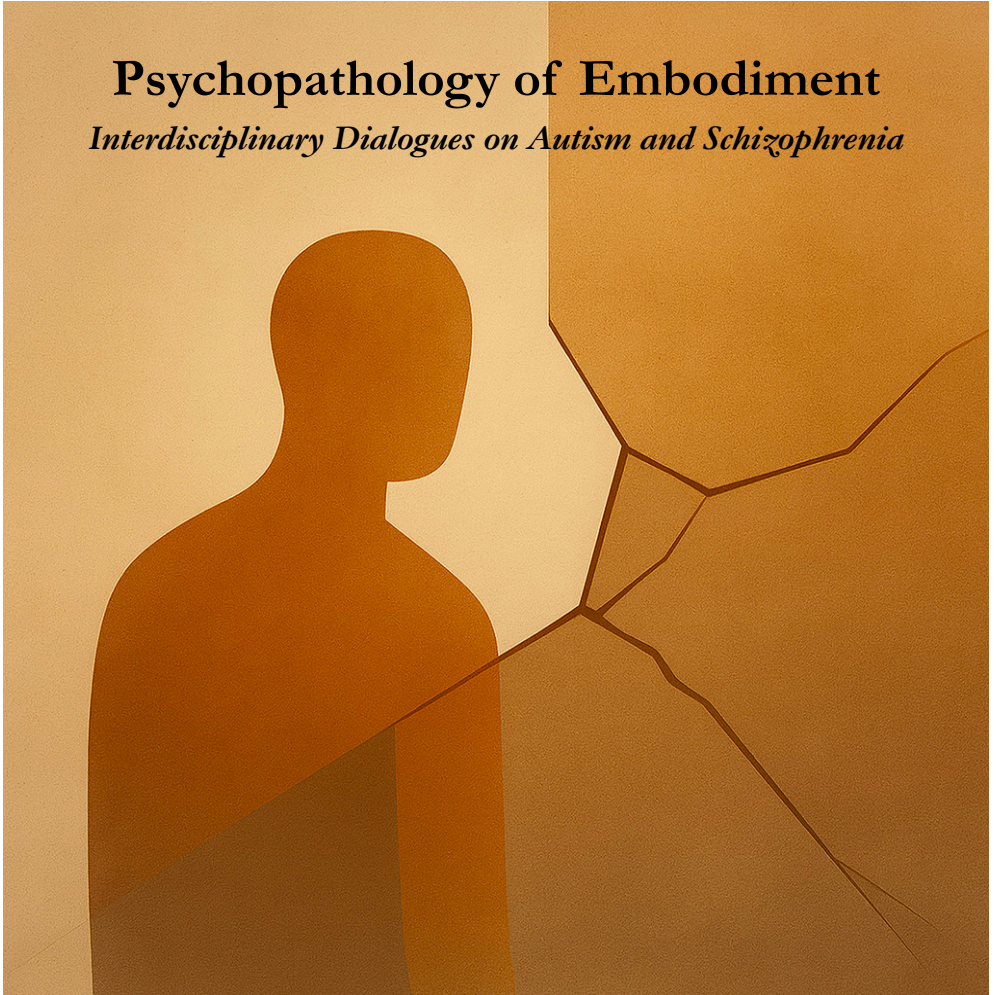


I LINGUAGGI DELLE  
SCIENZE COGNITIVE

GIOVANNI PENNISI (ED.)

**Psychopathology of Embodiment**  
*Interdisciplinary Dialogues on Autism and Schizophrenia*



(CORISCO)



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Luigi Lobaccaro

*Mirrors, Enunciation, and the As-If Function in Schizophrenia*

**Abstract**

This commentary critically discusses Pennisi's proposal that self-face mirror misidentification (S-FMM) in schizophrenia originates from disruptions of synchronic self-continuity driven by altered corollary discharge mechanisms. While this account offers a plausible route from sensorimotor desynchronization to mirror estrangement, it risks treating S-FMM as an umbrella label that conflates heterogeneous phenomena. By re-examining the clinical vignettes mobilized in support of the model, we argue that several cases primarily involve disturbances of the *self observing* (depersonalization, loss of embodied anchoring, hyper-reflexive capture) while leaving intact the recognition of the *self observed* in the mirror. To account for transitions from mirror estrangement to full-fledged misidentification, we propose analyzing mirrors as enunciative prostheses that operationalize an *as-if* stance – i.e., an unstable mediation between embodied centering and virtual third-person positions – whose breakdown can underwrite transitive confusions and, in some cases, delusion-like reinterpretations. In conclusion, I outline a tentative hypothesis, inspired by models of Capgras delusion, according to which mirror misidentification may involve an affective disruption of self-familiarity that triggers aberrant sense-making and narrative stabilization.

**Keywords**

Schizophrenia; Mirror self-recognition; Self-face mirror misidentification (S-FMM); As-if function; Enunciation

## **1. Introduction: The Pitfalls of a Multidimensional Phenomenon**

This essay reflects on mirror-recognition disorders by taking as its point of departure Pennisi's "Schizophrenia and the "Unrecognizable Face": Bridging the Gap between Synchronic and Diachronic Aspects of Self-Continuity" (this volume). In that essay, Pennisi offers a theoretical model to explain the emergence of self-face mirror misidentification (S-FMM) in patients with schizophrenia. For Pennisi, S-FMM results from a breakdown in the balance between two forms of self-continuity: a *synchronic* form, tied to the capacity to integrate diverse bodily information into a unified representation of the self located within a phenomenological time and space; and a *diachronic* form, tied to the stability of identity over time (itself connected to memory, narrative, and cultural belonging).

The component that is initially compromised is the synchronic one, due to an alteration of the mechanisms of *corollary discharge* (CD) – i.e., signals that help the brain maintain perceptual coherence and predict the consequences of its own movements (Poletti and Raballo 2019). An alteration at this level would produce a desynchronization between self-perceived movement and the movement observed in the reflected face, which may appear static, unmoored, alien. On the basis of this experience of detachment and lack of recognition of the mirror image, Pennisi argues that the development of full-blown mirror misidentification (S-FMM) can follow.

At the same time, the essay discusses cases related to the "strange-face illusion" (Caputo 2010), showing that patients with schizophrenia are less susceptible to certain induced transformations in mirror-like face stimuli. Pennisi's idea is that this phenomenon is linked to patients' familiarity with recognizing themselves through faces that appear distorted/other, a familiarity tied to forms of hyper-reflexivity (Pennisi and Gallagher 2021).

Pennisi's proposal is ambitious, and it aims to open up the understanding of a phenomenon such as schizophrenia-related mirror-gazing, which has so far received limited attention in the literature.

Perhaps for this very reason, the proposal attempts to unify a wide variety of phenomena by bringing them back to a now-classic model in psychopathology, namely the Ipseity Disorder Model (IDM) / Hyper-reflexivity model (Parnas and Sass 2003): on the one hand, corollary discharge accounts for a certain disorientation in front of the mirror image, insofar as it loses a spontaneous and immediate link with one's world and one's movements; on the other hand, an excessive focus on one's own experience in the mirror leads to the conclusion that the face deformed by the illusion, even if altered, must nonetheless be one's own.

Such an operation may, however, involve two risks. The first is that it may reduce the concept of phenomenological hyper-reflexivity to a kind of self-dialogical rumination, thereby placing the disturbance of ipseity on an embodied, pre-reflective, perceptual, implicit, and experiential dimension, while treating hyper-reflexivity as a shift to a reflective, explicit dimension associated with second-order, conceptual cognition. We know, however, that – at least in the classic phenomenological model – these two dimensions are structurally connected to one another without any relation of logical precedence. They present themselves as two sides of the same coin already at a pre-reflective level (Sass and Parnas 2003; Sass 2014; Sass 1992). For instance, Pennisi discusses the case of Eva in order to explain the early phases of the mirror-gazing crisis:

I don't recognize myself completely in the mirror, as if I look like a stranger. I look in the mirror quite often. Sometimes I may stand before the mirror for half an hour without doing anything, but I don't know why I'm doing it (Værnes, Røssberg and Møller 2018, 202).

In this case, one can note that alongside the crisis of recognizing one's own face there is also a morbid scrutiny of the image, and a form of hyper-reflexivity that is first and foremost experiential: a perturbing experience that is repeatedly placed at the center of the field of consciousness. Once this point is clarified, it is certainly possible to follow Pennisi in observing the ways in which both a disturbance

of ipseity and a hyper-reflexivity – both characteristic of synchronic consciousness in schizophrenia – may generate a network of causal phenomena on the diachronic dimension through compensatory processes (Sass 2014).

However, the very attempt to trace this shared development lies at the heart of a second risk, tied to the contradictory outcomes of such a trajectory. How can one justify a psychopathological evolution that, starting from the same pair of phenomena in the IDM/Hyperreflexivity model, would lead both to mirror misidentification and to its exact opposite, namely hyper-identification with a distorted image? One cannot exclude that this may be possible if we think of the two phenomena as forms of reorganization arising from the same experiential breakdowns. At the same time, if hyper-identification with a distorted image is possible through hyper-reflective reasoning, it is unclear how such hyper-reflective reasoning would come to be entirely suspended when, in the mirror, one misidentifies one's own image. This raises the suspicion that such heterogeneous phenomena might belong to two different orders of explanation, even though there is a temptation to keep them together because both occur in front of a mirror.

For example, in light of other data we have on schizophrenic perception, such as a high resistance to perceptual illusions and a lower sensitivity to Gestalt catastrophes (Dima *et al.* 2009), one might read the results of Caputo's experiment (2010) as a manifestation of reduced reactivity to a categorical change induced by a mutation in a figure's Gestalt properties. On this reading, patients, rather than identifying with a face transformed at a reflective level, simply fail to register the transformation at the perceptual level.

To sidestep this set of problems – difficult to disentangle without further empirical studies – this article will offer some reflections in dialogue with Pennisi's considerations by focusing only on one aspect of his model, namely the development of the misidentification delusion, which would find its roots precisely in a disturbance of corollary discharge. We will try to show, following Pennisi's own suggestion, that when addressing cases of misidentification delusions it is neces-

sary to appeal to a whole range of dimensions connected to the repertoires of meaning an individual brings to the situation, and to attend closely to the operations of experiential sense-making.

## **2. Failing to Recognize Oneself *from* the Mirror, Failing to Recognize Oneself *in* the Mirror**

Pennisi's hypothesis – namely, that one should start from a disturbance of ipseity in cases of altered mirror-gazing – is, in our view, crucial, and it frames the problem from the right perspective. We know, for instance, that children acquire the capacity to observe themselves in the mirror through sensorimotor coordination and through the analysis of contingency between the movement performed and the movement observed on the reflective surface (Zazzo 1993). We also know that this capacity always develops within a cultural environment guided by other subjects, and that it emerges in part thanks to the mirror's material properties (Rochat and Zahavi 2011; Koukouti and Malafouris 2021; Lobaccaro and Bacaro 2021). In short, the sensorimotor, material, intersubjective, and cultural dimensions are deeply interrelated in the ways we ordinarily use mirrors, so much so that we employ them for the most diverse purposes, both across different cultures and within the same culture (Pendergrast 2003; Fabbri 2002).

It is therefore clear that if schizophrenia is characterized as a disorder that primarily affects the phenomenological level connected to a sensorimotor sense of agency and to a proprioceptive affectivity (Gallagher 2005; Sass, Parnas and Zahavi 2011), this may have consequences for mirror-gazing. With the idea that there is a disturbance at the level of corollary discharge and efference copy (Poletti and Raballo 2019), it indeed becomes possible to account for why some patients experience perturbations in front of the mirror image. A disturbance of the sense of agency would thus produce a loss of recognition in one's own image. Let us return to the case discussed by Pennisi:

When I look myself at the mirror I have the feeling that I do not exist, it's difficult to explain, for some time it feels like I never existed, and that now it's the first time I put my feet on the Earth planet... it's difficult to tell, but it's

like this, can you understand it? It lets me puzzled yet curious... I think about it all the time [...]. When I look at the mirror, for example washing my face or my teeth, after a while I feel I do not exist, as if the mirror makes me forget who I am... my image at the mirror is always the same, it doesn't change... then I try to close my eyes but when I open them I have the same feeling... I don't like mirrors so much... but when I go away from the mirror everything is perfect once again. This feeling lets me astonished, dazed, and scared at the same time. (Poletti and Raballo 2019, 319)

Beyond testifying to an experience of bewilderment in front of the mirror, that is perhaps more common than one might think, (Carpenter 1976; Morin 2016; Lacan 1966; Merleau-Ponty 1964; Lobaccaro 2023; Boldsen and Hughes, this volume) the patient explicitly reports a series of experiences that can be traced back to a disturbance of ipseity connected to the sense of agency.

What is interesting to note, however, is that the initial case discussed by Pennisi does not manifest in any way either a form or even a principle of S-FMM. It is in fact readily observable that there is a very strong identification between the face in the mirror and the patient's own image, and the patient shows a clear awareness that the face is indeed his own. What is reported is rather that mirror-gazing produces a distancing from one's flesh-and-blood self in front of the mirror, a distancing that dissolves into an imaginative flight.

Here Pennisi introduces a distinction that arguably does not facilitate the argument. He distinguishes two dimensions of embodiment: the *sense of agency*, namely the pre-reflective feeling that certain actions or movements of the lived body are caused/controlled by oneself; and the *sense of ownership*, namely the idea that a given bodily experience is one's own (Gallagher 2005). Now, we know that in schizophrenia a fundamental disturbance of the sense of agency can lead to a form of de-animation accompanied by a peculiar sense of ownership, as if the body were a machine one possesses but is unable to inhabit (de Haan and Fuchs 2010). In turn, we can distinguish a sense of ownership as a *feeling* (a felt sense that the body is mine) from a *judgement* of ownership, that is, the knowledge that this body

is mine (David and Ataria 2021).

The mirror image does not concern these dimensions, which are tied to the lived body and to the body schema; rather, it concerns what is called *body image*. That is, the mirror reinforces and completes a reflective image of one's body (Lobaccaro and Bacaro 2021). In this sense, rather than speaking of a bodily ownership of the mirror image or of a judgement of bodily ownership<sup>1</sup>, it would perhaps be better to speak of *self-attribution* of the mirror image, since under ordinary conditions we do not feel that the body in the mirror is ours. On the contrary, the effect of the mirror is precisely to give us the sense that our body is doubled, and that we see it from the outside, as if it were an other standing before us, something that only after some familiarity we learn to conceptually attribute to ourselves (Lobaccaro 2023; Rochat and Zahavi 2011).

Even in the Eva's case, it is clear that the patient is stupefied by the mirror image that captures and fascinates her, because it seems as if the face were that of a stranger; yet there is never an explicit misidentification. What we have, rather, is a feeling of non-correspondence. It is as if these patients were undergoing a phase typical of the acquisition of mirror self-recognition, what has been called the "Me-but-not-me paradox" (Rochat and Zahavi 2011), characterized by a state of confusion between the sense that the image in the mirror is one's own and the sense that it is another. The image is felt *as if* it were that of another, and *not* as that of another.

On closer inspection, recognizing one's own image in the mirror is always a phenomenon grounded in a certain degree of *as-if*.

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<sup>1</sup> Having a self-ownership of the mirror image is precisely what may occur in certain schizophrenic manifestations – namely, in those delusions that are classified as transitivity and that Pennisi cites among phenomena of strange mirror perception (cf. Kimura 1994, 94; Parnas and Sass 2001, 109). These are cases in which patients struggle to distinguish between their flesh-and-blood self and their mirror image – for instance, a patient discussed by Sass who avoided looking at himself when walking past shop windows for fear of being "captured", and of becoming uncertain about which part of the window he actually occupied (cf. Parnas 2003, 232). We will return to this point in depth in the next section.

Elsewhere (Lobaccaro 2023) I have argued that the mirror constitutes a zero-degree of enunciation (Fabbri 2002): that is, the phenomenon through which we are able to disentangle a self – characterized by an *I*, *here*, *now* – from a non-self, *not-here*, *not-now*, through an impersonal third space that we can occupy in different ways. The classic example of enunciation is linguistic: when we speak, we project ourselves into a possible world that opens up multiple spaces. We can talk about other things, narrate someone else’s story (a *he*), or use language by referring to the situation of enunciation through specific linguistic elements such as *I* and *you* (Benveniste 1966). Both operations are made possible by an impersonal semiotic space that mediates between an egocentric position of perception and the allocentric position of the possible world we set up (Paolucci 2020). The mirror works in exactly the same way: it is a reflective surface that allows us to project ourselves into possible worlds – so much so that in various cultures (not least our own, as in Carroll’s *Alice*) the mirror can function as a portal to other worlds, which we can then use *as if* they were identical to the one we inhabit (Malafouris and Koukouti 2021).

When we look at ourselves in the mirror in the morning, we can use the mirror image *as if* it were an *I*, checking our face; but also *as if* it were a *you*, in order to see the effect that certain facial expressions directed at others might have; or as a *he*, through an objectification and distancing from the mirror image (Lobaccaro 2023). In practice, the only objective and real thing in the mirror is that it duplicates the “stimulus field” (Eco 1997/1999). On the basis of this duplicated field, it acts upon us (Koukouti and Malafouris 2021), inducing us to signify and to treat the image *as if* it were something else (a *you*, an *I*, a *he*).

If we look closely, then, the disorders Pennisi analyzes are all disorders in which the ordinary and shared use of the mirror remains intact, and patients use it exactly as everyone does (in the cases analyzed, patients recognize that the mirror image is their own). The problem detected in these cases is that, starting from mirror-gazing, patients experience difficulties at a coenesthetic and embodied level. In short, it is the *observing self* that creates problems, not the *observed self*.

For Pennisi (this volume), these phenomena «pave the way for the impression that the mirror image is independent of the subject, as if it were another individual» (300), and he goes on to describe under the S-FMM (that he calls an «umbrella term», *ibidem*) a whole series of delusions ranging from misidentification to transitivism and to intermetamorphosis. In all these cases, however, the problem concerns the way the mirror is perceived: the observed self is problematic as well as the observing self. This means that in all these cases, beyond disturbances connected to the perception of one's own body (not always necessarily present), one also finds an alteration in the recognition of one's own mirror image.

Delusions in front of the mirror may plausibly build on the experiential perturbations described by Pennisi, and therefore be connected to a disturbance of ipseity. However, because these full-blown mirror delusions operate at a different level and on a different scale than the mirror-gazing-related perturbations, it would be unwarranted to treat them as manifestations of the very same underlying structural alterations. In other words, a disturbance of cenesthesia and movement is certainly sufficient as a motive for explaining experiences of depersonalization in front of the mirror, but it is not sufficient to explain how, at a certain point, hallucinatory images are visualized in the mirror, or how the mirror image ceases to be recognized as one's own.

### **3. Schizophrenia as a Problem of the As-If Function**

A first route toward a deeper understanding of these phenomena might be to consider the relation that binds delusion and imagination (Gallagher 2009; Sass 1994). In semiotics, imagination is identified as the capacity that allows us both to project ourselves into fictional worlds and to decouple ourselves from a perceived state of affairs so as to consider it under a different aspect. The objective correlate of this imaginative operation is what is called the *fictive* (*fittivo*) (Basso Fossali 2009), and it can be described in various ways: for instance, the child who perceives a horse where there is a broom; or shadow play, where the projections of hands come to be perceived as animals.

In short, a domain is *fictive* when one uses an object in the world in order to perceive it *as if* it were another. More precisely, it involves the creation of a commensuration between a configuration of perceived relations and a configuration of relations generated within an imagined possible world.

Now, this imaginative capacity – and its fictive correlate – is not only useful for play, but also for action planning: it enables us to imagine possibilities of action and interaction that differ from the current ones. This *as-if* dimension is regarded as one of the fundamental functions for the development of imagination in phenomenology and enactivism. Fuchs defines the *as-if function* as follows:

It allows me to put myself to another point in space “as if” I were there, or into the position of another person, “as-if” I were in his/ her situation, while I remain nevertheless anchored to my own bodily center. I compare “me-here” to “me-there”, although this “me-there” remains virtual—just like my mirror image, which, despite all similarity, looks at me from out of nothing. Thus, the “as-if” gains a particular manifestation in reflective self-consciousness, when I see myself “from the outside” or in others’ eyes. In the last analysis, self-reflection is the product of an “as-if” stance (Fuchs 2015, 85).

In short, it designates the capacity to adopt virtual allocentric perspectives (“as if I were there”, “as if I were the other”) while nevertheless remaining anchored in one’s own (egocentric) bodily centering. It is the matrix of pretend play, planning, simulation – and, crucially, self-reflection: seeing oneself through another’s eyes, or from an “external” point of view, is a special case of the as-if function (Fuchs 2015). This capacity is fostered and developed through material interactions with objects and through their material agency (Koukouti and Malafouris 2020).

In another work, we have argued that the mirror constitutes one of the material prostheses that makes this specific operation available in a perceptually constrained form: mirrors open up a space of play that can be occupied by different positions. In Western culture, these virtual positions have been exploited for operations of self-reflexivity,

providing us with the possibility of taking up a virtual perspective on oneself (*me-there*) while remaining anchored to one's bodily center (*me-here*) (Lobaccaro 2023). In other words, the mirror institutes a condition of controlled doubling in which a subject must simultaneously manage an egocentric anchoring (one's own bodily center) and an "other" perspective on oneself, made perceptually available by the tool's material and reflective properties.

It will not be surprising at this point to note that, for some interpreters, schizophrenia can also be read as a disturbance of the as-if function (Fuchs 2015), just as it will not be surprising to note that schizophrenia has been traced back to a form of de-dialecticization of the *I* and the *me* (Kraus 2002). In some cases, schizophrenic subjects end up confusing the egocentric position with the allocentric positions they open up through imaginative effort; in other cases, by contrast, there is an absolute rigidity and an inability to project into such positions through imaginative variation. This mechanism is, for example, what would underlie delusions of transitivity. We know that some schizophrenic patients, in interactions with others, become lost in perspective-taking, such that taking the other's perspective does not yield a stable shift in viewpoint but instead leaves them *captured by the other's bodily presence* – as if the other's corporeality intruded upon, or overrode, their own perspective.

Now, from Fuchs (2015, 83) we know that beyond supporting perspective-taking with others, the as-if function is precisely the function that allows us to recognize ourselves in the mirror. We can therefore infer that it is possible to read certain mirror-delusional phenomena through this lens. Consider, for instance, this case of transitivity:

A young man was frequently confused in a conversation, being unable to distinguish between himself and his interlocutor. He tended to lose the sense of whose thoughts originated in whom, and felt "as if" the interlocutor somehow "invaded" him, an experience that shattered his identity and was intensely anxiety-provoking. When walking on the street, he scrupulously avoided glancing at his mirror image in the windowpanes of the shops, because he felt uncertain on which side he actually was (Parnas 2003, 232).

Here one can note that the patient is unable to mediate between an egocentric and an allocentric position, and becomes lost in the web of relations opened up through a fictive surface. Since, in order to look at ourselves in the mirror or to speak with another person, we need to understand that we are the other's 'you', just as the other is our 'you', and that we can take up the perspective of that *I* whom we call *you*, we constantly need to mediate between an allocentric projection and an egocentric one. Patients with schizophrenia lose the capacity to mediate between an embodied and an imaginative dimension of the self, thereby developing forms of transitivity – both because of disturbances of embodiment (Pennisi, this volume) and because of disturbances of intersubjectivity (Stanghellini 2004; Gallese and Ferroni 2023).

At this point, it is worth noting that these phenomena, which lead to confusions of deictic position (between *you* and *I*, and between *I* and *me*) remain very far from misidentification in the strict sense. Granted that someone might confuse themselves with their own mirror image, or conversely view it as a *you* wholly alien to them, it is still unclear how and why one would arrive at failing to recognize the image seen in the mirror, or at transforming it through delusional ideation. In this sense, even if we can account for delusions of transitivity by adding disturbances of imagination and of the as-if function to fundamental disturbances of the self, we are still far from describing what happens when a patient does not recognize their own mirror image and mistakes it for another person's face. To explore a possible route, we will try to apply a cognitive-semiotic approach to delusion to this specific case.

#### **4. What Happens in Misidentification Delusions? A Working Hypothesis**

In our chapter (Lobaccaro, this volume), we tried to explain how a delusion can emerge through a prediction error that fails to integrate prior knowledge with information coming from the environment. Such integration errors at a neurocognitive level have a phe-

nomenological correlate, expressed through feelings of perplexity, a lack of affectivity, a sense of hypo-reality, and estrangement (Hughes and Boldsen, this volume). The central point is that this imbalance – caused by dopaminergic dysregulation – must be brought back to a sense of meaningfulness, which is achieved through the development of a delusional perception of meaning: a form of aberrant narrativization of the perceptual field.

In schizophrenia, however, we find different forms of delusion, sometimes circumscribed and tied only to particular aspects of patients' lives and experience – a sign that the neural circuits involved are likely circumscribed as well, and tied to specific cognitive functions (Gerrans 2014). At this point, we must acknowledge that, in the absence of ad hoc empirical studies on this kind of disturbance, any adequate interpretation of S-FMM will have to remain at the level of hypothesis. To do so, we will draw on an intuition offered by Pennisi himself (this volume), who sketches a comparison between mirror misidentification delusion and Capgras syndrome, a delusion in which one mistakes the faces of loved ones for impostors who have taken their place.

In a forthcoming paper (Lobaccaro, forthcoming), we have tried to show how a range of studies and theories on Capgras syndrome push us to identify, as the main cause of this delusion, a loss of the affective response linked to perceiving the faces of loved ones (Ellis and Lewis 2001; Gerrans 2012). This loss would generate a sense of uncanniness, which in turn would trigger a cascade of renewed predictive attempts. It would be precisely this absence of affective response that produces a perceptual “solution” through the elaboration of a delusion. The person standing in front of the Capgras patient does not appear different from the original, yet they are not recognized as such and are instead taken to be an impostor who has taken their place.

If, then, an absence of affective response to familiar faces can cause prediction errors that enable the development of such a misidentification delusion, perhaps in S-FMM we are faced with a similar phenomenon, one that would, however, need experimental testing.

From the reports discussed by Pennisi, we know that patients in front of the mirror register a distinctive uncanniness and estrangement. One could investigate whether this uncanniness is linked not only to an altered perception of motor coordination between oneself and the mirror image, but also to an alteration in neural circuits connected to explicit face recognition, affective response, and preparation for social interaction (Ellis and Young 1990; Debrulle *et al.* 2012). If so, S-FMM could be explained by the fact that, in front of their own face in the mirror, patients do not feel the sense of familiarity and immediate recognition normally associated with one's own face, with a consequent delusional re-stabilization. However, this hypothesis cannot be pushed any further.

## 5. Conclusion

At the end of our commentary on Pennisi's essay, we realize that we have opened more problems than we have solved. In addition to the aspects related to the perception of the sense of agency and ownership brought to the fore by Pennisi, we have argued that other concepts must be taken into account, including disturbances of intersubjectivity in schizophrenia, the dimension of the as-if function, and affectivity. This effort, of course, must be supported by conceptual clarification focusing on more circumscribed case studies and less variegated manifestations, as well as by contributions from empirically designed *ad hoc* studies. We can only hope for readers willing to engage with the problems we have raised and to recognize that their resolution will require further work.

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