

## Key Studies

In *Key Studies*, we aim to provide in-depth accounts of some of the most important classic studies in psychology.

# Conditioned emotional reactions



TOPHAM PICTUREPOINT

Watson was the American founder of **behaviourism**, according to which behaviour (as opposed to the mind) is the only appropriate subject matter for a *scientific* psychology. Behaviour needs to be defined and analysed, and Watson found the key in the concept of the **conditioned reflex** (or conditioned response), which had been discovered by Pavlov, the Russian physiologist, during his research into the digestive system of dogs.

Watson was the first psychologist to apply the concept of conditioned responses to human behaviour, and demonstrated how a conditioned *emotional* response (fear) could be induced in an 11-month-old boy called Albert B. (better known as 'Little Albert'). Watson and Rayner's (1920) study is a **laboratory experiment**, involving a single participant. It also represents a **diary study** — the detailed record of the behaviour of one child over a period of approximately 6 weeks (though not on each day during that period).

### Procedure

Little Albert's mother worked in the hospital (the Harriet Lane Home for Invalid Children) where Watson and Rayner also

happened to be working. Albert was described as 'healthy from birth' and 'on the whole stolid and unemotional'. When he was about 9 months old, his reactions to various stimuli were tested — a white rat, a rabbit, a dog, a monkey, masks with and without hair, cotton wool, burning newspapers, and a hammer striking a 4-foot steel bar (just behind his head). Only the last of these produced a fear response, and so constituted the **unconditioned stimulus** (UCS), with the fear reaction being the **unconditioned response** (UCR).

When Albert was 11 months old, the rat and the UCS were presented together. The rat was taken from its basket and just as Albert's hand touched it, Watson brought the hammer down on the steel bar right behind his head (but out of view). Albert jumped violently and fell forward, burying his face in the mattress — but he did not cry. This pairing of the rat and the UCS was repeated seven times altogether over the next 7 weeks.

### Results

After these seven joint presentations of the rat and the hammer on the steel bar, the rat *on its own* induced a fear response. This

now included crying, falling over, and attempting to crawl away from the rat as quickly as he could. The rat is called a **conditioned stimulus** (CS), and the fear response is a **conditioned response** (CR).

The CR transferred spontaneously (without the hammer on the steel bar having to be used) to the rabbit, the dog, a sealskin fur coat, cotton wool, Watson's hair, and a Santa Claus mask. This demonstrates the process of **stimulus generalisation**. But it did not generalise to Albert's building blocks or to the hair of two observers (demonstrating the process of **discrimination**).

Five days after conditioning, the CR produced by the rat persisted; after 10 days it was 'much less marked'. But 1 month later it was still evident.

### Conclusions

Watson and Rayner concluded that:

This was as convincing a case of a completely conditioned fear response as could have been theoretically pictured... If the sound had been of greater intensity, or of a more complex clang character, the number of joint stimulations might have been materially reduced.

They went on to claim that many of the phobias that are presented to psychiatrists are really **conditioned emotional responses** (CERs), such as Albert's phobia of rats, cotton wool and so on.

## Evaluation

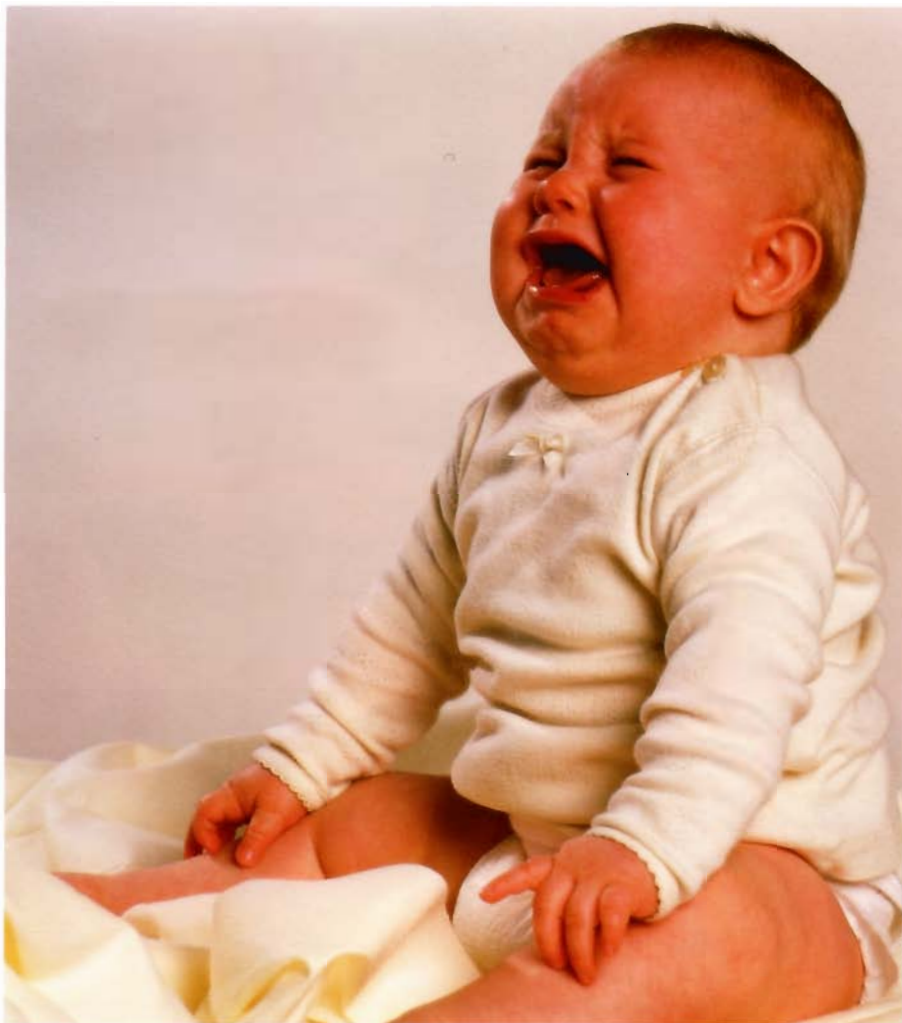
Not surprisingly, the study has been criticised on ethical grounds. Even allowing for the fact that Albert's mother (presumably) gave her consent for the experiment, although it is unclear whether this was *informed* consent, can such experiments ever be justified? Watson and Rayner say that '...a certain responsibility attaches to such a procedure...' (i.e. experimentally inducing a CER), and they were very 'hesitant' about carrying it out.

They eventually decided to go ahead, since '...such responsibilities would arise anyway as soon as the child left the sheltered environment of the nursery for the rough and tumble of the home'. By 'responsibility' they seem to mean 'risk'. This gives the impression that they struggled long and hard with the moral issues involved. But what kind of justification is it to say that Albert would have acquired the CER anyway? Is he likely to have encountered rats (or any of the other stimuli) while his ears were assaulted by the sound of a full-grown man striking a hammer on a large steel bar right behind his head?

While he might not have been easily frightened, some stimulus was needed that *would* frighten him, otherwise the experiment could not proceed. Watson and Rayner, therefore, knowingly decided to cause distress to a defenceless 11-month-old child.

Another important ethical issue, which follows from this, concerns Watson and Rayner's intention to *remove* Albert's CER. They state that they would have tried several methods to achieve this, had Albert's mother not removed him from the experiment before they had a chance to try. For example:

- Constantly confronting Albert with the CS until the fear subsides, which sounds like **flooding** — a form of forced reality-testing from which there is no escape.
- Exposing him to increasingly frightening forms of the CS while sexually stimulating him or giving him candy, which sounds like **systematic desensitisation** (SD).
- Encouraging him to imitate non-fearful responses to the CS, which sounds like **modelling**.



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Regarding the second of these, Watson subsequently supervised Jones's (1924) treatment of 'Little Peter', who was afraid of various animals (this time a fear not acquired in the name of psychological research). Through a series of 17 steps, Peter learned to tolerate a previously feared rabbit while eating his lunch. This is usually taken to be the first demonstration of systematic desensitisation (a term first used by Wolpe, 1958).

According to Eysenck and Rachman (1965), Wolpe and Rachman (1960) and other behaviourist psychologists and therapists, the case of Little Albert exemplifies how *all* phobias are acquired (as Watson and Rayner had concluded). While there is evidence that *some* phobias are learned through classical conditioning, it is extremely unlikely that this is the *only* way. For example, some phobias are easier to induce experimentally, and some 'naturally occurring' ones are much more common than others.

Finally, while classical conditioning may explain why (some) phobias are acquired in the first place, it cannot account for why they *persist*. For a more complete

explanation, we need to bring **operant conditioning** into the picture. ■

## References

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