Dimensions of embodiment: a performative and enactive approach to the issue of corporeity in schizophrenia and eating disorders

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Introduction

The aim of this work is to enrich the enactive approach to cognition with the observations coming from the phenomenological interpretation of some symptoms of schizophrenia and eating disorders. Albeit different for many aspects, these two pathological conditions share a core feature, that is, they are both characterized by the patient's sense of "disembodiment", a feeling of detachment and distance from the dimension of the lived corporeity that arise at the level of the body schema (especially in schizophrenia) and at the level of the body image (in both schizophrenia and eating disorders). As I will discuss throughout the chapters, the body schema and the body image correspond respectively to the performative and the perceptual aspects of one's own bodily experience and undergo through several kinds of distortion that undermine the patient's enactive and pre-reflective attunement to the environment.

In my view, focusing on bodily processes such as the body schema and the body image and analyzing the implications behind their pathological disruption may be a good way for enactivism to overcome some criticism. Over the last years, in fact, enactivism had to defend itself from the accusation of being a form of "dressed-up

behaviorism" (Shapiro, 2011; 2014), an allegation based upon the observation that this approach uses to describe the interaction between sensorimotor systems and environment as the only event that matters in the development of human cognition. However, although it is undeniable that some enactivists focused their attention primarily on the role played by the sensorimotor contingencies in the "enactment" of our consciousness (O'Regan & Noë, 2001; Noë, 2004), it is just as true that many academics feel the urge to make enactivism even more embodied (Gallagher & Bower, 2014; Gallagher, 2017) and consider the latter as the right framework to explain why, in psychopathology, "the body loses its mediality" (Fuchs, 2018, p. 257). What I want to do in this work is putting these two perspectives together, trying to make enactivism "more embodied" through an analysis of the pathologies of the lived body.

According to Gallagher, one of the possible ways to make enactivism more embodied is to take into account the literature on intersubjectivity (Gallagher, 2017). Intersubjectivity, in fact, is the paradigmatic example of the relationship between environmental inputs and bodily structures: as we grow, we become increasingly more able in reading others' expressions and in grasping the meaning of their actions thanks to both our Mirror Neurons System – which is

nowadays considered as the neurophysiological basis for social cognition (Gallese et al,. 2004; Gallese, 2009) – and our early "embeddedness" in a shared world where, through the interaction with caregivers and conspecifics, we practice our ability to pre-reflexively catch social affordances (Hutto, 2007; Gallagher & Hutto, 2008).

The interdependence among body, environment and mental functions is thus proven by the fact that the more we exercise our social skills, the more we embody them, letting them become part of those processes that, despite being conscious, do not need any mental inference nor thematization. What I just said about social skills, however, applies also to practical ones. For many enactivists, in fact, studies on performance served as a reference for testing the hypotheses on the interaction among body, mind and environment. In his famous book *Out of our heads* (2009), for example, Alva Noë discussed some experiments (Grays, 2004; Milton et al., 2007) conducted on expert and amateur performers, summing up the results as follows: as far as novices are concerned, there is a direct proportionality between the degree of thematic attention they pay to the task and the efficiency of their performance; on the opposite, the

relationship between experts' focused attention and performance efficiency is inversely proportional (Noë 2009, pp. 99-100).

The idea that, once the learning process of a specific ability is completed, the quality of the performance depends upon our predisposition to remain within the lowest levels of conscious processing of the inputs is pivotal for enactivism. In the same way we become expert at immediately catching the emotional content intrinsic to others' facial expressions in a way that does not require any kind of inference about their mental states, an amateur turns into a skillful dancer when he manages to embody the choreography, that is to say, when he does not need to thematically focus on every single step of it anymore. Studying performance, thus, means trying to understand how movement and action synchronize with environmental contingencies – the baseball that comes towards the batter, the limited space of the stage where the dancer performs, the music played by the guitarist's bandmates – and it is a small-scale example of what enactivism is all about: showing that "cognition is not the representation of a pregiven world by a pregiven mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs" (Varela et al., 1992, p. 9). It is only through our *practical* – that is to say, both

pragmatic and *practiced* – experience of "being in the world" that we learn to master our cognitive, social and bodily abilities.

Defined as such, enactivism seems to be perfectly compatible with the concept of *performativity*. As it has been recently stated, "performativity can be defined as a constitutive component of cognitive processes, the material action that allows us to interact with reality. It is both the means by which the subject knows the surrounding world and the one through which he experiments with the possibilities of his body" (Pennisi A. & Falzone, 2016, p. 174). It is important to add that performativity is an "exploratory activity [carried out] in absence of known algorithms" (p. 247). Therefore, with the term performativity we refer to the constant "discovery" of new forms of bodily know-how that is independent of the application of "procedural rules" to the action, as well as of other conceptual or intellectual operations, such as self-reflection and thematization. The concept of performativity will be crucial, insofar as it accounts for a dimension of the lived body that, in certain mental illness and according to a phenomenological interpretation, is impaired precisely due to an exacerbated tendency towards self-reflection and the thematization of one's own bodily experience. In light of this, it should be clear why I consider the enactive/performative approach to

cognition and phenomenological psychopathology as the two sides of the same coin, and why I believe that the former may benefit from the study of the latter and vice versa.

The thesis will be structured as follows: in Chapter 1, I will explore the phenomenological literature on perception and skillful performances and argue that the latter are the outcome of the embodiment of certain conscious processes that lie at the basis of our everyday way of carrying out intentional, rule-based and goal-directed actions. I will call this perspective "embodied rationality".

In Chapter 2, I will explain why schizophrenia can be described as being characterized by a "disembodied" kind of rationality, an observation that will be corroborated by the analysis of some typical symptoms, such as the breakdown in the protentional function of time consciousness, the disruption of body-schematic process and hyper-intentionality.

In Chapter 3 I will focus on the concept of body image, and show why the distortions that the latter undergoes in schizophrenia and eating disorders may be accounted as an exacerbated effect of the patient's disembodiment.

Finally, in Chapter 4 I will investigate the effects that certain kinds of media have on the onset and worsening of eating disorders, arguing

that the sense of disembodiment typical of these pathologies is positively correlated with the use of media based on visual representations (i.e. television, magazines, social networks) and negatively correlated with the use of media that allow a more immersive experience, such as Virtual Reality.

Chapter 1

Rationality and normativity

Traditional conceptions of the human mind rely on the assumption that what sets us apart from the other animal species is rationality. Since Aristotle, the ability to solve problems and to understand causal relationships between different events by means of deduction, syllogistic reasoning and inference have been considered differential marks of our ontology. Thanks to our peculiar cerebral and anatomical configuration, we are the only living creatures that develop language-based skills such as judgement making, propositional knowledge and mind-reading. Far from being contestable, these considerations have nonetheless often resulted in an "intellectualist view" (Noë, 2005; 2009; 2015), namely the misconception that "rational deliberation is the most basic kind of cognitive operation" (Noë, 2009, p. 99). There appear to be at least two fallacies intrinsic to this position. On the one hand, it seems to imply that logical thought is the first (if not the only) "mental tool" we resort to in order to face everyday challenges such as taking a decision or carrying out intentional, goal-directed actions. On the other hand, it both rests on and reinforces the common idea

that the quality of being rational can be attributed only to those acts that depend upon the use and the mastery of language.

In this chapter, I will critically challenge the principles of this intellectualist picture not only by redefining the role that some of the correlates of our linguistic rationality have with respect to more basic, embodied mechanisms, but also by arguing that such mechanisms are foundational to a peculiar kind of intelligence. I will call it "embodied rationality" (Gallagher, 2018a) and argue that this concept does not aim at downgrading the importance of our highest cognitive functions, but rather at explaining how the latter integrate with a complex system of implicit forms of non-conceptual know-how. I will develop the notion of embodied rationality by exploring a phenomenological approach to perception and skillful performance; this will allow me to explain, in Chapter 2, what I mean with the expression *disembodied rationality*, which is a typical trait of schizophrenia.

1.1 The normative character of perception

When we deal with the notion of rationality, we need to distinguish between a weak and a strong sense of the word (Stanovich, 2011). The

weak sense, which is the one underlying the dictionary definition, refers to the quality of being in accord with reason and has its roots in the Aristotelian conception of man as the rational animal. Since we are the only species that can be in accord with reason (and violate, consciously or not, its principles), other animal species must be considered ontologically *arational* (de Sousa, 2007). In contrast, the strong sense, which is the one used in cognitive science (Stanovich, 2011), has a prescriptive value and is opposed to *irrationality*: "rationality (and irrationality) come in degrees defined by the distance of the thought or behavior from the optimum defined by a normative model" (p. 3). This is the working definition of rationality I am going to use throughout the chapter.

Whereas, according to Stanovich, the idea that rationality can be described as the extent to which our thoughts and actions adhere to a set of established rules sparks no controversy in cognitive science, there is no consensus as to whether these rules should be considered a linguistically organized form of knowledge or not. Such a disagreement, for example, can be found in the opposition between McDowell's (1994) view on the ubiquitous presence of concepts in our normative openness to the world and the Husserlian tradition, which holds that perception is intrinsically normative, although not

structured in propositional terms (Husserl, 2001; Crowell, 2013; Doyon, 2015a; 2015b). What is at stake here is the notion of normativity itself, together with the possibility of determining to what degree language is implicated in it.

Following McDowell, the relation between mind and world is normative in the sense that we, as rational animals, are in the position to assess the truthfulness of our beliefs and to make judgements about things being so and so (McDowell, 1994, p. xii); in doing this we provide a regularity (a norm) to the structure of perceptual content on the basis of the conceptual one. The way the world appears to us is thus determined by our intellectual understanding of it and by the pervasive power of our propositional knowledge. Importantly, the tendency to apply the principles of our linguistic competence is a constitutive element of perception, something we cannot even try to avoid doing: "when we enjoy experience conceptual capacities are drawn on *in* receptivity, not exercised *on* some supposedly prior deliverances of receptivity […]. In experience […] one's conceptual capacities have already been brought into play, in the content's being available to one, before one has any choice in the matter" (p. 10). Therefore, McDowell establishes an intimate and indissoluble connection between language and perception, which is proven not

only by the fact that we are always (at least in principle) capable of providing a justification for, say, thinking that we are looking at one particular object rather than another; most notably, this link emerges as a form of "conceptual shaping" (Siewert, 2013), a relationship in which the way things like chairs, apples and nails appear to us depends on our knowing-that, namely our understanding that apples, chairs and nails must have certain features in order to be defined as such. However, as Siewert noted, "it is left unclear why […] the manner in which the nails appear, from which I judge them to be a certain way, could not have been experienced by those whose lack of inferential abilities would deprive them of any *concepts* of nail or length" (p. 201). Why, then, should we consider the set of rules in virtue of which a nail is a nail (i.e. its being short, sharp and made of steel) a language-bound kind of normativity, if the same regularities could be assessed even by those who have no clue about what a nail is? Furthermore, one might wonder: is our conceptual knowing-that about objects a necessary condition for us to grasp how to use them, that is, our know-how? And what about the relationship between our explicit knowledge of the rules we have to follow in order to carry out skillful actions and the possibility to perform them? Do we need the former to secure the latter, as the intellectualists claim? These are the

questions I am going to answer in the remainder of this chapter, relying on the phenomenological approach to the issue of normativity in perception and skillful performance.

The attempt to provide an account of our experiential openness to the world that could be "both non-conceptual and yet responsive to norms" (Crowell, 2013, p. 127) was one of Husserl's main aims. His descriptions of perceptual intentionality, in fact, "all draw upon normative vocabulary" (p. 130). Traces of such a lexicon can be found, for example, in his lectures on transcendental logic, in which Husserl (2001) claims that:

> "there are originally prefigured ways [norms] of possible verification […] intrinsic to the sense of every objectivity being experienced" (p. 266);
>
> "[there is] a universal regularity encompassing the course of lived-experiences, a regularity that prefigures a firm determination for future consciousness from past consciousness" (p. 267);
>
> "the spatio-temporal world and the correlative regulation of the stream of consciousness not only exists, but exists precisely for the ego, […] as a pregivenness, an availability, as a readiness for possibilities of cognitive activity that are to follow" (p. 268);

What emerges from these passages is Husserl's fundamental idea that the understanding of the norms that govern our interaction with the environment, allowing us to envisage what is to come in the perceptual experience of the objects we find and the events occurring in it, does not rely on our capacity to internalize these rules in a propositional form and then put them to the test of reality, but rather on the inherently temporal structure of our consciousness. This issue was addressed also in Husserl's lectures on the phenomenology of the consciousness of internal time (1991), in which he explained that the content of an act of perception like, for example, looking at a tree or hearing a melody (see p. 355; see also Gallagher & Zahavi, 2008, p. 79) is never determined by the single sensorial datum we have access to in any given moment, such as the side of the tree we are in front of or the note that is being played now. On the contrary, every act of being directed at intentional objects, whether they are physical entities like trees or event phenomena like melodies, is characterized by the impression that these objects have a temporal extension and by a related anticipatory sense of what is to follow if, say, one circles around the tree to look at a part of it that is now hidden from sight, or continues to listen to the melody.

This way of experiencing the perceptual contents as a cohesive unity that transcends the present moment, unfolding in a temporal continuum that encompasses also our future dispositions towards what is there, depends on the peculiar nature of our consciousness, which, for Husserl, has the fundamental function of structuring the flow of time in three seamlessly integrating phases: the *primal impression*, which is a mode of appearance of the intentional object that cannot provide us any temporal information about it, as it is constituted by every single "now" in which a portion of the object is given to the senses; a *retention*, namely a particular kind of non-representational, "primary memory that continuously attaches itself to the [primal] impression" (Husserl, 1991, p. 32) and that, adding to the actual "now" of every perception, allows us to experience the intentional object as a phenomenon that extends across a time span; a *protention*, which is the intuition that something is about to happen in the very next phase of the perceptual process, an anticipation based upon the combination of the retentional sense of the just-past moments and manifests itself as the expectation we have towards the future modes of appearance of the object. Importantly, the protentional aspect is a feature of consciousness that is constitutive of our engagement with both familiar and unfamiliar entities. In this

respect, it is sufficient to think about the first time we listen to a song: "it is not that we perceive only the present (and past) of the melody and then spontaneously *postulate* a future; we *perceive* the future of the melody – though the character of that perceived future may be more or less indeterminate" (Blaiklock, 2017, p. 473). Although it is true that in cases like this our protentions might be guided by some normative coordinates, such as the system of rules that takes the name of musical "style" or "genre", it is just as true that even those who have no conceptual awareness of these rules – for instance, those who ignore what a scale is or are unable to distinguish the sound of the notes – or have a very naïve and superficial acquaintance of that genre, may have "the vaguest of protentions of the future shape of the music" (p. 475).

The crucial point of Husserl's argumentation is that our normative openness to the world, that is to say, the awareness of the existence of rules that govern our relationship with every intentional object and that enable us to grasp what to do with and what to expect from it, is not to be intended as the direct expression of some level of knowledge of these rules, in the form of a knowing-that, but rather as the natural tendency to project ourselves into the future of our perceptions, anticipating more or less predictable outcomes that will "set the

standards against which the agent's performances will be measured" (Doyon, 2015a, p. 45). Needless to say, the accuracy of the expectations on the basis of which we adapt our bodily and cognitive responses to the intentional object may depend on many factors, such as the number of previous interactions we have had with it or the context in which the action takes place, but this is not the point. What I want to highlight here is that the normative character of perception lies in its being structured in such a way so that it predisposes us to continually attribute what Husserl calls the "norms of possible verification" (see above) to our experience, not in its alleged function of confirming (or disconfirming) our propositional knowledge about the objects and the events we have access to. Therefore, perception is to be considered as having a basic, pre-predicative and intrinsic coherence, which is interdependent with what Husserl and Merleau-Ponty call "operative", "bodily" or "motor" intentionality.

1.2 Operative intentionality and coherence in skilled action

Importantly, some of the disputes over the non-conceptual yet normative character of the perception of intentional objects also concern the field of skillful performance. There is no doubt that the

ability to carry out bodily activities that require a high level of expertise – for example, following a choreography, driving a car or playing tennis – is intrinsically normative, as it presupposes a deep knowledge of the instructions on how one has to move his/her body in order to reach a certain goal or to successfully combine the actions that make up the whole performance. Even in this case, however, there is no consensus as to what degree language or propositional knowledge is involved in accomplishing coherent or skilled movement. Whereas, as we will see below, some proponents of intellectualism support the Aristotelian claim that "what makes an action an exercise of skill, rather than mere reflex, is the fact that it is guided by the intellectual apprehension of truths" (Stanley, 2011, p. 174), some representatives of the phenomenological approach to skillful performances hold that skilled performance rests on at least two, closely intertwined processes, each of which is independent from the intellectual apprehension of truth (see §1.3): body-schematic (intrinsic) control and a performative self-awareness (Gallagher, 2005a; 2016; 2018b; 2020; Legrand, 2007).

The body schema is what enables the agent to immediately and pre-reflectively adapt bodily responses to perceptual inputs and to constantly readjust the position of the body – of the head, of the limbs

etc. – in order to have the best possible "grip" on the environment, both from a perceptual and from a practical point of view (Gallagher, 1986; 2005a). Examples of how the embodied agent follows "a schema of all types of perceptual unfolding to conform to the logic of the world" (see Merleau-Ponty, 2002, pp. 380-381) can be found in an extremely wide range of circumstances. Body-schematic processes, in fact, operate both at a "prenoetic" level – like in the case of eyestrain, when "the body begins to make automatic postural and motor adjustments prior to the subject's becoming aware of the oncoming headache" (Gallagher, 2005a, p. 139) – and at a pre-reflective (conscious) level, such as in everyday walking or when we make voluntary and goal-targeted movements.

It is important to stress that the dynamic organization of the body schema is also structured by the same Husserlian conception of intrinsic temporality – the retentional, impressional, protentional structure. Thus, Merleau-Ponty, following both Husserl and the neurologist Henry Head (1920), reconfirms that each present moment of the body-schematic process is 'charged with a relation' to what has happened before so that movement incorporates past moments into the present:

> "At each successive instant of a movement, the preceding instant is not lost sight of. It is, as it were, dovetailed into the present, and present perception generally speaking consists in drawing together, on the basis of one's present position, the succession of previous positions, which envelop each other" (Merleau-Ponty, 2002, p. 161).

These retentional aspects of movement are further integrated into anticipatory or prospective dispositions already noted:

> "Each instant of the movement embraces its whole span, and particularly the first which, being the active initiative, institutes the link between a here and a yonder, a now and a future which the remainder of the instants will merely develop" (p. 161).

These kinds of anticipatory processes are pervasive motoric actions; they can be found in hand-mouth coordination in infants, where the mouth opens to anticipate the hand (Butterworth & Hopkins, 1988; Lew & Butterworth, 1995); in visual tracking (Berthoz, 2000); in fast correction of reaching and grasping movements (Georgieff & Jeannerod, 1998; Jeannerod, 2001). Likewise, these dynamical aspects of the body schema involve a kind of intrinsic control attuned to worldly affordances and to the intentions of the agent. That is, they

are not completely automatic; rather than being blindly repetitive of the same movement in each situation, the fine-tuned and non-conscious details of the body schema adjust to changes in the environment, and to changes in agentive intention. I will come back to this issue below (see §1.3).

Although the body schema is a system of partially automatized motor responses that, ontogenetically, start to form during fetal development and are responsible for phenomena such as early mouth-hand coordination and neonate responses to caregivers (Gallagher & Meltzoff, 1996), it also shows a good level of flexibility. This is proven by empirical studies that have demonstrated the incorporation of tools and instruments like rakes, sticks and tennis rackets into the agent's body schema (Maravita & Iriki, 2004; Fourkas et al., 2008), or by the fact that one can train and enhance his/her body schema, such as when a dancer works on his coordination to improve his moves or when a tennis player learns new basic techniques. However, the body schema by itself is not sufficient to account for the complexity of skillful performances. Contrary to what some anti-

intellectualist maintains[1], in fact, the "maximal grip" (Merleau-Ponty, 2002) that the expert performer has on the situation due to his finely tuned body-schematic processes is not everything he needs. Skill within a context of, say, a cricket or a basketball game requires more, since the player "has to strategically take into account the precise situation (the layout of the field, the position of other players, the speed of the ball, and so forth) that involves a mindful sense of where

[1] The harshest critic of intellectualism is Hubert Dreyfus, who is well-known for claiming that what distinguishes the novice, the advanced beginner and the competent person from the expert is the fact that, whereas the former three need to think while they act, the latter does not rely on any kind of mindful process and "acts arationally" (Dreyfus & Dreyfus, 2000, p. 36). Following this line of thought, Dreyfus defines expert performers as "absorbed copers" (see Dreyfus, 2002; 2007) whose skillfulness lies precisely in their capacity to "ignore" the rules they know and to let themselves go to the automatisms acquired during the many hours of practice. Many authors have provided a critical account of Dreyfus' position (see Gallagher, 2018b; Sutton et al., 2011; Montero, 2010; Noë, 2015; Fridland, 2014); here, I want to highlight that some of them have noticed that intellectualism and the anti-intellectualist view of Dreyfus, rather than being opposite poles, can be considered as the two sides of the same coin, for they both misrepresent the role played by cognition in the carrying out of skillful performances.

she is going to put the ball" (Gallagher, 2020, p. 46). This "mindful sense" is what we may call performative (Gallagher, 2005a; 2016; 2018; 2020) or situated (Christensen et al., 2016) awareness.

Performative awareness involves both a heedful consciousness of one's surroundings and a tacit and pre-linguistic sense of "proximity" to the purpose of one's intentional actions. It is one's awareness of bodily and environmental aspects relevant to one's ongoing movement, which pairs with the body-schema since the earliest stages of life, i.e. allowing the infant to correct and improve the coordination of the facial muscles and expressions involved in the imitative performance (Gallagher, 2005a). In this respect, children and adults are similar, insofar as they are both guided by a sense of the ongoing course of the immediate action that provides them with a good grip on whether their goal-directed gestures are on target or not. Of course, this peculiar kind of sensitivity can be enhanced over time and with training. During early development, infants learn what is reachable and graspable, how best to grasp a particular object, and so on. It is no coincidence, moreover, that experienced athletes are particularly good at detecting the correctness of their movements: one thinks, for example, of the basketball player, who knows he missed a shot before the ball even touches the hoop and moves accordingly to get the

rebound right away, or of the tennis player, who feels he has just hit the ball too short and immediately knows what he needs to do (at least approximately) to prepare for the return (see Doyon, 2015b).

Coping with the environment sometimes involves letting the flexible nature of our body-schematic processes guide some of our actions. The importance of letting oneself be guided in a pragmatic attunement enabled by the body schema is evident in both ordinary actions – such as walking – and skillful performances[2]. A number of theorists, however, point out that this body-schematic process is not sufficient to account for the complexity of what goes on in something like dance or athletic performance, because being engaged in a skillful practice always involves the performative awareness that one is moving or

[2] In a series of interviews conducted by Høffding (2018) with the Danish String Quartet, some of the musicians reported that in certain occasions "you [just] let the body function on its own […]. You're surprised about how much the fingers remember themselves. Let the fingers play. Just use the activity of the brain not on what you're playing. Let go and think about something else (p. 198-199). As Høffding explains throughout the book, however, this is just one of the several modalities of experiencing one's engagement with the performance that an expert musician may undergo; many others, conversely, require mindfulness and situation awareness.

doing something in terms closer to an optimum defined by the agent's intentions and by the context itself (see Christensen et al., 2016; Legrand, 2007; Montero, 2015; Shusterman, 2008). As we will see, these observations about body-schematic processes and performative awareness are enough for us to refuse the intellectualist position and pave the way to the development of an embodied approach to rationality (Gallagher, 2018a).

I will deepen and extend our understanding of how the concepts of body schema and performative awareness function in the next section. Then, in Chapter 2, I will show that these phenomena are extremely problematic in schizophrenia and how this is reflected in the emergence of a *disembodied* kind of rationality. Before that, however, I have to discuss what I mean by *embodied rationality* and how this notion may fit the working definition of rationality I have adopted (see §1.1).

1.3 Embodied rationality

When we describe rationality in terms of the "proximity" of our thoughts and actions to an optimum defined by a normative model we might assume that our conceptual understanding of what is contained

in this system of rules – a form of knowing-that – plays a fundamental role. As a consequence we might be prone to think that our ability to carry out skillful performances – our know-how – *depends* on our knowing-that. There are at least two possible interpretations of such a claim: the first is that, in order to become skilled in a certain practice – say, driving – one must first be able to assess the truthfulness of some propositions, such as the ones that prescribe the exact order in which we have to press the pedals or those that tell us how to coordinate the movement of the gear stick with that of the clutch. The second is that, assuming the importance of an intellectual apprehension of the norms in order to make their application possible, we may think that the former always precedes the latter, and that our performances can be defined as skillful only when our propositional knowledge about what it is correct to do or not to do guides our actions. In this view, "knowing how to perform a skill is simply a matter of knowing the appropriate propositions governing its instantiation" (Fridland, 2014, p. 2737).

The distinction between these two interpretations corresponds to the difference between what Noë (2015) calls the intellectualist insight (which he endorses) and the intellectualist thesis (which he rejects). Whereas the insight is somehow implicit to the position of the

intellectualists (Williamson & Stanley, 2001; Stanley, 2011; Stanley & Krakauer, 2013), the thesis represents its epistemological core and, in Noë's opinion, an unnecessary stretch. Take, for instance, the following statement, which is meant to illustrate that motor skills depend on the knowledge of facts (Stanley & Krakauer, 2013):

> "Part of having skill at throwing a curve ball is having the knowledge that throwing a curveball requires picking a baseball up (as well as knowing what to do with it when it is in your hand)" (p. 5).

If we were to read this example in light of the intellectualist insight, we should assume that throwing a curve ball is an ability that "requires training past baseline" (p. 4), the result of a learning process that allowed the trainer's verbal instructions on how to position the single parts of the body and to shape the hand to turn into a complex motor skill. In this sense, it is true that know-how depends on the knowledge of facts, as it can be developed only after a phase during which the novice's understanding of what he is taught plays a key role and in which his need to "consult" the propositional knowledge he has acquired takes over physical action (see Stanley, 2011, p. 185). If, on the other hand, we were to read the example in light of the

intellectualist thesis, we should suppose that being able to throw a curve ball is the same thing as having a certain number of beliefs about what one has to do with one's hand and body. Most notably, the thesis argues that it is precisely the kind of knowledge that gets expressed in judgement that guides the action (Stanley, 2011). The difference between the thesis and the insight is slight but fundamental and can be explained with another example, which takes into account the unpredictability of a dynamical context such as a tennis game.

According to Stanley and Krakauer (2013), when an expert tennis player switches from one technique to another – say, from a groundstroke to a drop shot – based on the position of the opponent, he is "injecting" in the ongoing course of the activity a peculiar kind of knowledge about that activity (see p. 4). This kind of knowledge is "the knowledge of what to do to initiate actions of that sort, [which is] a feature of skill that explains the fact that the manifestations of skill are intentional actions" (p. 5). Therefore, for Stanley & Krakauer skills are intentional – and, hence, a paradigmatic example of Aristotelian rationality – insofar as they are expressions of the agent's ability to voluntarily choose among a wide range of rule-based options that he has stored in terms of knowledge of facts about that activity, a form of propositional knowledge-that. This explanation,

however, does not do justice to the nuanced complexity intrinsic to the concept of skill, for at least two, closely interrelated reasons: first, for any case one might think of, “knowing how to do something implies that you have the ability to do it (and vice versa), whereas the corresponding propositional knowledge has no such practical entailments” (Noë, 2015, p. 6); that is, of course, unless one wants to support the unlikely hypothesis that everyone who is able to read a

manual or to follow the trainer's instructions is a virtually great performer.[3]

The second reason is that even knowing what to do to initiate an action, as well as deciding whether to resort to one action rather than another, can hardly be considered as a display of the expert's know-that, at least in the sense implied by the intellectualist thesis. As Fridland (2014) notices, in fact, it is difficult to fathom how single propositions with a generic value – i.e., "I know what to do to perform a groundstroke," or "I know that when the opponent does *x*, I have to do *y*" – could ever account for the elegant, precise and fine-grained control exhibited in various manifestations of the skilled action (see pp. 2743-2744). Being a skillful performer is most of all a matter of being able to turn one's well-trained and rule-based motor routines into adaptive, dynamic and context sensitive responses when needed, "of building and accessing flexible links between knowing and doing" (Sutton et al. 2011, p. 95). This ability, in turn, depends on the expert's capacity to keep track of the ongoing course of the performance, exercising a mindful control over the action that is made possible by the constant emergence of performative or situated awareness (see below). Therefore, although the intellectualists are right when they claim that some kind of conscious control is a necessary condition for

a performance to be defined as skillful, “the mistake is to think that a performance is only rational if control is exerted in the mode of judgement, as if from outside” (Noë, 2015, p. 7).

Many authors (Fridland, 2014; Christensen et al., 2016; Montero, 2010; 2015; Hagendoorn, 2003) have focused on the different types of conscious control involved in athletic performances, providing several accounts of skillful practice that refuse rational intellectualism – as well as the idea that being an expert is just a matter of going on automatic pilot. For instance, Fridland counters the intellectualist thesis by saying that “when a baseball pitcher decides to throw a curveball instead of a fastball, this decision is an instance of strategic control. Also […] knowing what one has to do to in order to initiate an action is part of strategic control […]. Strategic control [is what] guides motor skill by integrating fine-grained automatic routines with the personal-level goals and intentions of the agent” (Fridland, 2014, pp. 2744-2745).

What Fridland calls strategic control over skillful actions is closely connected to performative awareness. Whereas performative awareness is the tacit sense of what one can or cannot do in order to reach specific goals and given the overall contextual circumstances, strategic control is what allows the agent to modulate and implement

in the course of the performance the actions called forth by performative awareness. Fridland gives several examples of how strategic control governs the activity (see pp. 2744-2746). In similar fashion, the concept of a *meshed architecture* put forward by Christensen et al. (2016) "proposes that controlled and automatic processes are closely integrated in skilled action, and that cognitive control directly influences motor execution in many cases" (p. 43). One of the ways in which cognitive control exerts its influence is by a "parameterization of the action, or action 'gist'" (see pp. 43-44), which is "a particular way of performing the action appropriate to the circumstances. For instance, the soccer player may form a gist in kicking a pass that aims to put the ball into a particular area with a particular weighting that will wrong-foot a defender and allow a teammate to run onto the ball" (p. 43). Action gist clearly shows that knowing-how is much more than knowing what to do (i.e. to pass a ball) and when to do it, as it is a manifestation of skill that depends upon context sensitivity, individual differences, personal sub-goals and other elements whose combination can be explained only by an approach that takes into account the role of performative awareness and the dynamical complexity of body-schematic processes.

Another important feature of skillfulness that is enabled by performative awareness is selective attention (Fridland, 2014; Wu, 2014; Sutton et al., 2011), which can be described as the expert's proficiency in focusing only on those aspects of the perceptual scene that are relevant to the achievement of his goals. Selective attention is a fully-fledged part of skillfulness insofar as it improves over time and with training, as demonstrated by the neuroscientific data on the regional brain activity of novice sportsmen, who show a high activation in the areas implicated in "the maintenance of global, rather than selective attention […] and a lack of attentional focus […], which contrasts with the highly selective motor system activation in the experts" (Milton et al., 2007, p. 810; see also Gray et al., 2004). Selective attention is neither the result of some sort of automatic reflex or mindless process, nor the outcome of the agent's top-down voluntary decision to focus on some details rather than others; it is rather the result of a bottom-up intrinsic control that is elicited by the perpetual influence of one's goal-oriented form of situated awareness. In this regard, the mindfulness that includes performative awareness and selective attention is not imposed as a type of top-down cognition; it is rather something closer to an attuned habit. Habit, in this case, is, as Merleau-Ponty (2002) describes it, when the body "acquires the

power to respond with a certain type of solution to situations of a certain general form" (p. 164). Instead of blind automatic repetition, habit is intrinsically intelligent. That is, it involves an intelligence, a rationality built into the agent's bodily movement.

To sum up, we can state that skillfulness is the result of the interaction among various elements. First of all, it depends upon the normative character of our perception and bodily action. In §1.1 I presented the phenomenological argument that perception is normative as it is intrinsically linked to the temporal structure of consciousness, which provides us with an anticipatory sense of the (immediate) future modes of appearance of the intentional object. Extending this observation to the example of the expert tennis player, we can say that part of his expertise consists in perceiving the various salient details of the scene – the distance from the net, the other player's body language and position on court, etc. – as bearers of a protentional sense of action possibilities to efficiently counter the opponent's shots. As Crowell (2013) puts it:

> "the perceptual optimum of a tennis ball in flight is relative to the best place for my body to be in order to return it; […] perception is feelingly guided by an optimum because it takes place in the

> context of practices in which the body seeks to improve its stance in, and by means of, its dealings with things in the world" (p. 145).

Secondly, we can say that skillfulness depends upon the integration of body-schematic processes and performative awareness. One of the ways in which the expert improves his dealing with things in the world, in fact, is by attuning and enhancing both body-schematic processes – i.e. learning new basic techniques, getting better in the overall coordination etc. – and the sense of goal-directedness of his actions – i.e. becoming more precise in discriminating whether his movements will be on target or not, or discovering new possibilities intrinsic to his own body.

Lastly, I want to stress that every account of skillfulness should address the relationship between body-schematic processes, performative awareness and phenomena such as action gist and selective attention. This is because, in my view, only an agent who entertains a context-related awareness that he is moving or doing something in terms closer to his aims can develop a good sensitivity towards the way in which he has to modulate the actions or orient his attention. Moreover, action gist and selective attention provide a valid explanation for the emergence of know-how, for they both represent

a kind of "cognitive control on execution [that] is *not* through 'step-by-step' [viz. reflective, or procedural] control of the movement" (Christensen et al., 2016, p. 44), but rather manifests itself as a pre-reflective attunement to the situation that is refined with experience, practice and the formation of intelligent habits.

The above considerations about the nature of skillfulness bring me to a final, crucial point, namely that the processes involved in the carrying out of skillful activities are the same that govern intentional and goal-directed daily actions. In saying this, I am neither qualitatively nor quantitatively equating the abilities that are displayed during a challenging performance with the physical and cognitive requirements necessary to accomplish easy, targeted motor tasks. Rather, I want to highlight that both skillful performances and everyday intentional, goal-directed actions rely on some shared, ontogenetically determined basic mechanisms. Take, for instance, the act of grasping an object to use it: on the one hand, grasping is one of those motor programs that are enabled by innate structures that generate body-schematic processes corresponding to elemental aspects of the movement (i.e. the extension of the arm or the rotation of the wrist, see Gallagher, 2005a, p. 48) and processes such as a primary form of proprioceptive, pre-reflective self-awareness (p. 76);

on the other hand, grasping depends on more complex capacities that are refined with practice and differ according to the purpose the agent wants to achieve, such as adjusting the hand to the shape of a glass in order to drink from it vs. adjusting the hand to the shape of a glass in order to throw it (Ansuini et al., 2006; 2008). Of course, we are so accustomed to grasping objects in order to use them that, once this skill is mastered, it produces an almost irrelevant cognitive effort. However, this does not imply that, at some point, action gist and selective attention do not take place, but rather that they are "absorbed" into the intelligent habits of bodily movement and our systematic engagement with things in the world.

Examples of how conscious processes like action gist and selective attention are integrated into the habitual functioning of the body schema through practice can be found in a range of motor acts extending from the simplest (i.e., grasping) to the most complex (i.e., driving). The case of grasping, however, is sufficient to illustrate why the relationship between performative awareness and phenomena such as action gist and selective attention enables us to identify "a rationality that is intrinsic in the hand" (Gallagher, 2018a, p. 88). As an agent reaches to grasp an object to use it, his hand shapes itself into the right posture in a way that is close to automatic but yet perfectly

appropriate to his purpose, showing that "central forms of flexible and adaptive actions which are clearly not the product of deliberation or explicit reflection can nonetheless be best understood as involving certain sorts of (dynamic, embodied) intelligence" (Sutton et al., 2011, p. 79). This peculiar kind of intelligence is explained by the fact that the hand is part of a brain-body system that is guided by an ongoing sense of goal-directedness of one's actions and by conscious processes that both draw on and update the body schema, allowing us to have a pre-reflective attunement to most of the relevant environmental contingencies. Therefore, when I talk of embodied rationality, I mean that our efficiency in reaching an optimum in everyday situations that are clearly rule or norm-based – like all goal-targeted actions – is not conditional upon the conceptual understanding or the explicit application of these rules, but rather depends on the embodiment of conscious mechanisms that are refined by simply being in the world.

Chapter 2

Schizophrenia as the realm of anti-performativity

In this chapter, I will consider the case of schizophrenia, a pathology marked by a breakdown in the process of interaction between tacit and explicit knowledge and in which the embodied aspects of rational behavior are suffocated by "a hypertrophy of intellectual and static tendencies" (Sass, 2001, p. 251), namely what Sass has called "hyper-reflexivity (Sass, 1992; 2000). I will dwell on the notion of hyper-reflexivity in order to show that the analysis of this phenomenon is extremely useful for revealing the detrimental effects of a lack of embodied rationality.

I will introduce the concept of *disembodied rationality* to account for the inability of the schizophrenic patients to optimize their bodily and cognitive responses to environmental inputs due to the interference of their hyper-reflexive attitude. This condition is reflected in two typical symptoms, namely the disruption of the protentional function of time consciousness (Fuchs, 2007; Gallagher, 2000) and the breakdown in body-schematic processes (Chapman, 1966; Fuchs, 2005; Fuchs & Schlimme, 2009). The correlation between these phenomena will be addressed in §2.1; then, in §2.2 I will focus on

another typical trait of the illness, that is, the failure in grasping the intentional content behind others' actions, and I will argue that even this symptom may be due to an impairment in operative intentionality.

2.1 Disembodied rationality

In the previous chapter I showed that when we perform intentional, goal-directed actions:

a) The intrinsic temporal structure of our perception includes a primordial and vague anticipation of the future modes of appearance of events and objects in the world;
b) There is a pre-reflective attunement to objects and things in the world thanks to the embodied processes involving action gist and selective attention. Such processes work along with and enhances the function of our body schema – that is to say, with time and practice we become able to effortlessly carry out an increasing amount of intentional and goal-targeted actions.

These core features belong to a basic kind of intentionality usually characterized as motor intentionality, operative intentionality and intentionality-in-action (see Gallagher, 2012; Pacherie, 2006), and help to explain why we can talk of an "embodied" kind of rationality,

namely a “sensitivity towards the worldly norms” (Doyon, 2015a, p. 48) that manifests itself in our ability to reach an optimum in most of our everyday activities without recurring to an explicit (reflective or conceptual) recalling of the procedural rules we have to follow in order to perform goal-targeted actions.

Embodied rationality can fail in various circumstances and often in specific psychopathologies. Here I examine schizophrenia as one such failure. If the normative character of perception and the performative aspects of motor intentional behavior can be defined as the foundations of our “embodied rationality”, then certain symptoms of schizophrenia can be considered as involving a “disembodied” kind of rationality. Many authors, in fact, have proposed that the early stages of the illness are characterized by (1) a breakdown in the protentional function of time-consciousness (Fuchs, 2007; Stanghellini et al., 2016) and by (2) a disruption of body-schematic processes (Chapman, 1966; Fuchs, 2005; Fuchs & Schlimme, 2009), that is, a deficit in both selective attention and action gist.

1) The disturbances in time perception of the schizophrenic subjects have been known for a long time. In his pivotal *Lived Time* (1970), Minkowski described the peculiar temporality experienced by schizophrenics as characterized by a perpetual feeling of

immobility that has been vividly captured by the words of one of his patients:

“There is an absolute fixity around me. I have even less mobility for the future than I have for the present and the past. There is a kind of routine in me which does not allow me to envisage the future. The creative power in me is abolished. I see the future as a repetition of the past” (p. 277).

What Minkowski’s patient depicts in terms of a pervasive and unescapable feeling of motionlessness is rooted in an initial impairment in the protentional function of consciousness. As Fuchs (2007) has noted, in fact, the prodromal stages of the schizophrenic syndrome are marked by the emergence of “gaps” in the temporal flow, gaps that “leave the patients with the task of ‘rational reconstruction’ of meaningful thinking or speaking” (p. 233). One of the first symptoms that arises, thus, is a lack in the sense of being “projected” towards the future modes of appearance of the intentional objects. For example, a patient of Bin Kimura (1994) complained about the fact that

“While watching TV […], though I can see every scene, I don’t understand the plot. Every scene jumps to the next, there is no

connection. The course of time is strange, too. Time splits up and doesn't run forward anymore" (p. 194).

When interviewed, many other patients reported different kinds of unusual experience of the dynamics of time (see Sass et al., 2017, pp. 22-26), expressing an overall inability to anticipate even the most predictable outcomes in the unfolding of perceptual events and a correlated condition of uncertainty that often resulted in a sense of anxiety or in the feeling that anything – but especially bad things – could happen. This deficit in the anticipatory function of consciousness was also experimentally tested. For example, Frith (1992; Frith & Done, 1988) showed that, during the execution of an intentional movement correction task, schizophrenics perform like normal subjects when they are provided with a visual feedback, but, unlike normal subjects, fail to correct their mistakes when they are deprived of such a feedback. In line with these findings, a study conducted by Singh et al. (1992) evidenced abnormal premovement brain potentials in schizophrenia, which the authors addressed as the effect of a dysfunction in those brain areas that are "associated with physiological constructs such as

readiness, preparation, initiation, planning, volition and intention to act" (p. 39).

Consistent with the above data and with the observations made by Merleau-Ponty about the interdependency between the temporal structure of consciousness and operative intentionality (see §2.2), once the protentional function is impaired "even bodily movements appear 'out of the blue' and interrupt the intentional arc" (Fuchs, 2007, p. 234). This happens because the protentional function of consciousness is a necessary (even though not sufficient) condition for the sense of agency (see Gallagher, 2000, p. 222), that is, the pre-reflective sense of being the source or the willful initiator of every intentional action:

"without protention, whatever intention I may have, whatever sense I would have of what I will do or think, what I *will* to do or to think, is disrupted. My non-observational, pre-reflective sense of agency, which is tied to control over my own actions, and control over my own thoughts, and which I normally experience within a protentional framework, will be deferred by the lack of protention" (p. 223).

2) In one of the most important papers on the issue of disorders of attention and perception in schizophrenia, McGhie & Chapman (1961) explained that, in the early stages of the disease, patients struggle to keep their attention focused on just one element of their surroundings. According to one of their patients, trying to concentrate is like "trying to do two or three different things at the one time" (p. 104). Moreover, some of the subjects who were interviewed by the authors talked about a desynchronization between visual and auditory stimuli, whilst some others reported they could never avoid getting distracted from what they were doing or thinking about (see also Oltmanns, 1978). These symptoms were often accompanied by a failure in distinguishing between salient and secondary aspects of the scene (figure/ground reversal) and by a heightened awareness of background auditory sensations (see Sass et al., 2017, p. 20). In other words, with the onset of the pathology, schizophrenics' attention is directed "not by the individual's volition but by the diffuse pattern of stimuli existing in the total environment situation" (McGhie & Chapman, 1961, p. 105). This lack of selective attention has the immediate effect of depriving the patients of their implicit know-how, preventing them from having a tacit understanding of how to

perform actions in a way that is appropriate to the circumstances (action gist). As Chapman (1966) puts it, the patients “appear to have lost access to previous learning so that they are often unable to initiate an action simply by contemplating its goal. Instead, their attention seems to be taken up with the intermediate steps, which now require conscious co-ordination […]. The schizophrenic's psychomotor performance is consequently slow and deliberate and readily interfered with” (p. 240).

The psychopathological literature is full of reports on subjects who suffer from a complete absence of spontaneity when it comes to perform even the automatized and easiest motor tasks. This symptom can be accounted as a deficit in action gist, since the pre-reflective control that is usually associated with intentional actions and that manifests itself as an effortless parameterization of the movements is superseded, in schizophrenia, by an exasperated thematic attention towards every aspect of the bodily action, a hyper-reflexive attitude (Sass, 1992; 2000) that takes over operative intentionality. This is shown, for example, by the following excerpts from some interviews with the patients:

> “I can’t do simple habits like walking or cleaning my teeth. I have to use all my mind to do these things and sometimes I find myself […] having to use tremendous control to direct my feet and force myself round a corner as if I’m on a bicycle” (Chapman, 1966, p. 231).

> “I am not sure of my own movements anymore. It’s very hard to describe this but at times I am not sure about even simple actions like sitting down. It’s not so much thinking out what to do, it’s the doing of it that sticks me” (McGhie & Chapman, 1961, p. 107).

> “At times, I could do nothing without thinking about it. I could not perform any movement without having to think how I would do it” (Fuchs & Röhricht, 2017, p. 132).

The fundamental indication coming from the above passages is that the performative dimension is one of the first cornerstones on which the experience of the lived body is grounded that is impaired. In short, in the prodromal phase of the illness patients start to feel overwhelmed by the pattern of perceptual stimuli that surrounds them, reporting a lack of fluency in the unfolding of time and events. The breakdown in the fluency of perceptual experience results in the loss of the dynamicity intrinsic to every action, a disruption of the pre-

reflective, implicit control over one's movements that the patient tries to gain back through a deliberate and thematic reconstruction of the single steps he has to follow in order to carry out the action. However, this hyper-reflexive tendency towards one's body and movements has a counterproductive effect and "can easily become a kind of self-propagating spiral. The person who attempts, for example, to reassert control and reestablish a sense of self by means of introspective scrutiny may end up exacerbating his self-alienation and fragmentation" (Sass, 2001, p. 261).

Hyper-reflexivity is linked to another typical symptom of schizophrenia, namely what Minkowski (1927) has called *morbid rationalism*. Morbid rationalism is "an attitude comprising an effort to submit some or all aspects of life under [a set of] schematic and often algorithmic rules, typically associated with focus on irrelevant details" (Parnas, 2019, p. 4). Defined as such, morbid rationalism may be thought of as something very similar to hyper-reflexivity; however, there are a few important differences. First of all, whereas hyper-reflexivity is considered a phenomenon that is "equiprimordial" (Sass, 2000, p. 152) with the alteration in the implicit sense of being a source of intentionality (that is to say, they arise together and fuel each other, according to the spiral structure described above), morbid

rationalism has “a secondary status in relation to the decline of the ‘intimate dynamism of our life’ and of vital contact with reality” (Sass, 2001, p. 256) caused by the joint effect of hyper-reflexivity and the lack of intentionality. Secondly, whereas hyper-reflexivity is the exaggerated way in which “an agent or self takes itself or some aspect of itself as its own object of awareness” (Sass, 2000, p. 152), i.e. focusing on the different parts of one’s body during a motor act, morbid rationalism is an exaggerated form of awareness that affects many (if not all) aspects of the patient’s life. Morbid rationalism, in fact, is the tendency to see not only oneself, but other people and even objects as guided by merely logical rules; in this sense, morbid rationalism may be conceived as the more evident manifestation of the patient’s “loss of natural self-evidence” (Blankenburg, 1971/1991), as the paradigmatic example of what happens when rationality is reduced to simply knowing-that. Consider an example mentioned by Parnas, Bovet and Zahavi (2002):

> “A famous vignette of a schizoid father, who buys, as a Christmas present for his dying daughter, a coffin, illustrates this odd friction. The act is rational from a formal-logical point of view, because a coffin is something that the daughter eventually is going to need,

yet nevertheless it is bizarre by any ordinary human standard" (p. 132).

This example shows not only why "schizophrenic rationalism is not merely an *exaggerated* rationalism, but one that lacks both the vitality and the flexibility or *souplesse* that is characteristic of human rationality in its more normal forms" (Sass, 2001, p. 256), but also why it is important to highlight the differences between hyper-reflexivity and morbid rationalism. These phenomena, in fact, represent two different "stages" of the patient's detachment from the embodied aspects of life. On the one hand, the hyper-reflexive attitude is a sort of "compensatory mechanism" through which the patient tries to make sense out of a world that starts to fall to pieces due to perceptual disturbances (fragmentation of the intentional arc, loss of selective attention); however, this mechanism has the immediate effect of further distancing the patient from the embodied and performative dimension of the self, i.e. preventing him from relying on the "know-how" that manifests itself in action gist and leading him to parameterize the action in a deliberate way, in the form of "I need to think how to move my body to carry out even the most banal actions". On the other hand, morbid rationalism is a form of

detachment from the social and intersubjective dimension of our being in the world (i.e. loss of common sense) that might be rooted in the hypertrophy of the tendency to objectify one's own bodily experience; therefore, morbid rationalism shows how fundamental it is for the subject to follow a rationality that is not only the application of logical or language-based rules, but rather is based in those embodied and pre-reflective processes that allow us to optimize our cognitive and bodily responses to the environment.

2.2 The two faces of intentionality

Up to this point, I have referred only to one of the several meanings of the term "intentionality", that is, the carrying out of volitional and goal-targeted actions (operative intentionality). However, there is another sense intrinsic to this word, namely the ability to grasp the others' intentions on the basis of their movements, gestures and expressions. Interestingly, even this kind of intentionality is impaired in schizophrenia.

One of the first things humans learn to do is to recognize the volitional and emotional content intrinsic to the caregivers' facial expressions. This process is part of what we know as *affect attunement* (Stern et

al., 1985), that is, the matching between the affective state of the infant and the one of the mother that occurs when their dynamic exchange of vocalizations, expressions and movements is repeated over time, enhancing the relationship. The synchronization between the bodily and vocal responses of the mother-child dyad is necessary for the baby in order to become increasingly more skillful in immediately catching the emotions conveyed by the others' body posture, gestures and even the minimal changes in the facial expressions.

The importance of affect attunement was proved by the *still face experiment* (Brazelton et al. 1975; Tronick et al. 1978), which showed that infants respond with frustration and anger to the sudden and deliberate interruption of the interaction with their mother. When the mother and her child are engaged in a communicative exchange involving reciprocal attention (i.e. playing together, pulling faces at each other etc.), in fact, the baby anticipates the future actions of the caregiver due to the combination of the repetitiveness of the attunement process and the activation of his mirror neurons (Gallese et al., 2007); if the mother's face abruptly becomes a non-responsive and neutral "mask", the infant first bursts into tears and then, after he fails many attempts to get the interaction into its usual reciprocal

pattern, withdraws from his mother with a hopeless facial expression (Brazelton et al., 1975).

Conversely to what the hypotheses based on the Theory of Mind suggest (Baron-Cohen, 1995; Gopnik & Meltzoff, 1997)[4], the precondition for the understanding of the emotional and intentional content of the actions carried out by others is not the ability to make inferences about the mental states of the latter, but the embodied capacity to "simulate" such inner states that is enabled by the mirror neurons and by the interactivity of the context (Gallese & Goldman, 1998; Gallese, 2005). Reading facial expressions, thus, is not an activity that depends on our highest mental functions, such as rationalization or propositional logic; rather, it is rooted in cerebral and automatized mechanisms that we develop since the early stages of life, due to our embeddedness in a social world. The experience of faces as bearers of meaning is not the result of an interpretative effort, but relies on "the intrinsic relational character of the bodily format of bodily action representation" (Gallese, 2016, p. 300). After the "training session" of affect attunement, the facial cues of our

[4] For arguments in support of the need to integrate the Theory of Mind with other approaches, see Gallese 2007.

conspecifics turn into peculiar kind of *affordances*, namely *social affordances*: the combination of expressions, movements, gaze direction and tone of voice that provide information about the actor as well as about other aspects of the environment (Loveland 1991) and that we perceive as a single and homogeneous whole.

However, there are conditions in which the unitary perception of the elements that make up faces is impaired; one of these conditions is schizophrenia. Studies carried out on the drawings, paintings and sculptures made by schizophrenic artists showed that the faces they represent are deformed and express predominantly anxiety and fear (see Rentschler et al., 1988, p. 273). Such studies are consistent with both the results of some experiments that proved that the schizophrenic subjects' performance in grasping the emotional content of a face is poorer than the one of normal subjects (Kerr & Neale, 1993; Mueser et al. 1996) and the hypothesis that one of the core symptoms of schizophrenia is the breakdown in the capacity for Gestalt perception (Conrad, 1958; Matussek, 1987). In line with the above findings, many psychiatrists reported several cases of patients who could not recognize familiar faces anymore (Sechehaye, 1970; Cutting & Dunne, 1989), like in the following example, excerpt from the autobiographical diary of a schizophrenic girl:

> "I saw the individual features of [my therapist's] face, separated from each other: the teeth, then the nose, then the cheeks, then one eye and the other. Perhaps it was this independence of each part that inspired such fear and prevented my recognizing her even though I knew who she was" (Sechehaye, 1970, p. 37).

Lastly, one of the most significant evidences of the schizophrenics' failure to perceive the face as a cohesive unit can be found in a notorious "case study", that is, the famous schizophrenic poet and actor Antonin Artaud, whose words denote "an alienation from what might seem the most intimate of phenomena: the inner experience of one's own face as it is lived from within" (Sass, 2003, p. 170). In describing the sensation of seeing his own face, in fact, Artaud speaks of a:

> "human face flattened out, deflated as if sucked up by shriveling leeches. And this lubricating membrane will go on floating in the air, this caustic lubricating membrane, this double membrane of multiple degrees and a million little fissures […], so capable of multiplying, splitting apart, turning inside out with its glistening little cracks" (Artaud, 1965, p. 39).

The relationship between the distorted perception of one's own face and the inability to read the others' expressions is an interesting phenomenon because it shows that the ability to understand other people's intentions is deeply interconnected to the concept of operative intentionality, a correlation that is corroborated by the data on another symptom of schizophrenia, which is typically observed in patients with persecutory delusions: hyper-intentionality, namely the tendency to attribute an excessive amount of intentions to others and even to inanimate objects (Peyroux et al., 2014; Bara et al., 2011; Ciaramidaro et al., 2014). Hyper-intentionality is an interesting phenomenon for two reasons: first of all, because it shows that the ability to understand other people's intentions is deeply interconnected to the concept of operative intentionality. As Fuchs (2005) puts it, in fact, "we use the operative intentionality of our body as an instrument for understanding the other's intentions" (p. 99); therefore, if the patient's intentional arc and body-schematic process are impaired due to perceptual disturbances and hyper-reflexivity, it follows that even others' actions will be perceived as fragmented and will call forth an explicit, pseudo-logical explanation. Secondly, our ability to understand other people's intentions is another example of "embodied rationality", since it is the product of the activity of the

kind of bodily attunement associated with primary intersubjectivity (Trevarthen, 1978) and of our practical attunement to the world and to others that comes with experience. Traditionally, however, it has been explained as a form of "linguistic" or "intellectual" competence (Theory of Mind), which ignores embodied rationality. Here again, well-known problems with social cognition in schizophrenia[5] suggest that hyper-intentionality can be accounted for as one of the effects of the breakdown in the embodied processes of operative intentionality and the social forms of understanding that are deeply rooted in the embodied and performative aspects of intentional behavior.

[5] As Parnas, Bovet and Zahavi (2002) indicate, "the dimension of intersubjectivity is also fundamentally impaired (disorders of social and interpersonal functioning, inappropriate behavior). These three dimensions are inseparable: I, we, and the world belong together – and they are all afflicted in the schizophrenic autism" (p. 132).

Chapter 3

The embodied nature of body image and the problem of hyper-representation

In this chapter, I will investigate the concept of *body image*. Specifically, my aim is to argue that the body image is a complex and ever-changing process that is influenced by factors that are often beyond our control and our awareness, rather than the outcome of a volitional, reflective thematization of the bodily experience, or the "mental picture" (Schilder, 1950, p. 106) of the body that we have in our mind. The idea that the body image can be addressed as the representation of how the body is perceived by oneself is very common, especially in the neuroscientific literature (see §3.3). I will reject this notion by contrasting it to the definition given by Gallagher (1986; 2005a) and by showing why he and the vast majority of the proponents of enactivism refuse the principle that our mind works through representational processes. In order to corroborate the validity of the anti-representational account of body image, I will juxtapose it with the description of how the body image is experienced by individuals with severe psychopathologies such as schizophrenia and eating disorders. The relationship between the subjects who suffer

from these conditions and their body image is marked by a hyper-reflexive attitude that prevents the patients from feeling the "owners" of their sensations and body-related emotions, as well as enactively interconnected to the others, and that in eating disorders often results in what I call *hyper-representation*. Once I will describe what I mean with this term, I will suggest some of the potential uses for it and for the framework made up by the opposition between the corporeity described by enactivism and the one described by phenomenological psychopathology.

3.1 Is the body image a reflective phenomenon? Insights from the body schema/body image dichotomy

No analysis on the body image can be carried out without bringing the body schema into the equation. Although the two expressions *body image* and *body schema* were originally adopted to refer to independent phenomena – when, in 1911, Head and Holmes developed a taxonomy of what they called body representations, talking about body image and body schema*ta* (Head & Holmes 1911) – many authors conceived them as synonyms (see Gallagher, 2005a, pp. 19-23). The interchangeability that marked the use of the two

terms is reflected not only by the fact that the preference between them often depended on the discipline that adopted them (see de Vignemont, 2018, p. 141), but even by the ambiguity found in some reference works. To mention just one example, in the English version of Merleau-Ponty's *Phénoménologie de la perception* (Merleau-Ponty 1945/1962), the French locution *schema corporel* was translated as *body image*, making the meaning of the first expression overlap with that of the second.

It is precisely the retrieval of Merleau-Ponty's notion of *schema corporel* that inspired Gallagher's conceptual clarification between body schema and body image (Gallagher, 1986; 2005a). As I have discussed in the first chapter, the body schema "is the body as it actively integrates its positions and responses in the environment" (Gallagher, 1986, p. 548). Such a definition frames the body schema as the natural ability of performing bodily tasks adapting one's movements and actions to environmental contingencies. This close to automatic motor and postural schema on which our movements are based is strictly related to action and is one of the preconditions for a performance to be defined as skillful. Thanks to the perpetual interaction between the body schema, performative self-awareness and pre-reflective forms of control such as selective attention and

action gist, in fact, expert performers do not have to thematically focus on each single movement they carry out. The condition of the expert, however, is different from that of the novice. As I will show below, examples such as the one of the acquisition of dancing and driving skills demonstrate that in some cases our body and movements become the object of a reflective attention. This implies that sometimes, in order to turn into a pre-reflective form of attunement to the requirements of the task, the body schema needs to be "adjusted" through an explicit effort towards the action.

In Gallagher's view, whereas the body schema is related to action, the body image is related to perception. Perception, however, is a complex notion that has more than one meaning; the body image reflects this complexity. It is, in fact, a multifaceted phenomenon with at least three aspects (Gallagher, 1986, pp. 545-546; Gallagher, 2005a, p. 25):

- Body percept: the subject's perceptual experience of his own body;
- Body concept: the subject's conceptual understanding (including folk and/or scientific knowledge) of the body in general;
- Body affect: the subject's emotional attitude towards his own body.

The three elements that make up our body image are shaped by our being in the world. The body percept includes the sense of body ownership, which in turn depends on what phenomenologists call "the sense of *for-me-ness* of the experience" (see Gallagher & Zahavi, 2005; Gallagher & Zahavi, 2008), namely the individual's tacit but perpetual impression that every experience he is living is mediated by his and no one else's body.

When we talk about body concept, we mean that we all have a set of beliefs about our body. For instance, we know that there are some physical limits that prevent us from holding our breath for too long or from stretching our muscles beyond a certain point. Importantly, this peculiar knowledge encompasses the history of our relationship with the environment: i.e. a child who burns his hand by touching an iron learns that the contact with certain objects leads to a painful experience. It is likely that, in the future, such information will result in a belief – specifically, "I believe that the objects that transmit heat are dangerous" – that will consciously or unconsciously change the way in which the child interacts with his surroundings.

Lastly, the body affect is the wide and heterogenous range of emotions and attitudes that the individual has towards his own body. This aspect of the body image cannot be addressed without taking into

account the role of society in defining normative boundaries between what is attractive and worthy of acceptance and what is not: “for example, I may be emotionally dissatisfied with the way my body looks because it does not match up to the cultural ideal of beauty or strength. Or I may be emotionally dissatisfied because of an altered and abnormal sense of body image, for example in cases of anorexia” (Gallagher, 2005a, p. 30). Hence, the social factor has a decisive impact on those pathological conditions that have always been described as marked by alterations in one’s own body image, such as eating disorders (see Garner et al., 1987; Rosen, 1990).

The hypothesis I am going to defend, inspired precisely by considerations about the relationship between alterations in the body image and the onset of eating disorders, maintains that the alterations typical of this category of illness occur due to a change in the way the individual usually embodies his own body image (Stanghellini et al., 2012; 2015; Gaete & Fuchs, 2016). This cause-effect link can be grasped only if one calls into question a view that seems to be shared by many authors who have dealt with the notion of body image, namely that the latter is a reflective phenomenon (see Coslett, 1998, p. 528; Paillard, 1999, p. 197; Mishara, 2005, p. 133; De Preester, 2008, p. 154). This conceptualization of the body image is the result

of the uncritical acceptance of a principle – developed in one of the most relevant papers on the topic – according to which the body image "involves a reflective intentionality" (Gallagher & Cole 1995, p. 371). However, whereas Gallagher himself recognized, a few years later, that the body image is *sometimes* reflective (Gallagher, 2005a), the idea that this phenomenon can be differentiated from the body schema on the basis of a clear distinction between the reflectiveness of the former and the pre-reflectiveness of the latter still lingers. Not only will I argue that the body image is a mainly embodied, pre-reflective phenomenon, but I will also try to show that the more the individual tends to reflectively represent his bodily experience, the more likely he is to feel a sense of detachment from his own body image.

To demonstrate this, I must dig a little deeper into the notion of body image. First of all, we need to discern the various kinds of processes that are involved in its constitution: for example, the broad range of sensorial data that we gather from the outside world and that convey the impression that we are the "owners" of our body and sensations – the body percept – does not correspond to the emotional attitude that one has towards his/her own body – the body affect – which is heavily dependent on the history of one's encounters with the others. Secondly, we must underline that the difference among body percept,

body concept and body affect does not lie only in the way they manifest themselves, but even in the *ontogenetic origin* of these processes: in fact, whereas the body percept is precedent and necessary to the development of a reflective self-consciousness (if we follow the principle that the quality of *for-me-ness* of the experience is a precondition for the conceptual, explicit and objectifying self-awareness, Gallagher & Zahavi, 2005), the body affect can emerge only after the individual has become able to reflect upon his subjective experience. None of us can feel positive or negative emotions that are related to how one's own body is perceived from the outside prior to having acquired the capacity to take an external stance towards the self, namely before that stage of ontogenetic development – approximatively 18-24 months of age – in which the child starts to recognize his figure in the mirror (Gallup, 1994; Rochat, 2010), to feel ashamed about his body (Lewis, 1993; Fuchs, 2002) and to understand if the latter is in agreement (or disagreement) with social norms (Riva, 2018).

If the body percept and the body affect have, respectively, a pre-reflective and a reflective root, the body concept has some sort of hybrid origin. In fact, on the one hand, it seems that certain forms of tacit knowledge are "incorporated" into one's own body memory (see

Fuchs, 2003) long before the child develops an explicit self-consciousness: for instance, some studies have shown that newborns who underwent painful procedures, such as circumcision without local anesthesia and heel lances, had a more intense pain reaction to an immunization injection occurring several months later than children who did not have the same experiences (Taddio et al., 1997; Taddio et al., 2002; Von Baeyer et al., 2004, pp. 241-242). On the other hand, the knowledge we have of our body is often the outcome of a volitional reflection upon the limits and the possibilities of the latter: for instance, one might wonder why his/her back hurts and then, after some research, understand that the problem is a bad posture that needs to be corrected.

As we can see, we need to recognize the fundamental distinction between the developmental course of the processes that make up the body image and the way they unfold in our everyday life. Let's take the example of the body affect: the fact that, from an ontogenetic point of view, the possibility to feel emotions that are related to how our body is perceived and judged from the others is completely dependent on the development of a reflective self-consciousness, does not imply that the body affect is always the result of the attempt to reflectively

access our emotional contents; or, to put it in other words, that the body affect is a phenomenon with an entirely reflective nature.

I think that the best way to explain my argument is to test how it applies to the body schema. No one would ever question that the latter has a pre-conscious ontogenetic origin, because this would mean going against a massive amount of evidence that prove there are "biological, genetic and phylogenetic factors that influence the process of body-schematic development even prior to birth" (Gallagher, 2005b, p. 236). However, such considerations do not suggest that the body schema *always* involves pre-reflective mechanisms (see Legrand, 2007). There are cases, in fact, in which we have to thematically focus on the bodily movements necessary to accomplish a complex motor operation or to embody a certain practice. I am talking about all the occasions in which we approach for the first time an activity that requires peculiar skills, such as driving (Dreyfus, 2002) or learning a choreography. It is precisely by referring to the example of dancing that Legrand (2007) addresses this issue with great clarity:

> "when a beginner learns to dance or when a dancer learns a new choreography, he often needs to control consciously the position

> and movements of his body. This attitude implies to take an observational stance on the body […]. The situation is different with an expert dancer who knows his choreography or who improvises a skillful dance. In these cases, the expert dancer *embodies* the dance. Observational consciousness is not necessary to control actions and would even be counterproductive" (p. 501, emphasis added).

Therefore, when a novice deals with a performative activity that he hasn't yet mastered, his body schema shows up as a set of "bodily rules" that he is aware of, but that he does not manage – and nevertheless still tries – to apply. At this stage, the body schema emerges as a form of explicit rather than implicit knowledge; however, this is still a necessary condition for the practice to be embodied.

Once I have shown that the movements we attempt to incorporate into our body schema can become the object of reflective self-awareness, I want to prove that the body image – which has been predominantly considered as inherently explicit, conceptual and thematic – is a mainly pre-reflective, embodied phenomenon. In order to do that, I have to analyze the relationship between the body image and the

human ability to consciously represent one's own bodily experience, addressing the issue of whether it is right to refer to the body image as some form of representation or not.

3.2 The body image/body representation equivalence

The concept of representation has been (and still is) a subject of great debate in the field of cognitive science. My aim here is not to go into the details of such debate, but rather to discuss the use of the term "representation" in relation to the notions of body schema and body image. A convergence between these expressions can be found especially in the neuroscientific literature, in which the body schema and the body image are defined as peculiar kinds of representations. To mention a few examples: Longo (2015) proposed a hierarchical model of body representations, dividing them into implicit and explicit ones and claiming that the body image falls under the second category; Rossetti et al. (2005) discussed the neuropsychological evidence for the dissociation between the body image and the body schema, referring to the latter respectively as "conscious and non-conscious body representations"; lastly, de Vignemont (2018), who is interested in bridging the gap between the philosophical and the

neuroscientific approaches to the study of the brain-body system, asserted that "mental representations can be […] highly dynamic, nonconceptual, and even action-orientated. Cognition can then be said to be embodied because it is affected by the way the body is represented in the mind" (p. 4). Whereas I totally agree with the second part of de Vignemont's statement and will provide arguments in favor of it (§3.5), I do not go along with the first part, nor with the equivalence between "body schema and body image/body representations".

The reasons behind my disagreement are the same expressed in two recent influential works in the field of enactivism: *Enactivist interventions* (Gallagher, 2017) and *Ecology of the brain* (Fuchs, 2018). In one of the chapters of the first book, Gallagher explains why in his and in most of the enactivists' opinion, we should get rid of the term "representation" when it comes to describing how actions are performed. Gallagher argues that none of the characteristics that have been classically associated with the concept of representation – i.e. being an internal image, symbol or sign, having a discrete duration and being decouplable from its current context (see Gallagher, 2017, p. 99) – can be observed when a motor operation is carried out. As I have said in the previous sections, the execution of intentional actions

is enabled by our body schemas, which "are complex processes that extend over brain and body […], and are in all cases specified by environmental contexts" (p. 101); most importantly, such processes "are not constituted by one part of the system representing another part, or by one part interpreting the other as a representation" (p. 101). It is true that, sometimes, we are forced to break the flow of our engagement with the environment and to detach – to decouple – from it: for instance, a novice who is learning to drive tends to focus on the mental "image" or "map" of the instructions he has to follow – move the gear stick, press the pedals, pay attention to the road etc. – *while* he is trying to apply them, and this is what prevents him from immediately embodying the practice. However, even though we might admit that an interruption of the experiential flow of this sort could be considered as the outcome of a representational activity, not only do we have to acknowledge that such activity occurs in a limited range of circumstances, but also that it cannot be in any way considered dynamic and action-orientated as de Vignemont claims. This point has been made extremely clear by Hubert Dreyfus when he stated that "what the learner acquires through experience is not *represented* in the mind at all but is *presented* to the learner as more and more finely discriminated situations" (Dreyfus, 2002, p. 373).

A criticism of representationalism similar to the one summarized by Dreyfus can be found in *Ecology of the brain*, in which Thomas Fuchs says that "the representational relation – [in which] something stands for, or refers to some other thing – […] is a special mental feat added to certain perceptions, it cannot be transferred to perception as such. We see *trees*, not pictures of trees. Perception is not a representation, but a *presentation* of objects" (Fuchs, 2018, p. 160). As we can see, the difference between the two statements is that, whereas Dreyfus refers to the necessity of getting rid of the notion of representation in relation to *action*, Fuchs refers to the (at least partial) incompatibility between the notion of representation and the one of *perception*. Therefore, if it is possible to call into question the body schema/body representation equivalence in virtue of the analogy between body schema and action, it should be possible to call into question the body image/body representation equivalence as well, since it is based on the analogy between body image and perception. However, as I have mentioned in the previous sections, the combination of processes that generate the body image is a complex and multifaceted phenomenon. On the one hand, there are all the sensations that produce the body percept, which can be easily regarded as non-representational given that, most of the time, they are "limited" to providing us the opaque

and attenuated sense of "for-me-ness" of bodily experience. On the other hand, there is the body affect, namely all the emotions that stem from our capacity to reflect upon our own body and to represent the latter as if we were in an external standpoint with respect to it. Against this background, how are we supposed to argue that such experiences are non-representational? Again, a possible answer to our question can be found in Fuchs' words:

> "human beings have the peculiar capacity to take a stance towards themselves, to observe their own experience, and to reflect on themselves as subjects of experience, thus seemingly becoming an inner world of their own. However, the possibility of representation and self-distance that human persons have does not suspend their primary, embodied being-in-the-world. It does not turn *all* their experience into representation or into a reduplication of the world in the mind as a separate container" (pp. 70-71, emphasis added).

The point made by Fuchs is of crucial importance. The fact that beyond a certain stage of our ontogenetic development we become able to reflect upon our physical presence in the world and to represent our body as an object that is "external" to our embodied

perception of the latter – for instance, wondering how it is judged by others, imagining how it would look with different features, focusing on some processes occurring in it or asking ourselves why we feel a certain way about it – does not imply that this is the only way we access our body image. To put it otherwise, our body image is not a particular type of bodily representation, nor a phenomenon with a reflective nature, but rather a complex system made up of different kinds of processes (sensorial, social, emotional etc.) that we can – and, under certain conditions, are forced to – consciously represent through a thematic and reflective effort, just like we sometimes do with other aspects of our bodily experience, such as our movements or our physical appearance.

Now that I have clarified my position, I must both outline what happens to the body image when one represents his/her own body and specify what I mean by the term "hyper-representation" I mention in the title of the chapter. In order to do that, I will take into account the vast literature on the disturbances of body image in psychopathology, and specifically in schizophrenia and eating disorders.

3.3 From hyper-reflexivity to hyper-representation

The abnormalities in the body image of the schizophrenic patients have been known for a long time. In a paper published more than four decades ago (Chapman et al., 1978), the authors provided an overview of the studies that proved that some schizophrenics show "perceptions of alterations in the size and shape of their bodies, or feelings of unreality of the body, of the merging of the body with external objects, and of the body not being one's own" (p. 399). Throughout the last 40 years, such symptoms have been deeply investigated. The perception of the body not being one's own, in particular, has been the subject of much research, mostly because, as we will see, it is not an exclusive feature of schizophrenia. It can be described as a sense of detachment from the body such as to make the latter perceived from a third-person perspective rather than from a subjective standpoint, and referred to as *disembodiment* (Stanghellini, 2004; Fuchs & Schlimme, 2009).

There are two reasons why the alterations in the schizophrenic's body image deserve attention. The first is that they arise in the early stages of the illness (Chapman et al., 1978, p. 405) and, thus, are most likely prodromal to the course and the worsening of it. This data is perfectly consistent with the observations I made on the ontogenetic

development of the body image: the distorted perception of the size and the shape of the body, the feeling of unreality of the body, the sense of the merging of the body with external object and disembodiment, in fact, are impairments of the perceptual dimension – the body percept – that is considered the *sine qua non* for the most complex processes that make up the body image. Therefore, it is at least conceivable that the high severity of these symptoms is due to the fact that they undermine the deepest core of the subject's perceptual experience of his own body.

The second reason is that these pathological traits seem to be closely related to the impairment of the performative dimension of the body schema. As I showed in the previous chapter, when interviewed patients claim to be unable to accomplish bodily tasks of any sort without focusing on each single subtask or on the procedural rules they have to follow; in a nutshell, they consciously represent their movements just like the unexperienced dancers (§3.2) and drivers (§3.3) do, but reiterate the effort for every bodily performance they (try to) carry out. The continuous breakdown of the action renders it a sequence of "snapshots" that are not cohesive nor mutually consistent. The following words of a schizophrenic subject make this point extremely clear:

> “If I do something like going for a drink of water, I've to go over each detail – find cup, walk over, turn tap, fill cup, turn tap off, drink it. I keep building up a picture. I have to change the picture each time” (Chapman 1966, p. 239).

Interestingly, the metaphor of picture does not just capture the essence of the lack of fluidity in the action and, accordingly, in the functioning of the body schema. A figurative language of this kind, in fact, has been used by the patients to account for the perceptual experience of their surroundings and, most of all, of their own body. The feeling of “disembodiment” I have mentioned above has been frequently described in terms of a dichotomy between a body that is physically in the world but that does not “live” in it and a body that “records” the experiences of the other one from a distant and detached perspective. The imagery of the body that transforms into a camera that passively shoots the subjective and the intersubjective life of the schizophrenic is very common in the psychopathological literature, as shown by the following excerpts from some interviews:

> “I become aware of my eye watching an object” (Stanghellini, 2004, p. 113);

> "I saw everything I did like a film camera; […] I was myself a camera" (Sass, 1992, p. 286);
>
> "I feel as if I am sitting on some distant planet and there is somehow a camera in my head and those images are sent there. As if I am completely far away from here, where I am sitting right now" (de Haan & Fuchs 2010, p. 329);
>
> "For me it was as if my eyes were cameras, and my brain would still be in my body, but somehow as if my head were enormous, the size of a universe, and I was in the far back and the cameras were at the very front. So extremely far away from the cameras" (pp. 329-330).

The words of the patients I have just mentioned show what happens when the hyper-reflexive proclivity of the schizophrenic subject creates an irreparable divide between the self and the body. The latter, at this stage of the pathology, is not perceived as *Leib* (Husserl, 1931) or *medium* (Fuchs, 2018), that is to say, as the primordial and only standpoint from which the world reveals itself (p. 73) and to which the sensations that provide the feeling of being alive are conveyed (Fuchs, 2012); on the contrary, it is perceived as *Körper* (Husserl,

1931), a disowned object that is treated as a foreign matter. This shift occurs because

> "the tacit mediating role of the body has become explicit and felt, thereby changing the whole nature of experiencing. For S.N. and L.N. [the last two patients I have quoted above], for instance, seeing has turned into looking at images through a camera. *They perceive the perceiving*. Since experiences are no longer lived from the inside, they can be observed as reified objects or data" (de Haan & Fuchs, 2010, p. 331, emphasis added).

Against this background, I would like to introduce the concept of *hyper-representation*, which is slightly different from the concept of hyper-reflexivity and that account for one of the potential effects of this exacerbated tendency to take an external stance towards one's own bodily experience. Once a certain level of disembodiment is reached, in fact, the body turns into some sort of a duplicate, which literally re-presents itself to the consciousness of the patient over and over again. This duality emerges as a paradox, a loop in which the subject gets irretrievably stuck: if, on the one hand, he feels like his body no longer belongs to him, on the other, the physical impossibility to "leave" the body leads it to be perceived as a weight that one cannot

get rid of, an obstacle between the self and the world, an opaque image from which the patient cannot draw his attention away and that stands for something he doesn't recognize anymore. This new way of experiencing the body has a devastating impact on the "sane" body image, namely all the sensations, concepts and emotions related to the body that we internalize through experience and time, that shape our identity and our peculiar way of being in the world and that allow the body to withdraw in the background of our consciousness instead of being represented on its foreground.

Once I have introduced the concept of hyper-representation, I need to show how this phenomenon manifests itself in a category of pathologies that are characterized by actual aberrations in the body image, namely eating disorders. To address the real nature of such alterations, however, I must first explain how the process of internalization – or, to put it better, of *embodiment* – of the body image I have just mentioned occurs. These are the topics I am going to tackle in the next section.

3.4 Embodying and disembodying the body image

The idea that the expression "body image" refers to a complex system of processes that originate in different moments of ontogenetic development rather than to an abstract representation of the body that we can access only through a reflective effort is nothing new. Such a view can be found, for example, in the work of Gail Weiss, who, partially retrieving and partially criticizing Merleau-Ponty's (1945/1962) and Schilder's (1950) understanding of the body image, describes it as a developmental "Gestalt" that participates in a mutually constitutive dialogue with the others' body images, emerging even prior to the mirror stage as a fragmented set of bodily experiences that find their coherence when the child becomes able to recognize his specular image as being of, rather than identical to, oneself (see Weiss, 1999, p. 10; p. 13; p. 33). According to Weiss, thus, the progressive shaping of the body image follows the steps of the individual's growth since the earliest months of life, even though it is only when the subject achieves a rudimentary form of reflective consciousness and enriches his knowledge with the notion of body-for-others that he starts to feel emotions about his body being perceived and judged from the outside (body affect). The crucial point of Weiss' argumentation, however, is that the reflective genesis of the

body affect doesn't match up at all with the way in which the latter manifests itself throughout the existence of the individual. The feelings and the attitudes towards our own body that result from our embeddedness within a social and inter-corporeal context, in fact, are mostly the effect of the triggering of unconscious mechanisms, such as "introjection, projection, and identification, [through which] the body image continually incorporates and expels its own body (parts), other bodies and other body images" (p. 33). The constant evolution of the body image is the key to understanding how to address it, that is, not as a static representation of how our body appears to ourselves and/or to the others, but rather as a perpetual process of adaptation to the physiological changes occurring in the body and to the social demands we face in our everyday experience (see p. 91). Therefore, if we want to give an exhaustive definition of the body image, we have to say not only that it is the combination of sensorial perceptions, beliefs and emotional contents related to the body, but also that such a combination stems both from our encounters with the others and from the wide range of physiologic, psychological and social factors – sex, gender, social class, age, family, religion, ethnicity etc. (p. 167) – that shape our identity. In a nutshell, the body image is the way in

which we internalize through and within our body – in just one word, the way in which we *embody* – our identity.

The influence exerted by the intersubjective and cultural constraints on the constitution of the body image is a subject of great interest for the feminist approaches to the issue of corporeity. Some feminist philosophers such as Weiss herself or Iris Young (2005) have stressed the urgency of analyzing how Western society forces women to live the relationship with their own body, in order to understand not only what are the measures that must be taken to ensure women the right to freely decide for themselves, but also what are the effects that such external interference produces on the body image as an embodied phenomenon. Among these effects, the one that Weiss and Young investigate the most is the women's tendency to focus heavily on their own body and to treat it as an object that needs to be "molded" and "decorated" (see Young, 2005, p. 44; Weiss, 1998, p. 45). Rather than analyzing the reasons underlying this attitude, however, what I want to highlight here is that the latter is paradigmatic of a disconnect between women and their own body image: as I have said (§3.3), in fact, the constant thematic attention towards one's own body paves the way to a condition of disembodiment from the dimension of *Leib*, which in turn may result in a perpetual hyper-representation of one's

own body during (what are supposed to be) the usual interactions between the subject and the environment. This phenomenon is well depicted by Young's words, according to which "for feminine existence the body frequently is both subject and object for itself at the same time and in reference to the same act" (Young, 2005, p. 38), but it is even more accurately addressed by Weiss, when she says that the modalities of "feminine" bodily existence outlined by Young "occur not because women focus on their bodies before, during, and even after their action, transforming their bodies into objects in the process, but because many women mediate their own relationship with their bodies by seeing their bodies as they are seen by others and by worrying about what they and these (largely invisible) others are seeing as they are acting" (Weiss, 1998, pp. 46-47). Such statement draws with great precision the demarcation line between hyper-reflexivity and hyper-representation: whereas with the first term we refer to the subject's proclivity to focus on his bodily experience in general (body image included), something we may call an "inward turn" towards the body and that triggers the process of detachment from the latter, with the second one I refer to the contradictory condition in which the body is perceived as an object for oneself and for the others at the same time, something we may call an "inside-out

perspective" towards the body. In this last case, the level of the detachment I have mentioned has become so high that the body of the subject continuously re-presents itself to his consciousness in the form of an image that stands for an entity that is not recognizable anymore because it is no longer lived or felt, but rather experienced as external and extraneous. This new modality of bodily existence produces a disowned, disembodied body image.

The feminist theories on the body image are perfectly consistent with a phenomenological and experimental approach that has been recently adopted to investigate the nature of eating disorders, a category of mental illnesses that mainly affect women. This approach (Stanghellini et al., 2012; 2015; Gaete & Fuchs, 2016) was developed in order to provide an explanation for the onset of the distortions of the body image that characterize pathologies like anorexia nervosa and bulimia, such as the overestimation of one's own body dimensions and weight (Slade & Russell, 1973; Taylor & Cooper, 1986; Garner et al., 1987; Rosen, 1990; Fairburn & Harrison, 2003). The philosophical and empirical framework I am talking about is premised on two key assumptions: first of all, its proponents argue that the theories that the clinical research has drawn on to assess the impact and the extent of the alterations in the body image are based

upon a wrong conception of the latter, as they maintain that the body image is an objective parameter, something that can be captured as a picture or described in terms of a representation (see Gaete & Fuchs, 2016, p. 19). The second underlying principle is that all the symptoms typical of eating disorders, whether they are the ones involving the body image or behavioral anomalies such as starvation, are secondary epiphenomena to a deeper pathological core, that is the inability of the subject to embody his own body image (Stanghellini et al., 2012; 2015; Gaete & Fuchs, 2016; see also Fuchs, 2010, p. 557). In particular, the authors believe that "the reasons why persons with EDs overvalue their body shape and weight can be better understood as a specific disorder of lived corporeality, and more specifically as the predominance of one dimension of embodiment, namely the 'lived-body-for-others'" (Stanghellini et al. 2012, p. 148).

The theoretical foundations of the hypothesis put forward by Stanghellini, Gaete and Fuchs are fully in line with my description of the body image, that is, of an embodied and non-representational phenomenon, whose nature changes when the subject starts to thematically focus and to reflect on aspects of his bodily experience of the world such as his sensations, the emotions he feels about the body or even just the look of the latter. Once the condition of

disembodiment becomes extremely severe, the body turns from being lived to being (hyper-)represented, loses its private and intimate connotation and is perceived as a replica of itself; such a duplication process marks the passage from the body-as-subject to the body-as-object, and specifically from the body-for-oneself to the body-for-others, with the consequence that "one's identity becomes reified by the gaze of the other, and reduced to the external appearance of one's own body" (Stanghellini et al. 2012, p. 148).

Interestingly, the embodied approach to eating disorders largely overlaps with another theory that has been developed to account for the nature of these pathologies, namely the "self-objectification theory" (Fredrickson & Roberts, 1997; Dakanalis & Riva, 2013), according to which eating disorders are characterized by the increased tendency of the patients – in the vast majority women – to take a third-person perspective towards their own body and, consequently, to treat it as an object that must be evaluated exclusively in terms of how it looks. Self-objectification usually manifests itself as a range of attitudes that cannot but enhance the individual's sense of disembodiment – such as a persistent body surveillance or the habitual monitoring of the body's outward appearance – and often triggers a feeling that phenomenologists describe as the impression of being

both exposed to and unable to avoid the gaze of the others (see Fuchs, 2002). Moreover, many studies have proven that there is a relationship among self-objectification, eating disorders and the diffusion of certain kinds of media. For instance, whereas a research carried out on the members of the media-naïve Fijian society showed that their prolonged exposure to television shows typical of Western culture led to the emergence of dysfunctional eating behaviors in the adolescent girls (Becker et al., 2002), a significant number of experiments demonstrated how the spread of ultra-thin models of feminine corporeity fostered by different types of media correlates with the increase in the incidence of feelings that are prodromal to the onset of eating disorders, such as shame (Groesz et al., 2002; Grabe et al., 2008; see also Dakanalis & Riva, 2013). Against this background, there are two main reasons why I think that self-objectification theory is extremely worthy of attention: the first is that it corroborates the observations on the gender gap in the ability – or, it would be better to say, in the *possibility* – to internalize one's own body image, thereby broadening the horizons for the feminist and, more generally, enactivist and embodied approaches to cognition. The second reason is that such theory suggests that the messages conveyed by the media and, most importantly, what they allow us to do have a

causal link with the exacerbation of the tendency to take a third-person perspective towards one's own body, namely what I called here hyper-representation. Therefore, I believe that exploring this term might provide us with a new key to understanding the relationship between media and the body image, considered that the detrimental effects that the former have on the latter seem to be inevitably enhanced by the uncontrolled use of technological tools and virtual platforms that give us the opportunity to continually produce a huge amount of representations of our body, something I would speak of in terms of a hyper-representation phenomenon on a wide scale. Employing the notion of hyper-representation to investigate and assess the impact that media have on the emergence of psychopathologies that are strongly influenced by the sociocultural context (such as eating disorders), thus, might reveal as one of the best potential uses for this new concept and a good starting point for future research on the brain-body-environment system.

3.5 The body image vs. the image of the body

In §3.2 I quoted a statement made by de Vignemont, according to which "cognition can […] be said to be embodied because it is

affected by the way the body is represented in the mind" (de Vignemont, 2018, p. 4). As I have already said, I fully concur with such a claim, but for reasons other than the ones underlying de Vignemont's position. My disagreement with the latter is due to the fact that I do not go along with the body image/body representation equivalence suggested by de Vignemont and, more generally, by the whole neuroscientific literature on the topic. In this chapter, I have tried to show that the body image is not the outcome of a volitional, reflective thematization of the bodily experience, nor a static representation of how the body is perceived by oneself or the others, but rather a complex and ever-changing process that is influenced by factors that are often beyond our control and our awareness. In short, the body image is not an image of the body.

Nonetheless, we can always produce images of our body: we can look in the mirror and recognize our figure; we can draw, photograph or even digitally edit the appearance of our body; we can focus on single or multiple parts of the latter and imagine how they would look like with different features; the list might go on and on. Such abilities, which are some of the many correlates of the linguistic ontology of our species, usually develop and are mastered through experience and time, without this necessarily leading to a hyper-reflexive attitude

towards the body and to hyper-representation. However, psychopathology teaches us what happens when this attitude emerges: whereas the schizophrenic talks about the events involving his body in terms of a succession of "frames" captured by an external, mechanical and soulless entity, a person who suffers from eating disorders perceives her body as an object, a replica in which she can no longer identify her own self. At this point, it seems like we can outline a polarization between the body as it is described by enactivism – that is, a body that allows a direct and dynamical interaction with others, that moves in perfect attunement with the environment and that does not rely on any representational activity – and the patient's body as it is described by phenomenological psychopathology, which is to say, a body made heavier and stranger by the persistent tendency to hyper-reflect on it. Obviously, these two extremes are not the only ways one can experience his/her own corporeity; there is a continuum that separates them, made of different intermediate modalities of bodily existence. In this respect, I believe that the feminist theories on the body image provide us with great examples of such intermediate forms, given that they account for modalities of bodily existence that, despite not being pathological, are marked by the presence of that hyper-reflexive stance that can easily

result – and sometimes does result – in hyper-representation and mental disorders. Therefore, I believe that the framework made up by the opposition between enactivism and phenomenological psychopathology may turn out to be useful for assessing both to what extent cognition can be said to be embodied under certain circumstances and how the experience of our body is shaped by environments and media with certain features. This is the topic I will address in the following, final chapter, in which I will juxtapose the impact of visual media on the exacerbation of eating disorders with the use of Virtual Reality to treat them (Perpiña et al., 2003; Riva et al., 2002; Riva, 2011; Gutiérrez-Maldonado et al., 2018; Serino et al., 2016). This operation will serve a double purpose: on the one hand, it will be useful for providing arguments in favor of the embodied approach to eating disorders; on the other hand, it will show that the effects that media have on the body image is not always detrimental (like many of the studies on the relationship between psychopathology and media seem to imply), but rather depends on the intrinsic nature and functions of the technologies taken into account.

Chapter 4

The role of media in the emergence and treatment of eating disorders

In the previous chapter I have introduced the notion of "hyper-representation" to account for the exacerbation of the tendency to take a third-person perspective towards one's body, claiming that this is a typical trait of eating disorders. This phenomenon, albeit with a different terminology, has been deeply investigated by the psychopathological literature: to mention a few examples, Stanghellini et al. (2012) defined eating disorders as a class of pathologies predominated by the dimension of the "lived-body-for-others" (see §3.4); Fredrickson & Roberts (1997) proposed the "self-objectification theory" to account for the adoption of a detached perspective on the body as opposed to a first-person stance "such that girls and women come to place greater value on how they look to others rather than on how they feel or what they can do" (Calogero, 2012, p. 575); finally, Riva (2011; 2012; 2015) claims that patients suffering from eating disorders are lock to an allocentric position with respect to their body, that is to say, they experience it as an outside observer would rather than from an egocentric standpoint. According

to the allocentric lock hypothesis, thus, in eating disorders the body is not lived as the source from which all the somatoperceptions stems or the center to which they convey, but as an external entity that can only be represented through the distorted lens of the psychopathological condition.

In the remainder of this chapter I will dwell both on the self-objectification theory and the allocentric lock hypothesis in order to show that the application of these theoretical frameworks can positively contribute to the study of the relationship between media and eating disorders. In the past three decades, in fact, a large body of literature has been devoted to assess the repercussions that media have on the onset and worsening of eating disorders symptoms and predictors; however, only a few of these studies have adopted an embodied approach to eating disorders, describing them in terms of a shift from a first- to a third-person perspective towards one's own body.

The chapter will be divided in two sections: in §4.1 I will focus on those studies that proved the correlation between the diffusion of media based on visual representation (such as television, magazines, music videos and, more recently, social networks) and the emergence and worsening of eating disorders symptoms and predictors, arguing

that this is due both to an "internalization" of some models of corporeity and a process of "externalization" of one's body image. In §4.2 I will explore the literature on the use of Virtual Reality (VR hereafter) to treat eating disorders, in order to show that the positive impact that this tool has on the clinical condition of the subjects is both an index of the importance to "bridge the gap" that separates the patient from his/her own body image and a good starting point for rethinking the role that media might have in promoting a positive experience of one's corporeity.

4.1 Self-objectification theory and the impact of visual media

The self-objectification theory put forward by Fredrickson & Roberts (1997) posits that women in Western society are under the constant pressure of a sexually objectifying gaze. According to the authors, who draw from the background of feminist theories on socio-cultural disparities between the sexes (Bordo, 1993; Smuts, 1994), women and young girls are subject to a series of cultural practices and experiences that make them perceive their body not as the expression of their own identity, but rather as an object that must be evaluated only in terms

of attractiveness and acceptability. The shift from the body-as-subject to the body-as-(sexual) object "is one of many cultural practices indicative of patriarchy" (Fredrickson & Roberts, 1997, p. 281) and is a phenomenon that is deeply interrelated with the diffusion of certain kinds of ideal corporeity (usually, an ultra-thin one for females and a muscular one for males) fostered by the media.

Over the last three decades, a lot of studies addressed the role of media in promoting the emergence of body image concerns, showing that the latter often lead to and precede abnormal eating behaviors. One of the most investigated forms of body image concern is body dissatisfaction, which is proven to be a good predictor of eating disorders (Rohde et al., 2015) and associated with the development of depressive symptoms and binge eating (Dunkley et al., 2010). A large body of research has demonstrated that the relationship between body dissatisfaction and eating disorders is mediated by the exposure to models of ideal corporeity that can be found in a huge variety of forms of entertainment: for example, Shaw (1995) and Tiggermann & McGill (2004) showed that adolescent girls are particularly sensitive to the images of thin and attractive women spread in fashion magazines, reporting negative feelings such as anxiety, an excessive tendency towards comparison and an overall feeling of uneasiness

about their body; Tiggerman & Slater (2004) and Bell et al. (2007) investigated the role that music videos featuring thin idealized women have in enhancing negative attitudes towards one's own body. They found out that this peculiar kind of entertainment is positive correlated with the drive for thinness – which is one of the primary indicators for anorexia nervosa – and that "adolescent girls exposed to thin models in music videos show a significantly larger increase in body dissatisfaction from pre- to post-exposure in comparison to girls who had listened to the songs without visual input" (p. 143); finally, Tiggermann & Pickering (1996) and Lavine et al. (1999) addressed the impact that TV shows and commercials have on body image concerns, i.e. indicating that the time spent watching soap operas and movies starring women in stereotyped roles is positively correlated to body dissatisfaction and that women exposed to sexually objectifying ads tend to judge their body sizes as larger than they actually are.

There are at least two interesting aspects shared by the above studies. The first is that they are all consistent with the self-objectification theory. What clearly emerges from this line of research, in fact, is that negative attitudes and feelings towards the body such as body dissatisfaction or drive for thinness are the outcome of an overall perception of the body as an object that must be evaluated and

presented according to certain standards of visual attractiveness. However, it is important to highlight that the objectifying power of the ideal bodies displayed by mass media does not lie only in their sexual desirability, but also (and, perhaps, most importantly) in their being a form of representation that is completely detached from the identity of the subject. When the body of a model or an actress is "used" for advertising purposes or for perpetuating a stereotype of beauty, in fact, it ceases to be the bearer of one's identity and turns into a representation of a status quo, an empty image that gets easily internalized by the most sensitive and susceptible subjects, such as children and adolescents[6]. As Calogero et al. (2005) put it, "the viewing of sexually objectifying images of women in visual media (e.g., magazines, music videos, television shows) may be a contributing factor to the chronic viewing of *oneself* as a sexual object

[6] In this respect, it is important to highlight that "although most people are aware of societal standards of beauty, not everyone internalizes those standards to the same degree, and it is those who do internalize the societal standards who are at greatest risk of body dissatisfaction and eating disorders" (Fardouly et al., 2018, p. 1381; see also Stice, 2002).

if those images become integrated into one's self-perception" (p. 47, emphasis added). I will come back to this issue below.

The second aspect underlying the studies that I mentioned is that they agree in describing the internalization of the others' body representations as one of the main causes behind body dissatisfaction. The internalization of the idealized images portrayed by the media is the process through which a subject embodies certain salient features of those images (such as the thinness or the overall shape of the model's body) and involuntarily recalls them during everyday life, letting them become a benchmark for the evaluation of one's own bodily appearance. This exacerbated tendency towards the (often unconscious) comparison with the images of the others' bodies is a distinctive hallmark of the relationship between young girls and the most influential form of mass media of our days, that is, social networks.

The first studies that addressed the correlation among the use of social networks, body image concerns and the reinforcing of abnormal eating behaviors focused their attention on Facebook. In a research carried out by Mabe et al. (2014), for example, the authors found that "women with greater eating pathology not only reported spending more time on Facebook […], but also reported engaging in

appearance-focused behaviors, such as comparing their appearance to friends' pictures and untagging photographs of themselves" (p. 520). The results of this study have been replicated and extended over the years. Fardouly & Vartanian (2015) showed not only that the relationship between Facebook usage and body image concerns is mediated by the tendency to compare one's look to the others' appearance, but also that the comparison with distant peers has a stronger influence on body image concerns than the comparison with models or celebrities. According to the authors, "this difference may be due to the appearance of distant peers being seen as more attainable than the appearance of celebrities" (p. 86). Meier & Gray (2014) highlighted the importance of considering the differences between Facebook and traditional media, suggesting that are the peculiar kinds of interaction allowed by Facebook (i.e. sharing and posting photos of oneself and friends, social grooming etc.), rather than the total time spent navigating on it, that are significantly linked to the emergence of body image disturbances. Lastly, Kim & Chock (2015) not only replicated Meier's and Gray's results, showing that using Facebook for photo-based activities is more strongly associated with body image concerns than overall Facebook exposure, but also demonstrated a positive correlation between social grooming on

Facebook and the drive for thinness, confirming that “social media tend to influence body image concerns via appearance comparison” (p. 337).

Consistently with the outcomes of the research carried out on Facebook usage, many authors found an association among the use of Instagram, body image disturbances and the emergence of eating disorders predictors. Unlike Facebook, Instagram is a social platform that is based exclusively on the production and the consumption of representational material, such as photos, videos and “stories” (brief videos during which the user shares moments and events of his everyday life). Giving the peculiar nature and the success of Instagram, researchers wondered whether this social network could be related to the spread of maladaptive eating attitudes among young girls in Western societies and to the diffusion of body image concerns, such as body dissatisfaction and body surveillance. For example, Brown & Tiggermann (2016) examined the impact of the exposure to attractive celebrities images in comparison to equally attractive unknown peers photos and travel images, showing that whereas the former two strongly correlated with the onset of negative mood and body dissatisfaction, the latter did not. These results proved not only the detrimental effects of a social comparison based exclusively on

appearance, but also that the self-objectification theory is right when it states that images in which the female body is the "product" are more likely to generate body uneasiness than images in which the body finds itself in a context that tells us something about the identity of the subject. In similar fashion, a study carried out by Cohen et al. (2017) demonstrated that following appearance-focused or "health and fitness" accounts on Instagram is associated with great levels of thin-ideal internalization, body surveillance and drive for thinness, stressing that these forms of body image concerns are established risk factors for disordered eating (see p. 186). A research that goes in the same direction is the one by Fardouly et al. (2018), who found that "the internalization of the beauty ideal mediated the association between Instagram usage and self-objectification" (p. 1390) and claimed that, since "the images posted on Instagram can be carefully selected, edited, enhanced and may contain idealized representations of women's physical appearance […] viewing images on Instagram might enhance the salience of the societal beauty ideal ultimately, thereby increasing the extent to which women internalize that beauty ideal" (p. 1390). Finally, Butkowski et al. (2019) showed that young girls who are particularly involved in selfie-sharing activities and attitudes such as investment in photo selection and editing are more

likely to develop both disordered eating behaviors and an exacerbated tendency towards body surveillance, that is, a preoccupation with scrutinizing one's own appearance.

What emerges from the above studies and especially the last one, is that the impact that social networks have on the emergence of body image disturbances and eating disorders predictors seems to be strictly related to the use that the subject makes of such platforms. In particular, it looks like being engaged in activities such as selfie sharing and editing is more strongly associated to the onset of an exaggerated proclivity towards body surveillance and self-monitoring. This last consideration allows me to return to the self-objectification theory and to stress why it is important to apply this theoretical framework to the field of social media. Compared to traditional media, in fact, social networks enable not only to internalize certain models of corporeity, but also to produce a huge amount of external images of oneself. The twofold internalization/externalization function of social networks accounts for the relationship between the objectification of the others' body and self-objectification as it is described by Calogero et al. (see above): it is likely that the more girls and women become accustomed to seeing the others' body as an object or a sexually connotated image, the more

they will engage in an appearance-based hyper-representation of themselves, thereby increasing the tendency towards the compulsive monitoring of their own look and self-distance. This point is perfectly consistent with the observations coming from some feminist theories on the body image (see §3.4), according to which the embodiment of an observer's gaze within the perception of one's body is the fundamental issue underlying the condition of women in Western society. Against this background, it seems that social media do not play a positive role, since they push people towards the adoption of a third-person perspective, often fueling that sense of disembodiment that is both a typical trait of women's condition and a core symptoms of eating disorders.

4.2 VR and the allocentric lock hypothesis: regaining the first-person perspective

The self-objectification theory is complementary to another hypothesis, put forward by Riva (2011; 2012; Riva et al. 2015), that is, the allocentric lock hypothesis. Both the theories posit that many body image disturbances and related psychopathologies such as eating disorders are rooted in an initial impairment in the perception

of one's body, which can be described in terms of a shift from a first- to a third-person perspective towards it. However, whereas the self-objectification theory focuses especially on the sociocultural causes behind such a shift, the allocentric lock hypothesis addresses the cognitive mechanisms underlying it. Specifically, Riva claims that pathologies like eating disorders are marked by the predominance of an allocentric stance over an egocentric one.

According to Riva (2011; 2012; Riva et al. 2015), thus, there are two different frames of reference with respect to the body:

- The *egocentric frame* (or *field mode*): when we find ourselves in the egocentric frame, the body is lived as the source from which all the somatoperceptions stems and the center to which they convey. The egocentric frame corresponds to what I have referred to as the first-person perspective; in this modality, in fact, the way in which we gather sensorial inputs from the environment depends on the position of our body with respect to the surrounding and changes according to our movements. In the egocentric frame the body is experienced as a *medium*, that is, as the primordial standpoint from which the world reveals to our senses.

- The *allocentric frame* (or *observer mode*): in the allocentric frame, the body is perceived as an object in the world, something that is external to the self. This modality, in fact, accounts for the ways in which we conceptualize, judge or mentally represent our own body, as if we were an outside observer. Importantly, the allocentric frame involves also the long-term memory about one's body: for example, an early trauma such as having being bullied during childhood could lead me to put myself in a position from which I judge my body to be fat, no matter what my physical appearance is. According to Riva, this is precisely what happens in eating disorders. Due to sociocultural pressure or traumatic experiences, in fact, at some point patients with eating disorders are "locked to an allocentric negative representation of their body that their sensory inputs are no more able to update even after a demanding diet and a significant weight loss" (Riva et al., 2015, p. 35). In a nutshell, a person who suffers from an eating disorder fails in estimating her body size and shape despite the changes that occur due to behaviors such as starvation and vomiting, because she finds herself stuck in a distorted representation of her body that can no longer be adjusted via the egocentric reference.

The allocentric lock hypothesis proved extremely useful in providing a solid theoretical background to the clinical treatment of eating disorders through VR (Perpiña et al., 2003; Riva et al., 2002; Riva, 2011; Gutiérrez-Maldonado et al., 2018; Serino et al., 2016). VR is a virtual experience that "uses computer technology to create a simulated world that individuals can manipulate and explore as if they were in it" (Riva, 2018, p. 7). VR has shown good efficacy for both relieving the symptoms of many pathologies, from anxiety disorders (Wiederhold & Wiederhold, 2005, Carl et al., 2019; Freeman et al., 2017) to post-traumatic stress disorder (Difede & Hoffman, 2002), and treating impairing phobias such as acrophobia (Opdyke et al., 1995) and flying phobia (Baños et al., 2002). The reasons behind the clinical success of such tool are to be found in its specific characteristics, which allow the subject to live an extremely immersive experience. VR, in fact, consists of a system (see Zheng et al., 1998) made up by sensors (which register the position and movements of the subject's body), effectors (which stimulate the subject's senses) and a reality simulator – i.e. a head-mounted display with a small screen in front of the eyes – that, working together, are capable of recreating environments and situations that would be otherwise inaccessible or distressing for the individual.

The reassuring aspect of VR is particularly relevant for its clinical usage. According to Perpiña et al. (2003), the greatest advantage in relying on such a technology lies in the fact that it constitutes a "safe space" that the patients can explore and in which they are free to express actions, feeling and thoughts without fearing the consequences that they would suffer (or that they think they would suffer) in the real world. This sense of relief and protection, together with the interactivity of a context in which the patient has to actually move his body in order to achieve his goals, facilitates the emergence of "the sensation of being present, surrounded by a reality whose perceptive indications are recognized by us, are found believable, they impact us emotionally, and get us to feel present (to be there) in a world that responds to our interaction with it" (Botella et al., 1998, p. 77). As I will state below, letting the patient regain the first-person perspective and the sense of being-there is a crucial step for the treatment of eating disorders.

Going back to the allocentric lock hypothesis, consistently with the observations coming from it VR has been used to treat eating disorders by "adjusting" the wrong representation of the body through different strategies, such as recreating avatars that had sides and shapes similar to the ones of the subject, or recurring to the

“body swapping”, a method in which VR induces the illusory sensation of being the owner of a body with a different shape and/or size.

An example of the first strategy can be found in the aforementioned study by Perpiña et al. (2003), in which the authors designed a virtual environment consisting of a kitchen where an avatar with proportions similar to that of the experimental subject could simulate actions such as eating healthy or fat foods. The purpose of the study was to help the participants (girls suffering from anorexia nervosa and bulimia nervosa) not to overestimate their weight after eating. The eighteen patients were randomly assigned to two different treatment conditions, only one of which involved the use of VR. After the participants completed the treatment, “those who had been treated with the VR component showed a significantly greater improvement in general psychopathology, eating disorders psychopathology, and specific BI variables” (p. 267). Among the several reasons given by the authors to explain the success of VR usage (see pp. 268-269), the one that is more consistent with the premises of the allocentric lock hypothesis is that VR allows the patient “to ‘embody’ her body image” (p. 268), that is to say, it recreates a relatable first-person perspective and lets the patients

experience the effects of their behavior from an egocentric and representations-free point of view.

An example of the body swapping strategy can be found in a study by Serino et al. (2016), in which the authors asked the participants (21 female subjects) to retrieve the memory of their body (allocentric) representation and to estimate the width and circumference of different body parts – such as abdomen and hips – on the basis of the recalled memory; then, the authors asked the subjects to wear a head-mounted VR display that showed a virtual body with a skinny belly, inviting them to estimate the measures of shoulders, abdomen and hips of the body they were experiencing from an egocentric stance. Finally, the authors asked the participant to repeat the estimate of the measures of the retrieved body, in order to assess whether the embodiment of a body perceived from a first-person perspective changed the allocentric representation of the subject's actual body or not. The results showed that "after participants embodied a virtual body with a skinny belly […] there was an update of their "remembered body". Specifically, participants reported a decrease in the ratio between estimated and actual body measures for most of the body parts considered" (p. 131). Also in this case, the experimental outcomes prove the

accuracy of the allocentric lock hypothesis, since they demonstrate how important it is to feel one with the body (even if this is just a virtual one) in order to reduce body uneasiness and self-distance.

In conclusion, I would like to stress that the literature on the usage of VR to treat eating disorders shows how pointless it is to demonize the role that media play in Western society, rather emphasizing the urgency to analyze the impact that the different functions of media have on our cognition. The effectiveness that VR has in medical context is a perfect example of that, since it has implications that go beyond this field of research and sheds light on what a truly embodied approach to cognition should be all about: identifying the heterogenous conditions in which the discrepancy between body, consciousness and environment occurs and providing theoretical and empirical frameworks useful for preventing or mitigating the effects of such a phenomenon.

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