Module:
Psychological Foundations of Mental Health

Week 5
Psychological therapies: from behaviour modification to behaviour therapy

Topic 1
The first wave – behavioural psychotherapy – Part 2 of 3

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Lecture transcript

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Next, let's turn to the so-called British tradition of behavioural psychotherapy. This developed as a direct descendant of the work of an early American psychologist, Mary Cover-Jones. Her work, in turn, was based on that of Watson and Pavlov, rather than Skinner. Another important influence was the neobehaviorist Clark Hull, who emphasised the role of motivation or drive in shaping behaviour.

The concept of reinforcement and operant methods were less central to what became the British tradition. Rather, it drew more on the principles of stimulus-stimulus learning, using deconditioning and extinction as a therapeutic tool. Unlike in the US, the target of the treatment was less on changing behaviour than in addressing emotion, in particular, emotional distress, fear, anxiety, and worry, so-called neuroses. Hence the term was called behaviour therapy, rather than behaviour modification.

A major driver for this development with the return of thousands of soldiers from the First World War suffering with so-called "shell shock" or "war neurosis." In the UK alone, 80,000 soldiers were identified as shell shocked by the end of the war, probably only a fraction of the number left with significant psychological trauma. Treatment, when offered during the war itself, was designed to return the soldiers to fighting as soon as possible. After the war ended, the challenge became finding a way to offer care and treatment for large numbers with lasting psychological problems.

The Maudsley Hospital here in South London, next to the IoPPN was established in 1907 as the first modern hospital for the treatment of mental illness. By the time it was built and opened in 1916, the First World War was well underway, and its first role was in the assessment and treatment of soldiers suffering with shell shock.

We see here a couple of photos taken at the time, the one on the right showing soldiers engaged in a workshop doing occupational therapy, one of the standard treatments of the time the psychiatric disorders before modern behavioural approaches were developed. It is worth noting that the Maudsley Hospital also had the first psychiatry medical school in the UK. It trained doctors and nurses, but also carried out research into the causes and treatment of mental illness, including shell shock.

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Fully established in 1924, that medical school eventually became the Institute of Psychiatry, Psychology, and Neuroscience. Today, we carry out the same roles as the original medical school and continue to work in close partnership with the Maudsley Hospital with which it shares a location in South London. On the KEATS pages, you will find an interesting leaflet produced from a photographic exhibition in 2015, illustrating the Maudsley at war, the story of the hospital during the Great War.

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In week 1, we learned about Pavlov's pioneering research in the classical conditioning in dogs. That evidence was taken up by the behaviourist J.B. Watson as a possible mechanism for the acquisition of neuroses and phobias. We learned how he tested this hypothesis in the famous or infamous case study with the baby Little Albert. You had a chance to review the evidence and decide for yourself how convincing this was as a demonstration of a classically conditioned fear response and its generalization to other objects. However, the study was highly influential as evidence to support a behavioural learning model of fear, without the need to infer an inner or subconscious process ask Freud did. It also has stimulated new approaches to the treatment of neurosis.

Before we come on into the early clinical developments from Watson's work, we should consider an important question about Little Albert. What happened to him? Or more precisely, what happened to any conditioned fear that he had acquired over the days of the study? This is an important question, not just out of concern for the child, but for our understanding of how fear and fear behaviour develops into a problem that can remain with a person for their whole life.

We will remember that experiments in classical conditioning in animals show that the conditioned response does not usually persist forever but tends to extinguish when a conditioned stimulus ceases to be paired with the unconditioned stimulus. Given that Watson and Rayner stopped pairing a rat with a loud noise, we would expect that any conditioned fear that Albert had acquired would soon go away.

We will never know for sure whether this was what actually happened. Years later, attempts to identify and follow up Little Albert as an adult have not been wholly successful. The most likely candidate was Douglas Merritte, who sadly died aged 6 of a neurological condition. Incidentally, this makes it hard to know whether Watson and Rayner's experiment tells us anything about fear conditioning in normally developing babies.

However, if his fear did persist, despite expectation that it would extinguish, we would need to find a way to explain it. This would not mean that classical conditioning was unimportant in the acquisition of the fear but that other processes may be necessary to explain its persistence. Conversely, if the fear did not persist, it would suggest other factors must be at play to explain the developing of lasting neuroses and phobias. We will turn to the distinction between onset or etiological factors and maintaining factors later on. They have an important place in modern cognitive theories of mental health and particularly in the identification of targets for treatment.

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You will recall that Watson and Rayner explained how they had planned to reverse or decondition Little Albert's fear response. However, before they could do this, he was unexpectedly discharged from the hospital. Not only did this leave Little Albert at risk of a lasting distress, but it prevented Watson from further testing his theory, that not only could a neurosis be explained using behavioural theories and created using behavioural methods, but that the same theories and methods could quickly and easily remove a learned neurosis.

It would seem that Watson never went on to test this latter prediction himself, or if he did, he never wrote about it. However, his work directly inspired others to explore the potential of behavioural approaches as treatments. One of the earliest pioneers was the American psychologist Mary

Cover-Jones, who had heard Watson present his work and theories.

In the course of her research in what would now be called behavioural genetics, Cover-Jones investigate the potential of classical conditioning to remove fear or phobic responses in young children. In a famous report in 1924, she describes in detail one of a series of such experimental treatments. The subject was a young boy, just under three years old, called Peter. Otherwise healthy, he showed considerable fear when presented with white rabbits, white rats, fur coats, and rugs, but not to other objects, such as wood rabbits or other toys.

This similarity to Little Albert was striking to Cover-Jones and suggested that the rabbit and other furry items were a conditioned stimulae. As there was nothing in his history to say that he had come across rabbits or rats before, Cover-Jones assumed they were what she called a "transferred fear," or what we would call generalised conditioned response.

Cover-Jones worked with Peter over a period of months, sometimes twice a day and sometimes once, often with large gaps in between. She was careful to call this study an experiment, not a treatment. Over this time, she defined a series of stages to chart Peter's growing ability to tolerate the presence of the rabbit and be less afraid. These varied from step A, where the rabbit anywhere in the room caused a fear reaction, to step Q, where Peter allowed the rabbit to nibble his fingers.

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Cover-Jones reported Peter's progress with the graph shown here, with the degree of toleration on the vertical y-axis and the sessions on the x-axis. Note, the period of time between sessions was not constant and included long gaps of up to two months. By using the term "degree of toleration," Cover-Jones was keeping with her behavioural background, measuring what could be observed-- Peter's ability to tolerate the rabbit's presence, rather than his emotional state.

Cover-Jones showed her careful approach by first checking that this toleration series did actually amount to a systematically ordered stage of change by getting six other people to rank the levels in order. This showed a high level of agreement between the different raters. Today, we would call a tolerant series an exposure or stimulus hierarchy.

She started by presenting the rabbit to Peter in an unthreatening way, something that we would now call exposure, allowing them to get used to it over a period of time. This also included allowing Peter to see other children playing with the rabbit without fear, an approach that is still used and called modelling, a form of observational or social learning. This stage of the experiment showed that Peter progressed relatively quickly, to the point where he was able to touch the rabbit. This period is shown in red on the graph.

Peter then became ill and did not return for two months, at which point his fear behaviour had returned to its original level, and he was unable to tolerate the presence of the rabbit. Rather than an extinction process, this was attributed to a recent experience where Peter was badly frightened by a large dog.

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Cover-Jones then moved to a different approach based directly on classical conditioning. Her aim was not to change the nature of the conditioned stimulus-- the rabbit-- but the nature of the conditioned response to it, from a fearful one to a positive or at least a neutral one. She first needed an unconditioned stimulus that was associated with a positive unconditioned response. Cover-Jones chose sweet food, biscuits and candy.

After establishing the Peter liked sweets, Jones set about preparing the presentation of a rabbit with the presentation of the food. However, rather than just throwing the rabbit in Peter's lap with a biscuit, as Watson might have done, Cover-Jones presented the rabbit in a cage some feet

way from Peter when giving him the sweet. The distance was as close as they could get without provoking a response in Peter.

This was repeated over several occasions, gradually bringing the rabbit closer, with corresponding reduction in Peter's apparent fear. Thus, the unconditioned response to the rabbit changed to the point where Peter allowed the rabbit to play with him in his playpen. The study improvement is shown in the blue area during the period of 25 sessions.

Following a temporary reversal when Peter was bitten by the rabbit, he continued to progress to show even greater tolerance, allowing the rabbit to nibble his fingers without apparent fear. A final research innovation that Cover-Jones used in this case study was the use of physiological methods to measure fear. In addition to measuring Peter's behaviour, she also measured his blood pressure as an objective measure of his physiological arousal or visceral response. She showed how it became elevated when he showed signs of fear, although she did not go on to use it as an objective measure of change over time with the experimental treatment.

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Although an uncontrolled single case, this report established many of the principles and methods that would influence behavioural psychotherapy in the decades to come, many of which are still used today. Let's summarise Mary Cover-Jones's legacy to these later developments.

The first is that she took theory and empirical evidence and applied it to the treatment of a psychological problem, in this case, irrational fear. This is a very different approach to what went before in contemporary psychoanalytic methods of Jung and Freud. Although these also had an underpinning model or theory, they were not empirically based. The contrast between the two reflects the difference between the empiricists and the rationalist traditions that have run through science since its outset.

Cover-Jones's experimental approach precedes today's scientific approach to understanding the processes underpinning mental health problems and the development and evaluation of new therapies. In terms of methodology, in the single example of Peter, she gave us a number of approaches that continue to be used today. She took existing ideas and demonstrated the potential of deconditioning, pairing a feared stimulus with an alternative non-feared one. She used the principle of exposure, she used a graded approach to exposure, what she'd call degree of tolerance that today we call stimulus hierarchies. She used observational techniques, including others showing non-fearful reactions to the feared objects, today called modelling.

In terms of assessment, she used proven, reliable methods to define and measure change. And finally, she introduced the possibility of using physical measures as objective non-behavioral indicators of fear, what we now call psychophysiology.

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Although widely recognised today, this groundbreaking study was largely forgotten for many years. This may be because Cover-Jones was a woman at a time when science was still dominated by men or because operant conditioning replaced classical conditioning as the dominant model within US behaviourism. Nevertheless, her contribution was eventually recognised in later years, and she has been called the mother of behavioural psychotherapy.

She died in 1987 at the age of 91 after a long career in science. The majority of this work was based on the Oakland growth study, a longitudinal investigation of 200 children as they grew up to be adults, measuring their physical and psychological health and its impact on later problems. In an article that she wrote in 1976, she reflected on how this longitudinal approach influenced her thinking on the historical reports on Peter and on Watson's Little Albert. We see here an extract from that paper.

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Following Cover-Jones's work, one of the pioneers of the 20th century behaviour therapy was the South African psychologist Joseph Wolpe. Most of his early work was in animals, developing experimental models of neuroses by conditioning fear, and then finding ways to reduce or remove it. He use punishment techniques that would not be permitted today. However, he is most justifiably famous for how he applied this early work and other behavioural research to the treatment of neuroses.

His work was based on the concept of what he called reciprocal inhibition. This proposed that it was impossible to be both anxious or afraid, while at the same time carrying out behaviour that indicated the opposite, in other words, relaxation and fearlessness. Wolpe started out using assertiveness training as a way to address problems with shell shocked soldiers that we would now see as social anxiety. In such patients, developing positive and assertive social interaction was seen as incompatible to the fearful withdrawal in many life situations that these ex-soldiers showed.

However, his clinical studies quickly suggested that a more effective method could be found in those first described by Mary Cover-Jones with her case study of Peter and the rabbit.

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Many of the approaches developed by Wolpe owe their origins to Cover-Jones's writing, combined with Wolpe's own pioneering work in animals. Techniques that Wolpe affected included the identification of clear stimulus hierarchies. This was a graded list generated by the patient and the therapist ahead of treatment. It listed situations from the easiest to the most difficult, with a series of steps in between.

Here's an example of a hierarchy for someone with a fear of spiders. These were used as the basis to systematically expose the patient to a situation, starting with the easiest and waiting for any initial levels of anxiety to subside. Critically, the approach required that the patient did not engage in any behaviours that would reduce the fear, such as backing away, closing their eyes, trying to distract themselves, and so on.

Inhibition of such behaviours was called response prevention. The idea was that the patient experienced the anxiety and learned that it would reduce on its own. To facilitate this process, Wolpe developed a simple numerical scale that patients could use to rate their own levels of anxiety, so-called Subjective Units of Distress or Discomfort Scale.

Because there was no behaviour to observe during exposure, this subjective rating became the only way for the patient and the therapist to monitor change. The scale typically has 100 points, from 0, no distress, to 100, the worst possible stress, with labels at intermediate points on the scale, typically in steps of 10. Sometimes the scale goes from 1 to 10 and supporting images are used to make them even easier to use, especially for children like the one shown here.

Once the patient was comfortable with low distress in the easiest situation on the hierarchy, the treatment moved on to the next step and so on. Depending on the nature and severity of the phobia, this would be done in a single session or extended over several sessions. Prior to exposure treatment, patients were typically taught relaxation. This provided them with the skill to reduce their level of anxiety, both subjectively and also the physical symptoms, before enduring exposure. This builds on the idea of reciprocal inhibition.

Being relaxed is obviously incompatible with being afraid. Being relaxed in the presence of a feared object or situation was felt to enable counter-conditioning. Wolpe termed this overall treatment approach "systematic desensitisation."

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Systematic desensitisation became a mainstay of behavioural therapy for the treatment of a range of anxiety disorders, from phobias to social anxiety to obsessive compulsive disorders. Over time, the basic techniques became a further refined and adapted to increase its effectiveness, but also to allow it to be applied to a wider range of problems. Even early on in its development, Wolpe introduced the approach of imaginal desensitisation. It is the nature of anxiety that the stress can occur when a person imagines a step on the hierarchy, as well as when it is actually experienced. This is further evidence from brain imaging studies that show the physiological equivalence of real and imagined exposure to fearful stimulae.

This is a clear example of the way in which our internal state, our memories, perceptions, and expectations, can influence our emotions based on a common neuronal substrate. One implication of the power of the imagination is that therapy can be done by asking the person to imagine exposure, rather than actually happen in real life or in vivo.

This has a number of advantages. First, it broadens the range of target problems that can be treated. A person who is afraid of heights does not necessarily have to be taken up tall buildings. Second, it allows the patient to practise exposure more easily, including between therapy sessions. Imaginal exposure is sometimes called in vitro, implying that the stimulus is not actually present.

Imaginal desensitisation became an important therapeutic approach, although subsequent evidence suggested that it was less effective than in vivo exposure when the latter was practical. A disadvantage of the imaginal approach, however, is that it only really worked in patients who were able to conjure strong and convincing visual images, something that not all people can do. Increasingly today, virtual reality techniques are being used to bridge the real and the imagined, opening up new opportunities to reduce anxiety.

Today, classic systematic desensitisation approaches are rare as the main component of treatment, having been replaced by a wider a more effective cognitive and cognitive behavioural approach. However, some still incorporate elements of Wolpe's original methods. We'll look at an example shortly.

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First though, let's look at another approach first introduced by Mary Cover-Jones-- deconditioning by observation. In other words, that it is possible to reduce our responses to fearful or anxiety provoking situations by watching another person experience it, rather than experience directly or even imagining it. The ability to learn by observation formed the foundation in what came to be called social learning theory, and its pioneer was the Canadian psychologist Albert Bandura. His work formed another important strand in the so-called cognitive revolution in the 1960s that we looked at in week 1.

Simply stated, social learning theory proposed that we can and do learn important behaviour from watching other people and observing the consequences of their actions. In other words, we can learn without being directly reinforced ourselves something that ran contrary to operant models at the time. Social learning theory was an important influence on later developments in the area of social cognition and even mirror neuron systems that you learned about in previous weeks.

We also saw in week 1 the powerful example of observational learning in the problem solving ability of Goffin's cockatoo's. One of Bandura's most influential series of studies was the Bobo doll experiment of the early 1960s in which he investigated the influence of observation on the development of aggressive behaviour in young children.

A Bobo doll is a large inflatable doll, weighted at the bottom, that stays upright when played with. In the classic study from 1961, a group of 72 girls and boys, aged 3 and 1/2 to just under six years, were randomly assigned to groups with equal numbers of boys and girls in each. Before playing

with the doll themselves, 2/3 of the children first watched an adult, either a male or female, playing with the doll. For half, the adult played aggressively with the doll, such as hitting it with a hammer. For the others, the adult played nonaggressively. For the remaining third of the children, they did not see an adult playing with the toy.

There were other parts to the study and its design. However, the main finding to note here is that the children who observed aggressive play towards the doll were more likely to imitate the aggression when they came to play with the doll themselves. There is a link to a short video showing Bandura talking about his experiments on the KEATS page. This study, and others like it, have had a strong influence on the debate around exposing children to violent behaviour on TV, and more recently, in video games.

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Bandura's experiments were about the transmission of violence. However, fear behaviour has a social function. We communicate danger to others so that they can take appropriate action. Because of this, it is logical that we can learn to be frightened by observing others expressing fear in a specific situation. Indeed, this is one of the possible mechanisms for the intragenerational transmission of fear. A child who observed his or her own parent demonstrating a fear of spiders is more likely to develop such a fear themselves.

You learned in week 3 about the role that observation and instruction and can play in fear acquisition. I remember an incident with my own daughter when she was about 8. We were on holiday by the seaside, and she was with a group of children, jumping from a high rock into a deep pool of water. Although scary, it was also exciting, and my daughter jumped in with screams of mixed fear and delight. She then made friends with another girl of her own age. That girl refused to jump, showing evident fear and voicing her distress. My daughter then refused to jump anymore. To this day, almost 20 years later, she will not jump into deep water, other than in the swimming pool.

However, just as observational learning has the potential to reinforce fearful avoidant behaviour and aggression, it can also do the opposite. In therapeutic modelling, the patient observes another person in a situation that they themselves find distressing, just as Cover-Jones did in some of her sessions with Peter. Later research has shown that the effect of modelling is even more powerful when the other person was themselves afraid of the same thing. This was termed "coping modelling," as compared to the situation where the other person had no fear, so-called "mastery modelling." Seeing someone doing something despite being afraid is a more powerful way to help us overcome our own fears than seeing someone fearless doing the same thing.