

Chapter 7

Development of Morality and Emotional Processing



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Abstract Emotions play a very important role in moral judgments. Hume argues that morality is determined by feelings that make us define whether an attitude is virtuous or criminal. This implies that an individual relies on their past experience to make a moral judgment, so that when the mind contemplates what it knows, it may trigger emotions such as disgust, contempt, affection, admiration, anger, shame, and guilt (Hume D. *An enquiry concerning the principles of morals*, 1777 ed. Sec. VI, Part I, para, 196, 1777). Thus, even so-called “basic” emotions can be considered as moral emotions. As Haidt (*The moral emotions*. In: *Handbook of affective sciences*, vol 11, 852–870, Oxford University Press, 2003) points out, all emotional processing that leads to the establishment and maintenance of the integrity of human social structures can be considered as moral emotion. Consequently, the construct of “morality” is often characterized by a summation of both emotion and cognitive elaboration (Haidt J. *Psychol Rev*, 108(4):814, 2001).

Keywords Emotional processing · Morality · Moral psychology

Introduction

Emotions play a very important role in moral judgments. Hume argues that morality is determined by feelings that make us define whether an attitude is virtuous or criminal. This implies that an individual relies on their past experience to make a moral judgment, so that when the mind contemplates what it knows, it may trigger emotions such as disgust, contempt, affection, admiration, anger, shame, and guilt

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(Hume, 1777). Thus, even so-called “basic” emotions can be considered as moral emotions. As Haidt (2003) points out, all emotional processing that leads to the establishment and maintenance of the integrity of human social structures can be considered as moral emotion. Consequently, the construct of “morality” is often characterized by a summation of both emotion and cognitive elaboration (Haidt, 2001).

According to the Social Intuitionist Model (Haidt, 2001), moral judgment is substantially influenced by “intuitions,” i.e. automatic affective reactions. In turn, these intuitions appear to have evolved from physiological reactions in response to external threats and opportunities over our phylogenetic history (Bloom, 2012) and now play a role in resolving situations that threaten the integrity of human social structures (Haidt, 2003). A later hypothesis, the Moral Foundations Theory (MFT; Haidt & Joseph, 2004) based on the assumptions in the Social Intuitionist Model, posits that these intuitions emerge whenever at least one of the six universally human “moral foundations” is violated: (i) Care; (ii) Fairness; (iii) Loyalty; (iv) Authority; (v) Sanctity; and (added by Haidt, 2012) (vi) Liberty.

In summary, the violations of these six foundations can be described and exemplified as follows (Graham et al., 2013; Graham et al., 2011): (i) Care/harm—situations that involve impairment in emotional and physical care between humans and humans in relation to animals (e.g., Physical aggression in response to an affective betrayal); (ii) Fairness/cheating—situations involving cheating (e.g., The use of public money for personal purposes); (iii) Loyalty/betrayal—situations in which an individual shows disloyalty toward a person or entity (e.g., An employee who works simultaneously for a competing company); (iv) Authority/subversion—situations involving disrespect and disregard for a figure of authority (e.g., Talking loudly during a religious ceremony); (v) Sanctity/degradation—situations involving the “degradation” of moral principles (e.g., Engaging in sexual behavior such as incest); and (vi) Liberty/oppression—situations involving the restriction of personal freedom (e.g., Forcing individual to wear a specific item of clothing).

As presented by Haidt (2008), the first three characterize foundations oriented toward the valuation of the individual (Individualizing Foundations), while the last three value the collective (Cohesive Foundations). In this sense, the recent literature on moral processing is based on the assumptions of TFM (Haidt, 2003, 2008, 2012; Graham et al., 2013), stimulating, for example, the development of instruments such as the Moral Foundations Questionnaire (Graham et al., 2011) and the Moral Foundations Vignettes (Clifford et al., 2015). On the other hand, the degree to which moral dilemmas are involved in the processing of emotions varies consistently with the influence that emotion has on moral judgment (Greene et al., 2001). However, Haidt and Greene disagreed about the role of reason in moral psychology because of Greene’s belief in the relevance of thought in a manual way—which is the rational and controlled judgment system—in contrast to the automatic mode, regulated by emotion and intuition, defended by Haidt (2001), who considers emotion as the only source of moral judgment, rationalized by the manual mode (Greene, 2013). In

addition, it is estimated that the moral judgment changes according to social and cultural influences (Haidt et al., 1993). However, this conception contrasts with the widespread belief in the twentieth century that a rational and deliberate process takes part in the moral decision (Kohlberg, 1969; Turiel, 1983). Although the notion that judgment is based on the emotional implications of morality is strong, the evidence is still considered insufficient and unproven by some, who argue that emotions can have little influence on moral judgment (Huebner et al., 2009). The recent literature on moral processing is based predominantly on the assumptions of the MFT (Graham et al., 2013) and forms part of the theoretical framework for the development of research instruments such as the Moral Foundations Vignettes (MFVs; Clifford et al., 2015). Furthermore, a group of researchers have recently criticized the MFT, arguing that it fails to cite specific activation modules for triggering the violation of each foundation (and an ensuing affective reaction). In the face of these criticisms, in addition to the importance of factors such as *Nativism*, *Cultural Learning*, *Intuitionism*, and *Pluralism* to account for the development of personal morality (see Graham et al., 2013, for a more in-depth analysis), a group of researchers predominantly represented by Kurt Gray have recently developed the Theory of Dyadic Morality (TDM; Schein & Gray, 2018), which suggests that morality or moral violations are represented socially through different forms of harm, but nevertheless have the same ontological basis.

As highlighted by Pizarro (2000), emotions are typically understood as processes antagonistic to moral judgments, sometimes not considering their impact on judgment processes, sometimes assuming that emotions harm judgments. However, a series of contemporary studies points out the close relationship between the two phenomena, frequently highlighting the causal role that emotional modulation plays in the impact of moral judgment (Haidt et al., 1993; Schnall et al., 2008). This impact sometimes contributes to judgment, in cases where, for example, emotional disgust related to a moral violation guides the recrimination of such a violation. On the other hand, emotions can also guide immoral behavior, for example, in cases where positive effects guide acts of injustice or corruption, such as those often observed in political contexts.

Attitudes and judgments can be taken automatically, without necessarily reasoning, based on pre-established concepts or in a complex way, using different perspectives (Van Bavel et al., 2015). As noted by Koenigs et al. (2007), some brain structures are related to more deontological moral judgments, and when these structures suffer brain injuries, the most intuitive judgments predominate, demonstrating that moral judgments are present in both situations. However, cognitive processes may be present to a greater or lesser extent. Moreover, it is worth mentioning that some studies have demonstrated that emotional intuitions can significantly impact moral judgment and reasoning both in adults and children (Danovitch & Bloom, 2009; Malti & Ongley, 2014). As such, differences in moral judgment at distinct stages of development may often be due to individual differences in the development of emotional processing and the regulation of these emotional intuitions (Eisenberg, 2000).

Emotional Processing

Several studies have identified overlapping areas in the brain responsible for both moral judgment and emotional processing, including the insula (Vicario et al., 2017; Ying et al., 2018), amygdala (Decety et al., 2012; Harenski et al., 2014), orbitofrontal cortex (OFC; Fumagalli & Priori, 2012) and ventromedial prefrontal (PFC; Shenhav & Greene, 2014; Pascual et al., 2013), and anterior cingulate cortex (ACC; Pascual et al., 2013). Moll and Oliveira-Souza (2007) suggest that this overlap may be due to the dependence of moral reasoning and judgment on the engagement of multiple emotion-related systems in the brain, citing the ventromedial PFC as one of the key nodes in this network as an interface between emotional experience and moral decision-making.

There have been frequent reviews of research into moral judgment and decision-making due to the increasing importance of moral behavior and reasoning in modern life. Several reviews have dedicated themselves to establishing a neural basis responsible for the cognitive processes underlying moral reasoning (Forbes & Grafman, 2010; Van Bavel et al., 2015). A greater understanding of the physiology of the “moral brain” has been possible by the so-called boom of functional neuroimaging studies (Greene & Haidt, 2002). Verplaetse et al. (2014) have identified some of the key nodes in a neural system subserving moral cognition, including (i) medial frontal gyrus; (ii) the superior temporal sulcus; (iii) the temporoparietal junction; (iv) orbitofrontal cortex; (v) ventromedial PFC; and (vi) dorsolateral PFC. In particular, some structures of the PFC deserve to be highlighted as they have a distinct impact on the cognitive and social processes underlying moral judgment (Forbes & Grafman, 2010).

The dorsolateral PFC has been implicated in many aspects of moral intuition; Forbes and Grafman (2010) suggest an auxiliary function of the right dorsolateral PFC in the integration of complex emotional responses that are generated by the evaluation of information from the context that is being judged, increasing the weight of emotion in this decision. However, Greene et al. (2004) find evidence that demonstrate greater involvement of the same region in more difficult personal moral dilemmas, which require greater rational cognitive processing.

On the other hand, Greene (2007) found that patients with lesions in the ventromedial PFC showed more utilitarian moral judgments, with less cognitive elaboration. More recently, another study regarding group categorization demonstrated that the ventromedial PFC showed greater activation in situations in which participant evaluated themselves as belonging to a specific group, compared to situations in which they did not belong (Molenberghs & Morrison, 2012), revealing the role of ventromedial PFC in social categorization as well. However, the studies described above only reveal correlations between different forms of moral judgment and brain activation.

Interestingly, emotions themselves may be moral in character, including such complex emotions as guilt, shame, and righteousness (Turner & Stets, 2006). These moral emotions often signal emotional arousal in response to moral violations or conformity but may have a primary role as “triggers” for more basic emotions such

as anger, fear, and hatred. Similarly, our emotional reactions to moral violations of fairness and our propensity to engage in prosocial behavior have been shown to depend on similar neural substrates as reactions to situations eliciting disgust (Sanfey et al., 2003; Tabibnia et al., 2008).

Morality

Relatively few studies have been published on the development of the psychological and neural underpinnings of moral judgments. To date, the primary theories in this field continue to be those proposed by Jean Piaget and Lawrence Kohlberg, two of the most significant scholars of moral and cognitive development of the twentieth century, who saw morality primarily in terms of justice, care, and respect for authority (Bloom & Wynn, 2016).

Piaget

For Piaget et al. (1989), moral values are constructed from the interaction between the subject and the various social environments which he/she engages with, and it is through daily coexistence with others in adulthood that we build our moral values, principles, and norms. Processes of internal organization and adaptation are necessary for these interactions to occur, which Piaget's model categorizes as interactions of assimilation and accommodation. Assimilation schemas vary according to the stage of individual development and are defined as strategies for conflict resolution based on pre-existing cognitive structures and knowledge. Furthermore, Piaget argues that the development of morality is composed of three phases: (i) a "pre-moral" phase, (ii) a "heteronomous" phase, and (iii) an "autonomous" phase.

The first "pre-moral" phase, present in children of up to 5 years of age, is where the child bases their rules of conduct on their immediate needs instead of a set of moral norms which supersede behavior. When the child obeys an internally generated rule, the behavior is reinforced through habit and not by a sense of right and wrong. A baby who cries until fed is an example of moral behavior in this phase.

The second phase, that of heteronomous morality, is typically present in children aged 5–10 years. In this stage, morality corresponds to behavior, which complies with social rules and norms, with any interpretation other than this does not correspond to a correct attitude. A poor man who steals medicine to save his wife's life is committing an equal moral wrong as a man who murders his wife, according to heteronomous reasoning.

Finally, during the third phase of moral development, autonomous morality, individuals set moral codas and rules by mutual agreement.

However, as pointed out by Vozzola (2014), there are stronger points that should be considered in Piaget's classical theory, such as the interference of the

environment in development and what we can structure in order to stimulate the child, but there are also other aspects that must be considered, such as the fact that Piaget underestimates the role of culture and education in fostering cognition and moral development. This important role of cognitive development in moral development is evident in a study by Smetana and Ball (2018) showed that children make distinctive moral judgments regarding physical damage and psychological damage (both from Care Foundation) because the first is concrete while the latter may have no direct and observable consequences, and therefore requires a more advanced understanding of the thoughts and feelings of others (Helwig et al., 2001; Smetana et al., 2012). In particular, understanding young children's judgment relative to psychological damage is hampered by the difficulty in coordinating moral assessments with an understanding of intentions, actions, and outcomes (Jambon & Smetana, 2014).

Kohlberg

Kohlberg (1976) divided moral development into intervals based on the responses he observed to hypothetical dilemmas presented in the form of stories, concluding that there are three main levels of moral reasoning with two stages each.

The first level is that of "preconventional morality," which is divided into an initial stage of orientation to punishment and obedience, where the child decides what is wrong on the basis of what behavior is punished, and a subsequent stage of individualism, instrumental purpose and exchange, where the child follows rules when it is in his/her immediate interest. This level is largely related to the moral foundation of authority, which values both respect for the rules established by a moral authority and punishments for moral transgressions. The role and importance of authority figures and social norms guiding the individual's principles of right and wrong are also established at this level.

The second level is that of "conventional morality" which is divided into an initial stage of mutual interpersonal expectations, relationships, and interpersonal conformism, where those actions that meet the expectations of the family or other significant social grouping are deemed to be morally right (directly related to the moral foundation of loyalty). The later stage in this level, that of social system and consciousness, emphasizes that moral actions are those defined by broader social groups (e.g., a nation or people) or by society as a whole (Kohlberg, 1976).

Finally, the third level is that of "postconventional morality," which is divided into an initial stage of orientation by the social contract, where the attitudes of the individual are directed to act in order to achieve the "greater good for the greatest number of people" (i.e. utilitarianism), and a subsequent stage of universal ethical principles, where the individual develops and follows ethical principles through reflection and personal choice to determine what is morally right (Kohlberg, 1976).

As with Piaget, Vozzola (2014) also points to the strong and weak points which can be highlighted in Kohlberg's theory. Kohlberg primarily asserts that it is through

development that people can construct “a deeper understanding of particular social practices or of more specific social contexts” in qualitative divisions based on hypothetical dilemmas.

Current Perspectives

More recently, Saarni (2011) has highlighted the construction of emotional competence as a key milestone in moral development, as a set of cognitive and regulatory skills and goal-oriented behavior that emerges over time relative to the individual’s social context. As discussed by Eisenberg (2000), individual factors such as cognitive development and temperament influence the development of emotional competence, which can also be influenced by social experiences and learning, including the individual’s social relations history and beliefs. Also, emotion regulation abilities may mediate how emotional intuitions impacts moral judgment and reasoning. Thus, some skills of emotional competence, described above, are: (i) ability to discern and understand others’ emotions based on situation and expressive clues; (ii) the capacity for empathy and sympathy involving the emotional experiences of others; and (iii) ability to soften the intensity of aversive and distressing emotions using self-regulation (Eisenberg, 2000).

Saarni (2011) also states that child’s relationship with their caregivers is characterized by the initial context in which there is the unfolding of the emotional life of the child, causing this relationship to structure the child’s life for the development of emotional skills and future relationships social rights (see also Graziano et al., 2010; John & Gross, 2004). The same author goes on to say that a safe bond between the caregiver and the child leaves the child free to explore the world and engage with peers, since an insecure or unstable attachment is associated with emotional and social incompetence, particularly in the areas of understanding emotions and anger regulation. Typically, in relation to the development of emotional abilities, in younger children, the expression of emotions and their regulation are less developed, requiring a greater support and reinforcement of the social environment. The development of these skills does not occur in isolation, and its progression is intricately linked with cognitive development (Eisenberg, 2000; Saarni, 2011).

In this sense, some studies have investigated the influence of emotional regulation on moral judgment (Feinberg et al., 2012; Lee et al., 2013; Li et al., 2017; Zhang et al., 2017; Helion & Ochsner, 2018). For example, one of the studies pointed out that cognitive reappraisal habit influences the rigidity of moral judgment, so that individuals who have a high frequency of cognitive reappraisal also have a more liberal moral judgment (Feinberg et al. (2012). In this same sense, another study revealed that the habit of cognitive reappraisal, in addition to being related to less conservative behaviors, is also related to less behavior in support of conservative policies, which demonstrates that this cognitive control has as much influence on moral judgment as on moral attitudes (Lee et al., 2013).

Conclusions

Several studies address the relationship between emotion and moral judgment (Pizarro, 2000; Greene et al., 2001; Haidt, 2001; Helmuth, 2001; Haidt, 2003; Koenigs et al., 2007; Moll & de Oliveira-Souza, 2007; Tangney et al., 2007; Huebner et al., 2009; Feinberg et al., 2012; Zhang et al., 2017; Wagemans et al., 2018), sometimes highlighting the duality between faster/intuitive and slower judgments/deontological, others defending the domain that emotions cause in guiding decision-making processes (Haidt, 2012; Greene, 2013). In one way or another, there is a great interest by moral psychologists in studying the relationship between these two phenomena, since this relationship affects areas such as law, politics, public health, and interpersonal relationship processes in general. In addition, emotions are currently being discussed as active processes, no longer as a mere physiological consequence of a given stimulus, highlighting the important role of cognitive processes, such as the regulation of emotion, in modulating the emotional response. In that sense, the specific assessment of different moral foundations for different ages can contribute to a better understanding of the development of moral judgment throughout the different stages of development. In addition, it is essential to highlight the importance of assessing the development of moral judgment also during adulthood, as well as in different sexes.

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