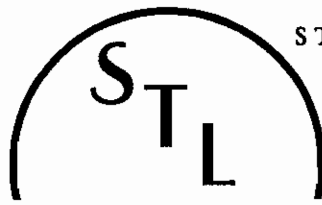

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Sesame. Bad decisions are given when the judge has muddled the password and the wrong door opens. But we do not believe in fairy tales any more.

One of the reasons that Weinreb's account of the use of analogy in legal reasoning is important is precisely because it helps to explain how judges can make law in novel or controversial areas so as to hold the executive or legislature to account without usurping their functions. Weinreb's argument is concise, cogent, and generally persuasive. It also benefits from an exceptionally clear style of prose. The author is to be congratulated not only on having written a book which reasserts so powerfully the centrality of analogy in common law reasoning, but on having done so with a clarity and brevity which leaves no serious student of the common law with a legitimate excuse for failing to read it. It is just a pity that the author does not quite muster the courage of his own convictions.

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Emotional Intelligence: Science and Myth. Gerald Matthews, Moshe Zeidner, and Richard Roberts. Cambridge, Massachusetts: MIT Press, 2004, 697 pages, $30.00 softcover.

Reviewed by Glenn Geher and Erica C. White, State University of New York at New Paltz

Emotional Intelligence: Science and Myth, written by Gerald Matthews, Moshe Zeidner, and Richard Roberts, provides an evaluation of and comment on the notion of Emotional Intelligence (EI) that is unmatched in depth, coherence, and importance. This book, weighing in at well over 600 pages, provides an extraordinary critique of EI from a variety of perspectives. In the end, the reader is left with a thorough understanding of issues that pertain to the potential utility of EI in current psychology as well as the validity of this construct.

Is EI a reasonable, useful, novel construct? According to Matthews, Zeidner, and Roberts the answer is seemingly a qualified "it depends on what you mean by EI." The primary purpose of this book is to present different frameworks for understanding EI in both historical and conceptual contexts moving toward the development of a unified, coherent, consensual conceptualization of EI. The authors are certainly well-situated to present such an analysis and include intelligence (Roberts), emotions (Zeidner), and cognition (Matthews) experts. This combination allows for an assessment of EI that provides insights from the broader areas of psychology that conceptually pertain to this construct.

From the outset, the book takes a highly critical tack. Is EI a novel, useful, coherently defined construct that reasonably exists in psychology proper, or is EI, rather, simply a reframing of existing constructs in psychology that has much popular appeal? This question, addressing EI as both science and popular psychology, permeates the nature of the authors' critique. This book is organized with three major divisions: an *introduction*, a section on *individual differences in emotion and adaptation*, and a section on *applications* of EI. This review addresses these sections in turn.

Introduction

Matthews, Zeidner, and Roberts define EI as the "competence to identify and express emotions, understand emotions, assimilate emotions in thought, and regulate both positive and negative emotions in the self and in others" (p. 1). This

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definition is clearly rooted in Mayer, Salovey, and Caruso's (2000) four-branch, hierarchical, ability-based model of EI. This model is the result of years of work on EI that started with Salovey and Mayer's (1990) paper, which delineated the conceptual components of this construct. Throughout the 1990s, and into the current decade, Salovey, Mayer, and their collaborators have implemented many studies comprising a research program designed to develop and define this construct. This work is generally considered by the authors as scientific, if not always fully valid.

Throughout the introduction, however, the authors also present alternative, popular conceptualizations of EI that are less supported by rigorously collected data and are perhaps less rooted in extant theoretical schools of thought. In particular, the authors are highly critical of Goleman's popularized version of EI which suggests that EI is an extraordinarily broad construct comprising both ability-based and dispositional qualities. Such qualities include impulse control, empathy, ability to regulate one's own mood, and a variety of other constructs. The constructs in this conceptualization include both ability and trait-based sub-constructs. That fact has led some authors to label his (and other similar models) as "mixed models" (Mayer, Salovey, and Caruso, 2000) as Goleman's model includes a mix of abilities and traits. The authors refer to this model as both "sweeping . . . and . . . overinclusive" (p. 11). Further, the authors criticize Goleman's model on empirical grounds arguing that "Goleman's research . . . seems to lag [behind] that of other researchers . . ." (p. 13). A general criticism of Goleman's model is provided in the introduction, where the authors contend that:

> in a linguistic sleight of hand that fails to match either data or theory (not to mention accepted standards of logical inference), he [Goleman] comingles personality, ability, and motivational constructs to explain why EI rightfully constitutes a legitimate form of intelligence. (p. 14)

In addition to the Mayer, Salovey, and Caruso (2000) and Goleman (1995) conceptualizations of EI, Matthews, Zeidner, and Roberts summarize Bar-On's (2000) framework for understanding EI. Like Goleman's perspective, Bar-On's perspective suggests that EI is comprised of "non-cognitive skills" that pertain to one of five sub-types including *intrapersonal intelligence*, *interpersonal intelligence*, *adaptability*, *stress management*, and *general mood*. While the authors acknowledge that Bar-On has provided support for his model in several validation studies examining reports from several thousand participants, the authors are generally critical of Bar-On's model, and argue that his measure, the EQ-i (Emotional Quotient Inventory), does not clearly "measure any construct that is not already captured in existing personality measures" (p. 16). In short, this critique suggests that EI is in fact no more than a re-labeling of existing constructs. Matthews et. al argue that EI as a construct does not help us predict variability in relevant observable phenomena (emotion-relevant behaviors) above and beyond variability explained by a battery of existing constructs.

As the authors end their introduction, they leave the reader with a critical foundation for considering the utility of any framework for understanding EI. The reader also feels compelled to continue so to more fully consider issues bearing on the utility of EI.

The chapters that address "Conceptualization and Measurement" break EI into its elements and consider these fundamentals in contexts of existing bodies of work in psychology. From a scientific perspective, Matthews, Zeidner, and Roberts (quite reasonably) argue that indices of EI need to be examined in light of issues pertaining to reliability and validity. Importantly, the authors point out that the symbiotic relationship between construct development and measurement development needs to be carefully considered in examining whether EI is indeed a reasonable construct from a psychometric perspective. For instance, they prompt the reader to consider the issue of "item content." For items in an index of EI to be "content valid," they need to reasonably and clearly reflect the underlying components of the construct. However, given the heterogeneous nature of frameworks for understanding EI, the authors raise the point that "In the case of EI, it is unclear what a prototypical EI item should look like" (p. 37). In other words, large-scale publication of EI measures may well represent a premature endeavor given the infancy that characterizes the development of conceptualizations of EI. Before the large-scale creation of measures of EI, the authors argue, a case has to be made to support the idea that EI is generally a novel construct that is conceptually distinct from prior constructs (e.g., social intelligence). Throughout the book, Matthews, Zeidner, and Roberts question whether the discriminant validity of any conceptualization of EI has been documented strongly enough to warrant the endorsement of this idea among academic circles.

Additionally, this first section of the book focuses on how conceptualizations of EI mesh with conceptualizations of general intelligence. The authors point out that Goleman's (1995) popular account of EI was partly designed as a rebuttal to Herrnstein and Murray's (1994) treatise outlined in *The Bell Curve*. Herrnstein and Murray's work, which provides a conceptualization of general intelligence as both (a) vital for effective function and (b) generally immutable, underscores the important role that traditional intelligence plays in functioning at both the individual and societal levels. In responding to this thesis, Goleman used the notion of EI to provide an alternative. Perhaps traditional intelligence is not as important as EI in determining the success of individual functioning, Goleman argues. In his broad framework for understanding EI, Goleman (1995) pointed out several cases in which variability on dimensions that seem more pertinent to EI than traditional intelligence predicted success in career-related and social outcomes. It was this argument, delineated effectively by Goleman, that was so appealing to Americans who consumed his work in large numbers; his thesis is in fact considerably more optimistic than that of Herrnstein and Murray.

However, according to the authors, Goleman "pays only rather minor lip service to intelligence research" (p. 82). Compared with Goleman's portrayal of intelligence, the authors attempt to "provide the reader with a balanced [and mature] account of major issues . . . that over a century of research into cognitive abilities has [provided]" (p. 83). In summarizing work on intelligence, the authors provide several problems for actually conceptualizing EI as a form of intelligence. For instance, the authors argue that for an index of EI to reasonably be considered as tapping some form of intelligence, that measure should reflect the "positive manifold" principle which basically states that the index should have at least a moderate positive correlation with extant, valid measures of *g*. The authors go on to point out that in general, indices of EI have not demonstrated this principle of positive manifold. Further, models of intelligence that incorporate multiple subtypes have not generally been modified so as to include EI as a distinct concept. Such omission, according to the authors, is based on the inability of EI to emerge as a unique and useful construct in factorial studies.

The "Conceptualization and Measurement" subsection also includes a chapter devoted fully to emotions, reflecting another basic area of psychology that under-

lies EI. The impetus of this chapter is largely to address the question of whether EI is consistent with existing theories dealing with emotions. The short answer is "no." Speaking to this idea, Matthews, Zeidner, and Roberts contend "EI does not leap out at us as a necessary concomitant of emotion theory" (p. 134). In making this point, the authors provide much context, starting with philosophical and conceptual perspectives on emotion. One important line of thinking pertains to the notion that emotions are somehow non-cognitive in nature (e.g., Izard, Fine, Schultz, Mostow, Ackerman, and Youngstrom, 2001). To the extent that EI includes cognitive competencies (as *some* models of EI suggest), evidence supporting such a separatist treatise of the relationship between cognitions and emotions speaks against the utility and validity of EI.

The primary concern of Matthews, Zeidner, and Roberts is that research on emotion generally reveals a complex dimensional characterization. For instance, Russell, Weiss, and Mendelsohn (1989) provide strong evidence that emotion is multidimensional and is well-described by the dimensions of "pleasant/unpleasant" and "calm/aroused." Regardless of this, conceptions of EI tend to consider EI abilities (e.g., perception of emotion) in manners that gloss over the complexities inherent in emotions; EI theorists generally do not suggest that EI abilities vary across dimensions of the emotional experience. For instance, Mayer, Caruso, and Salovey's (2000) ideas about individual differences in the identification of emotions (proposed as basic to their conception of EI) say nothing about differences in the ability to identify different dimensions of the emotional experience.

Matthews, Zeidner, and Roberts note that one of the more established conceptualizations of EI, Bar-On's model, includes proclivity toward positive affect as a basic component. However, the authors cite several instances in which a heightened proclivity toward *negative* affect may actually be most adaptive. In the authors' words, ". . . we cannot simply identify EI with a sunny disposition" (p. 170). Matthews, Zeidner, and Roberts generally prescribe that researchers develop constructs and measures of EI that more accurately reflect the voluminous research into emotions.

After considering existing bodies of scholarship regarding intelligence and emotion, the authors explore EI in the context of psychometrics. Given the importance of effective measurement in modern, empirically based psychology, the chapter focusing on measurement is perhaps the most important. Basically, Matthews, Zeidner, and Roberts divide measures of EI into two categories: performance-based and self-report. Performance-based indices include the Multifactorial Emotional Intelligence Scale (MEIS; Mayer, Caruso, and Salovey, 2000) and the intellectual offspring of the MEIS, the Mayer, Salovey, and Caruso (2000) Emotional Intelligence Test (MSCEIT [pronounced *mesquite*]). These measures are derived from these researchers' four-branch model of EI which include, from basic to higher levels, *perceiving/identifying emotions*, *assimilating emotions into thought*, *understanding emotions*, *and managing emotions*. Emotional Intelligence scores are computed by examining the degree to which participants' responses agree with responses of either other participants or of emotion experts.

Generally, Matthews, Zeidner, and Robert's findings regarding the value of the MEIS and MSCEIT are mixed. Reliability analyses suggest low internal reliability for the MEIS but improved reliability for the MSCEIT. Importantly, convergent and discriminant validity studies have found that EI scores based on these indices are moderately correlated with indices of cognitive intelligence and are generally uncorrelated with scores on personality measures. Further, factor analytic studies have provided some support for the utility of the four-branch model underlying these measures. In sum, the authors suggest that these measures are not that bad!

Matthews, Zeidner, and Roberts also elaborate on several self-report indices of EI. Such indices ask participants to rate themselves in terms of the degree to which presumably EI-relevant items accurately describe them. Two such indices that are described in some detail include Bar-On's (2000) EQ-i and Boyatzis, Goleman, and Rhee's (2000) Emotional Competence Inventory (ECI). Generally, the authors point out a number of concerns with these indices. While the EQ-i has been examined using large samples of participants, and has yielded both high internal reliabilities and evidence of predictive validity, discriminant validity seems to be a problem for this measure. Matthews, Zeidner, and Roberts describe several studies which show that the EQ-i is very (too) strongly correlated with measures of basic personality traits (e.g., extraversion). The authors suggest that EI as measured by the EQ-i may well reflect some personality construct(s) as opposed to something reasonably approaching a form of intelligence.

Matthews, Zeidner, and Roberts are a bit more critical of the ECI. Generally, this index is designed to tap an extremely broad conceptualization of EI as provided by Goleman (1998). This ambitious index, comprised of scales designed to measure 20 competencies that presumably comprise EI, seems to not be supported by previous research. The authors state, ". . . we could find no factor . . . analysis supporting the derivation of factors in the scientific literature" (p. 217). In a more biting passage, Matthews, Zeidner, and Roberts argue that

> . . . it is difficult not to be cynical of this measure, given the lack of publicly accessible data supplied by its creators and the constellation of old concepts packaged under its new label. (p. 218)

In essence, this comment captures the overarching concerns that the authors have of EI, at least as framed against the current landscape of psychology. Overall, Matthews, Zeidner, and Roberts leave the reader with the sense that if EI is to survive as a viable construct in the realm of academic psychology, research operationally defining this construct with performance (rather than self-report) measures is likely to lead to more useful and valid outcomes.

Individual Differences in Emotion and Adaptation

Chapters in this section of the book elaborate on how EI may be contextualized as a differential (individual-difference based) variable relating to adaptive psychological functioning. How can we understand EI given our current understanding of the notion of adaptive functioning in cognitive neuroscience, cognitive psychology, stress research, and personality? Matthews, Zeidner, and Roberts walk the reader through literatures regarding these different areas that are potentially relevant to EI. For instance, with regard to cognitive psychology, Matthews, Zeidner, and Roberts explore how EI may pertain to appraisal of stimuli as positive or negative. The authors end this section by indicating that scant research exists to support the utility of EI as an important individual-difference variable.

Certain data from the existing literatures in these different areas of psychology provide some insights into potential proximate mechanisms underlying EI. For

instance, Bar-On (2000) includes tendency toward positive affect as a core component of EI. This hypothesized component of EI may be rooted in memory bias; high EI individuals have been found to employ relatively positive biases in making judgments (Ciarrochi, Chan, and Caputi, 2000).

Emotional Intelligence researchers have made bold claims regarding stress. For instance, individuals high in EI are likely to have relatively rich coping resources and greater self-efficacy for emotion regulation. However, Matthews, Zeidner, and Roberts consistently point out that strong evidence does not exist to support these claims.

Matthews, Zeidner, and Roberts address conceptualizations that frame EI largely as a personality trait (or set of traits) [e.g., Bar-On, 2000] and convey how EI fits in with current notions of personality. Regarding the utility of such models, the authors argue that such models need to demonstrate that they are not fully redundant with existing conceptualizations of personality and that EI, framed as a trait-like construct, has some adaptive benefits. For instance, they argue that EI needs to be demonstrably discriminant from the "Big Five" personality traits (Costa and McCrae, 1992). These five trait dimensions, which include neuroticism, open-mindedness, extraversion, agreeableness, and conscientiousness, are thought (by many modern trait theorists) to comprehensively describe personality. Thus, Matthews, Zeidner, and Roberts argue that if a measure of EI is to be useful, it needs to demonstrate that it is distinct from (uncorrelated with) indices of these other traits.

In the end, Matthews, Zeidner, and Roberts find little evidence that would naturally suggest a reframing of personality traits into an EI perspective. The authors assert, ". . . a closer look at the data suggests that there is little to be gained by linking these dispositions to EI" (p. 368). Further, as to whether dispositional qualities associated with (and perhaps comprising) EI are adaptive, the authors conclude that broad dispositions, such as neuroticism, are rarely either invariantly adaptive or not. Neuroticism, for instance, which is strongly (negatively) correlated with several indices of EI, is likely adaptive under certain conditions, and less adaptive under others. Overall, Matthews, Zeidner, and Roberts remain skeptical regarding whether EI reasonably fits in with research in these existing areas of psychology.

Applications of EI

In the section pertaining to applications of EI, the authors examine EI as it has been (and potentially could be) applied in the contexts of psychotherapy and business. In the treatment of psychopathology, they consider a hypothetical disorder called "Pathologically Low Emotional Intelligence" (PLEI) and address how such a disorder may look and how it could be treated. As addressed in prior sections of the book, it is argued that neuroticism or negative emotionality may actually serve as a more useful emotion-relevant construct than EI. For instance, anxiety disorders are well described by the existing constructs of "high negative emotionality" and "high arousal." The authors find little evidence that PLEI sheds new light on anxiety disorders above and beyond the existing constructs.

The authors argue that EI tends to be painted with too broad a brush to be useful in understanding the heterogeneity that describes psychological abnormality. Part of the problem here is that EI includes several facets that differentially pertain to a variety of unrelated disorders. For instance, conceptualizations of EI variously include impulse control, proclivity toward positive affect, and ability to manage emotions in others — all under the same umbrella. In fact, these different facets do not relate to any set of psychological disorders in a coherent, parsimonious manner. Some of these pertain to anti-social personality disorder, others to generalized anxiety disorder, and others still to post-traumatic stress disorder. A general disorder labeled PLEI may simply be *too broad* to fit in with existing categories of disorders. Matthews, Zeidner, and Roberts suggest that more narrow constructs, such as alexithymia (a pathological disorder associated with an inability to identify emotions) may be more useful in understanding psychopathology.

Chapter 11, an important and thorough chapter on the development of EI and the potential for training people to increase EI, seems strangely placed. While this chapter seems to involve very basic issues regarding EI, it resides in a section primarily focused on the efficacy of applying EI. In any event, the authors attempt to explore the origins of EI. Here Matthews, Zeidner, and Roberts separate EI from EI-relevant constructs, such as temperament and emotional sensitivity. In fact, much is known about the development of several EI-relevant constructs. For instance, the authors cite evidence that empathy is at least partly rooted in genetic factors. Further, they describe work indicating that familial discourse increases children's overall sensitivity to negative emotions. Matthews, Zeidner, and Roberts conclude by providing the reader with the sense that we know something more about the development of several EI-relevant constructs. However, research on the development of EI per se seems lacking; that is ultimately something that researchers need to address.

Regarding the importance of EI in the workplace, the authors take a particularly critical tone. It appears that claims regarding the importance of EI in the workplace are not consistent with extant empirical findings. Matthews, Zeidner, and Roberts state that "A bewildering array of [EI] competencies have variously been claimed to be critical for success in occupational settings" (p. 470) and they cite research that suggests EI has not been found to account for job success above and beyond variability accounted for by general intelligence and personality dimensions. This point speaks clearly to the "reinventing the wheel" issue: self-report indices of EI have been especially unable to predict occupational success. The authors do cite some research which suggests that the MSCEIT (a performance-based measure) predicts variability in occupational success.

The analysis of EI in the workplace is, of course, central to our understanding of the importance of EI as it is presented in popular formats. Generally, EI has been discussed in business and organizational contexts and it has often been marketed that way. To the extent that EI is not a relevant predictor of job performance and success in organizations, the utility of the popularized versions of EI is critically brought into question.

Conclusions Regarding EI

In their concluding chapter, Matthews, Zeidner, and Roberts summarize reasons — rooted in scientific claims — to be skeptical of EI as a broad, novel, and important construct in psychology. Basic issues that they highlight include the heterogeneous nature of the multiple conceptualizations of EI, psychometric properties of EI indices, the *redundancy* issue (i.e., the idea that EI is not novel, but, rather, is redundant with existing personality conceptualizations), theoretical issues which suggest that EI does

not fit coherently into existing paradigms or research areas in psychology, and concerns regarding insufficient evidence that EI predicts important outcomes in real-world contexts. In the final pages, the authors summarize their concerns regarding EI by stating that ". . . EI appears to be more myth than science . . ." (p. 548). This point, critical to be sure, is not pulled out of some hat. This conclusion is, rather, based on extensive data analysis, examination of several claims regarding EI vis-à-vis existing bodies of research in psychology, and a careful, detailed, and thorough examination of how different conceptualizations of EI pertain to established constructs in psychology. The conclusions drawn, therefore, need to be seriously considered.

Final Comments on Emotional Intelligence: Science and Myth

Emotional Intelligence: Science and Myth comprises an extraordinary, detailed piece of scholarship that is important for many reasons. There is a skeptical quality that permeates the writing; the authors' highly critical tone will be appreciated by both scientists and scholars alike. Of course, some of the authors' critical points are debatable. Several of the researchers discussed in the book have provided either alternative ways of conceptualizing some topics described or have supplied new data that bear explicitly on these same issues. Regardless, their general stance regarding EI is largely justified in light of empirical work that exists on this topic.

The particular tack taken in this book may well be useful for general pedagogical purposes. The authors' presentation of ideas, in fact, provides excellent examples of (a) the application of scientific methodological principles and (b) comprehensive, no-stone-left-unturned scholarship. *Emotional Intelligence: Science and Myth* provides an example of the importance of skepticism and the importance of thorough examination of primary data first-hand. For that reason, this book is potentially interesting to researchers outside the field of EI.

In the book's foreword, Robert Sternberg declares that while the writing is ". . . extensive, intensive, . . . and unified in tone," it also "will be tough slogging for laypeople." He is exactly right. *Emotional Intelligence: Science and Myth* is written by scholars and is designed for scholars. Regardless, it provides the educated reader with an extraordinary journey through all the issues relevant to the utility of Emotional Intelligence.

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