Available online at www.sciencedirect.com
ScienceDirect
Cognitive and Behavioral Practice 14 (2007) 18–25
Cognitive and Behavioral Practice
www.elsevier.com/locate/cabp

Cognition About Cognition: Metacognitive Therapy and Change in Generalized Anxiety Disorder and Social Phobia

Adrian Wells
University of Manchester

Metacognitive theory and therapy views the persistence of negative beliefs and thoughts as a result of metacognitions controlling cognition. This paper describes, with reference to the treatment of generalized anxiety disorder (GAD) and social phobia, how metacognition contributes to cognitive stability and to change. Metacognitive therapy offers a level of formulation and intervention that does not focus predominantly on challenging the content of negative thoughts and beliefs that are emphasized in traditional cognitive therapy. The focus of treatment in GAD is on erroneous beliefs about worry and unhelpful mental regulation strategies. In treating social phobia, a greater emphasis is placed on modifying attention and worry processes and on configuring processing during and after behavioral experiments.

This paper is based on the premise that resistance to cognitive change is a normal feature of information processing, and in cognitive therapy is a result of incomplete formulation of the internal factors or *metacognitions* involved in controlling and modifying cognition.

Theory and research in metacognition evolved in the areas of developmental and cognitive psychology (e.g., Flavell, 1979; Nelson, 1984; Nelson & Narens, 1990), and has recently been developed as a basis for understanding and treating psychological disorders (Wells, 2000; Wells & Matthews, 1994, 1996). Metacognition refers to cognition applied to cognition and may be defined as any knowledge or cognitive process that is involved in the appraisal, control, and monitoring of thinking (e.g., Flavell, 1979). It is multifaceted and a basic distinction has been made between metacognitive knowledge, which is information that individuals have about their own thinking and about strategies that affect it, and metacognitive regulation, which are the strategies used to change the status of thinking.

Our metacognitive theory (Wells, 2000; Wells & Matthews, 1994) describes the generic cognitive and metacognitive factors underlying emotional vulnerability and psychological disorder maintenance. In this theory we argued that disorder is associated with a nonspecific style of thinking that we termed the cognitive-attentional syndrome. This consists of repetitive and difficult-to-control thinking in the form of worry/rumination, an attentional style of threat monitoring, cognitive resource limitations, and use of coping behaviors that fail to modify negative beliefs. Many of the coping behaviors are metacognitive in nature because they involve maintenance of patterns of thinking or attempts to control thoughts that are unhelpful. The syndrome is evident in the dwelling and the brooding quality of cognition seen in psychological disorders. A further marker for this syndrome is the presence of heightened and difficult-to-control self-focused attention.

According to the theory, much of the knowledge on which processing depends is metacognitive in nature. So the activation and persistence of the cognitive-attentional syndrome in response to stress is dependent on maladaptive metacognitive knowledge (beliefs). We have suggested that metacognitive knowledge (or beliefs) should be formulated separately from the usual beliefs (i.e., schemas) typically emphasized in cognitive therapy (e.g. Beck, 1976; Beck, Emery, & Greenberg, 1985).

The distinctness and importance of metacognitive knowledge can be illustrated with reference to generalized anxiety disorder (GAD). Cognitive models that base the disorder on general beliefs about the self and world (e.g., "I'm vulnerable; the world is a dangerous place") fail to account for difficult-to-control, pervasive worry, the central cognitive feature of the disorder. Indeed, a general schema such as "The world is a dangerous place" might be associated with behavioral avoidance of aspects of the environment rather than worry, and yet the latter is more characteristic of GAD. Traditional schemas might explain the negative content of thoughts but they

1077-7229/07/18–25$1.00/0

do not explain the presence of worry. Worry must arise from metacognitions that lead to that particular style of thinking. As discussed later, the person with GAD has positive metacognitive beliefs about the use of worry as a means of coping, but also has negative metacognitions concerning its uncontrollability and potential harmful effects. This leads to unhelpful patterns of metacognitive regulation causing pathological worry and anxiety.

The metacognitive analysis can be applied to all disorders. A basic premise is that it is not particularly useful to consider the general self (e.g., "I'm a failure") or world schema as the main influence controlling cognition. For example, in the metacognitive model and treatment of depression (Wells & Papageorgiou, 2004), there are specific metacognitive schemas driving ruminative thoughts (e.g., "Ruminating on my feelings will help me find answers") that are separate from the more general schemas representing the negative cognitive triad. Furthermore, metacognitive beliefs and strategies appear to lead to patterns of thinking that impede emotional processing and contribute to posttraumatic stress symptoms (Holeva, Tarrier, & Wells, 2001; Roussis & Wells, 2006; Wells & Papageorgiou, 1995; Wells & Sembi, 2004a).

Implications of the Metacognitive Analysis for Cognitive Therapy

There are many implications of the metacognitive approach for developing cognitive therapy for psychological disorders. In this paper I will confine the focus to considering the effect of metacognitive beliefs and strategies on opportunities for change in GAD and social phobia. GAD is particularly interesting as a starting point if we consider worry as a component of most types of disorder, because the dysfunctional metacognitions underlying it are likely to be nonspecific, basic pathological mechanisms and processes.

Generalized Anxiety Disorder

The metacognitive model of GAD (Wells, 1995, 1997) is based on the principle that metacognitive beliefs, metacognitive appraisals, and thought control strategies are central factors in the development and persistence of the disorder. The model (Figure 1) differs from other cognitive conceptualizations of GAD by emphasizing the role of metacognition rather than maladaptive beliefs about the world or social self. This approach suggests that resistance of the worry process to modification in treatment results from failure to modify the metacognitions underlying different types of worry.

In the model a distinction is made between two types of worry, labeled Type 1 and Type 2. Type 1 worry is concerned with external events and noncognitive internal events (e.g., physical symptoms), while Type 2 worry

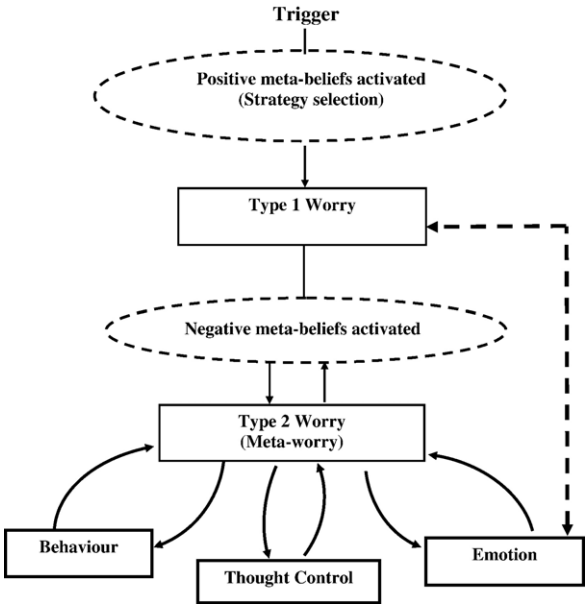

Figure 1. Cognitive model of GAD. From *Cognitive Therapy of Anxiety Disorders: A Practice Manual and Conceptual Guide* (p. 204), by A. Wells, 1997, Chichester, UK: Wiley. Copyright 1997 by John Wiley and Sons, Ltd. Reprinted with permission.

concerns negative appraisal of the individual's own thought processes. This is essentially worry about worry or meta-worry.

Worrying is typically triggered by an initial intrusive thought that may occur as an image or in the form of a "what if" question (e.g., "What if my partner is involved in an accident?"). External factors, such as news items or information, can act as triggers for these initial intrusions. Once a trigger is encountered, positive metacognitive beliefs about the usefulness of worrying as a strategy for anticipating and dealing with threat are activated. Examples of positive beliefs include, "Worrying helps me cope"; "Worrying keeps me safe"; "If I worry I'll be prepared," Such beliefs are thought to be normal and are not specific to GAD; however, the individual with GAD overuses worry sequences as a predominant mode of coping. Initial worry sequences consist of chains of catastrophizing thoughts involving "what if" danger-related questions and the generation of potential coping strategies. This process of Type 1 worrying is associated with the activation of anxiety and its cognitive and somatic symptoms. When the goal of Type 1 worrying is reached (i.e., achieving a sense that one can cope), anxiety and other emotional symptoms decrease. Typically the person with GAD continues to worry until he or she assesses that he or she will be able to effectively cope with anticipated threat. This assessment is often based on internal cues such as a "felt sense" that one will be able to cope, or the belief that all-important outcomes

have been considered in sufficient detail. Worrying may also stop when competing goals, which have processing priority, are activated.

GAD develops when the person activates negative beliefs about worrying. Negative beliefs include the idea that worrying is uncontrollable and potentially harmful for physical, mental, or psychosocial functioning. Examples of negative beliefs include, "Worrying could make me go crazy"; "Worrying is uncontrollable"; "Worrying can damage my body." During worry episodes, negative beliefs become activated and this leads to negative appraisals of the worry process. Such appraisals known as Type 2 worry or meta-worry intensify the sense of threat and exacerbate anxiety responses. Anxious responses can themselves be misinterpreted as a sign of imminent catastrophe such as loss of one's mind, which in turn leads to rapid escalations of anxiety in the form of panic attacks. In this way the relationship between Type 2 worry and emotion constitutes a vicious cycle in which cognitive and somatic symptoms associated with anxiety can be interpreted as evidence of loss of control and evidence of the harmful effects of worrying. Because negative appraisals of worrying emerging from negative beliefs increase anxiety, it becomes more difficult for the person with GAD to obtain an internal signal indicating that it is safe to stop worrying.

Two further mechanisms contribute to problem maintenance. These are labeled "behavior" and "thought control" in Figure 1. Subtle behaviors involving avoidance of situations that might trigger worrying contribute to the problem since the individual fails to discover that worrying is subject to personal control. Reassurance seeking may also be used as a means of trying to decide that there is really nothing to worry about. This transfers the control of worry to other individuals, removing opportunities for the individual to develop beliefs about self-control. Information search is another behavioral strategy and consists of reading books and/or surfing the Internet to find information that may reduce worrying. Unfortunately, this process can backfire and increase the range of threat-related information the individual is exposed to, widening the range of worry triggers.

Thought-control strategies used by the individual consist of trying to suppress thoughts about worry triggers. Suppression strategies are rarely totally successful and some empirical evidence suggests that they may be counterproductive (Purdon, 1999; Wegner, Schneider, Carter, & White, 1987). Thus, individuals are engaged in a control activity that generates information concerning a general inability to control thoughts in a desired way. This effect reinforces negative appraisals concerning mental control and contributes to negative metacognitive beliefs in this domain. Another strategy important in maintaining the problem is a failure to interrupt the worry process once it is activated. Because the individual believes that worrying is uncontrollable, desirable, or part of his or her personality, few concerted efforts are made to interrupt the catastrophizing process once it is initiated. This deprives the individual of control experiences that might otherwise modify negative beliefs about uncontrollability. Even on the occasions when worry is avoided or suppression is successful, the termination of the worry process means that beliefs concerning the dangers of worrying are not challenged.

Metacognitive Therapy for GAD

The pervasive and difficult-to-control worry process derives from the individual's metacognitive knowledge base and strategies. Patients often have limited insight into the metacognitive beliefs that feed such mental processes. Elsewhere we have suggested (Wells & Matthews, 1994) that much of this knowledge should be considered procedural in form as plans or programs for directing cognitive processing.

This model emphasizes the importance of examining the patient's metacognitions that drive the implementation of maladaptive coping. This focus is different from existing cognitive therapy, which might focus on challenging the content of Type 1 worrying. Such attempts are often met with resistance and/or the phenomenon of worry substitution in which one worry concern is replaced with another concern. The problem is a manifestation of the control that metacognitions have over processing style and regulation strategies.

Metacognitive therapy for GAD focuses first on challenging negative metacognitive beliefs concerning uncontrollability of worrying. Initially, the therapist constructs and shares the metacognitive formulation of the problem. The therapist emphasizes that worrying is a normal process but has become problematic because of the negative and positive beliefs that the person holds about worrying and unhelpful strategies that are used to regulate it. Socialization to the metacognitive perspective is achieved by contrasting positive and negative beliefs about worrying and asking the patient what the consequences of such conflict might be for the regulation of worry processes. The therapist asks if worrying would be a problem if the patient no longer believed that it was uncontrollable and harmful. Finally, a thought suppression experiment is used to illustrate how some thought control strategies are not particularly effective.

The first target of treatment is modification of uncontrollability metacognitions. Evidence and counterevidence supporting uncontrollability is reviewed. The patient is asked how it is that worry ever ceases if it is truly uncontrollable. The worry postponement

experiment is then introduced. This consists of asking the patient to do the following for homework: (a) notice a trigger for worrying and then, without suppressing the trigger, (b) postpone the Type 1 worry process. This should be postponed until a period of time later in the day, which can be designated as a worry time lasting approximately 15 minutes. The therapist makes a clear distinction between suppression and postponement of the worry process. The patient is not being asked to remove the content of an initial worry-intrusion from consciousness merely to interrupt the Type 1 worry process normally engaged as a means of problem solving or coping. The allotted worry time is not compulsory and the patient is informed that he or she does not have to use it.

Tracking of belief in uncontrollability indicates the effectiveness of the worry postponement experiment. The experiment is refined and repeated in order to maximize belief change. In the next step the therapist asks the patient to use the allotted worry time and during that period to deliberately try to lose control of the worry process. This experiment may then be further refined and the patient is subsequently asked to deliberately lose control of worry at the time it is triggered rather than postponing the activity.

Following the effective modification of erroneous beliefs about uncontrollability and the introduction of alternative metacognitive strategies, treatment focuses on challenging beliefs concerning the danger of worrying. Verbal reattribution focused on these metacognitions can be used to weaken such beliefs. Patients often equate worry with stress and have an oversimplistic view that stress and therefore worry is harmful. One strategy is to de-couple the concepts of worry and stress. Moreover, the oversimplistic view of anxiety as a harmful agent should be challenged. For instance, stress and anxiety responses are part of the individual's survival program and they would not have functioned effectively in evolutionary terms if they had led to death, serious illness, or psychological breakdown. Behavioral experiments are then used in which the patient attempts to produce feared negative outcomes as a result of periodically intensifying the worry process. For instance, one patient was fearful that she could induce a mental breakdown through worrying. This was operationalized as losing touch with reality and seeing things that other people could not see (i.e., hallucinations). In the treatment session, the therapist worked with her to try and induce hallucinations by having intense periods of in-session worrying.

In some cases patients believe that worrying is abnormal and must be a sign of psychological instability. In these instances, the process of worrying can be normalized by asking clients to conduct a mini-survey in which they ask a range of other people if they engage in worry, how frequently, and if they are distressed by worrying. Often patients are surprised to discover that other people who do not have GAD experience frequent worry and find worrying difficult to control.

Later in treatment, positive metacognitions about the need to use worrying as a means of preparation and coping are the target of therapeutic modification. Some patients are reluctant to completely abandon worry as a coping strategy. However, the therapist has a range of cognitive treatment techniques to choose from. First, a review is undertaken of the counterevidence suggesting that worrying does not assist coping. Second, the mechanism by which worrying improves outcomes can be explored and challenged. Next, the therapist introduces the *worry mismatch* strategy in which the patient is invited to write, in detail, the contents of a recent worry sequence. This is followed by writing out the "reality" script, which is a description of what truly happened in the "worried about" situation. The worry script is compared against the reality script, with the aim of emphasizing the discrepancy. Identification of such a discrepancy allows the therapist to question how useful worrying can be when it does not accurately depict reality. Worry *modulation experiments* are also used. Here, the client is asked to increase worry on some days and decrease the frequency of worry on other days while observing the effects on coping outcomes. For example, a person can be asked to determine if they cope better or perform more effectively on the days when they worry more.

Treatment normally concludes with reviewing alternative strategies for dealing with intrusions and stresses that trigger worrying. This consists of building up an alternative strategy base (i.e., new knowledge of strategies) so that individuals can develop a greater range and flexibility of responses to intrusions and stress that do not necessitate engagement in catastrophizing. This can be viewed as helping the patient develop an alternative set of plans or subroutines that can be called to direct processing.

Summary

In this section, I have described how the metacognitive analysis of knowledge and strategies informs a particular formulation and treatment of difficult-to-modify worry in GAD. The emphasis is placed on the control of thinking by beliefs that are metacognitive in nature. Using this approach it is not necessary to formulate and treat other (nonmetacognitive) belief domains.

The principles of metacognitive therapy can be applied to the cognitive-attentional syndrome in other disorders. In the next section I will briefly describe how cognitive therapy for social phobia has been abbreviated

by focusing on dysfunctional cognitive processes and metacognitive beliefs driving them.

Social Phobia

The cognitive model of social phobia that we proposed (Clark & Wells, 1995) contains elements that were discovered as a result of using the metacognitive theory to guide interviews with patients. Searching for the cognitive-attentional syndrome led to the discovery that patients focused attention inward onto an "observer" image of themselves in social situations, and they engaged in worry/rumination in the form of anticipatory processing before social encounters and as a postmortem. These processes can impede and slow down cognitive change in the treatment of social phobia.

On entering feared social situations the person with social anxiety activates dysfunctional beliefs about the social self and performance, leading to concern about failure to create a favorable impression. This is associated with a shift in the direction of attention to self-focused processing. Such self-processing is typically characterized by processing an image of the self from an "observer" perspective, that is to say, from another person's vantage point. In this observer image anxiety symptoms and signs of embarrassment or failed performance are seen as highly conspicuous. This image usually represents an exaggeration, but it is assumed by the individual to be accurate.

As a result of negative thoughts and the negative self-image, the person engages in coping behaviors that are intended to avert feared social catastrophe and improve self-presentation. These (safety) behaviors are, however, problematic in several respects and contribute to a persistence of negative beliefs and anxiety. The mechanisms linking safety behaviors to problem maintenance are as follows:

1. The behaviors support an attributional bias in which the nonoccurrence of social catastrophe, such as being criticized, is attributed to the use of the behavior and not the fact that this is unlikely to happen.
2. Some behaviors increase self-focused attention as they require self-monitoring for their execution. This interferes with task-focused processing, rendering social performance more difficult, and interfering with the processing of social feedback that could disconfirm negative beliefs.
3. Some safety behaviors exacerbate unwanted symptoms; for example, wearing extra layers of clothing to conceal sweating increases body heat and sweating.
4. Some safety behaviors contaminate the social situation and make the person with social phobia appear aloof, unfriendly, and disinterested in others, which can reduce the opportunity for social disconfirmation of negative beliefs. The model is presented diagrammatically in Figure 2.

Apart from the in-situation processing depicted in Figure 2, the person with social phobia tends to engage in worry before and after social encounters. These processes have been termed *anticipatory processing* and the *postmortem*. Anticipatory processing typically involves thinking about what can go wrong in the situation and planning or rehearsing coping strategies. Such preparation can prevent the person from discovering that social catastrophe is unlikely. Another problem with anticipatory processing is that it can cause the individual to enter the social situation already in a state of heightened anxiety and self-consciousness.

The postmortem consists of mentally reviewing and ruminating about what happened in the situation. Unfortunately, because the person was largely self-focused there is little encoded in memory that can modify the person's negative self-appraisal. Instead, the postmortem focuses on negative feelings and negative self-perceptions and can strengthen beliefs about poor social performance and the negative self-image.

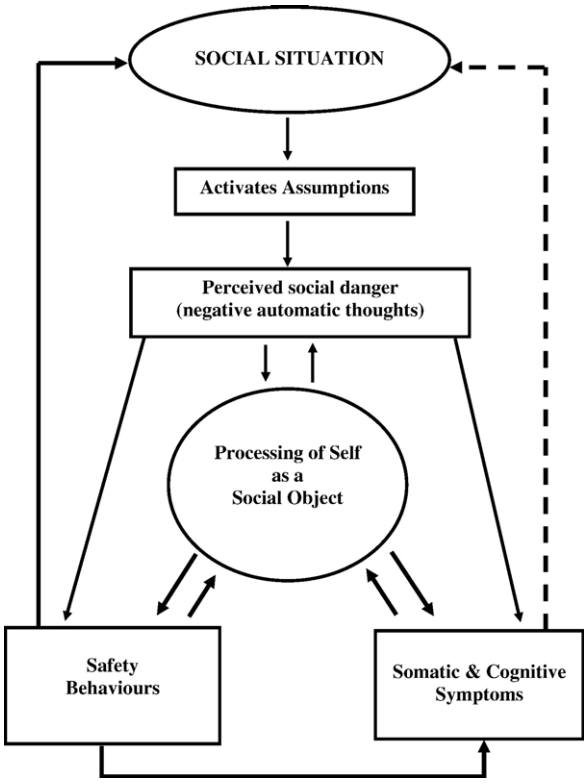

Figure 2. Cognitive model of social phobia. From *Cognitive Therapy of Anxiety Disorders: A Practice Manual and Conceptual Guide* (p. 169), by A. Wells, 1997, Chichester, UK: Wiley. Copyright 1997 by John Wiley and Sons, Ltd. Reprinted with permission.

A Metacognitive Approach to Treatment

The focus of initial treatment based on this model has been predominantly cognitive rather than metacognitive, and this has met with demonstrated success (Clark et al., 2003). However, we (Wells & Papageorgiou, 2001) considered it possible to abbreviate treatment without loss of overall effectiveness by taking a stronger metacognitive approach.

The earlier treatment had a limited emphasis on metacognitive strategy and no consideration of metacognitive beliefs that may impair change. We modified the emphasis to focus more on strategy and on metacognitive beliefs. This enabled us to enhance cognitive change (e.g., Wells & Papageorgiou, 1998) and develop an efficient, brief treatment (Wells & Papageorgiou, 2001).

Components of brief metacognitive-focused treatment. The brief treatment uses the maintenance component of the model as depicted in Figure 2 as a basic case formulation. According to the metacognitive approach negative beliefs/thoughts about the social self are products of the style of processing driven by the person's metacognitions. Thus, treatment focuses on modifying the style of processing before, during, and after social situations. An index of change in this style is the patient's level of self-reported self-consciousness in the past week in social situations. We decided to use this rating as a treatment termination criterion rather than general (social) belief ratings. Self-consciousness is a marker for the cognitive-attentional syndrome in the metacognitive theory, and the hypothesis is that removal of the syndrome should facilitate change, so this is an important measure.

In the first treatment session the therapist introduces the idea that attentional strategies of self-focusing contribute to problem maintenance by increasing awareness of symptoms, impairing performance, and diverting attention away from disconfirmatory external information. For example, patient's are asked how they can know that "everyone is looking" at them if they avoid eye contact and focus on symptoms. The therapist then examines the positive metacognitive beliefs held about focusing attention on the self and the negative beliefs held about focusing on the external social environment. The disadvantages of maintaining an attentional strategy of this kind are reinforced.

The effect of attentional focus on symptoms and performance is contrasted by asking the patient to perform an anxiety-provoking social task under two conditions. In the first the patient is asked to engage in usual coping behaviors and self-monitoring/control. The patient is then asked to predict what will happen if he or she repeats the experiment while engaging in external-focused attention, dropping all coping behaviors. The patient is videotaped performing these tasks in the first session (this video is to be used later). Typically, the patient discovers that contrary to predictions there is no more evidence of failed or inadequate performance in the second condition when compared to the first. In many cases, anxiety and performance "feel better" in the second condition. For homework, patients are asked to practice external-focused attention in social situations and nonsocial situations.

Exercises are provided to help anchor attention externally. These include asking patients to try and "feel" the texture of different objects by looking at them, and paying attention to other people's facial expressions to determine if they appear tired or rested.

The next step in treatment focuses on the concept of anticipatory processing and the postmortem. Here the therapist introduces the idea that worry and rumination are examples of self-focused attention that do not provide evidence that can modify negative beliefs about the situation and the self. Next, the advantages of anticipatory processing are elicited as a means of identifying positive metacognitive beliefs about the process. Such metacognitions are then challenged. Similarly, the advantages of the postmortem are elicited and challenged. The patient is then asked to modify anticipatory processing so that it is time-limited and not focused on predicting negative outcomes. The postmortem is dealt with by reviewing the advantages and disadvantages, reinforcing the latter, and asking the patient to ban it.

Following from this, video feedback is used to challenge the validity of the negative observer image and to illustrate how using self-focus on an internal impression as a means of judging the self can lead to erroneous conclusions. As in the original cognitive treatment, the therapist works with the patient to construct a detailed and objectified list of the exaggerated nature of symptoms that the patient expects to see on the video. The aim is to show that a discrepancy exists between the patient's internal image and the true image.

The next phase of treatment consists of interrogating the social environment by displaying signs of anxiety/failed performance and testing predictions concerning the consequences of doing so. The important feature of these experiments that renders them metacognitive is that the therapist aims to expose the patient to social encounters while controlling on-line cognitive processes in a way that facilitates belief change. To do so, behavioral experiments follow the P-E-T-S protocol (Wells, 1997) as outlined below:

1. Prepare (P): The therapist elicits and rates a negative belief to be modified in the social situation. The belief is configured as a prediction concerning the observable effects of showing anxiety/poor performance. The therapist introduces the idea of external

attention focusing on social cues as a process important for testing the belief.
2. Expose (E): The patient is exposed to the anxiety-provoking social situation (e.g., a crowded bar).
3. Test (T): The patient is asked to execute a specific test or disconfirmatory strategy. This involves external attentional monitoring while reversing coping behaviors or engaging in embarrassing behavior (e.g., Pay close attention to the reaction of others while spilling a drink in a bar).
4. Summarize (S): The results of the experiment are summarized in terms of the initial prediction and belief level is re-rated. The therapist refines the experiment and repeats it as necessary. The patient is asked to ban further postmortem processing following exposure.

Summary

The brief metacognitive-focused treatment differs from the longer cognitive treatment in several respects. There is a greater emphasis on modifying self-attention with practice of external attention monitoring within and between sessions from the beginning. This is coupled with an emphasis on removing worry/rumination in the first two sessions. Video feedback is used to both correct the content of the distorted self-image and also to show how the strategy of relying on an internally generated self-image can give rise to an exaggerated negative sense of self. This finding is used to strengthen the case for shifting to external-focused attention and developing new strategies of processing the external social environment rather than the inner sense of self. Behavioral experiments for challenging predictions follow the P-E-T-S protocol, and at least two behavioral experiments are used at each treatment session. The brief treatment consists of little or no verbal challenging of negative thoughts, and general negative beliefs about the self as a social object are not targeted. Using this approach and a termination criterion based on self-consciousness ratings, we have delivered treatment in a mean of 5.5 hourly sessions and have achieved reductions in fear of negative evaluation that appear to be comparable to those of the full cognitive intervention.

Conclusion

The metacognitive approach emphasizes the dynamic nature of processing in psychological disorders. In this model general beliefs and negative thoughts are the output of metacognitions that control the retrieval of information from long-term memory, the direction of attention, and the implementation of thinking styles (strategies). In this brief paper I have attempted to show, with reference to GAD and social phobia, how psychological disorder is associated with the maladaptive control of cognition and the nature of metacognitive beliefs, and not necessarily the content of the more traditional schemas.

The contrast between cognitive and metacognitive therapy can be perhaps illustrated with reference to the nature of the Socratic dialogue used in treatment. Cognitive therapy is characterized by questions such as, "What is your evidence for believing that?" In contrast, metacognitive therapy augments such questioning by introducing elements characterized by the following: "How have you arrived at that belief?"; "What are you paying attention to?"; "What are the internal factors that lead you to that conclusion?" The metacognitive approach views the construction of dysfunctional beliefs and appraisals as the result of recurrent dynamic patterns of processing guided by metacognitions. Such metacognitions and patterns are central targets for change.

I have outlined some principles of metacognitive therapy to illustrate how formulating the factors that control and appraise cognition can provide a new approach to treatment. This approach has the potential advantage of not relying on the direct verbal challenging of the content of negative thoughts and beliefs in the cognitive domain. Instead, it argues for the modification of beliefs and strategies in the metacognitive realm. This approach has the potential to overcome the resistance to change seen as recurrence of the worry process in GAD, and it has been used as a basis for accelerating cognitive change in social phobia.

Metacognitive therapy is not confined to the two disorders discussed here. Metacognitive models and treatments have also been developed for posttraumatic stress disorder, obsessive-compulsive disorder, and depression, and are currently under evaluation (Fisher & Wells, 2005; Wells, 1997; Wells & Papageorgiou, 2004; Wells & Sembi, 2004a,b). The advantage of a metacognitive approach to treating these disorders is that treatment does not require prolonged exposure to memories of trauma or obsessional stimuli or challenging depressive automatic thoughts. A significant proportion of patients and therapists find it difficult and time consuming to comply with optimal exposure and cognitive therapy practices.

Metacognitive theory considers a range of factors not discussed in detail in this paper. There are, for example, other issues concerning the way in which knowledge is represented (as factual information and as tactical knowledge) and the effect of different mental modes on change (Wells, 2000). In recent work, Leahy (2002, 2003) has drawn on metacognitive constructs in his formulation of emotional schemas as beliefs individuals hold about the durability, controllability, and pathology of emotions. An important implication of dysfunctional knowledge concerning emotions is that it may have an impact on one's

willingness to accept emotions and be exposed to them, factors likely to affect emotional processing and change.

The formulation of metacognition as a powerful influence on cognitive affective-change and on resistance to change reminds us of the complexity of thinking. It is a complexity that cognitive therapy might embrace with a view to discovering a landscape of change beyond that offered by the traditional schema principle.

References

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

Beck, A. T., Emery, G., & Greenberg, R. L. (1985). *Anxiety disorders and phobias: A cognitive perspective*. New York: Basic Books.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. Heimberg, M. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: diagnosis, assessment and treatment*. New York: The Guilford Press.

Clark, D. M., Ehlers, A., McManus, F., et al. (2003). Cognitive therapy versus fluoxetine in generalized social phobia: a randomized placebo-controlled trial. *Journal of Consulting and Clinical Psychology, 71*, 1058–1067.

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.

Flavell, J. H. (1979). Metacognition and metacognitive monitoring: a new area of cognitive-developmental inquiry. *American Psychologist, 34*, 906–911.

Holeva, V., Tarrier, N., & Wells, A. (2001). Prevalence and predictors of acute stress disorder and PTSD following road traffic accidents: Thought control strategies and social support. *Behavior Therapy, 32*, 65–83.

Leahy, R. L. (2002). A model of emotional schemas. *Cognitive and Behavioral Practice, 9*, 177–190.

Leahy, R. L. (2003). Emotional schemas and resistance. In R. Leahy (Ed.), *Roadblocks in cognitive behavioral therapy*. New York: The Guilford Press.

Nelson, T. O. (1984). A comparison of current measures of feeling-of-knowing accuracy. *Psychological Bulletin, 95*, 109–133.

Nelson, T. O., & Narens, L. (1990). Metamemory: a theoretical framework and some new findings. In G. H. Bower (Ed.), *The psychology of learning and motivation* (pp. 125–173). New York: Academic Press.

Purdon, C. (1999). Thought suppression and psychopathology. *Behaviour Research and Therapy, 37*, 1029–1054.

Roussis, P., & Wells, A. (2006). Posttraumatic stress symptoms: tests of relationships with thought control strategies and beliefs as predicted by the metacognitive model. *Personality and Individual Differences, 40*, 111–122.

Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology, 53*, 5–13.

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

Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practice manual and conceptual guide*. Chichester, UK: Wiley.

Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*. Chichester, UK: Wiley.

Wells, A., & Matthews, G. (1994). *Attention and Emotion: A Clinical Perspective*. Hove, UK: Erlbaum.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: the S-REF model. *Behaviour Research and Therapy, 32*, 867–870.

Wells, A., & Papageorgiou, C. (1995). Worry and the incubation of intrusive images following stress. *Behaviour Research and Therapy, 33*, 579–583.

Wells, A., & Papageorgiou, C. (1998). Social phobia: effects of external attention on anxiety, negative beliefs and perspective taking. *Behavior Therapy, 29*, 357–370.

Wells, A., & Papageorgiou, C. (2001). Brief cognitive therapy for social phobia: a case series. *Behaviour Research and Therapy, 39*, 713–720.

Wells, A., & Papageorgiou, C. (2004). Metacognitive therapy for depressive rumination. In C. Papageorgiou, & A. Wells (Eds.), *Depressive rumination: Nature, theory and treatment* (pp. 259–273). Chichester, UK: Wiley.

Wells, A., & Sembi, S. (2004). Metacognitive therapy for PTSD: a preliminary investigation of a new brief treatment. *Journal of Behavior Therapy and Experimental Psychiatry, 35*, 307–318.

Wells, A., & Sembi, S. (2004). Metacognitive therapy for PTSD: a core treatment manual. *Cognitive and Behavioral Practice, 11*, 365–377.

Address correspondence to Adrian Wells, Ph.D., University of Manchester, Academic Division of Clinical Psychology, Rawnsley Building, MRI, Manchester, M13 9WL, UK; e-mail: adrian.wells@manchester.ac.uk.

Received: January 18, 2006
Accepted: January 30, 2006
Available online 30 November 2006