

Vanessa Lux • Sigrid Weigel  
Editors

# Empathy

Epistemic Problems and Cultural-Historical  
Perspectives of a Cross-Disciplinary Concept

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## From Absorption to Judgment: Empathy in Aesthetic Response

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Empathy has become one of the growth areas in cognitive neuroscience. For some time, it has also been seen as a clue to the understanding of aesthetic engagement with visual works of art. Vittorio Gallese and I have written at length about the relevance of empathetic responses to paintings, sculptures and even calligraphy (Freedberg & Gallese, 2007a). But our positions (especially mine) have been misunderstood. It has been said that we propose that empathetic engagement is constitutive of art (as in the attempted critique of our position by Roberto Casati and Alessandro Pignocchi (2007), to which we replied in Freedberg & Gallese, 2007b). Far from it.

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## 1 The History of Empathy: A Short Introduction

The history of empathy in art history is long, and the ancient precedents are frequently cited. Among the famous works of ancient sculpture described by Pliny the Elder is the statue of a limping man by Pythagoras of Rhegion, which so clearly showed the pain resulting from the ulcer on his leg that even spectators seemed to feel it (Pliny the Elder, 1857, p.19). Viewers today have similar feelings when seeing press photographs of the war-wounded and tortured of our own time. But the lessons of the images that issued from the war in Iraq and other battlefields go back to the earliest photographs showing humans mutilated by war, as, most strikingly, in the case of the American Civil War (on these see Rosenheim, 2013).<sup>1</sup>

Pliny's passage also comes to mind when one considers medieval and later sources that tell of spectators who have to catch their breath or even clasp their thighs as they notice the horrible boil on the leg of Saint Roch in paintings and sculptures of him. Pictures and sculptures of the suffering Christ were supposed to have similar effects, too (see the remarkable compendium of examples in James H. Marrow, 1979). The textual bases for suffering with Christ, for suffering just as he did, were applied to pictures of Him and his martyred saints as well. The well-known and very popular fourteenth-century *Meditations on the Life of Christ* are full of appeals to physically imagine oneself in the place of Christ, particularly as he suffers bodily (just as Saint Ignatius's *Spiritual Exercises* would a couple of centuries later draw on very similar notions of *imitatio* and *compassio*). They contain frequent exhortations – of the kind regularly transmitted by preachers to non-literate as well as literate audiences – to transform the act of looking into corporeal feeling, in order to better understand Christ's suffering: "Look at him well then, as

<sup>1</sup> I discussed not only the well-known war photos by Brady and Gardner, but also those by Reed Brockway Bontecou in a lecture entitled *The Great Paradox of Civil War Photography: Art History, Neuroscience and the Real War*, given at the Metropolitan Museum of Art on May 31, 2013, which I hope to publish on another occasion.

he goes along bowed down by the cross and gasping aloud. *Feel* as much compassion for him as you can, placed in such anguish," runs a typical passage, emphasizing the conjunction between looking and feeling as well as how one is supposed to imagine the scene visually (Bonaventura, 1961, p. 331). As He hung on the cross, Christ himself said, "My Father, see how afflicted my mother is. *I* ought to be crucified, not she, but she is with me on the cross" (Bonaventura, 1961, p. 335). "And she was grieved, and looking at the wounds of her son, was weakened by the sorrow of death. Do you see how often she is near death today?" (Bonaventura, 1961, p. 340) The link between looking and feeling, between sight and actual physical sensation, could not be clearer.

Saint Ignatius Loyola's *Spiritual Exercises* required its adepts to imagine Christ's suffering even more vividly *as if* He were before their own eyes, bleeding from his every wound, casting his eyes upward and hopelessly towards his Father. That *as if* is very critical indeed. Those engaged in these *Exercises* were supposed to feel the wounds on his knees as he dragged his heavy cross along the road to Calvary, to feel the nail penetrating Christ's hands and feet, to sense the weight of the body, the blood of his wounds, and the smell of his wounds. They were exhorted to feel not only the physical pain of the Son, but the emotional suffering of his Virgin mother as she sees him hanging so pathetically on the Cross. Through repeating the exercises and imagining the pictures they had seen, they were supposed to feel the heat of the fires of Purgatory as if – *as if* – they were already there. The same, for example, for the boiling oil into which John the Evangelist was plunged during his martyrdom in the many treatises that adapted these Jesuit techniques of vivid imagination and co-suffering.

There is a clear theoretical line from Ignatius Loyola to Robert Vischer and on to Antonio Damasio that draws on more than just imagining oneself in the position of who or what one sees. The claim is that one suffers in some similar way to the sufferer one sees, that one feels the same emotions as one might feel if one were somehow present in the scene represented by the image itself. In *Das Optische Formgefühl* of 1873, Vischer outlined the grounding modern theory of empathy in art, that of *Einfühlung*, or "feeling in," while in *Descartes' Error* of 1995, Damasio already set out the basis for an *as-if* theory or responses to the

movements of others by describing the cortical reorganization that occurs upon the feeling of such movements as one's own. The history of empathy tells us not only about responses to real people and real images, but also to the imagination of such scenes.

On the one hand, then, empathy for pain; on the other, empathy for emotion and – above all – for movement. The implications for painting concerning the relationship between bodily movement and the immediate deduction of the emotions were classically set out for Western art in Leon Battista Alberti's treatise *On Painting* (first published in Latin in 1435):

The painting will move the soul of the beholder when the figures painted there each clearly shows the movement of his own soul. [...] we weep with the weeping, laugh with the laughing, and grieve with the grieving." And then he adds, "These movements of the soul are known from the movements of the body. (Alberti, 1966, p. 41)

### 1.1 Picturing Compassion: Rogier's "Deposition"

In discussing the relevance of modern theories of empathetic engagement (and, in particular, of contemporary findings about the neural substrate of physical and emotional engagement with visual images), I have long begun with the example of Rogier van der Weyden's great *Deposition* altarpiece from around 1435 which originally came from the Church of Our Lady outside the Walls in Louvain and is now in the Prado in Madrid. What is striking about this particular is the degree to which historical understandings of how the work was supposed to function coincide with recent neural accounts of responses to the movements and emotions of others. Both in the fifteenth century and today, the effects of a work like this are finely predicated on the relationship between movement and the evocation of emotion, as well as on the ways in which beholders' inward, embodied simulation of the depicted movements result in the evocation of the emotions the artist and his patrons

intended. It is precisely for this reason, rather than any closeness to a written text, that Rogier's altarpiece continues to be so compelling.

In the fifteenth century, viewers of a work like Rogier's were supposed to feel both what Christ and those present at the scene of the *Deposition* felt. The onlookers' compassion for Christ was felt through their bodies, and their feelings were transmitted through the effects they produced on viewers. Viewers were exhorted to physically feel what Christ felt and to emotionally feel what the witnesses at the scene felt. The bystanders at the scene – the three Maries, Joseph of Arimathea, Nicodemus and so on – were all said to have suffered as Christ did. In Rogier's painting this was exemplified, as Otto von Simson showed many years ago, by the way in which the slump and swoon of Christ's mother, the Virgin, imitates the form of Christ's body descending from the Cross (von Simson, 1953; see also the important material collected in Ringbom, 1984). Her compassion for her son, her *co-suffering*, was – and still is – exemplified and embodied by her repetition of Christ's slump. In almost every previous depiction of this scene, the Virgin is shown standing, not collapsing – let alone in the same way as Christ descended from the Cross. Rogier shows her in this manner not only to exemplify the notion of co-suffering, but also because he knew (consciously or unconsciously) that the Virgin's slump has the ability to evoke a sense of slumping (that is, bodily co-suffering) in his viewers as well. It is as if he knew that the sight of others' movements entailed the embodiment – mostly simulated, occasionally acted out – of the same movements within the viewers themselves.

### 1.2 Mirror Neurons and Embodied Simulation

The discovery of mirror neurons enabled a much clearer understanding of what Vittorio Gallese appropriately called *embodied simulation* (Gallese, 2005). By this he intended the bodily sense viewers have of imitating the actions of others. It was and remains through this that the evocation of the relevant emotions ensue. Ever since the great revival of the study of the emotions in the 1980s, it has been known that viewing an emotion (for example, fear) activates many of the same cortical and subcortical areas and networks in viewers as would be activated in the

figures they see. In the case of fear, the amygdala reacts both in the fearful person and the viewer of that person; the same occurs with feelings of disgust and the activation of anterior insula. It is through such common coding, as Wolfram Prinz so influentially called it (Prinz, 1997), that we have a form of direct access to, and intimate understanding of, the emotions of others. The mirror theorists, like William James before them, provided the link with the movements of the body.

All this applies to works of art as well. Rogier's skill lay as much in his ability to convey the movements and emotions of his protagonists as in his much-vaunted mastery of Early Netherlandish Painting techniques. Few if any surpassed him in terms of his precision of brushwork, depth of color, and command of anatomy, physiognomy, and pathognomy. The ability to convey to a viewer the movements and, consequently, the intentions of others is fundamentally predicated on the existence of mirror neurons that fire in the premotor cortex (and inferior parietal lobule) of the viewers as if they were actually executing the action themselves. It is this process that conveys to the viewer a sense of the movements of the protagonists in a scene and the continued understanding, even now, of the very essence of the painting – namely the evocation of appropriate emotions, *even without the most basic knowledge of the elements of the story*. Of course, such elements may well refine the response and enhance religious experience, but cognitive knowledge of the kind supplied by texts, say, the Bible or the *Meditations on the Life of Christ*, is not necessary for the automatic and precognitive responses that constitute the fundamental conditions for viewers' emotional, bodily, and empathetic engagement with a work like Rogier's altarpiece.

Since the late 1990s, considerable research has been devoted to the extrastriate body area (EBA) in the lower occipito-temporal cortex that fires in response to the sight of other people's bodies (for some groundwork on the EBA, see the early article by Perrett et al. (1985). This was then taken up by a number of writers, especially Peelen (2005) and Peelen and Downing (2005). Beatrice de Gelder and others have shown that it is through the activation of distributed areas involving fusiform areas and the amygdala that viewers grasp what she calls the

emotional body language (EBL) of others, either in the flesh or as figures in a representation (de Gelder, 2006). An easy objection to these findings is the claim that such responses only apply to scenes from real life, but they turn out to apply to images and art as well. Body images automatically generate the N170 waveform in the EEG, and it would seem obvious that artistic skill should play a significant role in the efficacy of arousing bodily responses to EBL, though so far little has been made of this possibility. One's sense of another person's bodily travails and of accidents to bodily pose and position, even the inversion of one's own body in the case of viewing figures in works such as Rubens' *The Fall of the Damned* for example has to do with the perception of bodies in motion and thus activates the superior temporal sulcus (STS) as well (de Gelder, 2006). Significantly, although the EBA chiefly responds selectively to static body images, it also projects to the STS, which plays such a critical role in the perception of bodily movements, even in static images.

The discovery of mirror neurons also greatly enhanced our understanding of bodily responses to the pains and travails of others. Mirror circuits are activated not only while observing others' movements, but also in response to the sight of bodily haplessness (as in the case of inversion) and to more serious bodily events and physical insults. In a now well-known article, Gallese and Christiaan Keyzers clearly set out how the sight of puncture wounds in the bodies of others generates an automatic sense of bodily infraction in observers (Keyzers et al., 2004). This mirroring effect is chiefly registered in the secondary somatosensory cortex, known to produce a frisson when touched or stimulated during epilepsy presurgery exploration and evaluation.<sup>2</sup> It is all too likely that the wounds in pictorial examples – say Christ's hands and feet in Rogier's *Deposition*, Saint Thomas' finger poking into the wound in Christ's side in Caravaggio's *The Incredulity of Saint Thomas*, and the nail smashed through Christ's hand in Grunewald's great *Crucifixion* in Isenheim produce a similar effect (whether weaker or stronger will presumably

<sup>2</sup> The feeling is clear; the precise location of the feeling less so.

have to do with the skill of the artist). Thanks to the research on mirror neurons, we are now in possession of a far more convincing (and concrete) way to account for the kinds of emulational and simulational bodily feelings that arise upon sight of others' movements, of the emotions that such movements entail and express, and of a wide range of insults to the bodies of others. Some of these simulational forms, like the sense of inwardly simulating the actions of others, are now definable in cortical terms. Others, like the sensation one might have of feeling the physical trials and tortures of others, are less clearly so. Often these responses seem to occur in the relevant body part, but not always. Sometimes they seem to be there but then dissipate, as if localized pain suddenly becomes unlocalizable.

### 1.3 Empathy: From "feeling-in" to the "as-if" Body Loop

Empathy has many meanings. It usually (but not always) implies the body. Precisely the feeling of the movements that one sees formed the basis of famous theories on empathy or *Einfühlung* in the works of the great nineteenth and early-twentieth century empathy theorists, like Robert Vischer and Theodor Lipps. Aby Warburg's notion of the *Pathosformel* (in which emotion is expressed through the movements of the body) also draws on the relationship between movement, especially that of the body beneath the drapery, and the expression of emotion.

In his invocation of what he called the "as-if body loop," Damasio was one of the earliest to set out a clear neural account of the argument that knowledge of the emotions of others relied upon a simulation of how the perceiver would feel *as if* he or she were in the situation observed. In mirror theory, such responses are often described as being pre-rational and automatic; Damasio's student Ralph Adolphs and others provided direct evidence for the unconscious simulation of emotions (Adolphs, Damasio, Tranel, Cooper, & Damasio, 2000).

## 2 Empathy as Bodily Engagement with the Movements of Others

In this part, I want to suggest (1) that empathy is fundamentally a matter of bodily engagement; (2) that the use of the term be confined to empathetic engagement with the movements of others, or even with the implied movements of others – and not only be used in reference to their emotional condition or the stories they tell; (3) that even though empathy is not constitutive of art, the form of immersion it entails is often a critical preliminary stage in aesthetic judgment – and always an illustrative one.

My aim in referring to the effects on beholders of works like Rogier's *Deposition*, Caravaggio's *Incredulity*, and Grunewald's *Crucifixion* was to suggest how recent research on the neural substrate of empathetic engagement overlaps with the functions of pictures from the past, and how this research may help us to understand their continuing effectiveness as well. It was not to show that empathy or emotion, or even the successful arousal of an imitative sense of movement, is constitutive of art.

But even what I took to be a relatively uncomplicated claim turned out to be controversial. Some critics flatly maintained that empathy has nothing to do with art and that aesthetic judgment has nothing to do with immersion in or bodily emotional involvement with a work, nor with simulation of movement.<sup>3</sup> The argument, as is commonly known, is that aesthetic judgment is detached, disinterested, and that art is somehow ironic and distanced (as Kant perhaps also wanted to believe) from the kinds of intimate bodily and physical engagements entailed in empathy.<sup>4</sup> Others noted that Alberti's views were written down just a few years before Rogier's painting was installed and claimed that the idea

<sup>3</sup> For a vigorous dismissal of what Nelson Goodman called the "tingle-immersion theory," see Goodman (1976, p. 112).

<sup>4</sup> See the more recent and excellent work by Thomas Hilgers that suggests Kant never intended his notion of disinterested judgment to be detached from the body – *pace* Nietzsche in *The Genealogy of Morals*, III, 6 and my own earlier work. See Nietzsche (1887/1996); for Hilgers' work (which I hope will be published soon), see for the moment Hilgers (2010).

that movements involve the readability of the emotions with which they are invested was simply in the air in the 1430s and that the assumptions underlying viewer involvement are entirely historically determined. I was not unaware of the currency of these ideas at the time. The point is that they were in the air for very good reasons indeed (and not just because they were fashionable). In empathy, history and context merge with biology and neurology.

The reasons that such ideas were in the air in the 1430s were basically the same as they always are: they have to do with the inextricable relationship between vision, the body, and movement that lies at the roots of all forms of empathetic engagement with images. This relationship accounts for the appeal of a work such as Rogier van der Weyden's altarpiece, not only in the fifteenth century, but now too. In significant ways, viewers continue to understand this work just as it was intended to be understood at his time. A visit to the Prado suffices to see how visitors flock to it, not because they are devout Christians or because of the undoubted brilliance of the painting's technique (though this is certainly a factor as well), but because they are detained in front of it by a direct emotional involvement facilitated and strengthened by the activation of a sense of the bodily movements that underlie the emotions the artist wishes to convey. This involvement is also facilitated by viewers' instant recognition of the expressions and gestures of the protagonists. These expressions and gestures not only activate mirror responses in the viewer but also activate the same subcortical areas (the amygdala in the case of fear, the anterior insula in the case of disgust) that are activated when viewers feel the same emotions themselves

## 2.1 *Gesture and the Pathosformel*

The original mirror research emphasized that mirror neurons only fire in response to goal-directed actions, but it has now been shown that mirror circuits may be activated by the sight of intransitive, non-goal directed actions as well (Graziano, Taylor, & Moore, 2002; Rizzolatti, Scandolara, Matelli, & Gentilucci, 1981).<sup>5</sup> Here it is perhaps worth noting that many actions that may not be regarded as goal-directed are

often just that, as in the case of the gesture of wiping the eyes with the front or the back of the hand or crossing the arms in front of the chest (a clear and intuitive effort at self-protection against real or perceived danger) likewise the action of warding off by means of an upraised hand and contracted wrist, as with Adam's gesture against the sword-bearing angel in Michelangelo's *Expulsion from Paradise* on the ceiling of the Sistine Chapel. These are gestures that occur across history and cultures, almost always with the same intent. One of the most frequent outward gestures of grief is throwing the arms up in the air, as can be seen in countless lamentations over the dead body of Christ. It finds expression in ancient and modern art. It is used so often to express extreme grief that it raises the question of a possible correlation between the particular gesture and the expression of that emotion.

But this possibility is skewed by the similarity of this pathos-formula to the throwing upwards of the arms not in grief but in joy or triumph, as so often occurs in the case of victorious players in sport events after they have scored a goal or won a match. It may well be, however, that the ability of these gestures to convey joy and triumph has to do with both contextual circumstances (for example cheering spectators, smiles on faces) and with the fact that they are combined with a leap into the air, a detachment from the earth-boundedness of our usual terrestrial existence. Or perhaps it may be that the difference between what such apparently similar gestures convey depends on even smaller physical modulations of their component movements than those we might consciously notice. The latter possibility remains to be examined.

## 2.2 "Life Enhancement"

Whatever the case, we can nevertheless surmise that such gestures work their effects by arousing in viewers' bodies a form of muscular emulation

<sup>5</sup> On the subject of the enhanced motor potentials evoked upon observing the raised hand and extended wrist gesture (as in Michelangelo's Adam warding off the Angel in the *Expulsion from Paradise* mentioned in this paragraph), see Battaglia, Lisanby, & Freedberg (2011). For a recent behavioral study of the automatic imitation of "goal-less" actions, see Chiavarino, Bugiani, Grandi, & Colle (2013).

of what they see outside themselves. Indeed, it is precisely this that Bernard Berenson describes in *The Florentine Painters of the Renaissance* when he refers to the life-enhancing qualities of the works of Michelangelo, Pollaiuolo, and others. The idea was that the viewing of works such as the *ignudi* on the Sistine ceiling, or Pollaiuolo's bronze *Wrestlers*, gives viewers a sense of muscular potential, imparting a feeling of physical emulation within their bones, so to speak, that exceeds their actual physical capacity (Berenson, 1896, section VIII, 1960, p. 77). This phenomenon is what Berenson intended (to some extent following his old teacher William James) by what still may seem like the purely sentimental notion of life-enhancement through looking at the muscular movements of others – in art or sports. Far from being sentimental – though perhaps expressed (as so often with descriptions of empathy and empathetic feels) in sentimental and banal language – it is precisely such responses that offer more concrete hopes for therapy via looking than have been recognized as of yet. They pave the way for a more complete understanding of the foundations of aesthetic judgment.<sup>6</sup>

Warburg's concept of the *Pathosformel* had less to do with the purely historical notion of the handing down of apparently formulaic expressions of emotion than with the notion that the outward movements of the body and the flow of draperies that cover them reveal inner emotions. This was a modern revival of a more ancient idea. As he wrote in his dissertation, the turbulence of the bodies depicted in works by Botticelli, and even more so in other works by quattrocento artists like Francesco di Giorgio, was directly translated into some form of inner turbulence within the viewer.<sup>7</sup> For him, these were elements of a gestural language that he referred to as "engrams of passionate experience [that] survive as a heritage stored in the memory."<sup>8</sup> Warburg never specified the biological mechanisms involved, though he seems to have presumed

<sup>6</sup> Warburg grappled with this issue from the very beginning. The *Vorbemerkung* to his dissertation on Botticelli's *Birth of Venus and Spring* concludes "Nebenbei sei bemerkt, dass dieser Nachweis für die psychologische Aesthetik deshalb bemerkenswerth ist, weil man hier in den Kreisen der schaffenden Künstler den Sinn für den ästhetischen Akt der 'Einfühlung' in seinem Werden als stilbildende Macht beobachten kann". (Warburg, 2010, pp. 39–40; Engl. transl. in Warburg, 1999, p. 89).

there were some at work. The pathos-formula becomes formulaic not just because it is embedded in a long historical tradition, but because it is rooted in the neural links between movement, the body, and the effective expression of emotion. These links, annoyingly for many contemporary pundits, may well be predicated on precognitive factors that have nothing to do with the pressures of context and experience though they may, often inevitably, act on them.

Everyone now recalls Warburg's dictum that the most difficult problem of all in art is that of capturing still images of life in motion.<sup>9</sup> At the same time, it is important to remember another strain in Warburg's thought. Despite his affinity with Winckelmann's theories on the relationship between calm stativity and beauty, he was at least as much influenced by Nietzsche's views of the close link between movement and sensation and the latter's intense, sometimes sarcastic, disapproval of Kantian notions of disinterest in aesthetic judgment (Nietzsche, 1887/1996, III, section 6). It was precisely in the same period that Nietzsche would write about how we can "*produce the feelings in ourselves by imitating with our own body the expression of his eyes, his voice, his walk, his bearing*" and acknowledge that this could happen by imitating "*their reflection in words, pictures, and music*" too (Nietzsche, 1881/1997, p. 142).<sup>10</sup> But the generation of like emotion through willed imitation, while clearly a related topic, must remain a subject for another occasion.

<sup>7</sup> See the valuable edition of the text and notes in Warburg, 2010. For an extremely useful contribution to the understanding of the origins of Warburg's use of the term *Pathosformel*, see Wedepohl (2012). For more on this, see my remarks in Freedberg (2013).

<sup>8</sup> "Daß diese Engramme leidenschaftlicher Erfahrung als gedächtnisbewahrtes Erbgut überleben und vorbildlich den Umriss bestimmen, den die Künstlerhand schafft" (*Mnemosyne Einleitung*, B 10/VI 929, in Warburg, 2012, p. 631, own transl.). See also Gombrich and Saxl (1986, p. 245).

<sup>9</sup> "Das schwierigste Problem für die bildende Kunst, lenkt das Festhalten der Bilder des bewegten Lebens" (Warburg 2012, p. 107). See also the contribution to this subject by Philippe-Alain Michaud (1998).



### 2.3 Vision, Movement, and Emotion

The connection between movement and emotion was always present in Warburg's writings, just as in the work of William James. In the *Principles of Psychology* from 1890, James famously set out his own arguments for the ways in which movement is not simply associated with, but actually precedes, emotion (especially what he calls "the coarser emotions"; James, 1890, p. 449). Even before James, however, there was a rich tradition in France of writing about the relationship between vision and movement, which Jonathan Crary (1999) concisely outlines in his book on attention. This more or less explicit group of theories about the connection between motor and aesthetic response, is of considerable importance for the history of the relationship between movement, emotion, and empathy. In all of them, perception of a mental or visual representation is taken to culminate in movement, irrespective of whether such a movement is outer or inner, voluntary or automatic. They are based on the notion that human responses can bypass conscious thought. Sensation is not to be thought of as part of a sequence of mental events resulting in knowledge, cognition, or even perception, but as producing movement. Such ideas formed the basis of "dynamogeny,"<sup>11</sup> a notion taken up by a succession of both scientific and more popular writers.

Jean-Martin Charcot himself wrote of the "dynamogenic influence of the visual on the motor center" (Charcot, 1991, p. 310). In his *Sensation et Mouvement* from 1887, Charcot's assistant Charles Féré set out a theory of "psychomotor induction" (Féré, 1900, p. 87) that influenced the painter Seurat in his views of color not just in terms of optical response, but of the evocation of automatic bodily responses, too (see the strong criticism in Henri Bergson, 1910). Similar ideas also occurred in

<sup>10</sup> The passage continues, "Then a similar feeling arises in us in consequence of an ancient association between movement and sensation . . ." (Nietzsche, 1881/1997, p. 142).

<sup>11</sup> The term seems to have been coined by the neurologist Charles-Edouard Brown Séquard (1871–1894). For its origins, see Crary (1999, pp. 165–9). Crary also notes the relationship between the term "dynamogeny" and the concepts of motor excitation and facilitation (Crary, 1999, p. 165, note 31).

the once-influential work of Eugène Véron in the mid-1870s, and, of course, in both James' and Nietzsche's works in the 1880s, especially in the latter's views on what he called "the ancient association between movement and sensation" (Nietzsche, 1881/1997, p. 142). In all these ways, the curious sounding doctrine of dynamogeny contributed to the late nineteenth-century development of the notion of the life-enhancing feelings that could be engendered by viewing works of art. And so this improbable circle was closed, at least in art historical terms, by James's former student, Berenson. By the end of the decade, Warburg himself was referring to the notion of "dynamograms" to describe the persistence in memory of the elements of gestural language conveying emotion, without, perhaps significantly, going as far in the therapeutic or body-changing mode as so many of his contemporaries did.<sup>12</sup>

French ideas about how the visual is transformed into the motoric culminated in the phenomenology of Merleau-Ponty. It is perhaps not surprising that some of the most important recent work on the embodied and emotional dimensions of seen movement, parallel and even a bit prior to the mirror theorists, is to be found in the research on motor cognition by Marc Jeannerod and his pupil Jean Decety.<sup>13</sup> But first let us turn to a recent writer with a very different view.

### 2.4 Emotion and Cognition

In her monumental work on the emotions entitled *Upheavals of Thought*, Martha Nussbaum insisted on what she called a neo-stoic theory of the emotions (Nussbaum, 2001). If she had attended to

<sup>12</sup> Several examples in Gombrich and Saxl (1986, pp. 248–50). Gombrich cites the *Allgemeine Ideen*, and the notebooks for 1927–1928, p. 20 ("Das antike Dynamogramm wird in maximaler Spannung aber unpolarisiert in Bezug auf die passive oder aktive Energetik des nachfühlenden, nachsprechenden (erinnernden) überliefert. Erst der Kontakt mit der Zeit bewirkt die Polarisation. Diese kann zur radikalen Umkehr (Inversion) des echten antiken Sinnes führen") and p. 67 ("die Polarization der Dynamogramme durch die Antike Mneme"); Koos, Pichler, Rappl, and Swoboda (1994). The source for the first of these passages is given as 1.6.1929.

<sup>13</sup> See my discussion of their work further below. For a general view of Jeannerod's theory of motor cognition and its relationship with what neuroscientists call imagery (what humanists would call the imagination of images), see Jeannerod (2006).

the lessons provided by visual works of art (such as Rogier van der Weyden's altarpiece) on the notion of *compassio* and the literal co-suffering on which it depends, and if she had acknowledged the unconscious and spontaneous dimensions of emotional responses to what one sees, then she might have drawn entirely different conclusions. In Nussbaum's view, emotions are entirely cognitive. They are upheavals of *thought* specifically. They are strictly the product of appraisal. Before the neuroscientific revival of studying emotion, one might indeed have continued to think so. It might have seemed the only way to deal with what was thought to be the unruly, unclassifiable, and disordered state of the emotions themselves.<sup>14</sup>

Cognitive neuroscience changed all of this. With the work of neuroscientists like Damasio and Adolphs on the role of emotions in decision-making and evaluation and of Joseph LeDoux on fear responses, the emotions were restored to the body. What this entailed, of course, was that emotions might not be entirely intellectual. Especially from the mid-1980s on, much research has shown what is not cognitive about emotions and empathy. It became possible to argue for ways of conceptualizing emotions and the movements that underlie them as automatic, unconscious and pre-rational, rather than products of cognitive appraisal.

Nussbaum devoted an entire chapter to *compassio* as a strictly cognitive and evaluative emotion. If she had instead reflected on the fact that *compassio* means to *suffer with*, quite literally, and if she had acknowledged the neural accounts of how the sight of a wound often produces a clear and precognitive somatosensory reaction, she might have come to a similar conclusion. But she would nevertheless have rejected out of hand Gallese and his mentor Giacomo Rizzolatti's account of how the embodied simulation of responses to the actions and feelings of others precedes reflection, and, in my view, also evaluation and appraisal. "In our brain," they state,

<sup>14</sup> The whole study of emotion was long neglected precisely because of this attitude (I remember discussing this in 1980 with Amélie Rorty, whose anthology *Explaining Emotions* (Rorty, 1980) played a major role in the renewed philosophical interest in the topic).

there are neural mechanisms (mirror mechanisms) that allow us to directly understand the meaning of the actions and emotions of others by internally replicating ("simulating") them without any explicit reflective mediation. Conceptual reasoning is not necessary for this understanding. As human beings we are able to reason about others and to use this capacity to understand other people's minds at the conceptual declarative level. The fundamental mechanism that allows us a direct experiential grasp of the mind of others is not conceptual reasoning but direct simulation of events through the mirror mechanism. (Gallese, Keysers, & Rizzolatti, 2004, p. 396)

The possibility that gestures and emotions might be understood through embodied simulation suggests a form of translation not necessarily constrained by cultural bounds. You understand the emotions such movements entail because you have a body, not because you know the story. It is the achievement of a good painter or sculptor to have the measure of this, consciously or unconsciously. Artists convey the emotions they wish through their knowledge of the body's capacity for movement, under whatever circumstances, and through their ability to transmit and evoke exactly the same sense of movement in the viewer. It is for this reason that empathy should be considered not so much as an all-purpose account of a sense of understanding the emotions of others, but as an account of bodily engagement with their seen movements.

Whether or not one agrees about the role of mirror neurons in aesthetic response, to continue to insist on a purely neo-stoic, intellectual, and evaluative view of the emotions would be to ignore the now abundant evidence for the degree of automaticity and direct precognitive involvement entailed in emotional responses and what we now broadly call empathy.

## 2.5 Empathy as the Felt Simulation of Observed Movement

But why restrict the concept of empathy to the movements of the body or to the feeling of direct imitation of another person's movements? Not only because this specification provides a better sense of the frequent

automaticity of responses to images, but because it also allows us a pragmatic refinement of the use of what has now become rather too loose a term. I argue for the constitutive role of movement in empathy both for the sake of analytic clarity and to distinguish the concept of empathy more clearly from other forms of deep emotional engagement with others.

Damasio's "as-if" body-loop theory described a neural circuit subtending the movement of one's own limbs that produces a reaction as if the body were engaged in the same movements as those of the bodies one observes (and not necessarily corresponding to the current reality of the observing body). Both his views and those of the mirror theorists outline brain circuits that are activated when viewers feel themselves seemingly perform actions they see, but do not actually carry them out. At about the same time that Damasio was working on these problems, the Parma mirror neuron team not only suggested a plausible theory of bodily engagement with images; they also gave a vivid account of why such engagements were pre-rational. In short, the renewed association of the emotions with the body gave a new impulse to empathy theory, in which empathy became less cognitive, so to speak, than before.<sup>15</sup>

In all the examples I have cited so far, observation is central. Against this it will no doubt be argued that empathy can issue from verbal as much as from visual description, but I want to suggest that the feeling-in that arises from vision implicates the body more directly than the kind of imagination that is aroused by words alone, whether read or heard. The feeling-in that results from seeing an object is instructive even for the imagination roused by verbal description and for the form of inner vision that neuroscientists, confusingly for art historians, simply call *imagery* – in other words, the imagination of a scene, particularly, in the case of imagined movement.

David Milner and Andrew Goodale compellingly argued that vision evolved for movement and action, rather than for perception

<sup>15</sup>To say this, however, is not to claim that bodily movements that precede emotion are necessarily precognitive, though they may in many instances be automatic. Automatic responses can just as well be the result of training as the result of precognitive mechanisms.

(Goodale & Milner, 1995, 2nd ed., 2008). As we now know from many areas of research, identification of an object may well be preceded by a motor response predicated on the location and orientation of the stimulus in relation to the body of the viewer, a process that occurs in the first instance in the parietal lobe. The transformation of vision into movement always implicates the body, or the simulation of movements implied by the body or even of traces left by manual actions. The model of empathy proposed here is thus not just predicated on the automatic transformation of vision into movement, not only on the body in the picture, but also on the implied body, the body, and movement behind the trace in the work. This is what lies behind much of Merleau-Ponty's *Phenomenology of Perception* and his work, for example, on Cézanne.

No one who looks at a painting by Jackson Pollock, such as his *Number 1, 1949*, or *Number 7, 1950*, for example (there are, of course, many other possible examples), can fail to have a sense of being swept up in the movement of the thrown paint. Even if one insists on the pure abstraction of the scene, or has never seen the famous films by Hans Namuth of Pollock in action, one still feels compelled to move in the general direction of the perceived motion of the work. One may not actually move, but one still has the feeling of doing so, even of somehow being compelled to move. Sophisticates may deny all of this, or counter that if it is so, it has little to do with the aesthetic constitution of the work.

But the evidence for motor responses continues to mount, in research on both the behavioral and the neuronal level. Recent research by Maria Alessandra Umiltà, Gallese and myself has demonstrated the elicitation of corticomotor responses to the sight of brushstrokes in works by Franz Kline and to cuts in the canvases of Lucio Fontana (Freedberg & Gallese, 2007a; Freedberg, 2011; Umiltà, Berchio, Sestito, Freedberg, & Gallese, 2012). Though these may be non-conscious responses, they may also be related to a vaguely conscious sense of inner movement, seeming to recapitulate the actions that are felt to have produced the brushstrokes and cuts of the artist. It is the further transformation of such forms of motor engagement that bring us closer to the roots of aesthetic judgment. This does not, of course, get us any closer to the constitution of art. It does

not take us further into what happens beyond empathetic engagement with what we see (or hear). Nevertheless, I will argue for the importance of this early form of engagement with a visual work as constituting a critical step in the passage from sight to aesthetic judgment.

## 2.6 Motor Responses in Empathy

More or less at the same time as the Parma team under Rizzolatti published the first results of their discovery of mirror neurons, Decety and Jeannerod were working on the relationship between vision, movement and imitative motor cortex activity. It is not surprising that Decety in particular, along with his later colleague Philip Jackson,<sup>16</sup> should have made a fundamental contribution to the study of empathy.

They started unpromisingly – or at least their basic article from 2004 entitled “The Functional Architecture of Empathy” started unpromisingly. They began by observing that at the phenomenological level “empathy denotes a sense of similarity between the feelings one experiences and those expressed by others” (Decety & Jackson, 2004, p. 71). But this observation was certainly insufficient. It should be possible to distinguish between mere similarity of feeling (between oneself and another) and the kind of bodily and motor identification that the words “empathy” and *Einfühlung* intend. It is not just a matter of similarity, nor just of feeling or emotion. Instead of beginning with the notion of shared representation, Decety and his colleagues might have done well to proceed directly to the question of perception and action coupling in order to further clarify the link between sensory and motor activity in empathetic responses to others. It is true that they called on James J. Gibson’s now hackneyed view of affordances to account for the direct link between perception and action. Affordances are properties of objects or events in the surroundings that respond to the needs

<sup>16</sup> Jackson came from Andrew Meltzoff’s team at Washington University in Saint Louis that did fundamental and abundant work on neonate imitation of expression in the late 1970s (Meltzoff, 1988; Meltzoff & Moore, 1977, 1983).

of the perceiver. They are physical, psychological and ecological. But Decety et al. were paradoxically inexplicit – at least in this early yet fundamental article – about the ways in which empathetic involvement with others is predicated above all on motor involvement. Decety was presumably as aware of this as anyone. In fact, he and Jackson were clearly familiar with the work by Günther Knoblich and Rüdiger Flach that adopted Prinz’s common coding theory. The core assumptions of this theory claim that actions are coded in terms of perceivable effects and that the perception of an action activates action representations to the degree that the perceived and represented actions are similar (Knoblich & Prinz, 2001). It is in this respect that sensory and motor representations are shared between individuals.

I take these positions two steps further. First, I extend these claims not only to the relations between individuals and depictions of individuals but also to depictions that *imply* the actions of individuals. Second, I propose that empathy is not just a matter of shared representations or common coding, but is only to be understood in terms of felt engagement with the movements of others.

Together with colleagues like Julie Grèzes, Decety emphasized that the neural circuit involved in action-execution overlaps with the circuit activated when actions are observed (for a review of the empirical experimental evidence, see Jeannerod, 2001). As is now well-known, this circuit involves the premotor cortex, the parietal inferior lobule, the supplementary motor area and the cerebellum (Decety & Grèzes, 1999; 2001; 2002). Significantly, Decety also did substantial experimental work showing that imagining one’s own actions (Decety et al., 1994; Hari et al., 1998), imagining another’s actions (Decety & Grèzes, 1999) and imitating the actions performed by a model<sup>17</sup> all activate the same areas of the premotor cortex and posterior parietal lobe in the observer as in the observed (Decety, 1996; Decety & Grèzes, 1999). Both the Lyons and the mirror groups acknowledged that these shared motor representation mechanisms provided an important foundation for intersubjectivity. What they left out initially – though it was hinted at by Damasio and then others – was that these mechanisms might also provide an important foundation for the intersubjective understanding of what art historians call visual

imagery – that is, material visual images, not just imagined images (“imagery” in neuroscientific parlance). Decety notes that this form of intersubjectivity is necessary but not sufficient for emotional understanding (Decety & Jackson, 2004, p. 77). The question still remains as to precisely how one gets from action to emotion.

## 2.7 From Action to Emotion

In the works of ancient and Renaissance writers, this connection was almost taken for granted. One of the earliest statements on the relationship between artistic representations of emotion and the feelings they arouse in the spectator was made by Socrates. The observation, recorded in Xenophon’s *Memorabilia*, lies at the basis of doctrines such as that of the *affetti*. After asking Cleiton the sculptor whether the accurate representation of the different parts of the body as they are affected by the pose – the flesh wrinkled or tense, the limbs compressed or outstretched, the muscles taut or loose – makes them look more real and convincing, Socrates goes on to inquire: “Does not the exact imitation of the feelings that affect bodies in action also produce a sense of satisfaction in the spectator?” “O yes,” replies the sculptor. “Then must not the threatening look in the eyes of fighters be accurately represented, and the triumphant expression on the face of conquerors be imitated?” “Most certainly.” Socrates concludes that “it follows then that the sculptor must represent in his figures the activities of the soul” (Xenophon, *Memorabilia*, III, 10).<sup>18</sup>

Both here and in Alberti’s famous dictum about how the movements of the body reflect the movements of the soul, we find the habitual conflation of the two meanings of the idea of movement: one physical, the other metaphysical; one corporeal, the other emotional. But the latter two are not mutually exclusive. In such passages, action is coupled with emotion as closely as it is with perception.

<sup>17</sup> Originally suggested by Meltzoff and Moore’s famous neonate experiments of 1977, as in the articles already noted, but especially Meltzoff and Moore (1977). For adult subjects, see Decety et al. (1997, 2002) and Iacoboni et al. (1999).

The phenomenon of emotional contagion is often described in terms of its physical manifestations, such as the automatic mimicking and synchronizing of the expressions, postures, vocalizations and movements of others, which are then taken as outward signs of the tendency for associated emotions to converge with each other (Hatfield, Cacioppo, & Rapson, 1994; see also the useful literary and art historical examples in Schaub, Suthor, and Fischer-Lichte (2005)). This is not, of course, what we generally intend by empathy, though what is fundamentally at stake in both phenomena is, as I have suggested, the matter of automaticity, not cognitive appraisal. The latter may indeed play a critical role in emotional responses,<sup>19</sup> but the question we confront here is *how* we most immediately perceive the affective state of another person. We perceive it, for the most part, through the actions that express their emotion, their expressions (after all another form of action), or even through their implied actions. We do not perceive emotions in the first instance through the prefrontal modulation of subcortical responses. We may *process* them and become more clearly conscious of them via such routes, but the more problematic issue is to define what happens first. It should perhaps be noted here that even in the absence of bodily functionality or in cases of bodily deficits, empathy involves the neural substrate of sensorimotor responses.

## 3 Empathy, Compassion, and Sympathy

But what about empathy without a body? What about compassion in the modern psychological sense? Someone tells you her sad story, perhaps on a plane or train. You are a captive audience; you listen to her. She may even interest you for one reason or another; you may find her sympathetic, as one colloquially says, and so you listen. She tells you the

<sup>18</sup> This translation from E. C. Marchant, London-New York: 1923. Not surprisingly the passage is quoted on the very first page of Jennifer Montagu (1994).

<sup>19</sup> For basic surveys of the neural substrates of emotional appraisal in terms of prefrontal modulation of lower level responses, see Ochsner, Bunge, Gross, and Gabrieli (2002) and Ochsner and Gross (2005).

sad story of her life, her vicissitudes, her loss of jobs; maybe she recounts the successive deaths of her nearest and dearest. You feel sorry for her; you understand her pain. You understand her simply because you have suffered similarly yourself; you have lost parents or children; you have suffered the same pains she has. This is not empathy. This is not a matter of spontaneously feeling the pain of others, except in an entirely metaphorical sense. This is rooted in your past. It is based on anecdotes that involve appraisal, but not on automatic responses of the body. It is a form of compassion based on comparison – comparison between what has happened to you and what has happened to another. You may think that you can understand what it is like to be in her shoes because you have been in them yourself. But until your body is involved, the feelings of compassion remain one stage away from empathy, closer to sympathy than anything else. This may be a question of terminology, but unless we take heed of the distinction between “sympathy” and “empathy,” both terms become anodyne.

It is not just the computation of sympathy. It is not a matter of hearing a story. When you feel sorry for someone who tells you about misfortunes that have befallen them, about bereavement or loss upon loss, your involvement depends on your experience, your personal history, your own context. You are more sympathetic when you have suffered similarly. It is indeed a cognitive and richly semantic experience.

Here I want to distinguish this general use of “empathy” from the more palpable and restricted form that has to do with the body. In this reading, empathy is a form of engagement with the other that is, at least at first, unconscious and summoned forth by a motor response. It takes the form of a shared motor representation with the viewed other. It is not just a shared emotional representation, though motoric and emotional representations, as we have already noted, are not always easily separable.

### 3.1 Benjamin's View

Sophisticates are hostile to empathy; historical materialists shudder at the thought. In one of his scathing attacks on the vulgar use of empathy, Walter Benjamin wrote that “the true method of making things present

is: to represent them in our space (not to represent ourselves in their space).” And he continued “The same with the aspect of great things from the past – the cathedral of Chartres, the Temple of Paestum: to receive them into our space (not to feel empathy with their builders or their priests)” (Benjamin, 1999, p. 845). Exactly. The notion of empathy with builders or priests is still-born. What would one know about their lives, except perhaps by way of their production? Even if we knew *something*, that would be a form of sympathy for them. We still could not see them, only their works. And this would entail an entirely different form of empathy – a representation in ourselves of the movements of the body involved in the labor of *producing* the work. This is the only workable notion of empathy. Though it may seem literalist to some, it actually *opens* the way to history, not to its denial.

Benjamin wants anecdote as antidote, because he thinks the kind of false empathy of which he speaks is totalizing. He charges its exponents with failing to take into account the fact that “the ‘modernity’ that concerns men with respect to the bodily is as varied in its meaning as the different aspects of one and the same kaleidoscope.” But the only way to achieve that variation of meaning is to acknowledge the possibility of the modification of bodily involvement through sight, not to deny it. “Empathy,” Benjamin says, “this is what newspaper reading terminates in” (Benjamin, 1999, p. 846). We might say “Empathy: this is what looking at press photographs terminates in,” but we would have to add: “What does this imply for the images we think of as art?” And we would have to conclude “Empathy: this is what looking at great – and perhaps lesser – works of art begins with.” The deep question is what happens afterwards. To deny the importance of unmediated responses as a step in the analysis of all serious responses to works of art is to stop wondering at the stars.<sup>20</sup>

### 3.2 Empathy and Art

Though not constitutive of art or of aesthetic judgment, empathy clearly forms an important element in our engagement with works of art. How do we get from empathetic engagement to art? Let us turn to another factor in this process.

The detachment of empathy from art already began in the work of Theodor Lipps, who is often cited, but still misunderstood. He has usually been taken – as I, too, once did – as a proponent of the constitutive role of empathy in the visual arts, but this is not entirely accurate. A closer reading reveals just the opposite. While he may have commented on the way a Romanesque column arouses some sense of equivalent torsion in the viewer's body, he nevertheless makes clear that *Einfühlung* is precisely *not* aesthetic, especially in his still all too neglected essay on the relation between empathy, inner imitation and the experience of one's own bodily self (Lipps, 1903).<sup>21</sup> The position I set out here is neither that empathy is constitutive of aesthetic experience or aesthetic judgment nor a reiteration of what Lipps claims. It lies somewhere between the two, not in a compromising or timorous manner, as is so often the case with in-between positions, but strongly and decidedly so.

Lipps' work also leads to Wilhelm Worringer, for whom empathy and abstraction famously became the two poles of artistic experience. For Worringer, both naturalistic works, especially the sculptures and paintings of ancient Greece and Rome and the Renaissance, and abstract ones induce a form of alienation from the self that is critical for absorption into the artwork and that, therefore, leaves the self behind, as paradoxical as it may seem. The difference between the two forms is that while the naturalism of the first group entails the absorption of the self into the other, the other is actually a kind of stylized abstraction away from nature. One way or the other you lose yourself in the artwork, either through empathy or through abstraction. This is not a view that has won much support over the years. In any case, as I have already suggested, there are ways in which *Einfühlung* can extend to abstraction as well. And although this may be a mistaken view, it does raise the matter of what role awareness of the self plays (or loss of the self) in the brain's operations when it judges art.

<sup>20</sup> Learned examples of such denial are provided by Willibald Sauerländer (1989) and the many predecessors he cites.

<sup>21</sup> I am grateful to Thomas Metzinger for reminding me of Lipps' views on the precise role of these elements in the relationship between empathy and aesthetics.

### 3.3 The Feeling of Emulation: The Example of the Capponi Chapel

To look into the Capponi Chapel in Santa Felicita in Florence is to have an immediate physical sense of the figure's actions in Pontormo's scene of *The Deposition from the Cross*. Viewers often have a sense of physically emulating the gestures of those figures, even if they do not actually do so. Not only do they comment on the great staring eyes (always a major attractor in a picture, as in life), they have the feeling, almost within themselves, of the torsion of the huge figure of the woman turning toward the virgin on the right and of the weight of Christ's body as supported by John the Evangelist on the left and the young boy holding him from beneath on the right. Among the different gestures they may seem to emulate, perhaps the most striking are the Virgin's upraised right arm that seems to extend across the entire picture with her hand silhouetted against the sky, the despairing outstretched arms of the woman in green behind her, and, to a lesser extent, the hand stretched across the breast of the tender veiled figure at the very top of the work.

The exceptional colors in this picture play an important role in drawing attention and probably (for this has not yet been studied) in reinforcing the sense of the relevant emotions within it. But what is so notable is the immediate feeling one has of emulating or being about to emulate the gestures. Almost as soon as one looks at the gestures of these figures, almost as soon as one has the sense that one is about to raise one's hands, or drop them, or press one or the other to one's own chest, one notices something else – the strangeness of one or the other hands that form the apex of these gestures, from the curiously tapered fingers and forearms of the Virgin and the woman above to the awkwardness of the gesture and the hand of the woman in green in the upper right, all contrasting so strikingly with the more powerful and seemingly more carefully depicted hands of the other characters in the scene. Who knows whether these weak and flaccid hands were intended to indicate the helplessness of their actions?

In the very moment that we perceive those hands, or possibly some other factor in the picture such as its colors, the automatic simulation of

movement halts, and the moment of looking is transformed into one of contemplation. This takes the body of the viewing self out of the picture, even if momentarily, and makes it a third-party judging self. When we see the *way* the picture is depicted, we become aware of ourselves as judging, assessing selves, as well, perhaps, of the fact that even our simulatory or imitative sense of their actions is an effect of the picture. At that moment we consider the other dimensions of this picture as well: formal, emotional, and compositional. And it is at this precise juncture that the self is drawn out of its absorption in the represented other in order to be made to realize that it is a judging self. Absorption in the figures turns into an assessment of them *as represented* there. It is also at this point that one is likely to stop oneself from acting out (that is, literally mimicking) the gesture that one observes in a representation.

I have set out in a rather literal manner the course of reactions viewers may have to a painting like this. In doing so, I do not wish to suggest that it is the same for everyone, but rather to propose that some such sequence of processes (from absorption to inhibition, self-aware detachment, contemplation and reflection) is likely to occur, and that these processes are most clearly understandable, possibly entirely explicable, in neural terms. Empathy paves the way for the forms of inhibition necessary for contemplation and reflection. It will be noticed, I hope, that I do not describe inhibition in the way that Freud might have done as essential to his notion of culture; I speak of it in motoric terms.

All this may seem to recall the centrality of inhibition in the old notion of dynamogeny. Critical to it was "a view of the checking of motor responses" that regarded inhibition as "an integrative force preventing the dissolution of higher organized mental functions" by constraining lower level and more instinctual processes (Crary, 1999, p. 165). This view has had a long and suggestive history. It originated with the French psychologist Théodule-Armand Ribot, but can also be found in the work of foundational British neurologist Hughlings Jackson. In *The Will to Power*, Nietzsche maintained that automatic muscular responses can suspend inhibition in the course of pleasurable responses to art and "the enhancement of the feeling of life" (Nietzsche, 1967, sec. 802, 1886/1989). More than once Aby Warburg spoke of "dynamograms" and the need to keep them under control. This reflection may also seem to

prefigure Freud and have overtones of his view on the relationship between repression and culture; but Freud, as so often, is fleshed out by neuroscience.

Earlier I distinguished empathy from ordinary compassion. Empathy is not just a matter of taking perspective, or of imagining the plight of others but rather a state of being in the situation of others; it is often unconscious. It comes before the prefrontal appraisal of emotion; it is precognitive. But by themselves these claims would be too easy and insufficient. They would not tell us why empathy is not constitutive of art, or how the cognitive interacts with the precognitive, or clarify the relationship between bottom-up and top-down responses in empathy. These are all questions that require expansion.

Let us return to the example of responses to Pontormo in Santa Felicita. While his figures may arouse a variety of forms of empathetic engagement, it is not this that constitutes its quality as a work of art. What is critical is the inhibition of empathetic engagement in such a way that one's sense of self is reclaimed from its immersion in the other. The inhibition of this particular form of engagement enables self-awareness. It is as if viewers become aware that upon sight of the work they have automatically given themselves up and put themselves in the place of those figures – or rather that they must get themselves out of the position in which they suddenly find themselves assimilated to someone there. As Walter Benjamin argued in his rejection of vulgar notions of *Einfühlung*, the point is not to represent ourselves in their space, but to represent them in ours. You have to get yourself out of there; but first you have to give yourself up and put yourself there.

#### 4 Frontal Circuits Involved in Judgment

How are these forms of self-awareness and withdrawal of the self from what is observed represented in the brain? The situation of listening to or watching other people's stories requires a person to more or less consciously adopt the subjective point of view of the other. Actually imagining oneself in the place of a man strapped in a



machine generating painful heat – the famous Stotland experiment – is a more intense experience than just watching or trying to imagine how the target is feeling (as opposed to thinking about how *you* are feeling) (Stotland, 1969). But this vivid imagining of oneself in the place of the other needs to be kept in check, or toned down at least, otherwise it jeopardizes judgment. A complex inhibitory process is thus necessary to regulate the self-perspective in order to then allow for the evaluation of the other perspective. As Decety and Jackson note, the prepotent self-perspective, driven by the automatic link between perception and action, is the default mode, and its regulation allows a necessary degree of cognitive and affective flexibility (Decety & Jackson, 2004, p. 87).

Such a view is compatible with the role of the prefrontal cortex in top-down control of behavior (Miller & Cohen, 2001). Key structures in the circuitry underlying emotion regulation are relevant in empathy. The orbitofrontal, ventromedial and dorsolateral cortices have all been reported to be implicated in empathy and its modulation. In particular, the ventromedial prefrontal cortex (VMPFC) plays a special role in emotion regulation with its reciprocal connections between brain regions involved in emotional processing (amygdala), memory (hippocampus) and executive functions (Davidson, Putnam, & Larson, 2000). Interestingly, Damasio's somatic marker hypothesis envisaged the VMPFC as key to the adaptation of bodily states ("somatic markers") associated with emotions in the course of decision-making. This once more brings the body into the realm of the top-down moderation of emotion as a result of cognitive input that bears on decision-making, contemplation and judgment.

While lesions to the VMPFC often result in empathy deficits, they significantly affect self-reflection and its connections with memory (Kelley et al., 2002). The frontopolar cortex (which includes VMPFC) is involved in the process of evaluating self-generated responses and is recruited when a task requires monitoring and manipulation of information that has been internally represented. It regulates and inhibits motor processing and emotional inputs, and patients with lesions in this area consequently show a degree of lacking inhibition. This twofold function of the VMPFC is thus

entirely consistent with the general view set out here about the relationship between empathy and inhibition in judgment. Moreover, the frontopolar cortex, medial prefrontal cortex, and posterior cingulate are systematically involved when participants adopt the perspective of another individual as opposed to a self-perspective. In addition to its projections to the posterior cingulate cortex, the frontopolar cortex is also linked to the anterior cingulate as well, which, as is well known, plays a critical role in conflict monitoring and emotional regulation.<sup>22</sup> In all these ways, the transition from empathy to judgment (and the passage from imitative motor activity to cognitive modulation and appraisal of emotional response) becomes still clearer.

Recent work on the entire default mode network (DMN), which includes the group of cortical midline structures just mentioned (VMPFC, medial prefrontal cortex, especially dorso-medial prefrontal cortex (DMPFC), and posterior cingulate), has shown that it is essential for self-reflection and self-referential thought (Gusnard, Akbudak, Shulman, & Raichle, 2001; Gusnard & Raichle, 2001; Moran, Kelly, & Heatherton, 2013; Raichle et al., 2001). The DMN includes the hippocampal formation and is active when external perceptual tasks fall away (or where none such exists) (Greicius & Menon, 2004). "During such moments, participants change their focus of external attention and engage in spontaneous cognitive processes including remembering the past and imagining the future" (Andrews-Hanna, Reidler, Huang, & Buckner, 2010, p. 322). It is critical for internal trains of thought (Smallwood, Brown, Baird, & Schooler, 2012; Smallwood et al., 2013). Edward Vessel and others have recently demonstrated that it seems to be especially engaged during the evaluation and appreciation of works

<sup>22</sup> Perceiving and assessing the level of pain experienced by a person in photographs (hands and feet in situations likely to cause pain) is associated with significant changes in activity in the ACC, anterior insula, cerebellum and, to a lesser extent, the thalamus. Activity in the ACC is "strongly correlated with observers' ratings of the others pain suggesting that activity of this region is modulated according to subjects' reactivity to the pain of others" (Jackson, Meltzoff, & Decety, 2005, p. 771).

of art (Vessel, Starr, & Rubin, 2012). Especially relevant is the claim that “MPFC may serve as a processing ‘hub’ binding together information from all sensory modalities with internally generated information” (Moran et al., 2013, p. 391).

On these grounds alone one might hypothesize that the DMN is activated in the course of the extraction of self-awareness from the empathetic state, that is, at that moment of awareness that one is not that person there, but oneself. The process of evaluating the stimulus in terms of one’s own experience and context would begin only then. The DMN would then play a significant role in the processes of contemplation and judgment, in which what might once have been called the imaginative mind seeks to make sense, in its own terms, of an awareness that that other body is indeed someone else’s, that the viewer has not been absorbed into it, but is able judge it by other criteria supplied to the self. In light of all this, it is not surprising that the DMN should have been shown to be activated during intense aesthetic experience (Vessel et al., 2012).<sup>23</sup>

Let us briefly return to the question of stories. Decety and Chaminade did an experiment about sympathy for sad stories, in which trained actors told their tales with congruent or incongruent motor expressions of emotion (Decety & Chaminade, 2003). Watching sad stories versus neutral ones resulted in increased activity in the emotional processing structures, including the amygdala and parieto-frontal areas, especially the right ones (critical for awareness of others). The mismatch between the narrative content of the stories and the motor expression of emotion elicited a strong hemodynamic increase in the VMPFC and superior frontal gyrus. Both areas help monitor conflict between expected and actual outcomes, just as the anterior cingulate cortex (ACC) is involved in monitoring emotional conflict. The VMPFC’s involvement in processing emotions that arise from conflict is precisely what makes it so crucial to making judgments and aesthetic judgments in particular. Vessel’s recent work on the DMN makes its role clear in the aesthetic pleasure that arises from evaluation, while research on the interaction between the dorso-lateral prefrontal cortex (DLPFC) and the VMPFC has shown how the DLPFC serves to censor or dampen the VMPFC’s processing of emotion on the basis of knowledge and expertise (see Kirk

& Freedberg, 2015). For further references to relevant research on the modulating influence of DLPFC, see Kirk, Harvey, and Montague (2011) and Kirk and Freedberg (forthcoming).

Decety and Jackson (2004) rightly argue that the inhibitory component of frontopolar activity is necessary to regulate and tone down the self-perspective in order to evaluate the other-perspective in empathy. Here too, the posterior cingulate plays a role. But it is possible to take a slightly different point of view when it comes to art. The issue here is not so much the insertion of the self into the other or bringing the other to the self, but to have a sense that one remains oneself even in one’s involvement with the work. This is the essential dialectic at the heart of aesthetic judgment. No one has ever claimed that aesthetic judgment is a matter of immersion; but immersion or absorption of some form or another is what precedes and is subject to inhibition, contemplation and assessment. In these processes, the VMPFC certainly plays a role and so does censoring by the DLPFC, which has been shown to come into play in cases of those trained in art who resist favors and interest.<sup>24</sup> But the real issue is deeper down, something that does not leave much space for Kant. It is the issue of how automatic motor responses are inhibited at the basal ganglia level and how this inhibition has to do not only with the necessary restraints that lie at the core of all movement, but also with the monitoring and regulation of immediate emotional responses that occur at the level of the anterior cingulate. Hence the importance of projections from DLPFC to basal ganglia and vice versa.

These inhibitory movements are bound up with GABAergic uptake and dopamine release at striatal level. This results in some of the pleasure and nucleus accumbens (NAcc) activation involved both in sensory responses and in the satisfactions that ensue from self-aware aesthetic judgment. That prefrontal interactions, particularly between the VMPFC and the DLPFC, are indispensable here too is clear; but the

<sup>23</sup> Other areas of the brain (in particular, the inferior parietal lobule and the hippocampal formation) are also generally regarded as parts of the DMN, but discussion of their role in the relationship between detachment, contemplation and judgment can wait for another occasion (see Buckner, Andrews-Hanna, & Schacter, 2008; Andrews-Hanna et al., 2010; Smallwood et al., 2013).

body remains as a critical factor in aesthetic judgment in the course of its monitoring and regulation at ACC and basal ganglia levels as well. It is for this reason that, although not constitutive of art, empathy is an essential preliminary and motivating element for the forms of contemplation that lead to judgment and its multiple satisfactions.

What is finally at stake is the inhibition of empathetic forms of engagement. This involves forward processing by the VMPFC, regulation and censorship of emotional processing by the DLPFC, and inhibition in the basal ganglia and feedforward loops (both to cingulate and prefrontal cortices). So while empathetic engagement is a critical element in one's engagement with artworks, it is not constitutive of it. It is precisely the constraints on this engagement that are – and these are arguably cognitive, regulatory and productive of self-awareness.

## 5 Summary

What I have sought to emphasize in this article are the vicissitudes and potentials of a form of perception and understanding that is prior to cognition. My aim has been to foreground the ways in which sight leads to identification *with* rather than identification *of* the body of the other – empathy in its pure corporeal sense. Sight provides more direct access to the bodies and movements of others than has ever been imagined. It has always been regarded with suspicion precisely because of this access. The long prioritization of imagination over more direct sensual responses in the West and the East is both a consequence and a manifestation of the fear of evoking the body in the very processes of sight itself. Only by understanding – and then accepting – the possibilities inherent in the bottom-up processes of sight can we begin to grasp how we relate to what we see, rather than to what we imagine on the basis of the books we read

<sup>24</sup> See earlier Kirk et al. (2011). For a further analysis of the aesthetic implications, see Kirk and Freedberg (2015) and Kirk and Freedberg (forthcoming). Significantly, patients with DLPFC lesions seem to have “deficits in empathetic ability related to cognitive flexibility” as opposed to those with right VMPC regions where empathetic deficits are profound and relate to affective recognition and emotional and body states (as highlighted in the present discussion). See, for example, Shamay-Tsoory, Tomer, Berger, and Aharon-Peretz (2003).

or the stories we hear, of the concerts we attend or even the redolent aromas we smell – whatever their emotional and visual correlates may be.

Empathy is above all a visual phenomenon, however much we may wish to think of it as an imaginative state. It is true that empathy (or what may seem like empathy) occasionally arises from the imagination, but it does not primarily do so. One might say that it is by imaginative empathy that death touches us; one might think of the Holocaust as an example – and rightly so: it often moves us more by its narratives than by its representation in visual form, for death cannot be represented. At best it is representation truncated. It is the stories that move us to the core, the waste of life, ability, and talent – the numbers. But death precludes empathy. For death, there can be no feeling-in. Empathy needs the living body. It cannot be thought of without it. If you say you have empathy for the psychological condition of the other, you are deluding yourself and will disappoint the other, not necessarily in terms of strength or vitality of feeling, but in terms of feeling-in and feeling the same. It is easy enough to delude oneself into thinking that one's sympathy is empathetic. Empathy, in such cases, is spurious, a form of feeling-in in name only. Empathy remains fundamentally a physical condition. It entails feeling with the body; it is neither sympathy for the narratives of others, nor even the assertion of sympathetic or allegedly empathetic feeling. The basis of empathy, like the empathetic basis of aesthetics, is always precognitive. The two conditions, of course, are not unrelated because we see that picture as if the body it shows *or implies* were our own.

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