

Interesting volume on emotional intelligence, whatever it is

The Science of Emotional Intelligence: Knowns and Unknowns

By Gerald Matthews, Moshe Zeidner, and Richard D. Roberts (Eds.)

New York: Oxford University Press, 2007. 502 pp. ISBN 978-0-19-518189-0. \$65.00

Reviewed by Jelte M. Wicherts, University of Amsterdam, j.m.wicherts@uva.nl

Partly in response to many extreme claims concerning the importance of Emotional Intelligence (EI) (e.g., Coleman, 1995), Gerald Matthews, Moshe Zeidner, and Richard D. Roberts (2002) co-authored a book that was rather critical of this well known, yet poorly understood, construct. Now that the field of EI research has had a chance to further develop, they invited emotion researchers, differential psychologists, clinical psychologists, occupational psychologists, educational researchers, and an AI expert to shed their own light on EI. The result is a lengthy edited volume comprised of 17 chapters, of which the three editors wrote the first (introductory) chapter and the last chapter in which they discuss and synthesize the ideas put forward by the contributors. The book is divided into three parts. The first part contains theoretical accounts of EI, the second part is related to the difficult task of measuring EI, and the third part is concerned with possible applications of EI in the real world. The editors explicitly asked all contributors to focus on several issues, related to theory, measurement, and applications of EI. Because of this, the authors, all experts in their own fields, were forced to put their cards on the table with respect to several vexing issues surrounding EI. Therefore, the volume nicely highlights commonalities and differences in opinion among EI experts. The volume has a broad focus and covers the most important issues of the developing field of EI research. This edited volume is a must-read for anyone interested in the topic of EI.

A 500-page book on emotional intelligence would appear irrelevant if the broad construct of EI were non-existent. Nonetheless, doubts on the existence of EI as a unitary construct are raised throughout the book. In some chapters, such as Averill's, this issue is explicitly discussed. In other chapters, it is broached in passing. For instance, Herzmann, Danthiir, Wilhelm, Sommer and Schacht (Chapter 12) write that they are agnostic about "whether EI exists and causes individual differences". The theoretical chapters in the volume are interesting to read, but they fail to explain convincingly why EI should be an underlying

unitary construct. For instance, Rolls (Chapter 3) defines EI as a set of relatively *independent* basic emotion competencies. Likewise, Izar, Trentacosta, King, Morgan and Diaz (Chapter 5) consider several developmental facets of EI, such as emotion knowledge, emotion regulation, and emotion utilization. They also “assume relative independence between emotion, cognitive, and action systems” (p.128). The theoretical accounts of EI in this volume emphasize different components of EI. These accounts are more or less analogous to Mayer and Salovey’s (1997) account, in which EI involves the ability to perceive, use, understand, and manage emotions. Opinion differs on which components are important.

More importantly, however, is that according to the theoretical accounts in this book, *EI consists of different specific competencies related to dealing with emotions*. But if EI consists of competencies, then EI in itself does not appear to play much of a role in explaining individual differences in competencies like perceiving emotions, using emotions, understanding emotions, and managing emotions. O’Sullivan (Chapter 10) rightly questions whether the field is looking at the broad construct of EI or at the component parts. As I read the book, it became more and more apparent that EI appears to be a formative construct rather than a reflexive construct (Borsboom, Mellenbergh, & van Heerden, 2003). A formative construct is basically an index. If indeed EI is an index, then the concept of EI is rather hollow.

Let me illustrate this by means of an example involving cars. Cars differ in many “competencies”, such as fuel economy, performance (maximum speed and acceleration), driving quality, safety, and spaciousness. Some of these competencies are causally interrelated (e.g., fuel economy and performance), while others are not. Car reviews, such as those by the well-known TV show Top Gear, normally involve several categories reflecting these competencies. Cars differ in their scores in these categories. If we were to consider many different cars (Top Gear has 2500 car reviews on its web site), these competencies

would probably be found to be correlated with each other. Most likely, a factor analysis will result in a dominant general car quality factor, which is expressed in Top Gear's overall verdict of the cars. In other words, cars differ in general quality. A Mercedes is generally better than a Suzuki. Now, we have a gut feeling on why this is so. For instance, German car makers might use more durable and light-weight materials than Japanese car makers, and the Germans might put more time and effort in the developments of their cars than the Japanese do. As a result, a Mercedes is generally higher in quality than a Suzuki, but the Mercedes is also more expensive. Nonetheless, it is still difficult to speak of general quality of a car as the ultimate underlying cause of differences between cars in performance, build quality, safety, etc. A Mercedes isn't necessarily safe *because* it is a high quality car. A Mercedes is safe because it has a large number of airbags, an excellent antilock braking system, traction control, etc. I could easily come up with a theory of car quality that states that the ultimate cause of differences in general car quality is related to investment. According to this theory, differences in car quality arise because cars differ in the time and money invested in the development and building of the car (including the materials used). But the money has not been spent on raising the quality of cars per se, but rather in raising the competencies that make the car good or bad. For instance, suppose Mercedes were to develop a car with very poor driving quality (e.g., because it tends to topple when taking corners). This will negatively affect the driving quality as well as the safety of the vehicle. Top Gears' overall verdict would probably be devastatingly poor, regardless of the money spent on the toppling car. The driving quality will affect the overall quality of the car and not vice versa because quality of the car is not the ultimate cause, but rather the result of investments in the competencies of the car. Thus the general quality of cars is not an underlying causal factor, but an index.

The edited volume on EI contains several interesting chapters that deal with the nature of specific skills or competencies related to emotions. Some of these specific competencies are well understood, while others are still in their theoretical and empirical infancy. Often, specific competencies are causally related. For instance, one cannot use emotions intelligently if one is not able to perceive emotions correctly. Such causal links are the focus of much emotion research and are dealt with extensively in the first few chapters of the volume. Unfortunately, I did not come across a convincing explanation of why competencies are interrelated and what the role is of EI as an overarching construct. According to most of the experts' accounts in this volume, EI looks more like the *result* of individual differences in the lower order capabilities rather than the ultimate reason that lower order capabilities are correlated. If this were the case, then EI is more like an index such as car quality and not a latent variable that causes individual differences in perceiving facial expressions, using emotions, knowledge of emotions, etc. The question of whether EI is a causal construct or an index has important theoretical and practical implications. If EI is merely an index it cannot have a causal effect on variables related to dealing with emotions. EI can be raised by improving knowledge of emotions, but knowledge of emotions cannot be raised by improving EI. In many ways, EI as an index would be theoretically hollow.

However, EI as an index would not be completely useless. Car quality is an important variable because it determines in part whether or not people will buy a car. Also, car quality can be used to predict specific "competencies" of the car, like safety and performance. Likewise, even if EI were an index, EI scores could still be used to predict specific competencies and important real-life outcomes. Because EI has entertained such widespread interest, testing its practical applications is an important contribution to the literature, regardless of future theoretical developments of what EI might entail. But if people differ in EI, it is important to understand why they do so. It is not sufficient to explain individual

differences in understanding emotions by claiming that people differ in EI. A car is not safe because it is a good car.

Which approach will be most fruitful in determining the true nature of EI? Of course, theory is important, but a first empirical step would be to try to develop good measures of the components of EI and to consider the factorial structure of individual differences. To this end, most contributors of the volume prefer maximum performance measures of EI above self-report measures. Schulze, Wilhelm and Kyllonen (Chapter 8) argue convincingly that EI is an ability construct that cannot accurately be measured by using self-report questionnaires. However, Petrides, Furnham, and Mavroveli (Chapter 6) regard self-report measures the prime method to study “trait EI”. They discuss most of the literature on these self-reports measures and conclude that trait EI is a unitary personality construct that occupies “the factor space at lower levels of personality hierarchies”. They denote their ideas as a theory, but to me it is little more than a taxonomy based on exploratory factor analysis, just like big five theory is not a theory but rather a taxonomy. It appears to be more fruitful to focus on the factorial structure of individual differences in maximum performance measures of EI.

In intelligence research the factorial nature of individual differences is well established (Carroll, 1993). There is no doubt that there exist a general factor of intelligence, but there are alternative theories on the nature of this general factor. For instance, in g theory (Jensen, 1998), g is seen as a very general construct that causally affects lower-order abilities like spatial intelligence and crystallized intelligence. In addition, it is often claimed that predictive value of IQ in occupational settings is mediated by g (e.g., Gottfredsson, 1997). Also, in g theory, the reason that, say, spatial intelligence and crystallized intelligence are correlated is that they both tap on a more fundamental variable called g. Likewise, in Cattell’s (1987) theory, Fluid intelligence or Gf is the common cause of individual differences in more specific cognitive abilities such as crystallized intelligence or Gc. Both g and Gf are seen as

latent variables that arise because of biological characteristics in which people differ, such as brain efficiency, brain size, or speed of connectivity. But there are other theories that can explain the general factor of intelligence without invoking a unitary physiological cause (van der Maas, Dolan, Grasman, Wicherts, Huizenga, & Raijmakers, 2006). This illustrates that factor analysis is helpful in testing theories, but that factor analysis alone cannot do without theory.

The factorial structure of individual differences in maximum performance measures of EI has been the focus of several studies. For instance, Rivers, Brackett, Salovey, and Mayer (Chapter 9) describe EI as a set of abilities and report that a four-factor solution best describes the factor structure of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). The latter result is in line with the factor analytic results reported by Burns, Bastian, and Nettelbeck (Chapter 7). What struck me, however, is that these authors failed to test the most important model of all. The idea that IE is an underlying general construct with causal powers, implies that a general factor should explain correlations between specific competencies. This model is easily tested with confirmatory factor analysis. Whether or not a higher-order one-factor model fits the data has important implications for whether IE is an index or something more worthwhile.

I wholeheartedly agree with Schulze et al.'s call for more psychometric sophistication in EI research. Unlike the pioneers of intelligence research in the first half of the twentieth century, the pioneers of EI research have at their disposal a host of psychometric techniques with which most EI theories can be put to a rigorous test. As said, confirmatory factor analysis can be employed to study the existence of an overarching EI factor, and the use of item response theory can help in testing expectations at the item level. Psychometric modeling requires sound theory as the work by Herzmann et al. (Chapter 12) on face memory nicely illustrates.

It is often stated that the construct of EI is relatively new and that therefore, the field has had little time to develop and could that be the reason that we know so little on what EI is and how to measure it? Maybe. But in all honesty, after a century of research, there is still little agreement on why some people are more intelligent than others. Maybe EI exists as an underlying causal factor after all. Either way, this volume edited by Matthews, Zeidner, and Roberts certainly contributes to our understanding of EI.

References

- Borsboom, D., Mellenbergh, G.J., & Van Heerden, J. (2003). The theoretical status of latent variables. *Psychological Review*, *110*, 203-219
- Cattell, R. B. (1987). *Intelligence: Its structure, growth, and action*. New York: Elsevier Science Pub.
- Goleman, D. (1995). *Emotional Intelligence. Why It Can Matter More than IQ*. New York: Bantam Books.
- Jensen, A.R. (1998). *The g Factor: The Science of Mental Ability*. Westport, CT: Praeger.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds). *Emotional Development and Emotional Intelligence: Implications for Educators* (pp. 3-31). New York: Basic Books.
- Matthews, G., Zeidner, M. , & Roberts, R.D. (2002). *Emotional Intelligence: Science and Myth*. Cambridge, MA: MIT Press.
- Maas, H.L.J. van der, Dolan, C.V., Grasman, R.P.P.P., Wicherts, J.M., Huizenga, H.M., & Raijmakers, M.E.J. (2006). A dynamical model of general intelligence: the positive manifold of intelligence by mutualism. *Psychological Review*, *113*, 842-861