

# Bodily and Emotional Activation in Pain: Bridging Neurosciences and Gestalt Therapy to Understand the Therapist's Wish for Help

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## Abstract

Bodily and emotional activation in front of pain have been connected with the wish to help the other. Basing on previous researches of neuro-aesthetics, and on the concept of Aesthetic Relational Knowledge inside the frame of Gestalt therapy, the research has inquired on the reactions of 29 individuals in front of images of pain and neutral feelings, in artistic representations and in photos of actors. The individuals were tested with SCL-90-R, MAIA and IRI. The results confirm the hypothesis that the wish to help relates to bodily-emotional activation, with the capacity to feel one's own body and yet hold the emotion of the other. Bodily-emotional activation was shown only in artistic representation of pain. A possible explanation is that the "movement" that activates a person in front of the pain is better expressed in artistic images. At the same time, the wish to help relates to the capacity to de-centralize from oneself and focus on the other. Lack of empathy is not connected with avoidance to help the other. Lack of empathy and wish to avoid helping has shown to relate to a feeling of anxiety and mistrust in coping, rather than with lack of empathy.

## Keywords

Neuro-Aesthetics, Gestalt Therapy, Phenomenological Field, Aesthetic Relational Knowledge, Intentional Resonance

## 1. Introduction

In this article, we present a research on how the wish to help correlate with bodily emotional activation. It is based on previous researches of neuro-aesthetics

and on a new concept of therapeutic empathy. This work has started before the pandemic, when psychotherapy was already studying the increasing of symptoms deriving from bodily desensitization (see Spagnuolo Lobb, 2013) and was assessing the need for psychotherapists to update their interventions in order to co-create a sure feeling of the ground for clients (Panksepp et al., 2017; Ogden & Fisher, 2015; Dana & Porges, 2018; Spagnuolo Lobb, 2019). It follows that the results are even more interesting today, when people are traumatized from anxiety of contagion and sudden death, from lack of adequate care, and it will be more and more important to help clients find in body awareness the resilience to open up to the other. As well as it will be important for each psychotherapist to appreciate one's own bodily feeling, as a mean to be empathic and resonant towards the client (Spagnuolo Lobb, 2015).

In recent years neurosciences have extended their field of investigation to the artistic dimension (Gallese, 2000, 2001, 2012, 2016, 2017, 2019a, 2019b; Ticini, 2013; Cattaneo et al., 2019; Ishizu & Zeki, 2014; Di Dio et al., 2011; Kawabata & Zeki, 2004; Jacobsen et al., 2006). The term used to define this approach is "neuro-aesthetics". The concept of "aesthetics" defined in the first time by Baumgarten, in 1735, refers to the multimodal knowledge of the world through the senses. Neuro-aesthetic studies have shed new light on the concept of empathy. The first to deal with empathy were the German romantic authors who coined the term *Einfühlung* (Vischer, 1873), literally "to feel inside". With the discovery of mirror neurons (Gallese et al., 1996; Rizzolatti et al., 1996), and mirror mechanisms in the human brain (see Gallese et al., 2004; Gallese, 2007, 2018), it was possible to highlight the human being's ability to understand the actions, intentions and emotional experience of the other through an "embodied simulation" (Gallese, 2005, 2006; Gallese, 2011; Gallese, 2018; Gallese, 2019b).

Some Gestalt psychotherapy studies on therapeutic intuition have described the concept of "Aesthetic Relational Knowledge" (ARK) (Spagnuolo Lobb, 2018), defined as: "The way in which the therapist uses her senses to understand the patient's situation through embodied empathy (i.e. identification with the patient's experience) and resonance (i.e. personal and sensitive reaction to the field in front of the patient)" (ibid, pp. 27-28). Drawing on the idea of Hildebrand (1893), who stated that knowing an object means knowing the process by which it was created, some studies have shown how it is the identification in the motor processes that allows empathy, the deep knowledge of the other (Gallese & Freedberg, 2007; Heimann, Umiltà, & Gallese, 2013; Umiltà et al., 2012). The concept of ARK brings attention to the therapist's empathic involvement when empathy includes the function of care. Applying the concept of "intentional resonance or consonance", a direct form of experiential understanding of others (Gallese, 2003, 2007; Gallese, 2017), to the perception of works of art, Gallese (Gallese, 2019a, 2019b) states that the relationship established between the artist's intention and the observer's reconstruction of it concerns embodied empathy.

We have questioned how empathy forms in the case of a therapeutic relation-

ship. Gestalt psychotherapy sees the experience as co-creation. The concept of ARK highlights how the sensitive response to the movement of the other is not only embodied empathy (i.e. identification with the movement/emotion of the other) but also resonance (i.e. identification with the movement/emotion of those who co-created that experience). Actually, the vibration that the observer feels when looking at the cuts on the canvas of one of Fontana's works is also the vibration of the person who made the cut, not just the canvas that suffered it (Gallese & Spagnuolo Lobb, 2011). We can perceive the process of co-creation in its complexity, not only the emotion of those we observe, but also of those who have contributed to create that effect we observe. So, when we are exposed to the emotion/movement of the other, for example the crying, we know the "tension-toward" that is contained in that crying, but also what has contributed to giving it that form.

In this initial study on ARK, we limit ourselves to consider the different resonances of those who look at the pain of another human being, taking as a variable dimension the bodily feeling and the ability to focus on the emotions of the other, defocusing from attention to oneself. Afterwards, we will study the concepts of phenomenological field and co-creation of experience, to investigate the human capacity to feel the emotions of the whole field in which an action takes place, not only of the person who performs it.

Emotional-body activation in front of the emotions of the other is involved both in daily activities and in the illustrated representations, as evidenced by the researches of Gallese, Ardizzi, Umiltà and others, which have allowed to create a bridge between art and brain-body system (Ardizzi et al., 2018). The study to which this article refers concerns the quality of emotional-bodily participation of those who watch artistic representations of pain. The object is its correlation with the desire to help.

Specifically, this study aims to explore the correlation between emotional-bodily activation, desire to help and avoidance of visual stimuli that represent pain.

## **Hypothesis**

1) A greater emotional-bodily activation in front of stimuli that represent pain, combined with a greater ability to "be with" such activation, correlates with a greater desire to help the other who suffers.

2) Conversely, a lower emotional-bodily activation correlates with a lower ability to identify with the pain of the other (empathy) and with a greater tendency to avoidance.

## **2. Material and Methods**

### **2.1. Participants**

30 volunteers participated in the study, without any training in art or psychology, all with normal or correct visual capacity. Participants were given the "Symp-

tom Checklist-90 Revised” scale (SCL-90R) to exclude the presence of psychopathological aspects. One subject was excluded from the research because he presented a general health index that showed the presence of psychopathological problems (IGS = 1.97). The final sample is composed of 29 subjects (15 males and 14 females) aged 25 to 35 years ( $M = 29.44$ ;  $DS = 3.31$ ) whose education is divided as follows: 10.3% lower secondary school, 48.3% upper secondary school and 41.4% university degree.

## 2.2. Measures

The research involved the administration of 3 questionnaires and some pre-selected questions.

- The Symptom Checklist-90 Revised (SCL-90-R) (Sarno et al., 2011) is a self-report questionnaire designed to assess a broad spectrum of psychological problems (depression, somatization, anxiety, aggressiveness, hostility, impulsiveness) in order to exclude subjects with relevant psychopathological aspects from the sample. In this study, the SCL-90-R showed good reliability ( $\alpha = 0.891$ ).
- The Multidimensional Assessment of Interoceptive Awareness (MAIA) (Committeri et al., 2012; Mehling et al., 2012) is a self-report questionnaire for the assessment of emotional-bodily activation and interoceptive awareness. It consists of 32 items on a 6-point Likert scale (from 0 = never, to 5 = always), where higher values indicate higher levels of positive awareness. It is divided into 8 sub-items: Noticing (N): ability to detect and distinguish uncomfortable, comfortable and neutral bodily feelings; Not-Distracting (N-D): the tendency not to ignore or distract oneself from feelings of pain or discomfort; Not-Worrying (N-W): the tendency not to react with anxiety or concern to feelings of pain or discomfort; Attention Regulation (A): The ability to support and control attention to bodily sensations; Emotional Awareness (E): awareness of the connection between bodily sensations and emotional states; Self-Regulation (SR): the ability to regulate psychological distress through attention to bodily sensations; Body Listening (B): actively listening to the body for understanding; Trusting (T): living your body as safe and trustworthy. In this study the MAIA showed good reliability ( $\alpha = 0.719$ ), as well as its sub-items N, N-D, N-W, A, E, SR, B, T ( $\alpha = 0.821$ ;  $\alpha = 0.559$ ;  $\alpha = 0.512$ ;  $\alpha = 0.797$ ;  $\alpha = 0.799$ ;  $\alpha = 0.897$ ;  $\alpha = 0.874$ ;  $\alpha = 0.854$ ).
- The Interpersonal Reactivity Index (IRI) (Davis, 1980) is a multidimensional self-report questionnaire, for the evaluation of individual differences in empathy (to feel a tension-towards who experiences pain), defined by the author as the “mode of reaction of an individual, exposed to the experience of another”. It is composed of 28 items on a 5-point Likert scale (from 0 = it doesn’t describe me well, to 4 = it describes me very well) and is divided into 4 sub-scales: Perspective Taking (PT): the tendency to spontaneously adopt the other’s point of view; Fantasy (F): tendency to empathize with the actions

and feelings of characters in films, books or plays; Empathic Concern (EC): feelings of compassion for the other and for suffering people; Personal Distress (PD): self-perception of feelings of anxiety and discomfort in tense relational contexts. In this study IRI showed good reliability ( $\alpha = 0.703$ ), as well as its sub-scales F, PT, EC, PD ( $\alpha = 0.808$ ;  $\alpha = 0.642$ ;  $\alpha = 0.718$ ;  $\alpha = 0.653$ ).

- Finally, three questions associated with visual stimuli (“How much did you feel that emotion inside your body?”, “How much did you feel the desire to help?”, “Did you feel the desire to look somewhere else?”) were administered to assess the degree of support for the movement-toward the other.

### 2.3. Procedures

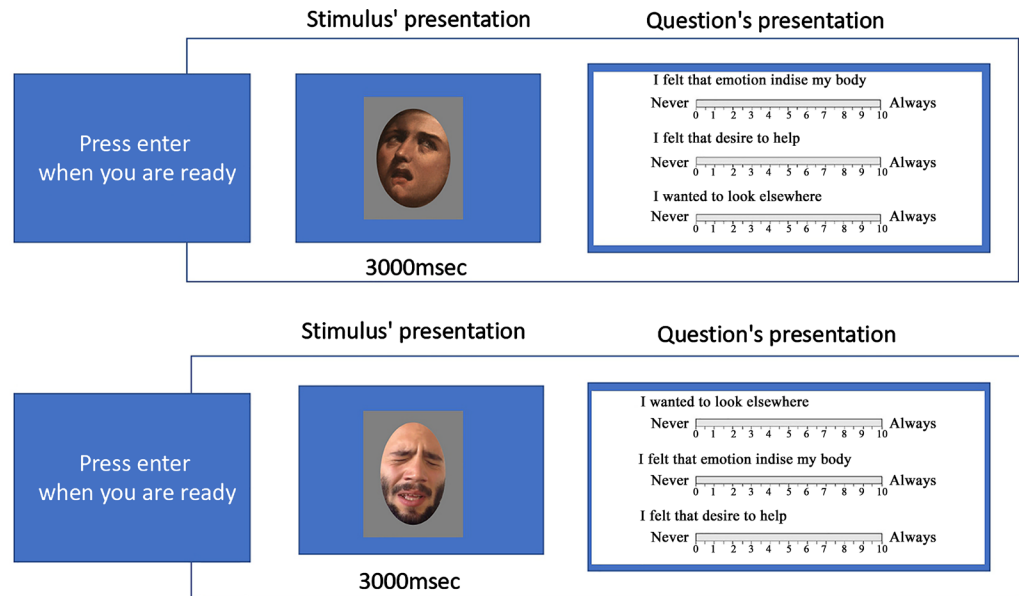
The study, its aims and general procedures have been described to participants who have given their informed written consent. The evaluation session of the participants preceded the experimental activities. The first phase of the research included an evaluation of possible psychopathological suffering, through the administration of the “Symptom Checklist-90” scale (SCL-90R). Subsequently, participants were shown visual stimuli previously selected and used in a study on sensory-motor involvement by the research group of Prof. Alessandra Umiltà of the University of Parma (Ardizzi et al., 2018). These stimuli were composed of twelve high-definition digital images of neutral (6) and suffering (6) facial expressions, selected from among Renaissance and Baroque works of art, and twelve photographs of actors simulating neutral (6) and suffering (6) facial expressions.

Each subject was presented with the 24 images in random sequence 6 times with different randomizations for a total of 144 test images. Each test began when the subject, to whom the procedure was explained, was ready. The image remained for 3 seconds. After this time, the stimulus disappeared and the subject was shown the screen with the test questions, also shown in randomized sequence, to which the subject could answer without time limits. The subject was then asked to score on a Likert scale from 0 to 10 on three different dimensions, investigated through three items:

- 1) the intensity of the emotion felt in the body (DOL)  
“I felt that emotion inside my body”
- 2) the intensity of the desire to help (DES)  
“I felt the desire to help”
- 3) the intensity of the desire to look elsewhere (EVI)  
“I felt like looking somewhere else”

After the three-dimensional responses, the test went ahead, and the next stimulus was presented (Figure 1).

For the presentation of the stimuli, a specially constructed computer platform was used. While conducting the experimental tests, the participants sat comfortably in a softly lit room with sound attenuation, in front of a 28-inch HD monitor (1920 × 1080) placed 60 cm from the face.



**Figure 1.** Survey procedure.

At the end of the survey session, the 24 images were shown one last time, to test the degree of familiarity of the participants ("Are you familiar with this image?", grade 0 to + 10).

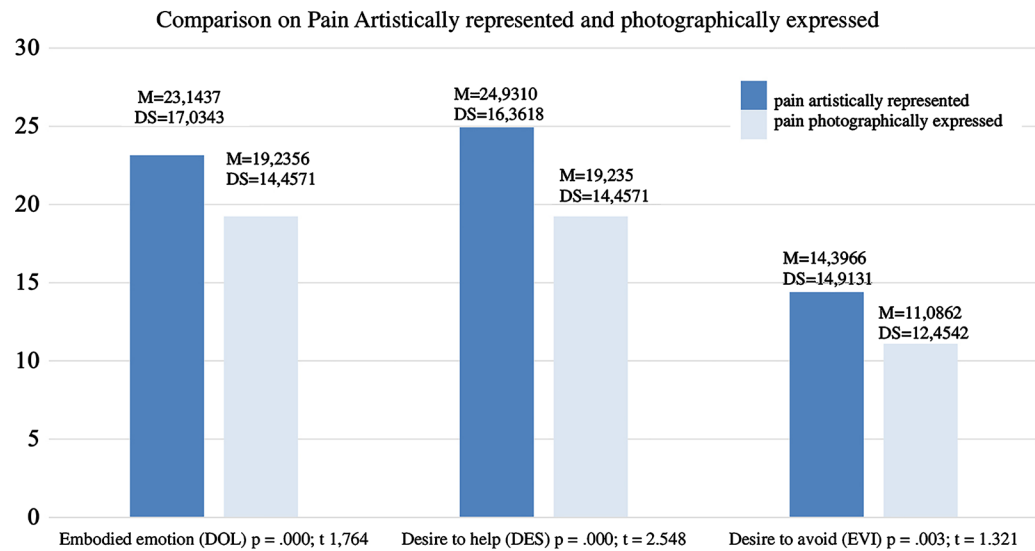
## 2.4. Statistical Analysis

The statistical analysis was conducted using the SPSS 24 for Windows software. The difference between groups and factors was calculated through the T-test analysis, the correlations through r-Pearson, and the reliability of the instruments was evaluated with Cronbach's alpha.

## 3. Results

The comparison between artistically represented images and photos showed that significant results exist only for stimuli representing pain and not for neutral images, inserted as control. In particular, the emotional intensity in front of pain images artistically represented is greater than in photos that simulate pain ( $M = 23.14$ ;  $DS = 17.03$ ;  $p = 0.000$ ;  $t = 1.764$ ); the intensity of the desire to help in front of pain images artistically represented is greater than in photos that simulate pain ( $M = 24.93$ ;  $DS = 16.36$ ;  $p = 0.000$ ;  $t = 2.548$ ). Moreover, the intensity of the tendency to look elsewhere and avoid the vision of pain images artistically represented is greater than the reaction in front of photos that simulate pain ( $M = 14.39$ ;  $DS = 14.91$ ;  $p = 0.003$ ;  $t = 1.321$ ) (**Figure 2**).

From the correlation analysis (**Table 1**) it emerged that the greater the emotional intensity in front of the images of pain (DOL) artistically represented, the greater is the tendency to identify strongly with the characters in the images ( $r = 0.451$ ,  $p < 0.05$ ), the tendency to experience feelings of human warmth, compassion and concern for another person ( $r = 0.494$ ,  $p < 0.01$ ) and the lesser is the



**Figure 2.** Comparison of responses to visual stimulus in the total sample.

**Table 1.** Correlations between DOL, DES, EVI, MAIA and IRI in the total sample.

Artistic Images	MAIA								IRI			
	N	N-D	N-W	A	E	SR	B	T	F	PT	EC	PD
DOL	0.137	-0.004	-0.305	-0.395*	0.276	0.021	0.123	0.122	0.451*	0.287	0.494**	0.113
DES	0.097	0.035	-0.212	-0.183	0.287	0.113	0.299	0.261	0.417*	0.323	0.523**	0.020
EVI	0.128	-0.284	-0.161	-0.174	-0.006	0.061	-0.066	0.078	0.227	-0.074	0.357	0.386*

\*\* $p < 0.01$ ; \* $p < 0.05$ . DOL, the intensity of emotion felt in the body; DES, the intensity of the desire to help; EVI, the intensity of the desire to look elsewhere; MAIA, Multidimensional Assessment of Interoceptive Awareness; N, Noticing; N-D, Not-Distracting; N-W, Not-Worrying; A, Attention Regulation; E, Emotional Awareness; SR, Self-Regulation; B, Body Listening; T, Trusting; IRI, Interpersonal Reactivity Index; PT, Perspective Taking; F, Fantasy; EC, Empathic Concern; PD, Personal.

ability to support and control attention towards one's own bodily sensations ( $r = 0.395$ ,  $p < 0.05$ ).

In addition, as the intensity of the desire to help (DES) increases, there is a tendency to identify strongly with the characters in the images ( $r = 0.417$ ,  $p < 0.05$ ) (embodied empathy) and a tendency to experience feelings of human warmth, compassion and concern for another person ( $r = 0.523$ ,  $p < 0.01$ ).

In addition, the greater the intensity of the desire to look elsewhere (EVI), the greater the tendency to experience feelings of anxiety and inability to handle the situation in front of the negative or painful experience presented in the stimulus images ( $r = 0.386$ ,  $p < 0.05$ ).

Finally, the greater the empathic consideration (Empathic Concern, IRI test), the greater the emotional awareness ( $r = 0.396$ ,  $p < 0.05$ ) and active insight listening to the body ( $r = 0.403$ ,  $p < 0.05$ ). On the contrary, the greater the feelings of anxiety and inability to handle the situation when faced with a negative or painful experience (personal discomfort), the greater the awareness of unpleasant, pleasant and neutral bodily sensations ( $r = 0.499$ ,  $p < 0.01$ ).



## 4. Discussion and Conclusions

The purpose of this study was to explore the correlation between emotional-bodily activation, desire to help and avoidance processes, in the face of visual stimuli that represent pain. To achieve this goal, participants were asked to express their feelings after exposure to visual stimuli of Renaissance and Baroque artworks and photographs of actors, all depicting suffering and neutral facial expressions. These responses were later related to the subjects' empathic and interoceptive awareness skills.

The results confirm the initial hypotheses for stimuli representing pain and not for neutral images i.e. participants activate themselves, on an emotional and bodily level, only in front of stimuli representing suffering.

The research also showed that the higher level of emotional-bodily involvement is caused by the perception of a pain experience artistically represented, compared to the one simulated in the photos. In fact, in front of the artistic image representing the pain, the participants show greater intensity of the emotion felt, the desire to help and the desire to look elsewhere. We can explain this result with the idea of [Hildebrand \(1893\)](#), confirmed by the studies of [Gallese & Freedberg \(2007\)](#); [Heimann, Umiltà, & Gallese \(2013\)](#); [Umiltà et al. \(2012\)](#), cited in the introductory paragraph. We can add that the dramatic focus of artistic representations facilitates Aesthetic Relational Knowledge ([Spagnuolo Lobb, 2018](#)) and therefore this result confirms that it is more activated in front of stimuli that evoke the intentional movement of the other.

More in detail, it emerged that the greater the emotional intensity in front of the painful images (DOL) artistically represented, the greater the tendency to identify strongly with the characters in the images, the tendency to experience feelings of human warmth, compassion and empathic consideration for another person, shifting attention from one's own bodily sensations to those of the other. This unexpected result may explain the process by which the need to help occurs, which requires the ability to decentralize oneself.

The intensity of the desire to help (DES) also increases when there is a tendency to identify strongly with the characters in the images and a tendency to experience feelings of human warmth, compassion and empathic consideration for another person.

And again, the greater the intensity of the desire to look elsewhere (EVI), the greater the tendency to experience feelings of anxiety and inability to handle the situation in front of the negative or painful experience presented in the stimulus images. This result leads us to think that the need for avoidance is linked to an experiential background dominated by anxiety.

Looking at Gestalt epistemology—based on phenomenology, aesthetics and the experiential field (see [Perls et al., 1951](#); [Spagnuolo Lobb, 2019](#))—we can conclude that this investigation has confirmed the hypothesis that the desire to help the other is connected with an embodied dimension, which expresses the ability to activate oneself, to feel one's own body and to let oneself be crossed by the



other's emotion, containing it, as underlined by the concept of empathy in "Aesthetic Relational Knowledge" (Spagnuolo Lobb, 2018).

When empathy, here understood as feeling the pain of the other (emotional-bodily activation), is felt stronger in the body and there is a capacity to decentralize from worrying about oneself, then the person experiences a tension-towards the other, manifesting a desire to help (hypothesis 1).

The second hypothesis, that a lesser emotional-bodily activation corresponds to a lesser capacity to empathize with the pain of the other (empathy) and to a greater tendency to avoid it, has not been confirmed, since the latter is associated with feelings of anxiety and incapacity, not a lack of empathy.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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