

THE LEARNING APPROACH

Assumptions:

- 1) All behaviors are learned
 - 2) Behaviours are therefore observable
 - 3) Psychology is an objective study of this behavior
- Reductionist!!

Terms:

- L Classical conditioning
- L Operant conditioning

Classical conditioning is learning by association e.g. getting food poisoning from samosas and so never eating samosas again because you associate them with getting sick

Operant conditioning is learning by consequence e.g. you don't study for a test and get a D so you learn to study for tests because if you don't the consequences will be severe.

Pavlov showed that dogs can be conditioned to salivate at the sound of a bell if that sound was repeatedly presented at the same time they were given food. Pavlov is therefore a perfect example of classical conditioning.

- 1) In the presence of food, dogs salivate. This is called unconditioned response and stimuli. Salivation = unconditioned response because this is natural and the dog has not been conditioned.
- 2) Normally, a bell would not warrant any response from the dog. The bell is therefore a neutral stimulus presented to the animal before conditioning
- 3) Now the dog will salivate due to the presence of the food, not the bell. If this is repeated regularly, the dog will associate the sound of the bell with the presence of the food, since it has learned that the presence of one of the stimuli must mean the other will follow.
- 4) At the end of the experiment, when the dog hears the bell, it will salivate because it has associated the sound of the bell with the presence of food. The bell has now become a conditioned stimulus and the salivation has become a conditioned response.

Operant conditioning - ground rules:

- L **Positive** - to add
- L **Negative** - to take away
- L **Reinforcement** - given to increase behavior
- L **Punishment** - given to reduce behavior

Positive punishment? → ADDING something to REDUCE behavior, e.g. giving detention to reduce rowdy behavior in class.

Negative reinforcement? → TAKING AWAY something to PROMOTE a behavior, e.g. taking away your phone to promote focus in class.

CORE STUDY #1: BANDURA ET AL. 1996 (AGGRESSION)

Aim:

Investigate whether a child would learn aggression through imitation by observing a model and whether or not they would reproduce this behavior in the absence of the model. There were 3 individual aims for this study:

- 1) To investigate whether aggression can be learned
- 2) To investigate whether the subject will imitate aggression
- 3) To investigate whether the sex of the model is significant

Hypotheses:

There were 4 hypotheses for this study:

- 1) Observed aggressive behavior will be imitated; children who see an aggressive model will be more aggressive than those who observe a neutral model or no model.
- 2) Non-aggressive behaviors will also be imitated, so children observing the non-aggressive model will be less aggressive.
- 3) Children are more likely to copy same-sex models
- 4) Boys will be more likely to imitate aggressive behavior than girls.

- ★ **Imitative social learning** – the learning of new behavior that is observed in a role model and imitated later in the absence of that model

Background:

The study was based on the knowledge that children copy adults.

- L This could be because the immediate social setting makes the child imitate what they are watching. This is "facilitation" of the behavior by making it more likely that the child would imitate it.
- L It could also be because of the reinforcement of sex-appropriate behaviors. For boys, this would mean being masculine, strong, and violent, whereas for girls this would mean being reserved, peaceful, and motherly. Bandura therefore suggested that because children are ingrained with this stereotype, they are more likely to copy same-sex models and girls are less likely to be aggressive when compared to boys.

Method:

Participants

- 72 participants selected from the Stanford University Nursery school
- 3-5 years of age (37-69 months)
- Mean age of 4 years and 4 months (52 months)

Design

- Lab experiment using a matched pairs design
- Matching was achieved by the research and a nursery teacher independently rating 51 of the children on a scale from 0 to 5 based on how aggressive the children were
- A very good agreement between the two raters was achieved (0.89)
- 8 conditions
- 3 IVs tested:
 - └ The behavior of the model (aggressive or non-aggressive)
 - └ The sex of the model
 - └ The sex of the children

Procedure

- Aggressive model shown to 24 children (12 boys and 12 girls). Half were shown a same-sex model (6 girls were shown a female model, 6 boys were shown a male model), and the other half were shown an opposite-sex model (6 girls were shown a male model, 6 boys were shown a female model).
- Non-aggressive model shown to the other 24 children. Half were shown the same-sex model and the other half were shown an opposite-sex model.
- One more group of 24 children (12 boys, 12 girls) was the control group and did not see any model

There were 3 stages:

Stage 1: Modelling the behavior:

- Every child was taken into a playroom by the researcher who invited the child to play a game. This lasted 10 minutes
- In the experimental conditions, the model was also present in the room.
 - └ In the aggressive condition, the model demonstrated aggressive behavior by kicking around a 3-foot-tall Bobo doll by hitting it, kicking it, throwing it in the air, and hitting it with a mallet.
 - └ In the aggressive condition, the model also used verbal aggression saying things like "kick him", "sock him on the nose", and "Pow!".
 - └ In the non-aggressive condition, the model played normally with the non-aggressive toys such as crayons and plastic farm animals.

Stage 2: Aggression arousal:

- To annoy the children and increase the chances of them displaying aggressive behavior, the researchers were taken into a different playroom with very attractive toys, but they were told that they weren't allowed to play with them. This was for 2 minutes.

Stage 3: Testing for delayed imitations:

- The children were then observed playing for the next 20 minutes via a one-way mirror
- Two observers watched, and the room contained a variety of aggressive and non-aggressive toys, as well as the Bobo doll. These toys included:

Aggressive toys:

- └ A mallet
- └ A peg board
- └ Dart guns
- └ The Bobo doll

Non-aggressive toys:

- └ A tea set
- └ Plastic farm animals
- └ Three bears
- └ Crayon

3 types of aggression were recorded by the observers:

- 1) Imitative aggression - physical and verbal aggression as modeled in the experimental conditions e.g. throwing the Bobo doll in the air
- 2) Partially imitative aggression - similar behaviors as carried out by the model e.g. sitting on the Bobo doll but not punching it
- 3) Non-imitative aggression - new aggression not displayed by the model e.g. the model never used a gun, but the child did

Results:

- Children who observed the aggressive model made more imitative aggressive responses than those who were in the non-aggressive or control groups.
- There was more partial and non-imitative aggression among those children who had observed aggressive behaviour, although the difference for non-imitative aggression was small (the child was more likely to copy aggressive behavior than think of new ways to abuse the doll)
- The girls in the aggressive condition showed more physically aggressive responses if the model was male, and more verbally aggressive responses if the model was female. The EXCEPTION to this pattern was how often they punched Bobo, and here the effects were reversed.
- Boys were more likely to imitate same-sex models than girls.
- Boys imitated more physically aggressive acts than girls. Girls were slightly more verbally aggressive.

Imitative physical aggression for girls in the aggressive vs. non-aggressive groups: 5.5 vs. 2.5
Imitative physical aggression for boys in the aggressive vs. non-aggressive groups: 7.2 vs. 0.0

Verbal comments made after the children observed the models were also recorded:

- When the female model was observed being aggressive, the comments made by the boys were: "Who is that lady? That's not the way a lady is supposed to behave. Ladies are supposed to act like ladies.", "You should've seen what that girl did in there. She was acting just like a man. I never saw a girl act like that. She was punching and fighting but not swearing."
 - When the male model was observed being aggressive, the comments made by the girls were: "He's a good socker, he beat up Bobo. I want to sock like Al.", "That man is a strong fighter, he punched and punched and he could hit Bobo right down to the floor and if Bobo got up he said 'punch your nose'. He's a good fighter like Daddy."
- ★ **Sex-typed behavior** - actions that are typically performed by one particular gender and are seen in society as more appropriate for that gender. For example, aggression is seen as a masculine-type behavior and was more commonly imitated by the boys.

Conclusion:

- Witnessing aggressive behavior in a model can be enough to produce aggression by the observer.
- Children selectively imitate gender-specific behaviors. Boys were more likely to imitate physical aggression whilst girls verbal aggression

Evaluation:

A strength of this study is that it has high replicability. This is because it was done in a controlled lab environment with standardized procedures with "72 children from the Stanford University Nursery", and so another researcher can simply get another group of children "aged 3-5 years with a mean age of 52 months" and replicate the procedure to compare the results for accuracy. This increases the reliability of this experiment because the results can be tested.

Another strength of this study is that it has low demand characteristics. This is because it was a "covert, non-participant observation", and the "children were observed through a one-way mirror". The researcher was, therefore, able to observe the participants without being discovered or having any interaction with them, which decreased the likelihood of the participants figuring out the aim of the experiment and changing their behavior to seem more socially desirable. This increases the validity of the study as the participants were not able to change their behaviors which would have otherwise impacted the results.

A weakness of this study, however, is that it breaches the ethical guidelines of protection from physical and psychological harm. This is because "24 children were shown an aggressive model" during the experiment, and imitated the aggressive behavior displayed, which could have impacted them and stayed with them after the experiment had ended. The children left the experiment in an altered psychological state (more aggressive) than when they had entered. This reduces the credibility of the findings of this study.

Another weakness of this study is that it lacks ecological validity and mundane realism. This is because it was a "controlled laboratory experiment with standardized procedures", and the children were taken to artificial rooms with toys, some of which they were "not allowed to play with". These are unusual and unnatural settings for children to play in, and this, therefore, reduces the extent to which the findings can be applied to reality. This reduces the validity of the study.

Issues and Debates:

Supports situational explanation and nurture, as well as the social learning theory.

CORE STUDY #2: SAAVEDRA & SILVERMAN 2002 (BUTTON PHOBIA)

Aim:

- To investigate the role of classical conditioning (particularly evaluative learning) on the development of a phobia by using exposure therapy.
- ★ **Classical conditioning** - learning through association, studied in both humans and animals. It is a learning process in which a new stimulus, which initially has no effect (the neutral stimulus, NS), becomes associated with another stimulus (the unconditioned stimulus, UCS). the UCS already produces a response (the unconditioned response, UCR) which is often an innate (instinctive) reaction. Following the pairing of the UCS and NS, sometimes only once by more often repeatedly, the NS will produce a response similar to the existing UCR, so the NS becomes known as the conditioned stimulus (CS), and the newly learned response, the conditioned response (CR). A famous example of classical conditioning can be seen in Pavlov's study in 1897.
- ★ **Evaluative learning** - a form of classical conditioning wherein attitudes towards stimuli are considered to be the product of complex thought processes and emotions which lead an individual to perceive or evaluate a previously neutral stimulus negatively. Attitudes acquired through evaluative learning may be harder to change than more superficial associations.

Background:

Psychologists proposed the idea of phobias being learned like other behaviors by evaluative learning meaning that the removal of the fear and disgust feelings towards a stimulus would help the individuals unlearn the phobia and would act as a treatment. Other studies hadn't investigated the role of disgust when looking at the treatment for a phobia, only fear.

Method:

Participants:

- One 9-year-old Hispanic-American boy who was part of the Child Anxiety and Phobia Program at Florida International University (Research method: case study)
 - The boy and his mother gave informed consent for the case study to be conducted and the mother provided written consent for the study to be recorded
 - The boy met the DSM-IV (Diagnostic and Statistical Manual 4th Edition (the current edition for 2023 is DSM-5)) criteria for a specific phobia for buttons
 - ★ **Phobia** - the irrational persistent fear of an object or event which poses little real danger but creates anxiety and avoidance in the sufferer.
- Background of the phobia: the phobia began when the child was 5 years old. He ran out of buttons while making a poster board and went to a large bowl of buttons sitting on the teacher's desk. His hand slipped and the entire bowl of buttons fell on him. The boy described the experience as very distressing and since then had an aversion to buttons. His symptoms included:
- ↳ Having difficulty dressing for school (not wanting to touch his uniform which had buttons)
 - ↳ Focusing on avoiding things that had buttons or *could have* touched buttons
 - ↳ Being preoccupied with button thoughts at school, decreasing his concentration
- **Why was this not considered to be OCD?**
- ↳ Because the child did not fit the DSM-IV criteria for obsessive-compulsive disorder, but the criteria for the specific phobia for buttons.

Design and procedure:

Therapy:

- The child was treated with two different exposure-based therapies: positive reinforcement therapy and then imagery exposure
 - The first treatment, positive reinforcement:
 - ↳ Was based on the mother providing positive reinforcement if the child completed the tasks presented (gradual exposure to buttons)
 - ↳ Had sessions lasting for 30 minutes with the boy alone, and then 20 minutes with both the boy and his mother
 - ↳ Was an 'in vivo' exposure therapy meaning that it included physical interaction with the distressing stimuli. The boy was presented with increasing amounts of different types of buttons, and his reactions and remarks were recorded (qualitative data), as well as the distress ratings he gave the buttons after the therapy (quantitative data)
- Before the first session, the boy was told to rank certain types of buttons on a disgust hierarchy called the "Feelings thermometer". It was a 9-point scale with ratings from 0 to 8.
- ↳ The scale included different types of buttons which the boy was asked to rate based on how disgusted he felt.
- ★ **Positive reinforcement** - a form of operant conditioning, another theory of learning. It involves rewarding desirable behavior to encourage it to be repeated. For example, praising a child for saying 'please' and 'thank you' positively reinforces good manners.

Table of stimuli presented and the rating the boy gave:

| Stimuli | Distress rating |
|---|-----------------|
| Large denim jean buttons | 2 |
| Small denim jean buttons | 3 |
| Clip-on denim jean buttons | 3 |
| Large plastic buttons (colored) | 4 |
| Large plastic buttons (clear) | 4 |
| Hugging mom when she wears large plastic buttons | 5 |
| Medium plastic buttons (colored) | 5 |
| Medium plastic buttons (clear) | 6 |
| Hugging mom when she wears medium plastic buttons | 7 |
| Small plastic buttons (colored) | 8 |
| Small plastic buttons (clear) | 8 |

- The second treatment, imagery exposure:
 - ↳ Was an 'imagery cognition' exposure rather than 'in Vivo exposure. It utilized visualization techniques including getting the boy to imagine buttons falling on him, and telling him to consider how they looked and smelled.
- **Why these questions?**

Prior interviews with the boy revealed that he found buttons "disgusting" and also that they "smelled bad".

- ⌞ The imagery exposure pictures went from images of large buttons to smaller buttons, in line with the ratings the boy gave on the distress scale.

- ★ **Self-control** - a form of cognitive behavioral therapy. It involves using 'self-talk'; the individual is taught to recognize difficult situations, acknowledge troubling thoughts, and consider alternative, positive thoughts.

Results:

Positive reinforcement therapy results:

- The boy was able to complete all the tasks listed in the fear hierarchy
- The boy also approached buttons with a more positive attitude. An example of this was that the boy was able to handle larger numbers of buttons during the later sessions
- **HOWEVER:** the boy's subjective ratings of distress increased (mostly between the second and third sessions). By the fourth session, most of the distress ratings had increased above the original ratings.
- Ratings that had originally been 6 or 7 were now 7 or 8
- Despite the boy's attitude changing to becoming more positive, his feelings of disgust, fear, and anxiety actually increased.
 - WHY?
 - ⌞ This finding is consistent with the theory of evaluative learning, which is that despite the apparent behavioral change, evaluative reactions will remain unchanged or even increase.

Imagery exposure therapy results:

- This therapy was shown to be successful in reducing the boy's distress ratings.
- This can be illustrated in his response to the prompt to imagine "hundreds of buttons falling all over his body":
 - ⌞ Before therapy: 8
 - ⌞ Midway through therapy: 5
 - ⌞ End of therapy: 3

Overall:

- Following the treatment, 6 and 12 months follow-ups were conducted.
- In these sessions the boy reported feeling minimal distress over buttons and no longer met the diagnostic criteria for the specific phobia of buttons
- His attitude towards buttons also no longer affected his daily functioning and he was now able to wear his school uniform which had small, clear plastic buttons on it, a stimulus which he had rated the highest on the distress scale.

Conclusions:

- Emotions and cognitions relating to disgust are important in the learning of new responses to phobic stimuli
- Imagery exposure can have a long-term effect on reducing the distress associated with a specific phobia as it tackles the negative evaluations

Evaluation:

A strength of this study is that it is a highly detailed case study done on just one person. This means that the results of the study are precise and detailed, focusing on one unique case and allowing other researchers to see how a rare disorder can affect an individual. This increases the validity of the results of the study.

Another strength of this study is that it could be argued that the study was ecologically valid. This is because it was conducted in the form of therapy assessments, which by nature are standardized. And, given the boys' unique psychological state, it was not an unusual possibility that the boy may need therapy. This increases the validity of the findings of the study.

A weakness of this study, however, is that it lacks generalisability. This is because it was only conducted on one "Hispanic-American 9-year-old boy", and so the results cannot be generalized to other populations of children of different ethnicities or ages. The boy's case was also unique, as button phobia is a rare phenomenon, and so the results of the therapy cannot be generalized to the wider population of people with button phobia.

Another weakness of this study is that the responses given by the boy could be subjective. There was no way for the researchers to fully determine whether the boy's feelings of anxiety and disgust actually decreased or if he was only giving desirable answers to leave the therapy as soon as possible. This reduces the validity of the findings of the study.

Issues and debates:

This study supports the learning approach and the nurture side of the nature/nurture debate.

Use of children:

- Child was put under stress to complete the therapy - protection
- **HOWEVER,** informed consent was given by both the child and the mother, as well as a signed consent form by the mother - informed consent cancels out protection breach

CORE STUDY #3: PEPPERBERG 1987 (PARROT LEARNING)

Aim:

- To investigate whether an avian subject could use vocal labels to demonstrate symbolic comprehension of the concepts of *same* and *different*.

Background:

- Humans are not the only species capable of making meaningful communication.
- Previous studies investigated how different species communicate with each other, but this research has mainly been done on primates such as chimpanzees and gorillas.
- Very very few studies investigated communication and symbolic understanding in avian species, and even fewer explored the concepts of 'same' and 'different'.
- A study on pigeons found that pigeons can understand the concept of 'same', but not different.

Method:

Participants:

- One African Grey parrot (*Psittacus erithacus*) called Alex
- He had been the focus of Pepperberg's research since 1977 (10 years) and had been part of multiple studies investigating learning and communication within avian species.
- Alex had free access to all parts of the laboratory for 8 hours a day while researchers were present (he also requested to go to places by saying "Wanna go X")
- The trials and tests were conducted in different parts of the lab, depending on where Alex was at the time or wherever he requested to be taken
- During his 'sleeping hours' Alex was put in his cage with water and standard food (seeds and oatmeal). Other foods such as nuts, fruits, and vegetables (and also toys) were provided when Alex asked for them (he was not deprived of anything)

Before training, Alex already had a wide range of vocabulary due to his participation in previous experiments. He could name some colors (including rose (red), green, yellow, blue, and grey), some shapes (such as triangle and square), and different materials such as wood, cork, paper, and rawhide.

- ↳ He could also respond to verbal prompts, e.g. when asked "What color?" he could often reply with the correct color of the object. He could also combine words to describe the items, e.g. "green wood"

The training method used was a model/rival technique.

- One human acted as another human's trainer, asking questions and presenting different objects
- When the person gave a desirable response, they would be rewarded with praise. This human acted as a model for Alex, who watched this interaction, while Alex would be considered a rival for the trainer's attention
- At the start of training, continuous reinforcement was used to create the closest association between the object or category and the label to be learned.
- During the same/different training, the trainer would ask the model "What's same?" or "What's different?", the model would respond with either a desirable answer or an incorrect answer.
 - ↳ When they gave a correct answer, they were rewarded by being allowed to keep the object
 - ↳ When they gave an incorrect answer, they were scolded and the object was taken away

- ★ **Continuous Reinforcement** - when a learner receives a reward each time they perform a desirable behavior. It is one of several possible schedules of reinforcement.

Procedure

- Alex was tested by secondary trainers who had not worked with him on learning same/different to prevent any extraneous variables such as trainer familiarity when Alex was answering questions.
- The materials were paired from a selection given to a student who had no association with the study
- They also randomly ordered the set of questions in each trial
- Though the researchers were only interested in the response to the questions of same/different, other questions were asked to prevent boredom:
 - ↳ What color?
 - ↳ What shape?
 - ↳ How many?
- In each trial Alex was presented with two objects that were different in ONE of THREE categories: shape, color, and material, e.g. the objects could be a blue wooden triangle and a blue wooden square
- Alex would then be asked "What's same?" and "What's different?"
- The task could involve objects Alex had been tested with before (familiar trial), or completely new objects (novel trials)
- The principal trainer was present in each trial, but faced away from where Alex was being tested
- After each of Alex's responses was repeated aloud. If he was correct, he was praised and given the object to keep. If he was wrong, the trainer would say "No!" and remove the object
 - ↳ Before testing Alex with novel objects, they would be placed on a shelf in the background within Alex's view, so that he wasn't daunted when presented with a completely new object he had never seen before.

Results

Familiar Objects

- Alex correctly responded in 99/129 trials (76.6%)
- First trials only: he answered correctly 69/99 times (69.7%)
 - ↳ These findings only give conservative recounts of the findings, possibly because a response was only counted correct if it was the first vocalization, and rather than giving an outright 'wrong' answer, he may have just not responded at all.

Novel Objects

- Alex correctly responded in 96/113 trials (85%)
- First trials only: he answered correctly 79/96 times (82.3%)
 - ↳ While it would be expected that Alex would be worse at describing novel objects, he was actually better at it. One reason for this could be that he would be allowed to keep the object if he answered correctly, and his curiosity for a new object motivated him to give more correct answers.

Conclusions

- 1) Parrots have the potential to demonstrate comprehension of the symbolic concepts 'same' and 'different'
- 2) They may also learn to respond to verbal questions to vocalize categorical labels

Evaluation

A strength of this study is that it has high replicability. This is because it was done in a controlled lab environment with standardized procedures with "One African Grey parrot named Alex", so another researcher can simply get another parrot and replicate the procedure to compare the results for accuracy. This increases the reliability of this experiment because the results can be tested.

Another strength of this study is that it could be argued that there were very few demand characteristics. This is because it was conducted in the form of a model/rival technique, using a different trainer each time. This means that the results were not impacted by Alex being familiar with the trainer and their facial expressions, which may have influenced the results. This, therefore, increases the validity of the study.

A weakness of this study, however, is that it lacks generalisability. This is because it was only conducted on one "African Grey parrot named Alex", and so the results cannot be generalized to the rest of the population of African Greys, or to other species of bird. It could also be argued that Alex may have been inherently smarter than other parrots, so the results cannot be generalized. This reduces the validity of the study.

Another weakness of this study is that it lacks ecological validity and mundane realism. This is because the study was done in a controlled lab environment with standardized procedures, which is not a natural environment for a tropical parrot. The study also focused on tasks such as vocalizing the concept of "some" and "different", which is not a natural task for a parrot to do. This reduces the validity of the findings of the study.

Issues and Debates

This study supports the learning approach and the nurture side of the nature/nurture debate.

Use of animals:

- The study only used one parrot, so only the minimum number of animals was used
- Positive reinforcement was given, and the parrot was not deprived of anything or abused in any way
- Alex was housed in his usual cage during "sleeping hours", and other than that he was allowed to be anywhere in the lab