in question is called the cognitive attentional syndrome (CAS) which consists of worry, rumination, fixated attention, and unhelpful self-regulatory strategies or coping behaviors.

A hint of this toxic pattern can be seen in the response of a recent patient. I asked this person, "What is the main thing you have learned during metacognitive therapy for your depression?" She replied, "The problem isn't really that I have negative thoughts about myself, it's how I've been reacting to them. I've discovered that I've been pouring coal on the fire. I just didn't see that process before." This patient discovered that her responses to negative thoughts had inadvertently developed into an unhelpful thinking style that reinforced her negative self-view. We will return to the nature of this process later in this chapter.

Metacognitive therapy (MCT) is based on the principle that metacognition is vitally important in understanding how cognition operates and how it generates the conscious experiences that we have of ourselves and the world around us. Metacognition shapes what we pay attention to and the factors that enter consciousness. It also shapes appraisals and influences the types of strategies that we use to regulate thoughts and feelings. The argument developed and illustrated throughout this book proposes metacognition as a crucial influence on what we believe and think and as the basis of normal and abnormal emotional and conscious experiences.

A basic premise of traditional cognitive-behavioral therapy (CBT), such as Beck's schema theory (e.g., Beck, 1967, 1976) and Ellis's rational-emotive behavior therapy (REBT; Ellis, 1962; Ellis & Harper, 1961) is that disturbances or biases in thinking cause psychological disorder. Both of these approaches give a central role to dysfunctional beliefs. MCT is in agreement with this view as a general principle, making it a type of cognitive therapy. Where it differs from previous approaches is in identifying a particular style of thinking and types of beliefs not emphasized by these other theories as the cause of disorder. The style of thinking emphasized is not about cognitive distortions such as absolutistic standards or black-and-white thinking. The style of interest in MCT is the CAS, which is marked by engaging in excessive amounts of sustained verbal thinking and dwelling in the form of worry and rumination. This is accompanied by a specific attentional bias in which attention is locked onto threat. The beliefs of importance in MCT are not the ordinary cognitions of CBT and REBT concerning the world and the social and physical self, but are beliefs about thinking (metacognitive beliefs).

The traditional CBT approach to psychological disorder asserts that it is not events themselves that cause psychological problems but the way those events are interpreted. CBT deals with the meanings that people give to their experiences. It assumes that the problem rests with erroneous and distorted views of the self and the world. It deals with changing

this thought content and the person's belief in the validity of that content. In contrast, MCT deals with the way that people think and it assumes the problem rests with inflexible and recurrent styles of thinking in response to negative thoughts, feelings, and beliefs. It focuses on removing unhelpful processing styles. It proposes that any challenges to cognitive themes (content) occur exclusively at the metacognitive level. For instance, if we consider the case of a depressed patient who believes "I'm worthless," the CBT therapist tackles the problem by asking, "What is your evidence?" In contrast, the MCT therapist asks, "What is the point in evaluating your worth?"

In both the CBT and the MCT approaches, the content of beliefs and thoughts determines the type of disorder experienced. Thoughts about danger give rise to anxiety; thoughts about loss and self-devaluation give rise to sadness. MCT posits that this content does not cause disorder because most people have these thoughts and for most the emotion is transitory. Emotional disorder is a problem of being trapped in a state of distress. It is chronic or recurrent. Emotional disorder is caused by the metacognitions that give rise to thinking styles that lock the individual into prolonged and recurrent states of negative self-relevant processing. In essence, MCT is about the factors that lead to sustained thinking and misdirected coping.

In CBT erroneous interpretations of events that cause psychological disorder are assumed to emanate from beliefs, but the beliefs emphasized are in the ordinary cognitive domain. These are beliefs such as "The world is dangerous" and "I'm inadequate." In MCT these beliefs can be seen as the products of metacognitions that give rise to patterns of attention and thinking that repeatedly generate or lock onto these ideas. The implication is that metacognition and patterns of thinking should be modified in treatment because these are the cause of stable negative beliefs or "ordinary cognitions." The beliefs or schemas of CBT are not seen by the MCT practitioner as stable entities that should be erased but instead are seen as the products of thinking processes.

It is clear from the foregoing introduction that MCT introduces an important distinction between cognition and metacognition, with therapeutic work focused primarily on the latter domain. There is no clear differentiation between cognition and metacognition in earlier cognitive therapies. This is exemplified in an extract taken from Beck's influential writing: "Through interviewing this depressed mother, I discovered that her thinking was controlled by erroneous ideas about herself and her world. Despite contrary evidence, she believed she had been a failure as a mother" (Beck, 1976, p. 16).

Here, it is apparent that depressive thinking is attributed to the presence of negative beliefs about being a "failure." Beck assumes that the patient's thinking is controlled by her erroneous ideas about being a failure.

However, it does not invariably follow that believing that one is a failure will control one's thinking. If we take all of the individuals who believe this, will they all become depressed? According to cognitive theory they should, but this is unlikely to be true. MCT views this situation differently. It assumes that most people will have thoughts or beliefs about being a failure, but that individuals will respond to these thoughts in different ways depending on their metacognitions. So it is metacognitive knowledge or beliefs that control subsequent thinking, not the ordinary cognitions that do so.

Let's look at this in more detail. Most people will believe that they are a "failure" at some time in their lives, but for some this belief is followed by renewed efforts to succeed, while for others it is followed by chains of negative thoughts consisting of brooding on personal failings and weaknesses. What is needed is a mechanism that accounts for the existence of these different cognitive and emotional response patterns. I have proposed that the mechanism is metacognition, that aspect of cognition that controls the way a person thinks and behaves in response to a thought, belief, or feeling.

In the case of the depressed mother Beck describes, we might assume that her thinking is controlled by metacognitive beliefs, perhaps something resembling the following: "If I think about my failings and analyze why they occurred, I will be a better mother." Unfortunately, the thinking process of rumination that results from this metacognitive belief is unlikely to lead to satisfactory answers, and the patient will persist in thinking about being a failure.

In the remainder of this chapter, I describe in greater depth the basic principles of MCT theory and treatment. A basic implication of metacognition as a central driver of psychological disorder is that treatment should not invest effort in interrogating and reality testing the person's individual thoughts and beliefs but should focus on changing *how* a person responds to these ideas. The focus of intervention shifts to cognitive processes and the metacognitions giving rise to them and away from evaluating the evidence for and against the cognitive products (e.g., "I'm a failure"). The only exception occurs when the products themselves are metacognitions, as in the form of worry about worry (e.g., "Worrying will harm me").

Having built an argument for metacognition so far in this chapter, now I will explore this construct in greater detail before presenting the complete metacognitive model of disorder.

The Nature of Metacognition

The study of metacognition emerged in the area of developmental psychology and subsequently in the psychology of memory, ageing, and neuropsychology (Brown, 1978; Flavell, 1979; Metcalfe & Shimamura, 1994). Only recently has metacognition been examined as a fundamental basis

for most or all psychological disturbances (Wells & Matthews, 1994; Wells, 1995, 2000).

Metacognition describes a range of interrelated factors comprised of any knowledge or cognitive process that is involved in the interpretation, monitoring, or control of cognition. It can be usefully divided into knowledge, experiences, and strategies (e.g., Flavell, 1979; Nelson, Stuart, Howard, & Crawley, 1999; Wells, 1995).

Knowledge and Beliefs

"Metacognitive knowledge" refers to the beliefs and theories that people have about their own thinking. For example, this knowledge consists of the beliefs that are held about particular types of thoughts as well as beliefs about the efficiency of one's memory or powers of concentration. An individual may believe that some thoughts are harmful. A religious person may believe that experiencing certain thoughts is sinful and will lead to punishment. These are examples of metacognitive beliefs about the importance of thoughts. Holding such beliefs has implications for how a person responds to his or her thoughts and how he or she orchestrates his or her thinking.

According to the metacognitive theory of psychological disorder, there are two types of metacognitive knowledge (Wells & Matthews, 1994; Wells, 2000): (1) explicit (declarative) beliefs and (2) implicit (procedural) beliefs.

Explicit knowledge is that which can be verbally expressed. Examples include "Worrying can cause a heart attack"; "Having bad thoughts means I'm mentally defective"; and "If I focus on danger I'll avoid harm."

Implicit knowledge is not directly verbally penetrable. It can be thought of as the rules or programs that guide thinking, such as the factors controlling the allocation of attention, memory search, and use of heuristics in forming judgments. The plan or program for processing can be indirectly inferred from assessment strategies such as metacognitive profiling (Wells & Matthews, 1994). Implicit or procedural knowledge represent the "thinking skills" that individuals have.

In addition to these two types of metacognitive knowledge, there are two broad-content domains in MCT. Individual disorders show some content-specificity within these domains. The broad domains are positive and negative metacognitive beliefs. *Positive metacognitive beliefs* are concerned with the benefits or advantages of engaging in cognitive activities that constitute the CAS. Examples of positive metacognitive beliefs include "It is useful to focus attention on threat," and "Worrying about the future means I can avoid danger."

Negative metacognitive beliefs are beliefs concerning the uncontrollability, meaning, importance, and dangerousness of thoughts and cogni-

tive experiences. Examples of such beliefs include "I have no control over my thoughts"; "I could damage my mind by worrying"; "If I have violent thoughts I will act on them against my will"; and "Being unable to remember names is a sign of a brain tumor."

In MCT metacognitive beliefs are a key influence on the way individuals respond to negative thoughts, beliefs, symptoms, and emotions. They are a driving force behind the toxic thinking style that leads to prolonged emotional suffering.

Experiences

Metacognitive experiences are the situational appraisals and feelings that individuals have of their mental status. For example, the negative interpretations that obsessional patients make of their intrusive thoughts are metacognitive experiences. The worry about worry that is a feature of generalized anxiety is an example of a metacognitive experience. The misinterpretations of cognitive events made by patients with panic disorder when they believe they are about to lose control of their behavior or lose their mind is a further example.

Experiences also include subjective feelings. A familiar and normal metacognitive feeling state is the *tip-of-the-tongue* effect, where individuals have a strong sense that an item of information is stored in memory even though it is currently not retrievable. There are similar experiences such as "feeling of knowing" and judgments of learning that have been examined in experimental work on metamemory and judgments (e.g., Nelson, Gerler, & Narens, 1984; Nelson & Dunlosky, 1991). These subjective experiences influence behavior such as retrieval efforts and learning strategies.

In MCT, negative appraisals of feelings and thoughts contribute to perceived threat and motivate attempts to control thinking. Subjective feeling states and appraisals of cognition can be used as information for influencing judgments about threat and coping. Often these experiences are not fit for purpose. For example, a man suffering from obsessional thoughts that he might have committed a murder focused on the completeness of his memory for a period of time to decide whether or not he had committed murder. Any blanks in his memory were interpreted as possible times during which he could have committed the act. In this example his strategies and his appraisals of his memory status (meta-experiences) were unhelpful and maintained his anxiety.

Strategies

Metacognitive strategies are the responses made to control and alter thinking in the service of emotional and cognitive self-regulation. The strategies

selected may intensify, suppress, or change the nature of cognitive activities. Some of them are aimed at reducing thoughts or negative emotions by altering aspects of cognition. For example, an individual may turn his or her attention toward threat in an attempt to be prepared, or he or she may try to suppress distressing thoughts, use positive thinking, or distract from emotion.

In psychological disorders, the patient's subjective experience is one of being *out of control*. Strategies often consist of attempts to control the nature of thinking. These attempts tend to be counterproductive in the long term. They include attempts to suppress certain thoughts, to analyze experiences to find answers, or to try and predict what might happen in the future so as to avoid problems. In anxiety disorders, individuals often negatively interpret the occurrence of thoughts and their strategies often involve attempts to suppress them. In disorders such as hypochondriasis and generalized anxiety a strategy consists of focusing on particular negative stimuli and worrying about them. For example, a hypochondriacal patient explained how he analyzed possible *harmful causes* for his muscle weakness to be sure that he did not miss anything that could be important. The problem with this strategy, as with most strategies used by our patients, is that it maintained his sense of threat.

In another case, a depressed woman receiving MCT described dealing with her feelings of sadness by dwelling (ruminating) on her inadequacies and mistakes. Her goal was to make herself feel worse so that she was "forced to snap out of it."

Clearly, strategies are dependent on the metacognitive knowledge and internal models that individuals have concerning how their cognition and emotion operates. Metacognitive knowledge (beliefs), experiences, and strategies are interdependent and function together in psychological disorder.

In the metacognitive theory of psychological disorder, maladaption in knowledge, experiences, and strategies combine to give rise to an unhelpful pattern of thinking that leads to psychological disturbance. However, before describing that pattern in detail, I would like to turn attention to an aspect of metacognitive experiences that plays an important role in MCT. The fact that humans have the capacity to engage in ordinary cognition and also to think about thinking means that there are two ways of experiencing thoughts. Previously I have called these "modes" (Wells, 2000).

Two Ways of Experiencing: Modes

It is not typical to experience thoughts or beliefs as events in the mind, that is, to objectify them. They are usually experienced directly, like per-

ceptions, in the same way that a person experiences the sound of a ticking clock or the sight of snowflakes falling on the rooftops. However, cognitions can be experienced in different ways such as a thought or a feeling and not as the actual world itself.

We do not normally see our thoughts or beliefs as inner events: we fuse them with reality. It's as if we see through them at the outside world and ourselves and yet they act as the filter coloring our model of everything. We fail to see our thoughts as inner representations or constructions independent of the actual self or world. I have termed this usual type of experiencing the *object mode,* in which thoughts or beliefs are not distinguished from direct experiences of the self or the world. We normally experience an undifferentiated consciousness, making no distinction between inner and outer events and thoughts and perceptions.

The object mode can be contrasted with the *metacognitive mode* of experiencing, in which thoughts can be consciously observed as separate events from the self and the world. These events are simply some form of representation that has a varying degree of accuracy. In this mode the individual's relationship to thoughts is one of standing back and observing them as part of a greater multifaceted landscape of conscious experience.

The metacognitive mode is not the same as identifying and challenging negative thoughts in CBT. In CBT the therapist challenges the patient's belief in the degree of accuracy of a thought, but this challenge may not shift the way that thought is experienced. To experience the metacognitive mode takes practice in shifting and experiencing that mode. It is a skill of relating to inner experiences in an alternative way irrespective of the accuracy of thought. This skill is acquired through practice. By approximating and experiencing the metacognitive mode the necessary metacognitive mechanisms and processes to support this type of processing are strengthened and developed. In other words, through experiencing the metacognitive mode, the individual begins to shape up and to strengthen an embedded metacognitive program that enables this activity (i.e., procedural knowledge).

Within the metacognitive mode a further type of experience is possible and desirable in metacognitive therapy. This is the experience of *detached mindfulness* (DM; Wells & Matthews, 1994). In this context, "mindfulness" refers to an objective awareness of a thought or belief, while "detachment" refers to two factors: (1) the disengagement of any conceptual or coping-based activity in response to the thought and (2) separating the conscious experience of self from the thought. This latter factor consists of the individual becoming aware of being the perceiver of the thought and separate from the thought itself. Thus, a negative belief or thought can be moved outside the boundary of self, separated from the self-model, at which point it becomes irrelevant for self-regulation. The person no longer defines the self or interprets his or her world with reference to it.

The Metacognitive Model of Psychological Disorder

Having introduced some of the important concepts in the metacognitive model of psychological disorder, at this juncture I will describe the model in detail.

The basic model is called the self-regulatory executive function model (S-REF; Wells & Matthews, 1994, 1996; Wells, 2000), so called because it offers an account of the cognitive and metacognitive factors involved in the top-down control or maintenance of emotional disorder. A diagrammatic representation of the model with its meta-level components revealed is given in Figure 1.1.

In the model cognitive processes are spread across three interacting levels involving automatic and reflexive processing (low-level processing), online conscious processing of thoughts and behaviors (labeled cognitive style), and a library of knowledge or beliefs that are metacognitive in nature stored in long-term memory.

In Figure 1.1, the meta-system is differentiated from the rest of the ordinary cognitive system but like other systems is distributed through different levels of processing. The meta-system holds a model or representa-

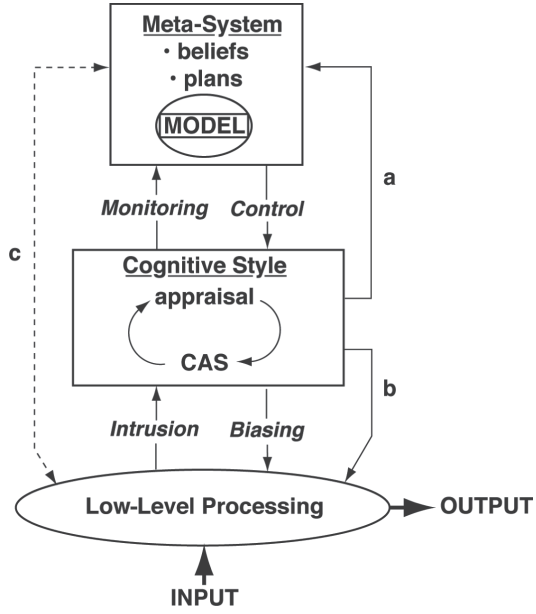

FIGURE 1.1. The S-REF model of psychological disorder with metacognitions revealed. After Wells and Matthews (1994).

tion of current ordinary cognitive processing and guides it toward the goal of an activated plan.

A core principle of MCT is that psychological disorder is linked to the activation of a particular toxic style of thinking called the CAS. For most people periods of emotion and negative appraisal (e.g., sadness, anxiety, anger, worthlessness) are isolated and temporary. However, the CAS has effects that lock people into prolonged or repetitive disturbances of this kind.

The CAS consists of a perseverative thinking style that takes the form of worry or rumination, attentional focusing on threat, and unhelpful coping behaviors that backfire (e.g., thought suppression, avoidance, substance use). This style has a number of consequences that lead to the maintenance of emotions and the strengthening of negative ideas. Generally speaking, the CAS maintains an individual's sense of threat.

An example of the effects of the CAS can be seen in the development of panic disorder. Spontaneous panic attacks are quite common and happen to many people at some point in their lives. However, worrying about subsequent attacks (part of the CAS) prolongs anxiety, and monitoring of bodily sensations (part of the CAS) increases the triggering conditions (intrusion of bodily sensations) for subsequent attacks to occur. Thus, the individual who is prone to activate this cognitive-attentional response pattern is more likely to show a persistence of anxious arousal and to develop repeated panic attacks. Such a pattern will support the growth of beliefs about the uncontrollable and harmful consequences of anxiety.

The CAS arises from knowledge and beliefs, but these are metacognitive in nature and not in the ordinary cognitive domain of beliefs about the self and the world. Two types of beliefs are important: (1) positive beliefs about the need to engage in aspects of the CAS (e.g., "If I worry about my symptoms, I won't miss anything important") and (2) negative beliefs about the uncontrollability, dangerousness, or importance of thoughts and feelings (e.g., "I have no control over my mind; my anxiety could make me go crazy").

At this juncture, before presenting any further detail, I believe that it may be useful to summarize the basic principles of the metacognitive approach:

1. It is proposed that the emotions of anxiety and sadness are basic internal signals of a discrepancy in self-regulation and of threats to well-being.
2. Such emotions are normally of limited duration because the person engages coping strategies to reduce threat and control cognition.
3. Psychological disorder results from the maintenance of emotional responses.

4. They are maintained because of the individual's thinking style and strategies.
5. The unhelpful style, found in all disorders, is called the CAS, consisting of worry/rumination, threat monitoring, unhelpful thought control strategies, and other forms of behavior (e.g., avoidance) that prevent adaptive learning.
6. The CAS is the result of erroneous metacognitive beliefs (knowledge) controlling and interpreting thinking and feeling states.
7. The CAS prolongs and intensifies negative emotional experience through several clearly specified mechanisms/pathways.

The CAS

The thinking patterns of psychologically disordered individuals have a repetitive and brooding quality focused on self-related topics that is difficult to bring under control. This quality is indicative of the CAS and is marked by heightened self-focused attention.

The CAS consists of excessive conceptual processing in the form of worry and rumination. These are long chains of predominantly verbal thought in which the person attempts to answer "What if . . . ?" questions (worry) or attempts to answer questions about the meaning of events (e.g., "Why do I feel this way?").

In addition to this conceptual component, the CAS is comprised of attentional bias in the form of fixating attention on threat-related stimuli. This is termed "threat monitoring" (Wells & Matthews, 1994). For example, an individual traumatized in a robbery described how he subsequently scanned the environment for potential danger. A patient with low self-esteem reported being sensitive to being ignored by other people; it was discovered that this sensitivity was associated with monitoring for signs that people might not like her.

These conceptual and attentional processes are part of the person's strategy for dealing with threat, self-discrepancies, and the emotion aroused by them. There are additional strategies that constitute the CAS including thought control strategies such as thought suppression and behaviors such as behavioral, cognitive, and emotional avoidance. Some examples of the CAS are evident in the following cases:

> A 43-year-old woman described how she had experienced repeated episodes of depression since she was a teenager. The current depression occurred following the birth of her second daughter approximately 14 months earlier. When asked how much of the time she had spent thinking about her feelings and depression in the past week, she explained that she had spent many hours doing so. When asked

for an example of this thinking, she described sitting and gazing at a television screen thinking about how abnormal it was to feel this way, why she felt sad, how she did not have the correct feelings for her daughter, why this had happened to her, and what this meant about her suitability as a mother. It was discovered that she was spending a large amount of time ruminating in this way in response to negative thoughts about her daughter. When asked what the goal might be in thinking this way, she explained how she was trying to make her mood worse in an attempt to become angry so that she would be forced to "snap out of depression."

The patient described above responded to her low mood by ruminating and extended focusing on her feelings in an attempt to deal with her sadness. In effect she was trying to "think herself better" by rumination because she held the metacognitive belief that by becoming angry she could escape from her sadness.

One of our male patients was suffering from delayed-onset posttraumatic stress disorder (PTSD) following exposure to a bomb blast. He explained how he had coped well for several years after the event, but recently, as a result of reading about terrorist attacks, he had developed nightmares and had become overanxious when using public transport and visiting the town. He was asked how he was dealing with his unwanted thoughts and nightmares and he explained that he was "trying to get over it." On careful questioning it emerged that he was trying to force himself to think and feel emotion about the trauma because he had read that this was the way to speed up recovery. Furthermore, he believed it was advantageous to worry about terrorist events in the future so that he could be "on his guard" against possible danger.

In this example, the patient's thinking style in response to intrusions was dominated by trying to think (rumination) and feel emotion to speed up recovery. In addition he was worrying about threats in the future as a means of being prepared. These features of the CAS backfired and increased his anxiety and sense of threat.

A 39-year-old female patient described herself as a chronic worrier. Exploration of a recent distressing worry episode established that in response to the negative thought "What if my child is injured?," she had engaged in prolonged worry to try and generate a series of potential ways of coping with such an event. On this occasion she had a panic attack during her worry because she thought she was losing control of her mind. Since then she had been trying to suppress thoughts about her children being involved in accidents, and she was avoiding local newspapers in case they gave her something new she needed to worry about.

In this case, prolonged worry in response to negative thoughts, thought suppression, and avoidance were readily observable components of the CAS. On further questioning the patient described how she believed that worrying was an effective means of avoiding problems in the future, clearly indicating the involvement of positive metacognitive beliefs in the problem as well as negative metacognitive beliefs about losing control.

> A 23-year-old man presented with a problem of anxiety in social situations, in which he feared that he would look anxious and "weird." When asked about his most recent experience of social anxiety, he identified feeling anxious before attending the treatment session. He was asked what he had been thinking and for how long beforehand. The patient described how he had been trying to anticipate what the situation would be like and rehearsing ways of answering any difficult questions. He was also asked if he had been paying attention to himself or to the external environment during the session. The patient answered that he was paying more attention to himself at the beginning of the session and in particular that he had been focusing on how he sounded and might look to the therapist. He was trying to sound and look normal by controlling his behavior.

The feature of the CAS most evident in this case is perseveration in the form of anticipatory worry. It also involves threat monitoring in the form of focusing on an impression of himself, and coping behaviors in the form of trying to sound and appear "normal."

In each of the cases described above it is possible to identify and isolate the CAS. The problem is that components of the CAS lock the person into prolonged emotional experience and produce conflicts in self-regulation that lead to a sense of helplessness and loss of adaptive control over cognition and emotion.

Consequences of the CAS

What is it that is bad about the CAS? There are several consequences that lead to psychological disturbances. The negative consequences for self-regulation are depicted by the arrows labeled A and B in Figure 1.1. The arrow labeled A depicts the effect that appraisals and coping behaviors have on beliefs. For example, focusing attention on threat reinforces beliefs about the presence of danger, and avoiding experiences such as anxiety prevents the person from discovering the truth about the benign nature of emotion. The arrow labeled B in Figure 1.1 signifies the effect of thinking style and coping on low-level automatic and emotion-level processing. For example, worrying may maintain activation of the anxiety network and divert attention away from processing intrusive images,

thereby blocking emotional processing. There are also likely to be direct links between the meta-system's knowledge and the lower level in that certain types of automatic processing may prime the retrieval of knowledge or plans for guiding subsequent processing, as depicted by the arrow labeled C.

Let's now consider in more detail the deleterious effects attributed to the CAS in the model. Worrying and rumination are invariably biased and focus the individual on negative information. This leads to a distorted impression of the self and the world. For instance, worrying focuses on potential danger in the future, but has little relationship with the true probability of dangerous events.

Rumination seeks answers to questions that often do not have a single or identifiable answer, such as "Why me?" Thus, it perpetuates uncertainty and self-discrepancies between what the person knows and what the person desires to know. Furthermore, worry and rumination activate and maintain a sense of threat so that anxiety and depression persist rather than being transient. These processes use up valuable attentional resources and can impair clear and controlled decision making and thinking under pressure. The repeated practice of worry and rumination increases the habit strength of these responses such that the individual has diminished awareness of these activities and allows them to proceed unchecked. Habit strength and lack of awareness contribute to a sense of loss of control of these mental processes. Worry and rumination can interfere with other self-regulatory cognitive processes. For example, worry is predominantly verbal and can interfere with the processing of images that is necessary for emotional processing after trauma. Similarly, ruminating on the past, such as thinking about failures and mistakes, increases the accessibility of this material when making judgments in the future.

The "threat-monitoring" component of the CAS fixates attention on sources of potential threat. This is a problem because (1) it inflates the sense of subjective danger, thereby increasing or maintaining emotional activation; (2) it strengthens a plan or program for guiding cognition that leads the individual to become a skilled and more sensitive threat detector; (3) in cases such as PTSD or trauma, in which cognition needs to retune to the normal threat-free environment, the strategy prevents this process; and (4) threat monitoring may bias fear-processing networks responsible for generating intrusions of stimuli into consciousness. Thus, threat monitoring may increase intrusive mental experiences.

Thought control strategies such as suppression or thinking in special ways are problematic because they interfere with normal emotional processing, such as emotional habituation through repeated exposure to thoughts. Suppression is a problem because it is not consistently effective in stopping unwanted thoughts, and failure can be interpreted as loss of

control. In each case persistence in processing of threat occurs. Some regulation strategies have ironic effects because they rely on dissonant processes. For example, a patient might try to think him- or herself out of depression by dwelling on how bad he or she feels and why he or she feels that way. Such dwelling deepens and prolongs the depression because it locks the person onto more negative self-relevant information. Similarly, chronic worriers effectively attempt to worry themselves into a state of feeling that they will be able to cope in the future.

Other coping behaviors such as avoidance and using substances to regulate emotion and cognition are problematic because they deprive the individual of an opportunity to discover that he or she can cope in situations and emotion is not dangerous. A sense of prospective danger is maintained because some coping behaviors prevent reality testing of negative thoughts and beliefs. For example, the nonoccurrence of a catastrophe such as suffering a "mental breakdown" can be attributed to avoiding stress rather than to the fact that the belief about stress causing a breakdown is faulty.

Positive and Negative Metacognitive Beliefs

The CAS is controlled by erroneous beliefs about thinking. Two different content domains of metacognitive belief contribute to this style: (1) positive metacognitive beliefs and (2) negative metacognitive beliefs.

Positive metacognitive beliefs concern the usefulness of worry, rumination, threat monitoring, and other similar strategies. Examples include:

"If I worry I will be prepared."
"Focusing on danger will keep me safe."
"I must remember everything and then I'll know if I'm to blame."
"If I analyze why I feel this way I'll find answers."
"I must control my thoughts or I'll do something bad."

On the surface these beliefs may seem reasonable. However, in order to show their erroneous and distorted nature, they are repeated below with some useful questions (printed in *italics*) that the metacognitive therapist uses to reframe them:

"If I worry I will be prepared."
Is it possible to be prepared without worrying?
Is it possible to worry about everything that could happen?
Does worry give a balanced view of the future or a biased one?

"Focusing on danger will keep me safe."
How do you know which danger to focus on?
Is it the danger you see or the one you don't see that will catch you out?
Could focusing on danger make you less safe because you forget the usual things?

"I must remember everything and then I'll know if I'm to blame."
Is it possible to remember everything?
How will knowing if you're to blame help you feel better and move on?
Can you move on without blaming yourself?

"If I analyze why I feel this way I'll find answers."
How long have you been doing this? How much longer will it take?
What if the answer is stopping your analysis?
What if there is no answer other than changing the way you think?

"I must control my thoughts."
How do you know which ones to control?
Is it possible to control all of your thoughts?
Could controlling your thoughts stop you from finding out the truth about them?

The second domain of metacognitive belief concerns the negative significance and meaning of internal cognitive events such as thoughts and ordinary beliefs. There are two broad subsets of negative meta-beliefs: those that concern the uncontrollability of thoughts and those that concern the danger, importance, and meaning of them. These meta-beliefs lead to a persistence of the CAS because of a failure to attempt control and because they lead to negative and threatening interpretations of mental events. These beliefs can also be extended to emotional experiences or feeling states.

Examples include:

"I have no control over my worrying/rumination."
"Worrying can damage my body."
"Psychological distress can make me lose my mind."
"Bad thoughts have the power to make me do bad things."
"Some thoughts can make bad things happen."
"My thoughts can change me into something I don't want to be."
"Uncontrollable thoughts are a sign of madness."
"If I believe I'm bad then I must be bad."
"Feeling anxious means I must be in danger."
"Thinking something makes it true."

Summary of the Metacognitive Model

In summary, MCT is based on the principle that psychological disorder persists because of the effects of a state of thinking, the CAS, on emotional experiences and knowledge. The CAS maintains the person's negative sense of self and perception of threat through specific pathways.

The CAS is linked to the activation of negative and positive metacognitive beliefs. The separation of the metacognitive level from the ordinary cognitive level implies that it is possible to experience inner events such as thoughts, beliefs, and emotions in a cognitive or metacognitive mode. This presents a range of possibilities for treatment that focus on removing the CAS, modifying metacognitive beliefs, and developing alternative ways of experiencing and relating to inner events.

A Reformulated A-B-C Model

One way of understanding the metacognitive model and appreciating how it stands in relation to earlier cognitive-behavioral theories is to examine how it changes the standard A-B-C model that is a basis of cognitive therapies.

In the standard model as depicted in Figure 1.2, an activating event (A) leads to activation of a schema or irrational belief (B), which in turn leads to emotional and behavioral consequences (C).

However, as we have seen, a major unresolved issue in cognitive theories of psychological disorder is the question of what links ordinary negative appraisals or beliefs to persistent negative thoughts and emotions. A further unresolved question concerns what it is that gives rise to difficult-to-control thinking patterns that epitomize psychological suffering.

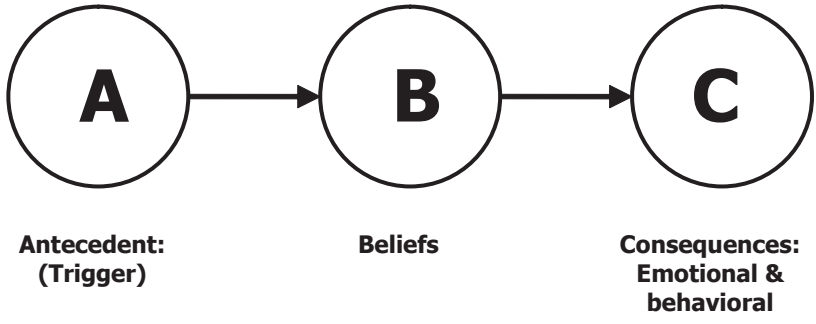

FIGURE 1.2. The A-B-C model.

The MCT reformulates the standard A-B-C model by placing metacognitive beliefs in the center and allowing the activating event to be replaced with an inner experience of a negative thought or ordinary belief. This is depicted as the A-M-C model in Figure 1.3. This is a model that begins downstream of the standard A-B-C model since the antecedent in the reformulated model is an internal cognitive event rather than a situation. In the new model the M component denotes metacognitive beliefs and the CAS. More general negative appraisals or ordinary beliefs (B) are influenced and used by metacognitive processes.

A case example might help to clarify these differences in approach.

> A 30-year-old woman had been depressed for a little more than 2 years by the time she presented for MCT. She described feeling depressed and suicidal for much of the time over the past 2 years since leaving her hometown to find a new job. In the week that she was assessed she described that she had been alone and had continuously thought "things won't change," which had led her to feel sadness most of the time and a sense of hopelessness and despair.
>
> An A-B-C formulation of this series of events is presented in Figure 1.4. As evident in this figure, the antecedent was "being alone"

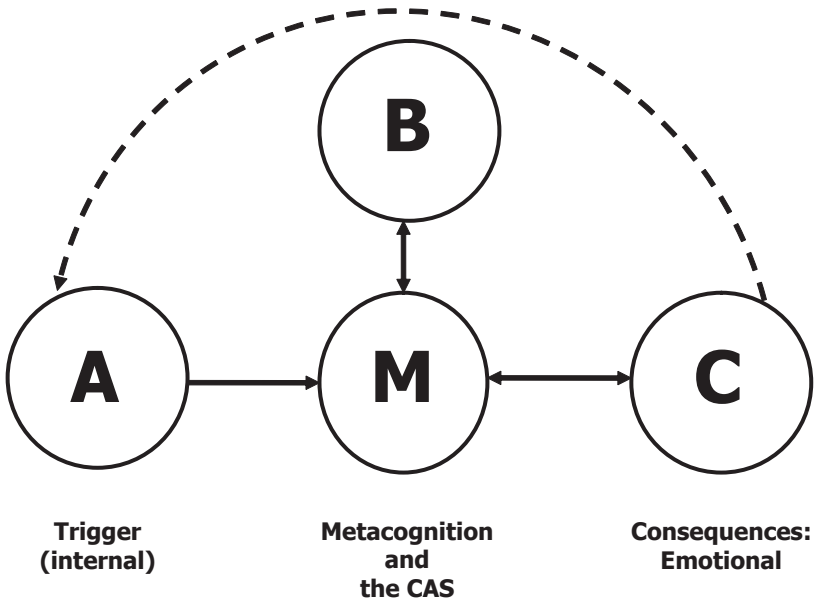

FIGURE 1.3. The reformulated A-M-C model. Adapted from Wells (2000). Copyright 2000 by John Wiley & Sons Limited. Adapted by permission.

which led to the belief "things won't change" and to feelings of sadness and hopelessness.

The metacognitive approach produces a somewhat different analysis by exploring the nature of metacognitions and the CAS. The therapist asked the patient how much of the time she had spent thinking about how she felt and why she felt this way. The patient described how she had spent long periods of time doing this. Her thinking consisted of chains of thought in which she asked herself "Why am I like this, will things ever change, what does this mean, why can't I get things done, why are people happier than me, and will this ever end?" She was asked if there were any advantages in thinking this way and she identified the idea that she needed to think about how bad things are (ruminate) in order to change things, and that by experiencing sadness she could become more motivated. The therapist asked her what she did to try and experience sadness and the patient described that she focused on her thoughts, focused on her feelings, listened to sad music, and reduced her activities to give her more time to think. These metacognitions and the CAS are formulated in Figure 1.5 using the A-M-C model.

By comparing Figures 1.4 and 1.5 it is possible to see the different emphasis of CBT compared to MCT. The former aims to challenge the belief about hopelessness (things won't change), whereas the engine driving persistent and recurrent sadness and hopelessness in the metacognitive formulation are metacognitions and the CAS. MCT therefore focuses on removing the CAS and challenging the metacognitive beliefs that support this response style. Notice also that in the A-M-C analysis the antecedent (A) is specifically identified as an internal trigger, a thought, rather than a situation.

In this example the nature of MCT is evident. It is a treatment that enables patients to recognize the patterns of thinking and coping that lock them into prolonged states of emotional distress, to change those patterns,

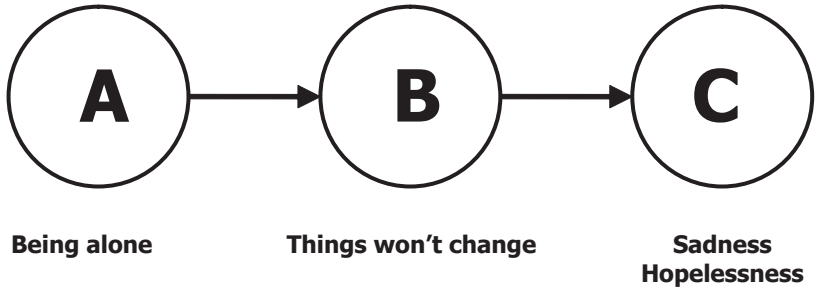

FIGURE 1.4. An example of an A-B-C formulation of a depressed case.

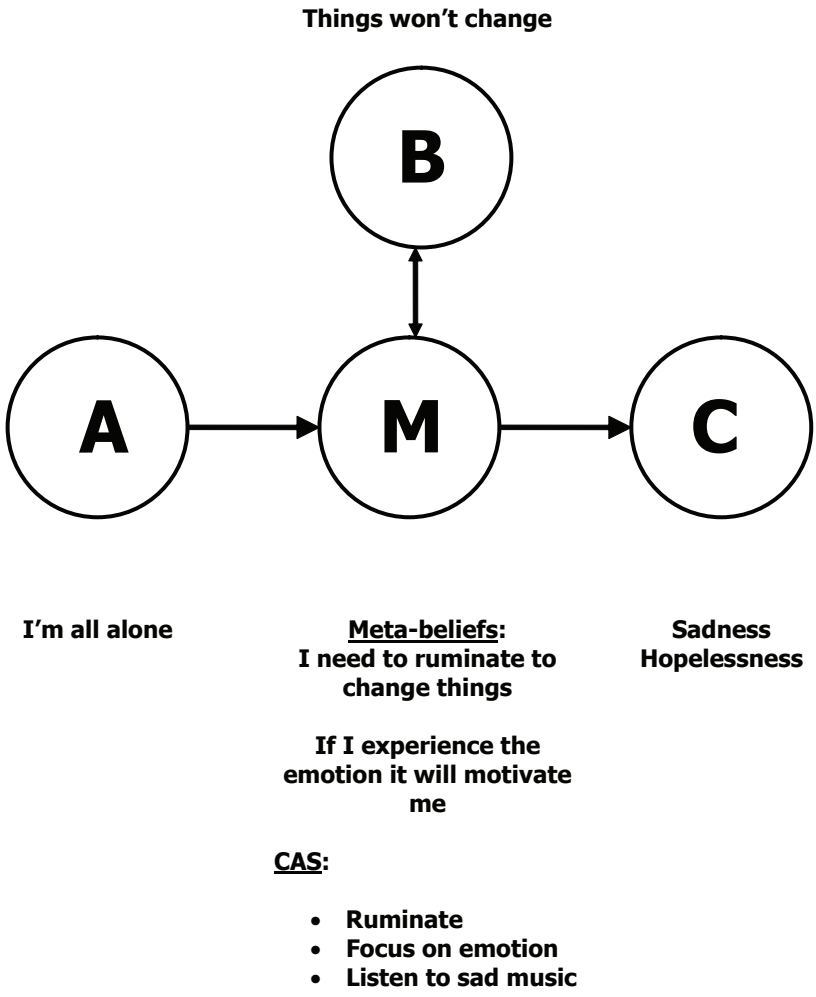

FIGURE 1.5. A metacognitive (A-M-C) formulation of the same depressed case.

and to alter their meta-beliefs about thoughts and feelings. It is not a treatment that focuses primarily on evaluating the reality of ordinary negative beliefs about the self and the world, as would be the case in more traditional forms of CBT. In the depression case we have just examined, the therapist did not reality-test her belief ("Things won't change") by questioning the evidence and reviewing counterevidence. Instead, therapy helped her to develop alternative responses to thoughts about being alone by challenging her metacognitive beliefs and by removing the CAS. The thought or

belief about things not changing is seen as persistent and salient because the CAS makes it so.

A Note on Process- versus Content-Focused Therapies

Existing CBTs are very much content-focused treatments. Therapists refer mainly to the content of an individual's thoughts and beliefs and challenge that content. MCT is chiefly interested in processes and its focus on content is usually in the metacognitive domain rather than in the social, physical, and world domains of other treatments.

For example, in traditional CBT for depression the therapist focuses on questioning the evidence for negative thoughts and beliefs about the self, the world, and the future. This is exemplified by therapist questions such as "What is the cognitive distortion in your thought?" and "What is your counterevidence?" However, in MCT the therapist aims to reduce the extent of rumination, modifies negative beliefs about the uncontrollability of this process, and challenges positive metacognitive beliefs about the need to engage this process in response to sadness. The metacognitive level of intervention is exemplified by questions such as "Can you postpone your rumination in response to your thought?" and "What are the disadvantages of dwelling on that thought?"

When we refer to the "content of cognition" we are referring to the information-processing system's knowledge, the information that is stored or is current in consciousness. Beliefs can be seen as part of this library of information or knowledge.

When we refer to "processes" we are referring to the actions involved in using that knowledge and in learning new knowledge. To use the library metaphor, processes might be likened to searching for a book, locating it in space, reading the information, and using that information to change what we do, think, or know. Processes link knowledge (beliefs) to emotional and behavioral consequences and processes determine the effect that experiences have on knowledge.

We cannot directly work on knowledge such as the belief "I'm worthless." We can only work on the processes that locate and make use of knowledge. To take this one step further, we might reasonably assume that what we think and consciously believe arises out of the subjective experience of processes. What we know is not content, it is the result of the processes that use content. Patients state that they are "bad," that they are "having a heart attack," and that they are "worthless" because they are repeatedly engaging in processes that generate or sustain this erroneous information.

A central concept in MCT is that it is necessary to alter cognitive processes, namely, the style of thinking, the process of paying attention, and the particular strategies of using internal information to form judgments.

Conclusion

In this chapter I have described the theoretical background of MCT and the basic features of the S-REF model on which it is based. The present description leaves aside some aspects of the model less relevant to clinical practice. The reader interested in further issues of cognitive architecture and how the model relates to experimental data on cognitive bias should consult other sources (e.g., Wells & Matthews, 1994, 1996; Wells, 2000; Matthews & Wells, 1999).

The metacognitive model identifies a pattern of thinking called the CAS that causes psychological disorder. This syndrome emerges from the control that metacognitions have over appraisal and coping. Metacognitions represent information about internal thoughts and feelings and also strategies that control the nature of coping and thinking. The metacognitive knowledge base can be thought of as highly proceduralized, representing plans or programs that control cognition.

The implication of the metacognitive model is that treatment can focus on different levels and aspects of the system. This gives rise to a range of new ways of working. The therapist should focus on removing the CAS. Techniques to enable this have been developed. It implies that treatment should focus on modifying erroneous metacognitive beliefs. It also implies that in addition to modifying propositional knowledge or beliefs, it is important to refine the patient's procedural knowledge (implicit metacognitive plans). This means training patients so that they develop new skills for responding to inner events in a flexible and decentered way. It is through the practice of standing back from thoughts and experiencing them in a detached way that the person develops the metacognitive programs necessary to control the effects of unwanted conscious experiences.

In conclusion, three important types of therapeutic change emerge from this analysis: (1) modification of thinking style or strategy (the CAS), (2) modification of declarative metacognitive beliefs, and (3) acquisition of new procedural knowledge or implicit plans for guiding processing and subjective experience. In this book I will describe in detail the implementation of metacognitive therapy that has been systematically developed to produce these effects.

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