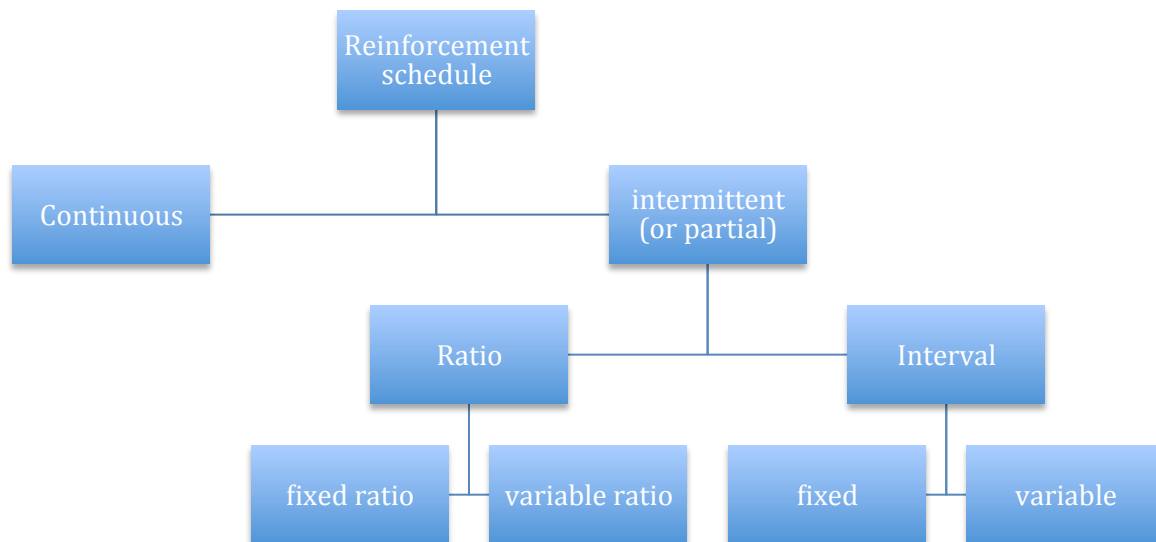


Lecture notes Oct 14, 2014

Operant conditioning continued...



Ratio schedule of reinforcement

Ratio schedule of reinforcement: The reinforcer depends on the number of times a response occurs.

- **Fixed ratio schedule:** The number of responses required for reinforcement is always the same (fixed). A behaviour is reinforced after a set (fixed) number of responses.
 - Ex: Skinner box – a rat working under FR-20 (fixed ratio every 20 responses). After pressing the bar 20 times, it gets a food reward. Then again after another 20 presses. And so on.
 - Another Ex: Loyalty cards where after you purchase 10 cups of coffee and get one free. This would be a fixed ratio of 10 (FR-10).
 - Pattern of responding: High rate of responding, responding is quite consistent, and there is a “post reinforcement pause”. A rat knows that the more it presses the bar, it gets more food, so it presses the bar a ton. And the pressing rate is stable, and will stay fairly consistent, except for right after you are given a reinforcer, where there is a brief

pause. The harder the organism has to work, the longer the pause will be after the reward. So the rat that has to press 100 times will pause longer than a rat that has to press it 20 times before being rewarded.

- **Variable ratio schedule:** A reinforcer is given for an average number of responses. It reinforces a response after an unpredictable number of responses.
 - Example: A salesman is working under VR-10 (variable ratio on average every 10 times). They won't make a sale every 10 times, but on average every 10 times. So maybe they will be reinforced after 7, then after 9 then after 30, then three in a row, etc, etc. but then you average these, and you'd get 10.
 - Pattern of responding: high rate of responding. Responding is quite constant. NO post reinforcement pause. This is because of the element of unpredictability. Variable ratio schedule creates the strongest and most persistent behaviour.

Interval Schedule of reinforcement

Interval Schedule of reinforcement: Reinforcement is delivered for the first response that occurs after a given time period or time interval has elapsed. So not how many times you do something, but how much time has gone by.

- **Fixed interval schedule:** Reinforcement is given after a fixed time interval. (the time is always the same)
 - Ex: rat in skinner box under FI-20s (Fixed interval 20 second reinforcement schedule). The rat presses the bar and gets food. But for the next 20s, there's no way to get food no matter how much it presses the bar. Once 20s have elapsed, the first bar press will be reinforced with food.
 - Pattern of responding: The rate of responding increases as the reinforcement time approaches. Activity stops for a while after the reinforcement is delivered. Responding gradually increases again. The rats can learn to estimate the passing of time. "After I get my reinforcement, I'm not going to get anything, so I'll stop pressing, so I don't waste my energy. But after I think it's getting close to 20s, I'm going to press very quickly so I'll get it right away."
 - Real life Ex: Employee on an assembly line FI-20m. A supervisor comes by and says, "Fantastic job, keep up the good work". If the employee is working under a FI-20m schedule, every 20 minutes, the supervisor will come by and say good job. You'll soon learn that he won't come around again for 20m. You'll stop working and grab a coffee. Then, as the time nears, you'll start working hard again. So the boss would want to be more unpredictable.
- **Variable interval schedule:** There is an average time interval between reinforcers. Reinforcement is given after the first response after varying time intervals (unpredictable time intervals).

- Ex: Employee working under VI-20m. Boss will come by on average every 20m but not every 20. Sometimes shorter, sometimes longer. But if you looked at the course of the day, and averaged the time between reinforcers, it would be 20m.
- Pattern of responding: High rate of responding, consistent responding, no post reinforcement pause. Similar to variable ratio schedule.

These are the most common reinforcement schedules, there are some very complex schedules.

Examples:

A pigeon pecking at a light gets 3 pellets of food after an average of every 20s. Which schedule. A: VI-20s

A dog gets reinforced after every time it catches the Frisbee. FR-1 but no. this is continuous reinforcement schedule.

Your mom gives you 100 dollars an average of every 2 months for being a good student. VI2mo

You win a free lottery ticket an average after an average of buying 10 tickets. VR-10

Your dad gets a tie every Father's day FI-1y

Shaping

A type of reinforcement schedule kind of, but it's different from the others.

Shaping: learning in graduated steps in which each successive step requires a response that is more similar to the end desired response in order before that response is reinforced.

- Used when the end behaviour is a bit complex, and too difficult to learn at once.
- Teach a dog to shake hands.
 - Any time it moves its right paw in any way, you give it reinforcement. The dog will learn to move its right hand.
 - After that, to get a reward you have to move paw in vertical direction
 - Work your way more and more complex
 - Eventually to get reinforcement he has to put the paw in your hand before being reinforced.

Similar to classical conditioning there is generalization, extinction, etc etc..

Stimulus generalization: When a response that occurs in the presence of a particular stimulus is reinforced, it will likely also occur in the presence of other similar stimuli.

Stimulus ->	Response ->	Consequence
Dad walks into room ->	Baby smiles ->	Dad pays attention (pos rein)

This is established, and time passes

Stranger walks into room ->Baby smiles

Because stranger is similar to dad, the kid smiles at him.

The greater the similarity between stimuli, the more likely stimulus generalization will occur.

Stimulus discrimination: when a response doesn't occur in the presence of a new stimulus that is similar to the original one.

Discriminative stimulus (S^d): A stimulus that signals that a response will be reinforced. Ex: The stranger never reinforces the kid. Kid learns that dad is the only stimulus that reinforces it when it walks into the room. The Dad becomes the discriminative stimulus.

Pigeon in a box with a red light and green light. When it pecks at red light, no food, when it pecks at green light it always gets food. The green light is the Discriminative stimulus.

Tips for studying on test:

Next Tuesday tested on modules 1,2,3, 63 multiple choice
Thursday 40, 41, 42, 60 multiple choice

Not out to trick you. There will be fair questions about concepts you should know about. If you look at the concepts and definitions, you should understand them. *Italic words are also important to know. Best way to study is not reread, it's to test yourself. Use study guides, and practice questions.*

No questions on dates. But sometimes you need to know general things like Freud was in early 1900s rather than 2000s. But no questions on how many rats so and so used in a study.

Know major names Freud skinner Pavlov etc... names of people who made major theories.

BRING PHOTO ID!!! Bring pencil (HB) and eraser. Best not to fill out Scantron until you're sure of your answer.

The test is 1h and 63 questions, so you need to be fairly fast. Your scantron must be completed when time is up. No extra time for scantron filling out.

Lecture notes Oct 16, 2014

Academic dishonesty

University considers cheating a very serious offense. Cheaters will be appropriately penalized. University has clamped down on people caught cheating. Cheating is NOT WORTH IT!!!!

Back to Personality

Pattern of thinking behaving and acting.

Personality: a person's unique pattern of consistent behavioural traits.

Scientific study of personality is one of the oldest studies of psychology. Early on, there was a study called phrenology. Map a person's head into sections that corresponded to a different personality traits. A person would feel your skull and tell you what your personality is like. Later on they tried to describe personality by body type. Luckily psychology has come a long way since then.

Personality testing is ubiquitous in north America. Very commonly used in personnel selection. Some companies believe that certain personality traits are desirable for certain jobs.

In the past, personality theory was dominated by grand theories of everything about personality. Nowadays, things are a bit more narrow in focus.

Two aspects of personality:

- Consistency: the stability of a person's behaviour over time and across situations.

- Distinctiveness: behavioural differences between people reacting to the same situation.

Trait theories



Trait: durable disposition to behave in a certain way in a variety of situations. One infers the existence of traits, we assume it exists because of your behaviour.

There is a debate about how much your traits are based on the situation, your genetics, or because of your environment.

Some traits are supposed to be more basic than others. For example, impulsive and restless, and fearful could all be explained by a more basic trait called “excitability”.

Theorists try to come up with these more basic traits. They use a statistical technique called “factor analysis”.

Factor analysis: Correlations among many variables are analyzed to identify closely related clusters of variables. Highly correlated groups of traits are “simplified” into a more basic trait that the researcher identifies as a sort of “condensed” more basic trait.





Eysenck (~1960s) developed test to measure a person’s introversion and extroversion. He thought this was biologically determined. Thought that everyone seeks to have a moderate level of arousal.

- Introverts: high arousal (not sexual arousal, physiological)
 - Already high arousal, so will not go out and seek out arousal.
- Extraverts: low arousal
 - Low arousal, so will go out and seek arousal to increase arousal levels

Personality traits are not a polar distinction, there’s no yes/no, Usually people lie somewhere on a continuum. Personality traits usually are distributed in a normal distribution.

The 5 factor model of personality (Big five) (~1980s). Developed by McCrae & Costa did their own factor analysis and came up with 5 different basic traits. Of all the trait theories, this has been the most well supported, and well documented. This is still used today. Note that two are the same as Eysenck. Acronym CANOE to help remember.

- Conscientiousness 
- Agreeableness 
- **Neuroticism** (emotional stability vs. instability)
- Openness
- **Extraversion**

Research has shown that these traits are quite predictive of certain aspects of behaviour. Extroverts are more popular and date a greater variety of people. Conscientious people tend to be more honest, and get better job ratings, and better at university. Open people are more likely to play musical instrument. Neurotic people are more likely to get a divorce and psychological disorders.

Research has shown that both traits and situation play a role, not just traits alone. One of the assumptions of trait theory is that traits are stable **over time (stability)**. Gave personality tests at multiple ages over a long term with many people. Found that scores stayed very stable throughout lifetime. This implies that the traits are very stable. So if you have certain personality traits as a kid, you will tend to have them as an adult as well.

But what about **consistency**? Assumption is that if you have a trait, you will behave consistently in **different situations**. Walter Mischel looked into the situation's role on determining your behaviour. He found that the way you act is often situation dependent. You have to take the situation into account. This is a big controversy but bottom line seems to be like this:

- Unfamiliar and formal situation -> traits won't surface
- Familiar + informal situation -> traits will surface
- (chances are, this is not absolute.)

Ex: One of your classmates invited you to share in a religious celebration from a different culture. You don't know what you're supposed to do. You look for social cues because you are unsure of yourself. You will not "be yourself". In contrast, very familiar setting your true self will surface.

Traits are predictable over many different situations but they can't predict behaviour in any one situation.

Social cognitive theories

Bandura's social cognitive theory: Another type of personality theory, not a trait theory.

- Offshoot of behaviourism
- Bandura considered one of the greatest psychologists in terms of historical impact.

Recall: behaviourism was about observable behaviour, environment determined behaviour. Skinner thought that people show consistent patterns of behaviour because they have stable response tendencies that are tied to the situation. Not traits, but past experience. He also believed that we behave mechanically. We don't actively think before we behave we just do it.

Bandura agreed with behaviourists that personality is shaped by learning, but believed that they left out cognition. He thought we actively think about behaviour and have expectancies about behaviour.

Reciprocal determinism: Internal personal factors, environmental factors, and behaviour all influence one another in a complex relationship.

- How you behave will affect your beliefs, and influence your environment, and your environment will influence how you behave and so on.

Good luck on the tests! - Adam