



# Miruna Runcan

## The Body of the Empathic Spectator

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### ABSTRACT

The paper will try to analyze, from a combined neurological, psychological and semiotic perspective, the relationship between the audiences' perception/ imagination/ immersion processes and the solitary spectator's physical reactions to performing arts. It is a work in progress, attempting to demonstrate that the conscious/subconscious dynamics of sequential interpretation and understanding (of any and each spectator) are founded on a more profound ground of personal experience, self-sensitivity and physicality. This nearly virgin territory of research has been explored, in the last decades, by neurological experiments and theories, but its mapping still remains to be done. This paper focuses only on the personal body experiences induced to the spectator in the processes of watching live performances or fictional or nonfictional movies.

### KEYWORDS

Live Performance; Film; Spectator; Body-Perception; Immersion.

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### 1. Introduction and Working Hypotheses

Have you ever looked, really looked at your child (or any other child) fascinated by a theatrical performance or film, in the theater hall or at home? And, most of all, have you seen him/her post-withdraw from the state of concentration prompted by the fictional action?

By the time their exposure to performances becomes a constant form of social rite (or mere current practice in the case of television), children's recurrent reaction to what they see is mostly an active one. When the robe of spectatorship is removed, the child feels the almost irresistible need to "be" the character with whom he/she has identified temporarily, by reconstructing the climactic circumstances. "Mommy, look, I am Spiderman!" Their latent energy, required by observational concentration, is "released" kinetically and mimetically. Without being aware of it, the child wants more than just to be watched; he/she does not want ONLY to get the others' attention: on the contrary, he/she feels the instinctive need to *embody* and to live on his/her own the *experience* of alterity, previously undertaken as "observable."

Philosophically speaking, in his or her first childhood, the child feels the inherent



need to turn the fictional narrative nucleus, *hic et nunc*, from *object* to *subject*, from otherness to personal identity. Of course, ritualized social practices progressively “teach” him/her (how) to repress the physical expression of this active “mimetic” instinct: past a certain point in time, all the processes following the spectatorial dive will usually take place, albeit equally dynamically, only in his or her emotional-cognitive mind and memory.

According to the research carried out in the last decades – and to the subsequent theories – on the way in which the body is perceived and mapped by our brain, the condition and the parameters of understanding our spectatorship have undergone fundamental changes. For example, since the theory of *embodied simulations*<sup>1</sup> is proven to be a valid one, the small child’s kinetic-mimetic, post-spectatorial reaction could be an essential pattern relating to the physical release of the observational “print” of the performance. Certainly, we, the adult spectators, have “learnt” to stifle this spontaneous mimetic reaction. However, the embodied simulation resides – instinctively – in each of us, substantiating the cognition processes which fictionally/associatively produce our joy of experiencing alterity.

The hypothesis of this paper is that the assumption of the spectatorial condition is not only a way of “knowing” – passively, fictionally and associatively – the real or fictional others’ existential experiences that we find foreign or inaccessible; it is also a way to perceive our own corporeality, in safety conditions: that which is alive within us. In other words, following other phenomenological and neurological studies,<sup>2</sup> I assume that spectatorship is, at least in cinema and performing arts, a physical experience about both otherness as self-perception, not only a cognitive/semiotic one.

## 2. The (Personal) Body in Our Mind

### 2.1. A (More or Less) Non-Symptomatic Entity

What do we know about our body? How do we know it? How do we control it? How present is it for us? To what extent do we “possess” our own bodies?

We seldom ask ourselves these questions. As we grow up, as we age, in direct relation with our experiences and traumas, we are somewhat coerced to note the external or internal parts of our organism when something does not quite work properly.

We do have, of course, some kind of general, scattered sensation regarding our body; something “decipherable” mainly at tactile/haptic level, via skin sensors. If we pay attention (which we do not, usually) we can perceive the volumetric “threshold” between us and the surrounding air. Excessive cold, wind or heat stress this limit, as it is stimulated externally. Muscular motions are also signals we understand at least through the sensations linked with their control. When we swim, we perceive our body by a sensory intensification of our “tactile” margin, which experiences the environment/water and transfers it to us evenly, by the same motion. When we float on our backs, our eyes closed, we “see” ourselves swimming, we objectify ourselves, and pleasure extends in our entire body *in action*. (Hence the conceptual/metaphoric success of the notion of “immersion,” used for our interactions with live performing arts, films or video games<sup>3</sup>).

Otherwise, our corporeal image is an obvious construct based on watching and mirroring. Through reflection, we become aware of our overall aspect, checking with our own eyes how we “look” in those of others. We study our image, we mark,



measure, question it, and sometimes we act in such a way that it adjusts to our expectations of it. But our mental image, *reflecting* the mirror *reflection*, is not the body as such, but a “vision”: one that requires constant control and inspection by the other senses.

In fact, usually, a healthy body is an absent body. We “feel” it only by contrast with the external stimuli. Neurologists call this type of perception *Exteroception*. When in good function, a healthy body is, consciously, “non-existent.”

Our body does not send signals for comfort, but only for discomfort (pain, itch, hunger, cold etc.) or pleasure. We perceive our body in *symptom situations*, or in *ecstatic/satisfaction situations*. Being alive and well is a not a physical feeling, but a mental/imaginary construct, usually founded on the constant neglect of our corporeal/physical presence in our routine activities.

In reality, however, any accident that disturbs this subtle and quiet mechanism of the “non perception” of comfort, any aggression or any pain pushes us to focus on parts of or on the entire body, seeking the causes and the remedies of the dysfunction. At the same time, it also forces us to note the steady presence of the organ, of the limb or of the entire organism, as a concrete, material and, to some extent, “objective” entity, unknown to our “ethereal” mind. It is as if our self were enclosed only by our “visions,” and the body were something distinct, at least to some extent. Countless philosophical, religious or artistic works have resulted from this apparent “absence” of our healthy and living body, which reveals its irksome materiality only in case of trouble.

## 2.2 Mechanisms for the Perception and Configuration of One’s Own Body

Nowadays, even if the map of the areas where our brain processes the relationship with specific parts or with the entire body is more comprehensive and more accurate than, for example, fifty years ago, the cerebral mechanisms of association among perceptions, signals and their conscious awareness remain (the fruit of) theories rather than positively established conclusions. Technological progress advanced spectacularly the study of how the brain works, but the scope of our knowledge is still remote. Theories as such rely both on the empiric study of the dysfunctions and on the topologic association between function and dysfunction: the thing is that, as applicable to different persons, dysfunction could show contradictory symptoms.

For the time being, the “classic” dichotomy that accounts for the way in which the brain perceives and analyzes the body is the one that opposes, dialectically, *the body schema* and *the body image*. If we rely on the most complex descriptions – like Pailard’s<sup>4</sup> and Gallagher’s<sup>5</sup> – we can define the body schema as a sensory-motor map underpinned by self-perception. On the other hand, corporeal image is a complementary mechanism, founded on the concrete vision the individual has of his own body (and of parts of it), as perceived from the exterior. Furthering and deepening this basic dichotomy, Milner and Goodale<sup>6</sup> propose a different one, centered on functionality and on behavior: the one between the “visual pathway for perception” of the body to the brain, and “the visual pathway for action.”

A newer version of this latter actionist dichotomy, one that comes closer to the contemporary computational languages, is



proposed by Carruthers<sup>7</sup>: thus, the brain's mechanisms of corporeal exploration could be classified as *online knowledge* ("The body as it is currently," in controlling action) and *as offline knowledge* ("The body as it is usually like," as a synthetic representation/image of one's self).

In a complex critical reconsideration of these dichotomies, Berlucchi and Aglioti<sup>8</sup> boldly suggest a stellar pattern, which should convert the dialectic visions in some sort of matrix web, whose connector terminal would be in the *insular cortex* (thus reinforcing Craig's theory from 2009<sup>9</sup>). In a very simplified formula, the perception and codification mechanisms regarding the body intersect those that order the posts, the functions and the tasks of the perceptible organs,<sup>10</sup> to remix them in the anterior area of the insula, in a coherent format that allows acknowledgement. Subsequently, this "terminal" is responsible for the overlapping of data obtained by mapping, image, action and adjustment to its purpose, in an isomorphic and coherent image relating to our own body.<sup>11</sup>

### 2.3 Types of Investigation and of Perception of the Body

Summing up, the brain processes the entire body by systematizing a series of active functional schemas, images and reactions, trying to semanticize and to "translate" the significations of the obtained information. In the last century, neurologists managed to reach a consensus on the three large types of self-investigation by means of which the brain obtains the information submitted to constant systematization.

On the one hand, the information is gathered by the aforementioned *exteroception*: our neural terminals, particularly at skin level, perceive and respond to exterior stimuli, reading them consciously as heat, cold, humidity, wind, vibrations etc. In

other words, for our brain, the body is an interface with the environment.

On the other hand, *interoception* denotes our capacity to perceive and to interpret the stimuli received from within the organism, when an organ or a limb sends messages regarding its inappropriate or deficient operation. In general, we consider a recurrent signal (pain, itch, burn etc.) coming from the same area to be a symptom and we try to identify its cause.

Finally, the most complex and most obscure self-investigation procedure is *proprioception*: it relates to our capacity to perceive and to interpret, most of the times unconsciously, the information regarding location, position, orientation and motion received from within the organism. Discrete/unconscious and important in the formation of an overall "vision," the cerebral areas that store proprioceptive information are also responsible for our sensations of possession relating to particular parts or to the entire individual body. In other words, proprioception plays a capital role in the process of perception of a limb or of an organ as being ours, rather than a foreign one (in this sense there are countless revealing examples, in the casuistry of cerebral lesions<sup>12</sup>).

Conjunctively, the three types of self-perception make the somatosensory system that produces somaesthesia, the syncretic capacity of experiencing our own body.

Interoception works along with proprioception and exteroception to provide the brain with complete information about the rest of the body, and its cortical representation in the insula is thought to be part of a system for emotional expression and self-consciousness.<sup>13</sup>

Here, we could go back to the introductory remark on swimming and to the



complex corresponding feeling of pleasure relating to one's own body: the experience joins all the three types – exteroception, interoception and proprioception – in unmatched synesthesia.

On the other hand, however, whether they agree or not with the new theories (particularly with the theory of embodied simulations) resulting after the discovery, at the beginning of the 1990s, of the mirror neurons, neurologists do admit that an essential part of knowing one's own body is obtained by the human being, from the earliest (pre-verbal and pre-motor) age, in association with the visual and acoustic observations regarding the bodies of other human beings. The first observations/information occur in relation with the sounds and the smells, but mostly with the faces of the dear ones, with their expressions and aspect: mother, father, grandmother, siblings who take care of the child in his first months of life are first and foremost sounding faces.<sup>14</sup> Later, in the fourth part of this paper, we will look at the centering of interpersonal and artistic communication on the human face.

With the development of his/her motor capacities, the child accumulates first observations regarding the remaining parts of the body, initially regarding the limbs, and he operates the first gestural associations.<sup>15</sup> At about one year, children will also react for the first time to the mirrored image, recognizing themselves and playing with their own image in the mirror.<sup>16</sup>

However, such mechanisms and experiences are also likely to be involved in the ability to perceive and know the structure and movements of the bodies of other individuals, in order to understand their actions and to interpret their gestures for social communication. One can thus postulate the existence of a cognitive category for

the human body whose components include one's own body as well as the bodies of other humans.<sup>17</sup>

Separately from the theory of embodied simulations we will discuss below, another finding of these recent years is particularly important in our attempt to relate the performer's corporeality with the spectator's. At the beginning of the millennium, a multinational team of researchers<sup>18</sup> found, by applying fMRI procedures, an area in the right lateral side of the occipital-temporal cortex, which reacted coherently and constantly to the visual exposure to images of human bodies or parts thereof, with the exception of the face. Subsequent to a compelling number of experiences in laboratories of various countries (UK, USA), the area was called *extrastriate body area* (EBA). The meaning of the finding is even greater as it confirms former hypotheses that various brain areas are responsible for the visual reaction and the analogous representation regarding the head and the face, on the one hand, and the other parts of the body, seen jointly or separately, on the other hand.

However, it is already clear that, apart from the mapped presence of our autoscopia mechanisms, careful observation of others (daily or in the framework of mediated and artistic communication) plays an essential role in the corporeal knowledge of the self.



### 3. Yours Is Mine. The Body of the Performer in the Spectator's Mind

#### 3.1 The Mirror Neurons

Mirror neurons were revealed, for the first time, at the beginning of the 1990s, by experiments with electrodes implanted in macaque brains: the electrodes took over the electric signals from singular neurons and translated them in amplified acoustic signals. These neurons could be found in the premotor cortex.<sup>19</sup> This totally unexpected discovery has worked like an avalanche and, in the last two decades, has triggered an incalculable number of studies, findings and theories, not only in the field of neurology, but also in all sorts of other related or cross-disciplinary fields.

Mirror neurons are premotor neurons that fire both when an action is executed and when it is observed being performed by someone else.<sup>20</sup>

In simpler terms, the mirror neuron activates, with similar strength, both when the monkey sees another monkey or a man pick up a peanut, and when the monkey itself performs the same action. Subsequent experiments have shown that this behavior, present in a limited number of neurons, refers not only to visually perceived actions, but also to action perceived only acoustically. At the same time, they revealed that, at least with apes, mirror neurons activate only with focused (purposeful) actions.

Certainly, the situation is more intricate when we approach human beings, first of all because it is extremely difficult to study freestanding neurons in the human brain. Nevertheless, non-invasive comparative studies, mainly via magnetic resonance

imaging, have established neuronal areas with similar behavior in man, in the lower frontal lobe and the superior parietal lobe and, more recently, in the medial temporal lobe. Later, researchers reported experiments with electrodes that localized free-standing mirror neurons, in subjects who agreed with this research being done in parallel with preoperative testing, in extreme cases of epilepsy.<sup>21</sup> The same studies remarkably reveal neurons that work to inhibit imitative action, but which react to witnessing it.

The numerous articles on mirror neurons written by the Parma group and by other research groups all over the world have triggered very quickly an abundant series of concrete or theoretical developments: inevitably, any type of particular field of medicine, psychology, behavioral or social sciences that has ever dealt with the dilemmatic relationship between *observation* and *imitation* could be involved to some extent. With good reason, both the Italian group of scholars (very active in the experiment and the polyvalent development of their initial observations in a parade of hypotheses and applications), and many other teams or individual researchers could perceive the revolutionary facet of this finding. But even before the empiric data on the presence and action of mirror neuron in the human brain became consistent, the Italian group predicted the range of its significations for understanding the multiple mysteries relating to both imitation and empathy:

Action observation causes in the observer the automatic activation of the same neural mechanism triggered by action execution. The novelty of these findings is the fact that, for the first time, a neural mechanism allowing a direct mapping between the visual description of a motor act and its



execution has been identified. This mapping system provides a parsimonious solution to the problem of translating the results of the visual analysis of an observed movement—in principle, devoid of meaning for the observer—into something that the observer is able to understand.<sup>22</sup>

In a simplified formula, the presence of mirror neurons could explain the biological, unconscious, instinctive root of our capacity to experience other people's emotions and (perhaps) intentions, "to put ourselves in their shoes." However, this capacity would vary among individuals, determined on the one hand by native sensitivity and, on the other hand, by the complexity of interpersonal and mediated experiences to which we are exposed.

### 3.2 The Embodied Simulation Theory

Apart from the strictly medical applications of the studies that have resulted from the discovery of mirror neurons (on which not all neurologists have agreed yet),<sup>23</sup> in our opinion, the most interesting are the theories relating to empathy. In fact, the implications of empathy in the visual, musical or performing arts provide substantiation for any type of aesthetic judgment, from Aristotle to these days (let alone the complex Indian "Rasaesthetics").<sup>24</sup> On the other hand, the very concept of empathy, particularly in the 20<sup>th</sup> century, was at the heart of many controversies, given that the concrete mechanisms through which it is obtained or produced have always been mysterious. From the perception of one's "*corps propre*" (own body) theorized by Merleau-Ponty<sup>25</sup> to the haptic perception of film images theorized by Laura Marks<sup>26</sup> or the multisensory and vestibular systems analyzed by Antunes,<sup>27</sup> the spectator's physical/empathic experiences seem to become

each day a more and more substantiated field of exploring.

From this point of view, the Parma group of researchers suggested, from the beginning, that mirror neurons could be (and that in fact they are) some kind of essential link between our perception systems and the transfer of the obtained information in empathic reactions, in our own bodies. Vittorio Gallese, one of the most prolific and determined supporters of this point of view, also found a name for these processes: *embodied simulation*.

Our capacity to pre-rationally make sense of the actions, emotions and sensations of others depends on *embodied simulation*, a functional mechanism through which the actions, emotions or sensations we see activate our own internal representations of the body states that are associated with these social stimuli, as if we were engaged in a similar action or experiencing a similar emotion or sensation.<sup>28</sup>

No wonder that the theory, as such, quickly found supporters in fields ranging from general linguistics to aesthetics and back to fundamental neurology research (with dedicated followers, such as the group around Marco Iacoboni, the group headed by V. Ramachandran, or the very prolific pair Christian Keysers and Valeria Gazzola).

In the end, each of us has had, since our young age, incontrollable reactions of simulation: yawning when we see someone yawn, swallowing when someone else eats in front of us etc. We rarely or never ask ourselves, for example, why we are so engaged in the careful observation of a relative or of an employee, when they try to perform a complicated manual operation, for instance to repair a household item; we seldom ask ourselves where our barely repressible need to take over that action



comes from, or how come we need to make an effort to inhibit our irrational feeling that we could do it better...

Gallese's claim, substantiated by his collaborators' and competitors' experimental developments, is that the system of embodied simulation is innate (which could be proved, first of all, by the mimetic, facially centered reactions of the child in the months prior to the development of motor coordination; reactions such as smiling or frowning, imitation of sounds or gestures etc.). It develops, however, according to our intra-family and social experiences, in direct relation with the development and refinement of the motor cerebral zones, depending on the complexity of our existential and observations interactions.<sup>29</sup> For example, complex and compelling experiments have proven that, in adulthood, the activity of mirror neurons is considerably more dynamic when an observer who has studied the piano at some time or another, or has engaged perhaps in some sports activity, follows a pianist's finger movements or a sportsman's performance: in the observer, the muscles involved in the execution of that performance are, most of the times, also excited, simultaneously with the performer's actions.

Our mirror system is thus not fully determined at birth, but can be augmented by experiences that change the way we perceive these actions in others.<sup>30</sup>

Of course, we would be wrong to believe that the discovery of mirror neurons – the reality of which other researchers<sup>31</sup> do not necessarily deny, but approach as a mere adaptive change of function of regular cerebral neurons – is some sort of miraculous key to unlock all the previously closed doors that lead to an explanation of

mimesis, of empathy and of social practices of negotiation and violence attenuation.

It must be emphasized that mirror neurons are not "magic cells." Their functional properties are the outcome of the integration they operate on the inputs received from other brain areas. What makes the functional properties of mirror neurons special, though, is the fact that such integration process occurs within the motor system. Far from being just another species of multimodal associative neurons in the brain, mirror neurons anchor the multimodal integration they operate to the neural mechanisms presiding over our pragmatic relation with the world of others. Because of this reason they enable social connectedness by reducing the gap between Self and others.<sup>32</sup>

Nevertheless, the theory of embodied simulation is of capital importance in live performing arts (theater, dance, performance etc.) and in film or video arts, video games included, perhaps even to a greater extent than in static visual arts (painting, sculpture, photography, approached by Damasio on several occasions, in now famous works).<sup>33</sup> Audience surveys and, most of all, studies on the spectator, on the performer and on the relationship between them are, therefore, compelled to keep in step, as much as possible, with the theoretical and applicative developments of neurosciences.

In this respect, a recent study with a complex structure was made by a multidisciplinary group of neurologists from Tel Aviv,<sup>34</sup> using combined fMRI scanning, ECG and retrospective emotion rating. The group compared the cerebral emotional and cognitive reactions of 43 adults, by relating the results from three cortical and sub-cortical areas: the embodied simulation zones, the "theory of mind" zones and the





limbic system networks. The subjects of the experiment had to watch two excerpts of ten minutes, presenting the tragical separation of a mother from her children: one from the film *Stepmom* (1998) and the other from *Sophie's Choice* (1982).

Particularly – and to our knowledge, unprecedentedly – we found the dynamic patterns of connectivity of these circuits to be associated with empathy experienced under realistic situations. Furthermore, our data indicate a growing interaction of these circuits with a set of subcortical limbic structures during the intensification of empathic engagement. However, these findings also evince a context-dependent dissociation between empathy-related brain processes, suggesting that emotional sharing is based on the interplay between ES- or ToM<sup>35</sup>-related processes, which may alternatively dominate empathic engagement.<sup>36</sup>

Even more interesting and relevant, the results of the experiment seem to confirm that our empathic experiences, at least in dramatic situations, have at least two different kinds of personal sympathetic engagement:

A systematic examination of the cinematic factors that induce increased ToM-related processing in *Stepmom* and ES-limbic integration in *Sophie* is yet to be conducted. However, a key thematic distinction between the clips, which is related to agency, may readily be considered relevant: both films introduce a theme of separation of mother from child, but in *Sophie* the loss is presented as a real-time probabilistic event whereas in *Stepmom* the loss is presented as a determined fact, which cannot be changed by intentional

action. In *Stepmom*, the mother and children discuss the separation as a given fact, while *Sophie* and her children face an unfolding act of separation. Therefore, it is possible that *Sophie* triggers a ‘first-person engagement’ wherein the film viewer and the cinematic characters share an increasingly integrated activity of the ES-limbic circuit responsible for viscerally based sensations during a real-time action. On the other hand, in *Stepmom*, when the loss is primarily simulated as a distant and objective event, ToM-related processing, facilitating a flexible representation of non-actual states, may mediate empathic engagement.<sup>37</sup>

Thus, while empiric data confirm Galilese and collaborators’ theory (and they do that every day), there are at least three essential reasons to revisit newer or older notions relating to spectatorship and artistic communication, be they aesthetic, sociological or philosophical:

- What we used to call (for ages) “mimesis” is, first of all, the brain’s innate (pre-human) system of environmental adaptation. Konrad Lorenz and his teams observed and documented that abundantly on many species of animals. But what would Aristotle have to say about it?
- We are born spectators and then we become (social) Actors/Performers. Still, both spectatorship and acting are founded on the same brain/body mechanisms.
- Goffman’s intuitive/observational theories about everyday “theatricality,”<sup>38</sup> so influential in sociology and anthropology, seem to have neurological foundations.



#### 4. Embodied Simulation and the Mediation/Transfer between the Performer's and the Spectator's Bodies

##### 4.1 Mediation, Semiosis and Transfer

From a semiotic/pragmatic and psychological viewpoint, any theatrical and/or film communication relies on a concurred stability, preceding the installation of convention, between the watched and the watchers. Both the watched and the watchers abandon their ordinary identities in order to be able to engage in mediated communication, irrespective of the theme, topic or aesthetic structure of this communication.

For the former and for their expressive activity – the activity that structures an artistic discourse on sight (in real time or recorded), Umberto Eco proposed the *ostensive* definition as main global characteristic: the capacity of all the discourse elements (independent, but also in a syncretic-syntactic order) to show/to *expose* themselves<sup>39</sup> as fictional realities; thus, in time, they generate a general and coherent flow of signification. In other words, even when, for example, the stand-up comedian pretends he talks about himself, in fact he forsakes his everyday identity, “showing up” in the *role* of actor of his own discourse – thus gaining symbolic value.

As for the spectators, the correlative of the *ostensive definition* of the performer's condition is a *conscious emptying of the daily self*, in other words a temporary disturbance of contacts (including those of immediate memory) with the outer setting.<sup>40</sup> Freed from the worries and concerns of everyday reality, the spectator deconstructs

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and reconstructs the conventions on which the dramatic context relies (undertaking the fictional chronotope, a *here* and a *now* of the performance). Next, he/she dives in the artificial universe he/she embraces as an autonomous reality, in which he/she seeks a transfer identity (either as such – a character with whom he will identify or a situational, strictly emotional or conceptual one).<sup>41</sup> The semiotic perspective of the performer/ spectator relationship must be correlated, anyway, with a psycho-neurological one.<sup>42</sup> The triad designed by objectification, subjective physical and emotional/cognitive response deserves to be explored.

We see that we are acted upon and we know that as part of this dialogical contract of inter-inanimation we too are doing the acting. (...) Here, then, that which is looked at also acts upon that which does the looking, the “object” equally exerts tensions upon the “subject” in turn objectifying that subject. The performer in looking back at the spectator equally objectifies them such that perception between the two is marked by a lack of a singular direction. In seeing acting we are also acting seeing.<sup>43</sup>

The embodied simulation theory reinforces, from a more profound viewpoint, the semiotic conclusions on both the mechanisms of daily interrelation and interpretation (as put by Goffman, those of interruption of the *strip of perception* for the *framing* of a situation that catches our eye<sup>44</sup>), and those of identification and semiosis in our spectatorial experiences as such. Laura Marks's notions of *flow* and *haptic images*, or Antunes's analysis about the vestibular quality of framing and editing in cinema seem directly related to the embodied simulation capacities of our brain. This reinforcement is important, first of all, because it induces



one first (essential) difference between the procedures of Goffman's everyday drama and the practice of artistic communication in the performing arts and cinema. And this difference relates to the *deliberate control* of the embodied simulation.

More precisely, in our everyday life, ruled by stratified layered behavioral conventions and by social role practices, our decisions of framing and of interpreting the situations we face (*keying*, according to Goffman<sup>45</sup>) are made accidentally. They prompt – unconsciously and consciously – our embodied simulation reactions, whose main target is the familiarity with the other's intentions, for the purpose of (more or less) efficient social communication and insertion. In other words, when, voluntarily or not, “we put ourselves in others' shoes,” we do it, in fact, in order to understand who they are, what they want and, last but not least, in order to control our reactions and responses in relation to the observations we gathered; to be able to *play* adequately our role in the communicational action. Every day we are (alert) spectators, in order to be able to be (good) actors.

On the other hand, spectatorship is ultimately not an exploration for an adequate response; instead, it is, in many different ways, similar to a transfer of identity/personality. In this respect, we may correlate the seminal book of Murray Smith,<sup>46</sup> who suggests several levels of emotional and cognitive engagement between the character, and the Gal et alii experimental complex research, who seems to demonstrate at least two kinds of empathic response: “being in the character” and “being with the character.” In fact: “The screen is a space in which viewers can identify with an image that is *not* of them – the screen is not a mirror – but confirms their existence and reflects back on them.”<sup>47</sup>

In performing arts and in film, embodied simulation is (almost) simultaneous

with the careful observation and crosses regularly the processes of semiosis and production of symbolic signification. The spectator wants to become, and *becomes*, for a specific time interval, the very characters created by the performer (through the mediation of the performance in progress, with a narrative, aesthetic and/or emotional back-up). His identity, discharged from his existential context, is refilled with a fictional identity: that of the character. But fictional identity has a “real” significance as long as it is embodied by a performer/actor (or his substitute, in the case of puppetry or animations), whose experiences and sensations can be corporeally simulated. In brief: unlike our situations of role observation, framing and insertion in daily life, which are mainly adaptive, when we are spectators we undertake *voluntarily and in control*, by transfer, another body, another face, another existential identity. Or even several of these, successively.

Moreover, as spectators we are anchored physically (again, via the simulation mechanisms) in the space-time of the plot:

Depth perception is a habit of movement. When we see one object at a distance behind another, what we are seeing is in a very real sense our own body's potential to move between the objects or to touch them in succession. We are not using our eyes as organs of sight, if by sight we mean the cognitive operation of detecting and calculating forms at a distance. We are using our eyes as proprioceptors and feelers. Seeing at a distance is a virtual proximity: a direct, unmediated experience of potential orienting and touches on an abstract surface combining pastness and futurity. Vision envelops proprioception and tactility... Seeing is never separate from other sense modalities. It



is by nature synesthetic, and synesthesia is by nature kinesthetic. Every look reactivates a multidimensioned, shifting surface of experience from which cognitive functions emerge habitually but which is not reducible to them.<sup>48</sup>

#### 4.2 Body, Frame, Space Perception

For reasons of space, I will not approach exhaustively, in this article, the differences in the reception of performing arts (as live experiences) and film/video. They are rather matters of tone, as established several times by Auslander<sup>49</sup>, and for the time being we do not have empiric neurologic studies that could document concretely such differences.

Still, we can assume, for the moment, that actual artistic spectatorship in both film and performing arts is, basically, a practice founded on:

a. The possibility to change the everyday chaotic and meaningless “strip of perceptions”<sup>50</sup> in a controlled ritualistic syntax – “narrative strip” –, full of meaning and engaging emotions about our being.

b. The “need” to experience Otherness (story, personality, body etc.) in a secure environment/context.

c. The individual’s possibility to actually feel and take possession, by empathic transfer, of their own (bodily) existence.

In this respect, if we are to consider the relationship between the spectator’s body and the fictional space of the performance/film, we may launch at least two slightly divergent hypotheses:

First of all, the space of live performance (theater, dance etc.) seems to be a (more or less) exteroceptive-interoceptive experience: when an actor drinks tea on stage, our body simulates the actor’s actual spatial context (we immerse into the imaginary room and feel the distances

between objects, we can “touch” them, measure them etc.) and we can simulate even the taste of tea. The motor imaginary is easier to stimulate, by association/analogy with the materiality of the actor’s proxemics, as observed in his own space.<sup>51</sup>

Space in a film is, instead, more related to proprioception and interoception than to exteroception: we easily transfer our body into the (conceptual) “filmic eye,” and then we reconstruct and embody the holistic reasonable perspective on space, from outside the frame.<sup>52</sup> Even unconsciously, our embodied simulations have to “work” harder, and the exteroception has to be stimulated/ innervated by other factors (usually, the most important factor, in this respect, is the soundtrack space-design, non-diegetic music included, which serves also as a support for the time/rhythm dimension of our perceptions).<sup>53</sup>

#### 4.3 Case Studies. Face and Body: Let’s Experience our Own Reactions!

Commonly, our face-centrally natural focus seems to be more stimulated and somehow easier to mediate the transfer in film – and that is why the use of portrait close-ups was a real revolution in silent movies. By contrast, theatrical or non-theatrical live performances appear to offer, in many ways, a more holistic body-to-body sensorial and emotional experience.

I will use some visual and narrative examples of simulation transfer, all of them coming from three legendary films. For the sake of a more fluent argumentation – insofar as the live performance illustrations would imply a direct and common live experience of both the author and the readers of this article – I prefer not to use theater examples.



#### 4.3.1. *Passion of Joan of Arc* (1928)

One of the most famous scenes at the beginning of artistic filmmaking is, undoubtedly, the cutting of hair before the execution in Carl Theodor Dreyer's *Passion of Joan of Arc* (1928). For the readers who have not seen this work of art yet, it is available on YouTube, with the special soundtrack by Richard Einhorn, "Voices of Light" (see: <https://www.youtube.com/watch?v=CxJSGMK9yR>). The scene opens sometime around minute 59 and it is made using a cross-cutting technique that opposes the outer space (where the people gathered at the fair await frenetically the virgin's execution) and the inner one, where the film frame focuses on Joan's close-up.

The scene begins with two exterior frames, where a supporter who cries "Long live Joan!" is beaten in the crowd by English soldiers and then thrown into a puddle at the periphery of the town. The second frame looks only at the soldiers' and the victim's reflections in the water. The bodily impact is represented, only for several seconds, by the throwing of the immobilized peasant into the dirty water. The next frame is already an interior one, and it describes a piece of floor and the legs of a chair, while cut hair falls onto the ground. Without any linking transfer, the next image focuses on the supersized upper part of Joan's face, slightly tilting to the right, while the jailer's gigantic hands cut the rebel locks of hair. The frame is intersected, ironically, with an exterior where two soldiers are walking through the crowd and pushing a barrow with the steaming bowl of lunch for the priest-judges.

The dialectics of the editing induce a tension born from the double space-orientation of the spectator. On one hand, the filmic "objective" eye on the outside chaotic-aggressive world; on the other hand,

a nearly steady, and septic, inside space installing the subjective engagement into the character's condition. At the same time, the dynamics of the editing is meant to unbalance this tension, augmenting the empathic identification with the body of the heroine, in both proprioceptive and haptic conditions.

...one of the benefits of the audiovisual film medium is to align the rhythmic nature of our perception with "the thread of the world" and to place us in a time window that offers motor action without fatigue, danger without damage, and mood alignment without self-judgment (...). At the base of the multisensory lies precisely the principle of optimization, where sensory information is combined to save energetic costs and to produce the best possible perceptual outcomes.<sup>54</sup>

Again without a transfer, we see the frame that, by applying the same "gros plan" (close-up) procedure, halves the heroine's face to emphasize the tactile impact of the scalp; now, the jailer cuts the hair from the back right side. This time, the head of the actress Renée Jeanne Falconetti is acquiescently tilted to the left, while the scissors advance toward the nape, and the jailer's arm and elbow reach the center of the image. A new and very brief intersection gets us out, where the awaiting citizens watch a jester's dance. It is only then that Joan's face reappears, this time fully, occupying the center of the entire screen: her head is slightly tilted to the left, her eyes half-closed and her lips open. An utter expression of fatigue and self-abandonment. While the jailer cuts the last locks at the nape, Joan's tearful eyes open pleadingly/exasperated to the sky. Everything happens in only 53 seconds.



When we identify ourselves with the hero, his face sticks involuntarily to our own face. His expressions are ours; his gestures induce unconscious reactions of embodied simulation. We experience nearly electrically the metallic touch of the scissors against our head; we can perceive the dull noise of hair locks falling to the floor. Even without diegetic sound, accompanied only by illustrative music, we can hear the jailer breathe closely and each cut clatter. The tear that fell on the cheek of each of us is about to fall from the chin and we even want to wipe it.

#### 4.3.2. *Taxi Driver* (1976)

There are several scenes in Martin Scorsese's *Taxi Driver* (1976) where the strategies of filmmaking aesthetics and Robert de Niro's acting converge not only in the transfer of identity between the character and the spectator, but also in an interrogative, disturbing shock relating precisely to the (nearly pathological) strength of this transfer.

The first one is the legendary scene of the mirror, grown into a "meme" of popular culture: a scene that introduced the well-known, "Are you talking to me?" For a review, the reader can find it at <https://www.youtube.com/watch?v=Z4vGsrYZOC8>. It lasts two minutes.

The scene begins with a frame of the hero's right hand, practising shooting; a mirror in the background. It is a typical western close-up, completely inappropriate, given the time and place of the plot. Then, from an opposite perspective (from the door frame, on the same wall with the mirror) a brief American shot, in which the hero puts on the military coat, chest naked: the spectator is astounded to find that gun slings are strapped onto the naked body.

Here, the proxemics and vestibular role of the spectator's engagement is, I think,

capital. On one hand, our vestibular perception is dynamically instigated to turn around the character, but we are also "touching," "scraping" the multiple angles of the horrid small room. On the other hand, our embodied simulation system focuses on the hero's body and especially on his face, in some kind of subjective strike against the spatial distance. Using Antunes's words:

... (The) film aesthetics becomes a direct result of a dynamic relationship between the camera and the effect of orientation and balance. It is not a matter of recording the contents that convey a vestibular sensation, but in fact of creating a meaningful relationship between the continuous interactions of the camera with the bodies.<sup>55</sup>

Next, the frame lasts for longer than one minute, in a "long take" (plan sequence) that clips the hero's face, seen from the chest and shoulders: of course, a perspective from the mirror that reflects Travis Bickle's practice of his new vigilante attitude and posture. Because the actor looks straight into the camera, the distance between the protagonist and the spectator is reduced to the minimum, and the gestures have an instantaneous, hallucinating effect of complete superposition. The murmured, challenging, offensive sentences gain amplitude and vigor in the "direction" of an imaginary training conflict. The character does not practise only the operation of the sleeve gun; he also exercises and assumes, in the end, his new aggressive identity.

A very interesting aspect is that the hero's face is not at the center of the image; instead, it occupies some of the right side, leaving place, in the background, for the space of his dirty room, where we can see the front of an improvised kitchen and, on the perpendicular wall, the small mirror above the sink. Scorsese and his



cinematographer, Michael Chapman, wanted to create, through this apparently asymmetric structure, a spatial pressure that allows us to experience the contradiction between the character's presence and controlled showy movements, and his oppressive, everyday living environment. The fact that we reproduce involuntarily De Niro's face and his "theater within theater" gestures, as if they were our own expression, is marked, again discrepantly, by the end of the long take: the actor can be seen in a three-quarter view, as if his peripheral gaze observes the reflection of his back: our simulating, subconscious sensation is that, when we are placed in the mirror perspective, we are both the hero and his imaginary enemy, we are both beholders and beheld.

However, this time, the portrait meant for the spectator's transfer does not end with the close-up. The long previous take will be followed by a montage during which the character's voice-over "exercises" the writing of an explanatory letter, meant to justify his terrorist action. The monologue letter is an ideological statement, which, eventually, should induce the use of a sequence that resorts to ideological editing. Scorsese, however, opts for a very trimmed and sudden ideological "pseudo-montage," which focuses on the relationships between Travis's body and the stifling space of his own abode.

It starts with an enlarged frame, where the hero is placed on the left, seen three quarters from the back, hands on chest, installed in his new condition of "angel of justice." From this position, he contemplates the wall near the bed, a wall on which there are posters of Palantine, the candidate for the office of Mayor of New York. During the first words of the monologue, the camera turns to the mirror perspective, and Travis is again seen from profile, at the right side of the frame. The offensive words in the beginning of the letter are blocked,

repeated, and the protagonist's turn toward the mirror is also reprised with a stutter, three times, as if the hero exercised his uncivil rhetoric. All of a sudden, without any transition, as the monologue sentences are installed, the camera looks for the first time wholly at the hero: he lies in bed, but now he is seen from above, bird's eye, suggesting a completely unexpected "objective" perspective. Travis is fully equipped, but he lies on his back. While the voice-over renders the words in the letter "There is a Man who stood up!" the character turns, paradoxically, on one side, folding up like a child, powerless, in a fetal position.

Going imperceptibly from the infatuation of the aggressive "role construction," focused on the face (hence, on intentionality and ideology), to the exterior, indifferent perception of a defenseless body and withdrawing instinctively in the intrauterine position, the path of reception is complex, contradictory and integrating. In two minutes, our mechanisms of embodied simulation travel the trajectory from maximum, nearly "athletic" control, generated by the assumption of the new role (exteroception centered on the face and on the arms), to the perception/proprioception of the entire body, seen in its ultimate vulnerability.



### 4.3.3. *Blade Runner* (1983)

There are, however, frequent situations where the dramaturgically opposite characters engage in an empathic exchange that shifts the direction of the plot and overturns the general significations of the discourse in a play or in a film. In this case, the spectator has to change, in his turn, unsuspectingly, the conventional procedures of identification, both at the semiotic level as such, and at the level of the embodied simulation that unconsciously sustains the transfer. One such splendid exemplification is provided by one of the climax scenes in *Blade Runner* (1983) directed by Ridley Scott. (See: <https://www.youtube.com/watch?v=XTCV5BJiOhY>)

The scene opens in half-light, on the roof of a skyscraper in the city of a future imagined by Philip K. Dick and reinterpreted as *mise-en-scène* by Scott. It is nighttime and it is raining. From the background, the hero's (investigator Deckard – Harrison Ford) silhouette approaches us. It is at the center of the image while, to the right and to the left, the black blades of huge fans are turning and, from the rear, the roof platform is crossed regularly by light spots of control floodlights. The hero runs to the corridor between the two fans but stops suddenly, in a very brief close-up. In a reverse shot, at the same size (head and half of his trunk) comes the antagonist, the rebel replicant Roy Batty (Rutger Hauer).

Again, we have to concentrate here on the double effect – vestibular and haptic – of the set design and of the “*mise-en-scène*.” The entire film tells the story from Deckard's point of view, so the spectator is profoundly engaged in a classical first person form of identification. His/her multi-sensory perception system is bombarded

with combined visual and audio information meant to produce the physical empathic reactions: the exteroceptive sensation of cold and dampness, induced by the rain and by the fans rotation, the shivering search of the body balance while running on a slippery roof.

In a new reverse shot, Deckard turns and starts running in the rain, while the Vangelis music stresses the suspense. From the shadow, the antagonist follows him. We find that, unlike Deckard, he is fully unclothed and the rain falls straight on his skin. The next frame includes his perspective and follows the investigator in an absurd leap, an attempt to jump from one building to another. Equally quickly, the next frame focuses on the end of the jump, with Deckard hanging on a steel bar from the neighboring roof. The camera is close to the horizontal level of the bar and moves in a tracking shot, insisting on the hero's arms and face. Our empathic perspective centers physically on the desperate movement of the shoulders and of the arms that slide on the wet metal surface, and fight frantically to sustain the weight of the body. We can experience the steel, the sting in the hands, the trying and quivering movement of the shoulder muscles and bones. The spectator is experiencing, unconsciously, a classical situation of extreme stimulation of the embodied simulation (interoceptive) reaction. At this point, the empathic simulation “in the character's body”<sup>56</sup> reaches its peak.

In a low-angle shot, the next frame sees Roy coming from a water tower on the neighboring building. Fast cut. Now the frame shows him in “*plan américain*,” back against Deckard's building, face strongly illuminated by the recurrent floodlight. He is close to the center of the image, stately appearance, holding a white dove in one of the crossed hands. Although vaguely artificial, mechanical, his symbolic posture is completed, in the final seconds, with the





expression of a decision: a sudden 180° turn of the body, followed by a relaxed leap over the abyss, on the opposite roof. The replicant's body thump, just a meter away from Deckard's head, destabilizes the latter, just when he has managed to lean his upper arms on the metallic bar. The next frames are quick, edited shot-reverse shots, in high-angle shot from Roy's perspective, and in low-angle shot from Deckard's perspective. They focus on the gradual sliding of the latter's hands and, respectively, they oversize in close-up Roy's fully lit face, in an expression of sad and scorning curiosity. His reply, "*Quite an experience to live in fear...*" overlaps acoustically Deckard's failed attempts to keep his hands on the bar – attempts that hyper-sensitize our own hands.

When the fingers of the hero's left hand slide from the bar, in the very brief expanse of the fall, Roy's hand (perforated by a nail, as we can now notice) catches Deckard's arm; the camera insists on the two arms tensed by the lifting effort. We continue to experience the extension of the hero's shoulder and his body weight, but we can also perceive the strange skill with which the antagonist lifts him in the air and throws him on the roof. The fragment is realized by the editing of two brief shots, the first one in reverse shot on the two characters' bodies, the second one of Deckard's fall seen from the rear, while Roy faces us, at the center of the background. The exhausted hero's withdrawal on the elbows is continued in an opposite shot, which includes, to the left, Roy's approaching legs and right hand.

The frame is extended until the withdrawing body reaches the corner of a wall and leans against it. At the climax, Roy's lower part of the body stops and, Astonishingly, the character begins to sit down. The frame changes again, following in reverse shot, from Deckard's perspective, how the antagonist's body (faceless up to

that point) gains volume and face, and sits calmly against the light. The shot-reverse shot dialogue is continued by focusing on two tired faces that study their respective reactions. The spectator is already puzzled, oscillating between the two oversized faces, one barely breathing with fatigue and amazement, the other one keeping its stately size and sad sarcasm, despite the effort and the bleeding wound.

The ensuing scene, deservedly a film-making legend, is Hauer's one minute monologue: "*I've seen things...*" The montage overlaps Ford's expressive reaction only twice, each time for three or four seconds. For the remaining time, the camera stays fixed on the antagonist's face, whose forehead slightly exceeds the frame, so that our entire reactivity is anchored in his gaze and his mouth (intensifying the tension of the verbal message). Our mechanisms of embodied simulation are promptly shifted from the hero to the antihero, and our empathic perception is extreme: we experience fatigue; we can feel water running over our skin. The reply, "*Time to die!*" which precedes the character's death, is sharp and its tragic simplicity is augmented by the subtlety of the vibrant musical theme by Vangelis.



### In Lieu of Conclusions

It seems clear that many fields of research, such as audience studies on of performing arts and film, the spectatorship analysis, or the more general cultural / theater / film studies can and will definitely benefit from the recent findings on the “body in our mind.” The theory of embodied simulation is only one of the sources of this valuable knowledge exchange between the medical sciences and the humanist and artistic research and experiment practices. Based on such combined (ES-ToM-Limbic) scanning experiments as the one made by Gal et alii., we can already anticipate that the processes of mapping “the body in our mind” could soon offer us a deeper foundation for understanding empathy not only as a way to interact with (real or fictional) otherness, but also for understanding ourselves. Theater and film theory/criticism – and particularly reception studies – have to incorporate, somehow, these scientific new data and perspective: observing and interpreting our bodily interoceptive and proprioceptive reactions, as we tried to demonstrate in the case-studies above, re-articulates the relationship between the artistic object and spectator’s participation/experience.

As long as, in its stage of health and routine practice, our body seems to be a silent, apparently “non-existent” instrument, our participation as spectators in an artistic communicational action is justified (consciously or unconsciously) not only by the curiosity of knowledge in relationship with the experiences of otherness, but also by the (empathic) prospect of experiencing our body – via observational transfers. Thus, the aesthetic experience is established as an existential one. Talking about someone else,

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it offers us the paradoxical chance of experiencing, in a controlled and secure manner, through fictional immersion, our own body: alive and well.

### References

- Anderson, M. L., “Embodied Cognition: A Field Guide.” *Artificial Intelligence*, 149, 2008.
- Antunes, Luis Rocha, “The Vestibular in Film: Orientation and Balance in Gus Van Sant’s Cinema of Walking,” *Essays in Philosophy*, Vol. 13, Iss. 2, 2012.
- Auslander, Philip, *Liveness: Performance in a Mediatized Culture* (Second Edition), London, Routledge, 2008.
- Berlucchi, Giovanni; Aglioti, Salvatore M., “The Body in the Brain Revisited,” *Expanded Brain Research*, Springer-Verlag, 2009.
- Carruthers, G “Types of Body Representation and the Sense of Embodiment,” *Consciousness and Cognition*, 17: 1303-1316, 2008.
- Clark, A., *Being There: Bringing Brain, Body, and World Together Again*, Cambridge, MIT Press, 1997.
- Craig A.D., “How do you Feel Now? The Anterior Insula and Human Awareness,” *Nat Rev Neuroscience*, 10:59–70, 2009.
- Critchley HD, “Neural Mechanisms of Autonomic, Affective, and Cognitive Integration,” *J Comp Neurol*, 493:154–166, 2005
- Damasio, Antonio, *Descartes’s “Error.” Emotion, Reason and the Human Brain*, New York, Putnam, 1994.
- De Certeau, M., *The Practice of Everyday Life*, Berkeley, Los Angeles & London, University of California Press, 1984
- Downing, PE, Jiang, Y., Shuman, M., Kanwisher, N., “A Cortical Area Selective for Visual Processing of the Human Body,” *Science*, 293: 2470–2473, 2001.
- Eco, Umberto, “Semiotics of Theatre



- Performance," *The Drama Review*, no. 21, 1977.
- Elam, Kier, *The Semiotics of Theatre and Drama*, London, Methuen, 1980.
- Fenemore, Anna, "On Objects' The Pleasure of Objectification: A Spectator's Guide," *Performance Research*, Vol. 12, No. 4, 2007.
- Freedberg, David; Gallese, Vittorio, "Motion, Emotion and Empathy in Esthetic Experience," *TRENDS in Cognitive Sciences*, Vol. 11, No. 5, 2007.
- Gal Raz; Yael Jacob; Tal Gonen; Yonatan Winetraub; Tamar Flash; Eyal Soreq; and Talma Hendler, "Cry for Her or Cry with Her: Context-Dependent Dissociation of Two Modes of Cinematic Empathy Reflected in Network Cohesion Dynamics," *Social Cognitive and Affective Neuroscience*, 7: 30-41, 2013.
- Gallagher, S., *How the Body Shapes the Mind*, New York, Oxford University Press, 2005.
- Gallese, Vittorio, "Mirror Neurons, Embodied Simulation, and the Neural Basis of Social Identification," *Psychoanalytic Dialogues*, 19: 519-536, London, Routledge, 2009.
- Goffman, Erwin, *Frame Analysis*, London, Routledge, 1974.
- Goldman, A., *Simulating Minds: The Philosophy, Psychology and Neuroscience of Mindreading*, Oxford, Oxford University Press, 2006.
- Heyes, Cecilia, "Where do Mirror Neurons Come from?," *Neuroscience and Biobehavioral Reviews*, 2009.
- Keysers, Christian; Kaas, John; Gazzola, Valeria, "Somatosensation in Social Cognition," *Nature Reviews Neuroscience*, 11 (6): 417-28, 2010.
- Keysers, Christian, *The Empathic Brain*, London, Social Brain Press, 2011.
- Marks, Laura, *Touch: Sensuous Theory and Multisensory Media*, University of Minnesota Press, 2002.
- Massumi, Brian, "Sensing the Virtual, Building the Insensible," *Architectural Design*, vol. 68 (5/6), 21-38, 1998.
- Meltzoff, AN; Moore, MK, "Imitation of Facial and Manual Gestures by Human Neonates," *Science*, 198:75-78, 1977.
- Merleau-Ponty, Maurice, *Phénoménologie de la perception*, Paris, Éditions Gallimard, 1945.
- Milner, D., Goodale, MA, *The Visual Brain in Action*, Oxford, Oxford University Press, 1995.
- Paillard, J. "Body Schema and Body Image—A Double Dissociation in Deafferented Patients," in Gantchev, GN, Mori, S., Massion, J. (eds.), *Motor Control, Today and Tomorrow*, Sophia, Academic Publishing House, 1999.
- Peelen, MV, Downing, PE, "The Neural Basis of Visual Body Perception," *Nature Review Neuroscience*, 8:636-648, 2007.
- Recuber, Tim, "Immersion Cinema: The Rationalization and Reenchantment of Cinematic Space," *Space and Culture*, 10, 315, 2007.
- Rizzolatti, G., Craighero, L., "The Mirror Neuron System," *Annual Review of Neuroscience*, 27: 169-192, 2004.
- Rizzolatti, G., Fogassi, L., & Gallese, V., "Neurophysiological Mechanisms Underlying the Understanding and Imitation of Action," *Nature Neuroscience*, 2001.
- Runcan, Miruna, *Signore Misterioso. O anatomie a spectatorului (Signore Misterioso. An Anatomy of the Spectator)*, Bucharest, UNITEXT, 2011.
- Schwoebel, J., Coslett, HB, "Evidence for Multiple, Distinct Representations of the Human Body," *Neuroscience Reviews*, 2: 661-670, 2005.
- Slaughter, V., Heron, M., "Origins and Early Development of Human Body Knowledge," *Monogr Soc Res Child Dev*, 69:1-102, 2004.
- Smith, Murray, *Engaging Characters*.



Sobchack, V., *The Address of the Eye: A Phenomenology of Film Experience*, Princeton & Oxford, Princeton University Press, 1992.

### Notes

<sup>1</sup> Gallese, V., Goldman, A. I., "Mirror Neurons and the Simulation Theory," in *Trends in Cognitive Sciences*, 2 (12): 493–501, 1998.

<sup>2</sup> See, among others, Marks, Laura, *Touch: Sensuous Theory and Multisensory Media*, Minneapolis, University of Minnesota Press, 2002, or Antunes, Loius Rocha, "The Vestibular in Film: Orientation and Balance in Gus Van Sant's Cinema of Walking," *Essays in Philosophy*, Vol. 13, Iss. 2, 2012.

<sup>3</sup> See, for example, Recuber, "Immersion Cinema: The Rationalization and Reenchantment of Cinematic Space," *Space and Culture*, 10, 315, 2007.

<sup>4</sup> Paillard, J., "Body Schema and Body Image—A Double Dissociation in Deaf-ferented Patients," in Gantchev, G.N., Mori, S., Massion, J., (eds.), *Motor Control, Today and Tomorrow*, Sophia, Academic Publishing House, 1999.

<sup>5</sup> Gallagher, S., *How the Body Shapes the Mind*, Oxford, Oxford University Press, 2005.

<sup>6</sup> Milner, D., Goodale, M.A., *The Visual Brain in Action*, Oxford, Oxford University Press, 1995.

<sup>7</sup> Carruthers, G., "Types of Body Representation and the Sense of Embodiment," *Consciousness and Cognition*, 17: 1303–1316, 2008.

<sup>8</sup> Berlucchi, Giovanni; Aglioti, Salvatore M., "The Body in the Brain Revisited," *Expanded Brain Research*, Springer-Verlag, 2009.

<sup>9</sup> Craig, A. D., "How do you Feel-Now? The Anterior Insula and Human

Awareness," *Nat Rev Neuroscience*, 10:59–70, 2009.

<sup>10</sup> But not with those that manage the functions of the internal organs, operating independently, imperceptibly in the brainstem.

<sup>11</sup> Berlucchi and Aglioti, *op. cit.*, p. 31.

<sup>12</sup> Here, for a simple, coherent and touching reading, see Oliver Sacks, *A Leg to Stand On*, New York, Touchstone Books, 1984.

<sup>13</sup> Craig A. D., "How do you Feel-Now? The Anterior Insula and Human Awareness," *Nat Rev Neuroscience*, 10:59–70, 2009, qtd. in Berlucchi and Aglioti, *op. cit.*, p. 27.

<sup>14</sup> Meltzoff, AN, Moore, MK, "Imitation of Facial and Manual Gestures by Human Neonates," *Science*, 198:75–78, 1977.

<sup>15</sup> Slaughter, V., Heron, M., "Origins and Early Development of Human Body Knowledge," *Monogr Soc Res Child Dev*, 69:1–102, 2004.

<sup>16</sup> Keenan et al. 2003 quot. in Berlucchi and Aglioti, *op. cit.*, p. 25.

<sup>17</sup> Berlucchi and Aglioti, *op. cit.*, p. 26.

<sup>18</sup> Downing, PE, Jiang, Y., Shuman, M., Kanwisher, N., "A Cortical Area Selective for Visual Processing of the Human Body," *Science*, 293:2470–2473, 2001.

<sup>19</sup> Rizzolatti, G., & Craighero, L., "The Mirror Neuron System," *Annual Review of Neuroscience*, 27, 169–192, 2004.

<sup>20</sup> Rizzolatti, G., Fadiga, L., Gallese, V., & Fogassi, L. "Premotor Cortex and the Recognition of Motor Actions," *Cognitive Brain Research*, 3, 131–141, 1996.

<sup>21</sup> Keysers, Christian; Kaas, John; Gazzola, Valeria, "Somatosensation in Social Cognition," *Nature Reviews Neuroscience*, 11 (6): 417–28, 2010.

<sup>22</sup> Gallese et al., 1996; Rizzolatti et al., 1996, in Gallese 2009, p. 521.

<sup>23</sup> From among the objectors to the hypotheses on the dysfunctions of mirror neurons in cases of autism, the best known is Churchland, P.S., (2011). "6," *Braintrust*, Princeton University Press.



- <sup>24</sup> Schechner, Richard "Rasaesthetics," *The Drama Review*, Vol. 45/3, 2001, pp 27-50.
- <sup>25</sup> Merleau-Ponty, Maurice, *Phénoménologie de la perception*, Paris, Éditions Gallimard, 1945.
- <sup>26</sup> Marks, Laura, *Touch: Sensuous Theory and Multisensory Media*, Minneapolis, University of Minnesota Press, 2002.
- <sup>27</sup> Antunes, Luis Rocha "The Vestibular in Film: Orientation and Balance in Gus Van Sant's Cinema of Walking," *Essays in Philosophy*, Vol. 1.
- <sup>28</sup> Freedberg, David; Gallese, Vittorio "Motion, Emotion and Empathy in Esthetic Experience," *TRENDS in Cognitive Sciences*, Vol. 11, No. 5, 2007, p. 198.
- <sup>29</sup> Keyzers, Christian; Kaas, John; Gazzola, Valeria, "Somatosensation in Social Cognition," *Nature Reviews Neuroscience*, 11 (6): 417–28, 2010.
- <sup>30</sup> Keyzers, Christian, *The Empathic Brain*, London, Social Brain Press, 2011, p. 60.
- <sup>31</sup> See Heyes, Cecilia, "Where do Mirror Neurons Come From?," *Neuroscience and Biobehavioral Reviews*, 2009.
- <sup>32</sup> Gallese, Vittorio, "Mirror Neurons, Embodied Simulation, and the Neural Basis of Social Identification," *Psychoanalytic Dialogues*, 19:519–536, London, Routledge, 2009, p. 522.
- <sup>33</sup> See, for example, Damasio, A.R., *Descartes's "Error." Emotion, Reason and the Human Brain*, London, Putnam, 1994, or, more recently, Damasio, A., Meyer, K., "Behind the Looking Glass," *Nature*, 2008, p. 454.
- <sup>34</sup> Gal Raz; Yael Jacob; Tal Gonen; Yonatan Winetraub; Tamar Flash; Eyal Soreq; and Talma Hendler "Cry for Her or Cry with Her: Context-Dependent Dissociation of Two Modes of Cinematic Empathy Reflected in Network Cohesion Dynamics," *Social Cognitive and Affective Neurosciences*, 7: 30-41, 2013.
- <sup>35</sup> Theory of Mind, or *ToM*: "... ToM relies on *cognitive* rather than interoceptive representations of another's state. These representations allow for a top-down inference of another's mental state by attributing certain beliefs, thoughts, motivations and desires to that person." (Gal et alii., p. 31).
- <sup>36</sup> *Ibidem*, p. 35.
- <sup>37</sup> *Ibidem*, p 37.
- <sup>38</sup> See Goffman, E., *The Presentation of Self in Everyday Life*, London, Anchor Books, 1959; Goffman, E., *Frame Analysis: An Essay on the Organization of Experience*, London, Harper and Row, 1974.
- <sup>39</sup> Umberto, Eco, "Semiotics of Theatre Performance," *The Drama Review*, no. 21, 1977.
- <sup>40</sup> Runcan, Miruna, *Signore Misterioso. O anatomie a spectatorului (Signore. Misterioso. An Anatomy of the Spectator)*, Bucharest, UNITEXT, 2011.
- <sup>41</sup> Elam, Kier, *The Semiotics of Theatre and Drama*, London, Methuen, 1980, pp. 38-40.
- <sup>42</sup> Sobchack, V., *The Address of the Eye: A Phenomenology of Film Experience*, Princeton & Oxford, Princeton University Press, 1992.
- <sup>43</sup> Fenemore, Anna "On Objects' The Pleasure of Objectification: A Spectator's Guide," *Performance Research*, Vol. 12, No. 4, 2007, p. 4.
- <sup>44</sup> See Goffman (1974), pp. 10-11 and p. 22.
- <sup>45</sup> *Ibidem*, p. 44.
- <sup>46</sup> Smith, Murray, *Engaging Characters. Fiction, Emotion, and the Cinema*, Oxford, Oxford University Press, 1995.
- <sup>47</sup> Marks, *op. cit.*, p 25.
- <sup>48</sup> Massumi, Brian, "Sensing the Virtual, Building the Insensible," *Architectural Design*, vol. 68 (5/6): 21-38, 1998, p. 37.
- <sup>49</sup> Auslander, Philip, *Liveness: Performance in a Mediatized Culture*, second edition, London, Routledge, 2008.



<sup>50</sup> See Goffman, Erwin, *Frame Analysis*, London, Routledge, 1974.

<sup>51</sup> “We see that we are acted upon and we know that as part of this dialogical contract of interanimation we too are doing the acting. In seeing acting we are also acting seeing” (Fenemore, *op. cit.*, p. 2).

<sup>52</sup> “I infer that remaining still in a chair does not diminish our capacity to engage with a film in an embodied, and particularly vestibular, fashion. In a nutshell, the vestibular sense can help us understand the generation of meaning derived from the embodied relationship between the spectator and the film, between the mind and body, and between the self and the outside world.” (Antunes, *op. cit.*, p 526).

<sup>53</sup> In this respect, we note Laura Marks’ reflections about the erotic effect: “Haptic images invite the viewer to dissolve his or her subjectivity in the close and bodily contact with the image. The oscillation between the two creates an erotic relationship, a shifting between distance and closeness. But haptic images have a particular erotic quality, one involving giving up visual control. The viewer is called to fill in the gaps in the image, engage with the traces the image leaves.” (Marks, *op. cit.*, p. 13).

<sup>54</sup> Antunes, *op. cit.*, p. 524.

<sup>55</sup> *Ibidem*, p. 526.

<sup>56</sup> See Gal Raz and alii, *op. cit.*



Fig.1 Renée Jeanne Falconetti in *The Passion of Joan of Arc* (1928)

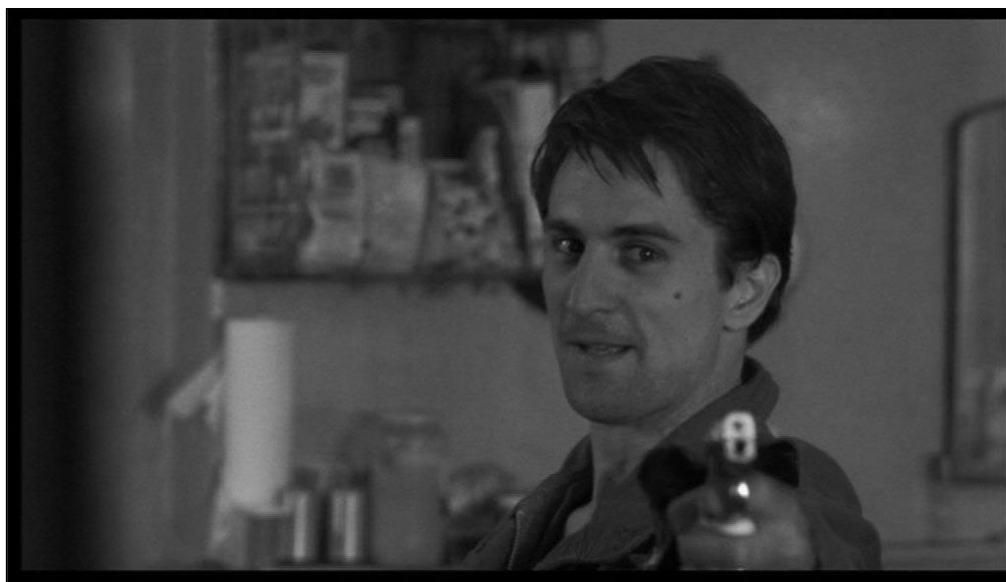


Fig. 2 Robert de Niro in *Taxi Driver* (1976)



Fig. 3 Rutger Hauer in *Blade Runner* (1983)

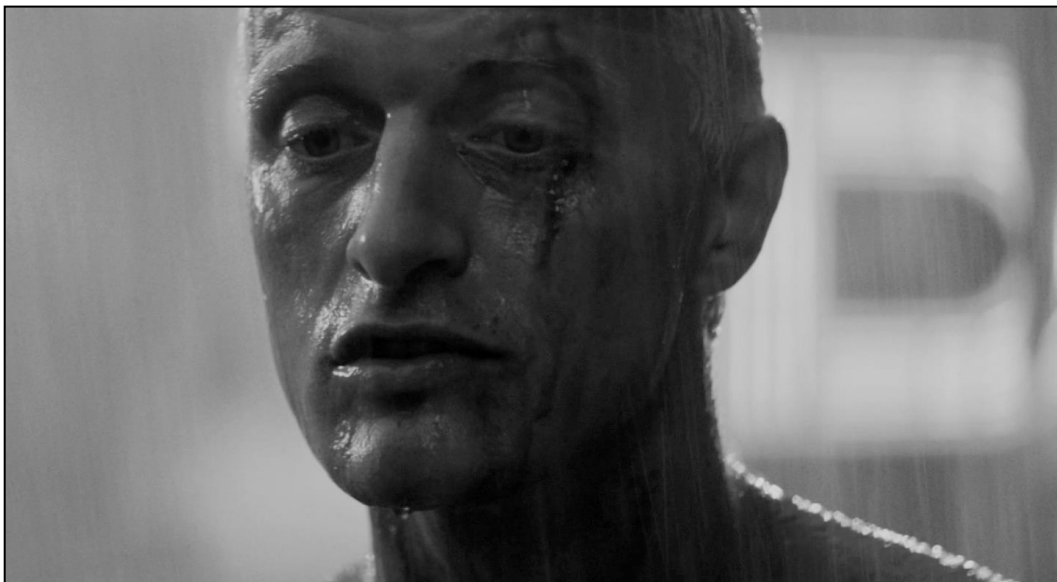


Fig. 4 Rutger Hauer in *Blade Runner* (1983)