

Lecture 4: The Behaviourist Approach

The Behaviourist Approach



This approach is concerned with how events in our environment modify our behaviours.

Some of the most important influences are people; they influence us in very specific ways, particularly when we are children.

Behaviourism focuses on learning, the creation and changing of behaviour.

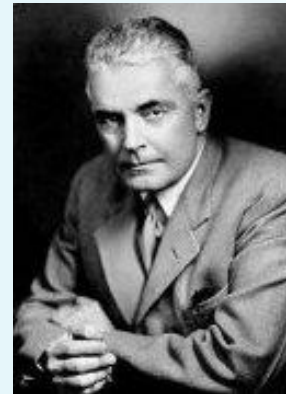
The only aim to behaviourists is the study of overt behaviours and environmental events. They are not concerned with the internal.

They began with Watson in 1913, progressed to Pavlov in 1927 and continued to Skinner by 1938.

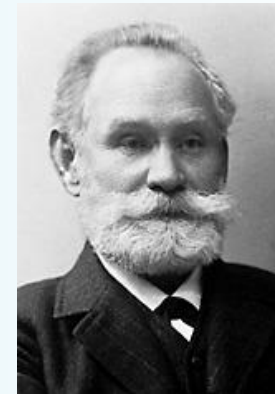
What is *Behaviourism*?

- Behaviourism is a school of psychology started by John Watson, in 1913, in the US.
- Watson and other behaviourists, like Ivan Pavlov and B.F Skinner, argued that psychology should only be about studying behaviour, as it is observable and objective- unlike thoughts and feelings.

John Watson Ivan Pavlov B.F Skinner



1878-1958



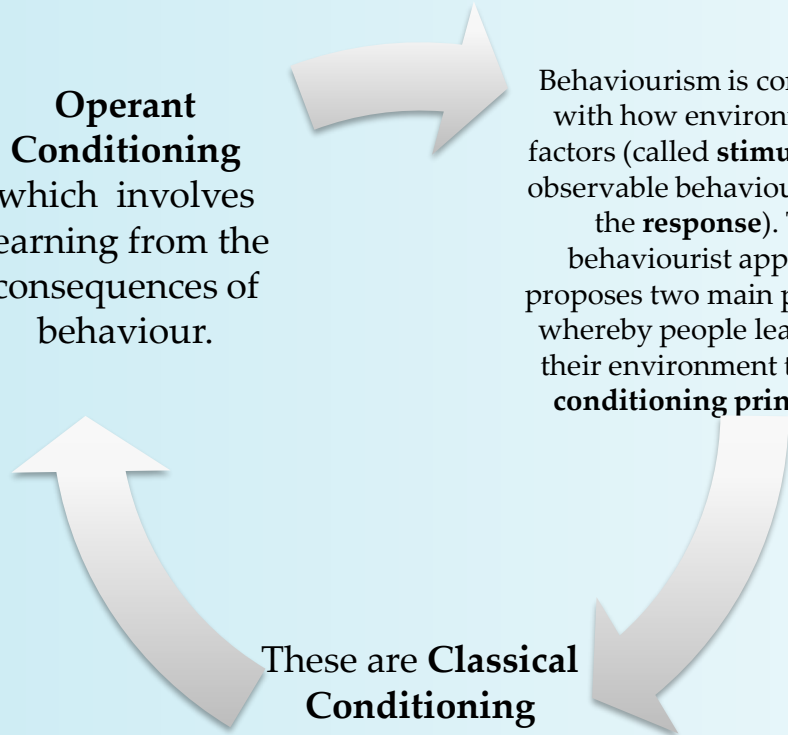
1849-1936



1904-1990

Assumptions of the Behaviourist Approach

Operant Conditioning
which involves learning from the consequences of behaviour.



Behaviourism is concerned with how environmental factors (called **stimuli**) affect observable behaviour (called the **response**). The behaviourist approach proposes two main processes whereby people learn from their environment through **conditioning principles**.

These are **Classical Conditioning** which involves learning by association, and

Behaviourism also believes in scientific methodology (e.g. controlled experiments), and that only observable behaviour should be studied because this can be measured.

NOTE: Behaviourism rejects the idea that people have free will and believes that the environment determines all behaviour. Behaviourism is the scientific study of observable behaviour working on the basis that behaviour can be reduced to learned **Stimulus-Response** (or S-R) units.

Classical Conditioning (Assumption 1)



Classical Conditioning (CC) was studied by the Russian psychologist Ivan Pavlov.

Through looking into natural reflexes and neutral stimuli he managed to condition dogs to salivate to the sound of a bell through repeated associated of the sound of the bell and food.

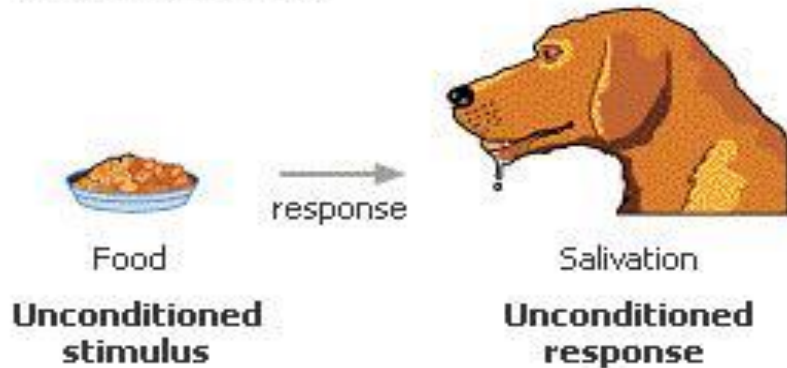
Watson and Rayner (1920) conducted their famous yet ethically dubious “Little Albert” experiment to show that CC applied to humans too.

Pavlov’s experiment: [Salivating dogs](#)

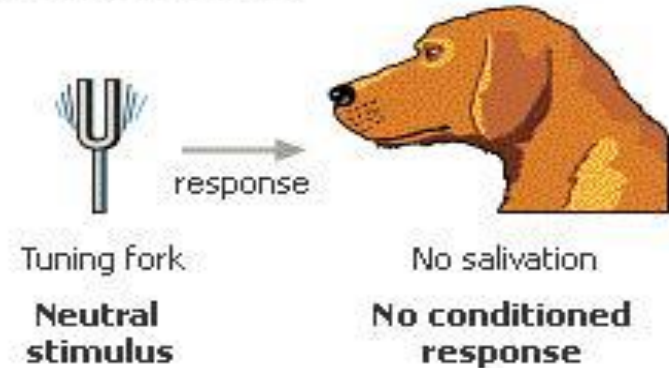
Little Albert experiment: [Fears and phobias](#)

Diagram: Classical Conditioning

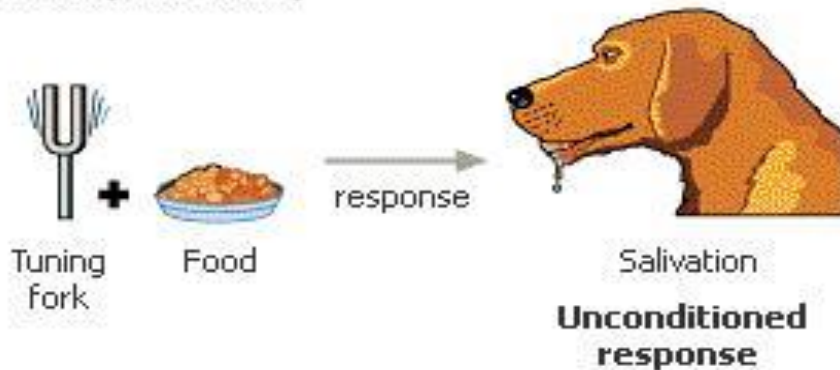
1. Before conditioning



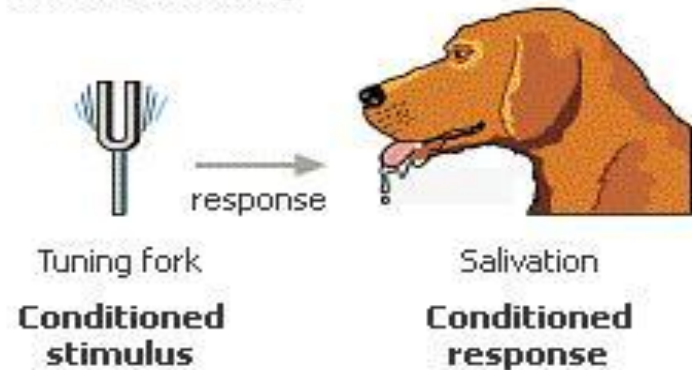
2. Before conditioning



3. During conditioning



4. After conditioning



Principles of Classical Conditioning

Stimulus generalisation – a similar stimulus to the conditioned stimulus elicits the same response

Discrimination – learning to respond only to the specific stimulus

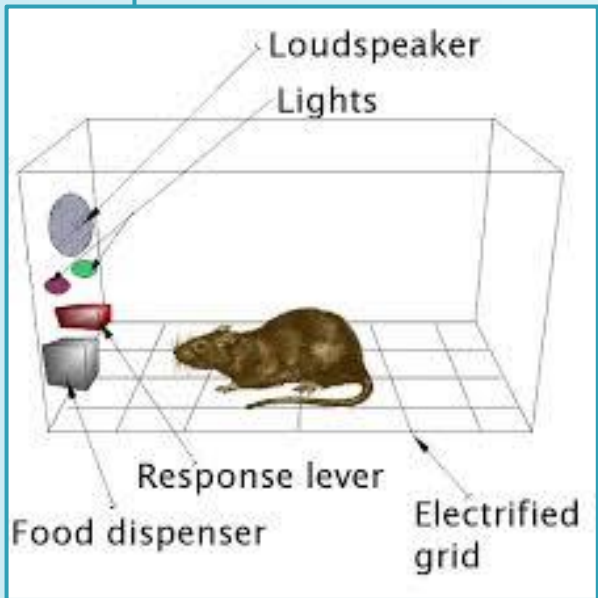
One trial conditioning – when learning occurs via a single pairing of the neutral and unconditioned response

Extinction – when the conditioned response disappears

Higher order conditioning – where a neutral stimulus is paired with an already conditioned stimulus and produces the same result

Biologically prepared learning – when certain conditioned responses are learned more rapidly than others

Operant Conditioning (Assumption 2)



Operant Conditioning is a form of behaviourism based on the premise that reinforced behaviours tend to continue, while those that are punished or are not reinforced tend to gradually end.



Operant conditioning was pioneered by B.F. Skinner and built on from the work of Ivan Pavlov on CC.



It is also known as **Instrumental Conditioning**, much of which is based on the **law of reinforcement**.



Can pigeons read?

Positive and Negative Reinforcement, and Punishment

Both positive and negative reinforcement **INCREASE** the likelihood of the desired behaviour occurring

Punishment aims to **DECREASE** the likelihood of the behaviour

E.g: Positive reinforcement – offering a reward for a specific behaviour. Clean your room get £10.

Negative reinforcement – the removal of an aversive event in return for a specific behaviour. You won't get pocket money until you clean your room.

Punishment – your room is untidy. You are grounded

Reinforcement: Key Terms

The law of reinforcement:
The probability of a response occurring increases if it is followed by a reward, or positive **reinforcer**, such as food or praise.

Primary reinforcers:
rewarding stimuli that are needed for life.

Secondary reinforcers:
rewarding stimuli associated with primary reinforcers.

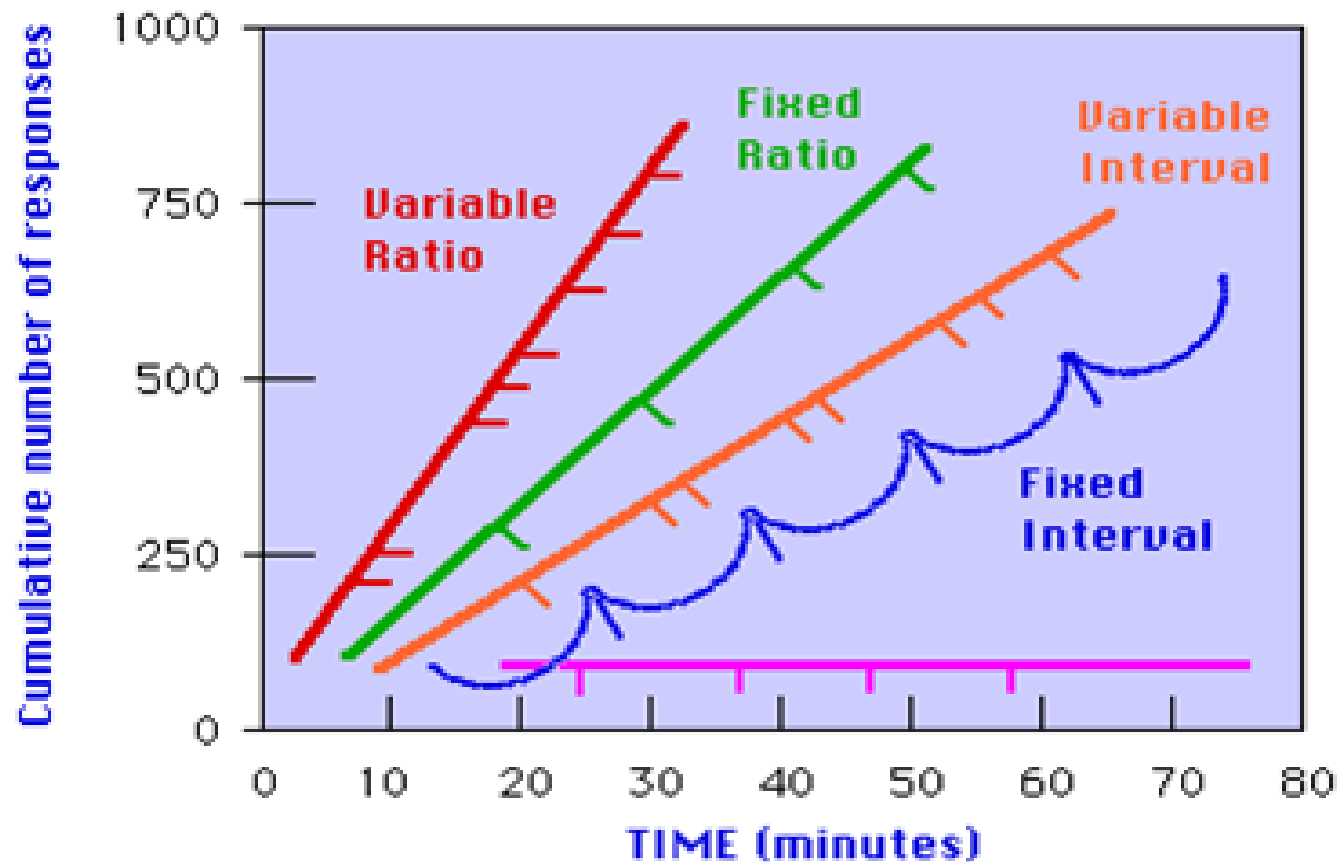
Continuous reinforcement:
the state of affairs in operant conditioning in which every response is followed by a reward.

Partial reinforcement:
schedules of reinforcement in operant conditioning in which only some responses are rewarded.

partial food reinforcement

Schedules of Reinforcement

SCHEDULES OF REINFORCEMENT



Schedules of reinforcement explained

When a target behaviour is reinforced after a number of occurrences, this is referred to as a ratio reinforcement schedule. There are two types of ratio reinforcement, each with its own benefits.

Fixed ratio reinforcement is delivered after a given number of occurrences.

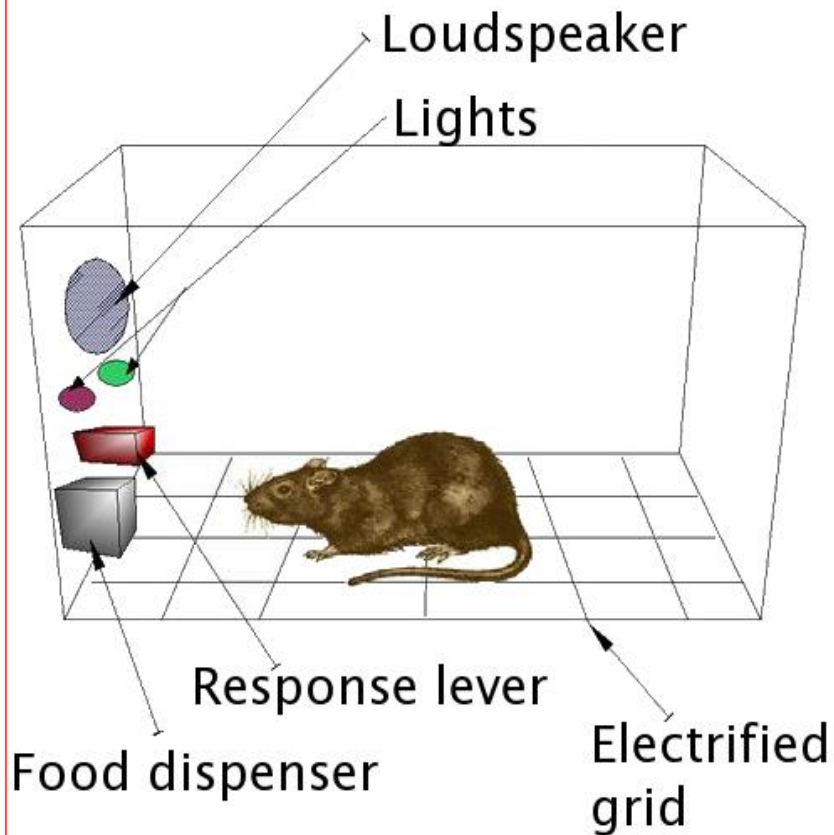
A **variable ratio** reinforcement schedule involves delivering reinforcement after an approximate number of times the target behaviour is exhibited.

When a target behaviour is reinforced after a period of time, this is referred to as an interval reinforcement schedule. As with ratio reinforcement, there are two types of interval reinforcement.

The first type is **fixed interval** reinforcement, which designates a specific interval of time.

Variable interval reinforcement is like variable ratio reinforcement in that reinforcement is delivered after an average length of time.

Diagram: Operant Conditioning



Type	Meaning	Outcome
Fixed ratio (FR)	Reinforcement depends on a definite number of responses	Activity slows after reinforcement and then picks up
Variable ratio (VR)	Number of responses needed for reinforcement varies	Greatest activity of all schedules results
Fixed interval (FI)	Reinforcement depends on a fixed time	Activity increases as deadline nears
Variable interval (VI)	Time between reinforcement varies	Steady activity results

Shaping, Latent and Observational Learning

Operant conditioning has **two** key features:

1. **Shaping:** As the required response needs to be made before it can be reinforced, we can **condition** an animal to produce a complex response, through shaping- i.e. by rewarding more and more exaggerated behaviour, through successive approximations.

E.g. if a pigeon turned its head left, some food is dropped. The next time the pigeon does that he has to turn a little more left to get the food.

Eventually you can train the pigeon to turn all the way around in a circle.

- 2. Latent Learning: When rewards are not provided, learning often occurs in the absence of changes in behaviour. Such learning is latent, or hidden.
- E.g. A passenger in a carpool learns the route, but does not exhibit that knowledge until it is necessary for him to drive it.
- Tolman found this with rats and this maze task. After 10 sessions in the maze in the absence of food, when food was put at the end of the maze they found it immediately.



Social Learning Theory

- **Observant Learning:**
- Observational or social learning is based primarily on the work of Albert Bandura. He argued and proved through several experiments that the application of consequences was not necessary for learning to take place.
- Rather learning could occur through the simple processes of observing someone else's activity.
- Bandura formulated his findings in a **four-step** pattern which combines a cognitive view and an operant view of learning:

- 1. **Attention** -- the individual notices something in the environment.
- 2. **Retention** -- the individual remembers what was noticed.
- 3. **Reproduction** -- the individual produces an action that is a copy of what was noticed.
- 4. **Motivation** -- the environment delivers a consequence that changes the probability the behaviour will be emitted again (reinforcement and punishment)

Bandura and Social Learning Theory

- The Bobo Doll Experiment
- What is the difference between the 'hard behaviourism' of Skinner, Watson and Pavlov compared to Bandura?

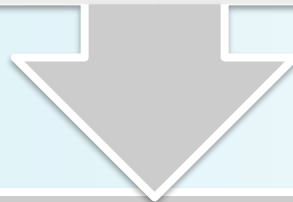


Social Learning Theory

In social learning theory, Albert Bandura (1977) agrees with the behaviourist learning theories of classical conditioning and operant conditioning. However, he adds two important ideas:

1. Mediating processes occur between stimuli & responses.

2. Behaviour is learned from the environment through the process of observational learning.



Individuals that are observed are called models. Children pay attention to these models and encode their behaviour. At a later time they may imitate the observed behaviour, if they think it is appropriate.

There are a number of factors that make the child more likely to imitate the behaviour:

If the child perceives the individual is similar to themselves.

If the consequences bring about a reward for the 'model'.

If the child imitates and is subsequently rewarded.

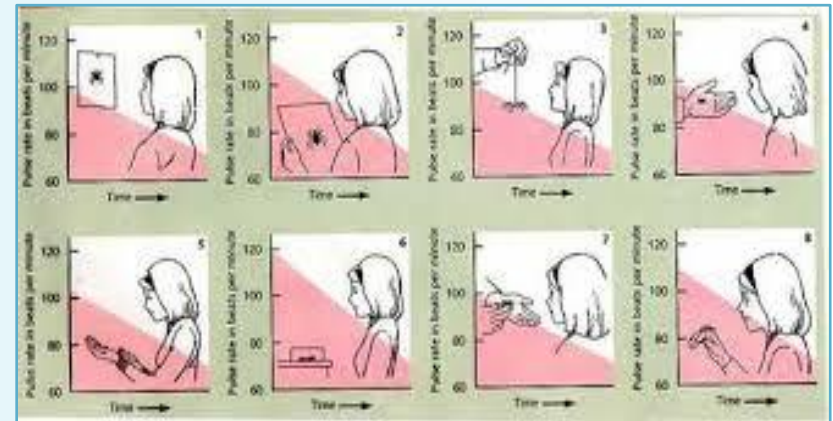
If the 'model' is deemed favourable in some way.

Identifying with a model leads to the child internalising the behaviour.

SLT is often described as the 'bridge' between behaviourism and the cognitive approach because it focuses on how cognitive factors are involved in learning.

S-R psychology becomes S-O-R Psychology

Applications and Treatments from the Behaviourist approach



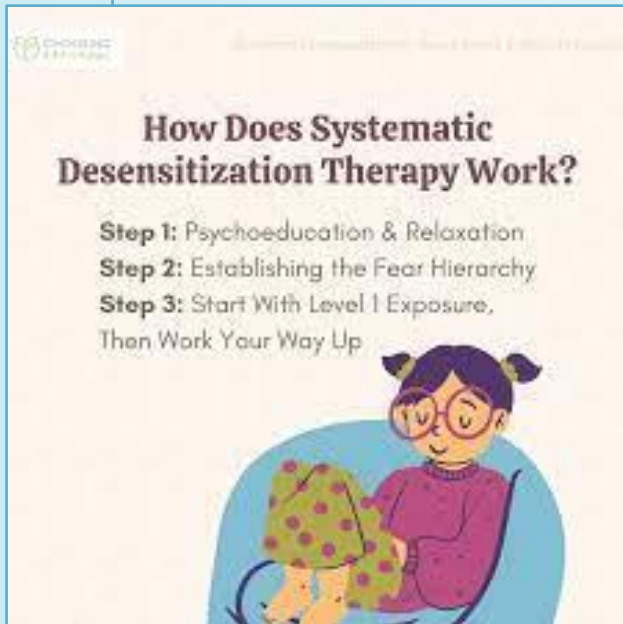
Treatment Methods used by the Behaviourist Approach

There are four methods mainly used by the Behaviourist approach, which have been used in treating patients with mental health disorders:



1. **Behaviour Therapy:** If you have a phobia, including a social phobia, where you feel anxious about blushing, public speaking or eating in public, behaviour therapy can be most helpful. It will concentrate on eradicating the difficulty in a practical way, using a step-by-step approach.

Systematic desensitisation and in vivo exposure



Creating associations between feelings of relaxation and the phobic object.

Over time in vivo treatments have become effective and popular treatments for short treatments for injection, dental and animal phobias.

In addition, virtual reality programmes have been effective in phobias associated with flying etc (Choy et al., 2007).

More recently exposure therapy has been used for the treatment of social phobias with some success (Marks, 1995).

Systematic desensitisation & Flooding

Obler & Terwilliger, (1970)

- 30 neurologically impaired children, 15 controls, 15 for treatment.
- 10 weeks of exposure, 5 hours per time.
- Significant improvements over time. *Modified SD- (no relaxation used).

Curtiss, Nesse, Buxton, Wright & Lippman (1976)

- Use of flooding to eliminate phobias.
- Sessions took between 1.7 and 7 hours.
- All pp`s experienced significant relief from their phobias.

2. **Token Economy**: A token economy is a form of behaviour modification designed to increase desirable behaviour and decrease undesirable behaviour with the use of tokens. Individuals receive tokens immediately after displaying desirable behaviour. The tokens are collected and later exchanged for a meaningful object or privilege.

Video Clip:

<http://www.youtube.com/watch?v=b6PqRdvyiI4>

The use of token economies

- Main & Munro (1977) Six, 16 year old children in school, deemed to be disruptive and potential drop- outs.
 - Two conditions (educational structure and praising for appropriate behaviour) were introduced successively.
 - Both procedures reduced inappropriate behaviour slightly.
 - When a token system, using backup reinforcers was introduced in conjunction with the initial two conditions, inappropriate responses declined dramatically in all pp`s.
 - Withdrawal of the token program for a three-week period, leaving educational structure and praise in effect, led to increased inappropriate behaviour in five of the six subjects.
 - Re-introduction of tokens in conjunction with contingency contracts led to a decline of inappropriate behaviour below the original mean in all pp`s.
 - Tokens were thinned and finally removed, leaving teacher praise and the contract system in effect. Data obtained four-weeks later indicated that the low level of inappropriate behaviour was maintained in all pp`s.

More treatment methods

3. Aversion Therapy: Is a controversial way in which patients can be treated with classical conditioning, by punishing unwanted behaviour using an aversive (i.e. off-putting) stimulus, e.g. electric shocks. It is primarily used to treat alcoholism, where drugs like *Antabuse* or *disulfiram* are the aversive stimuli.



Disulfiram interferes with the metabolism of alcohol. Normally alcohol is broken down into acetaldehyde and then into acetic acid (vinegar).

Disulfiram prevents the second stage from occurring, leading to a very high level of acetaldehyde which is the main component of hangovers. This results in severe throbbing headaches, increased heart rate, palpitations, nausea, and vomiting.

4. Programmed Learning:

Skinner used some of the principles of operant conditioning to develop new learning methods for students. He developed programmed learning, which typically has the following features:-

- Learning material is presented in a series of small steps, usually via a computer!
- Students are asked questions at each step to ensure they have understood the material.
- Immediate feedback on what the students have said is provided by the teacher.
- Linear (one single, continuous order) or branched (flexible structure to suit students' pace of learning) programmes of learning are developed.

ERP: Exposure and Response Prevention

This is one of the most widely used treatments for OCD, where one of the classic symptoms is the belief that acting out their compulsions will prevent awful events from occurring.

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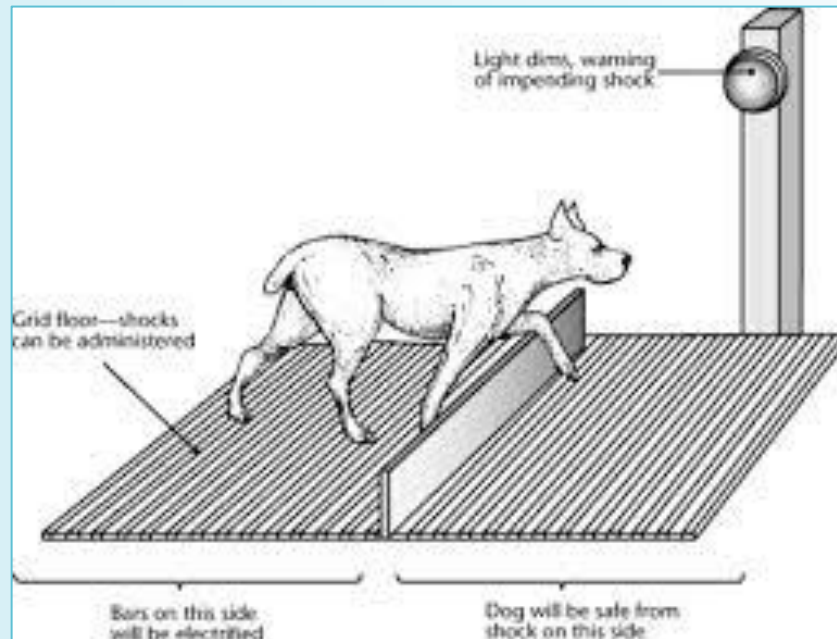
Pp's expose themselves to situations that elicit the compulsion and try to refrain from acting out the compulsion.

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Via the exposure to the anxiety in its fullest, the person conditioned anxiety will dissipate.

Other applications of the behaviourist approach

- Learned behaviour such as depression?
- Learned helplessness combines behavioural principles with cognitive principles:



Eating Disorders

- Societal pressures to become thin?
- More recently societal pressures on men to be muscular and ripped?
- Yet paradoxically, as societal values emphasize thinness, we are globally becoming more obese...
- What are the roles of-
 - 1. Classical conditioning
 - 2. Operant conditioning



Learning violent and aggressive behaviours



From parents?

The coercion model focuses on poor parenting skills as a cause of antisocial behaviour in childhood (Patterson & Yoerger, 1993).

Home life is distressing, where unskilled parents reinforce behavioural problems through coercion.

Three characters contribute to this:

- – No positive reinforcement for prosocial behaviours
- – No effective punishment for problem behaviours
- – A rich supply of reinforcement for coercive behaviours

Learning violent and aggressive behaviours



From the media?

Gunter et al., (2002) studying children's viewing patterns in St Helena following the introduction of TV. Teachers' ratings of violent behaviour correlated with the viewing behaviour.

Joy, Kimball & Zabrack (1986) compared regional areas of Canada (Notel, Unitel & Multitel) and found greater increases of violence in the Notel community as a result of TV exposure to violence.

Evaluating the Behaviourist Approach



Strengths

Behaviourism has been very influential: Modern psychology still relies heavily on scientific methods that were first proposed by Watson's (1913) Behaviourist Manifesto.

Practical applications: Behaviourism has given rise to numerous therapeutic applications.

For example,

token economies have proved to be somewhat effective in treating schizophrenic patients;

programmed learning is a structured way of acquiring skills and knowledge;

aversion therapy can produce fairly immediate beneficial effects in terms of reducing unwanted behaviour, etc.

Evaluating the Behaviourist Approach

Weaknesses

1. **The approach is seen as mechanistic.** Human beings are complex animals, we feel emotions, we live in complex societies etc. To see humans as functioning in a mechanistic manner is to over-simplify human behaviour.
2. **It excludes innate factors.** We now know that genetic factors do play an enormous role in influencing human behaviour and behaviourism simply does not acknowledge this.
3. **It is deterministic and reductionist.** The approach rejects the notion of free will, that we actively choose how to behave. Reductionist means that the approach takes complex behaviours and tries to explain them in simplistic ways (e.g. in terms of S-R units).
4. **Based on work with non-human animals.** The approach has been criticized for making generalizations about human beings based on experiments on non-human animals

However...



- Can pigeons think?
- What about these Ravens?