



## The evolution of behaviour therapy and cognitive behaviour therapy



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### ABSTRACT

The historical background of the development of behaviour therapy is described. It was based on the prevailing behaviourist psychology and constituted a fundamentally different approach to the causes and treatment of psychological disorders. It had a cold reception and the idea of treating the *behaviour* of neurotic and other patients was regarded as absurd. The opposition of the medical profession and psychoanalysts is explained. Parallel but different forms of behaviour therapy developed in the US and UK. The infusion of cognitive concepts and procedures generated a merger of behaviour therapy and cognitive therapy, cognitive behaviour therapy (CBT). The strengths and limitations of the early and current approaches are evaluated.

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The decision to start a journal devoted to publishing articles on the radical new developments in psychological therapy was taken after dinner on a rainy night in Professor Eysenck's house in south London in November 1962.

The new approach, behaviour therapy (BT), was a major shift away from the prevailing psychiatric treatment for psychological disorders (mainly medications and physical treatments), and fundamentally different from the psychoanalytic method.

In these circumstances it was difficult to publish clinical accounts of the new methods and associated research. The editors of medical journals were opposed to non-medical psychologists carrying out treatment and the analytic journals were closed because behaviour therapy was regarded as completely wrong and potentially harmful. The rejection letters from various journals were brief, occasionally rude and sometimes fruity.

Eysenck (1952, 1959, 1960), Eysenck and Rachman (1965) were a vigorous advocate of the new approach to therapy. In association with Dr. Joseph Wolpe, a brilliant, diffident, quietly cheerful clinical scientist, Eysenck sent proposals for a new journal to several publishers of scientific/academic journals but they were slow to respond and not interested. However, Pergamon Press had published Eysenck's important edited book on the new approach (*Behaviour Therapy and the Neuroses*, 1960), and it was felt that the owner of this rapidly expanding scientific publishing firm, Mr R. Maxwell, might be interested.

Accordingly, the full proposal was sent to Maxwell and a meeting was arranged. During a pleasant and lively dinner at Eysenck's house, politics, literature, and London were discussed. At the end of the evening as Mr. Maxwell prepared to leave, he casually said that the proposal was acceptable and he would publish the journal. "Call my assistant director Mr. Richards and he will supply you with whatever you need to start the journal."

The first issue of Behaviour Research and Therapy, with its chic acronym – BRAT – appeared in April 1963. Fifty years and 51 volumes later, the journal is widely read and has a consistently high citation index. Mr Maxwell's judgement has been vindicated.

What were these radical new developments, and what were the ideas driving them? The basic idea was that psychologists should apply the methods of behaviourism to clinical problems. Introspectionist psychology which focused on minute analyses of a person's reactions to physical stimuli, mainly auditory and visual, had nothing to offer, and the enterprise was embarrassed by failures of replication. Behaviourists rejected the discredited introspection and insisted on the need to study observable behaviour (Skinner, 1953, 1959; Watson, 1926). It was a move away from the stagnation of introspectionist psychology towards the optimism of behaviourism. As the distinguished historian E.G. Boring put it, "For a while in the 1920's it seemed as if all America had gone behaviourist" (Boring, 1950, p. 645).

Clinically-minded psychologists began to apply the behavioural ideas and techniques to abnormal behaviour. The founding Editor of Behaviour Research and Therapy, Hans-Jurgen Eysenck, stated the rationale succinctly: "Neurotic symptoms are *learned patterns of*

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behaviour which for some reason or another are unadaptive," (Eysenck, 1959, p. 62, original emphasis). Treatment should promote the extinction of the unadaptive behaviour and enhance adaptive behaviour. Eysenck's articulate advocacy of BT was a crucial element in the dissemination of the new ideas and methods (1960, 1990). He was a formidable critic and his 1952 article disputing the evidence that had been advanced in support of the claim that psychotherapy is effective, set off a storm. He asserted the need to introduce rigorous standards of evaluation, including controlled treatment trials (Eysenck, 1952). The article profoundly influenced the adoption of contemporary standards for evidence-based treatments.

Certain types of abnormal behaviour were suitable targets for the behavioural clinicians to take on. In the fifties and sixties there were many patients who suffered from agoraphobia (Mathews, Gelder and Johnston, 1981). Their unadaptive behaviour was restricted mobility which prevented them from leaving their homes, and intense fear when they attempted to do so. The clinical problem was construed as a problem of *observable behaviour*, and therefore respectable behaviourists felt free to proceed.

A behavioural treatment was developed. Patients were encouraged and assisted to engage in increasingly lengthy and prolonged therapeutic walks, and the method was reasonably effective. (The term 'agoraphobia' was not entirely appropriate because many of the affected people also experienced intense fear at home. Years later the emphasis shifted from restricted mobility to the occurrence of episodes or panic—see below).

The introduction of behavioural treatment sounds simple and it was, but at the time there was strong medical opposition to psychologists carrying out treatment. Moreover, a treatment for psychiatric patients *behaviour* seemed completely misguided and absurd. No medications, no physical treatments, no discussion of deep lying unconscious psychosexual complexes—simply modify the person's behaviour. Prominent psychoanalysts were convinced that the removal of a neurotic symptom by behaviour therapy would be followed by symptom substitution (it was not) and they were seriously worried that behaviour therapy would be harmful. However absurd the new ideas seemed to be, it became more and more difficult to ignore the accumulation of successfully treated cases; however, numerous editors and professors did manage to overcome the difficulty.

The medical opposition to psychologists was understandable. Prior to the introduction of behaviour therapy psychologists working in clinics/hospitals carried out tests of intelligence and aptitude. Diagnosis and treatment were not part of the curriculum and their clinical experience was narrow and minimal. Hence their attempts to provide therapy were opposed. They were obliged to teach themselves and they did. The gradual, discreet and sneaky expansion of clinical psychology from testing to treatment took place when the medical profession was hierarchical and dominating. Psychologists were limited to treating only those to patients referred by a physician. When case-reports of patients treated by psychologists were published they included an acknowledgement thanking the responsible psychiatrist for permission to see their patient.

Nevertheless, steady progress was made and fresh methods were developed for treating a variety of psychological disorders, particularly 'neuroses', roughly equivalent to 'anxiety disorders'. Large numbers of patients were helped and in the process a deeper understanding of fear and anxiety was achieved. Behaviour Research and Therapy played a major part in disseminating and promoting these developments.

The early attempts at behaviour therapy were followed by the development of cognitive therapy, and latterly by cognitive behaviour therapy (CBT). Behaviour therapy emerged in

independent but parallel paths in the United States and the United Kingdom during the period from 1950 to 1970. The second stage, the development of cognitive therapy, took place in the U.S. from the mid-1960s onwards. The third stage, the merging of behaviour therapy and cognitive therapy into CBT gathered momentum in the late 1980s and is now well established in Britain, North America, Australia and parts of Europe. It is the most broadly and confidently endorsed form of psychological therapy and is the mainstay of the momentous expansion of psychotherapy services in the U.K. (Rachman & Wilson, 2008). For a detailed description of the historical development from behaviour therapy to cognitive behaviour therapy see Rachman (2009).

### The evolution of behaviour therapy

The origin of BT can be traced to Pavlov's fundamental work on the process of conditioning (Asratyan, 1953; Pavlov, 1955 Edition). His discovery of conditioned salivary reflexes led to many new findings and in time he established an experimental paradigm for investigating abnormal behaviour.

Pavlov proved that abnormal and lasting disruptions of behaviour can be produced by exposing animals to insoluble perceptual discriminations or to intense stress, and he mapped out the effects of these induced disturbances (Pavlov, 1955 ed., pp. 234–244). It is a curiosity that Pavlov never took the logical next step, from causation to cure. His recommendations for treating the induced neuroses and clinical conditions were conventional, not de-conditioning but drugs (especially bromides), sleep, rest, and removal to protected shelter (Asratyan, 1953; pp. 128–130).

Later researchers reasoned that if neuroses in animals can be developed through conditioning, it should be possible to de-condition them. Prominent among the pioneers of this exciting possibility were Gantt (1944), Liddell (1944), Masserman (1943), and Wolpe (1952). Pavlov's experimental model laid the basis for the scientific study of how abnormal behaviour, and fear in particular, is acquired (Mineka, 1985, 1987) and his work was used as the basis for a conditioning theory of fear acquisition (Wolpe, 1958; Wolpe & Rachman, 1960).

In 1920, Watson & Rayner published their famous case of little Albert to demonstrate how emotional responses can become conditioned in humans. A distinct fear was established in a stable 11-month-old boy by presenting him with a rat and then making a sudden loud noise behind him. After repeating this sequence a number of times the child began to display signs of fear when the rat was introduced. This reactivity persisted and then generalized to other stimuli. The significance of this demonstration of inducing a fear was over-interpreted, but the idea that human fears can be conditioned inspired the valuable research of Jones (1924) on the unlearning of children's fears. Her enterprise made therapeutic fear-reduction seem viable and directly influenced the forms of BT that were developed for children and adults some 30 years later. After testing a number of possible methods, Jones concluded that two were reliably effective in reducing the fears: direct conditioning, in which the feared object is repeatedly shown to the child at gradually increasing proximity and the child's negative reactions are dampened by associating them with pleasurable eating, and by the imitation of 'fearless' children. Remarkably, these two tactics still have merit and are used in many circumstances. The graded and gradual exposures to fear stimuli were an implicit element of her conditioning method and are a central feature of the contemporary method of exposure and response prevention (ERP). The full value of her work emerged after a dormancy of three decades and is an historical example that provides a spark of hope for clinical researchers who yearn for the recognition of our unjustly neglected flashes of insight.

## The treatment of anxiety

The British form of BT emerged in the early 1950s and concentrated on anxiety disorders in adults: circumscribed phobias, agoraphobia, obsessive-compulsive disorders (OCD), social anxiety. Wolpe's (1958) laboratory research on experimental neuroses in animals provided a basis for his method of reducing human fears (Wolpe, 1952). His main technique was a de-conditioning method, systematic desensitization. Wolpe demonstrated that human fears can be de-conditioned by a programme of repeated gradual and graded *imaginal* exposures to the conditioned stimuli that evoked the fear response. Each evocation of anxiety was damped down by a relaxation response; exposure followed by inhibition (EXP + I).

In a series of classic experiments on desensitization Peter Lang built up convincing evidence of the fear-reducing effects of Wolpe's method of repeated *imaginal* presentations of the fear stimuli (Lang, 1968; Lang & Lazovik, 1963). Meanwhile, a shift was taking place in clinical practice. Therapists began using exposures to real situations and objects, described oddly as "*in vivo* exposures." The reasons for this change were not made explicit but probably were a combination of the tedium of lengthy courses of systematic desensitization and mounting evidence that *in vivo* exposures were superior. The combination of repeated exposures and response prevention was effective and widely adopted. Wolpe worked in isolation in his private practice and it was impractical to arrange *in vivo* exposures. Hospital clinicians had superior resources and most of the refinements and improvements in the methods of treating anxiety took place in hospitals, clinics and universities.

Few of Wolpe's (1958) other methods, whether borrowed or invented (thought-stopping, assertive behaviour, aversion relief), were adopted. His stimulating theory of reciprocal inhibition had explanatory value and enabled clinicians to think constructively about therapeutic problems, but it proved difficult to subject the theory to definitive tests.

Using the experience he had gained in treating agoraphobia at the Maudsley Hospital Dr. Victor Meyer, a dedicated high-spirited therapist not averse to a fine cigar, made a breakthrough in the treatment of OCD at the Middlesex Hospital in London in 1965 (Meyer 1966). He applied the behavioural technique of repeated exposures in the treatment of two severely afflicted in-patients suffering from OCD. At the time there was little to offer patients with OCD and numbers of severe cases underwent major psychosurgery, as had one of the two patients who was ultimately treated by Meyer. Both of the patients were given 24-h care during which prolonged sessions of exposure to their fear-inducing stimuli/situations were undertaken. During and after the sessions they were prevented from undoing the effects of the anxiety evoked, by washing their hands compulsively or by other compulsive behaviour – the response prevention component of ERP. They made some significant improvements, and Meyer's (1966) case-reports in Behaviour Research and Therapy inspired other behaviour therapists to tackle this complex intractable disorder. Within a few years the method was refined and made available for out-patients. In 1979 a randomized control trial of behaviour therapy for OCD was reasonably successful (Rachman et al., 1979). Steady progress was also made in treating social anxiety and generalized anxiety. Bandura (1969, 1977a), a 'social learning' theorist who attached importance to the social-cognitive factors in behavioural treatment, was the first experimenter to develop a fear-reduction method that surpassed systematic desensitization – participant modelling. He proved its therapeutic effectiveness and introduced the concept of perceived self-efficacy (Bandura, 1977b), which was put forward as an explanation for the effects of behaviour therapy, especially those involving the reduction of fear. Therapeutic modelling can be dramatically effective, notably in overcoming circumscribed

phobias, as illustrated by the research of Ost (1989). The method has been so refined that one-session treatments are now used routinely by Ost, Svensson, Hellstrom, and Lindwall (2001).

How did the ideas which promoted behaviour therapy fare in all this progress? Eysenck's (1959, 1960) general theory of 'neurotic behaviour', stated that neurotic symptoms are learnt patterns of behaviour that "for some reason or another are unadaptive". Influenced by Pavlov's thinking, it was postulated that the 'some reason or another' might be conditioning. The conditioning theory of fear acquisition (Eysenck, 1960; Wolpe, 1958; Wolpe & Rachman, 1960) retains some explanatory value but did not provide a comprehensive account of the genesis of fears. At least two other pathways are involved: vicarious and informational (Rachman, 1977, 1991, 2013).

It was reasonable to expect that neurotic behaviour would fade out precisely because it is *not* adaptive, but it did not. Mowrer's (1960) explanation of the "neurotic paradox" proved to be extremely useful for tackling the problem. He set out a two-stage model of fear and avoidance and argued that avoidance behaviour persists because it is successful in reducing or preventing fear. Any avoidant or other behaviour that reduces anxiety – for examples, agoraphobic avoidance of public places, or compulsively washing one's hands to reduce a fear of serious contamination (e.g. Rachman & Hodgson, 1980) – will be strengthened. Mowrer's explanation was timely and fitting and behaviour therapists exploited its explanatory value. However, his explanation of the persistence of avoidance behaviour dealt with avoidance driven by fear, but people also engage in avoidance behaviour for a variety of reasons that include discomfort, disgust, impatience, or simple convenience. It is also a common and important means of gaining and maintaining a sense of safety (Rachman, 1990; Rachman, Radomsky & Shafraan, 2008). The cognitive explanation for persistence postulates that the abnormal behaviour is caused by maladaptive beliefs and misappraisals, and it continues until they are corrected.

Obsessive-compulsive disorder (OCD) is a complex mixture of cognitive and behavioural problems that did not lend itself to behaviour therapy, not least because BT was absolutely behavioural, and cognitions were not on the agenda at that time. Wolpe (1958) had limited success in treating OCD; the application of desensitization to the tentacles of severe OCD was lengthy and laborious. As mentioned above, Meyer's (1966) exploratory treatment paved the way for the use of ERP in dealing with some manifestations of OCD. It is moderately effective in treating patients suffering from a fear of contact contamination, but of minimal value in treating obsessions (e.g. by looped tapes etc) or mental contamination. Progress in treating these manifestations of OCD was made when mental contamination was recognised, and by the introduction of cognitive construals and techniques (Rachman, Coughtrey, Shafraan & Radomsky, 2015).

## Reinforcement procedures

While these events were taking place in the United Kingdom, psychologists in the United States were applying Skinner's (1953, 1957, 1959) ideas and operant conditioning techniques to clinical problems. His forceful writings and intriguing demonstrations of the power of reinforcement procedures in laboratory animals, inspired attempts to use operant conditioning in order to help psychiatric patients (e.g. Lindsley, 1956). The idea was that the abnormal behaviour of psychiatric patients is the result of an inappropriate conditioning history, and it can be reshaped into normal forms by providing the correct reinforcement contingencies. It was essentially a matter of ensuring that appropriate behaviour was followed by rewarding consequences and that

inappropriate behaviour was extinguished by withholding rewards. This seemingly simple approach was often used with ingenuity (e.g. [Ayllon & Azrin, 1968](#)).

The entire medical model, with its concepts of “psychiatric disorder,” “abnormal behaviour,” and “mental illness,” was thrown overboard and a new vocabulary was introduced. The patient’s disorder was redefined as a behaviour problem, pure and simple, and the solution lay in providing a corrective programme of operant conditioning.

For institutional and theoretical reasons, the U.S. and U.K. psychologists turned their attention to different samples and different problems. The British psychologists were employed in National Health Service (NHS) clinics and hospitals, and worked primarily on ‘neuroses’, in adult out-patient facilities. The American psychologists tried to improve the life of people with severe disorders, such as schizophrenia, manic-depression, childhood autism, developmental disorders, and self-injurious behaviour. Some of these intrepid early researchers, such as [Ayllon \(1963\)](#) and [Ayllon and Azrin \(1968\)](#) chose to work with the most severe cases: patients who lived in the back wards of large dismal psychiatric hospitals and whose condition was believed to be chronic and unchangeable.

They introduced what became known as token economy systems, systematic programmes of reinforcement for appropriate behaviour and the omission of reinforcements for inappropriate behaviour. Tokens, originally plastic discs, were used as readily dispensable markers of reinforcement which the patients could exchange for tangible rewards, such as sweets, cigarettes and magazines. The earliest token-economy systems were established in psychiatric institutions and later introduced into homes for delinquent youths, hostels, facilities for intellectually handicapped people, and for modifying disruptive behaviour in selected schools.

In summary, the U.S. psychologists were Skinnerian in outlook, strictly behaviorist in their conceptions and their vocabulary, regarded psychological/psychiatric disorders as problems of faulty learning, concentrated their efforts exclusively on behaviour, and worked mainly with people who had severe, intractable problems. They espoused an unqualified environmentalism and described themselves as “behavioral engineers” who engaged in behaviour modification, not therapy.

This approach had limitations, and the British psychologists were influenced by “learning theory” and unreceptive to Skinner’s ideas, which they regarded as narrow and unhelpful. Methodologically, the virtual exclusion of evidence that was not based on observable behaviour proved to be unsustainable. For example, the attempt to get around this self-imposed prohibition led to the description of people’s thoughts and feelings as “verbal behaviour” ([Skinner, 1957](#)), or worse, “private events.” Using the latter term when interviewing patients suffering from intense anxiety (“tell me about your private events”) risked some misunderstandings.

Cognitions were disdained and Skinner’s attempt to explain language and thinking as behaviour, verbal behaviour, generated and maintained by operant conditioning, fell flat. The development and emergence of complex language early in childhood could not possibly be the result of direct conditioning, nor could a person’s ability fluently to switch from one language to another. Original speech and original thinking are not the product of operant conditioning.

The Brits had a quiet reverence for the ideas and findings of Pavlov, and the two leading contributors, Eysenck and Wolpe, both favoured the Hullian learning theory, a hypothetico-deductive theory that offered precision and scientific formality and was widely subscribed to at the time ([Hull, 1943](#)). Today very few clinicians know or care about the learning theories but they may have served as scaffolding.

A weakness of theories underlying BT was their lack of specificity. Regarding clinical problems as the result of faulty unadaptive learning had merit but left much unsaid. The many and varied manifestations of neuroses (mainly anxiety disorders) were put down to faulty conditioning, and few attempts were made to explain why one patient developed agoraphobia and another obsessive-compulsive disorder, or social phobia, and so on. This weakness had two consequences. The approach was too general to allow precise testing of the main propositions of the overall theory, and it did not promote the development of specific treatments for specific problems. The dependence on conditioning processes, and the over-emphasis on occurrences of traumatic events in accounting for neuroses, gradually ran out of steam.

For a period, the well-established exposure and response prevention method was used across the board, for virtually all clinical problems. There is abundant evidence of its effectiveness (e.g. [Barlow, 1988, 2002](#); [Marks, 1987](#); [Steketee, 2012](#)) and the method has the advantage of being easily learnt and easily conducted. It can be comfortably combined with other methods, notably cognitive therapy. ERP is particularly successful in treating circumscribed and other phobias, some forms of OCD, and other anxiety problems, but is limited by flaws in the rationale (e.g. it is not essential to evoke the fear in order to reduce it, [Rachman, 1990, 2009, 2013](#)), and the absence of cognitive analyses is a weakness.

ERP is the planned, deliberate, repeated, hierarchically graded, prolonged exposure to situations/stimuli that evoke fear, and the therapeutic aim is to promote extinction of fear and anxiety. The exposure treatment was widely adopted, almost to the exclusion of other techniques. For a period, it was believed that exposure was not merely sufficient but also a necessary condition for the reduction of fear/anxiety. However, fear/anxiety can be reduced without the use of ERP ([Rachman, 1990](#), p. 237, 2013). The resort to explanations that depend on putative incidental exposures to fear-evoking situations was tempting, but confused matters and the suppositions were seldom testable.

A selection of therapeutic non-exposure examples includes.

- (1) Mindfulness therapy for health anxiety ([McManus, Surawy and Muse, 2012](#)) and other problems (e.g. [Arch & Ayers, 2013](#); [Hofmann, Sawyer, Witte, & Oh, 2010](#))
- (2) Applied relaxation ([Ost and Westling, 1995](#)); for panic disorder; and for GAD ([Ost & Breitholtz, 2000](#)), Relaxation for anxiety disorders (e.g. [Beck et al., 1994](#); [Norton, 2012](#); [Ost, 2000](#))
- (3) [Bandura's \(1969, 1977a, b\)](#) informational means of changing fear
- (4) the reduction of fear/anxiety by cognitive therapy (e.g. [Arntz & van den Hout, 1996](#); [Barlow, 2002](#); [Booth & Rachman, 1992](#); [Butler Chapman, Forman, & Beck, 2006](#); [Clark et al., 2006](#); [Clark & Beck, 2011](#); [Cottreaux et al., 2001](#); [Norton & Price, 2007](#); [Ost, Thulin & Ramnero, 2004](#); [van Oppen et al., 1995](#); [Rachman et al., 2015](#); [Salkovskis, Clark & Hackmann, 1991](#); [Visser & Bouman, 2001](#); [Whittal, Thordarson & McLean, 2005](#); [Whittal, Woody, McLean, Rachman, & Robichaud, 2010](#)), and others
- (5) the frequently observed (untreated) reduction of fear/anxiety after successful treatment of depression,
- (6) reductions of fear/anxiety by medications ([Steketee, 2012](#))

### The emergence of cognitive therapy

Given the absence of progress in treating depression and the waning prohibition against using cognitive concepts, behaviour therapists followed [Beck's work \(1976, 1993\)](#) with keen interest, reassured in part by the inclusion of behavioural assignments in his

therapy protocols. They were also impressed by his insistence on accurate and repeated recording of events and by the self-correcting nature of the programme. Setting aside their reservations about the acceptability of cognitive concepts, behaviour therapists began treating patients with cognitive techniques. Therapeutic successes removed their remaining inhibitions about cognitive therapy, at least when used alongside BT and with an emphasis on the behavioural components of cognitive therapy. Paul Salkovskis, a leading behaviour therapist who absorbed Beck's cognitive concepts and became a major contributor to the growth of CBT, acknowledged the debt to Beck: "There can be no doubt that Beck's cognitive approach to the understanding and treatment of emotional problems represented a paradigm shift, and that paradigm has truly shifted" (Salkovskis, 1996, p. xiii).

Beck (1976, 1993; Clark & Beck, 2011; Hofmann, Asmundson & Beck, 2013) postulated that depression and other psychological disorders arise from faulty cognitions and/or faulty cognitive processing, and that the remedy is to correct the mis-appraisals and promote corrective actions and appraisals. In the mid-1960s, Beck "became familiar with BT and incorporated many principles from this approach" (Beck, 1993, p.13). He used behavioural exercises, now known as 'behavioural experiments', in order to obtain fresh corrective information and allow the patient to test the validity of their dysfunctional beliefs and mis-appraisals (Bennett-Levy, Butler, Fennell, & Hackmann, 2004). For a period the behavioural experiments were confused with exposure therapy. Unlike ERP which is used in order to generate extinction of anxiety by frequently repeated, prolonged exposure sessions followed by response prevention, the purpose of the behavioural experiments is to collect specific, vivid, direct information. There is seldom any reason to repeat a behaviour test, and response prevention tactics do not feature in the tests. Behavioural experiments are particularly useful in treating panic disorder, social phobia and OCD.

Beck's rationale was that "an individual's affect and behavior are largely determined by the way in which he structures the world".

The thrust of his early work was on understanding and treating depression, a clinical, problem that remained unsolved by behaviour therapists, and they sensibly turned to Beck's work for guidance. Unpredictably, CBT made an even greater contribution to the treatment of anxiety disorders than to depression. The development of behavioural activation for the treatment of depression was a late but welcome turn of events (Jacobson, Martell, & Dimidjian, 1996).

Cognitive therapy was developed in the wake of the growth of cognitive psychology, but the early claims of crucial connections between CBT and cognitive psychology were exaggerated (Teasdale, 1993, p. 341; Seligman, 1988). At opposite ends of the spectrum there was a sharp contrast between cognitive psychology and behaviourism. Radical behaviourism, especially as advanced by its productive proponents in Kansas, was described as dustbowl behaviourism. By contrast, Philadelphia was cognitive rich (Beck, Seligman).

### The merging of behaviour therapy and cognitive therapy

The adoption of cognitive concepts into therapy was inspired by the development of cognitive psychology and by a desire among clinicians to pay more attention to the humanistic concerns of their patients. Behaviourism left little place for the content of the patient's anxieties, and clinical conversations and analyses were regarded as distractions from the need for patients to wend their fearful way up the anxiety hierarchies. Clinicians also felt under pressure to produce a method for treating patients who were depressed.

The time was ripe for a cognitive-behavioural form of therapy, and the two streams, cognitive and behavioural, were brought together by Clark's (1986) cognitive theory of panic disorder. Barlow's (1988, 2002) comparable model was formulated independently and made an invaluable contribution to the development of CBT. For ease of exposition, this account of events and their significance focuses on the work of Clark (1986) and Salkovskis (Behaviour Research and Therapy, 1985). Their work provided a bridge linking behaviour therapy and cognitive therapy.

Prior to the introduction of Clark's theory of the nature and causes of episodes of panic, the occurrence of these episodes was regarded as an epi-phenomenon associated with agoraphobia. Panics were not treated directly but were expected to fade out once the agoraphobia was treated. Klein's (1987) original biological analysis of panics elevated them to a problem in their own right, and Clark's (1986) theory was an attempt to provide a psychological explanation. "Panic attacks result from the catastrophic misinterpretation of certain bodily sensations", such as a shortness of breath, pounding heart, and dizziness (Clark, Behaviour Research and Therapy, 1986, p. 462). These sensations are interpreted as being signs of imminent danger, most commonly of a serious threat to one's health—"I am having a heart attack" or "I am going into a coma." The immediate cause of the panic is a threatening cognition. It follows that disconfirmations of these cognitions should eliminate the panics.

Clark's admirably succinct theory is of historical significance because it became a model for the cognitive analysis of various manifestations of anxiety, and the effectiveness of the therapy deduced from the theory, is impressive. The evidence pertaining to the theory is mainly confirmatory, but some problems were encountered (Barlow, 2002; Clark, 1988; Craske, 1999; Rachman, 1990).

Salkovskis's original cognitive analysis of OCD was an important contribution to cognitive behaviour therapy. He showed the value of taking into account of the person's interpretations of their thoughts and feelings about their compulsions and obsessions (Salkovskis, Behaviour Research and Therapy, 1985). Additionally, he singled out the crucial role that feelings of inflated responsibility play in many cases of OCD. By focussing attention on the patient's explanation of their disturbing thoughts, pressing urges, and compulsive behaviour, Salkovskis filled an empty stage. Previously, the nature and significance of the specific content of the obsessions and compulsions went unexamined, but then clinicians became acutely attuned to the patients' explanations, understanding, appraisals, wishes, and fears. Prior to the infusion of cognitive ideas obsessions were regarded, indeed defined, as unwanted, intrusive thoughts (plus images and impulses) but the content of the unwanted thoughts was of marginal interest. Nowadays the precise content of intrusive thoughts is of central importance in dealing with obsessions (Rachman, 2003; Whittal et al., 2010). The psychological assessment of anxiety disorders has been greatly improved by the development of cognitive scales and standardized interview schedules. The recent surge of interest in images (Hackmann, Bennett-Levy & Holmes, 2011) has therapeutic implications. Intrusive, highly emotional, fully formed, effortless, extraordinarily stable visual 'pictures in the mind', often are of great personal significance, and many assessment protocols now include an evaluation of this important cognition. This development is a minor echo of Wolpe's (1958) original use of imaginal presentations of the fearful stimulus-situations in the fear hierarchy. The rescripting of distressing intrusive images is a fresh and powerful new technique. Cognitive analyses and tactics, including rescripting, are now used to treat mental contamination (Rachman, 2006, 2013; Rachman et al., 2015).

The work of Clark and Salkovskis started the search for increasingly specific explanations of the various anxiety disorders and correspondingly specific treatments. The expansions include theories of post-traumatic stress disorder (Ehlers & Clark, 2000), social phobia (Clark & Wells, 1995), obsessions (Clark, 2004; Rachman, 2003), compulsive hoarding (Frost & Hartl, 2003; Steketee & Frost, 2003); health anxiety (Rachman, 2012; Salkovskis & Clark, 1993; Salkovskis & Warwick, 1986; Warwick & Salkovskis, 1990). Similar to Clark's panic theory, the outdated concept of hypochondriasis is now construed as "health anxiety disorder," in which the anxiety is provoked and maintained by catastrophic misinterpretations of certain bodily sensations and cognitions. However, unlike panic, in which the feared event is imminent ("I am having a heart attack and will die"), in cases of health anxiety, the dreaded misfortune, is distressing but not an imminent danger. Moreover, the provoking bodily sensations in health anxiety tend to be persistent, even chronic, and give rise to extensive and intensive safety behaviour, and repeated requests for reassurance.

In the process of merging BT and cognitive therapy, the behavioural emphasis on empiricism was absorbed into cognitive therapy. The behavioural style of conducting empirical outcome research was adopted, with its demands for rigorous controls, statistical designs, treatment integrity and credibility, and so forth. In turn, cognitive concepts were absorbed into BT, and cognitive therapists made greater use of behavioural experiments.

### Problems encountered by cognitive behaviour therapy

Notwithstanding the remarkable advances that it has promoted, the CBT approach is not without problems. The term 'cognitive behaviour therapy' is used too loosely. Sometimes the B in CBT refers primarily to exposure therapy, but at other times CBT refers primarily to cognitive re-appraisals. In everyday practice the distinction matters little, but in research (and of course in meta-analyses) it is well to clarify exactly what is being investigated.

It has proven difficult consistently to demonstrate the therapeutic superiority of CBT over BT, and in several instances, the effects of ERP equalled those of CBT. For example, in Margraf & Schneider's (1991, Margraf, 1995) study of panic disorder, the patients who received pure exposure treatment without cognitive manipulations showed improvements as large and as enduring as the patients receiving pure cognitive therapy in which exposures were excluded. Moreover, the cognitions declined to the same extent in both groups.

Negative cognitions can decline after a directly cognitive treatment or after an indirect treatment such as exposure. One possibility is that with each exposure, the patient acquires fresh disconfirmatory evidence (e.g. no heart attack, did not lose control). The accumulation of this personal, direct disconfirmatory evidence weakens the catastrophic cognitions. However, it is puzzling that the direct modification of the negative cognitions is not consistently more effective than the indirect effects of exposure. The superiority of CBT over exposure has been demonstrated in various projects (e.g. Clark, Ehlers, Hackmann, McManus, 2006), and these are important. The remaining question is why do cognitive improvements take place after treatments that do not explicitly tackle the negative cognitions? One obstacle to answering questions of this type is the timing of the crucial events.

Reductions in fear and avoidance are easy to observe and measure, but they can, occur slowly, over weeks rather than minutes. In cases of panic, the measures typically range over days or weeks (e.g. the number of panics are recorded per week or even per month). If a patient records a decrease in panics, from four per week to one per week, when exactly did this decline take place?

Cognitions are evanescent and the time of the changes in misappraisals and in mis-interpretations are difficult to pinpoint. In many instances, clinical or experimental, the cognitive shifts are slow to develop, changing over weeks rather than minutes. Changes of interpretation can initiate a process of behavioural change that only becomes evident some time later. The cognitive processes set in motion during a CBT session often have their effects at some point between sessions. For example, a patient receiving cognitive therapy may experience a reduction in fear after an interval in which he/she had no contact with the phobic situation and made no deliberate attempt to facilitate the fear reduction between sessions. An illustration of this type of delay in the effects of CBT was reported during the experimental reduction of claustrophobia described by Booth and Rachman (1992).

There are also problems of causality. In the view of Seligman (1988) the results of CBT are open to more than a single interpretation. Seligman incisively questioned why people adhere to their irrational and unadaptive appraisals with such tenacity. Why do patients with anxiety disorders, such as panic, continue to believe in their irrational catastrophic interpretations of their bodily sensations/thought/images despite repeatedly disconfirmed expectations—"why does the panic victim still believe he or she will have a heart attack in spite of 1000 extinction trials?" (Seligman, 1988, p. 328).

The probable explanation for this apparent anomaly is that in these cases the fear of a heart attack does extinguish. It is then replaced by a fear of experiencing a distressing episode of panic, and that cognition is intermittently confirmed. Nonetheless, the tenacity of the irrational, unadaptive cognitions about fear and danger that are postulated to generate and sustain anxiety is a critical problem that remains to be explained. On similar lines, the catastrophically inflated feelings of responsibility encountered among patients with anxiety disorders, notably OCD, can be frustratingly tenacious.

The development of CBT spans nearly a century from conditioned reflexes to catastrophic cognitions, and there was an inevitable lag between the scientific advances, and the dissemination of the effective methods (Clark, 2004). In keeping with the growing insistence for evidence-based treatments, in 2007 the U.K. Minister for Health announced a plan for massively expanding the provision of psychological therapy for the treatment of anxiety and depression (Rachman & Wilson, 2008). He stated, "Psychological therapies have proved to be as effective as drugs in tackling, these common mental health problems and are often more effective in the long run" ([www.gnn.gov.uk](http://www.gnn.gov.uk); Oct. 10, 2007). The government introduced a six-year plan to improve the service by allocating more than 300 million pounds (roughly \$600 million) in the first three years in order to train an additional 3600 psychological therapists in "giving evidence-based treatment," specifically CBT. The number of specially trained therapists is approaching 8000.

### Summary and conclusions

The development of psychological treatment for anxiety disorders and depression has improved health care for many thousands of people, and the massive expansion of psychotherapeutic services for people in the United Kingdom will doubtless inspire comparable improvements elsewhere. Clinical psychologists and clinical researchers provided the means for this unparalleled improvement in mental health care. In the post-war period the medical profession strongly opposed the provision of therapy by psychologists. The massive expansion of psychological services in the United Kingdom, hints at the outcome of that tendentious professional dispute.

Developing the methods of treatment greatly enhanced our understanding of the nature of fear—the methods were, after all, methods for reducing fear. Lang (1968) introduced a fascinating conception of fear: fear is not a lump, but rather is a loosely connected set of three components. His work also led to a fresh conception of courage (Rachman, 1978, 1990). A stimulating construct of prepared fears was introduced by Seligman (1971), and Clark (1986) introduced the first cognitive explanation of episodes of intense fear. Naturally many questions remain to be tackled, but insufficient progress has been made in answering one of Seligman's (1988) crucial questions: Why are unadaptive fearful misinterpretations so tenacious? Consideration of tenacious irrational beliefs are not confined to psychologists. In his book "The Heel of Achilles" the philosophically-minded novelist Arthur Koestler pondered whether "the prevalence of passionately held irrational beliefs" will ever become comprehensible (Koestler, 1976, p.16).

### Conflict of interest

I am the sole author, it has never been submitted to any other journal, and I have no conflict of interest.

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