EMOTIONAL DISORDERS AND METACOGNITION

Innovative Cognitive Therapy

Adrian Wells
University of Manchester, UK

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ABOUT THE AUTHOR

Adrian Wells is appointed as Reader in Clinical Psychology at the University of Manchester. He is an international leading authority on cognitive theory and therapy, and has contributed significantly to the understanding and treatment of psychological disorders. His contributions include the development of new models and treatments of anxiety disorders, and, in collaboration with Gerald Matthews, the development of an influential theory of cognitive vulnerability to emotional disorder. He has published widely in academic journals, and has authored and edited several books in the areas of cognitive therapy. His book *Attention and Emotion: A Clinical Perspective* (Wells & Matthews, 1994) was recognised with an award by the British Psychological Society (1998) for significant contributions to psychology. This book was followed by his highly acclaimed work, *Cognitive Therapy of Anxiety Disorders: A Practice Manual and Conceptual Guide* (Wells, 1997), in which he presented an unrivalled state-of-the-art description of how to conceptualise and treat anxiety disorders. Dr Wells's pioneering ideas and contributions to understanding and treating emotional disorders continue with the publication of this volume, which marks the culmination of 15 years' work on metacognition, attention and emotional disorders.

PREFACE

In 1994 I published a book with one of my distinguished colleagues, Gerald Matthews, entitled *Attention and Emotion: A Clinical Perspective*. That award-winning work aimed to integrate cognitive therapy and information processing in a framework that provided a basis for explaining performance data on attention, and a basis for understanding the mechanisms of the regulation of attention, beliefs and thinking in emotional disorder. We advanced a theoretical explanation of disorder maintenance and of personal vulnerability, in which self-attentional processes, metacognition and worry strategies play a central role. Moreover, we argued that maintenance of disorder could be understood in terms of dynamic disturbances in processing and self-regulation located within a multi-level cognitive system. Our approach was the first to place strategic processes and metacognition at the centre of a general model of psychopathology.

This book develops the model presented in *Attention and Emotion*. It presents this in a more detailed way and expands on the metacognitive aspect. This elaborated model offers implications for the design of new treatment strategies, and for the application of cognitive-behavioural therapy. New clinical strategies are described in detail and the clinician is guided towards developing a metacognitive-focused approach to treatment. Armed with a basic understanding of how the mind becomes locked into negative and distorted patterns of processing, and how internal metacognitive processes can be used to bring about changes in negative thoughts, distorted beliefs and distressing emotions, we may push back the frontiers of cognitive therapy.

Adrian Wells
Manchester, January 2000

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PART I

THEORETICAL PERSPECTIVES

Chapter 1

SETTING THE STAGE: METACOGNITION AND COGNITIVE THERAPY

Cognitive theories of emotional disorder, such as schema theory (Beck, 1976), are based on the principle that psychological disorder is linked with a disturbance in thinking. In particular, anxiety and depression are characterised by negative automatic thoughts and distortions in interpretations. Negative thoughts or interpretations are thought to emerge from the activation of negative beliefs stored in long-term memory. The aim of cognitive therapy is to modify negative thoughts, beliefs, and associated behaviours that maintain psychological disturbance. Central components of the generic schema theory of emotional disorders are depicted in Figure 1.0.

According to this approach, emotional disorder is linked to the activation of dysfunctional schemas. Schemas are memory structures that contain two types of information: *beliefs* and *assumptions*. Beliefs are "core" constructs that are unconditional in nature (e.g. "I'm vulnerable"; "the world is a dangerous place") and are accepted as truths about the self and the world. Assumptions are conditional and represent contingencies between events and self-appraisals (e.g. "If I have unexplained physical symptoms, it means I must be seriously ill"). The dysfunctional schemas that characterise emotional disorder are thought to be more rigid, inflexible and concrete than the schemas of normal individuals (Beck, 1967), and schema content is supposed to be specific to a disorder. Anxiety schemas

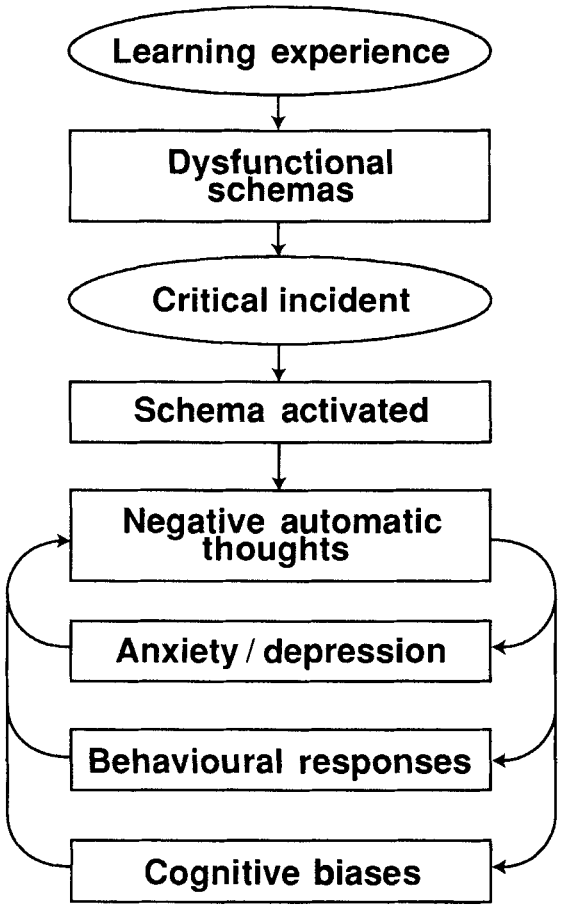

Figure 1.0 Generic schema theory of emotional disorder

are comprised of beliefs and assumptions about danger (Beck, Emery & Greenberg, 1985) and an inability to cope. In depression, schemas centre on themes of the "negative cognitive triad", in which early experiences provide the basis for forming negative concepts about the self, the future, and the external world (Beck, Rush, Shaw & Emery, 1979).

Once activated, dysfunctional schemas introduce biases in the processing and interpretation of information. These biases are manifested at a surface level as negative automatic thoughts (NATs) in the stream of consciousness. Negative appraisals of this kind are a manifestation of underlying cognitive mechanisms that maintain emotional disturbances.

Beck's theorising and description of emotional disorder phenomena within the schema framework still provides a rich and clinically useful account of psychological disturbance. However, problems with the schema theory and cognitive therapy have been highlighted by several recent theorists. For instance, Teasdale and Barnard (1993) summarise four difficulties, including evidence that negative thinking may be a consequence rather than an antecedent of depression, and that dysfunctional attitudes only appear elevated during depressive episodes and they return to normal with recovery. A further criticism is that the model only deals with one level of cognition and cannot deal with the distinction between "hot" and "cold" (i.e. emotional and intellectual) belief. Teasdale and Barnard go on to propose their own more comprehensive information-processing framework (interacting cognitive subsystems; ICS) for representing all aspects of cognition in depression maintenance, and for resolving the difficulties set out above.

However, it is premature to reject all of the basic principles of schema theory, and ICS, like most theories, generates its own set of difficulties, as discussed in Chapter 4. A useful principle of schema theory is that knowledge stored in long-term memory influences the content and nature of processing. By developing a theoretical framework that links the top-down influence of self-knowledge to important concepts such as self-regulation, and by viewing self-knowledge (beliefs) in a dynamic rather than a static way, the criticisms raised at schema theory begin to disappear. As Wells and Matthews (1994) point out, it is not helpful to view schemas as disconnected information that the therapist can erase and replace with more realistic propositions. People seem to construct and revise beliefs actively on the basis of internal rules. Thus, it is important to formulate the internal cognitive processes, rules and mechanisms that lead patients to arrive at maladaptive interpretations and beliefs. What is required is a comprehensive cognitive framework for representing interactions between self-knowledge and emotional disturbances.

There are other more fundamental theoretical limitations of schema theory, but these can also be resolved in a relatively straightforward fashion by reformulating the way knowledge is represented in information processing. Schema theory has focused almost exclusively on the content of appraisals and beliefs in emotional disorder, in which beliefs are represented in the human information processing system as declarative statements such as, "I am a failure"; "I am bad"; "I am vulnerable"; "I am physically ill". However, it is unlikely that knowledge is represented in this way. One of the arguments throughout this book is that we should begin to explore ways of representing beliefs and the effects of

appraisals in psychological disorder that are more consistent both with developments in cognitive psychology and with a view of the mind as a dynamic self-regulating system. In Chapter 2, we will see how one such model, the Self-regulatory Executive Function model (S-REF, Wells & Matthews 1994, 1996), views processing in dynamic and multi-level terms. Equipped with frameworks of this kind, we may begin to elucidate key processes involved in vulnerability to and maintenance of psychological disturbance. Moreover, this model not only provides details of what we should aim to do in cognitive therapy but also gives information on how cognitive change may be effectively achieved. Schema theory lacks the psychological sophistication to provide specific theory-based predictions on how best to modify beliefs, appraisals and emotions.

A crucial level of psychological explanation that is needed if we are to help individuals change their minds is the level that enables us to conceptualise the factors that control, correct, appraise and regulate thinking itself. This is the domain of metacognition. Furthermore, whilst the content of thought is undoubtedly important in determining the nature of psychological disturbance, *how* people think is an important dimension that has implications for psychological disorder and recovery. As we will see in Chapter 2, the model of emotional disorder presented by Wells and Matthews has directly linked metacognition and the form of thinking to emotional vulnerability and the maintenance of emotional disorder. Before describing and developing that model in Chapter 2, for the remainder of this chapter, we will be concerned with defining and understanding the general concept of metacognition and begin to establish links between metacognition and emotional disorder.

METACOGNITION

Metacognition is defined as any knowledge or cognitive process that is involved in the appraisal, monitoring or control of cognition (e.g. Flavell, 1979; Moses & Baird, in press). On one level, it can be thought of as a general aspect of cognition that is involved in all cognitive enterprises and some specific aspects of metacognition have been linked to psychological disturbances (Wells & Matthews, 1994; Wells, 1995; Nelson, Stuart, Howard & Crawley, 1999). Theory and research in metacognition has emerged predominantly through work in cognitive developmental psychology (Flavell, 1979) and interest in the area has spread to fields of neuropsychology, memory performance and ageing (Metcalfe & Shimamura, 1994).

Metacognition is a multi-faceted concept. It comprises knowledge (beliefs), processes and strategies that appraise, monitor or control cognition (e.g. Moses & Baird, in press). Most cognitive activities are dependent on metacognitive factors that monitor and control them. Moreover, the information that emerges from metacognitive monitoring is often experienced as subjective feelings, which can influence behaviour. For example, the "feeling of knowing" experience, a subjective sense that information has been encoded in memory, motivates efforts to retrieve information. An example of a strong and common metacognitive experience involving memory is represented by the "tip-of-the-tongue" effect, in which individuals experience a strong subjective sense that an item of information is stored in memory but is currently unretrievable. This effect has been explored experimentally and it is generally experienced as a mildly aversive state which leads individuals to continue retrieval efforts. Research on the accuracy of feeling of knowing shows that it is well above chance, but is far from perfect (Leonesio & Nelson, 1990)

A basic distinction has been made by most theorists between two aspects of metacognition: metacognitive knowledge and metacognitive regulation. Metacognitive knowledge is the information that individuals have about their own cognition and about task factors or learning strategies that affect it. Metacognitive regulation refers to a range of executive functions, such as the allocation of attention, monitoring, checking, planning, and detection of errors in performance (Brown, Bransford, Campione & Ferrara, 1983). The idea that metacognition controls and monitors general cognition implies a distinction between two cognitive levels.

Nelson and Narens (1990), have proposed that cognitive processes operate on two or more inter-related levels. These levels are known as the meta-level and the object level. Two processes are identified in their model that correspond to the direction of information flowing between the two levels, as depicted in Figure 1.1.

Information flowing from the object level to the meta-level is called *monitoring*, and this informs the meta-level of the state of the object level. Information flowing from the meta-level to the object level is called *control*. Control informs the object level what to do next. The meta-level contains a dynamic model (e.g. a mental simulation emphasising changes over time) of the object level. It is likely that this simulation will contain a goal and knowledge concerning ways the object level can be used to achieve this goal. However, a difficulty with proposing two levels is that

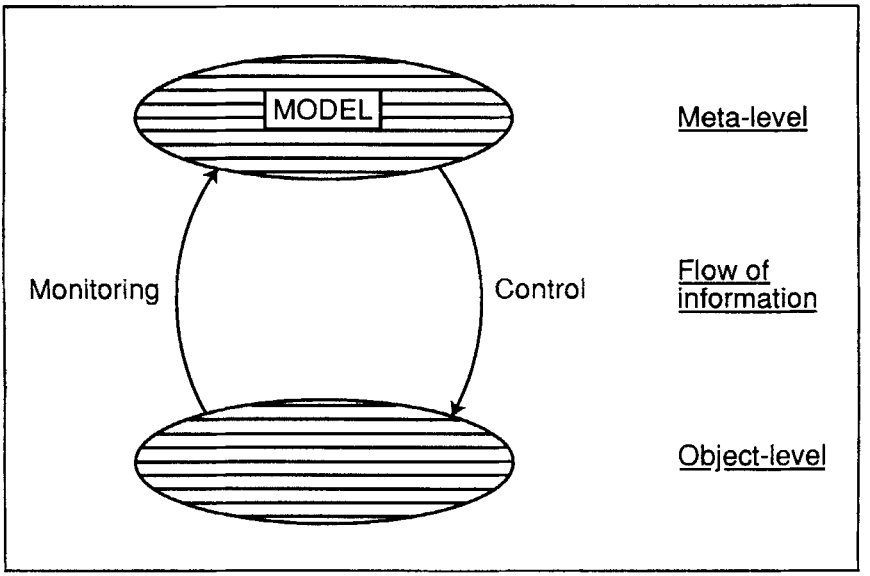

Figure 1.1 Nelson and Naren's (1990) Meta-level/object-level mechanism (adapted from Nelson and Narens, 1990)

it raises the question of what it is that controls the meta-level. One possibility is that the meta-level is controlled and modified by feedback from on-line processing, in which the individual appraises the effectiveness of particular cognitive and behavioural strategies in relation to activated goals, as in the S-REF model (Wells & Matthews, 1994).

The relationship between a meta-level and object level can be applied to understanding cognition in psychological disorder. As monitoring is the input process for an individual's self-regulation and control system, any inaccuracies or distortions in monitoring could contribute to psychological dysfunction. Similarly, control processes can change the object level by, for example initiating a new action, continuing or modifying a previous action, or terminating an activity. Thus, disturbances or biases in control, for example selection of certain (inappropriate) coping strategies, may contribute to psychological disturbance. The distinction between meta-level and object-level cognition and their dominance relation is a feature of the Wells and Matthews (1994) model of emotional disorder presented in the next chapter. In this model, choice and execution of coping strategies is a central determinant of the continuation or termination of psychological distress.

VARIETIES OF METACOGNITION

In earlier work (Wells, 1995), I have distinguished between three basic varieties of metacognition in understanding worry processes in Generalized Anxiety Disorder: (1) metacognitive knowledge; (2) metacognitive experiences; (3) metacognitive control strategies. In this section, each of these categories will be described and elaborated since they have particular conceptual relevance to exploring metacognition in emotional disorders.

Knowledge

Metacognitive knowledge refers to the beliefs and theories that individuals have about their own cognitions, such as beliefs about the meaning of particular types of thoughts, and beliefs concerning the efficiency of memory and cognitive control. It is useful to consider two types of metacognitive knowledge, explicit and implicit, particularly in the context of emotional disorder. *Explicit metacognitive knowledge* is that which is conscious and can be verbally expressed, for example individuals with generalized anxiety disorder believe that worrying is uncontrollable and dangerous, and more generally people appear to hold the belief that worrying can be advantageous (Wells, 1995; Cartwright-Hatton & Wells, 1997). Patients with obsessive-compulsive disorder believe that having certain types of thought will cause negative events or unwanted actions (Rachman, Thordarson, Shafran & Woody, 1995; Emmelkamp & Aardema, 1999; Purdon & Clark, 1999), and people with depression appear to have positive beliefs about rumination (Papageorgiou & Wells, in press (a)).

Implicit metacognitive knowledge is not normally amenable to consciousness and cannot be expressed in verbal form. These are the rules or plans that guide processing, such as attention allocation, memory search and use of heuristics and biases in forming judgements. As we will see in the next chapter, it may be useful to think of this knowledge as a procedure or plan for processing, and such metacognitive plans may be at least as important as declarative knowledge in emotional disorder.

Experiences

Metacognitive experiences include appraisals of the meaning of specific mental events (e.g. thoughts), metacognitive feelings themselves and

judgements of the status of cognition. Metacognitive appraisals and judgements can be defined as the conscious interpretations and labellings of cognitive experiences. They are the on-line manifestation of the use of metacognitive knowledge to appraise cognition.

Metacognitive experiences can be linked to emotional disorder in several ways. First, a range of disorders are associated with negative metacognitive appraisals and judgements. For instance, obsessive-compulsive patients appraise thoughts and memory phenomena in a negative way, and several disorders are associated with catastrophic appraisals of negative thought intrusions [e.g. generalized anxiety, post-traumatic stress disorder (PTSD), depression, panic, obsessional disorder]. Nelson, Kruglanski and Jost (1998) identify two different types of information that provide the basis for metacognitive judgements: momentary feelings or impressions, and lay or implicit theories that are more enduring. We saw above how one type of theory represented as beliefs about thoughts may be linked with psychopathology. Schwarz and Clore (1983, 1988) suggest that people use feelings as information for appraisals and judgements. Wells and Matthews (1994) have applied the notion that feeling provide metacognitive information in psychological disorder. In particular, on an implicit level, emotion may bias selection of plans for processing: more explicitly, emotionally disordered patients tend to use feeling-based information as a guide to appraising threat and for regulating the execution of coping strategies. For example, obsessive-compulsive patients may repeat a ritual until they "feel certain" that it has been completed correctly. Subjective feelings can be subject to different interpretations, and therefore the meaning of feelings and their influence on processing operations are likely to be mediated by self-knowledge. In a demonstration of the effects of interpretations of feelings on cognition, Clore and Parrott (1994) induced feelings of uncertainty by hypnosis; some subjects were led to believe that hypnosis had caused the feelings, other subjects were given no attribution. Subjects were then asked to read and rate the extent to which they understood a poem. Feelings of uncertainty influenced poem comprehension but only in the absence of the external attribution.

Metacognitive control strategies

Metacognitive control strategies are the responses individuals make in controlling the activities of their cognitive system. These strategies may intensify or suppress thinking strategies and may be directed at enhancing monitoring processes. In everyday life, people use strategies ranging