behavioral response to the stimulusExtinctionThe weakening of a learned response when the specific stimulus no longer predicts the eventGeneralizationThe ability to transfer past learning to similar situations

- ringing a different but similar bell may also make the dogs mouth
- waterOperant ConditioningOrganisms learn to make responses in order to obtain/avoid consequencesLaw of EffectThe probability of a particular behavioral response increases/decreases depending on the consequences that follow
- increased if response led to a desirable outcome
- decreases if the response led to an undesirable consequenceBehaviorism BeliefPsychology should restrict itself to the study of observable behaviors and avoid internal mental processesWho is considered the founder of behaviorism? Describe his studies. Watson
- studied learning in rats by placing them at the entrance to a maze and rewarding them if they found the exit
- stimulus response learningWhat are the principles of behaviorism?-Focus on behavior over mental processes (mental processes are irrelevant)
- Empiricism: should be studied experimentally
- Supports evolutionary perspective (what works for rats works for humans, all organisms are the same)
- Quantitate
- Supports Law of EffectWhat is the problem with behaviorism? It can't explain all of human learning
- doesn't explain:
 - the formation of a cognitive map
 - latent learning
 - reasoningLatent LearningLearning that takes place even when there is no specific motivation to obtain or avoid a specific consequence
- challenges the behaviorist assumption of stimulus-response

learningCognitive MapAn internal representation of the spatial layout of the external worldDescribe Tolman's Experiment to show Watson's rats were doing more than stimulus response learning-if you block the rats route in the maze, they find a new one

-if you start the rat at a new part of the maze, they still find the exit

the rats have goals and intentions

Cognitive PsychologyFocuses on human abilities like thinking, language and reasoningWhat are the principles of cognitive psychology?-Studies mental processes which cannot be directly observed but can be studied objectively

-humans are self-motivated to learn (despite law of effect)

-humans are related to other animals but what works for rats may not work on humans, we are distinct beings

-computer metaphorWhat did Bower contribute to psychology? Describe his findingsExplained the learning curve is not a slow gradual learning process

-If you look at a single person, you realize that a person tries to solve a problem/figure out how to behave and once they've figured it out, they will stick with their solution

-the " curve" is because we average numerous people's behavior

-shows individuals have different learning processes