

Do Intelligent Leaders Make a Difference? The Effect of a Leader's Emotional Intelligence on Followers' Creativity

Francisca Castro, Jorge Gomes and
Fernando C. de Sousa

This research investigates the connection between emotional intelligence (EI) and creativity. This was studied by exploring: (i) an association between leaders' EI and their followers' creative output; (ii) an association between six sub-dimensions of EI and creativity; and (iii) a mediating role of climate in the link between EI and creativity. Two questionnaires (one for leaders and one for employees) were used to collect data in a hospital. Sixty-six usable leader-employee dyads were collected. The findings confirmed a positive relationship between leaders' EI and employees' creativity. At an EI's sub-dimensions level, the current research showed an association between creativity, on one hand, and self-encouragement and understanding of own emotions, on the other. Finally, no mediating effect of climate was observed. The absence of a mediating effect is interesting, since it suggests a direct link between leaders' EI and employees' creativity, regardless of the climate. This is important, since it calls attention to the paramount role of leaders in shaping individual and organizational behaviours as far as creativity is concerned. The paper also discusses implications for management and practice.

Introduction

Creativity has acquired an important role amongst those variables with an impact on individual and organizational outcomes. As emphasized by McAdam and McClelland (2002), it is only through developing and sustaining a creative workforce that the organization will succeed in maintaining the necessary potential to overcome difficult problems and situations. The creative organization is dependent on its ability to retain creative managers and employees, and on an environment in which each employee will feel free and willing to contribute to organizational success. Such potential is found everywhere in the organization, and in its employees' everyday actions and interactions. It is a 'garden variety creativity', which needs to be cherished and treasured, but also processed and transformed into workable (tacit) knowledge, so that it can be later used to improve work methods and

produce new ideas and strategies (Amabile, 1996; Mayfield & Mayfield, 2008).

The literature on organizational attributes that encourage or hamper creativity has been fuelled by several developments in recent years. This literature points to a myriad of individual, group, organizational and societal factors that affect creativity, of which leadership has been the focus of Mayfield and Mayfield (2008) and Oldham and Cummings (1996), amongst many others. In Amabile's (1996) theory, for example, leaders are key influencing elements in fostering creative climates.

How leadership and creativity are related is, however, an understudied problem, especially with regard to how leaders influence their followers' creativity. This question has been raised in George and Zhou (2001) and Zhou and George (2003), who have claimed that the leader emotional intelligence (EI) is a key component in the leadership process that affects

creativity. But despite their assertion, empirical evidence is still scarce. In fact, with few exceptions (e.g., Rego et al., 2007; Barczak, Lassk & Mulki, 2010), existing knowledge on the EI-creativity linkage is still limited, especially when such connection involves workers at different hierarchical levels, such as leaders and employees. Some of the key questions still to address include: (i) How is a leader's EI related to employees' creativity? (ii) Is this link a direct one, or is it affected by other intervening variables? (iii) What are the dimensions of EI that are actually linked to creativity? These are the main questions guiding the current research. Its overall aim is to explore the relationship between EI and creativity.

The current investigation is inspired by the theoretical proposals of Zhou and George (2003), and it contributes to the field by building on the works of Rego et al. (2007), Barczak, Lassk and Mulki (2010) and Wang and Rode (2010). A first contribution is related to the strength of measures employed; data from Rego et al.'s study was collected from the same source (138 top and middle managers), hence suffering from the common method variance error (Podsakoff et al., 2003); the current research uses two respondents rather than one, hence allowing the relationship between leader's EI and followers' creativity to be examined with more robust measures. A second contribution is the inclusion of creative climates as a mediator variable in the EI-creativity relationship; it is important to explore this, since creativity seems to be affected not only by internal dispositions, but also by the extent to which the organization (and its leaders) are capable of stimulating settings in which creativity can unfold (Amabile et al., 2005; George, 2007).

The text is organized in five parts. Firstly, the existing literature is briefly surveyed, with emphasis on the topics of EI, individual creativity and creative climate. The second section presents the hypotheses, further detailing the proposed associations between the key concepts. The third part explains the method, and the fourth section shows the results. Finally, the last part discusses the results and delivers some cues for future research.

Theoretical Framework

From Emotional Intelligence to Leadership

EI has been defined as the aptitude to perceive and express emotions, understand them and use them, as well as the aptitude to manage the individual's own and other people's emotions (Salovey & Mayer, 1990). This definition

assumes that EI is a cluster of well-defined cognitive aptitudes dealing with emotionally-based information and with emotions regulation (Ashkanasy & Daus, 2005). Other authors have defined EI as a set of generic competencies and dispositions, which allow people to adapt to their environment (Zeidner, Matthews & Roberts, 2004).

Notwithstanding the differences, most popular EI models and theories (for a discussion of these research streams, see Ashkanasy & Daus, 2005) share some key elements. Firstly, EI implies that people are aware of their own emotions, i.e., individuals are able to understand their emotional activity as well as the role of these emotions in regulating their behaviour. Secondly, it is also assumed that emotionally intelligent people are aware and understand others' emotions. Finally, the EI concept entails the idea that people are able to manage their own and other people's emotions, i.e., individuals can use emotional activity to achieve specific goals and carry out particular activities.

When these ideas are brought into the leader-follower process, they highlight the ability of leaders to use emotions (their own and their followers') in the workplace. Comprehending and managing emotions is therefore an important tool to accomplish organizational goals, to motivate people and teams, to foster satisfaction and commitment, and to influence the work environment (Bass, 1997; Wong & Law, 2002; Avolio & Gardner, 2005). The question of how EI fosters effective leadership has been the subject of some reflections as well. George (2000), for example, proposes that EI contributes to effective leadership through five elements: development of collective goals and objectives; instilling in others an appreciation of the importance of work activities; generating and maintaining enthusiasm, confidence, optimism, cooperation, and trust; encouraging flexibility in decision making and change; and establishing a meaningful identity for an organization. In sum, leaders are emotional beacons to individuals and groups and are therefore a critical factor as far as getting the most out of people is concerned.

Not all authors agree with the role of EI on leadership and effectiveness, though. Some even question the existence of the EI construct. These divergences have fuelled some interesting debates in the literature; as for the relationship between EI, leadership, and effectiveness, for example, a heated argument-counterargument discussion was held between Antonakis (2003) and the group Prati, Douglas, Ferris, Ammeter and Buckley (2003a, 2003b). In 2005, the dispute was

heightened, with some authors challenging the very concept of EI (Conte, 2005; Landy, 2005; and especially Locke, 2005), which led to a strong defence by Ashkanasy and Daus (2005). Antonakis and Ashkanasy would actually write a joint text in 2009 (with Dasborough as the third author), in which they state in letter format the most important topics in EI: design of EI validation studies; evidence for the predictive validity of EI for leadership and for follower outcomes; theoretical linkage between EI and leadership; and type of measures used to assess EI (self-report versus ability tests).

Notwithstanding these predicaments in the EI literature, the aptitude to use emotions seems to be embedded in the leadership literature. For example, Yukl (2006) defines leadership as a process in which certain individuals understand and influence agreement about what needs to be done and how to do it, as well as facilitate individual and collective efforts to accomplish shared objectives. In their letter formalizing the points of agreement and disagreement related to the leadership-EI link, Antonakis, Ashkanasy and Dasborough (2009, p. 254) actually agreed that 'emotions are important for leadership and decision-making'.

Emotion understanding and management seem to be central in the transactional/transformational paradigm. Transformational leaders are highly committed to their followers, i.e., they go beyond conventional exchanges and transactions (Avolio & Bass, 1988). Recent studies show that those leaders capable of recognizing emotions are more transformational than transactional (Butler & Chinowsky, 2006). Other authors argue that transformational leadership is associated with creative thinking, identification and positive organizational culture (Yammarino, Spangler & Bass, 1993).

From Creativity back to Emotional Intelligence

There is not a consensual definition of creativity. According to Woodman, Sawyer and Griffin (1993), creativity is the creation of a new product, service, idea, procedure or process that has value and is useful. This link between creative potential and useful and valued ideas is a key point in many theoretical frameworks; furthermore, it is also stated that such a link is essential to organizational efficiency, complex problem-solving and global efficacy (DiLiello & Houghton, 2008).

Creativity in social psychology is regarded as a phenomenon that is influenced by both the environment and individual factors

(Amabile, 1996). Researchers in this area have highlighted the role of the context in individual creativity (Sternberg, 1999), or the macro determinants of organizational creativity, such as leadership and the organization climate (Amabile, 1998; Amabile et al., 2005; Borghini, 2005). The social dimension of creativity is central in Csikszentmihalyi's systemic vision (e.g., 1996). In his view, creativity is a process involving a combination of individuals, domains and fields, located in neither the creator nor the creative product, but rather in the interaction between the creator and the field's gatekeeper who selectively retains or rejects original products (see also Ford, 1996).

Another research stream has focused on factors that develop followers' creative skills. The literature has called attention to the role of leaders' attributes such as technical expertise, creative problem-solving skills and social competencies (persuasion, social intelligence and coaching) in stimulating followers' creative outputs (Mumford et al., 2002). Others have called attention to the instruments and processes that leaders need to use in order to promote followers' creativity: motivation, intellectual stimulation, support, autonomy, goal-setting, feedback and access to resources (Tierney, Farmer & Graen, 1999; Mayfield & Mayfield, 2008).

Creative management is another means to increase employees' creative output. Creative managers are capable of recognizing their employees' creative potential and skills, and of using such potential. In order to achieve that, they work on communication, they accept error and conflict, they allow their employees to work with autonomy and flexibility, they assign responsibilities, and they encourage intrinsic rewards (Sousa, 2000, 2003). The manager acts as a facilitator, since he or she creates the environments, settings and conditions in which people can set free their creativity (Guastello, 1995).

George (2007) stresses the critical role that supervisors and leaders play in providing a context that encourages or stifles creativity. Creativity is the result of a complex set of within-individual internal processes, but it needs a fertile ground to flourish; supervisors and leaders are key in creating (or not) such fertile soil, in a number of ways, such as nurturing high-quality relationships with employees, promoting justice and encouraging cognitive trust (George, 2007).

From these various research streams, it would seem that leadership and creativity are inevitably linked. Leaders are potential influencing elements in fostering or hampering their followers' creative behaviours. The

following section details the associations between these concepts.

Research Hypotheses

As the literature review suggests, emotionally intelligent leaders push and inspire followers to identify opportunities where they can be creative. These are leaders who understand conflicts and tensions in the group, and they can use such tensions to stimulate individual and group creativity. Moreover, they act as facilitators towards group goal-setting and they point to creative solutions and to improvement opportunities. Some steps in the creative process, such as data gathering and idea generation and implementation are made easier by an emotionally intelligent leader (Zhou & George, 2003; Rego et al., 2007). In sum, we envisage that:

Hypothesis 1: There is a positive relationship between a leader's EI and followers' creativity.

Since EI is a multidimensional concept, specific hypotheses can be proposed with regard to the relationships between EI and creativity. Amid the various existing EI models, we opted for Rego and colleagues' (2005, 2007, 2009) six-factor model, for four reasons: (i) it was developed in the same national and cultural context as the current study; (ii) it has shown a solid construct validity in some studies (e.g., Barczak, Lask & Mulki, 2010); (iii) it was the model used to explore a similar set of constructs (e.g., EI and creativity) and their relationships in previous enquiries (e.g., Rego et al., 2007); and (iv) for practical reasons (e.g., easy access to the EI scale). Hence, the following associations are based on the results of Rego and colleagues, as well as on a number of other works in the area.

Rego et al.'s EI model is based on six dimensions: (i) empathy and emotional contagion, (ii) understanding of other people's emotions, (iii) self-control against criticism, (iv) use of emotions (self-encouragement), (v) emotional self-control (emotions regulation), and (vi) understanding of one's emotions. Basic definitions of these constructs, which form the basis for Hypothesis 2, are as follows.

(a) Empathic leaders are more capable of capturing and understanding emotional signs from people around them than less empathic leaders (Goleman, Boyatzis & McKee, 2002). They are able to read and recognize values, fears and positive emotions in their followers, and they respond accordingly. Followers with such leaders are more optimistic about their future,

more confident and more proactive in their actions (Zhou & George, 2003).

- (b) Leaders who are better at understanding others help their followers to recover from negative emotional states, and to take creative steps to solve problems (Zhou & George, 2003). These leaders are better at perceiving their followers' frustrations, and they stimulate them to build up confidence in their own ideas, to negotiate and to keep a positive stance when executing their ideas.
- (c) EI leaders who are better at self-controlling against external strain events are more likely to act positively and constructively when faced with frustrations. They are also more capable of providing constructive feedback to their followers, which increases their motivation and resistance to failure (important in creative processes; Oldham & Cummings, 1996).
- (d) Self-encouraging leaders are more capable of living with their own frustrations, and are able to turn them into action-drivers towards new challenges. This attitude is passed on to followers, who learn how to look positively at difficult situations, how to assume risks with no fear, and how to produce novel ideas with enthusiasm, optimism and content (George, 2000).
- (e) Emotional self-control defines the capability of a person to be in control of his/her emotions (Goleman, Boyatzis & McKee, 2002). Emotional self-control in leaders is even more important, given their responsibility to achieve goals through followers. Leaders need to be able to transmit to followers the idea that emotions are central in creativity. Followers need to understand that they can take risks without fear, and that they can advance novel and unusual ideas and actions.
- (f) Leaders who understand their own emotions are aware of the impact of their feelings in their followers. They know that they can affect their followers' self-confidence, respect and drive for creativity. They are able to establish fruitful and supportive relationships with their followers, and they can push for creative thinking and behaviour (George, 2000; Goleman, Boyatzis & McKee, 2002).

The abovementioned lines of reasoning detail several associations between EI dimensions and employees' creativity. To sum them up, we predict that:

Hypothesis 2: There is a positive relationship between a leader's EI dimensions of empathy (2a), understanding of other people's emotions (2b), self-control against criticism (2c), self-

Table 1. Study Design

	Creativity	EI	Creative climate
Questionnaire answered by leaders	Q1 Leaders assess their employees' creativity	Q3 Leaders assess their own EI	Not assessed
Questionnaire answered by employees	Q2 Employees assess their own creativity	Q4 Employees assess their leaders' EI	Q5 Employees' assessment of climate (individual subjective accounts)

encouragement (2d), emotional self-control (2e), understanding of own emotions (2f), on one hand, and followers' creativity, on the other.

Although leaders may play a direct influencing role on followers, they may also be influencing them in an indirect way, through their power in the environment (Goleman, 2003; Witt, 2003). Zhou and George (2003, p. 547) state that 'leaders can play a crucial role in awakening and fostering creativity in organizational members both through their own behaviours and actions and through creating a work environment that supports and encourages creativity'. EI leaders may have a sizeable impact in creating a climate for change, innovation and creativity (Amabile et al., 2005; Borghini, 2005; George, 2007; Wang & Rode, 2010). This may be explained by the fact that followers interpret their surroundings based on several clues, which are instigated by their leaders. Goleman, Boyatzis and McKee (2002) and Momeni (2009) propose that EI leaders create environments in which people experience loyalty, intelligence, risk-taking and other attributes which pave the way for acting creatively. Finally, creative leadership may be viewed as a process intended to create the conditions for the emergence of member creativity, rather than to produce innovations, as described by Knowles (1990). A creative leader would not necessarily be an innovator, but someone who helps in providing conditions for the group members to innovate. In sum, these works lead to the third hypothesis:

Hypothesis 3: A creative climate mediates the relationship between leaders' EI and their followers' creativity.

As suggested by the previous references, a mediation effect seems to be more suitable than a moderator effect in the current setting, given the possible effect of leadership on the work environment.

Method

Design

Data was collected via questionnaire from both leaders and employees in a single organization. Leaders and followers were asked to evaluate creativity, EI and climate, according to the design shown in Table 1.

Sample

Data was collected in the largest healthcare organization operating in the Iberian Peninsula. With 5,000 employees and 16 business units, this company provides healthcare services in several areas, from eye clinics to hospital management. The current study was carried out in one of its hospitals.

The sample included seven leaders and 66 followers, which resulted in 66 leader-employee dyads. These respondents were from different areas: one team from the administrative sector, and the remaining were from various operating units (nursing and healthcare). No medical personnel were involved. The return rate was 60.8 per cent. Six of the seven leaders were female, and 61 of the 66 employees were also female (92.4 per cent), which made the current sample homogeneous in gender terms. Age means were 39 years for leaders and 31 for employees. Seniority means were 9.5 years for leaders and 1.5 years for employees. Number of employees per leader ranged between 3 and 17, with a mean of 9.

Instrument and Variables

The climate and the creativity scales were translated from English to Portuguese, following the translation/back-translation technique. Other adaptations to the original scales included slight changes in wording, and item scale (1 to 7 points in a Likert-type, excluding

Table 2. Descriptive Statistics of Main Variables

Main variables		Mean (SD)	Skewness/ Kurtosis
Individual level (<i>n</i> = 66)	Employees assess their own creativity	4.420 (0.77)	0.404 / 0.103
	Leaders assess their employees' creativity	4.382 (1.12)	0.438 / -0.692
	Employees assess their leaders' EI	4.779 (0.69)	0.176 / -0.582
EI dimensions (individual level)	Empathy	5.549 (0.97)	-0.228 / -0.786
	Understanding of other people's emotions	4.917 (1.28)	-0.628 / 2.085
	Self-control against criticism	4.974 (0.94)	-0.313 / 0.087
	Self-encouragement	5.480 (1.25)	-1.359 / 4.272
	Emotional self-control	4.667 (1.19)	0.015 / -0.514
	Understanding of own emotions	4.724 (0.97)	0.608 / -0.358
Group level (<i>n</i> = 7)	Employees assess their leaders' EI	4.893 (0.46)	-0.239 / -1.157
	Employees assess their own creativity	4.451 (0.39)	-0.535 / -0.753
	Leaders assess their employees' creativity	4.447 (0.58)	1.216 / 1.481

the climate for creativity – see below). The scales and variables measured in the current study were:

- (a) Creative performance (Zhou & George, 2001): 13 items asking managers to evaluate employees' creative performance. The same scale was used to assess employees' perception of creative performance. This required small changes in the original wording; for example, one sentence read 'he or she is not afraid of taking risks'. In the auto-evaluation mode, this sentence became 'I'm not afraid of taking risks'.
- (b) Emotional intelligence (Rego & Fernandes, 2005; Rego et al., 2009): Rego and his group have developed and refined their EI measure in several studies, following the works by Mayer, Caruso and Salovey (2000). The scale is composed of 23 items loading in six dimensions (see Research Hypotheses section above). Two of the items were removed, so that the scale could apply to followers (rating their leaders' EI).
- (c) Climate for creativity (KEYS; Amabile et al., 2005): KEYS is composed of 78 items assessing the perceived stimulating factors and obstacles to creativity in the workplace. We used two organizational-level dimensions which relate to creative climate: organizational encouragement (15 items) and organizational impediments to creativity (12 items). The former is defined as a 'culture that encourages creativity through the fair, constructive judgment of ideas, reward and recognition for creative work, mechanisms for developing new ideas, an active flow of ideas, and a shared

vision of what the organization is trying to do'; the latter as a 'culture that impedes creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo' (Coveney, 2008, p. 44). A Likert scale was used, ranging from 1 (climate feature never applies in the company) to 4 (climate feature always applies in the company).

Both questionnaires were sent to managers via electronic mail. They were instructed to answer the version 'Leader', and forward the version 'Employee' to each of his/her employees. After filling in their version, employees were instructed to send their questionnaires to an email account created by the researchers, thus averting confidentiality problems. Identification was requested in order to match supervisors' and employees' answers.

Reliability results of the scales showed good results on average. Four items had to be deleted from the KEYS scale, due to their negative impact on alpha coefficients. Some EI dimensions showed poor reliability results (below the 0.70 threshold) which could not be improved even after the removal of some items. We decided to proceed with the main statistical procedures, and we address this problem in the Discussion section. Table 2 shows the descriptive statistics of the main variables.

Results

Hypothesis 1 stated a positive association between a leader's EI and followers' creativity.

Table 3. Hypothesis 1: Pearson Correlation Results

		Employees assess their leaders' EI
Individual level (all 66 dyads)	(i) Employees assess their own creativity	0.329*
	(ii) Leaders assess their employees' creativity	0.270*
Group level (7 observations)	(iii) Employees assess their own creativity	0.817*
	(iv) Leaders assess their employees' creativity	0.490*

* $p < 0.05$.

This was tested in several ways (see Table 1): (i) Q4 × Q2 (individual answers); (ii) Q4 × Q1 (individual answers); (iii) Q4 × Q2 (grouped answers); and (iv) Q4 × Q1 (grouped answers). Numbers (i) and (ii) used all 66 dyads (individual level of analysis). Numbers (iii) and (iv) required aggregation of the data at a group level, in which all answers pertaining to a leader were aggregated and the mean was used. In practice, this meant that the sample in cases (iii) and (iv) consisted of seven cases (seven observations of means). Table 3 shows the results.

All the correlations in Table 3 show a positive and significant association between EI and employees' creativity. Even in the two cases where the common method variance error is theoretically absent (cases ii and iv), correlation coefficients are either significant or moderate to high. In sum, Hypothesis 1 is fully supported by the data, which means that supervisors' EI is positively related to their employees' creativity.

In Hypothesis 2, there were several predicted relationships between a leader's EI dimensions (2a to 2f) and his/her followers' creativity. This hypothesis was tested in two ways: (i) EI with six dimensions (acting as independent variables) × Creativity as dependent variable (Q4 × Q2 in Table 1); (ii) EI with six dimensions (acting as independent variables) × Creativity as dependent variable (Q4 × Q1). Due to the small sample size, this hypothesis was not tested with data at a group level. Several multiple regression models were tested. Table 4 shows the results.

These regression results give limited support to Hypothesis 2. The six EI dimensions account for 21 per cent of the variance in employees' assessment of their own creativity, or 5 per cent of the variance when the leader assesses employees' creativity. In other words, although in general terms a leader's EI has an impact on followers' creativity, not all EI dimensions influence creative performance.

The only two EI dimensions that seem to affect creativity are self-encouragement and understanding of own emotions.

Finally, for Hypothesis 3, the goal was to analyse the mediating effect of creative climate on the relationship between leaders' EI and their followers' creativity. Mediation effects were tested following the generic indications by Baron and Kenny (1986). We used creativity as the dependent variable, EI as the independent variable, and employees' assessment of climate (organizational encouragement and organizational impediments) as the mediating variable (Q1, Q4 and Q5, respectively, in Table 1). Following Baron and Kenny's indications, Table 5 shows the three steps to establish a mediation effect.

From Table 5, and according to Baron and Kenny (1986, p. 1177), no mediation effect can be established in the current sample, since: (i) climate (in both dimensions tested) is not shown to have an effect on creativity; and (ii) the effect of EI on the third step is greater than its effect on the second step (according to the authors, mediation exists when the effect of the independent variable is lower in the third step than in the second, which was not observed in our case). In sum, according to these results, Hypothesis 3 could not be confirmed, i.e., creativity climate does not mediate the relationship between a leader's EI and his/her followers' creativity level.

Discussion and Conclusions

The current research aimed at exploring the relationship between leaders' EI and followers' creativity. Furthermore, it also looked into the mediating effect of creative climate on the aforementioned relationship.

The findings show that followers' creativity is associated with their leaders' EI. This was observed both at an individual and at a group level of analysis. Since the current research

Table 4. Hypothesis 2: Multiple Regression Results

(i) Employees assess their own creativity		Employees assess their leaders' EI		(ii) Leaders assess their employees' creativity	
Adj. R ²	F	β	EI dimensions	β	F
0.208	3.533*	-0.226	(a) Empathy	0.045	1.571
		-0.117	(b) Understanding of other people's emotions	-0.209	
		-0.218	(c) Self-control against criticism	-0.237	
		0.441*	(d) Self-encouragement	0.380	
		-0.275	(e) Emotional self-control	-0.149	
		0.627*	(f) Understanding of own emotions	0.363	
				Adj. R ²	0.052

* $p < 0.05$.

dealt with the common method variance error, the findings support and strengthen Rego et al.'s (2007) research, as well as the theoretical propositions of Zhou and George (2003). It is therefore shown from these works that the way leaders manage their emotions and their employees' emotions is undeniably linked to their creativity.

When EI is broken down into its constituent dimensions, the strength of the relationships between EI and followers' creativity decreases considerably. However, some support was found for the linkage between creativity, on the one hand, and the EI dimensions of self-encouragement and understanding of own emotions, on the other. In this respect, the current research does not support Rego and collaborators' work, since in the latter a stronger predictive power was revealed by self-control against criticism, and empathy. The differences between the two works suggest that other factors may be influencing the relationship between EI dimensions and employees' creativity. For instance, in the current work, the sample was composed mainly of women (more than 90 per cent), working at an employee level, from a single organization, whereas in Rego et al.'s study, the sample was 25 per cent female, at a top and middle management level, from 66 organizations. As suggested by a number of authors (e.g., Amabile, 1996, 1998; Sternberg, 1999; Borghini, 2005), creativity is affected by factors pertaining to the individual, group and organizational level; likewise, in the EI literature, some researchers (e.g., Mayer, Caruso & Salovey, 2000; Mandell & Pherwani, 2003) argue that women and men are different as far as managing their emotions is concerned. Taken together, these two streams of the literature suggest that the relationship between specific dimensions of the EI construct, on the one hand, and creativity, on the other, may differ according to particular attributes of the population. This is an important finding that warrants careful exploration in future investigations.

Finally, Hypothesis 3 was not supported by the data, i.e. creativity climate did not mediate the relationship between leaders' EI and their followers' creative level. Despite the vast amount of studies suggesting this mediating effect, empirical research seems to show that the relationship between creative climate and EI and creativity is far more complex than proposed. In addition to the current findings, the work of Barczak, Lask and Mulki (2010) supports this conclusion: the authors found a mediating effect of collaborative culture in the link between trust and team creativity. Also in Wang and Rode's (2010) research, innovative climate affects employee creativity only as a

Table 5. Hypothesis 3: Testing Mediation

Mediating variable (climate dimension)	1st step (regressing climate on EI)	2nd step (regressing creativity on EI)	3rd step (regressing creativity on both climate and EI)
Organizational encouragement	$R^2 = 0.171$ $\beta_{EI} = 0.414$	$R^2 = 0.073$ $\beta_{EI} = 0.270$	$R^2 = 0.124$ $B_{Clima} = -0.205$ $\beta_{EI} = 0.384$
Organizational impediments	$R^2 = 0.008$ $\beta_{EI} = -0.09$	$R^2 = 0.073$ $\beta_{EI} = 0.270$	$R^2 = 0.124$ $B_{Clima} = 0.092$ $\beta_{EI} = 0.331$

third-order factor, interacting with transformational leadership and employee identification with leader. George (2007) had already recognized that the power to which environment settings affect creativity may depend on a number of variables, such as the type of task and the supervision level. All in all, these works offer exciting and promising research paths, which can be subsumed by the following questions: How does creative climate influence the association between EI and creativity? Will a moderating role make more sense than a mediating one? If this is the case, then perhaps the effect of EI on creativity is stronger if climate is perceived as more creative than if it is perceived as less creative. At a more complex level, will climate play both a mediating *and* a moderating role at the same time? Perhaps the concept of culture can be introduced to help clarify how such intricate associations play out (for a deeper discussion of this point, see McLean, 2005). Such premises should be considered in future research.

As far as managerial implications are concerned, the current investigation calls attention to the relationships between the supervision level in the organization and creativity of employees. Particularly significant in this relationship is the EI of supervisors. By understanding their own emotions and especially their employees' emotions, supervisors are able to directly stimulate the creative outputs of workers. As the current work has shown, this effect is mainly a direct one, and not so much an indirect one, through creative climates. This reiterates what was suggested previously, i.e., managing and handling creative climates may be a more complicated endeavour than has been proposed in the literature.

The fact that this study was carried out in a hospital also illustrates that creativity may sometimes be fostered by direct action, more

than by indirect factors. Units in hospitals need to work closely together, with leaders and employees developing intense relationships, influencing people's behaviour more than other organizational-level factors such as climate. This also needs further exploration in future research.

The two most important EI dimensions in the regression models were self-encouragement and understanding of own emotions (see Hypothesis 2), and this outcome may also be related to the particular setting in which the current study was conducted. A hospital environment may put extra strain on human aptitudes, relationships and emotions. In these cases, leaders who exert direct action upon frustrating external environments are likely to be vital to overcoming potentially difficult situations. Such leaders need to be: (i) self-encouraging, i.e., they need to show their followers how to look positively at difficult situations (George, 2000); and (ii) capable of understanding their followers' emotions, hence helping them to recover from negative emotional states (Zhou & George, 2003). These two attributes call practitioners' attention to the value of leaders' development and training, both in EI issues and in understanding the potential impact that they may have on their followers' creative outputs. When existing leaders do not possess the abilities and/or these competencies, management can either try to develop the individuals with high potential, or implement recruitment and selection criteria that enable companies to look for and admit leaders with such attributes. For example, if the literature on the transformational/transactional paradigm is correct, then transformational leaders may be more competent at managing (Yammarino, Spangler & Bass, 1993; Butler & Chinowsky, 2006) emotions than transactional ones, and in such cases, companies may prefer to recruit and integrate the former.

Limitations of this investigation include: (i) the conditions of questionnaire administration (e.g., there was no control with regard to which workers the questionnaire was sent to); (ii) creativity as the dependent variable; in this regard, it is worth mentioning that Zhou and George's (2001) scale addresses the perceived creative performance, and not the objective creative output; future studies should be able to use a mix of concurrent creative measures, both objective and subjective; (iii) the effect of other mediator and/or moderator variables with close links to EI, such as personality (see, e.g., Tierney, Farmer & Graen, 1999); (iv) the sample size, which precluded multi-level analysis to be conducted; (v) no theoretical conclusions regarding causal relationships, which would only be possible with other research designs, such as longitudinal strategies; and (vi) the gender bias in the current study (more than 90 per cent female); this limitation is particularly important since EI seems to depend on gender, although studies show contradictory results (e.g., Mayer et al., 2000, and Mandell & Pherwani, 2003, found higher EI in women, while Fatt & Howe, 2003, found that men score higher than women in EI). As both these limitations and implications show, the current topic is full of challenges and unresolved questions.

Modern organizations are faced with increasing pressures to innovate in order to remain competitive. Creativity plays an essential role in the organization's innovative and entrepreneurial activity. But creativity does not emerge easily; it needs to be stimulated, cherished and appreciated. Leaders, therefore, carry the responsibility to develop a workforce of creative employees.

Acknowledgements

This study was partly funded by FCT's Project PTDC/CS-GEO/102961/2008. The authors are grateful to Professor Arménio Rego for his valuable comments and insight into a previous draft of this article.

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Francisca B.V. Castro (francisca@stateoftheart.pt) is HR Consultant at State of the Art – Consulting and Business Training. She has a master's degree in Social and Organizational Psychology (ISCTE/IUL, Lisbon). Her research interests include creativity, emotional intelligence and leadership in an organizational context.

Jorge F.S. Gomes (jorgegomes@iseg.utl.pt) is associate professor of Human Resources Management and Organizational Behaviour at ISEG/UTL (Lisbon) and full researcher at CIS-ISCTE/IUL (Lisbon). His research interests focus on HRM as a communication process. Dr. Gomes' research has been published in *Technovation*, *International Journal of Management Reviews*, *The Journal of Workplace Learning*, and *Creativity and Innovation Management*.

Fernando Cardoso de Sousa (fernando.sousa@apgico.pt), PhD in Organizational Psychology, is President of the GAIM – Marketing Research Centre, and of the APGICO – Portuguese Association of Creativity and Innovation. Director of the MA in Human Resources Management at the INUAF – Institute D. Afonso III, Loule, Portugal, he is a member of the CIEO/UAIG research centre. His research interests include creativity, organizational innovation, leadership and research methodology.