

INTRODUCTION: ONE HUNDRED YEAR OLD QUESTIONS, NOVEL PARADIGMS AND NEW FINDINGS ON EMOTION

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Emotions are being scientifically scrutinized for the last 150 years and they make up a large slice of the “topic pie” in current Psychology. Charles Darwin and his contemporary Duchenne de Boulogne, pioneer of facial electromyography, inaugurated the scientific approach to emotional behavior and particularly to the facial expressions of emotion. They were shortly followed by William James (1884) who tackled both behavior and physiological reactions in relation to emotion. In “The expression of Emotions in Man and Animals” (1872/1965), Darwin founded several paradigms, still used to this day in the study of emotion, such as the ethological description and the cross species behavior comparison for studying emotional homology, and the cross cultural study of human emotion to sort “universal emotions” from culturally derived ones. He also introduced the use of questionnaires in content attribution to facial expressions, employing the first photos of induced facial expressions made by the physiologist Duchenne de Boulogne in the second half of the XIX century (1862/1990), and the study of children and the blind as an opportunity to study emotional expression less contaminated by conformity to cultural norms of control – the *display rules*, an expression coined almost 100 years later by Ekman, Sorenson and Friesen (1969).

Reflecting the different phases of scientific psychology, a diversity of perspectives of emotion related to the emotional experience in everyday social life emerged in the 20th century. Some enhanced the impact of social learning on human emotional experience, others, reflecting the emergence of the cognitive paradigm in the second half of the XX century, highlighted the importance of context evaluation in emotion differentiation, intensity and regulation, and the role of expectations.. In addition, various models of emo-

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tion also emerged, mainly within two major frameworks – a dimensional view (that can be traced back to the pioneering work of Wundt) and a discrete-emotions approach (enhancing the universality of basic emotions), both views widely embraced within the current community of emotion researchers (for a possible integration between these two views, see Lang, 1985).

Notwithstanding, entertaining top-down discussions to find consensual definitions and to resolve theoretical frameworks is a time-consuming business with limited success (e.g., Öhman & Birbaumer, 1991). At the speed emotion research is going, a bottom-up examination of recent findings in affective neuroscience for example, can certainly illuminate many relationships between cognition and emotion, and perhaps help bypass many strenuous discussions about what comes first – cognition or affect? (see Dalgleish, Dunn & Mobbs, 2009). Since the mid 1990's we have seen the refinement of the knowledge on the role of neural structures in emotion, learned the brain neurochemical pathways of large emotional and behavioral systems, and witnessed the discovery of the Mirror Neuron System, to mention just a few great findings. We also know more about the cultural *vs.* the universal signals associated with emotion, the influence of numerous factors in eliciting emotions and in interpreting them, the releasing potential of different kinds of stimuli and the role of emotion in decision-making. But century old questions linger. This means we are still back to basics regarding some of the toughest measures of emotion, such as behavioral clues to deception or even reliable behavior cues to certain emotions at all, which are still under heavy debate (Fernandez-Dolls & Ruiz-Belda, 1997).

This special issue of *Psicología* is the first of two, which are devoted to current research and theory on emotion and how it impacts our lives and social behavior.

The first article by Dias, Cruz and Fonseca, “Emotions: Past, present and future”, provides a historical perspective of the concept of emotion and a review of the study of affect with an account of the remaining discussions that survive to this day. The authors describe major theoretical models (e.g. appraisal theories of emotion *vs.* dimensional theories *vs.* discrete categorical models) with an emphasis on the cognitive appraisal based views. The authors provide some brief recommendations for the future in order to overcome the controversy surrounding this field of research (e.g. the development of a single model; the assimilation of affect terms into major families of emotions, the intertwining of biological and universal aspects of emotion with the variation that results from cultural, intra and interindividual processes).

In the following three articles, some old problems are revisited. Sidéra, Martí and Gabuccio, and Mota's articles approached the encoding of social

norms in the expression and experience of emotion, whereas Simão, Justo, and Martins investigated gender differences in decoding social emotions.

In Sidera, Marti and Gabucio's study, entitled "The distinction between real and apparent emotion in pretend play and deception situations", we find an ontogenetic perspective of the understanding of deceptive emotional expression, targeting 5-7-year-old children. Departing from the assumption that children as young as 3yrs old begin regulating their emotional expressions to conform to social norms (but only years later are capable of telling a "true" from a "false" emotion based of behavior observation alone), the authors investigated whether children were capable of understanding the distinction between an *internal* and an *external* emotion. Since children pretend-play often and even use emotional stereotypes in their pretend play, authors also explored whether it would be more difficult for children to make the internal/external emotion distinction in a deception task than in a pretend play task. Most 6 and 7 year-old children did not make a distinction between internal and external emotion in the deception task, and although there is a significant improvement with age, the pretend task was not significantly easier for the children as authors expected. Sidera and colleagues' data defy the current view that toddlers (at 3yr or older) are capable to distinguish real from apparent emotion. The authors propose, alternatively, that young children adjust their expressive behavior to *display rules* in their cultural environment, possibly unaware that they are doing it, and suggest that it is after performing well that children learn the meaning of their pretend emotion in social context. This is all the more plausible as human children are born outstanding imitators of expressive behavior (e.g. Meltzoff & Moore, 1983): even on the grounds that they play pretend some emotions well as toddlers, we cannot rule out automatic mimicry altogether to favor an understanding of the emotion *per se*.

Cultural differences in the experience of emotion, another core issue from the early days of the Psychology of Emotion, has always been a bit tortuous due to the diversity and intricacies of *Display rules*. In Mota's article [*Influence of socio-cultural factors and the independence-interdependence dimension on the focus of Social Anxiety*], the author presents a bibliographical review comparing contemporary western cultures (European and American) and eastern cultures (with a focus on Japanese) regarding the relationship between one's independent/-interdependent self-image and the experience of social anxiety. This analysis portrays a connection between an independent self and a mitigation of social anxiety and embarrassment. We also learn about a *taijin-kyofu-sho*, which could be enclosed within the universe of the so-called cultural emotions (the expression describes an experience that in many ways surpasses the DSM IV-R concept of social anxiety in the West).

Gender differences in emotion-related processes are a topic that never seems to run out of fuel. Indeed so many differences have been found over the years – especially in the knowledge of emotion, in emotional expression decoding accuracy, in emotional expression encoding ability and in emotional expressiveness parameters (e.g. Notarius & Johnson, 1982). The majority of studies (but far from all) have found that in these subtopics females tend to outrun males. Discussions around the question “where do these differences come from?” revitalize the nature/nurture debate. In this vein, Simão, Justo and Martins, in their article entitled “Recognizing facial expressions of social emotions: Do males and females differ?”, addressed this problem in relation to decoding facial expressions of arrogance, guilt and jealousy. Because social emotions reflect the integration of social norms and are affected by culture, it is interesting to learn whether this female bias extends to them. In this experimental study, Simão and colleagues asked if there would be gender differences in the recognition of social emotions, and expected to find them based on evolutionary psychology theories predicting that women’s caretaker role predisposes them to a higher attention to and learning of emotional signals. The authors went on to investigate if higher performance in cognitive tasks would predict better recognition of the facial expressions of these social emotions. Results confirmed this relation with some measures of abstract reasoning, attention and planning. The authors also confirmed that females are more accurate at recognizing facial expression, but also showed that these social emotions are not all equally “easy” to recognize.

In this special issue other authors have challenged old approaches and used new paradigms. The effect of emotion on cognition is another century old topic. Both Martinez, Zeelenberg and Rijssman’s, and Prada and Garcia-Marques’ articles, one a review, the other an empirical study, focus on the effect of emotion on cognition.

In Prada and Garcia-Marques’ article, “*Influence and Interference: Combining two affective priming paradigms*”, the authors present and compare the performance of two of the main experimental paradigms to study *affective priming* – a phenomenon in which a valenced representation, *a priori* activated by a *priming stimulus* presentation (prime), affects the subsequent processing of another stimulus. In the first experiment, Prada & Garcia Marques measured the prime effects on the correct appraisal of the valence of target words and on respective response times. Their results showed that incongruence between prime and target not only decreases correct responses but also slows down response, indicating an expected interference. In the second experiment, authors tested the effect of the valenced prime on the appraisal of images of neutral everyday objects. The effects were found even with the presentation of the prime at the subliminal

level. Valenced primes delayed response as compared to neutral ones, but negative primes delayed them less than positive ones. The findings of this study enrich our reflection on the functionality of emotional response.

Martinez and colleagues, in “Why valence is not enough in the study of emotions: Behavioral differences between regret and disappointment?”, challenge a valence-based approach and make the case for a more emotion-specific systems approach to the characterization of emotions. The authors pinpoint the limitations of valence centered studies, invoking for example aspects such as the blended and often conflicting nature of affects, the dual valenced meaning of some emotion names, depending upon the situation or the fact that closely related affects can nevertheless be bound to distinct action tendencies and thus affect decisions distinctively.

Finally, Machado Vaz, Martins and Martins’ article in “*Emotional differentiation and emotion regulation in Portuguese adults*” report a study comprising measures of emotional differentiation and emotional regulation in a large sample of the Portuguese adult population. By studying differentiation, this study dealt with the “tailored” aspects of emotion – the individual unique experience that is the product of one’s own attribution of meaning to the physiological response, context, and memories, altogether present with the eliciting stimulus. The authors tested whether emotional regulation and emotional differentiation are affected by education, and found indeed a population where less educated individuals are more likely to report emotions that are largely undifferentiated (how many times do we hear «I felt a commotion!») and others with a higher education tend to report a wider gamut of emotions, or shades of emotion. This ability to differentiate seems to better one’s efficacy in regulations.

There are, of course, many topics in Emotion and Social Behavior to explore beyond these. Many have been approached in the surprisingly large wave of submitted papers to this special issue. The current upsurge of interest in emotion, a worldwide phenomenon, provided us with material for a second special issue on emotion and its impact in our social life.

To all the contributors many thanks!

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