

Empathic gaze: a study of human resource professionals

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Abstract

Purpose – The purpose of this viewpoint paper is to explore the fixation of the eyes of human resource (HR) professionals' when identifying emotions in the context of workplace research and to propose measures that might support them in their role.

Design/methodology/approach – This paper combines a contemporary literature review with reflections from practice to develop more nuanced understandings of 39 HR professionals' ability to recognise emotions. This paper used eye-tracking technology more commonly used in laboratory-based students to explore the fixation of the eye when identifying emotions.

Findings – The preliminary findings suggest that HR professionals with higher levels of emotional recognition principally focus on the eyes of the recipient, whereas those with lower levels of emotional recognition focus more so the nose or the randomly across the face, depending on the level of emotional recognition. The data suggest that women are better than men, in the sample group at recognising emotions, with some variations in recognising specific emotions such as disgust.

Research limitations/implications – The viewpoint paper proposes a number of implications for middle leaders and suggests that middle leaders should proactively seek out opportunities to be engaged in activities that support the Default Mode Network (DMN) function of the brain and subsequently the relationship-orientated aspects of leadership, for example, coaching other staff members. However, it has to be recognised that the sample size is small and further work is needed before any generalisations can be made.

Originality/value – This paper offers a contemporary review underpinned by a preliminary study into HR professionals' ability to recognise emotions.

Keywords Empathy, Emotions, Neuroscience, HR, Leadership

Paper type Research paper

Introduction

Human interaction is highly complex and dynamic, changing with every interaction one makes. Our ability to traverse the ever-changing layers of social interaction often defines us as successful within our professional and personal lives. Lying at the heart of successful social interaction is the development of empathic responses, which can closely mirror the affective state of others (Le *et al.*, 2020). Shamay-Tsoory *et al.* (2009) point out that the emotional contagion system, the phenomenon of having one person's emotions and related



behaviours directly trigger similar emotions and behaviours in other people, is the basis of one's ability to empathise emotionally. For example, I feel what you feel illustrates the emotional contagion system. This idea of matching relations has been correlated in [Gallese \(2007\)](#) to the mirroring neuron system (MNS), which subsequently has its origins in the theory-of-mind concept. While theory-of-mind research focusses on complex inferences about abstract mental states such as another person's beliefs, another line of neuroscientific endeavour has focussed on our ability to understand other people's goals and intentions by merely observing their actions. [Gallese et al. \(1996\)](#) and [Rizzolatti et al. \(1996\)](#) have all been involved in this area of research which found that neurons in the premotor cortex were firing both when physical hand movements were performed and when observing others perform the same hand movements.

When emotionally synchronised with others, a state of empathy exists where we are not only able to share but fully understand the affective states of others, allowing us to successfully relate to them by responding in the most appropriate way ([Eisenberg and Miller, 1987](#)). This understanding and response are of particular importance when individuals occupy leadership roles. This is due to leadership being conceptualised as either task-orientated or socio-emotional or as a combination of both, depending on the leadership role that an individual occupies. These two leadership functions have been reimaged into practical theories such as transformational and transactional leadership ([Bass, 1990](#)). Transformational leadership principally focusses on building relationships with those with whom leaders work, whereas transactional leadership critically focusses on task achievement. [Hughes et al. \(2005\)](#) suggest developing leaders with high emotional intelligence (EI) is key to individual and organisational success, especially in people-centred professions.

However, [Wall et al. \(2017\)](#) suggest that there is extensive literature on the positive role that emotions play at the personal, organisational and societal levels, including workplace job satisfaction. Leadership theorists such as [McClelland \(1961\)](#), [Wofford \(1970\)](#), [Jago \(1982\)](#), [Vroom and Jago \(2007\)](#), and more recently [Henkel et al. \(2019\)](#) and [Psychogios and Dimitriadis \(2021\)](#) have all become interested in developing strategies that would enable leaders to integrate these two fundamental leadership roles. For this paper, these will be referred to as task-oriented and relationship-orientated leadership in order not to attribute the approaches to one particular leadership theory. Individuals' ability to move effectively between task- and relationship-orientated activities is critical if leaders are to be adaptable and responsive to organisational challenges. While the ability to move seamlessly between task- and relationship-orientated activities, individuals need to understand their existing levels of empathy.

[Ashkanasy and Daus \(2002\)](#) argue that this complex relationship between task- and relationship-orientated leadership is influenced by Affective Events Theory (AET). The importance of AET is that emotional states are seen to lie at the core of attitude formation and employee behaviour in organisations. Furthermore, according to this theory, it is mundane, everyday events that individuals experienced that affect the way we think about our jobs, our employers and our colleagues. Ultimately, the emotional build-up can profoundly affect our behaviours. AET thus carries an important message to managers: Emotions in organisational settings and the events that cause them are not to be ignored, even if they appear to be relatively minor. It is the accumulation of these positive and negative events that determine how we feel and that, according to AET, subsequently determines the way we think and feel at work. [Hochschild \(2012\)](#) describes the emotionally draining process of managing one's emotions in the service of a job or organisation. Often, leaders are required to express an emotion that we simply do not feel or even not to express one that we do feel.

This recognition and expression of emotion are particularly important for those who work within the human resource (HR) departments of organisations. [Muncy \(2020\)](#) found that HR

professionals considered empathy in the workplace to be essential to their practice of human resources. Stating that leaders who use empathy when dealing with employees are more influential leaders and more successful in building trust. This is especially important when having to deal with situations arising from conflict or heightened negative emotions generated from conflict between the individual and either task- or relationship-orientated aspects of their role. [Grzywacz and Marks \(2000\)](#) suggest that individuals seem capable of dealing with infrequent negative occurrences at work, even when these are relatively intense, particularly if they are buffered by uplifting events such as support by friends, family and colleagues. However, the situation is much worse if there is an unrelenting series of negative events. This is often where HR professionals are asked to intervene to mediate or act as an intermediary between those involved in the conflict. However, [Cuéllar-Molina *et al.* \(2019\)](#) found HR managers with high levels of empathy adopted HR practices, specifically training, assessment, internal promotion to promote the abilities, motivation and opportunities of employees and as such were able to resolve issues of conflict amongst individuals.

Existing studies in empathy have focussed on the use of self-reporting questionnaires. However, [Dimitriadis *et al.* \(2021\)](#) argue that these are unreliable and suggest that using techniques more commonly used in neuroscience offers greater accuracy. Research by [Cowan *et al.* \(2014\)](#) suggested that eye-tracking measures may be an alternative, in that the amount of time a healthy participant spends fixating on another person's eye and facial regions correlates positively with his/her degree of trait-empathy. However, little is known about the role that positional eye-gaze and face-processing play in the development of our empathic responses. This paper considers the extent to which HR professionals can identify empathy. This is important for a number of reasons. First, there is a gap in existing literature on the use of neuroscientific techniques in non-clinical or applied settings. The second is that as already mentioned, [Muncy \(2020\)](#) considers empathy to be an important trait for HR professionals, but there is little empirical evidence to test this claim.

This paper also adds to the body of literature by offering alternative ways of exploring empathy that has not widely been used. This paper applies eye-tracking technology more commonly used in psychological-based research to investigate the connection between our ability to recognise emotions and facial processing mechanics. Specifically, we propose that the eye-gaze pattern that arises as we process affective regions of faces may be subserved by our trait empathy.

Empathy and eye-gaze

In humans, emotions are automatically transmitted through visual cues, including non-verbal behaviours such as facial expressions and body language ([Picó, 2020](#)). While gazing is unique amongst non-verbal behaviours in that the eye is a sensory organ often associated with the gathering of information, at the same time, it performs the function of sending signals to others.

The ability to resonate with other people's emotions is a psychological trait that can be measured using self-report questionnaires ([Davis, 1980](#)) or facial indices ([Eisenberg and Fabes, 1990](#)). [Shamay-Tsoory *et al.* \(2009\)](#) and [Shamay-Tsoory \(2015\)](#) state that without the ability to recognise and experience emotions, one cannot show empathy. This has been shown in studies by [Shamay-Tsoory \(2015\)](#), which use emotional recognition to assess empathetic systems. Emotional recognition and empathy are integral notions of EI, from the very beginning of its conception ([Goleman, 1995](#)). Thus, it is crucial to a person's performance as an individual and within social groups.

Although no unified model of empathy yet exists in the literature ([Cowan *et al.*, 2014](#)), [Zaki and Ochsner's \(2012\)](#) model of empathic responding is comprehensive and well supported. According to the model, empathy is comprised of three major components:

- (1) Experience sharing is defined as people's tendency to subsume, or simply share, others' emotions and has been described as a form of affective empathy.
- (2) Mentalising which is thought to be the cognitive facet of empathy, which enables the capacity for perspective-taking.
- (3) Prosocial concern that drives the capacity for emotional concern.

As such, the motivation people have to act to help others depends upon the way they cognitively understand and/or share the emotions of others.

The mechanics of empathic responding, in particular our emotional concern, are critical to our overall understanding of the nature of successful social interaction. Little is known about the role that positional eye-gaze and face-processing play in the development of our empathic response in a non-diagnostic or clinical setting.

Baron-Cohen *et al.* (1985) and McIntosh *et al.* (2006) advanced the idea of considering empathy and eye-tracking in the literature on autism. They identified a possible connection between face processing and empathy. Individuals with autism have prominent social-emotional difficulties that include empathic-related deficits in perspective-taking, emotional contagion and mimicry (Xu *et al.*, 2020).

Until recently, research using gaze as a measurement tool has traditionally been divided into (1) frequency, (2) total duration of the gaze, (3) proportion of time looking at, (4) average duration of individual glances, (5) standard deviation of glances and (6) mutual gaze (the most investigated) (Argyle and Ingham, 1972; Gobel *et al.*, 2017). Other authors have determined different forms of eye movements based on their duration (Kirkland and Lewis, 1976). These traditional categorical classifications have largely been superseded by a quantitative approach that makes use of detailed records of eye movements through eye-tracking devices.

Yet studies on social gaze in a non-clinical setting, using eye-tracking technology, remain relatively rare. One of the few studies to include eye-tracking assessed facial gaze patterns in response to Hollywood actors performing emotionally impaired scenes for a film (Klin *et al.*, 2002). More recently, Hall *et al.* (2010) sought to examine gender differences in eye-gaze, the relationship between participants' trait empathy and eye fixations on static images of facial expressions. Although women tended to gaze more at the eyes than did men, no gender differences were found in their ability to recognise emotions. However, their study relied on brief presentations of static pictures that may be insufficient, in terms of length of exposure and salience of the emotions displayed to elicit empathic responses (Cowen *et al.*, 2014). Recently, Coutrots *et al.*'s (2021) study found that through the use of eye-tracking technology, they were able to ascertain that individuals who were able to correctly identify empathy through static images were also able to recognise empathy in dynamic situations using video images. This suggests that empathic recognition is not fixed and being able to identify emotions through one medium (static images) is transferrable to dynamic scenarios.

Unlike questionnaires, the use of eye-tracking techniques to measure empathy is neither falsifiable nor subject to self-interpretation biases (Zhou *et al.*, 2003), which makes them a viable alternative. Despite these advantages, the use of such techniques may not be a universal solution. For instance, individuals with biased attentional processing of emotional human faces, such as abnormally high or low visual attention may bias the results. This may be the case for individuals with high social anxiety (Hofmann, 2007), who tend to show attentional biases towards emotional faces.

Methodology

The objective of this paper was to examine the extent to which eye-gaze changes as a response to emotions. Thirty-nine individuals ($n = 39$), 16 were male ($m = 16$) and 23 were

female ($f = 23$), participated in an emotional recognition test. The sampling unit includes all managers within HR departments of companies based in the Balkans. The 39 participants were self-selecting out of a potential cohort of 85, and all were employed in HR departments within various large private-sector companies. All participants were attending a conference, so free of workplace pressures. Over 80% of participants could be classified as millennials (those aged 25–40 years old), the remaining were identified as either Generation X (41–55 year olds) or Baby Boomers (56–65 year olds) as defined by [Fishman \(2016\)](#).

All participants were shown a sequence of pictures portraying different human facial expressions of emotions. There were seven different emotions depicted (neutral, happy, angry, afraid, disgusted, sad and surprised) (see [Plate 1](#)) based on the Karolinska Directed Emotional Faces (KDEFs). The images are all black and white and slightly blurred. This is to minimise the risk of individuals using non-emotional cues such as colour tones to determine the expressed emotions ([Lundqvist *et al.*, 1998](#)).

To record eye movements, participants were seated at a Tobii x30 eye-tracking system. Participants then had their eyes calibrated and a drift-correction procedure to ensure that the positional eye data were consistent across all participants. After calibration, the images were shown in a random order, for 850 ms (milliseconds), and the fixation of their gaze for each emotion was recorded. Results from the eye-tracking software identified the region of the presented images, which individuals fixated to in relation to each of the images. [van Renswoude \(2018\)](#) states that the use of eye-tracking techniques is particularly useful for research into emotions because it can be used in such a broad range of populations (infants through to the elderly) and for a range of studies such as reading behaviours, through visual processing in individuals with cognitive impairment ([Karatekin, 2007](#)).

Results

This section of the paper presents and discusses the results from the eye-gaze measurements. These are going to be reported and discussed in parallel to ensure that they are contextualised based on overall results and then gender.

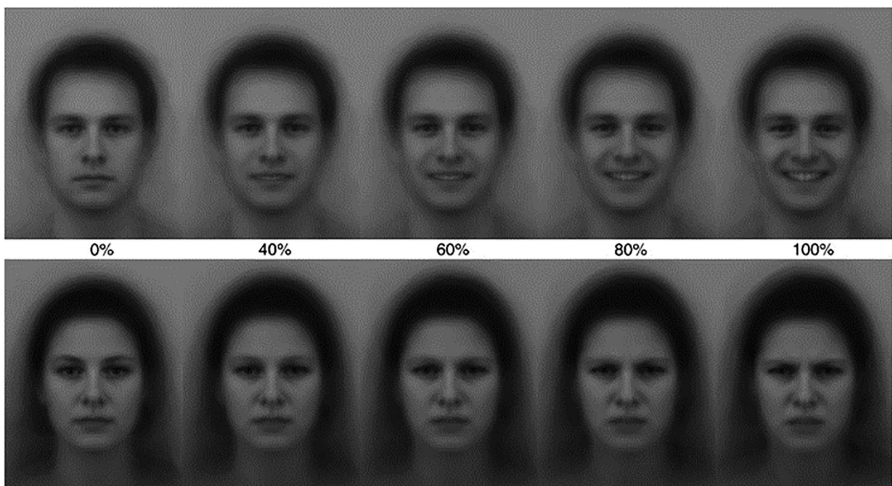


Plate 1.
Example of the visual stimulus used, based on the Karolinska Directed Emotional Faces (KDEFs)

Source(s): [Lundqvist *et al.* \(1998\)](#)

To calculate the scores, an individual's ability to correctly identify emotions was correlated to their eye-gaze, based on faces being split into three regions. As seen in [Plate 2A](#), the eyes are identified as 1, the nose 2 and the rest of the face 3. While looking at the sequence of pictures portraying different human facial expressions, the eye-tracking software mapped the points of the face that individuals were focussing on ([Plate 2B](#)) and calculated the time spent focussing on different regions of the face.

The first set of results is the overall data on the proportion of individuals who identified the presented emotion correctly. What [Table 1](#) suggests was that 44% ($n = 17$) had higher than typical levels of emotional recognition, whereas 18% ($n = 7$) had a lesser ability to recognise emotions.

This was reflected in [Plate 3](#), a heat map that identifies the focal point of participants when looking at the individual emotions presented on-screen.

From the heat map, we can see that individuals who have a higher ability to recognise emotions focus primarily on the eyes. Those with a typical level of recognition focussed on the eyes and the nose, while those with a lower level of emotional recognise had a more sporadic pattern of gaze.

In [Table 2](#) we can see that female participants score higher across all the emotional domains compared to male participants. However, some patterns are arising. For example, the emotional domain of *Disgusted* proved particularly challenging to identify for male participants, with females being on average 0.9 points more effective than their male counterparts. It is important to note that the lower the scores, the more the individuals fixated on the eyes of the viewed image, whereas all the other domains had a difference between males and females of 0.3 or 0.4 points.

What this demonstrates is that females can identify a fuller range of emotions compared to their male counterparts, despite being in similar roles.

This is supported by the correlation matrices for both male ([Table 3](#)) and female ([Table 4](#)) participants. [Table 3](#) demonstrates that for male participants, there was a low correlation with anger, surprise and disgust which is reflected in [Table 2](#), which has higher scores

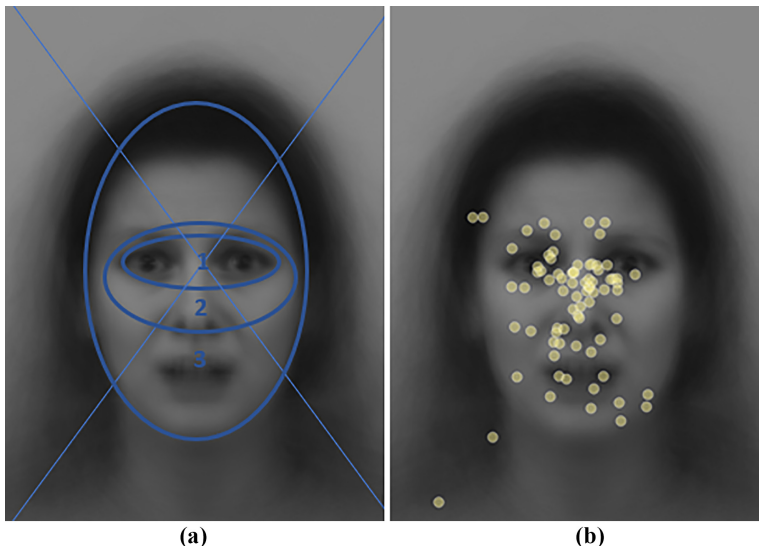


Plate 2.
Results obtained: (A)
regions of the face
identified, (B), gaze plot
of where an individual
was looking

relating to eye-gaze points, which means that when looking at these emotions, their eyes were less focussed on the eyes and more on the nose and other facial features.

When comparing this to female participants, we can see from [Table 4](#) that there are some similarities between the male and female participants, particularly when it comes to the

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Table 1.
Overall scores

Overall Level score	Level	Number of subjects	Percentage
1-1.7	High	17	44
1.7-2.3	Typical	15	38
2.3-3	Low	7	18

Plate 3.
Heat map obtained from overall results of all participants

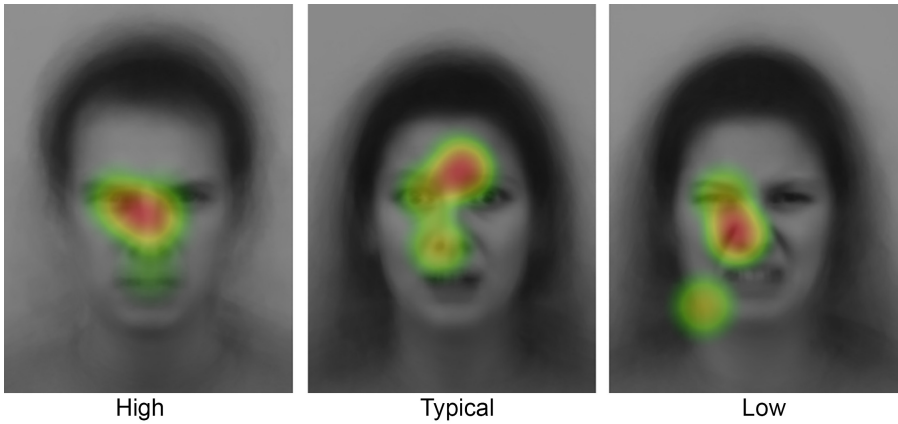


Table 2.
Emotions by gender

	Afraid	Angry	Disgusted	Happy	Neutral	Sad	Surprised
Overall	1.6	1.8	2.0	1.7	1.8	1.7	1.7
Female	1.5	1.6	1.6	1.6	1.6	1.6	1.6
Male	1.8	2.0	2.5	1.9	2.0	1.9	2.0

Table 3.
Male participants correlation matrix

	Overall	Afraid	Angry	Disgusted	Happy	Neutral	Sad	Surprised
Overall	1							
Afraid	0.96	1.00						
Angry	0.93	0.89	1.00					
Disgusted	0.54	0.42	0.46	1.00				
Happy	0.82	0.81	0.70	0.48	1.00			
Neutral	0.87	0.78	0.79	0.41	0.66	1.00		
Sad	0.93	0.90	0.89	0.30	0.70	0.86	1.00	
Surprised	0.86	0.85	0.79	0.36	0.61	0.64	0.79	1.00

emotion of disgust, the scores for females are higher than males, demonstrating that the difference between males and females is significant.

A one-way ANOVA was conducted to compare the differences between male and female participants. There was a significant difference [$F(5, 5) = 2.92, p = 0.001$] between the groups. This supports some of [Hall *et al.*'s \(2010\)](#) findings in their study of gender differences in eye-gaze. Like [Hall *et al.* \(2010\)](#), we found that women tended to gaze more at the eyes than did men, as seen in the lower scores of woman participants in [Table 2](#), suggesting that females spent more time focussing on the eyes rather than other facial features. We did find that there were differences between male and female participants in their ability to recognise emotions. A recent study by [De Lillo *et al.* \(2021\)](#) provides evidence that real-world social attention undergoes age-related changes. They found that individuals aged over 60 paid less attention to facial features during social interactions, thus having a reduced ability to recognise emotions, compared to those aged 20–40. These developmental differences might be a key mechanism that influences theory of mind amongst older adults, with potential implications for predicting successful social interactions in daily life. If we combine this with what we know about gender-based differences in recognising emotions, we could hypothesise that age and gender play a significant role in determining one's ability to recognise emotions.

Implications and conclusion

This study demonstrates the effectiveness of measuring emotional recognition through eye-gaze tracking. Being able to demonstrate the relationship between where the participant's attention is fixated and their ability to recognise emotion provides a new way of measuring a person's ability to empathise. This work is also novel due to the scarcity of research using these methods in non-clinical settings.

The use of HR professionals in this study demonstrates the applicability of results to real-world settings. Developing leaders in an organisation is an important factor in their success ([Hughes *et al.*, 2005](#)). This can be especially important when those individuals have a very human aspect to their work such as those working in HR. This is not just due to HR managers engaging with people on a daily basis but more importantly due to the sensitive nature of their work. A high degree of empathy for these professionals is an advantage, and methods to assess an individual's empathy may be useful to employers.

The implications of this are important, given the emotionally laden role that HR professionals have within organisations. In our study, we found that male participants could not recognise emotions to the same extent as their female counterparts. However, as [Coutrot *et al.* \(2021\)](#) points out, if an individual can improve their emotional recognition through static or simulated techniques, then they should be able to transfer this to real-world settings. Therefore, consideration should be given to whether male HR professionals should be supported to improve their emotional recognition. This would give them parity with their

	Overall	Afraid	Angry	Disgusted	Happy	Neutral	Sad	Surprised
Overall	1							
Afraid	0.84	1.00						
Angry	0.81	0.69	1.00					
Disgusted	0.75	0.63	0.60	1.00				
Happy	0.93	0.77	0.68	0.63	1.00			
Neutral	0.88	0.68	0.72	0.50	0.78	1.00		
Sad	0.89	0.71	0.63	0.53	0.83	0.82	1.00	
Surprised	0.80	0.52	0.54	0.58	0.77	0.65	0.69	1.00

Table 4.
Female participants
correlation matrix

female counterparts and importantly provide equality to those with whom they are supporting.

Additionally, we found that the emotions of anger, disgust and surprise caused a particular challenge for individuals to recognise. This raises a question around whether individuals need to be able to recognise the full range of emotions. Ideally, one would expect HR professionals to be able to deal with whatever emotions they are presented with. It is beyond the scope of this paper to speculate what organisations expect from their staff; however, these points are at least worthy of consideration.

The results of this study will need to be replicated, and our measures of participant empathy could be triangulated with other methods such as the use of electroencephalogram (EEG) techniques (Dimitriadis *et al.*, 2021). Further studies in this area will reveal further insights into the measurement of empathy as an individual attribute, offering further possible applications to industry. Potential further uses include the screening of applicants for empathy abilities and investigations of how individuals may seek to improve their empathy abilities.

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