

NEW HOT PAPERS - 2009

July 2009



Andrew Mathews & Colin MacLeod talks with *ScienceWatch.com* and answers a few questions about this month's New Hot Paper in the field of Psychiatry/Psychology.



Article Title: Cognitive vulnerability to emotional disorders

Authors: Mathews, A;MacLeod, C

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SW: Why do you think your paper is highly cited?

The high citation rate likely reflects two main factors. First, it reviews recent research linking clinical disorders with experimental cognitive psychology, and so may be of interest to workers in both areas. Second, it has theoretical and applied implications: for new explanations of emotional disorders, based on biases in basic cognitive processes such as attention and interpretation; and for new approaches to treatment by changing these biases.

SW: Does it describe a new discovery, methodology, or synthesis of knowledge?

This paper is a review article of recent research discoveries and methods, but its principal contribution is to synthesize this knowledge. We reviewed findings on selective attention, interpretation, inhibitory control, and associative memory that have been used in previous attempts to explain specific emotional problems and bring them together to provide an overall account of how selective processing biases may cause and/or maintain emotional pathology.

SW: Would you summarize the significance of your paper in layman's terms?

Emotional states such as depression and anxiety are accompanied by particular ways of thinking and seeing the world (e.g. whether your glass is half full or empty). Some psychiatrists, such as Aaron Beck, of the University of Pennsylvania, have long argued that negative ways of thinking actually cause emotional disorders.

This paper reviews recent research evidence that biases in how information is processed in the brain—biases of which we are not usually aware—can influence what we attend to and how we interpret and remember events, and thus influence both our thoughts and emotional state. This evidence has implications for understanding why

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emotional problems persist despite being unwanted, and for helping to improve them by retraining these underlying biases in a more positive direction.

SW: How did you become involved in this research, and were there any problems along the way?

We have been close collaborators for 25 years, during which the information-processing approach to emotional pathology has developed from a relatively obscure area of specialist interest, to become a major research focus for clinical and cognitive psychologists alike.

Andrew Mathews trained in clinical psychology before moving to more basic research on cognitive aspects of anxiety and depression. Colin MacLeod began as a cognitive researcher, before becoming interested in clinical problems and cognitive aspects of emotion. We first came to work together when Mathews recruited MacLeod to a research position in 1983. Despite our subsequent independent relocation to different continents, we have continued our collaboration.



*Coauthor
Colin MacLeod*

SW: Where do you see your research leading in the future?

At present, cognitive therapy for emotional disorders seeks to change dysfunctional thinking patterns by having people consciously monitor their styles of thinking, and deliberately changing them. Such approaches have proven therapeutic value but they also have limitations. Not all thoughts are amenable to deliberate control, and not all individuals are capable of maintaining this control, especially when under stress.

An exciting aspect of our present work is the development of indirect cognitive bias modification methods, designed to change styles of information processing through extensive practice in simple tasks designed to encourage automatic selection of more positive meanings. Using these methods will allow investigation of many important questions about the underlying mechanisms of emotional disorders, and the integration of cognitive bias modification procedures into clinical practice.

SW: Do you foresee any social or political implications for your research?

Every year, around 12% of the population suffers from clinical depression or anxiety. In addition to the distress they cause to individuals and their families, these emotional disorders also incur significantly direct and indirect economic costs, which exceed \$65 billion per annum in the US alone. Our research, together with the other work reviewed in this paper, is intended to increase understanding of the causes of such disorders, and to enhance their prevention and remediation, with attendant benefits to all members of society.

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