Available online at www.sciencedirect.com

ScienceDirect

Cognitive and Behavioral Practice 30 (2023) 45–54

Cognitive and Behavioral Practice

www.elsevier.com/locate/cabp

A Brief History of Metacognitive Therapy: From Cognitive Science to Clinical Practice

Lora Capobianco, *Research and Innovation, Greater Manchester Mental Health NHS Foundation Trust and Centre for New Treatments and Understanding in Mental Health, The University of Manchester*
Henrik Nordahl, *Norwegian University of Science and Technology*

Metacognitive therapy (MCT) is proving to be an effective treatment for anxiety and depression with effects that may exceed CBT. It has been described as a paradigm shift in psychotherapy in its theory-driven cognitive science approach and systematic development and evaluation. MCT was developed by Adrian Wells based on an information processing theory, the Self-Regulatory Executive Function model by Wells and Matthews. MCT theory formulates psychological disorders as sharing common causal factors under the influence of metacognition, representing a particular top-down model of biases in cognitive regulation. A key clinical implication was that a core set of interventions could be developed to impact a wide range of symptoms and disorders. In this paper, we trace the historical development of MCT and the major studies that informed theory and practice with the aim of introducing clinicians and researchers to this area and to understand why the metacognitive approach has developed into a treatment that is proving to be potentially more effective than current gold-standard treatments. In doing so, we will draw out the distinctive features of the approach and explore how this might offer a blueprint for scientific advancement in clinical psychology and psychotherapy.

Metacognitive therapy (MCT; Wells, 2009) is an effective, evidence-based psychological treatment that may exceed the effects of well-established interventions such as cognitive-behavioral therapies (e.g. Normann & Morina, 2018). MCT has been described as an innovative approach at the forefront of the evolution of clinical psychology (Schweiger et al., 2019). This article aims to raise awareness of the origins of this approach and understand how MCT development was informed by rigorous psychological theory, how this theory preceded and informed the creation of new techniques and provided a blueprint for treatment development.

Self-Attentional Processes and Information Processing Theory

Adrian Wells, the originator of MCT, began testing mechanisms and underlying concepts of what would later form the metacognitive model in the mid-1980s during his doctoral studies. Wells had an interest in information processing theory and the role of self-attentional processes in anxiety (e.g., Wells, 1985). This work developed in the context of seminal work by Duval and Wicklund (1972), Carver and Scheier (1988), and Fenigstein (1984), and colleagues who demonstrated effects of heightened self-focused attention across psychological disorders (see Ingram, 1990, for a review). Wells (1987) argued that attentional processes and thinking styles such as worry should be given more attention in developing theories of psychological disorder. In contrast, innovative psychotherapy interventions such as Cognitive Behavior Therapy (CBT; Beck, 1963; Beck, 1976) and Rational Emotive Behavior Therapy (REBT; Ellis, 1962; Ellis & Grieger, 1986) were centered on the *content* of cognitions and schemas as the central mechanisms of disorder. Wells considered *attention* to be an important topic that could provide a scientific basis for uncovering both objective and subjective mechanisms of psychological disorder and treatment, an idea that was developed further in a seminal work: *Attention and Emotion: A Clinical Perspective* (Wells & Matthews, 1994).

When we examine the role given to attention in earlier clinical models of disorder, biases in attention were

Keywords: metacognitive therapy; metacognition; S-REF model; metacognitive control system; history

considered principally in terms of bottom-up reflexive process resulting from emotion, personality dispositions, or environmental factors (e.g., Mathews & MacLeod, 1985; Williams et al., 1988). Other approaches focused more on the role of attention in explaining performance decrements in anxiety and stress. For example, in test anxiety, decrements in performance were attributed to the effects of worry in drawing attention away from task-focused processing during performance situations in test-anxious individuals (e.g., Sarason, 1972; Wine, 1971). Parallel work, and an important influence on Wells' early ideas, proposed a theory of self-awareness involving an important dichotomy in the direction of attention; attention could be directed inward towards the self or outward towards the environment (Duval & Wicklund, 1972). Duval and Wicklund proposed that environmental stimuli such as mirrors and the presence of an audience direct attention towards the self, whereas external distractions and engaging tasks direct attention away from the self. Fenigstein et al. (1975) termed the tendency of a person to direct attention inwards *self-consciousness* and made a separation between private and public self-consciousness, where both were found to correlate positively with social anxiety. Individual differences in these domains were considered personality traits, and it was argued that state self-directed attention resulted from transient situational variables, dispositions, or both. It emerged that state and trait self-attention were reliably and positively correlated with psychological disorder and symptoms, but a unifying theory linking attention bias for threat, self-focus, attention resource limits, and psychological disorder was missing. Wells saw the benefits and practical implications of developing such a theory.

Extant work in the 1980s offered expanded research on attention bias and emotion that would become and remains an important influence in the field of psychopathology (Bar-Haim et al., 2007). Mathews and MacLeod (1985) demonstrated that anxiety patients had an attentional bias towards threat, which they attributed to the activation of underlying schemas and negative interpretations of experience, consistent with schema theory (Beck et al., 1979). They first evaluated this using the modified Stroop task in patients with generalized anxiety disorder and found that patients experienced increased color-naming latencies for threat-related words. Later, MacLeod et al. (1986) used the dot-probe paradigm and found that anxious patients, but not depressed patients, shifted their attention towards threat-related words but were slower to attend to neutral words. This suggested that there was a processing bias that may contribute to the maintenance of anxiety. Subsequent research suggested a bias for dysphoric stimuli in depression (e.g., for review see Armstrong & Olatunji, 2012).

In the late 1980s and early 1990s, Wells together with Gerald Matthews continued work on attention, cognition, stress, and coping (e.g., Matthews & Wells, 1988; Wells & Matthews, 1994). They expounded that "experimental research on attention and emotion is of particular value in developing scientifically rigorous theories of emotional disorder" (Wells & Matthews, 1994, p. 10). They argued that a person's knowledge—self-beliefs—is not simply an internal data file of disconnected information that can be challenged by the therapist: clinical disorder may be influenced not only by automatic processes but more strategic conscious processes that regulate attention and cognition. They aimed to identify these possible mechanisms and set out to conduct an extensive critical review of the existing literature on attention and emotion in psychopathology. Central to this work was an examination of theories and evidence on the contributions of bottom-up versus top-down control of processing. Wells and Matthews (1994) observed that use of cognitive science principles in the clinical psychology and psychopathology literature was limited, and that top-down influences on the biases and negativity seen in psychological disorders were not accounted for by existing theories. They aimed to redress this, and after a critical analysis of the literature advanced their Self-Regulatory Executive Function model, the theoretical foundation later developed by Wells and used as the basis for metacognitive therapy.

The Self-Regulatory Executive Function Model

The Self-Regulatory Executive Function (S-REF) model (Wells & Matthews, 1994, 1996) has also been referred to as the metacognitive model of psychological disorders by some researchers. Wells and Matthews argued that a model of disorder should distinguish between levels of control of attention and map the effects of levels of processing on psychological disorder. Writing of existing theories, such as schema theory, they stated: "the theories fail to specify in detail the different aspects of the cognitive architecture which may contribute to emotional problems" (Wells & Matthews, 1994; p. 297). An analysis of this type was central in the S-REF model, leading to specific predictions about what should be done in treatment and which components of cognition should be targeted.

The starting point in their account was the identification and labeling of the cognitive attentional syndrome (CAS), a cluster of processes activated under stress (or threat) and leading to psychological disorder. The CAS consists of perseverative negative thinking in

the form or worry, rumination, threat monitoring, and unhelpful coping behaviors such as thought suppression that reduce opportunities for effective self-regulation. Elevated self-focus (e.g., private self-consciousness), they argued, was a surface marker for the likelihood that an individual will develop this syndrome. In the S-REF model the CAS is generated by an interaction between higher-level controlled processing and lower-level automatic processing, especially that involving self-relevant processing and reducing distressing emotions through self-regulation. In modeling the effects of higher-level cognition, the model distinguished between declarative beliefs (e.g., "I'm worthless") and procedural beliefs, programes or commands that guide processing and therefore have a metacognitive function. Wells and Matthews considered that general negative beliefs (e.g., "People think I'm a failure") were likely to be the output of processing routines guided by metacognitions and the persistence of such beliefs might be accounted for by the CAS. Wells (e.g., 1994, 1997) further hypothesized the existence and role of negative (e.g., "I have lost control of my worrying") and positive (e.g., "Worrying means I'm ready to cope with anything") metacognitive beliefs driving CAS responses (i.e., perseveration on negative information). The S-REF model differs from other cognitive models by emphasizing the importance of cognitive architecture, discriminating the influence of reflexive low-level processing from top-down (higher level) motivated strategies. It described a cognitive attentional syndrome of biased perseverative negative processing characteristic of disorder, which is a central coping strategy. These distinctions are important in the development of psychotherapy because the level at which a mechanism of bias operates determines the type of treatment that should be used (e.g., repeated exposure for low-level processes versus strategy modification and revision of metacognitive knowledge for the upper level).

Wells and Matthews proposed that individual differences in self-focused attention seen across psychological disorders is a marker for a cognitive attentional syndrome (CAS), which is a universal mechanism causing/maintaining psychological disorder. Thus, the S-REF model introduced novel ideas that focused on the similarity between disorders, identifying common causal processes and mechanisms (e.g., worry/rumination), involving clearly defined information processing structures and functions.

Wells and Matthews (1994) argued that perseveration in response to negative thoughts (i.e., CAS) rather than the content of cognition, which was emphasized in other theories (e.g., Beck et al., 1979), caused disorder. It followed that it would be beneficial to develop techniques that allow the individual to regulate the CAS effectively. In the S-REF model, the CAS was viewed as resulting from metacognitive knowledge such as beliefs about the usefulness of worrying or paying attention to threat and also higher-order procedural metacognitions that acted as modifiable programs for processing. Because psychological disorder was linked to maladaptive metacognitive beliefs and overuse of coping by negative thinking strategies (and not skill deficits, as proposed by others; e.g., Curran, 1979; Lewinsohn, 1974), treatment should be developed that focused on using flexible mental control rather than fixing skill shortages or challenging the content of schemas. Wells (2009, 2019) continued to extend the S-REF model in light of emerging experimental data and informed by applying its principles to his clinical patients. Specifically, he has described in detail an inner structure of higher-order cognitive functions and the relationship between metacognitive components of the model and regulation of the CAS.

Evaluating the Role of Metacognitions in Psychopathology

To empirically test the metacognition mechanisms of disorder emphasized in the S-REF model, there was a need to develop new measures and assessment tools. Early measures included the Thought Control Questionnaire (TCQ; Wells & Davies, 1994), which assesses individual differences in the tendency to select particular strategies (e.g., worry, self-punishment, reappraisal) for dealing with negative thoughts, and the Anxious Thoughts Inventory (AnTI; Wells, 1994), which assesses different types of worry including *meta-worry* (i.e., worry about worry). The Metacognitions Questionnaire-65 (MCQ-65; Cartwright-Hatton & Wells, 1997) was the first measure of metacognitive beliefs corresponding to the S-REF model and assessed five subscales of metacognitive beliefs, including: (1) positive beliefs about worry; (2) negative beliefs about the uncontrollability and dangers of worry; (3) cognitive confidence; (4) need for control; and (5) cognitive self-consciousness. The MCQ was subsequently abbreviated to the Metacognitions Questionnaire-30 (MCQ-30; Wells & Cartwright-Hatton, 2004), and these measures have been instrumental in establishing the role of metacognitive beliefs across a range of disorders, symptoms and age groups (e.g., Capobianco et al., 2020; Cotter et al., 2017; Gkika et al., 2018; Hamonniere & Varescon, 2018; Myers et al., 2019; Palmieri et al., 2021; Sellers et al., 2017; Sun et al., 2017).

Disorder-specific measures (e.g., GADS-R, PTSD-S, OCD-S) and generic measures (e.g., CAS-1, CAS-1r) have been developed to be used from session to session

as a means to monitor and assess metacognitive strategies (i.e., CAS) and metacognitive beliefs during therapy (Wells, 2009). There are also measures of metacognitions relevant to depression (e.g., Negative Beliefs about Rumination Scale (NBRS; Papageorgiou & Wells, 2001a) and Positive Beliefs about Rumination Scale (PBRS; Papageorgiou & Wells, 2001b) that have been instrumental in testing the role of the CAS and metacognitions (e.g., Cano-López et al., 2021).

A Systematic Multilevel Theory–Driven Approach to Developing Treatment Techniques

The S-REF model (Wells & Matthews, 1994) had direct implications for how psychological disorder should be treated. Unlike many psychological therapies that import techniques from other approaches, the techniques used within MCT were developed based on psychological theory of mechanisms and many were individually evaluated experimentally prior to being integrated into the MCT package. For example, the attention training technique was tested using single-case experimental methodology (Papageorgiou & Wells, 2000; Wells, 1990; Wells et al., 1997) and evaluation of neuropsychological, attention and behavioural inhibition effects of ATT has continued (Knowles & Wells, 2018; Murray et al., 2016, 2018; Nassif & Wells, 2014). The technique of situational attentional refocusing, developed to counteract threat-monitoring and introduce alternative plans for processing, was tested in social anxiety (Wells & Papageorgiou, 1998), while metacognitively delivered exposure was tested under laboratory conditions in OCD (Fisher & Wells, 2005) as was detached mindfulness (Gkika & Wells, 2015; Wells & Roussis, 2014). Such an approach has allowed for systematic evaluation of processes and outcomes and continued appraisal of the fit of techniques with predictions of the psychological theory on which the treatments were developed. The approach taken has probably resulted in an unusually comprehensive and theoretically coherent connection between theory of mechanisms underlying psychological disorders and the psychotherapeutic change techniques used in treatment.

The model states that attention control in psychological disorder can become inflexible and entangled in negative self-focused processing (i.e., the CAS). As such, attention-focused treatment techniques can provide a means of interrupting the CAS and improving flexible metacognitive control. Wells (1990) developed the first technique of MCT, the Attention Training Technique (ATT), with this aim. The ATT was devised to impact multiple aspects of attention, including improved knowledge of control and reduction of self-focussed processing. Further description of the ATT can be found in Wells (2009).

The ATT was first evaluated in a pilot case of panic disorder (Wells, 1990), using a repeated measures "reversal methodology." Since then, ATT has been evaluated across studies in adults with emotional distress symptoms and has been reported to have positive effects as a stand-alone technique (Fergus & Bardeen, 2016; Knowles et al., 2016), appearing to impact, as it was intended, higher-level executive processes (Barth et al., 2019; Knowles & Wells, 2018; Kowalski et al., 2020; Rosenbaum et al., 2018).

Wells and Matthews (1994) proposed that a reduction in the CAS, coupled with adaptive metacognitive modification, could be facilitated through techniques that induced states they termed *detached mindfulness* (DM). DM is a state that aims to decrease the activation of the CAS and has the potential to modify the metacognitive processes and knowledge that drive it. DM techniques that modify metacognitive knowledge and strengthen executive control of processing could act on the connectivity of cognitive and metacognitive subsystems (Wells, 2019). DM involves a detachment from thoughts, meaning that the individual is guided in separating thoughts from volitional reactions to thoughts, while keeping extended processing under control and experiencing the self as a detached observer (mindful) of mental events (Wells, 2005). The technique is used to enhance knowledge of control, enhance meta-awareness, and modify unhelpful personal models of mental functioning. In metacognitive therapy these techniques are embedded in a meta-level dialogue which differs from the usual dialogue of CBT. Since the goal of MCT is to change higher-level cognition and modify cognitive regulation, the therapist does not focus on the content of thoughts and schemas. Instead, the MCT therapist guides discussion onto beliefs about thoughts and their ability to choose how to relate to them rather than staying in the content of thoughts and challenging their validity.

Evaluation of Metacognitive Therapy

The approach used in evaluation of MCT effectiveness demonstrates a stepwise progression. The developmental sequence is notable because the majority of psychotherapies are based on clinical observation rather than scientifically tested techniques or a-priori theory, but MCT was developed more systematically, driven by an advanced theory. This was followed by a series of pilot studies, uncontrolled trials, and randomized controlled evaluations. For example, the evaluation of MCT for generalized anxiety disorder (GAD) began with a case study (Wells, 1995), then an uncontrolled trial (Wells & King, 2006), before randomized controlled trials were run against active treatments such as applied relaxation (Wells et al., 2010) and

two forms of CBT: intolerance of uncertainty therapy (van der Heiden et al., 2012) and NICE recommended CBT (Nordahl et al., 2018). Since then, feasibility studies of MCT for GAD in children and adolescents (Esbjørn et al., 2015) and in a group format (Haseth et al., 2019) have emerged.

Over the last 25 years, MCT has been trialled in a range of psychological disorders (e.g., OCD, PTSD, MDD) following these steps. For example, in depression, the ATT was first evaluated as a stand-alone technique and was found to be associated with positive effects (Papageorgiou & Wells, 2000). Then, full MCT was evaluated in a case series (Wells et al., 2009), followed by open trials delivered in individual (Wells et al., 2012) and group (Dammen, et al., 2015; Papageorgiou & Wells, 2015) formats. The first randomized controlled trial evaluated MCT versus waitlist control (Hagen et al., 2017), and more recently MCT has been evaluated against "gold-standard" CBT (Callesen et al., 2020). The evidence base supports MCT as an effective treatment and there is growing evidence that MCT may be more effective than other psychotherapies (see Normann & Morina, 2018).

At a mechanism level, evidence indicates that MCT effectively reduces the CAS and creates metacognitive change (Normann & Morina, 2018). Several studies have reported that change in metacognitions are a significant predictor of outcome in treatments where metacognitions are not directly addressed. For example, metacognitive change predicts symptom improvement in patients with OCD (Sunde et al., 2021), social anxiety disorder (Nordahl et al., 2017), and comorbid anxiety disorders (Hoffart et al., 2018).

New Waves of Therapy: Is MCT Part of the So-Called Third Wave?

The development of psychological therapies to date has been characterized as moving through three waves (Hayes, 2004). The first wave focused on classical conditioning, operant learning, and behaviorism, while the so-called second wave was characterized by interventions that focused on using cognition and information processing, with the dominant intervention in this wave being cognitive therapy. Although highly debated, Hayes (2004) noted the emergence of a third wave of psychological therapies that focused on acceptance, mindfulness, values, and relationships, noting that third-wave interventions included Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1991), Integrative Behavioral Couples Therapy (IBCT; Jacobson & Christensen, 1996), Acceptance and Commitment Therapy (ACT; Hayes et al., 1999), and Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002). Hayes (2004) further suggested that third-wave interventions focused on philosophical approaches, were less focused on mechanisms, and aimed to change the function of psychological events experienced rather than changing or modifying events themselves. He later stated that these therapies operated through approaches including acceptance, cognitive diffusion, and mindfulness (Hayes et al., 2006). While MCT has been described by some (e.g., Hayes, 2004) as a third-wave therapy, we question this suggestion and highlight below how MCT differs from the third-wave therapies.

Unlike MCT, third-wave therapies do not have a strong grounding in psychological theory or models of cognitive processing and are instead rooted in theory outside the field of clinical psychology (i.e., philosophical models). For example, mindfulness-based interventions stem from Buddhist practices, rather than from a framework for conceptualizing how such interventions result in clinical improvement by changing prespecified psychological mechanisms. It is only more recently that researchers have tried to apply psychological theory as a means to conceptualize the underlying mechanisms of mindfulness effects on pathology (Brown et al., 2007; Vago & David, 2012). Similarly, ACT is rooted in philosophical principles based in functional contextualism (Hayes et al., 2006), with theoretical roots in Relational Frame Theory (RFT; Hayes et al., 2001), which relates language and cognition. Such theories contrast deeply with metacognitive therapy, which is based on an information processing model that outlines the interplay between cognitive appraisal, cognitive processes (i.e. memory, attention), and metacognition. As such, the theoretical bases of MCT and third-wave therapies differ significantly in their focus, and in the sequence of theory and therapy development involved.

Such theoretical differences are important because the proposed mechanisms in third-wave therapies differ from MCT and this impacts the target and nature of treatment method development. For example, in mindfulness interventions, the aim is to cultivate nonjudgemental awareness of present-moment experience, via therapeutic techniques such as using the breath as an anchor as a means to disengage from maladaptive cognitive processing that bring patients into present moment awareness. But it has been argued that the absence of an information pocessing model makes it difficult to interpret how awareness of the present moment can unambiguously result in the modification of the dysfunctional metacognitive beliefs and biased processing mechanisms that are hypothesized in the S-REF model and found in research to predict disorder (Wells, 2002). Furthermore, using a method such as focusing on the breath would not be compatible with

MCT techniques, which aim to reduce sustained processing and self-attention. Third-wave approaches moved away from a detailed a-priori formulation of theoretical mechanisms, which is the opposite approach that underlies that taken in the development of metacognitive therapy. This could, in the future, result in significant challenges for third-wave therapies in understanding and testing how and why techniques work and slow down the development of novel theory-derived treatment methods.

The Metacognitive Approach: A Paradigm Shift in Clinical Psychology?

We believe that MCT represents an example of "good practice" in the development of psychotherapy and a key reason why the approach has offered therapeutic advantages. The Medical Research Council UK and the research community have called for more research on mechanisms to stimulate advances in psychotherapy to counteract inertia in the field (Craig et al., 2008; Holmes et al, 2018; Kazdin, 2009). For example, Holmes et al. (2018) noted that treatments should develop a model of explanatory specificity and experimentally evaluate and establish causal validity first. We argue that this process of theorizing mechanisms, empirical testing, and development and evaluation of new treatment techniques from theory-up already exists and is alive and well, and is exemplified by metacognitive therapy. We also believe that this process of treatment development has represented a paradigm shift in psychotherapy, where robust psychological theory of mechanisms developed first, heralds model testing and the development of specific targeted techniques. Furthermore, MCT has been instrumental in fueling the shift towards transdiagnostic mechanisms in psychopathologies, a move away from the content of cognition towards process-focused accounts, a reevaluation of automaticity-based explanations, and an appreciation of higher-level cognition (metacognition) within the context of understanding biases in mental regulation.

Limitations, Barriers, and Future Directions

The advances made by the metacognitive model and treatment have been substantial on several different levels in clinical psychology; however, there are limitations. While Normann and Morina (2018) note the superior effects of MCT in comparison to waitlist control and CBT, they draw attention to the fact that some of the trials have small sample sizes and are predominantly conducted on patients with GAD or major depressive disorder. Furthermore, Wells has been involved in a substantial number of the trials to date, and more independent studies are required. There remains a need for a greater number of evaluations of the effectiveness of MCT in routine clinical practice, and in patients with severe and complex mental health problems. However, research in MCT continues to gain pace and larger scale trials have emerged in patients with major depressive disorder (Callesen et al., 2020) treated in routine clinical practice, and in patients with physical health conditions (Wells et al., 2021). One uncontrolled study has also reported positive effects of MCT for early traumatized patients with borderline personality disorder (Nordahl & Wells, 2019). These recent advances indicate that the effectiveness in earlier trials may generalize to further patient groups and settings. However, further studies using randomized controlled trials by independent groups are needed. A key factor in this task will be maintaining the level of rigour evident in the development of MCT in its future evaluation. Specifically, this must require that effective training, established competency, and fidelity must be observed.

As with all theories there is room for development and where necessary revision based on new data. The central assertions of the S-REF model have remained consistent, and more data has supported the proposed mechanisms over the last 30 years. In a recent extension, Wells (2019) elaborates on the structure and function of metacognition in self-regulation and describes in greater detail a distinct *Metacognitive Control System* (MCS; Wells, 2019). Wells has been concerned with making clearer and more precise the distinctions between the cognitive and metacognitive systems in psychopathology and recovery. This has required contemplation on how the systems store, transmit, and use information about the status of processing. He argues that the MCS creates and transmits information as a *cybernetic code* that is used to instruct other neural self-regulatory systems towards reaching goals for processing. The MCS model presents new predictions for self-regulation, developing treatment methods, and for understanding processes of recovery.

After 36 years of theory and research, MCT is still in its developmental stages, and much remains to be explored, such as applications to occupational settings, physical illnesses, severe mental illnesses, addiction, and children and adolescents. While research has begun in these areas (i.e., Caselli et al., 2018; Esbjørn et al., 2018; Simons & Kursawe, 2019; Simons & Vloet, 2016; Wells et al., 2020; Wells et al., 2021), large-scale trials, mirroring those conducted in adult mental health, are a task for the future.

Ensuring appropriate use of MCT and associated techniques such as ATT is imperative. For example,

some research groups have evaluated the effect of MCT when therapists have not been formally trained in the method (Glombiewski et al., 2021; Jordan et al., 2014). While MCT was efficacious and equal to well-established treatments in these cases, we call for greater equipoise in studies ensuring minimal standards in training and competency for comparative treatments. Furthermore, the way therapies are labeled is important, and combining treatments under banners such as CBT or "third-wave" risks obscuring important differences between approaches. This can have the unfortunate effect of meta-analyses combining interventions that have different targets for change and different methods. In the case of MCT this could undo the results of the painstaking systematic work that has led to the development of this therapy approach. A further threat to the development of MCT arises from the enduring tendency in psychotherapy research to combine treatment techniques from different theoretical orientations to create a "new intervention". Such an approach does not fit with the theory-driven development that is the bedrock of MCT. Eclecticism in psychotherapy (i.e., combining of treatment techniques without theoretical or mechanistic justification) has yet to produce a treatment that is more effective than CBT, but it appears that in the development of MCT, this may be within reach.

Conclusions

The metacognitive approach to psychological disorder developed from systematic theory and research on mechanisms conducted over the past three decades. One of the advantages of MCT appears to be its grounding in a clear a-priori theory, based on cognitive psychology principles and systematic treatment development work. This appears to have led to the development of a novel and effective treatment approach.

The metacognitive model reshapes how psychological disorders are viewed, hypothesizing that emotional disorders are largely the result of top-down self-regulatory strategies under the influence of metacognitions, rather than bottom-up biases in processing or emotion or skill deficits. The similarities between disorders are seen as more important than the differences, supporting transdiagnostic formulation and interventions targeting common biases in self-regulation of thinking.

The developmental history of MCT provides a model for the wider progression of psychotherapy, where specific treatment techniques are developed based on theories that target well-specified and empirically validated causal processes and mechanisms.

Suggested Reading

Normann, N., & Morina, N. (2018). The efficacy of metacognitive therapy: A systematic review and meta-analysis. *Frontiers in Psychology*, 9, 2211. doi:10.3389/fpsyg.2018.02211

Wells, A. (2009). *Metacognitive therapy for anxiety and depression*. Guilford Press.

Wells, A. (2019). Breaking the cybernetic code: Understanding and treating the human metacognitive control system to enhance mental health. *Frontiers in Psychology*, 10, 2621. doi:10.3389/fpsyg.2019.02621

Wells, A., & Matthews, G. (2014). *Attention and emotion: A clinical perspective* (Classic ed.). Psychology Press.

References

Armstrong, T., & Olatunji, B. O. (2012). Eye tracking of attention in the affective disorders: A meta-analytic review and synthesis. *Clinical Psychology Review, 32*(8), 704–723. https://doi.org/10.1016/j.cpr.2012.09.004.

Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M. J., & Van Ijzendoorn, M. H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study. *Psychological Bulletin, 133*(1), 1–24. https://doi.org/10.1037/0033-2909.133.1.1.

Barth, V., Heitland, I., Kruger, T. H. C., Kahl, K. G., Sinke, C., & Winter, L. (2019). Shifting Instead of Drifting – Improving Attentional Performance by Means of the Attention Training Technique. *Frontiers in Psychology, 10*, 23. https://doi.org/10.3389/fpsyg.2019.00023.

Beck, A. T. (1963). Thinking and depression: I. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry, 9*(4), 324–333. https://doi.org/10.1001/archpsyc.1963.01720160014002.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. Guilford Press.

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*(4), 211–237. https://doi.org/10.1080/10478400701598298.

Callesen, P., Reeves, D., Heal, C., & Wells, A. (2020). Metacognitive Therapy versus Cognitive Behaviour Therapy in Adults with Major Depression: A Parallel Single-Blind Randomised Trial. *Scientific Reports, 10*, 7878. https://doi.org/10.1038/s41598-020-64577-1.

Cano-López, J. B., García-Sancho, E., Fernández-Castilla, B., & Salguero, J. M. (2021). Empirical Evidence of the Metacognitive Model of Rumination and Depression in Clinical and Nonclinical Samples: A Systematic Review and Meta-Analysis. *Cognitive Therapy and Research*, 1–26. https://doi.org/10.1007/s10608-021-10260-2.

Capobianco, L., Faija, C., Husain, Z., & Wells, A. (2020). Metacognitive beliefs and their relationship with anxiety and depression in physical illnesses: A systematic review. *PLoS One*. https://doi.org/10.1371/journal.pone.0238457.

Cartwright-Hatton, S., & Wells, A. (1997). Beliefs about worry and intrusions: The Meta-Cognitions Questionnaire and its correlates. *Journal of Anxiety Disorders, 11*(3), 279–296. https://doi.org/10.1016/s0887-6185(97)00011-x.

Carver, C. S., & Scheier, M. F. (1988). A control-process perspective on anxiety. *Anxiety Research, 1*, 17–22.

Caselli, G., Martino, F., Spada, M. M., & Wells, A. (2018). Metacognitive therapy for alcohol use disorder: A systematic case series. *Frontiers in Psychology, 9*, 2619. https://doi.org/10.3389/fpsyg.2018.02619.

Cotter, J., Yung, A. R., Carney, R., & Drake, R. J. (2017). Metacognitive beliefs in the at-risk mental state: A systematic review and meta analysis. *Behaviour Research and Therapy, 90*, 25–31. https://doi.org/10.1016/j.brat.2016.12.004.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions: The new medical Research Council guidance. *BMJ, 337*. https://doi.org/10.1136/bmj.a1655 a1655.

Curran, J. P. (1979). Social skills: Methodological issues and future directions. In *Research and practice in social skills training* (pp. 319–354). Springer.

Dammen, T., Papageorgiou, C., & Wells, A. (2015). An open trial of group metacognitive therapy for depression in Norway. *Nordic Journal of Psychiatry, 69*(2), 126–131. https://doi.org/10.3109/08039488.2014.936502.

Duval, S., & Wicklund, R. A. (1972). *A theory of objective self-awareness*. Academic Press.

Ellis, A. (1962). *Reason and emotion in psychotherapy*. Lyle Stuart.

Ellis, A. E., & Grieger, R. M. (1986). *Handbook of rational-emotive therapy* (Vol. 2). Springer.

Esbjørn, B. H., Normann, N., Christiansen, B. M., & Reinholdt-Dunne, M. L. (2018). The efficacy of group metacognitive therapy for children (MCT-c) with generalized anxiety disorder: An open trial. *Journal of Anxiety Disorders, 53*, 16–21. https://doi.org/10.1016/j.janxdis.2017.11.002.

Esbjørn, B. H., Normann, N., & Reinholdt-Dunne, M. L. (2015). Adapting metacognitive therapy to children with generalised anxiety disorder: Suggestions for a manual. *Journal of Contemporary Psychotherapy, 45*, 159–166. https://doi.org/10.1007/s10879-015-9294-3.

Fenigstein, A. (1984). Self-consciousness and the over perception of self as a target. *Journal of Personality and Social Psychology, 47*, 860–870.

Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology, 43*(4), 522–527. https://doi.org/10.1037/h0076760.

Fergus, T. A., & Bardeen, J. R. (2016). The Attention Training Technique: A Review of a Neurobehavioral Therapy for Emotional Disorders. *Cognitive and Behavioral Practice, 23*(4), 502–516. https://doi.org/10.1016/j.cbpra.2015.11.001.

Fisher, P. L., & Wells, A. (2005). Experimental modification of beliefs in obsessive-compulsive disorder: A test of the metacognitive model. *Behaviour Research and Therapy, 43*, 821–829.

Gkika, S., & Wells, A. (2015). How to deal with negative thoughts? A preliminary comparison of detached mindfulness and thought evaluation in socially anxious individuals. *Cognitive Therapy and Research, 39*, 23–30. https://doi.org/10.1007/s10608-014-9637-5.

Gkika, S., Wittkowski, A., & Wells, A. (2018). Social cognition and metacognition in social anxiety: A systematic review. *Clinical Psychology & Psychotherapy, 25*, 10–30. https://doi.org/10.1002/cpp.2127.

Glombiewski, J. A., Hansmeier, J., Haberkamp, A., Rief, W., & Exner, C. (2021). Metacognitive Therapy versus exposure and response prevention for obsessive-compulsive disorder–A pilot randomized trial. *Journal of Obsessive-Compulsive and Related Disorders, 30*. https://doi.org/10.1016/j.jocrd.2021.100650 100650.

Hagen, R., Hjemdal, O., Solem, S., Kennair, L. E. O., Nordahl, H. M., Fisher, P., et al. (2017). Metacognitive therapy for depression in adults: A waiting list randomized controlled trial with six months follow-up. *Frontiers in Psychology, 8*, 31. https://doi.org/10.3389/fpsyg.2017.00031.

Hamonniere, T., & Varescon, I. (2018). Metacognitive beliefs in addictive behaviours: A systematic review. *Additive Behaviors, 85*, 51–63. https://doi.org/10.1016/j.addbeh.2018.05.018.

Haseth, S., Solem, S., Sørø, G. B., Bjørnstad, E., Grøtte, T., & Fisher, P. (2019). Group Metacognitive Therapy for Generalized Anxiety Disorder: A Pilot Feasibility Trial. *Frontiers in Psychology, 10*, 290. https://doi.org/10.3389/fpsyg.2019.00290.

Hayes, S. C. (2004). Acceptance and Commitment Therapy, Relational Frame Theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*, 639–665. https://doi.org/10.1016/S0005-7894(04)80013-3.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (2001). *Relational frame theory: A post- Skinnerian account of human language and cognition*. Plenum Press.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*(1), 1–25. https://doi.org/10.1016/j.brat.2005.06.006.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. Guilford Press.

Hoffart, A., Johnson, S. U., Nordahl, H. M., & Wells, A. (2018). Mechanisms of change in metacognitive and cognitive behavioral therapy for treatment-resistant anxiety: The role of metacognitive beliefs and coping strategies. *Journal of Experimental Psychopathology, 9*(3). 2043808718787414. https://doi.org/10.1177%2F2043808718787414.

Holmes, E. A., Ghaderi, A., Harmer, C. J., Ramchandani, P. G., Cuijpers, P., Morrison, A. P., Roiser, J. P., Bockting, C. L. H., O'Connor, R. C., Shafran, R., Moulds, M. L., & Craske, M. G. (2018). The Lancet Psychiatry Commission on psychological treatments research in tomorrow's science. *The Lancet Psychiatry, 5*(3), 237–286. https://doi.org/10.1016/S2215-0366(17)30513-8.

Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin, 107*(2), 156–176. https://doi.org/10.1037/0033-2909.107.2.156.

Jacobson, N. S., & Christensen, A. (1996). *Integrative couple therapy: Promoting acceptance and change*. WW Norton & Co..

Jordan, J., Carter, J. D., McIntosh, V. V., Fernando, K., Frampton, C. M., Porter, R. J., ... Joyce, P. R. (2014). Metacognitive therapy versus cognitive behavioural therapy for depression: A randomized pilot study. *Australian & New Zealand Journal of Psychiatry, 48*(10), 932–943. https://doi.org/10.1177%2F0004867414533015.

Kazdin, A. E. (2009). Understanding how and why psychotherapy leads to change. *Psychotherapy Research, 19*(4-5), 418–428. https://doi.org/10.1080/10503300802448899.

Knowles, M. M., Foden, P., El-Deredy, W., & Wells, A. (2016). A systematic review of efficacy of the attention training technique in clinical and nonclinical samples. *Journal of Clinical Psychology, 72*(10), 999–1025. https://doi.org/10.1002/jclp.22312.

Knowles, M. M., & Wells, A. (2018). Single Dose of the Attention Training Technique Increases Resting Alpha and Beta-Oscillations in Frontoparietal Brain Networks: A Randomized Controlled Comparison. *Frontiers in Psychology, 9*, 1768. https://doi.org/10.3389/fpsyg.2018.01768.

Kohlenberg, R. J., & Tsai, M. (1991). *Functional analytic psychotherapy: Creating intense and curative therapeutic relationships*. Plenum Press. https://doi.org/10.1007/978-0-387-70855-3.

Kowalski, J., Wierzba, M., Wypych, M., Marchewka, A., & Dragan, M. (2020). Effects of attention training technique on brain function in high- and low-cognitive-attentional syndrome individuals: Regional dynamics before, during, and after a

single session of ATT. *Behaviour Research and Therapy, 132*. https://doi.org/10.1016/j.brat.2020.103693 103693.
Lewinsohn, P. M. (1974). Clinical and theoretical aspects of depression. In K. S. Calhoun, H. E. Adams, & K. M. Mitchell (Eds.), *Innovative treatment methods in psychopathology* (pp. 63–120). John Wiley & Sons.
MacLeod, C., Mathews, A., & Tata, P. (1986). Attentional bias in emotional disorders. *Journal of Abnormal Psychology, 95*(1), 15–20. https://doi.org/10.1037/0021-843X.95.1.15.
Mathews, A., & Macleod, C. (1985). Selective processing of threat cues in anxiety states. *Behaviour Research and Therapy, 23*(5), 563–569. https://doi.org/10.1016/0005-7967(85)90104-4.
Matthews, G., & Wells, A. (1988). Relationships between anxiety, self-consciousness, and cognitive failure. *Cognition and Emotion, 2* (2), 123–132. https://doi.org/10.1080/02699938808408069.
Murray, J., Scott, H., Connolly, C., & Wells, A. (2018). The Attention Training Technique improves Children's ability to delay gratification: A controlled comparison with progressive relaxation. *Behaviour Research and Therapy, 104*, 1–6. https://doi.org/10.1016/j.brat.2018.02.003.
Murray, J., Theakston, A., & Wells, A. (2016). Can the attention training technique turn one marshmallow into two? Improving children's ability to delay gratification. *Behaviour Research and Therapy, 77*, 34–39. https://doi.org/10.1016/j.brat.2015.11.009.
Myers, S. G., Solem, S., & Wells, A. (2019). The Metacognitions Questionnaire and Its Derivatives in Children and Adolescents: A Systematic Review of Psychometric Properties. *Frontiers in Psychology, 10*, 1871. https://doi.org/10.3389/fpsyg.2019.01871.
Nassif, Y., & Wells, A. (2014). Attention training reduces intrusive thoughts cued by a narrative of stressful life events: A controlled study. *Journal of Clinical Psychology, 70*(6), 510–517. https://doi.org/10.1002/jclp.22047.
Nordahl, H. M., Borkovec, T. D., Hagen, R., Kennair, L. E., Hjemdal, O., Solem, S., ... Wells, A. (2018). Metacognitive therapy versus cognitive–behavioural therapy in adults with generalised anxiety disorder. *BJPsych Open, 4*(5), 393–400. https://doi.org/10.1192/bjo.2018.54.
Nordahl, H., Nordahl, H. M., Hjemdal, O., & Wells, A. (2017). Cognitive and metacognitive predictors of symptom improvement following treatment for social anxiety disorder: A secondary analysis from a randomized controlled trial. *Clinical Psychology & Psychotherapy, 24*(6), 1221–1227. https://doi.org/10.1002/cpp.2083.
Nordahl, H. M., & Wells, A. (2019). Metacognitive therapy of early traumatized patients with borderline personality disorder: A phase-II baseline controlled trial. *Frontiers in Psychology, 10*, 1694. https://doi.org/10.3389/fpsyg.2019.01694.
Normann, N., & Morina, N. (2018). The Efficacy of Metacognitive Therapy: A Systematic Review and Meta-Analysis. *Frontiers in Psychology, 9*, 2211. https://doi.org/10.3389/fpsyg.2018.02211.
Palmieri, S., Mansueto, G., Ruggiero, G. M., Caselli, G., Sassaroli, S., & Spada, M. M. (2021). Metacognitive beliefs across eating disorders and eating behaviours: A systematic review. *Clinical Psychology & Psychotherapy*. https://doi.org/10.1002/cpp.2573.
Papageorgiou, C., & Wells, A. (2000). Treatment of recurrent major depression with Attention Training. *Cognitive and Behavioral Practice., 7*(4), 407–413. https://doi.org/10.1016/S1077-7229(00)80051-6.
Papageorgiou, C., & Wells, A. (2001a). Metacognitive beliefs about rumination in recurrent major depression. *Cognitive and Behavioral Practice, 8*, 160–164. https://doi.org/10.1016/S1077-7229(01) 80021-3.
Papageorgiou, C., & Wells, A. (2001b). Positive beliefs about depressive rumination: Development and preliminary validation of a self-report scale. *Behavior Therapy, 32*, 13–26. https://doi.org/10.1016/S0005-7894(01)80041-1.
Papageorgiou, C., & Wells, A. (2015). Group Metacognitive Therapy for Severe Antidepressant and CBT Resitant Depression: A Baseline-Controlled Trial. *Cognitive Therapy Research, 39*, 14–22. https://doi.org/10.1007/s10608-014-9632-x.
Rosenbaum, D., Maier, M. F., Hudak, J., Metzger, F. G., Wells, A., Fallgatter, A. J., & Ehlis, A. (2018). Neurophysiological correlates of the attention training technique: A component study. *NeuroImage: Clinical, 19*, 1018–1024. https://doi.org/10.1016/j.nicl.2018.06.021.
Sarason, I. G. (1972). Experimental approaches to test-anxiety: Attention and the uses of information. In C. D. Spielberger (Ed.). *Anxiety: Current trends in theory and research* (Vol. 2). Academic Press.
Schweiger, J. I., Kahl, K. G., Klein, J. P., Sipos, V., & Schweiger, U. (2019). Innovation in Psychotherapy, Challenges, and Opportunities: An Opinion Paper. *Frontiers in Psychology, 10*, 495. https://doi.org/10.3389/fpsyg.2019.00495.
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. Guilford Press.
Sellers, R., Varese, F., Wells, A., & Morrison, A. (2017). A meta-analysis of metacognitive beliefs as implicated in the self-regulatory executive function model in clinical psychosis. *Schizophrenia Research, 179*, 75–84. https://doi.org/10.1016/j.schres.2016.09.032.
Simons, M., & Kursawe, A. L. (2019). Metacognitive therapy for posttraumatic stress disorder in youth: A feasibility study. *Frontiers in Psychology, 10*, 264. https://doi.org/10.3389/fpsyg.2019.00264.
Simons, M., & Vloet, T. D. (2016). Emetophobia–a metacognitive therapeutic approach for an overlooked disorder. *Zeitschrift für Kinder-und Jugendpsychiatrie und Psychotherapie, 46*, 57–66. https://doi.org/10.1024/1422-4917/a000464.
Sun, X., Zhu, C., & So, S. H. W. (2017). Dysfunctional metacognition across psychopathologies: A meta-analytic review. *European Psychiatry, 45*, 139–153. https://doi.org/10.1016/j.eurpsy.2017.05.029.
Sunde, T., Johnson, S. U., Himle, J. A., Bertelsen, T. B., Haaland, V. Ø., Vogel, P. A., ... Haaland, Å. T. (2021). Metacognitions and Obsessive Beliefs in Obsessive-Compulsive Disorder: A Study of Within-and Between-Person Effects on Long-Term Outcome. *Cognitive Therapy and Research*, 1–15. https://doi.org/10.1007/s10608-021-10210-y.
Vago, D. R., & David, S. A. (2012). Self-awareness, self-regulation, and self-transcendence (S-ART): A framework for understanding the neurobiological mechanisms of mindfulness. *Frontiers in Human Neuroscience, 6*, 296. https://doi.org/10.3389/fnhum.2012.00296.
van der Heiden, C., Muris, P., & van der Molen, H. T. (2012). Randomized controlled trial on the effectiveness of metacognitive therapy and intolerance-of-uncertainty therapy for generalized anxiety disorder. *Behaviour Research and Therapy, 50*(2), 100–109. https://doi.org/10.1016/j.brat.2011.12.005.
Wells, A. (1985). Relationship between Private Self-Consciousness and Anxiety Scores in Threatening Situations. *Psychological Reports, 57*(3_suppl), 1063–1066. https://doi.org/10.2466/pr0.1985.57.3f.1063.
Wells, A. (1987). *Self-attentional processes in anxiety: An experimental study* Unpublished PhD thesis. UK: Aston University.
Wells, A. (1990). Panic disorder in association with relaxation induced anxiety: An attentional training approach to treatment. *Behavior Therapy, 21*, 273–280. https://doi.org/10.1016/S0005-7894(05)80330-2.
Wells, A. (1994). A multi-dimensional measure of worry: Development and preliminary validation of the anxious

thoughts inventory. *Anxiety, Stress & Coping, 6*, 289–299. https://doi.org/10.1080/10615809408248803.

Wells, A. (1995). Meta-cognition and worry: A cognitive model of generalized anxiety disorder. *Behavioural and Cognitive Psychotherapy, 23*(3), 301–320.

Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practice manual and conceptual guide*. John Wiley & Sons Inc..

Wells, A. (2002). GAD, meta-cognition, and mindfulness: An information processing analysis. *Clinical Psychology: Science and Practice, 9*(1), 95–100. https://doi.org/10.1093/clipsy.9.1.95.

Wells, A. (2005). Detached mindfulness in cognitive therapy: A metacognitive analysis and ten techniques. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 23*, 337–355. https://doi.org/10.1007/s10942-005-0018-6.

Wells, A. (2009). *Metacognitive therapy for anxiety and depression*. Guilford Press.

Wells, A. (2019). Breaking the cybernetic code: Understanding and treating the human metacognitive control system to enhance mental health. *Frontiers in Psychology, 10*, 2621. https://doi.org/10.3389/fpsyg.2019.02621.

Wells, A., & Cartwright-Hatton, S. (2004). A short form of the metacognitions questionnaire: Properties of the MCQ-30. *Behaviour Research and Therapy, 42*(4), 385–396. https://doi.org/10.1016/S0005-7967(03)00147-5.

Wells, A., & Davies, M. I. (1994). The Thought Control Questionnaire: A measure of individual differences in the control of unwanted thoughts. *Behaviour Research and Therapy, 32*(8), 871–878. https://doi.org/10.1016/0005-7967(94)90168-6.

Wells, A., Fisher, P., Myers, S., Wheatley, J., Patel, T., & Brewin, C. R. (2009). Metacognitive therapy in recurrent and persistent depression: A multiple-baseline study of a new treatment. *Cognitive Therapy Research, 33*, 291–300. https://doi.org/10.1007/s10608-007-9178-2.

Wells, A., Fisher, P., Myers, S., Wheatley, J., Patel, T., & Brewin, C. R. (2012). Metacognitive therapy in treatment-resistant depression: A platform trial. *Behaviour Research and Therapy, 50*(6), 367–373. https://doi.org/10.1016/j.brat.2012.02.004.

Wells, A., & King, P. (2006). Metacognitive therapy for generalized anxiety disorder: An open trial. *Journal of Behavior Therapy and Experimental Psychiatry, 37*(3), 206–212. https://doi.org/10.1016/j.jbtep.2005.07.002.

Wells, A., & Matthews, G. (1994). *Attention and emotion: A clinical perspective*. Erlbaum.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF model. *Behaviour Research and Therapy, 34*(11–12), 881–888.

Wells, A., & Papageorgiou, C. (1998). Social phobia: Effects of external attention on anxiety, negative beliefs and perspective taking. *Behavior Therapy, 29*, 357–370. https://doi.org/10.1016/S0005-7894(98)80037-3.

Wells, A., Reeves, D., Capobianco, L., Heal, C., Daives, L., Heagerty, A., Doherty, P., & Fisher, P. (2021). Improving the effectiveness of psychological interventions for depression and anxiety in cardiac rehabilitation: PATHWAY- a single-blind parallel randomised controlled trial of group metacognitive therapy. *Circulation, 144*, 23–33. https://doi.org/10.1161/CIRCULATIONAHA.120.052428.

Wells, A., Reeves, D., Heal, C., Fisher, P., Davies, L., Heagerty, A., Doherty, P., & Capobianco, L. (2020). Establishing the feasibility of group metacognitive therapy for anxiety and depression in cardiac rehabilitation: A single-blind randomized pilot study. *Frontiers in Psychiatry, 11*, 582. https://doi.org/10.3389/fpsyt.2020.00582.

Wells, A., & Roussis, P. (2014). Refraining from intrusive thoughts is strategy dependent: a comment on Sugiura et al. and a preliminary informal test of detached mindfulness, acceptance, and other strategies. *Psychological Reports, 115*(2), 541–544. https://doi.org/10.2466/02.PR0.115c21z9.

Wells, A., Welford, M., King, P., Papageorgiou, C., Wisely, J., & Mendel, E. (2010). A pilot randomized trial of metacognitive therapy vs applied relaxation in the treatment of adults with generalized anxiety disorder. *Behaviour Research and Therapy, 48*(5), 429–434. https://doi.org/10.1016/j.brat.2009.11.013.

Wells, A., White, J., & Carter, K. (1997). Attention training: Effect on anxiety and beliefs in panic and social phobia. *Clinical Psychology & Psychotherapy, 4*(4), 226–232.

Williams, J. M. G., Watts, F. N., MacLeod, C., & Matthews, A. (1988). *Cognitive psychology and emotional disorders*. John Wiley.

Wine, J. (1971). Test anxiety and direction of attention. *Psychological Bulletin, 76*(2), 92–104. https://doi.org/10.1037/h0031332.

We would like to thank Professor Adrian Wells for providing us with helpful information and answering questions about MCT in the preparation of this manuscript.
The authors have no conflict of interest to disclose.

Address correspondence to Dr. Henrik Nordahl, Department of Psychology, Norwegian University of Science and Technology, Dragvoll, 7491 Trondheim, Norway. e-mail: Henrik.nordahl@ntnu.no.

Received: May 28, 2021
Accepted: November 13, 2021
Available online 20 December 2021