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0521833914 - Cognition, Emotion and Psychopathology: Theoretical, Empirical and Clinical Directions

Edited by Jenny Yiend

Excerpt

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An introduction and synthesis

Jenny Yiend

It will not escape the reader's notice that the inspiration for this volume is our friend and colleague, Andrew Mathews. It was my intention at the outset of the project to bring together a collection of researchers in the field of cognition and emotion who have been taught by, worked with or been heavily influenced by Andrew. The enthusiasm and readiness to participate that I encountered is testament itself to the high esteem in which Andrew is held, and this is also reflected in the many personal tributes scattered throughout the book. For those less familiar with Andrew's history, Tom Borkovec, a long-standing colleague and friend, provides a fascinating and more personal overview of Andrew's contributions to the field, from his clinically oriented early work, through his seminal findings and theorizing on cognitive biases, to his latest theory and present interests in the experimental modification of biased processing.

It is a tribute to the extent of Andrew's influence that contributors to this volume span a wide range of approaches. This is reflected in the structure of the book, which is organized around the scientific progression from theoretical conception, through experimental verification, to application in the clinic. These divisions are inevitably somewhat arbitrary, given that in this field most of us are typically concerned with all three domains. Indeed, some contributions would sit equally comfortably in any section. Thus, rather than being at all exclusive, the structure is instead intended to reflect authors' primary orientations towards the field, be it clinical, theoretical or empirical.

Scope of this volume

A glance at the current peer-reviewed literature shows that the field has indeed moved on, not merely in time, but crucially in content. There is a wealth of new information to be assimilated. In Part I (Theoretical approaches) Mineka starts by presenting a new theoretical model of generalized anxiety disorder (GAD), which draws together the literature on worry and the animal work on conditioned fear and avoidance. Eysenck

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considers the relative contributions of trait anxiety and repression to the cognitive bias literature and proposes new refinements to his 1997 model. Mogg and Bradley review their recent cognitive-motivational account of mood disorders and discuss relevant new data from their laboratory. Finally, Fox summarizes data in support of her ideas about the mechanisms underlying attentional biases.

Part II (Empirical directions) focuses on recent work reporting important new findings that have the potential eventually to impinge in both directions, upon theoretical models as well as on clinical practice. Hertel opens with some fascinating new data from her own laboratory, demonstrating the elusive memory bias in anxiety following an interpretative training manipulation. She follows this up with a theoretical discussion addressing, amongst other things, why memory biases may have proven hard to find in anxiety, but not depression. Using a transfer-appropriate processing framework, she suggests that a critical factor may be the use of tasks that are sensitive to cognitive habits. Richards focuses too on the resolution of ambiguity and sets this within the wider literature on text comprehension. She describes the recent expansion of this work to explore more ecologically valid materials, such as facial expressions, as well as the influence of the context or setting within which such interpretations occur. The increasing application of functional imaging techniques is set to be a growth area within our field, as in many others, and the chapter by Lawrence, Murphy and Calder reflects this. They describe both functional imaging and neuropsychological data relevant to the processing of fear and disgust, and highlight the implications of these data for current theoretical approaches to emotion. The last two contributions to this section cover the burgeoning work on experimental modification of cognitive biases that Andrew Mathews has himself been heavily involved in over recent years. These new 'training' methodologies are allowing us to assess directly for the first time the causal status of cognitive biases. This is described in the MacLeod, Campbell, Rutherford and Wilson chapter, where they review the evidence for a causal link between biased processing and cognitive disorder, in the light of these new data. Finally, Yiend and Mackintosh outline the ongoing programme of research into interpretative bias modification that Mathews' lab has been engaged in over recent years.

Part III (Clinical perspectives) concentrates on research and theory that is approached from a primarily clinical angle. Many of the contributions in this section provide examples of the transfer of ideas from research into practice. For example, Huppert and Foa discuss how their emotional processing theory might be integrated with Mathews' own latest model and applied to the treatment of social anxiety disorder. Staying with social

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anxiety, Hirsch and Clark describe recent work exploring the seemingly powerful role of mental imagery in treatment. Williams gives an overview of over-general autobiographical memory and its implications for clinical practice. Teasdale gives a summary of mindfulness-based cognitive therapy, as well as an update on the latest treatment trial results. In the final chapter, Butler rounds off by presenting a clinician's view of current research priorities. She highlights several areas, including comorbidity and treatment-failure rates, which can be overlooked by non-practising academics, but which need to inform the future research agenda.

Emergent themes

The overall scientific goal of the book is to provide an account of current research in cognition and emotion, particularly that having implications for clinical conditions, and to set out an agenda for productive future work in the field. In keeping with this purpose, I will attempt, in the latter half of this introduction, to draw out some common themes arising from the many excellent contributions in this volume that researchers might focus on over the coming years.

There are several theoretical themes running through a number of chapters. The most general of these is the trend to focus on issues of *process*, as opposed to, say, the content of material undergoing that process. Delineating the precise nature and characteristics of the cognitive processing undertaken by the individual appears crucial to current thinking. That is, a given cognitive operation may be performed in a number of different ways, or be made up of different specific elements, which researchers need to delineate. There are many examples of this in the present volume. Conceptualizing attention as a series of operations involving, for example, engaging and disengaging is a case in point. Fox's chapter is an elegant example of how such an approach can reap rewards in terms of a more detailed characterization of the nature of, in this case, anxiety-related processing differences. Similarly Hertel, in her discussion of memory bias, shows that in our experimental design we might inadvertently constrain processing, such that memory biases in anxiety, but not depression, for example, remain unobserved. Mathews' own work on training has thrown up an apparently important distinction of process, such that different techniques of encoding – generative or passive – have different clinically relevant mood consequences.

That the nature of cognitive processing matters is of no surprise to cognitive psychologists, but the issue is more specific than this. We need to focus more research effort on characterizing the components and mediators of cognitive operations and on understanding how these lead to

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clinically important differences in mental products. Imagery, for example (see Hirsch and Clark), has the potential to produce effects across cognitive domains and could therefore be important in a variety of operations, including attention, encoding and memory. Teasdale's notion of mindful attention also illustrates the point. Here, it is the *manner* in which attention is deployed towards unpleasant information that determines whether the consequences for vulnerable individuals will be beneficial or detrimental. One of the challenges for future years, then, will be to continue to identify the precise aspects of a given process that are critical to an emotionally relevant outcome and to identify how to conceptualize and measure these features.

Another broad topic that is likely to become increasingly prominent is the issue of *cognitive control*. In previous years, there has been considerable interest in the degree of automaticity of cognitive biases, especially within attention. Now that we have a corpus of literature exploring the extent to which biases operate automatically, interest is shifting towards the degree to which they can be controlled. The emergence of attentional and interpretive training paradigms, from the laboratories of MacLeod, Mathews and others, demonstrates that biases are amenable to control and raise questions about the mechanisms underlying those changes. Similarly, Teasdale's application of mindfulness to relapse prevention in depression implies a level of cognitive control that warrants further characterization. Imagery (see Hirsch and Clark) is another example of a process that can be influenced by simple instruction and presumably the effects are mediated by conscious intent. As psychologists in general are becoming less afraid to address the 'last frontier' of consciousness, so too can cognitive clinical researchers begin to consider similar questions in the context of processing in emotional disorders. This will doubtless be assisted by the availability of functional imaging, which allows us for the first time directly to observe and quantify concepts such as mental resources, effort and intent.

A third, related, but somewhat more specific, theme that looks set to develop further over coming years concerns the potential importance of *avoidance* in emotional processing. Mogg and Bradley provide us with the most detailed discussion of this issue in the present volume. They explicitly consider the possibility of reversal of attentional biases for threat in the context of their cognitive-motivational model and explore possible factors that might mediate this, such as effort (see above), and the evolutionary need for escape. Cognitive avoidance has been found in specific phobias, social anxiety, repressors and low anxious individuals, and the need to incorporate these data into our theoretical understanding of processing biases is increasing as the data continue to accumulate. Indeed,

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Eysenck's four factor theory already predicts that in responding to ambiguity repressors show a vigilant-avoidant pattern. Interestingly, in this volume, he goes on to speculate that this pattern may account for repressors' paradoxical autonomic versus experiential profile: initial vigilance could lead to behavioural and physiological anxiety, while subsequent avoidance might be responsible for the absence of any conscious experience of distress. The relevance of avoidant processing is picked up again by Teasdale. In discussing mindfulness, he proposes that in disorder, attention to negative material may be driven by an underlying motivation to avoid the associated unpleasantness. In contrast, one mechanism of mindfulness may be to teach an approach motivation, involving positive orientation towards such material, one that promotes acceptance rather than avoidance. Avoidance is also an important component in Mineka's new learning theory perspective on GAD. She suggests that we can better understand the persistent and uncontrollable nature of worry in this disorder by conceptualizing worry as a cognitive avoidance response, which is then both negatively reinforced (for example, by a reduction in somatic symptoms) and punished. Consideration of the learning theory literature suggests that punishing an *avoidant* response leads to a paradoxical increase in that behaviour, which, in the case of GAD, is consistent with increased worry and the perception of uncontrollability. Thus, both theoretically and empirically, the role of avoidance in cognitive processing is likely to be a recurring feature in future work.

Another emerging issue is the potential importance of the *context* in which cognitive operations occur. In the rigorously controlled environment of the laboratory it can be too easy to forget that real world cognition occurs within a contextual setting, which may or may not have the power to influence processes and their outcomes. Richards' work on contextual effects of ambiguity resolution gives us an excellent example of how important context might actually be, finding, as she does, that context effects can in fact override individual differences. Similarly, as training methodologies move further towards clinical application, it becomes increasingly important to examine their efficacy outside of the laboratory. Likewise, Huppert and Foa's discussion of social anxiety acknowledges the importance of invoking multiple contexts to achieve maximally effective treatment outcome. Future work is very likely to continue this trend for a broader perspective on cognitive–emotional interactions.

Comparisons between *different emotions* is a topic as old as any within psychology. Nevertheless, it is acquiring renewed interest within the cognitive–emotional literature, as the chapter by Lawrence, Murphy and Calder illustrates. In turn, this trend is likely to impact upon the clinical-cognitive field. Whereas our earlier focus was on issues of content

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specificity, such as whether attentional biases applied uniformly to negative material or uniquely to threat, we are now starting to focus on more discrete emotion categories. This is complemented by methodological shifts, such as an increasing use of facial expressions as stimuli. Fox, for example, speculates that angry and fearful facial expressions both constitute a threat to the observer, but have different directional implications, with anger being directed towards the observer and fear being directed towards the environment. The implications of this for cognitive processing remain to be determined. It is also likely that other emotions, such as disgust, which to date have been largely ignored within cognition and emotion may become more prominent, especially given links such as that between disgust and obsessive-compulsive disorder (OCD). Lawrence et al. provide a good starting-point for the interested researcher.

The importance of prior *trauma* in the genesis of emotional disorder is another topic of widening interest. Here, this is represented by, for example, Hirsch and Clark's discussion of early traumatic social episodes. They suggest that such trauma may be the original source material from which the potent negative imagery is constructed, and that subsequent avoidance (see above) may prevent updating in the presence of disconfirmatory information. Williams also highlights the role of trauma in producing the over-general autobiographical memory associated with depression. He concludes from the data that previous traumatic experience is necessary, but not sufficient, to produce the effect, but also points out that over-generality could be a vulnerability factor, pre-dating the trauma itself. Either way, the severity of the trauma appears to be the critical factor mediating the degree of subsequent over-generality. Could it be that trauma, and the individual's response to it, may turn out to have a crucial role in a range of pathologies, in addition to post-traumatic stress disorder (PTSD)? More research is clearly needed, but if we could identify such a substrate linking ostensibly different pathologies, then we would be making a significant step forward.

This leads us to the question of *comorbidity*. As Butler points out, practising clinicians have to confront this reality and its attendant problems on a daily basis. However, it has not historically been at the forefront of the research agenda. The time is right to redress this. Mogg and Bradley are heading in this direction by attempting to explain the paradoxical absence of attentional biases in comorbid anxiety and depression. They describe the interaction between the putative processes of valence evaluation and goal engagement in their cognitive-motivational model. They suggest that the amotivational state associated with depression leads to poor goal engagement, so that the attentional consequences of negative valence evaluations are not displayed, despite the attendant anxiety. Although

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there is clearly still a long way to go, the potential gains of understanding comorbid presentations are large. After well over a decade of characterizing the cognitive processing of specific pathologies, researchers should now be in a position to explore the reasons for, and implications of, the widespread co-occurrence of apparently different pathologies.

As this last point demonstrates, there is a continued need for a synthesis between clinical and research priorities. Practising clinicians need to stay in touch with advances in relevant cognitive research and apply them where they can. Similarly, researchers need to be aware of the needs and concerns arising from the clinic. One of the aims of this edited collection is to encourage this synthesis, by representing views from a variety of perspectives. In doing so, it also provides an up-to-date picture of the field today. Finally, it is hoped that this volume will, in some small way, assist in marking out a path for researchers and clinicians over the next decade.

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Andrew Mathews: a brief history of a clinical scientist

T. D. Borkovec

On a cold, cloudy, dreary day in June of 1939, Andrew Mathews was born in Farnborough Hospital, just outside of London. No one suspected at the time that he was destined to become one of the leading clinical scientists of his generation. I am guessing about the meteorological conditions of his first appearance on earth, but I lived in London while working at the Institute of Psychiatry for three summer months in 1978, during which time I saw the sun on exactly three days. So I am fairly confident about the cold, cloudy, dreary bit. Everything else is certainly true.

I am uncertain about the cosmic significance, if any, of that particular summer spent in London, but I do know that the brightest spot in my stay involved meeting Andrew for the first time. He was Chair of the British Association for Behavioural Psychotherapy, and I had written to ask whether I might come to the Association's annual meeting in Sterling, Scotland, so that I could present some of my research and have the opportunity to meet British clinical psychologists at the beginning of my stay in England. He graciously agreed to schedule something for me. So began a cherished friendship and collaboration that has lasted for a quarter of a century.

Andrew grew up educationally at the University of London, where he received his B.Sc., Dip.Psych. (Clinical Qualification, Institute of Psychiatry) and Ph.D. From 1969 to 1976, he was a Senior Research Psychologist in the Department of Psychiatry at the University of Oxford, where he had a lovely vineyard in his backyard, whose wine was not too bad. He held the position of Chair of the Department of Psychology at St George's Hospital Medical School from 1976 to 1988, living in a lovely home on the Thames. This home would later play a significant role in both of our histories. From 1988 to 1992 he was a Professor of Psychology at Louisiana State University. He returned to the United Kingdom in 1992, as a Medical Research Council Senior Scientist at the Cognition and Brain Sciences Unit (formerly, the Applied Psychology Unit) in Cambridge, where he has been ever since. The external world has recognized the significance of his work with two prestigious awards:

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Andrew Mathews: a brief history

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The British Psychological Society's President's Award for Distinguished Scientific Contributions to Psychology (1993) and The American Psychological Association, Society for the Science of Clinical Psychology, Distinguished Scientist Award (1995). The basis of such awards can be found within the 5 books, 18 book chapters and 106 journal articles that he has produced during his career thus far. I am getting ahead of myself, however.

Andrew and I are from the same generational cohort. We became graduate students in clinical psychology at the dawn of behaviour therapy, so we have had the privilege of observing and periodically participating in nearly its entire history. The 1960s were wonderfully exciting times, because everything seemed possible from this new point of view, and there were seemingly unlimited opportunities for research and treatment development from this new perspective.

Early behaviour therapy rested on two important and fundamental ideas. First, it insisted that the best way to understand psychological problems and to develop effective therapies based on such understandings resided in the application of known principles of human behaviour. It just happened to be the case that the best-known principles at that time came from the operant and classical conditioning literatures. Second, this movement committed itself to the experimental evaluation of the efficacy of newly developed therapy techniques. Within the prevailing psychodynamic and experiential traditions of this time, both of these were remarkably radical ideas. And they were ideas that eventually yielded very important results. It now seems amazing that, when Andrew and I were graduate students, the practising community considered panic attacks and obsessive compulsive disorder to be untreatable! The relative success of the subsequent work based on these early behaviour therapy ideas is clearly evident in the current existence of several empirically supported treatments (e.g. Chambless & Ollendick, 2001), the majority of which are grounded in applications of those very same, early-learning principles. Exposure therapies and operant reinforcement and extinction procedures make up the bulk of methods contained in these validated approaches. This is an important point to which I will much later return in commentary about Andrew's significant contributions to our field.

Andrew's research career really has two distinct phases. The first phase lasted until the mid-1980s. I will call this phase 'Andrew's Wanderings in the Desert'. There was so much to do in the early days and so many questions to address with research. In terms of overall approach, his work during this time was reflective of behaviour therapy's original empirical commitment, in that it was characterized by an ideal combination of therapy outcome studies and laboratory studies designed to acquire basic

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knowledge about the nature and mechanisms of psychological disorders. In terms of content, Andrew's passion focused on anxiety and behavioural medicine. Although some of his earliest work involved investigations of epilepsy (Scott, Moffett, Mathews & Ettliger, 1967), tics and Gilles de la Tourette's syndrome (Connell, Corbett, Horne & Mathews, 1967; Corbett, Mathews, Connell & Shapiro, 1969), he was already showing signs of a systematic and programmatic interest in the anxiety disorders. At first, working with Malcolm Lader and Michael Gelder, that interest had a decidedly physiological thrust in both theory development (Lader & Mathews, 1968) and empirical work (Lader & Mathews, 1968, 1970a, 1970b, 1971; Mathews & Gelder, 1969; Mathews & Lader, 1971), culminating in his brilliant *Psychological Bulletin* article on the psychophysiological mechanisms of systematic desensitization (Mathews, 1971). One of his conclusions from that review of the extant literature on desensitization was that the presence of a relaxed state during phobic imagery presentations likely produced three important effects facilitative of extinction process: increased vividness of the imagery, augmentation of the autonomic effects of the imagery, and maximization of response decrement to repeated exposures to the feared stimuli. It is striking to recognize how similar this perspective was in significant ways to the highly influential neo-behaviouristic model of fear reduction via emotional processing proposed fifteen years later by Foa and Kozak (1986). Andrew's article also had a profound effect on my way of thinking about desensitization and the kind of research that I would pursue for the next few years. Our group's series of investigations culminated in a component control study designed explicitly to test Andrew's conclusions by contrasting hierarchical imaginal exposures during contiguous relaxation, exposures with noncontiguous relaxation, exposures alone and no-treatment, while heart rate reactions to the images were monitored during the five sessions of therapy for speech anxiety. The results unequivocally supported all three of Andrew's hypothesized effects of relaxation (Borkovec & Sides, 1979). I presented these results for the first time at the British Association for Behavioural Psychotherapy in Sterling, Scotland, June, 1978.

Andrew's research and writing during the mid-1970s and early 1980s continued to focus on basic research on anxiety disorders, as well as on clinical descriptions of exposure-based therapies and on experimental outcome investigations of their efficacy. This work primarily involved phobias (e.g. Mathews & Rezin, 1977; Mathews & Shaw, 1973) and especially agoraphobia (e.g. Cobb, Mathews, Childs-Clarke & Blowers 1984; Johnston, Lancashire, Mathews, Munby, Shaw & Gelder, 1976; Mathews, 1977a, 1977b, 1984; Mathews, Johnston, Lancashire, Munby, Shaw & Gelder, 1976; Mathews, Teasdale, Munby, Johnston & Shaw,