

# Metacognitive Therapy for Major Depressive Disorder: Development and Clinical Potential

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Adrian Wells and colleagues have developed a metacognitive model of psychological dysfunction which shows clinical promise for treating multiple Axis I disorders. This paper explores the fundamentals of this model and the self-perpetuating cycle of counterproductive coping behaviors underlying it. Several therapeutic techniques that have been designed to interrupt this cycle are described and contrasted with cognitive behavioral therapy (CBT). Papageorgiou and Wells' specifications of the general model for rumination and depression are outlined, and empirical tests of a clinical metacognitive model of major depressive disorder (MDD) are described. The metacognitive therapy (MCT) treatment package for MDD is summarized. Finally, evidence from recent clinical tests that support the effectiveness of MCT for treating MDD is discussed. Wells' model appears potent and efficient for reducing anxiety and depression, and his treatment package is a novel approach to combating MDD that should be investigated in further studies.

Major depressive disorder (MDD) can be particularly difficult to treat when faced with certain treatment-resistant patients. Cognitive behavioral therapy (CBT) and its variants have become first-line psychological treatments for many mood and anxiety disorders, but, when evaluated using the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), only 40-58% of depressed patients have been found to recover with such treatment (see e.g., Dimidjian et al., 2006; Gortner, Gollan, Dobson, & Jacobsen, 1998), and only one-third to one-quarter of patients so treated may remain recovered after 18 months (Roth & Fonagy, 1996; Teasdale et al., 2000; Wells, 2009). Furthermore, some patients show limited or no response to antidepressant medications (Teasdale et al., 2002). British clinician and researcher Adrian Wells has worked with European colleagues for decades to develop an alternate, information-processing model of psychopathology. It is hoped that methods derived from these theories, formalized as the new metacognitive therapy (MCT), may provide efficient and efficacious treatment packages for acute and relapse prevention phases of many Axis I disorders designated in the DSM-IV-TR, including but not limited to generalized anxiety disorder (GAD) and MDD (Nordahl, 2009; Wells, 2009).

Metacognition may be conceptualized as an information-processing capacity encompassing the monitoring, interpretation, evaluation, and regulation (or control) of mental activities and the contents of consciousness (i.e., thoughts), as well as beliefs about one's ability to effectively perform these reflective functions (Papageorgiou & Wells, 2001a; 2003). This paper outlines the development and

rationale of Wells' metacognitive models as well as core methods designed to address processing deficiencies and counterproductive habits. Further, this paper will focus on elaborations of those models to accommodate rumination, and a formulation of MCT that specifically targets depression. Contrasts with traditional CBT are highlighted, tests of an MDD-specific metacognitive model are reviewed, and recent clinical tests of a formalized treatment package are discussed. In the concluding section, comparisons are made between the MCT approach and "third wave" cognitive behavioral therapies which approach cognition similarly but contain more humanistic elements. Lastly, implications of the reviewed studies are summarized, and suggestions for further exploration of the efficacy of MCT in the treatment of depression are presented.

## Overview of the Metacognitive Model

Thoughts and beliefs can be considered actual, direct experiences of the self and the world, perceived via an "object mode" (Wells, 2009). However, Wells (2009) posits that there is also a "metacognitive mode," wherein thoughts are experienced as separate from the self and the world, as if observed from a detached perspective. As such, MCT is designed to act on the process of thinking and how thoughts are experienced, rather than on challenging the content or accuracy of thoughts as CBT might (Wells, 2009; Wells et al., 2009). The theoretical underpinnings of MCT lie in Wells and Matthews' self-regulatory executive function model of psychological disorders (S-REF; 1996). In this schema, cognitive processes operate on three levels, working from the top down to maintain or exacerbate emotional disturbances. A meta-system, possessing its own model of cognitive processing alongside metacognitive knowledge and beliefs that reside in long-term memory, controls and is monitored by a particular "cognitive style" of conscious thought and

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behavior processing. This style, in turn, biases more automatic, low-level processing, which feeds back into it.

A “toxic thinking style” that Wells (2009) refers to as the cognitive attentional syndrome (CAS) perpetuates disorder through worry and/or rumination, excessive threat-monitoring, and counterproductive coping behaviors (such as avoidance). The CAS is maintained by positive meta-beliefs about its components (e.g., “If I contemplate reasons for my negative mood I can find answers”) as well as negative beliefs (e.g., “Controlling worry or rumination is impossible”). A typical “A-B-C” model typically espoused by CBT might posit that activating triggers, (A), lead to schemas or belief manifestations, (B), which lead in turn to affective and behavioral consequences, (C). MCT adds meta-beliefs and the CAS to step B, in an “A-M(B)-C” formulation. For example, the trigger (A) of being alone might lead to affective responses (C) of sadness and hopelessness. However, an intervening belief (B) that “things won’t change” may be mediated by metacognitive beliefs (M), such as the belief that rumination is necessary for change, or that emotions must be directly addressed to motivate improvement (Wells, 2009). These meta-beliefs, then, serve to discourage more adaptive ways of coping and so unhelpful beliefs are reinforced, in a perseverative loop. To overcome the perseverative effects of the CAS, clinicians must work to direct patients into a metacognitive mode of thinking, facilitating improved executive control and cognitive flexibility in order to interrupt and replace detrimental processing habits.

### **Major Techniques Associated with the Model**

One early strategy developed to “unlock” patients from their maladaptive thinking styles was the attention training technique (ATT; Papageorgiou & Wells, 2000; Wells, 2009). The goal of the technique is to aid anxious or depressed patients in establishing executive flexibility and disengaging from unhealthy levels of self-focused attention. Administration consists of explaining the purpose to the patient, and then practicing five minutes of selective attention, five minutes of rapid attention switching, and a brief (1-2 minutes) period of divided attention. The patient is asked to focus exclusively on one of several sounds within the room, beyond the room, or in spatial locations behind, in front, or to the side; to quickly alternate focus; or to try to take in all sounds at once, respectively. In-session practice should continue, but patients are expected to practice alone at least once a day. A key aspect lies in proper understanding – ATT should not be used as a coping behavior to eliminate negative thoughts. Instead, thoughts are not to be resisted during the procedure, but treated as additional “noises” in the mind (Wells, 2009).

This last concept is a core component of another major metacognitive strategy, detached mindfulness (DM; Wells, 2005). In the DM state, a patient is mindful or aware of “cognitive events” without locking attention onto any in particular. This is reminiscent of, but distinct from, the

Buddhism-derived “mindfulness” practice espoused by Thich Nhat Hanh, Jon Kabat-Zinn, and adherents, which has been described as the nonjudgmental recognition of present thoughts, feelings, or sensations, with focus on increased attention to and acceptance of immediate experience (Bishop et al., 2004; see also Hanh, 1999; Ludwig & Kabat-Zinn, 2008). Critically, during DM, a detached perspective precludes any conceptual or behavioral engagement with thoughts, beliefs, memories, or feelings. Furthermore, these mental events are observed from a separated point of view, by imagining a “self” within the mind separate from one’s cognitions and consciousness. This realization of a metacognitive mode of thinking can facilitate more flexible attention. Moreover, it supplants the cognitive style of the CAS, which consists of self-focused attention and high incidence of conceptual processing and coping behaviors, with little meta-awareness of thoughts as separate entities from the self or reality. Indeed, one method of facilitating this mode with patients involves asking them to conjure a mental image of a tiger, allowing it to move freely about the mental landscape while observing its behavior, as a metaphor for negative thoughts. Thoughts might also be conceptualized as transient events—mere clouds passing through the mind. Patients are asked to try to implement DM on their own whenever they notice a negative thought, in attempt to derail the CAS and prevent the triggering of unhelpful beliefs and responses (Wells, 2009). In this way, ATT and DM work in concert to establish flexible attentional control, and to eliminate pathological processing of everyday inputs and resultant thoughts, without working to eliminate the thoughts themselves.

### **Specification of the Metacognitive Model for Depression**

Building on these foundational models and techniques, which have been tested in varying forms for many disorders including GAD (Wells & King, 2006; Wells et al., 2010), posttraumatic stress disorder (Wells & Colbear, 2012; Wells et al., 2008), and obsessive compulsive disorder (Fisher & Wells, 2008; Rees & van Koesveld, 2008), Papageorgiou and Wells (2003; 2009) set about devising and testing a clinical metacognitive model specified for depression. The critical feature of the CAS in MDD is rumination, which consists of cycling thoughts that revolve around particular themes. These thoughts, such as the repeated, negative pondering of personal problems or self-worth, may be difficult to disrupt (Smith & Alloy, 2009). While worry has also been associated with many individual manifestations of depression, it is generally considered to be future- or anticipation-oriented (e.g., “What if I never emerge from depression?”). Depressive rumination dwells on finding explanations for past behavior or present circumstances (“Why am I so abnormal?”), which may in turn generate worry about coping or surviving in the future (Wells, 2009).

Papageorgiou and Wells (2001a) employed a semi-structured interview (derived from a metacognitive profiling interview; Wells & Matthews, 1994) to investigate

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metacognitive beliefs in a sample of 14 patients, who were diagnosed with recurrent MDD without Axis I comorbidity using the Structured Clinical Interview for DSM-IV Axis I Disorders—Patient Edition (SCID-I/P; First, Spitzer, Gibbon, & Williams, 1997). Depressive symptoms, as assessed by the BDI, were at the moderate-to-severe end of the scale ( $M = 31.7$ ,  $SD = 8.9$ , range = 21–50). All participants reported having ruminated within a few days of the interview, when asked to “think about the most recent time in which you felt particularly depressed and you were ruminating” (p. 161). The authors found that all participants endorsed positive beliefs about the necessity or usefulness of rumination, as well as negative beliefs that rumination is either uncontrollable and self-destructive, or has serious interpersonal and social consequences. These negative beliefs were in line with the general S-REF architecture of CAS activation and maintenance through perseverative negative thinking. Therefore, therapy based on a specified MDD model could target these belief categories directly to break the cycle.

To elaborate, a positive belief such as “I must ruminate about the past to make sense of it” might trigger the selection of rumination as a coping strategy, which, upon failure to help, may produce negative thoughts such as, “Ruminating is a sign of weakness.” This, in turn, may serve to deepen the ruminative state. An external trigger such as a verbal insult (e.g., “You’re a moron”) could result in positive metacognitive beliefs about rumination (e.g., “If I think about it, maybe I can be smarter”), followed by a ruminative cascade (e.g., “How could I have seemed less dumb all those times? Why am I so stupid?”). In addition, negative beliefs about rumination (e.g., “I’ll always be useless and can’t think myself smarter”) can add more fuel to the depressogenic CAS. In this way, the input, mediated by metacognitive beliefs and rumination, leads to such cognitive beliefs as “I’m stupid,” or “I’m worthless.” These beliefs then elicit affective responses of sadness or hopelessness, and may generate counterproductive behaviors in the future, such as avoiding schoolwork or social interaction, which can perpetuate the cycle (Papageorgiou & Wells, 2004; Wells, 2009).

### Formal Tests of Model Fit

Papageorgiou and Wells (2003) conducted two studies to test the fit of this metacognitive model of rumination and depression. In Study 1, 200 adults diagnosed with MDD using the Inventory to Diagnose Depression (IDD; Zimmerman, Coryell, Corenthal, & Wilson, 1986) completed the Ruminative Response Scale (RRS; Nolen-Hoeksema & Morrow, 1991; Roelofs et al., 2009). Participants also completed Wells and colleagues’ Positive Beliefs about Rumination Scale (PBRs; Papageorgiou & Wells, 2001b; Watkins & Moulds, 2005), the Negative Beliefs about Rumination Scale (split into uncontrollability/harm [NBRS1] and interpersonal/social [NBRS2] subscales; Roelofs, Huibers, Peeters, Arntz, & van Os, 2008), and a section of the Metacognitions Questionnaire (MCQ; Cartwright-Hatton &

Wells, 1997) concerning self-confidence in cognitive functioning.

Structural equation modeling supported paths from the PBRs to the RRS, which then passed through the NBRS1 and NBRS2 in two paths to reach the IDD scores. In other words, positive beliefs about rumination were cross-sectionally linked to ruminative tendencies, which were then related to depression level through the mediation of negative beliefs about rumination. Cognitive confidence (as measured by the MCQ) was proposed to be a depressogenic byproduct, feeding back into the model to reinforce both negative beliefs about rumination’s interpersonal and social consequences and positive beliefs about its value, as part of a vicious cycle. For example, depression can lead to the metacognitive belief, “My memory is not very reliable,” which could support the negative belief, “My friends and family won’t think I am reliable if I continue to ruminate about my past,” and the positive belief, “I have to keep ruminating to sort my head out.” However, it was unclear if this variable added anything substantive to the model, as a reversal of paths such that PBRs and NBRS2 influenced metacognitive confidence was required to achieve a good model fit, which was not significantly better than a model lacking the MCQ variable ( $\Delta CFI = .01$ ;  $\Delta\chi^2(2, N = 200) = 1.4, p > 0.05$ ). Papageorgiou and Wells (2003) employed the same assessments with a younger, non-clinical sample of 200 psychology students in their Study 2. However, the best model fit differed from that in Study 1, with a direct path from rumination to depression and no indirect path through negative beliefs about the uncontrollability or harm of rumination, possibly reflecting less impaired metacognition. Further, cognitive confidence was only non-significantly influenced by PBRs and NBRS2, with no influence from depression level itself, presumably because of the lower overall levels of depression in the sample.

To better assess causality, Papageorgiou and Wells (2009) conducted a prospective test of the metacognitive model in a nonclinical sample of 164 students (133 female). Participants completed the IDD, RRS, and NBRS (subscales 1 and 2), and then completed the IDD again 12 weeks later. IDD scores at Time 2 were dichotomized into nondepressed (59.1%) and borderline-depressed (40.9%) categories (see Zimmerman et al., 1986 for symptom severity classification). Hierarchical logistic regression showed that, when added to the model in Step 1, IDD at Time 1 was a significant predictor of depression severity, correctly classifying 72% of participants into one or the other category and accounting for 17–22% of the variance in IDD scores at Time 2. The addition of RRS scores in Step 2 improved variance estimates to 21–28%, but did not improve classification accuracy. Subsequent addition of NBRS1 and NBRS2 scores resulted in 73.8% correct classification and accounted for 24–32% of IDD score variance. Importantly, only IDD at Time 1 and NBRS1 were significant predictors of IDD severity at Time 2 when controlling for other factors. Though RRS score approached significance as a predictor, when NBRS1 and NBRS2 scores were added in Step 2 in a second analysis, and

RRS scores were added as Step 3, there was no significant improvement in the model. This suggests that effects of rumination on depression may be attributable to variance shared with negative beliefs about rumination, particularly about its uncontrollability and harmfulness. While the results did generally support the clinical metacognitive model, and suggested that metacognitive beliefs predict depression level in a way that could be consistent with causation, further work must be done to determine whether the same results are obtained with a clinical sample and a longer retest interval (see also Roelofs et al., 2007; Yilmaz, Gençöz, & Wells, 2011).

### **Implementation of the MCT Treatment Package for MDD**

To support further empirical testing and clinical studies, Wells (2009) formalized metacognitive therapy for MDD based on the aforementioned techniques and models and presented a treatment manual. First, a patient's case is conceptualized using, primarily, the Major Depressive Disorder Scale (MDD-S), which provides insight into positive and negative metacognitive beliefs and maladaptive behaviors used to cope with depressed mood. The patient is interviewed and a case-specific model of meta-beliefs, ruminative behavior, and depressive responses is generated. The patient is then presented with the rationale for rumination being a counterproductive coping behavior and is introduced to the ATT as a method of improving awareness and control of ruminative processes. Homework is also assigned. Detached mindfulness is then presented and demonstrated, along with the suggestion of "rumination postponement." This entails recognizing when rumination is being triggered, and actively deciding to put it off until a specific time later in the day (rather than attempting to suppress it directly).

Next, negative beliefs about the uncontrollability and social stigma of rumination are challenged by showing that rumination is interrupted (i.e., controlled) when attention is directed away from the self, and that it is not abnormal to experience fluctuations in mood or energy level. Positive beliefs are then tackled by investigating whether rumination actually helps, or in fact makes things worse (i.e., a cost-benefit analysis). Reasoning intended to reinforce the disadvantages of rumination is used to help eliminate maladaptive threat-monitoring or coping behaviors, and actively exploring the consequences of an increased activity level is encouraged. Then, a summary of case-specific depressogenic triggers and counterproductive responses is presented, and new responses and attentional strategies are developed with the patient's input to replace them. Finally, this plan and summary points from all major steps are collected in a therapy blueprint, and booster sessions are scheduled for 3 and 6 months later. Treatment can be completed in 5 to 10 sessions at discretion, or a standardized 8. Changes in metacognitive beliefs and attentional control may be monitored throughout.

### **Tests of Clinical Effectiveness**

An initial study of metacognitive techniques for treating depression examined only the ATT method. Papageorgiou and Wells (2000) administered the ATT to four physician-referred adult antidepressant-stabilized patients with recurrent MDD (2-4 major depressive episodes; MDEs) and no Axis I comorbidity, as diagnosed with the SCID-I/P. BDI and Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) measures were administered prior to a no-treatment baseline period that ranged from three to five weeks (depending on patient assignment), before beginning weekly ATT sessions, and at follow-up periods of 3, 6, and 12 months after treatment concluded. Participants also completed the short RRS and the MCQ before and after treatment and at follow-up assessments, as well as the Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980) and the Private Self-Consciousness Scale (PSCS; Fenigstein, Scheier, & Buss, 1975). The treatment rationale was explained to participants at the first session and daily homework practice was assigned. Both BDI and BAI scores for all patients fell within the normal range for the general population (<10) after 5-8 treatment sessions, with stability observed at 3, 6, and 12-month follow-ups. Readministration of the SCID-I/P at 12 months showed no Axis I diagnoses. Stable post-treatment improvements were also attained for all patients on the ATQ, RRS, PSCS, and MCQ, although the study design did not allow conclusions to be drawn about whether this was a direct result of ATT or a byproduct of reduced depressive symptoms. Furthermore, self-reported ruminative behaviors and unhelpful metacognitions were consistently reduced and stabilized. While the results were encouraging as to the general efficacy of the ATT for reducing pathological depression and anxiety, the weak pre-test/post-test design and small sample size precluded strong conclusions of causality or generalizability.

Wells et al. (2009) conducted the first clinical study of a complete MCT package targeting depression. Participants were four medication-free or stably medicated adults with a SCID-I/P diagnosis of a primary MDE without borderline personality disorder (BPD), with no current psychological treatment program, and with no CBT during the preceding two years. Participants did not exhibit psychosis, medical problems, substance abuse, or suicidality. Importantly, participants had histories of recurrent or persistent MDD (three of four suffered from lifelong depression since teenage years) and three of four had shown little response to pharmacological intervention, in line with profiles suggesting poor prognosis for CBT treatment (e.g., Coffman, Martell, Dimidjian, Gallop, & Hollon, 2007). A trained, supervised therapist delivered 6-8 weekly MCT sessions of 45-60 minutes each, according to the treatment guidelines described above. The researchers used a non-concurrent multiple baseline design to improve their ability to convincingly attribute post-treatment improvement to the MCT package. Participants were randomly assigned to baseline periods ranging from three to seven weeks in duration. The Hamilton

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Rating Scale for Depression-17 (HRSD-17; Hamilton, 1960; 1967) and SCID-I/P were administered at pretreatment, posttreatment, and 3- and 6-month follow-ups. Weekly ratings on the BDI, BAI, and a custom measure of rumination were collected. Questionnaire packages containing the RRS, PBRs, NBRS, and MCQ-30 (a short form of the MCQ; Wells & Cartwright-Hatton, 2004) were mailed weekly, and all self-report measures were completed at follow-ups.

Participants showed relatively stable BDI scores during the baseline phase, with an average pretreatment score of 24.30 ( $SD = 5.77$ ), and no longer met criteria for MDD at treatment completion ( $M = 6.50$ ,  $SD = 3.87$ ). One participant's dysthymia and another's GAD also became subclinical by 6-month follow-up. Scores on the RRS, PBRs, NBRS, and MCQ scales were also substantially reduced, with post-treatment levels maintained at follow-ups, suggesting that MCT does affect metacognitive and cognitive-process variables underlying depression. An application of stringent criteria to BDI scores requires that recovered patients should no longer meet diagnostic criteria for depression and should have BDI scores  $\leq 8$  (Frank et al., 1991). If diagnostic criteria are not met but BDI scores are above 8, patients may be considered improved. All participants were improved post-treatment and at follow-ups, with three recovered at post-treatment and 3-month follow-up, and two recovered at 6-month follow-up. HRSD-17 remission criteria require scores  $\leq 7$  for at least three consecutive weeks, while recovery requires scores  $\leq 7$  for four months with two-week assessments (Rush et al., 2006). Adjusting the criteria to the timeline of their study, the authors determined that all four participants were in remission after treatment and at 6-month follow-up, and three of four were in remission at 3-month follow-up. Three of four participants showed consistent remission and could be considered recovered. The researchers concluded that the treatment, though relatively brief, was well-tolerated, and achieved high compliance and marked improvements in depressive symptomology, despite the presence of potentially CBT-resistant cases. The very small sample was a clear limitation, but there is room for optimism in planning larger controlled trials for depressed samples with varying circumstances. Additionally, multiple therapists would allow for measurement of the influence of skill on treatment outcomes, and adherence to manual guidelines could be more formally assessed.

In a promising study, Nordahl (2009) compared the efficacy of treatment by a brief MCT package to that of CBT. Though the author had formal training and fifteen years of experience with CBT, he had no previous experience with MCT and proceeded using a generalized formulation of the treatment derived from available literature on attention training (Wells, 1990), an early manual for GAD treatment (Wells, 1997), and a general therapy manual (Wells, 2000). Participants were 30 patients with varied diagnoses undergoing treatment at a Norwegian university outpatient facility. The majority of patients had been stabilized on SSRIs or SNRIs, and 50% had diagnoses of recurrent MDD, while 42% presented with an anxiety disorder according to

International Classification of Diseases, 10th Revision (ICD-10; World Health Organization, 1992) criteria. The rationale for the study was that a generalized, cost-effective implementation of MCT that targets the trans-diagnostic CAS might compare favorably to standard treatment practices in a head-to-head trial, particularly in an unfavorable, heterogeneous clinical setting. As in Wells et al. (2009), exclusion criteria included severe BPD, psychosis, serious medical problems, substance abuse, and suicidality. A two-group between- and within-subjects pre-post test design was employed, with patients randomly assigned to receive either MCT or CBT. Measures included the BDI and BAI, as well as Wells' Anxious Thoughts Inventory (AnTI; Wells, 1997), which was designed to assess changes in worrying and meta-worrying (worrying about the uncontrollability and danger of worrying). Because patients resumed standard facility treatment programs following the study, follow-up data could not be collected. MCT treatment lasted an average of 7.5 sessions, employing the ATT, DM practice, worry/rumination postponement, and the challenging of negative and positive beliefs about worrying and ruminating. Homework was assigned at each session. CBT followed a similar structure, but averaged 10 sessions and consisted of traditional activity scheduling, identification and challenge of automatic negative thoughts and schemas, and self-monitoring and diary-keeping homework (following Beck, Emery, & Greenberg, 1985, for anxiety; Beck, Rush, Shaw, & Emery, 1979, for depression).

One-way ANCOVAs controlling for pretreatment measures showed significant differences in posttreatment BAI scores between MCT and CBT groups ( $F(1,23) = 4.35$ ,  $p = .05$ ,  $\eta^2 = .16$ ), significant differences in AnTI-assessed meta-worry ( $F(1,23) = 6.20$ ,  $p = .02$ ,  $\eta^2 = .21$ ), and non-significant difference in BDI scores. Posttreatment uncontrolled CBT effect sizes (Cohen's  $d$ ) compared equally or favorably with those from a study with a similar patient group treated with CBT (Westbrook & Kirk, 2005) that was chosen as a benchmark. Though all effect sizes were very large, MCT effect sizes were higher for both BAI scores ( $d = 2.25$  vs.  $1.74$  for CBT) and BDI scores ( $d = 1.31$  vs.  $1.21$  for CBT). Though this MCT package did not show a treatment advantage over CBT in this clinical sample, it performed equally well and outperformed it for anxiety reduction. Also, this is despite the fact that an implementation of MCT specifically tailored to depression was not used, nor Wells' (2009) recent diagnosis-general formulation. Further, it is possible that the meta-worry measured and reduced in this study, or beliefs about worry, may overlap with beliefs about rumination as the two constructs have been shown to be at least somewhat related, and were conceptually combined in the original S-REF model (Nolen-Hoeksema, 2000; Wells, 2009; Wells & Matthews, 1996). Nordahl concluded that MCT may provide an efficient and accessible form of trans-diagnostic treatment that is potentially favorable to CBT. Ratings of treatment adherence and independent diagnostic assessment could strengthen future findings.

### Conclusion

In sum, Adrian Wells and colleagues have developed a robust model of metacognitive and emotional dysfunction, with well-defined components that can be targeted and treated individually to break perseverative cycles of anxiety and depression. Disorders such as MDD present a disorder-specific form of cognitive attentional syndrome (CAS) that acts as a toxic go-between connecting metacognitive beliefs—which are at the top of the self-regulatory executive function (S-REF) model—with the low-level processing of basic inputs. This syndrome forms the core of a perseverative cycle (Wells & Matthews, 1996; Wells, 2009). Dysfunctional metacognitions include positive thoughts about the need to engage in unhelpful coping behaviors such as rumination, and negative thoughts about the consequences of doing so that can increase the behavior's damage. The attention training technique (ATT) and detached mindfulness (DM) can be practiced to strengthen executive control and direct one's attention away from the self, allowing for more effective interruption and delaying of rumination, and for the consideration of thoughts from a detached perspective. In contrast to CBT's emphasis on content, metacognitive therapy aims to switch patients into a "metacognitive mode" of thinking and challenge their thought processing and attentional fixation. MCT targets the rationale behind positive and negative meta-beliefs, as well as threat-monitoring and coping behavior.

It may be useful to distinguish MCT from several conceptually related approaches to therapy, sometimes popularly designated "third wave" cognitive behavioral therapies, which share a focus on acceptance or a mindfulness concept derived from Buddhist traditions, as described earlier (Hanh, 1999; see Bhanji, 2011, for discussion). Like MCT, these treatment programs emphasize patients' interpretations of and reactions to their thoughts, rather than attempting to modify cognitions directly. However, Wells considers MCT an extension of traditional CBT in that it targets specified psychological mechanisms that perpetuate depressive symptoms (Wells et al., 2009). In contrast, Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2012; see Piet & Hougaard, 2011, for review) was developed primarily to aid in relapse prevention (see e.g., Teasdale et al., 2002). Attention to the "present moment" is practiced in MBCT to facilitate awareness of self-defeating thinking, and to promote acceptance of transient negative thoughts and disengagement from them before they can induce a depressive episode (Scherer-Dickson, 2004). The approach of Acceptance and Commitment Therapy (ACT; Luoma, Hayes, & Walser, 2007; see Ruiz, 2010, for review) is a similar one, focusing on the power of language and de-emphasizing negative self-judgments (Bhanji, 2011). Dialectical Behavior Therapy (DBT; Dimeff & Koerner, 2007; Linehan, 1993) shares similar ideas about cognitions and acceptance, but is more oriented to address emotional dysregulation and behavioral extremes, given its original development as a treatment for BPD (see Kliem, Kröger, &

Kosfelder, 2010, for review). MCT is distinct in its philosophy of logically challenging counterproductive cognitions without a spiritual emphasis or an overt focus on personal acceptance. Instead, it employs a precise, customizable model of how metacognition can malfunction, and emphasizes cognition over affect. It is possible that this more mechanistic approach could be advantageous for patients whose circumstances or personalities may make them less amenable to the humanistic elements of third wave therapies.

Evidence has accumulated for a clinical metacognitive model of depression and clinical tests have begun. Wells et al. (2009) showed that an MCT package targeting depression may be effective even for difficult cases with recurrent or chronic MDD that have not responded to medication and may be unlikely to benefit from traditional CBT, and observed promising stability at follow-ups. Nordahl (2009) showed that even a diagnosis-general MCT package may be comparably effective and favorably efficient to CBT in treating depression, in a head-to-head study with patients of varying diagnoses. These promising results should motivate coordinated effort in the future to better determine MCT's potential, including implementation of the depression-targeting MCT treatment package with expert training and supervision in a well-controlled head-to-head study. It would also be useful to examine the efficacy of MCT for patients with distinct depression diagnoses and histories (e.g., chronic MDD, dysthymia or double depression, single MDE, etc.), and compare responses to treatment. This could allow for deconstruction of the clinical metacognitive model and its techniques with respect to current depressive nosology, and facilitate comparison with CBT and other therapies across case presentations. Research groups evaluating other therapeutic techniques and their treatment outcomes could consider adopting one or more of Wells' measures of metacognitions and beliefs about rumination in their studies as additional variables.

Metacognitive therapy may have the potential to treat and stabilize depressive symptoms in a straightforward, resource-efficient manner. Increasingly recognized and respected in Europe, MCT has yet to garner mainstream support in North America but warrants more extensive investigation.

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