

Emotional intelligence: A theoretical and empirical review of its first 15 years of history

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The term Emotional Intelligence (EI) was first introduced in the scientific literature in 1990. Since then, the development of models of EI and research in this field has increased substantially. In this manuscript, a theoretical and empirical review of the first 15 years of history of EI is presented. First, the broad interest on this concept is shown through qualitative and quantitative indexes. Then, current theoretical models of EI: the mental ability model; the Bar-On Model of Emotional-Social Intelligence; and Goleman's model of EI are described in depth. Finally, authors give relevant keys about future considerations for research on EI. Specifically, authors 1) propose some ideas concerning the measurement of the construct and the use of ability and self-reported measures; 2) discuss the learning, development, and training potential of EI; and 3) consider the cross-cultural validity of EI.

La inteligencia emocional: una revisión teórica y empírica de sus primeros 15 años de historia. El concepto *Inteligencia Emocional* (IE) fue introducido por primera vez en la literatura científica en 1990. Desde entonces, el desarrollo de modelos de IE y la investigación en este campo han aumentado sustancialmente. En este artículo se presenta una revisión teórica y empírica de los primeros 15 años de historia de la IE. El amplio interés que ha suscitado este concepto se muestra mediante índices tanto cualitativos como cuantitativos. Seguidamente, se describen con detalle los modelos actuales de IE: el modelo de habilidad mental, el modelo de Bar-On de inteligencia emocional-social y el modelo de Goleman. Finalmente, los autores proponen algunas claves relevantes a tener en cuenta en futuras investigaciones en IE. Concretamente, los autores: 1) proponen algunas ideas acerca de la evaluación del constructo y del uso de las medidas de autoinforme y de habilidad; 2) analizan el potencial de aprendizaje, desarrollo y entrenamiento de la IE; y 3) reflexionan acerca de la validez intercultural de la IE.

The concept of Emotional Intelligence (EI) has generated a broad interest both in the lay (Goleman, 1995) and scientific fields (Mayer & Salovey, 1997; Salovey & Mayer, 1990), overshadowing other less spectacular classical psychological concepts, such as personality, or even a concept having bad press as IQ (Grewald & Salovey, 2005; Sternberg, 2002).

There are several sociological and epistemological reasons to explain the fast and wide diffusion of the term EI in professional fields. One of these reasons regards the acknowledgement made by professionals of the importance and relevance of emotions and feelings for their work outcomes. In this sense, EI has become a satisfactory and appropriate theoretical scaffold within organizational and educational fields to organize their everyday work, both for evaluative and formative tasks (Caruso & Salovey, 2004; Feldman-Barret & Salovey, 2002). However, this fast and wide diffusion of the term EI in the lay, and, specially, in applied fields such as education and organizations, has oversimplified the concept and generated expectations of results beyond scientific

data available to date as a cost (Matthews, Zeidner, & Roberts, 2002; Mayer, 1999).

On the other hand, the scientific interest in EI is shown, for example, in a qualitative analysis considering the number of Special Issues recently published in prestigious journals as *Emotion* (2001, vol. 1), *Psychological Inquiry* (2004, vol. 15), or *Journal of Organizational Behavior* (2005, vol. 26). As in these Special Issues, in other journals we can find interesting papers defending (Ashkanasy & Daus, 2005; Daus & Ashkanasy, 2005; Mayer, Salovey, & Caruso, 2004a; 2004b) and criticizing (Brody, 2004; Matthews, Roberts, & Zeidner, 2004), or even killing and burring the term EI (Locke, 2005). Another indicator of the growing of EI is the publication of, at least, 12 prestigious Handbooks in English language and two in Spanish language within the last eight years (see Appendix 1).

A quantitative analysis of the vitality of EI is shown in the number of papers published in peer review journals. Specifically, at the time of writing this paper, a keyword search for «emotional intelligence» in PsychINFO (2000-present) resulted in 671 hits. It seems interesting to emphasize that out of these 671 publications, 157 were dissertation abstracts, which represents the 23% of the total. Comparing this with a similar topic, although with a larger tradition in psychology, as IQ, we find a similar number of hits (746), but just 54 dissertation abstracts, which is just the 7% of the total. Even when conducting a risky search for such a wide

keyword as depression, we obviously find a 50 times larger number of hits (33520), out of them 3114 were dissertation abstracts. This number of dissertation abstracts is impressive, but it only represents the 9.29% of the total number. This comparative analysis gives us an index of the number of young scientists academically interested in EI, and this will be exposed by new good quality publications within the next years.

It is also interesting to emphasize that these 671 hits found for EI are distributed within different and assorted topics, showing the expansion of EI to several fields as health, education, human resources, assessment, sport psychology, and transcultural psychology. On the other hand, this growth has also been focused on the development of self-report and performance instruments for the assessment of EI, thus, to date, there are at least 10 well-validated instruments to measure EI.

Current theoretical models of EI

A review of the literature focusing on the models of EI during the last fifteen years allows different classifications of the construct, but these classifications are, in some sense, compelling and complementary. As a first division we could distinguish several approaches following the publication of Goleman's book (1995). These are pseudo-scientific proposals with a noticeably commercial intention, and with divulgation rather than scientific purposes (Cooper & Sawaf, 1997; Elías, Tobías, & Friedlander, 1999; Shapiro, 1997; Weisinger, 1997).

On the other hand, as a second division, we distinguish those scientific models which propose a theoretical explanation of their components. These models are based on the review of previous literature, conduct controlled empirical studies to validate them, and use measurement instruments developed with this purpose (Bar-On, 1997; Boyatzis, Goleman, & Rhee, 2000; Mayer & Salovey, 1997).

These theoretical approaches have guided current lines of research. In general, these approaches try to discover the emotional components that underlie emotionally intelligent people and the mechanisms and processes that set off the use of these abilities in our everyday life. Currently, there are three theoretical approaches accepted by the scientific community, these are: the EI ability model by Mayer and Salovey (1997; Brackett & Salovey, 2006), Bar-On's Emotional-Social Intelligence (ESI) model (1997; Bar-On, 2006), and the emotional competencies model focused on the workplace (Goleman, 1998; 2001; see also Boyatzis, 2006).

The EI ability-based model (Mayer & Salovey, 1997)

Reviewing the literature on EI, one finds that Mayer and Salovey's mental ability model is the theoretical approach that has generated the largest number of researches published in peer-review journals (Matthews et al., 2002; Geher, 2004). The interest of the scientific community for this model is based on several reasons: 1) the solid and justified theoretical base, 2) the novelty of the measurement compared to other approaches, and 3) its systematic evaluation and support by empirical data obtained from basic and applied fields. Moreover, the critics of the concept consider Mayer and Salovey's model a genuine approach to the study of intelligence that could add interesting contributions to the emotional individual differences field (Matthews et al., 2002).

Although there was a previous theoretical approach (Salovey & Mayer, 1990), the most accepted proposal is the one that considers EI as a mental ability, specifically: «Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth» (Mayer & Salovey, 1997, p. 10).

The model comprises four abilities: perception, assimilation, understanding, and regulation of emotions. Concisely, emotional perception consists on the ability to perceive emotions on the self and on the others, and also on objects, art, stories, music, and other stimulus. The assimilation of emotions is the ability to generate, use, and feel emotions as necessary to communicate feelings, or to use them in other cognitive processes. Emotional understanding is related to the ability to understand emotional information, how emotions combine and shift across time, and the ability to appreciate emotional meanings. Finally, emotional regulation refers to the ability to stay open to feelings, and to monitor and regulate one's and other's emotions to promote understanding and personal growth.

These four branches are hierarchyly organized, thus, perceiving emotions is at the most basic level, and managing emotions is at the highest and most complex level in the hierarchy, therefore, the ability to regulate one's and other's emotions is built on the basis of the competencies of the three other branches.

According to these authors, EI represents an intelligence system focused on the processing of emotional information, and, as that, it must be part of other traditional and well established intelligences (Mayer, Caruso, & Salovey, 1999). In this sense, the methodology for the assessment of EI is based on performance or ability measures, in line with the assessment methodology used to measure other intelligences (i.e., math intelligence or logic-spatial intelligence).

Although the authors initially developed self-reported measures for the assessment of the concept (Trait Meta-Mood Scale, TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), their biggest efforts have been focused on the design and development of ability measures or performance-based measures, culminating in the development of the MSCEIT (*Mayer-Salovey-Caruso Emotional Intelligence Test*; Mayer, Salovey, & Caruso, 2002; Mayer, Salovey, Caruso, & Sitarenios, 2001; 2003). This instrument provides an indicator of people's emotional performance level in different items that evaluate: the ability to perceive emotions in faces, pictures, and abstracts designs; the ability to assimilate emotions in several thinking and decision making processes; the ability to understand simple and complex emotions, their combinations and the shift of emotions; and finally, the ability to manage and regulate own and other's emotions.

Bar-On's emotional-social intelligence model (Bar-On, 1997; Bar-On, 2000)

Bar-On's (1997) theoretical approach to EI is wider and more comprehensive than Mayer and Salovey's model (1997). From Bar-On's point of view «...emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands» (Bar-On, 2006). The

accent on «non-cognitive» factors represents a withdrawal from the traditional conceptions of intelligence which underlined the relevance of cognitive factors. The aim of this proposal was to find out the key factors and components of social and emotional functioning that lead individuals to a better psychological well-being (Bar-On, 2000, 2004, 2006).

Bar-On's model defines the construct «emotional-social intelligence», which is formed by a cross-section of inter-related emotional and personality traits that are well established and interact together in the individual. Specifically, emotional and social intelligence comprises five high level factors, which are subdivided in 15 subfactors: 1) Intrapersonal Skills refers to the ability of being aware and understand emotions, feelings, and ideas in the self, and it is subdivided into the 5 subfactors Self-Regard, Emotional Self Awareness, Assertiveness, Independence, and Self-Actualization; 2) Interpersonal Skills refers to the ability of being aware and understanding emotions, feelings, and ideas in the others, and it is subdivided into the 3 subfactors Empathy, Social Responsibility, and Interpersonal Relationship; 3) Adaptability refers to the ability of being open to change our feelings depending on the situations, and includes the 3 subfactors Reality-Testing, Flexibility, and Problem-Solving; 4) Stress Management refers to the ability to copy stress and control emotions, it is composed by the subfactors Stress Tolerance and Impulse Control; and lastly, 5) General Mood refers to the ability of feeling and expressing positive emotions, and being optimistic, and comprises the subfactors Optimism and Happiness (for an extensive review, see Bar-On, 2006).

In order to evaluate the factors proposed in his model, Bar-On developed the first *commercial* instrument available to measure EI (EQ-I; Bar-On, 1997). Later, Bar-On designed a large amount of measuring instruments (i.e., interviews, questionnaires for external raters, self-report measures for different ages, and different versions of these instruments) distributed by *Multi-Health System* (MHS). For research purposes the most employed measure is the *Emotional Quotient Inventory* (EQ-i; Bar-On, 1997), a self-reported measure comprising 133 items that evaluates the five components described in his theoretical model. As the author points out, the EQ-i is a wide inventory that includes many emotional and social competencies, giving not just an estimation of the EI level, but also an affective and social profile (Bar-On, 2000). This led some authors to consider Bar-On's proposals as a mixed model of EI, since it combines social, emotional, cognitive, and personality dimensions (Mayer, Salovey, & Caruso, 2000). A substantial part of the research developed by this group and by independent groups is focused on the psychometric properties of the EQ-I, its predictive, construct, and incremental validity upon other classical constructs (i.e., personality and cognitive intelligence) and its contribution to different everyday life criteria (Bar-On, 2000, 2004, 2006).

Goleman's model of EI: a model of competencies focused on the workplace (Boyatzis et al., 2000; Goleman, 1998, 2001)

No doubt, the term EI was brought to light by Daniel Goleman's book and by his statements regarding the influence of these abilities upon many areas of our lives (Goleman, 1995). In his first book, Goleman stated that EI comprises five essential elements: 1) knowing one's emotions ; 2) managing emotions; 3) motivating oneself; 4) recognizing emotions in others, and 5) handling relationships.

In 1998, Goleman presented his second book, proposing a theory of performance in organizations based on a model of EI. This model was created and adapted to predict the effectiveness and personal outcomes in the workplace and in organizational fields (Goleman, 1998). The model is based on several competencies, which were identified by researches conducted in hundreds of organizations; these competencies are considered characteristic of the most brilliant and successful employees (Goleman, 2001). Currently, the model presents four essential dimensions, which are subdivided into 20 competencies (Boyatzis et al., 2000; Goleman, 2001): 1) Self-Awareness, comprising Emotional self-awareness, Accurate self-assessment, and Self-confidence; 2) Social Awareness comprising Empathy, Service orientation, and Organizational awareness; 3) Self-Management comprising Self-control, Trustworthiness, Conscientiousness, Adaptability, Achievement drive, and Initiative; and finally, 4) Relationship Management which comprises Developing others, Influence, Communication, Conflict management, Leadership, Change catalyst, Building bonds and Teamwork and collaboration.

According to Goleman, each one of these four dimensions are the basis to develop other learned abilities or competencies necessary in the organizational field. For example, the Self-awareness domain provides the basis for the development of learned competencies such as to perform an «accurate self-assessment» of the advantages and disadvantages in decision making processes, which is necessary when an executive must play his/her leading role in his/her work team. For Goleman (2001), an emotional competence is «a learned capability based on emotional intelligence that results in outstanding performance at work».

This idea of learned competence is essential to understand Goleman's proposal. Thus, while EI as defined by Mayer and Salovey represents our potential to dominate specific emotional abilities, from Goleman's proposal, emotional competencies by themselves represent the level in which a person dominates specific abilities or skills based on his/her EI level and make this person more effective in his/her work (Goleman, 2001).

In order to evaluate social and emotional competencies in the organization, this approach uses 360° methodology or measures based on external raters. This methodology is easier and quicker than other measurement methods such as the individualized interview, and it is also wider because it provides a general indicator of 20 emotional competencies regarding the work performance using just one instrument. Besides, this instrument shows higher security and reliability than others because it allows the comparison between the employees' perception of his/her own competencies and other employee's and boss' perceptions of these competencies (Boyatzis, et al., 2000). The instrument used to evaluate Goleman's model is the *Emotional Competence Inventory 2.0* (ECI 2.0), which is based on 360° methodology and shows evidence of validity and reliability (Boyatzis et al., 2000; Sala, 2002). Built on the measure developed by Boyatzis, the authors of the ECI consider that the instrument has applicability only in the workplace and organizational fields. The ECI consists on 110 items, where 3 items is the minimum number to evaluate each competence. The ECI comprises two ways of evaluation: a self-reported measure where people are asked to estimate their performance in each one of the competencies, and an evaluation by an external rater, such as work mates or superiors.

Compared to other approaches, to date, the model by Boyatzis and Goleman (see Boyatzis et al., 2000; Goleman, 2001) has less

empirical support. In this sense, the efforts made by the authors to show empirical evidence from their theoretical model in this Special Issue is a valuable effort that will answer some of the critics made to this approach (Boyatzis, 2006).

Future considerations

We would like to conclude offering some keys about the most important questions that remain unanswered, and which young scientists beginning their PhD must resolve in the next decade. Among the so-called Hot Intelligences, EI is the one that shows the best and largest development of instruments for the assessment of the concept. Especially, if we compare EI with other Hot Intelligences as the Theory of Multiple Intelligences (MI, Gardner, 1983/1993) which has an extensive theoretical development and a widespread repercussion in scholar practice, theory with which we sympathise. The few instruments developed for the assessment of MI do not provide the standards for reliability and consistent measurement (McMahon, Rose, & Parks, 2004), showing for example, very low alphas for interpersonal and intrapersonal intelligences (alphas = .39 and .22, respectively).

However, the abundance and development of different instruments to measure EI, both self-report and performance based measures, represents a problem to some authors because it makes simple comparisons among studies difficult, and of course, it makes meta-analyses hard (Landy, 2005). Although this is true, maybe the Darwinist dynamic competition among instruments will end determining those that will survive and will be used in the future. However, this tendency probably will continue, and several research groups will develop new measures of EI, especially *freeware* performance-based measures beyond those currently commercialized (Freudenthaler & Neubauer, 2005).

On the other hand, it will be interesting to analyze differences between self-report and performance based EI measures, since these measures are only weakly correlated (for example, MSCEIT and TMMS or Schutte Self-Report Inventory, SSRI; Schutte, Malouff, Hall, Haggerty, Cooper, Golden, & Dornheim, 1998). As some authors point out, this distinction between self-report and performance-based EI measures would be strengthened by demonstrating differential criterion-oriented validity (Lumley, Gustavson, Partridge, & Labouvie-Vief, 2005). This knowledge would allow us to answer some paradoxes found in the literature such as those found with gifted students or between males and females (Extremera, Fernández-Berrocal, & Salovey, 2006; Zeidner, Shani-Zinovich, Matthews, & Roberts, 2005). For example, the research with gifted sample showed that whether or not gifted versus non-gifted students differ in EI depends on the EI measures used (MSCEIT and SSRI; Zeidner et al., 2005). Similar results were found regarding gender differences, thus, using performance-based measures as the MSCEIT, women score higher than men (Extremera et al., 2006), but using self-report measures, as the TMMS, men usually perceive themselves as more emotionally intelligent than women (Extremera & Fernández-Berrocal, 2005). From our point of view, the most important implication of these previous studies is that we should no longer ask whether self-report and performance based EI measures are correlated or not. Future research should focus on the more exciting questions of when and why.

Some authors have shown their most pessimistic side towards the existence of different approaches and instruments for

measurement of this new field, and for some of them this is enough to impair the construct and the lines of investigation generated (Locke, 2005). However, although a lack of agreement regarding the concept could be seen as a matter that lessens the construct validity of EI, the existence of several theoretical approaches to the concept of EI must not be understood as a conceptual weakness of this field, but as a sign of robustness and theoretical maturity. The co-existence of multiple ways to study emotional competencies and abilities demonstrate a new and incipient field, searching for a satisfactory scientific explanation to the processes of interrelationships between cognition and emotion from different points of view. The findings reported from each approach and through different instruments for measurement, help scientists to introduce subtle distinctions in their proposals, to verify the existence of the abilities comprising their models and the relationships between these abilities, and to analyze the compatibility of the approaches and refine the instruments for the assessment of EI. The diversity of the efforts made regarding the definition of the concept, the assessment, and the empirical research should not be considered as unsuccessful or questioning the validity and utility of EI in the field of individual differences. In fact, other classical but very prolific topics for individual differences research such as cognitive intelligence (Sternberg, 2000, 2004) or personality (Carver & Scheier, 2000; Pervin & John, 2001) get advantage from the continuous debate and from the existence of the numerous theories, approaches, and measurements trying to explain human behavior or personal success. We join Sternberg's words considering that since the first paper of EI was published in 1990, it is not surprising that there are still aspects to improve and questions to answer (Sternberg, 2004). Moreover, the rapid increase and growth of this field in just 15 years is impressive. This growth is supported by the rigorous and careful work of scientists trying to verify the validity of the construct and to know the real contribution of EI upon people's life.

One of the biggest expectations of education and human resources professionals regarding EI is its learning, development, and training potential. Daniel Goleman, in his book published in 1995, stated that EI is the most important variable contributing to professional and personal success. His statement was based on the fact that IQ explains just the 20% of the success in life, while the leaving 80% could be conferred to EI. These optimistic perspectives and their diffusion to the mass media opened Pandora's Box leading to the proposal of ambitious training programs for schools and organizations made by educational and consulting entities, giving exaggerated promises of improving performance and scholar and professional success. However, empirical support for these statements is still discrete. Future investigations must determine clearly, through adequate experimental designs, which ones of the four branches of EI: (1) perception of emotion, (2) emotional facilitation of thought, (3) understanding emotions, and (4) managing emotions, are suitable of developing and training, how long this would take, and the adequate ages for this (for a revision in scholar fields, see Greenberg, Weissberg, O'Brien, Zins, Fredericks, Resnik, & Elias, 2003; Zins, Weissberg, Wang, & Walberg, 2004; and in organizational fields, see Ashkanasy & Daus, 2005; Jordan, Ashkanasy, Härtel, & Hooper, 2002). In accordance with these assertions, Lopes and Salovey (2004) underlined the need for future educational research to identify which components of social and emotional learning (SEL) programmes are most important and

effective. Specifically, they strengthen that there are two important points to address the question as to what skills we should teach to students. The first one is that SEL programmes should be personalized to students' requests and the problems these students face everyday. The second is to focus on skills that are likely to be useful across domains and are important for the development of additional abilities. Future research must investigate which one of these two approaches is more productive and effective. In addition, it is necessary to determine whether it is the programmes that lead to advance or the excellence, interest, and motivation of the educators and trainers who deliver the SEL programmes.

Finally, other productive line of future research would be the cross-cultural validity of EI. On one hand, it is not likely that different cultures such as European and Asian cultures use the same emotional skills. In this sense, correct answers for instruments like the MSCEIT should change considering the cultural context where emotional skills are used. It is also necessary to determine the way in which cultural dimensions interacts with the individual's ability to attend to, understand, and regulate their emotions and the specific weight that each of these variables has in its influence upon people's emotional and social adjustment (Fernández-Berrocá, Salovey, Vera, Extremera, & Ramos, 2005).

In summary, qualitative and quantitative indexes develop a picture of the latest 15 years of research in which the study of EI became a coherent and integrative approach to the relationship between emotions and reasoning. While, during the 90's most efforts were dedicated to the development of the concept and instruments for its assessment, and to determine the different theoretical approaches, the 21st century begins with an explosion of empirical research verifying the contribution of emotional abilities, in some cases modest but incremental upon other constructs, to people's life. Doubtless, this growth in the number of studies is a good indicator of the importance of other types of intelligence, revealing a new latent potential in the human being. A new and hopeful field of applied research opens up to future social scientists whose main work will be to determine the real value EI has in the different fields of our lives, and the adequate methods to measure EI with validity.

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