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Literature review

A stenography of empathy: Toward a consensual model of the empathic process

Une sténographie de l'empathie : vers un modèle consensuel du processus empathique

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ABSTRACT

Empathy has gained popularity in the general population and the scientific world during the past decade. Recently, several researchers found a significant decrease in empathy scores of healthcare students (notably medical students) and recommend promoting empathy skills in several fields of education. The current paper presents a new model of the empathic process: a stenography of empathy compelling scientific data and contemporary conceptions. Indeed, we combined all pioneer researchers' conceptions of empathy (Davis, Decety, Batson, Preston & de Waal) into an integrative model. This model is centered on the empathizer (i.e., a person observing a target experiencing emotions) and displays how all empathy components are articulated, explaining the individuals' general functioning and how the process might become dysfunctional. We illustrated applications of the model with three clinical examples (i.e., burnout, psychopathy, and borderline personality disorders) to display how empathy is related to psychopathological symptoms. We believe this new dynamic and sequential model would be helpful in explaining how empathy works, which is of great interest to healthcare students, clinicians, researchers, and academics.

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RÉSUMÉ

Depuis ces deux dernières décennies, on observe un intérêt croissant au sujet de l'empathie, tant au sein de la population générale que dans le monde scientifique. Effectivement, plus de la moitié des productions scientifiques sur l'empathie ont été réalisées depuis 2012. Récemment, de nombreuses études se sont focalisées sur le développement de l'empathie des étudiants (notamment en médecine), de par l'observation d'un déclin significatif de leurs scores au cours de leur parcours académique. Si la plupart de ces travaux prônent la nécessité d'un développement accru des compétences empathiques, certes, de nouveaux supports théoriques méritent d'être construits afin d'en faciliter l'apprentissage théorico-pratique. Le présent article propose une nouvelle modélisation du processus empathique. Il s'agit d'une sténographie de l'empathie car il se rapporte à une simplification d'un phénomène complexe aux frontières floues, voire parfois ineffables. Ce modèle intégratif combine les données scientifiques contemporaines et les différentes approches théoriques d'auteurs pionniers du domaine comme M. Davis, J. Decety, C. Batson, F. de Waal et S. Preston. Centré sur « l'empathiseur » (c.-à-d., la personne qui observe une cible éprouvant une émotion), le modèle décrit comment les composantes de l'empathie s'articulent entre elles. Il permet d'expliquer le fonctionnement général des individus mais aussi comment le processus peut devenir

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dysfonctionnel. Dans ce présent article, nous avons également illustré à travers trois exemples cliniques (c.-à-d., le *burnout*, la psychopathie et le trouble de personnalité *borderline*), comment l'empathie peut être associée à des symptômes psychopathologiques comme le cynisme ou l'épuisement émotionnel, ou encore, les comportements antisociaux et l'émoussement affectif. Nous pensons que ce modèle dynamique et séquentiel offrira un nouveau background théorique clair et didactique pour expliquer et enseigner le fonctionnement de l'empathie (et ses éventuelles dysfonctions), ce qui reste d'un grand intérêt pour les futurs professionnels de la santé, les cliniciens, les chercheurs et les enseignants.

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1. Introduction

People have a growing interest in empathy (cf. Google Trends©), and half of the articles on empathy in psychology have been published since 2012, showing that this interest is recent [1]. Currently, students have been in the spotlight because several authors propose to improve their empathy skills in almost all disciplines (medicine [2,3], nursing [4,5], pharmacy [6], health sciences [7], engineering [8], and project management [9]). These studies are particularly right to propose improving empathy abilities given that numerous studies have shown a significant decrease throughout the academic career (especially in medicine [10–12]). However, what exactly do we need to improve?

1.1. What is empathy?

Cuff et al. identified 43 definitions of empathy and synthesized them into one: “empathy is an emotional response (affective), dependent upon the interaction between trait capacities and state influences. Empathic processes are automatically elicited but are also shaped by top-down control processes. The resulting emotion is similar to one’s perception (directly experienced or imagined) and understanding (cognitive empathy) of the stimulus emotion, with a recognition that the source of the emotion is not one’s own.” [13, p. 150].

More recently, Eklund and Meranius found four main themes in the empathy literature, drawing a consensus concerning the empathizer (i.e., the observer) [1]. The first theme is *understanding* and refers to knowing something about the mental life of another person. The second theme is *feeling* which corresponds to an appropriate affective response to another person’s situation. The third theme is *sharing* (i.e., experiencing similar states to those the other person is experiencing). Finally, the fourth theme is *self-other differentiation*, which refers to recognizing a differentiation between the other person and oneself.

These clarifications are necessary because they help move forward through a consistent theoretical empathy framework. In line with these improvements, the current paper proposes articulating several conceptions of empathy into a sequential model of the empathic process. Several authors recommended promoting empathy skills (notably for health care professionals), but, as mentioned by Triffaux et al., we need to propose tailored interventions on empathy [14]. For instance, as they mentioned, if we use Davis’ theoretical framework [15], would it be necessary to promote personal distress and fantasy? Therefore, before promoting empathy skills, it is important to rely on theoretical models offering a better understanding of how empathy works (e.g., to target specific empathy domains).

In the present paper, we propose a new model that is expected to have developmental, educational, and clinical implications. Indeed, we believe this modelization will offer a clearer view of the empathic process to develop specific empathic abilities (for instance, during the academic curriculum). In addition, clinicians

and researchers will be able to identify components of the empathic process that might be related to psychopathology symptoms (e.g., burnout symptoms, psychopathy, or borderline personality disorders, see Section 4).

Hence, the model will be a stenography of empathy because it will transcribe a complex phenomenon in a shorthand way: some ineffable features and connected components form the empathy phenomenon, making all theoretical approaches a simplification of reality.

2. A new model of empathy

The model proposed in the current paper (see Fig. 1) will describe an interaction between an empathizer (i.e., an observer interacting with a target) and an empathee (i.e., the target experiencing an emotional state). The most important characteristic of this interaction is that the emotion felt by the empathee irradiated the empathizer. In other words, no matter what the empathizer does, the emotion felt by the empathee will activate some empathizer’s neural patterns; de Waal & Preston called this step *emotion transfer* [16]. This activation has been demonstrated by Preston and de Waal in their Perception-Action model of empathy [17]. They showed that observing or imagining another person’s feelings automatically activates some state patterns in the observer. This is an automatic activation because it is elicited unintentionally, requires minimal cognitive resources, cannot be stopped voluntarily, and occurs without conscious awareness [18]. Other authors showed that the observer’s brain circuits partially overlap the target’s brain circuits when s/he is experiencing a positive or negative emotion [19,20].

Numerous studies showed that observing someone’s emotion (or pain) activates similar neural patterns in the observer [21–24]. However, this process is described as selective and influenced by similarity, familiarity, membership, or cooperation [18,25–27], showing that this process is flexible and context-dependent, as suggested by Yamamoto [28]. Parallely to this automatic activation, the empathizer makes a rapid and brief assessment (RBA) of the empathee (see the RBA component in Fig. 1): s/he identifies the emotional state (e.g., its valence and arousal) and the state of need of the target (i.e., the empathee). For instance, Singer showed that people use representations of their emotional responses to understand others’ feelings [29]. This is also supported by the Perception-Action Model and mirror-neuron theories [17]: “Individuals understand and have a sense of others’ emotions because the nervous system evolved to map others’ state onto their own individual representations for experiencing those states. As such, when an observer attends to another’s state, he or she spontaneously accesses about the other (the ‘target’), their feelings, the situation and other related concepts through a distributed associative process” [16, p. 499].

After this stage, the empathizer enters into a contagion path: the empathee’s emotion arouses similar feelings in the empathizer (i.e., a vicarious feeling). Then, this vicarious feeling can evolve through

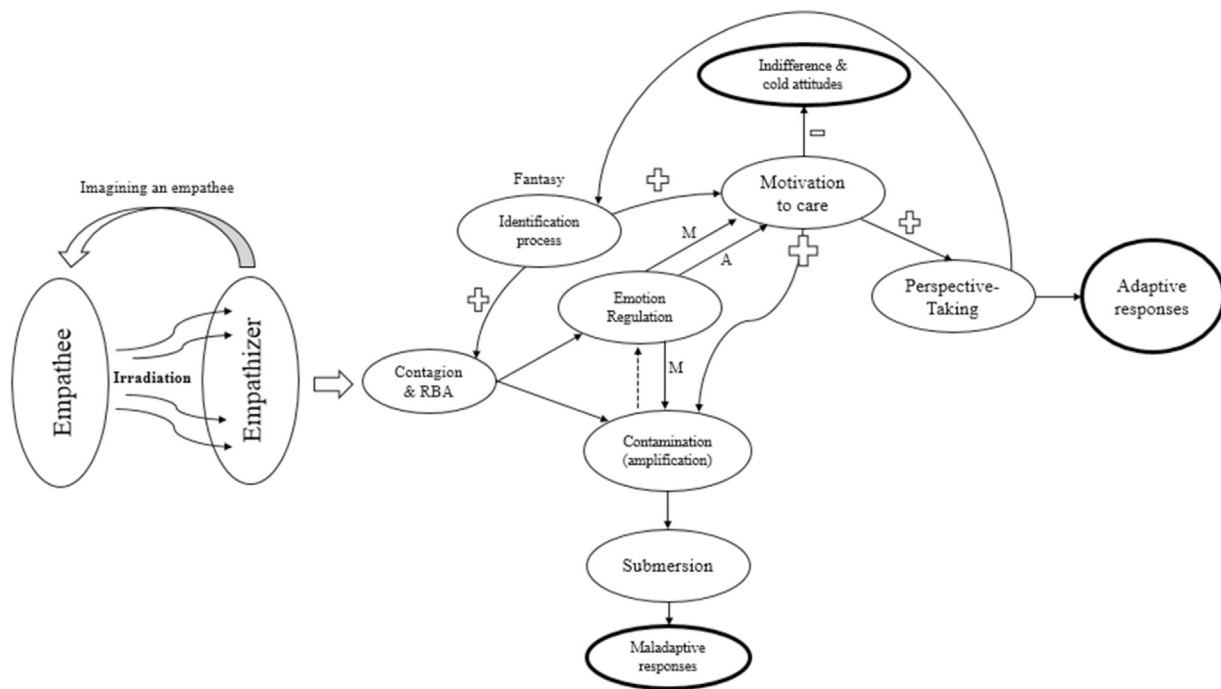


Fig. 1. The modelization of the empathic process. RBA: rapid and brief assessment of the empathizee; M: maladaptive emotion regulation; A: adaptive emotion regulation.

contamination (see Fig. 1): an amplification process starts (i.e., the empathizer's emotion gains in intensity), and if the empathizer does not appropriately regulate this amplification (e.g., if maladaptive coping strategies are used), it leads to submersion (i.e., the empathizer's emotion reaches an important level). This evolution will mainly produce maladaptive responses¹ such as psychological distress, dramatizing, or overreacting (unproportioned reaction). Dixon-Gordon and collaborators showed that the growing intensity of emotions (especially negative ones) is linked with greater efforts to regulate these emotions [30]. This finding is illustrated by the dotted line between *Emotion Regulation* and *Contamination* in Fig. 1: the empathizer becomes conscious that his/her emotion is amplified and makes more arduous efforts to down-regulate this feeling.

Nevertheless, once the vicarious feeling arises in the empathizer (contagion step), there is another path of evolution. The vicarious feeling is regulated (i.e., transformed into something different, in terms of intensity or emotional state) in a maladaptive or adaptive way. This step involves emotion regulation abilities (i.e., strategies attempting to influence the individual's emotional experiences) and encompasses both positive and negative emotions [31]. In that sense, De Vaus and collaborators stressed that emotions are likely to change: they do not last and are likely to be followed by other emotions [32].

Garnefski et al. identified several cognitive emotion regulation strategies that can be divided into adaptive (e.g., putting into perspective, positive refocusing, positive reappraisal, acceptance, planning) and maladaptive strategies (e.g., self-blame, other-

blame, rumination, catastrophizing, suppression) [33]. In addition, Gross identified five families of emotion regulation strategies: situation selection, situation modification, attention deployment, cognitive change, and response modulation [34,35]. The first four are considered antecedent-focused (i.e., they occurred before the emotional responses), and the latter response-focused (i.e., employed once the emotional response has been activated).

This regulation process leads to several options. As displayed (see Fig. 1), maladaptive emotion regulation can lead to an incongruent emotion (e.g., if the empathizee's emotion was sadness, the same emotional pattern is initially elicited in the empathizer, but it quickly evolves into another negative feeling, like anger). Then, maladaptive emotion regulation can lead to (1) the contamination-submersion path or (2) indifference and cold attitudes if coupled with a low motivation to care.

The optimal path is when the feeling is appropriately regulated (e.g., using acceptance or positive reappraisal strategies). Then, coupled with a high degree of motivation to care (corresponding to empathic concern²), it will foster perspective-taking and promote more adaptive responses (e.g., active listening, proper identification of empathizee's needs, proposing targeted help, or functional altruistic behaviors). In our modelization, perspective-taking is putting yourself in someone's shoes (by keeping your own socks on) to understand what s/he's is experiencing: the empathizer incorporates and transposes him/herself by simulating the empathizee's perspective, but s/he clearly distinguishes him/herself from the empathizee (as suggested in systematic reviews [1,13]). This process allows the empathizer to understand the empathizee's emotions, goals, and needs by making inferences (i.e., some statistical projections). We based our assumption that perspective-taking is especially involved with adaptive responses on the Russian-doll

¹ Important note: the current model identifies adaptive and maladaptive responses. These responses are qualified as adaptive or maladaptive from a middle to long-term perspective, and from the benefits or damages the empathizee will keep from this interaction. For instance, dramatizing or overreacting might be perceived by the empathizee as an appropriate response (and maybe more), from a short-term perspective. However, if a clinician repeatedly overreacts in response to the distress of one patient, this patient will learn ineffective emotion regulation strategies in the long run. Moreover, the patient might learn that being distressed attracts attention and encourages people to help him/her, which might entertain his/her pathology.

² Empathic concern is frequently associated with sympathy [78]. However, some authors reframed the notion of sympathy by mentioning that sympathy includes empathy, but while sympathy includes going along with a party, empathy would be more unbiased [79]. An empathizer understands but is not especially agree with a particular cause.

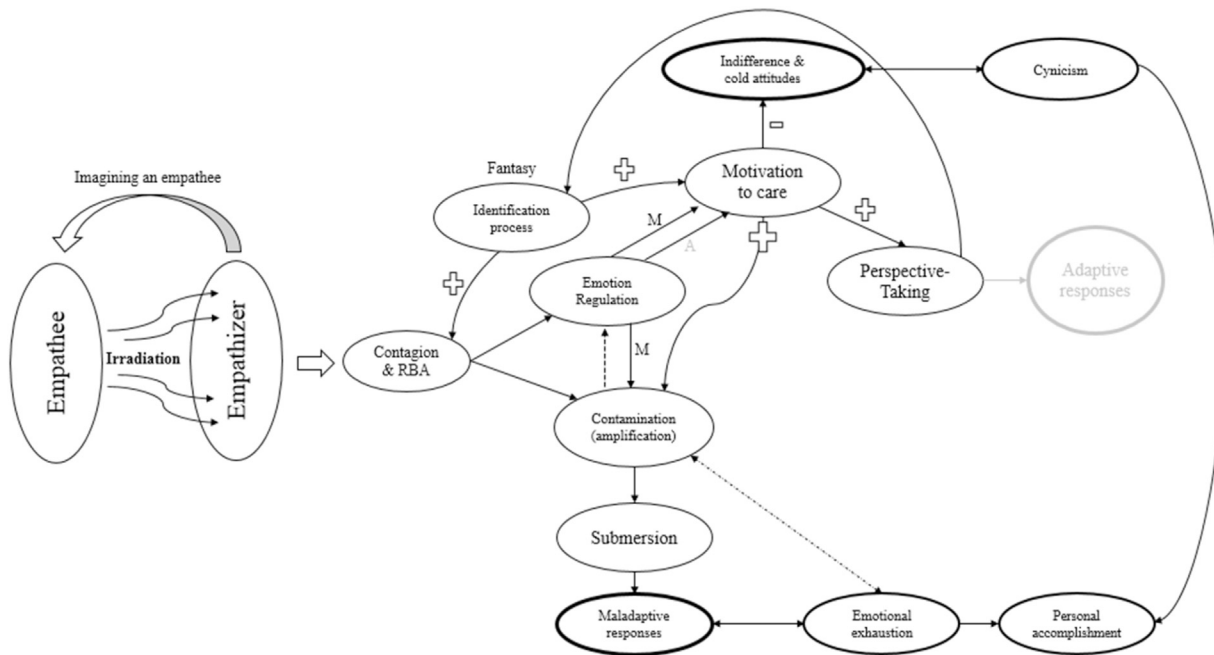


Fig. 2. The empathy model and its associations with burnout domains. RBA: rapid and brief assessment of the empathee; M: maladaptive emotion regulation; A: adaptive emotion regulation.

model of the evolution of empathy [16]. This three-stage model shows that: (1) the perception-action mechanism (motor mimicry) is linked with emotional contagion, (2) empathic concern is linked with consolation, and (3) perspective-taking is related to targeted helping. The downside of perspective-taking is that the empathizer might understand the situation differently when taking the empathee's perspective, triggering the identification process (see Fig. 1) that is fostered by shared features and kinship or ingroup³ affiliations. Then, when this identification process occurs, the motivation to care increases, leading to the contamination path. Decety and Cowell mentioned that “explicitly projecting oneself into the patient’s situation led to higher levels of personal distress” [36, p. 8], and we hypothesize that the identification process mediates this effect. Indeed, the personal distress domain of Davis’ approach corresponds to the contagion-submersion path (see Fig. 1) [15], and the identification process can exacerbate this path *per se* or when the empathizer takes the perspective of the empathee.

Another important component of our model is the motivation to care. Decety and Cowell mentioned that the motivation to care for others is deeply rooted in our biology, very flexible, and arises early in ontogeny [36, p. 7]. We consider this step the cornerstone component of our model and join Jean Decety’s conception that empathic concern refers to the motivation to care for another’s welfare [37]. Indeed, depending on the empathizer’s degree of motivation, it will foster drastically different responses. For instance, when motivation reaches a too high level (notably when the empathizer strongly identifies or confounds him/herself with the empathee), the empathizer might enter into a contamination process (e.g., the empathizer thinks that there is an emergency to help) and this can lead to submersion and maladaptive responses. Generally, higher motivation to care is influenced by identification (i.e., a cognitive process of emotional participation in which we perceive others as similar to ourselves) and shared features between the empathee and empathizer (e.g., same gender, same past experience, or same

age) [38]. As shown by previous findings, *similarity* (i.e., the perceived overlap between one person and another) is recognized as one fundamental factor facilitating empathy [16,17]. In the current paper, we posit that it is especially true for the motivation to care and the contagion process (e.g., if the empathizer perceives that the empathee has the same sportive/political/professional interests, it will potentiate the motivation to care for the empathee and the risk for contagion). However, when the vicarious feeling has elicited another feeling (e.g., sadness has elicited anger or disdain), if coupled with low motivation to care (see Fig. 1), it can lead to indifference and/or cold attitudes (i.e., a feeling of not being concerned by the empathee’s experience, like becoming too insensitive or detached).

The current model places the motivation to care as a cornerstone feature and aligns with Batson’s empathy-altruism hypothesis supporting that empathic concern produces altruistic motivation [39–41] (but it extends and nuances specific features of this assumption). According to Batson, *altruism* is a motivational state with the ultimate goal of increasing another’s welfare [39, p. 1]; hence, empathy eases behaviors aiming to increase another’s welfare. However, there are several ways to consider someone altruistic. As displayed by our model (see Fig. 1), the degree of motivation to care can lead to different outcomes: maladaptive or adaptive responses, but how we interpret these responses (as maladaptive or adaptive¹) depends on several factors (notably the perspective: from the empathee’s, the empathizer’s, or the observer’s perspective). For instance, an empathee (e.g., a patient) might find it adaptive that the empathizer (e.g., his/her therapist) overreacts or reacts like there is an emergency (and might consider him/her altruistic). However, if this pattern is repeated, it will lead to several issues for the patients (e.g., learning maladaptive emotion regulation strategies) and the therapist (e.g., emotional exhaustion). In other words, the interaction (and interpretation) between the empathic process and altruism is complex and depends on several mechanisms like emotion regulation strategies, motivation to care (empathic concern), and contamination or perspective-taking.

³ People favor ingroup over outgroup members from a very early age and across different cultures [36,80,81]. This propensity to favor ingroup members is known as the intergroup empathy bias [82].

Lastly, another connex feature linked to the empathic process is the empathizer's ability to create an empathee (e.g., someone s/he anticipates interacting with). In other words, the empathizer mentally simulates an empathee (as proposed by Cuff et al. [13]): s/he imagines a specific situation where the empathee experience a specific emotion (anticipated by the empathizer) and his/her probable reaction.

3. Moderators and external factors influencing empathy

Many moderators and external factors influence our model's components. For instance, the perceived ability to help the empathee successfully is expected to influence the motivation to care [42]. Insofar the empathizer can perceive s/he has insufficient means and capacities to help the empathee (e.g., too much physical distance between the empathizer and empathee, or other professional duties), s/he will be more likely to feel powerless and enter into a contamination process. Inversely, when the empathizer feels s/he has sufficient means and capacities to help the empathee, it will impact motivation and promote perspective-taking and adaptive responses. Here are other examples: (1) other findings showed that emotion perception is context-dependent [28,43], suggesting that context features influence the RBA component (see Fig. 1); (2) the type of communication (e.g., displaying intentional care) is also expected to be a tool that promotes perspective-taking and empathic concern [44]; or (3) the intergroup empathy bias appears to modulate perspective-taking and personal distress [45].

This paper's current purpose is also to invite researchers to test other components that might be added to the model to empower its faculty to explain the empathic process.

4. Practical applications of the empathy model

The model highlights the complexity of the empathic process and stresses that this is a dynamic and sequential process. Moreover, it describes how empathy works and how specific

components might become dysfunctional, which is of interest to clinicians, researchers, and professionals aiming to teach empathy.

T. Singer explained that "empathy refers to a complex and multi-level concept incorporating processes of affect sharing, mental state attribution and action control and initiation" [29, p. 858], stressing the importance of benefiting from a model that displays how these parameters are articulated. We also join Preston and de Waal's idea that empathy is a profoundly personalized phenomenon [46]. Indeed, our modelization displays how transitions might occur during this process, leading to a personal configuration for each individual (that will depend on proximal situational features and psychological settings).

The following section will expose three practical applications of our model to explain the associations between empathy and burnout, borderline personality, and psychopathic traits.

4.1. The associations between empathy and burnout

The scientific literature generally describes burnout as a three-domain phenomenon: emotional exhaustion (i.e., feeling emotionally depleted by work, resulting in both psychological and physical symptoms of fatigue); depersonalization or cynicism (i.e., treating others as impersonal objects or diagnoses); and low personal accomplishment (i.e., feeling a lack of intrinsic work-related satisfaction) [47-49]. Based on a systematic review, empathy is related to burnout in healthcare professionals [50]. The authors showed that most studies in their review displayed significant (negative) correlations between empathy and emotional exhaustion, depersonalization, and personal accomplishment. In Fig. 2, we hypothesize that the *indifference and cold attitudes* path (see Fig. 2) is related to cynicism or depersonalization. Based on our model, people display indifference and cold attitudes when they frequently use maladaptive emotion regulation strategies (e.g., suppression) and present low motivation to care about the empathee. For instance, several authors stressed that a gradual emotional (and cognitive) withdrawal leads to progressively displaying detached responses at work and starting to treat others as impersonal objects

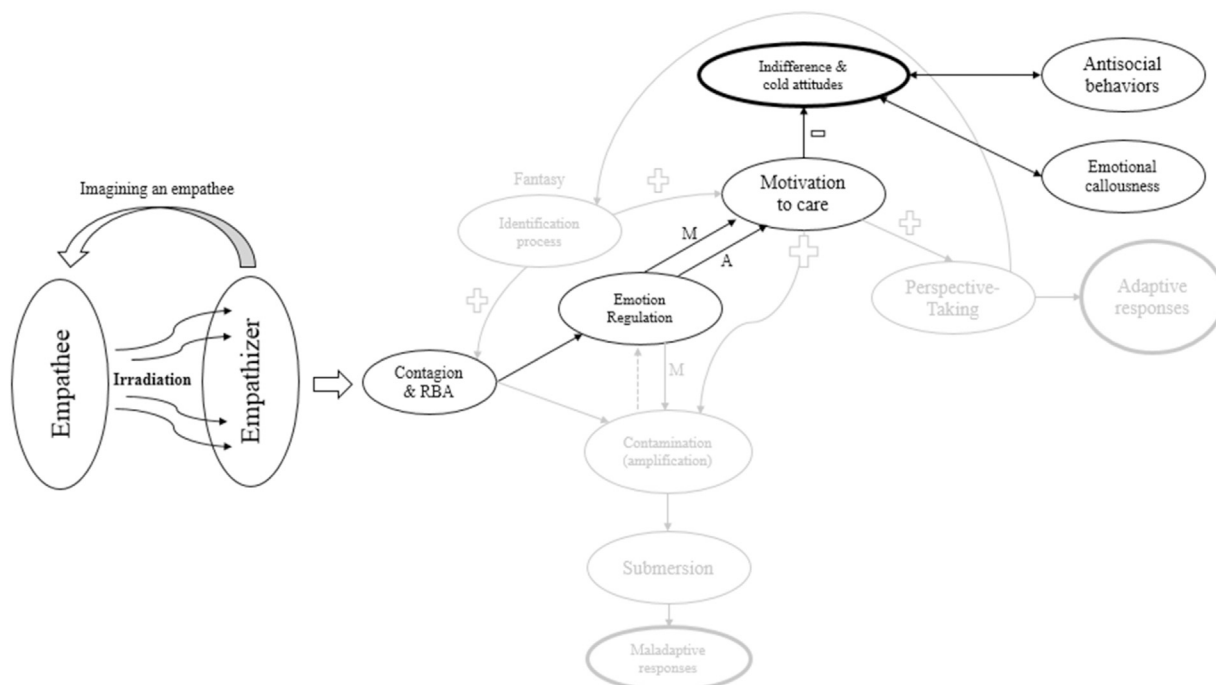


Fig. 3. The empathy model and its associations with psychopathic traits. RBA: rapid and brief assessment of the empathee; M: maladaptive emotion regulation; A: adaptive emotion regulation.

or diagnoses [47,51]. Therefore, we hypothesize that the reoccurrence of a specific path creates a recurrent pattern of interaction that would be, in this case, preferentially related to cynicism (the more indifference and detached affects there will be, the more the individual will be likely to dehumanize others). Then, based on previous findings [52], both cynicism and emotional exhaustion decreased the feeling of personal accomplishment.

Concerning emotional exhaustion, there are several ways to be emotionally exhausted. The first path (see Fig. 2) is when the empathizer does not use efficient emotional regulation strategies (e.g., suppression, self-blame, rumination), and the emotional experience is amplified to the point that this emotion submerses him/her. For instance, Lee and Jang showed that maladaptive emotion regulation strategies (i.e., suppression) significantly increased directly and indirectly emotional exhaustion [53]. Inversely, they showed that adaptive emotion regulation strategies, such as reappraisal, significantly decreased directly and indirectly emotional exhaustion.

The second path is when the empathizer identifies him/herself with the empathee. For instance, Jonsson and Segesten showed that nurses in ambulance services have strong tendencies to identify themselves with the victim, impacting their emotional engagement [38]. In addition, authors found that over-identification with a distressed person was related to higher posttraumatic stress and depression [54,55]. As previously mentioned, the identification process can increase the empathizer's motivation to care and be transformed by an emergency to help the empathee, amplifying the emotional experience and submersion. On the other hand, it is also possible that the motivation to care is appropriate, leading to perspective-taking (see Fig. 2). Then, when the empathizer takes the empathee's perspective, s/he might identify him/herself with the empathee, increasing his/her motivation to care and leading to emotion contamination and submersion. As for cynicism, this repeated interaction pattern would be predominantly related to being emotionally exhausted.

Wilkinson et al. showed that the correlations between empathy and burnout domains vary in intensities and natures (positive or

negative), depending on the studies [50]. The current model displayed in Fig. 2 offers explanations of previous findings by showing how people can deploy specific combinations of empathic features that may lead to emotional exhaustion or cynicism.

4.2. The associations between empathy and psychopathic traits

Hare described psychopaths as fearless, callous, and lacking of empathy with impulsive and antisocial behaviors [56]. More precisely, regarding their empathic abilities, studies reported relatively intact cognitive empathy abilities [57,58] but dysfunctions in empathic responding (i.e., personal distress and empathic concern) and deficient responses to transgressions [59,60]. However, a recent meta-analysis [61] showed that psychopathy entertains negative correlations with empathic concern and personal distress (two affective empathy domains) but also with perspective-taking, showing that psychopaths are also impaired in cognitive empathy.

Fig. 3 shows how the empathic process entertains correlations with specific symptoms characterizing psychopathy. Psychopaths are characterized by emotional callousness; hence, they are less triggered by others' emotions [62,63]. As displayed in Fig. 3, they do not enter into a contamination process. Indeed, the vicarious feeling arising from the empathee is quickly "neutralized" (notably because they present fewer activations in response to someone's distress and because they are presumably less sensitive to shared features), and their lack of motivation to care for others (empathic concern) would produce indifference or cold attitudes. Once again, the repetition of these interaction patterns would be predominantly linked with emotional callousness and antisocial behaviors.

4.3. The associations between empathy and borderline personality traits

Borderline personality disorders (BPD) are characterized by pervasive instability of affects, interpersonal relationships, self-image, and marked impulsivity [64]. Regarding BPD patients' empathy, several studies pointed out they present lower cognitive empathy

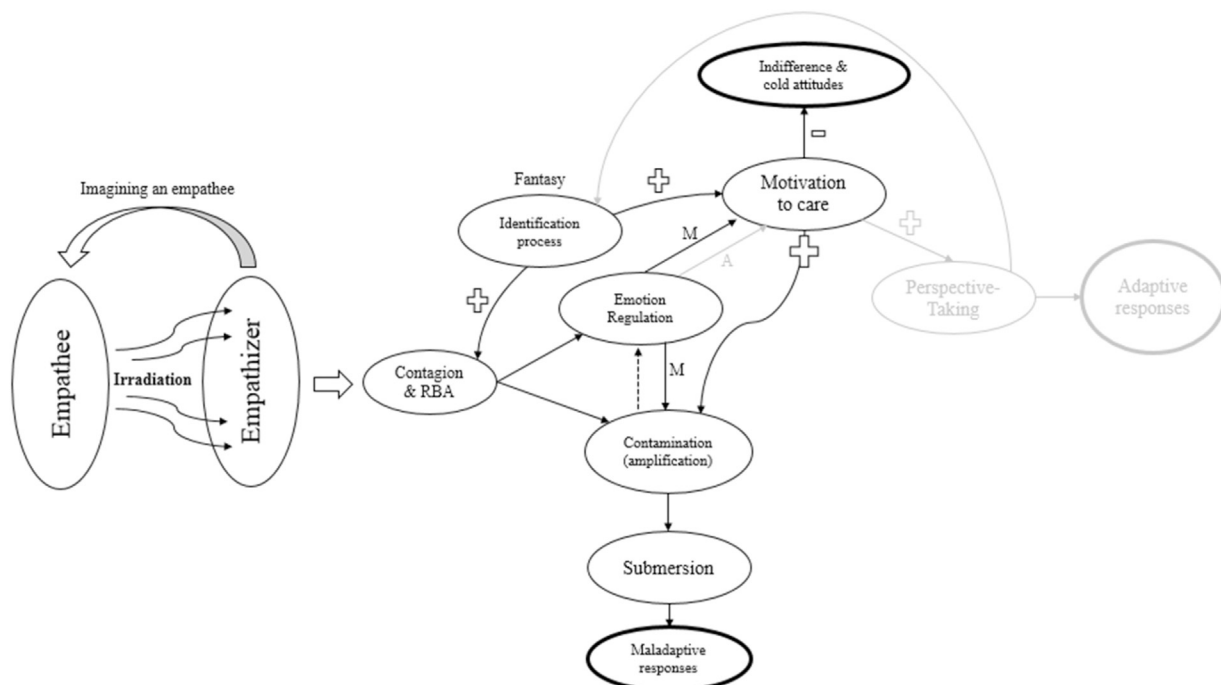


Fig. 4. The empathy model and its associations with borderline personality disorders. RBA: rapid and brief assessment of the empathee; M: maladaptive emotion regulation; A: adaptive emotion regulation.

and higher personal distress (both perspective-taking and personal distress) [65–68] (other studies showed only cognitive empathy [69–71], or personal distress impairments [72,73]). Our model can explain how their empathic process might be related to interpersonal conflicts (see Fig. 4). It is hypothesized that BPD patients predominantly use the contamination to submersion path. Indeed, studies showed that BPD patients display poor emotion management skills and poor emotional understanding [74]. Peter et al. showed that these patients present deficits in understanding emotions and do not adequately use their ability to regulate their emotions (that are not altered) [75]. The frequent amplification of emotional experiences would lead to frequent maladaptive responses, and the repetition of these maladaptive responses will negatively affect their social relationships. Alternatively, when BPD people inadequately use their emotion regulation strategies, depending on their motivation to care, they might alternate between the contamination path (if the motivation to care is too high) and indifference and cold attitudes (if the motivation to care is low). These alternations are both related to negative social consequences.

5. Conclusion

Our theoretical model combines several approaches to describe the empathic process [15–17,37,40,41].⁴ In addition, all relationships between its specific features are explained by experimental findings and systematic reviews. Hence, we hypothesize that this model would be helpful for researchers, clinicians, and healthcare professionals aiming to study and predict empathy skills, opening new avenues of clinical applications and research. Furthermore, it was illustrated that the model offers suitable theoretical explanations of how empathy presumably works in three clinical examples. Finally, this new model (1) is inserted into the continuity of previous theories and findings, (2) helps analyze past research and clinical manifestations, and (3) can be empirically tested.

The current model also promotes several recommendations in line with these clinical and research applications. Firstly, it advocates stopping to use total empathy scores in experimental studies because cognitive and affective domains (and subdomains, like fantasy and perspective-taking) cannot be associated without losing crucial information. As displayed, they involve drastically different features interacting together. For the same reasons, experts (e.g., clinicians) should avoid using generic terms alone, like “empath” or qualifying someone as an empathic person.

Secondly, we also believe there is a strong necessity to reform the undifferentiated promotion of empathy skills. Indeed, healthcare professionals and professionals from other disciplines need tailored interventions to promote empathy skills. For this purpose, education requires models explaining how empathy works. Therefore, future healthcare professionals' education needs to focus on identification processes (i.e., between a patient and a therapist), teaching adaptive emotion regulation strategies (e.g., positive reappraisal, acceptance, or positive refocusing), promoting appropriate levels of motivation to care, and encouraging perspective-taking. In addition, education needs to identify middle and long-term adaptive responses that should be promoted and teach how to avoid maladaptive responses, like dramatizing or overreacting.

However, despite the model stemming from empirical findings, therein lies a speculative model at this stage. Furthermore, the model is centered on the empathizer and does not consider the interaction between the empathizer and the empathized, contrary to

de Waal and Preston's model [16]. Like Bernard Rimé's interpersonal dynamic model of the social sharing of emotion [76,77], de Waal and Preston's model is important because it completes the model proposed in the current paper by highlighting the effects of the interpersonal dynamic. Nevertheless, to our knowledge, this is the first idiosyncratic model (centered on the empathizer) synthesizing the complexity of the empathy phenomenon by combining several approaches and providing concrete clinical and educational applications.

Disclosure of interest

The authors declare that they have no competing interest.

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⁴ The empathy domains proposed by Davis are illustrated in our model [15]. Empathic concern corresponds to the motivation to care (see Fig. 1); Personal distress refers to submersion; Fantasy corresponds to identification; and Perspective-taking to perspective-taking.

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