

*Seeing art....beyond vision.
Liberated embodied simulation in
aesthetic experience.*

The multimodal nature of vision

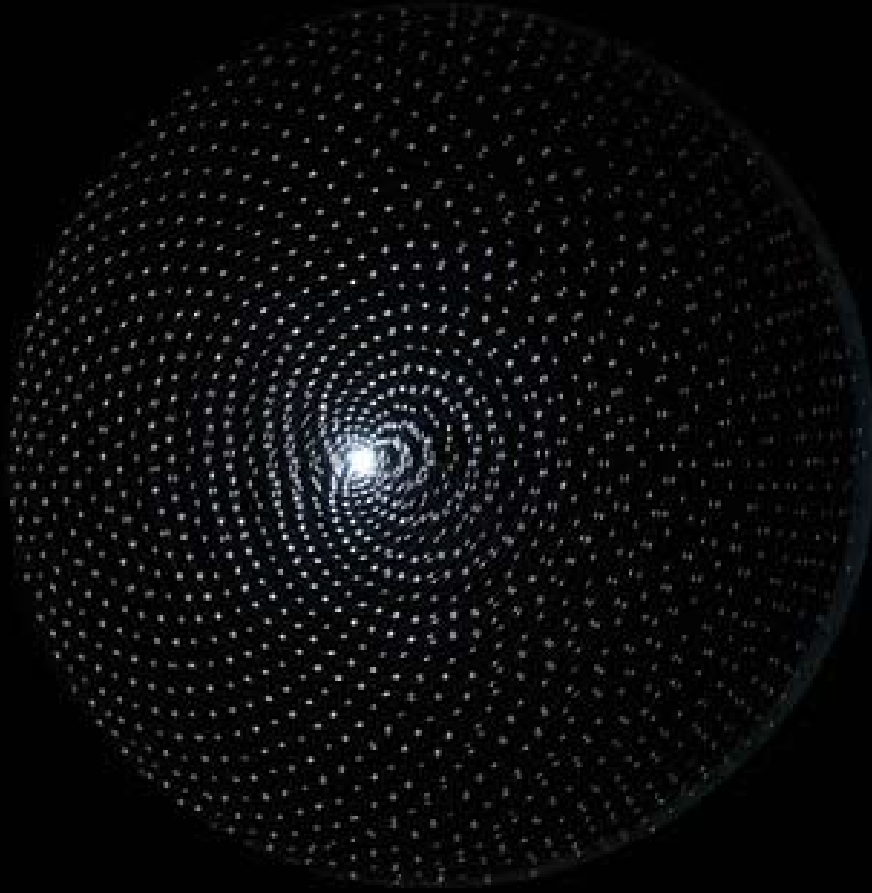
Our visual perception of *real* objects in the real world implies a lot more than the mere activation of our visual brain. Vision is always a multimodal enterprise, encompassing the activation of sensory-motor, visceromotor and affect-related brain circuits.

The discovery of mirror neurons¹ and of a variety of mirroring mechanism in our brain show that the same neural structures activated by the actual execution of actions or by the subjective experience of emotions and sensations are also active when we see others acting or expressing the same emotions and sensations. These mirroring mechanisms have been interpreted as constituting a basic functional mechanism in social cognition, defined embodied simulation. Embodied simulation is engaged also when actions, emotions and sensations are displayed as static images. Freedberg and Gallese (2007)² proposed that a fundamental element of aesthetic response to works of art consists of the activation of embodied mechanisms encompassing the simulation of actions, emotions, and corporeal sensations. Mirroring mechanisms and embodied simulation can empirically ground the fundamental role of empathy in aesthetic experience. Freedberg and Gallese's theory of empathic responses to works of art is not purely introspective, intuitive or metaphysical, but has a precise and definable material basis in the brain/body system. This theory is articulated in two complementary aspects. First, the relationship between embodied simulation-driven empathic feelings in the observer and the content of art works, in terms of the actions, intentions, objects, emotions, and sensations portrayed in a given visual art work. This aspect can be viewed as the "what" of aesthetic embodied experience.

Second, the relationship between embodied simulation-driven empathic feelings in the observer and the quality of the art work in terms of the visible traces of the artist's creative gestures, like brush work, chisel marks, and signs of the movement of the hand more generally. We can refer to this component as the "how" of aesthetic experience.

Einfühlung and aesthetic experience

The role of the body in aesthetic experience is an old idea. The notion of empathy (*Einfühlung*) was originally introduced in aesthetics by the German philosopher Robert Vischer in 1873, well before its use in psychology. By *Einfühlung* Vischer³ meant the physical responses generated by the observation of forms within paintings. He described how particular forms aroused particular responsive feelings, depending on the conformity of forms to the design and function of the muscles of the body, from those of the eyes, to our limbs, and to our bodily posture as a whole. Vischer distinguished a passive notion of vision – seeing – from an active one – looking at. According to Vischer, it is the act of looking that best characterizes aesthetic experience when perceiving images, in general, and art works, in particular. This account of art perception implies an empathic involvement, which, in turn, encompasses a series of bodily reactions and bodily feelings of the beholder. Particular observed forms would evoke specific emotional reactions on the basis of the conformity of the former with the design and functionality of the body of the beholder. According to Vischer, symbolic forms acquire their meaningful nature first and foremost because of their intrinsic anthropomorphic content. Symbols are something different from the indirect manifestation of concepts. It is through the non-conscious projection of her/his body image that the beholder is able to establish a relation with the artwork. The work of Vischer exerted a powerful influence over two other



German scholars: Adolf von Hildebrand and Aby Warburg. The German sculptor Hildebrand in 1893 published a book entitled *The Problem of Form in Figurative Art*. In this book Hildebrand proposed that our perception of the spatial characters of images is the result of a constructive sensory-motor process. According to Hildebrand, space does not constitute an a priori of experience, as suggested by Kant, but its product. The reality of artistic images resides in their effectuality, conceived both as the end result of the artist's actions producing them and of the effects artistic images produce on the beholder. According to the same constructivist logic, the aesthetic value of art works reside in their potentiality to establish a link between the intentional creative acts of the artist and their reconstruction on the side of the beholder. In such a way creation and artistic fruition are directly related. To understand an artistic image, according to Hildebrand, means to implicitly grasp its creative process. A further interesting aspect of Hildebrand's proposal concerns his notion of the fundamental motor nature of experience. It is through movement that the available elements in space can be connected, that objects can be carved out of their background and perceived, that representations and meaning can be formed and articulated. Ultimately, according to Hildebrand, sensible experience is possible and images acquire their meaning just because of the acting body. Hildebrand, in turn, influenced another famous German scholar, Aby Warburg. Warburg conceived art history as a tool to shed light on the psychology of human expressive power. His famous notion of "form of pathos" (*Pathosformel*) of expression implies that a variety of bodily postures, gestures and actions can be constantly detected in art history, from Classic art to the Renaissance period, just because they embody in exemplar fashion the aesthetic act of empathy as one of the

main creative sources of artistic style. According to Warburg, a theory of artistic style must be conceived as a "pragmatic science of expression" (*pragmatische Ausdruckskunde*).



Aby Warburg, 1866-1929

Warburg, when describing the classic marble group known as the Laocoon, identified transition as a fundamental element to turn a static image in movement charged with pathos. Several years later, the Russian movie director Ejzenstejn, when commenting on the same *Laocoon* sculpture, wrote that the lived expression of human suffering portrayed in this masterwork of classic art is accomplished by means of the illusion of movement.



Laocoon and his Sons, 25 BC, Vatican Museums, Vatican City

Such movement illusion is obtained by condensing in one image different aspects of expressive bodily movements that could not possibly being visible at the

same time. These scholars believed that the feeling of physical involvement with a painting, sculpture, or architectural form also enhances our emotional responses to such art works. Thus, it constitutes a fundamental ingredient of our aesthetic experience.

Fictional worlds and embodied simulation

Mirror mechanisms are just *one* instantiation of embodied simulation, where the simulation process is triggered by a perception. Indeed, embodied simulation can also occur when we *imagine* doing or perceiving something. The border between real and fictional worlds is more blurred than one would expect. Cognitive neuroscience has shown that visual imagery shares with visual perception several features. Brain imaging studies demonstrate that when we imagine a visual scene, we activate the same visual regions of our brain normally active when we actually perceive the same visual scene, including the primary visual cortex. Similarly to visual imagery, motor imagery also shares many features with its actual counterpart. Motor imagery and real action both activate a common network of brain motor centers such as the primary motor cortex, the premotor cortex, the supplementary motor area (SMA), the basal ganglia and the cerebellum. Typically human activities such as visual and motor mental imagery, far from being exclusively symbolic and propositional, rely on and depend upon the activation of sensory-motor brain regions. Visual imagery is equivalent to simulating an actual visual experience, and motor imagery is equivalent to simulating an actual motor experience. Thus, motor and visual imagery do qualify as further forms of embodied simulation, since they imply re-using our motor or visual neural apparatus to imagine things and situations we are not actually doing or perceiving. These findings open interesting scenarios for an embodied approach to art. As the

Italian philosopher Alfonso Iacono (2010)⁴ recently proposed, to enter into the fictional world of art implies to inhabit an *intermediate world* whose fictional character is naturalized, henceforth acquires a natural character, in spite of its artificial nature.

Embodied simulation can be relevant to aesthetic experience in at least two ways: First, because of the *bodily feelings* triggered by art works with whom we identify by means of the mirroring mechanisms they evoke. In such a way, embodied simulation generates the peculiar *seeing-as* that plays a peculiar role in our aesthetic experience. Second, because of the bodily memories and imaginative associations that art works can awake in beholders' minds.

Aesthetic experience and liberated simulation.

There is a further aspect characterizing embodied simulation when driven by our immersion into the fictional worlds of art, with respect to when this functional mechanism is activated by real-life situations. In fact, very often artistic fiction is more powerful than real life in evoking our emotional engagement and empathic involvement. Why? Perhaps because in aesthetic experience we can temporarily suspend our grip on the world. We liberate new energies and put them into the service of a new dimension that, paradoxically, can be more vivid than prosaic reality. Aesthetic experience of art works, more than exclusively being a cognitive suspension of disbelief, can be thus interpreted as a sort of "liberated embodied simulation". When looking at a visual work of art, reading a novel, or attending to a theatrical play or to a movie, our embodied simulation becomes *liberated*, that is, it is freed from the burden of modeling our actual presence in the "real" world. We look at art from a *distance of safety* from which our being open to the world is magnified. In a sense, to appreciate art means leaving the world behind in order to more

fully grasp it. Through an immersive state in which our attention is totally focused on the artistic virtual world, we can fully deploy our simulative resources, letting our defensive guard against reality slip for a while. Our pleasure for art is likely also driven by this sense of safe intimacy with a world we not only imagine, but also literally embody. A similar perspective can be applied to the creative process of the artist. The artwork becomes the mediator of the sensory-motor and emotional resonance that establishes between the artist and the observer, thus allowing beholders to feel the artwork in an embodied manner. Liberated embodied simulation hence provides a potentially unified level of description of both artist's and beholders' relation with the art work.

¹ Gallese, V., Fadiga, L., Fogassi, L. and Rizzolatti, (1996) G. Action recognition in the premotor cortex. *Brain* 119: 593-609. See also Gallese, V. (2010) "Mirror Neurons and Art". In: F. Bacci and D. Melcher (Eds.) *Art and the Senses*. Oxford: Oxford University Press, pp. 441-449. e Gallese, V., Di Dio, C. (2011) "Neuroesthetics. The body in aesthetic experience". In V. Ramachandran (Ed): *Encyclopedia of Human Behavior*. 2nd Edition. San Diego (CA): Elsevier Inc.

² Freedberg, D. and Gallese, V. (2007). "Motion, Emotion and Empathy in Aesthetic Experience". *Trends in Cognitive Sciences* 11, 197-203.

³ Hammermeister, K. (2002) *The German Aesthetic Tradition*. Cambridge University Press.

⁴ Iacono, A. (2010). *L'Illusione e il Sostituto. Riprodurre. Imitare, Rappresentare*. Milano: Bruno Mondadori Editore

