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Introspection in the Disordered Mind And the Superintrospectionitis Thesis

Alexandre Billon

In their target article, Kammerer and Frankish (K&F) wonder what forms introspection could take in non-human animals, enhanced humans, artificial intelligences, and aliens. In this short note, I focus on disordered or neurodiverse minds. More specifically, I assess a claim that has often been made more or less implicitly to the effect that, in virtue of their conditions, people with schizophrenia or depersonalization disorder have superior introspective abilities that allow them to discern some important but normally hidden characteristics of our experiences — call this the superintrospectionitis thesis. In the course of my argumentation, I introduce distinctions and questions concerning the nature of the architecture and the function of introspection that might enrich K&F's framework. Readers familiar with contemporary philosophy of mind and psychopathology have probably come across a 'subtraction argument' of this kind (see e.g. Duncan, 2019; Billon and Kriegel, 2015; Billon, 2023a,b):

- 1. People with mental disorder D report experiences lacking a certain feature
- 2. If people with D report experiences lacking F, then our experiences normally have the feature F and they can lack it.

Usually, D is schizophrenia or depersonalization disorder (DD), a frequent but lesser-known disorder characterized by impressions of alienation or unreality of one's mental states, body, actions, and surrounding objects (Sierra, 2009; Billon, 2023). D can also be certain monothematic delusions such as Cotard syndrome or Capgras syndrome. F is what we might call an 'inflationary' feature of experience, i.e. a feature whose very existence is disputed, such as the subjectivity or 'mineness' of experience, the feeling of reality, the feeling of familiarity...

One way to resist this 'subtraction argument' is to claim that people with D have poor introspective abilities regarding F. Another way to resist this argument is to claim that people with D, in fact, have better introspective abilities than we do regarding F and that what their complaints reveal is accordingly that our mental states normally lack F — even though we are normally unable to notice it. A response of this kind is in fact suggested by many phenomenological works on schizophrenia and by some writings on DD which say, or at least imply, that patients suffering from these disorders see some features of our experience, namely the absence of F, that usually remain hidden to us. A bit like people with depression who, according to some, have a better self-view than healthy people, these patients would suffer (in part) from too good an introspection — call that the superintrospectionitis thesis (SIT). It should be noted that, because people with DD often seem to complain of a lack of

phenomenality (Billon, 2014; Billon and Kriegel, 2015), if it were true about DD, SIT might well serve K&F's illusionist agenda.

The Superintrospectionitis Thesis (SIT)

SIT is a claim that is often used but seldom made completely explicit. As far as I can tell, in the tradition of phenomenological psychopathology, SIT can be traced back to the works of Blankenburg on schizophrenia. He argued that reports of some people with schizophrenia 'reveal, in a kind of immediacy the conditions of possibility of our existence that otherwise remain concealed' (Blankenburg, 2001, p. 308). Likewise, Kimura (2001, p. 335) wonders whether schizophrenia might not render manifest, through introspection, the 'innate structure of all human beings that happens to be hidden in healthy people owing to some mechanism or other?'. More recently Stephenson and Parnas (2018) have compared schizophrenia to 'amplified mirror image' that reveals a 'differentiation or potential alterity implicit in the dynamic nature of subjectivity'.¹

The term 'depersonalization' comes from the works of the Swiss diarist Amiel who arguably suffered from DD but was quite ambivalent with regard to it. He sometimes describes it as an awful psychological disorder, sometimes as a metaphysical blessing and a confirmation of Schopenhauer's Buddhist views on the unreality of self (Amiel, 1894). This ambivalence about DD is still common. Even though DD is usually dysphoric and the strange experiences of people with DD are usually considered misleading, the popular writer Suzanne Segal, aided by her Buddhist teachers, has argued that her first DD was the first step of a spiritually enlightening journey (Segal, 1996). She has been followed by some philosophers who saw in DD a confirmation of Buddhist views on the unreality of the self (see Chadha, ms) and has led many patients to question the deep meaning of DD (as witnessed by frequent discussions of DD forums).3 It is important to distinguish SIT from the (almost) trivial claim that people with schizophrenia or DD can know better than us some peculiar forms human experience can take (either because we do not know them or because, even when we do know them, we do not know them in such a direct way). It should also be distinguished from the claim, endorsed by friends of the subtraction argument, that people with DD or schizophrenia can know better than us, by contrast, and so to speak 'negatively', what normal experiences are like (compare to someone who suddenly notices, just on becoming deaf, the humming of the fridge he had been hearing for hours). Finally, SIT does not just claim that some people with DD or schizophrenia can have better introspective abilities (regarding F or some of its properties) than most people without DD or schizophrenia. Rather, it claims that they have better introspective abilities (regarding F or some of its properties) in virtue of their having DD or schizophrenia, which seems to imply that most people with DD or schizophrenia have better introspective abilities (regarding F or some of its properties) than most people 2 In these last two cases, SIT is invoked to defend a broadly Heideggerian view that (against Descartes, Henry, 1993, and Husserl, 1907/2010) downplays the immanent, nonintentional dimension of experience. In fairness, it should be emphasized that many phenomenologists also claim that some aspects of the introspective abilities of people with schizophrenia are impaired (see e.g. Sass and Fishman, 2018, p. 253). By 'better introspective

¹ In these last two cases, SIT is invoked to defend a broadly Heideggerian view that (against Descartes, Henry, 1993, and Husserl, 1907/2010) downplays the immanent, non-intentional dimension of experience. In fairness, it should be emphasized that many phenomenologists also claim that *some* aspects of the introspective abilities of people with schizophrenia are impaired (see e.g. Sass and Fishman, 2018, p. 253).

abilities' regarding F or some of its aspects, I just mean that they are more reliable regarding them when they are forced to adjudicate on them. As far as I know, there is no experimental evidence directly supporting SIT. Most researchers consider that people with DD or schizophrenia have normal introspective abilities. Some believe that the introspective abilities of people with schizophrenia are in fact impaired. Currie (2000) has influentially argued that they mistake some acts of imagination for beliefs, and, more generally, their commonly poor insight may indicate poor self-knowledge and poor metacognitive abilities (Lysaker et al., 2018; 2020). SIT should not, however, be dismissed right away. There is no solid experimental evidence against it either, and, as we shall see, there might be some philosophical arguments in its favor. There is, moreover, a long tradition of picturing people with mental disorders as endowed with some form of 'superpowers',² and that tradition has, as we shall see, gained a form of scientific respectability in the second half of the last century. Below, I criticize this tradition and put forward a general argument against SIT.

The Fine-Tuning Argument Against SIT

Consider a small stereo that can play CDs and receive FM radio wavelength (for simplicity take an old one with many wires rather than a tiny chip on a printed circuit board). Suppose you open it, choose one wire randomly and disconnect it, or connect it to a different slot. Suppose that, as a result, you cannot listen to CDs on your stereo anymore. You might still be able to listen to your favorite radio stations. Maybe not. But the chances that it might now better receive the range of radio waves it used to receive, or that it might receive a new range of radio waves, seem extremely meager. The reason why is that a stereo is a fine-tuned system, that is, a system optimized to fulfill a certain set of functions, and whose functioning is extremely sensitive to a set of parameters. Accordingly, if you modify these parameters, you are likely to end up with something that cannot properly fulfill some of its functions, and extremely unlikely to obtain something that fulfils some of its functions better. Now, (i) our minds are likewise fine-tuned: they are optimized to fulfil a certain set of functions, including introspection. (ii) On the most plausible accounts, schizophrenia, and DD are mental disorders, (iii) a mental disorder involves a (harmful) dysfunction of the mind (Wakefield, 1992), (iv) and it is extremely unlikely that a dysfunction of a fine-tuned system might make it better at fulfilling some of its (other) functions such as introspection. All these premises, which together thwart SIT, can be, and indeed have been, challenged. There are, however, pretty good reasons to endorse them: (i) is supported by psychological and neuro-physiological observations, (ii) is supported by the authority of the DSM-5 and the ICD-11, (iii) is implied by Wakefield's (1992) now standard account of mental disorders as (harmful) dysfunctions, i.e. failures of some traits to perform their function, (iv) seems to follow from the notion of fine-tuning and the simple analogy with a radio receiver.

The simplest challenge to this argument comes from the idea, championed by early advocates of evolutionary psychiatry, that the most common mental disorders are not just random mental dysfunctions, comparable to a random rewiring in a radio receiver. They are disorders that have survived despite the biological costs they may incur, and it is tempting to explain their survival by the claim that they may confer 'superpowers' (in the sense of making some traits fulfil their function better than normal) to their subjects that are selective in some (not too infrequent) contexts. In a famous pioneering article, Huxley et al. (1964) thus bluntly claimed that 'overt schizophrenics are extremely resistant to surgical and wound shock (and recover much more

² A tradition that can be traced back at least to Plato's idea of 'divine madness' (*Phaedrus*, 244–245 and 265a–b), and to the claim, made by Pseudo-Aristotle (*Problems*, XXX.1) that genius is closely tied to melancholy, and that has had an important influence on the romantic and post-romantic (for example surrealist) take on madness.

rapidly), to visceral perforation, to high doses of histamine..., to pain, to arthritis and probably many infections. One of us (H.O.) has seen a schizophrenic recover from the most appalling burns which would have killed any normal person in hours or minutes' (p. 220). In answer, it must be emphasized that, pace Huxley et al., indisputable examples of disorders (be they mental or somatic) that stably confer selective superpowers in the present context are extremely few, to say the least. The idea that schizophrenia does confer superpowers was popular a few decades ago. It is extremely controversial today and most evolutionary explanations of schizophrenia make do without it, either claiming that it is not adaptive, or that it is only adaptive in that it allows one to avoid greater harm — not in that it confers superpowers. Finally, among the 'superpower' hypotheses' that have been put forward to explain the prevalence of schizophrenia, none involves enhanced introspection. Some have attributed to schizophrenic patients a better immune system, better illness recovery, an important role in (useful) group-splitting, a facilitating 'shamanic' role in group functioning, and better creative abilities (see Montalvo, 2021, and the references within). These theories are not very plausible (ibid.). In any case, they do not predict any introspective benefit of schizophrenia. As for DD, it is usually considered a defense mechanism that allows the subject to detach himself from a distressing and inevitable situation (Sierra and Berrios, 1998; Dugas and Moutier, 1911, V). This might make it adaptive in some contexts, as it might allow the subject to avoid some of the dramatic consequences of panic attacks; it does not imply any superpower, nor, for that matter, any introspective benefit. Another objection against the fine-tuning argument targets another flaw of the analogy with a simple radio receiver. Unlike such a simple device, we are complex organisms endowed with many different ways to do the same thing, with many organs having identical or connected functions: we have two hands to grab objects, various senses to perceive the world, and so on. And when one of these organs is dysfunctional, we can sometimes 'overcompensate' by making more use of and enhancing another one. There is, for example, neurophysiological and psychological evidence for auditory overcompensation to early blindness (Renier et al., 2010). Maybe DD and schizophrenia are harmful dysfunctions that get overcompensated by enhanced introspective abilities. The best hypothesis along these lines is probably that introspection is 'plurimodal' in the sense that it involves various independent, parallel processes;⁵ the failure of one of these could be overcompensated by the refinement of others. It is true that most people with DD (Dugas and Moutier, 1911, VI) and some people with schizophrenia (Sass, 2013) become hyper-reflective, which might suggest a deficit in introspection and the adoption of a compensation strategy. However, this hypothesis of 'super-introspection by over-compensation' is still rather speculative.

³

³ The most plausible candidate I can think of is senescence (Williams, 1957), but as it affects us all, it is hard to construe it as conferring super (in the sense of better than normal) powers. There are examples of genes whose homozygous phenotype involves a recessive disease, but whose heterozygous phenotype is selective. Sickle-cell anemia is, for example, a recessive disease caused by two copies of a gene (HbAS) that produces abnormal haemoglobin but also protects against malaria. In such cases of 'heterozygous advantage', however, it is not the disease that confers superpowers, but rather a gene that can cause the disease. More fundamentally, if superpower-conferring diseases are rare it is probably that as soon as a(n otherwise) dysfunctional trait becomes adaptive (like the various genes causing senescence according to Williams) it tends to become adaptive enough to become ubiquitous and hence normal. Some mathematical modelling would be needed to test this last hypothesis.

⁴ McKay and Dennett's (2009) 'shear pin' hypothesis of the formation of motivated delusions picture it as adaptive in that it allows their subject to avoid greater harm. We might compare to a shear pin, more generally, any trait that is adaptive in that it avoids greater harm, rather than conferring superpowers.

⁵ I first used the more common word 'multimodal' instead of 'plurimodal'. As pointed out by one of the editors of this special issue, the word 'multimodal' would be a bit misleading: we do not usually think of vision as multimodal even though it might involve independent processes such as the ventral stream and the dorsal stream process.

It is also threatened by the fact that overcompensation normally takes time (known cases involve neuroplasticity) while the supposed super-introspective abilities of people with DD usually come with the very onset (or even, in the case of schizophrenia, the prodromes) of the disorder. Finally, influential phenomenologists tend to describe hyper-reflexivity as 'objectifying' and misleading (Sass and Fishman, 2018, p. 256) rather than as an insightful overcompensation. One could also worry that the concept of function and dysfunction on which the fine-tuning argument relies, namely Wakefield's (1992) account, is explicitly biological: a function, on that account, is a trait that has been brought about or at least maintained by natural selection (adaptations and expaptations). But it is hard to prove that introspection is a biological function. In response, it should be emphasized that (i) would remain true even if introspection had no biological function but only a psychological or social function (and if it was accordingly merely maintained by psychological (intentional) or social rather than natural selection). Indeed, (i) only requires that introspection is fine-tuned to play a certain function (be it biological, psychological, or social), it requires that it is, so to speak, 'a fragile achievement'. This response might, however, suggest an interesting exception to (iv). Suppose that introspection had both a psychological and a biological function but that these were partly antagonistic (say, that the biological function of introspection was to inform us about the mind while hiding from us some depressing truths concerning it, and that its psychological function was to yield as much knowledge about our minds as possible). Then, one might conclude, a disruption of the biological function might help fulfil the psychological function. This conclusion could follow, it seems, but only if the two functions were performed by independent components of the introspective system (so that a disorder of one component does not yield a disorder on the other component), one of which bridles the other.⁶ That would require, again, that introspection be plurimodal. Interestingly, the two last objections depend on an important aspect of the architecture of introspection (plurimodality) that is not mentioned in K&F's framework.

Phenomenological Reduction and Meditation

I do not believe that the fine-tuning argument is a conclusive objection against SIT. It can at best show that SIT is very unlikely to be true, not that it is false. Its cogency moreover depends on the architecture of introspection. It is enough to show, however, that its proponent owes us compelling argument in favour of SIT. Even though they are seldom expressed in a straightforward manner, it is in fact rather easy to reconstruct such arguments for SIT from the literature. They rely on the idea that the states or the attitudes of people with DD or schizophrenia often resemble those of people who use certain introspective techniques believed to enhance introspective abilities. Advocates of the SIT for schizophrenia and DD invoke different techniques. Advocates of the SIT for schizophrenia invoke the 'phenomenological reduction', a technique initially devised by Husserl in order to bracket everything that is not absolutely certain and to focus, in a Cartesian fashion, on the way things appear to us through experience rather than, as we ordinarily do (in what Husserl calls the 'natural attitude'), on the things that so appear through experience (Husserl, 1907/2010). Phenomenologists have often criticized

⁶ Something like this might explain the phenomenon of depressive realism (the widespread hypothesis that depressed individuals have a more accurate view of themselves and the world around them)... if the phenomenon is indeed real. The evidence for depressive realism is indeed contrasted (Moore and Fresco, 2012). There are moreover reasons to believe that the most influential results in support of depressive realism cannot be replicated with up-to-date methods and measurement techniques (Dev et al., 2022).

There are in fact many kinds of 'phenomenological reductions', and many debates, within phenomenology, on the best way to construe them. For simplicity, I focus on the way Husserl construed the phenomenological reduction when he first introduced the term (in the 1907 lessons).

introspectionist psychology for failing to perform the phenomenological reduction (see e.g. Overgaard, Gallagher and Ramsøy, 2008) and advocates of the SIT have emphasized, after Blankenburg, the similarities between the phenomenological reduction and the (ordinary) attitude of people with schizophrenia (Depraz, 2003; Stanghellini, 2004; Ratcliffe, 2008). Thus, says Depraz (2003, p. 189): Phenomenologists believe that schizophrenic persons have the capacity to perform the reduction much better than ordinary people: they show an enhanced aptitude to the epoche. This is supposed to be one of the major features of the vulnerability to schizophrenia (Stanghellini 1997)... This is not, for them, an achievement, but so to say a natural experience. As already said, philosophers in the Buddhist tradition can underline the similarity of the introspective reports of people with DD to those of people who meditate, and meditative practice is sometimes claimed to incur some introspective benefits. Shear (2007), mentioned by K&F, describes meditation techniques as 'sophisticated means for exploring the inner world of consciousness', comparable to the use of microscopes and other tools for exploring the outer world, and that allow us 'to display the ground, structures, and dynamics of consciousness underlying all human experience'. K&F argue that 'the kind of introspection afforded by... meditation may come close to' being non-conceptual but flexible (this issue, p. 25) and they mention shape and colour vision as examples of nonflexible processes. I am unsure whether meditative practice or phenomenological reduction really afford a new kind of introspection. 10 There are in fact many kinds of 'phenomenological reductions', and many debates, within phenomenology, on the best way to construe them. For simplicity, I focus on the way Husserl construed the phenomenological reduction when he first introduced the term (in the 1907 lessons). Copyright (c) Imprint Academic For personal use only -- not for reproduction 58 A. BILLON They seem to me to consist in new ways to use ordinary introspection. I am not sure either that it really shows that introspection can be (or become) more flexible than vision. We should probably distinguish two kinds of flexibility here. Say that a mechanism is tool-flexible when its functional role can be modified to yield abnormal outputs, and that it is only use-flexible when, although its functional role cannot be modified, it can yield abnormal outputs if we feed in abnormal inputs. The visual system is not tool-flexible as I cannot change its functional role. I can, however, use it in many different ways (moving my eyes as far as I can, contracting the ciliary muscle to become temporarily shortsighted...), some of which can allow me to see things differently (think about what you can do to see the 3D shape of a stereogram appear, or to make an apple in front of you appear fuzzy). It is accordingly use-flexible. I see no reason to believe that the phenomenological reduction or meditative practices involve something deeper than useflexibility. In any case, the argument for SIT from meditation/the phenomenological reduction is not cogent. The reason is that (a) there is good evidence that meditation/the phenomenological reduction do not enhance introspection regarding the aspect of experience F targeted by proponents of the SIT thesis, and (b) all the evidence we have for the claim that meditation/the phenomenological reduction enhance introspection seems rather irrelevant to F. I tackle these two points in turn. The aspects of experience targeted by advocates of SIT are those aspects of experience on which people suffering from schizophrenia/ DD seem to agree with certain phenomenologists/meditators. They are all structural aspects of experience whose scope and existence are a matter of philosophical dispute. More specifically, advocates of SIT often focus on the subjectivity of experience. Now there is good evidence that phenomenological reduction or meditation do not enhance introspection regarding subjectivity and other disputed structural aspects of experience. It is the case that the best practitioners of phenomenological reduction or meditation deeply disagree about these features. Many phenomenology textbooks (e.g. Gallagher and Zahavi, 2020) and interdisciplinary writings involving phenomenology tend to present it as being a quasi-coherent and univocal doctrine. Shear (2007) likewise insists on the

coherence of introspective insights brought about by meditative practices. There is, however, considerable disagreement between the different views of experience supported by the phenomenological reduction, or the best way to perform the phenomenological reduction or meditation. To take a simple example, there is no more consensus on the subjective aspects of experience between Michel Henry (1993) and Heidegger (1987) than between Descartes and Hume. As noted by K&F, the same thing could be said of meditative practice (Garfield, 2015, pp. 184-6). And it is hard to advocate the reliability of an introspective method regarding F when some of its best advocates dissent about F. Now there is, conversely, some evidence that meditation can enhance introspection regarding some mental states: introspection, for example, seems to enhance metacognition in memory tasks, but not in perceptual tasks (Baird et al., 2014), body-scanning meditation seems to enhance tactile sensitivity (Fox et al., 2012). The problem is that there is absolutely no hint that people with schizophrenia or DD might have this kind of introspective advantage, and it is difficult to see why such an advantage should predict better introspective abilities regarding F. Why should the fact that one is better at telling when she remembers something or where she is being touched help us settle philosophical disputes about the structure of experience? In other words, the extant evidence that meditation can enhance introspection seems simply irrelevant. The same could be said of the phenomenological reduction. There is, as far as I can tell, no evidence that it enhances introspection regarding F.

Conclusion

I have questioned the hypothesis that people with schizophrenia or DD are better at introspecting certain features F of their experiences by virtue of their disorder (SIT). I have put forward an argument against the plausibility of this claim. I have reviewed, and rejected, the positive arguments for that claim, grounded on the reputed introspective merits of meditative practice and of the phenomenological reduction. The discussion of the SIT has also brought up interesting questions concerning the possible nature of introspection: questions concerning its biological function, its unimodal vs. plurimodal character, and its use-flexibility vs. tool-flexibility.

Amiel, H.-F. (1894). Amiel's Journal: The Journal Intime of Henri-Frederic Amiel. Translated by H. Ward. MacMillan

Baird, B., Mrazek, M. D., Phillips, D. T., & Schooler, J. W. (2014). Domain-specific enhancement of metacognitive ability following meditation training. Journal of Experimental Psychology: General, 143(5), 1972–1979. doi:10.1037/a0036882

Billon, Alexandre & Kriegel, Uriah (2015). Jaspers' Dilemma: The Psychopathological Challenge to Subjectivity Theories of Consciousness. In R. Gennaro (ed.), Disturbed Consciousness. MIT Press. pp. 29-54.

Billon, Alexandre (2023). What is it like to lack mineness? Depersonalization as a probe for the scope, nature and role of mineness. In Manuel García-Carpintero & Marie Guillot (eds.), Self-Experience: Essays on Inner Awareness. cambridge: OUP. pp. 314-342.

Billon, Alexandre (forthcoming). The sense of existence. Ergo: An Open Access Journal of Philosophy.

Bortolotti, L. (2020). The epistemic innocence of irrational beliefs. Oxford University Press.

Chadha, M. (ms). Depersonalization and the sense of self. Manuscript accesses on the 01/08/2019.

Currie, G. (2000). Imagination, delusion and hallucinations. Mind & language, 15(1), 168-183

Dev, A. and Moore, D. and Johnson, S and Garrett, K.; Sadder ≠ Wiser: Depressive Realism Is Not Robust to Replication. *Collabra: Psychology* 5 January 2022; 8 (1): 38529.

doi: https://doi.org/10.1525/collabra.38529

Duncan, Matt (2019). The Self Shows Up in Experience. Review of Philosophy and Psychology 10 (2):299-318.

Fox KCR, Zakarauskas P, Dixon M, Ellamil M, Thompson E, Christoff K (2012) Meditation Experience Predicts Introspective Accuracy. PLoS ONE 7(9): e45370. https://doi.org/10.1371/journal.pone.0045370

Gallagher, S., & Zahavi, D. (2020). The phenomenological mind. Routledge.

Henry, M. (1993). *The genealogy of psychoanalysis*. Translated by Brick, D. T. Stanford University Press.

Jay L. Garfield (2015) Engaging Buddhism: Why It Matters to Philosophy, Oxford University Press.

Heidegger, M. (1987). Nietzsche vol. II. Translated by Krell D.Harper San Francisco.

Husserl 1907/2010. The Idea of Phenomenology. Husserliana: Edmund Hussserl Collected Work, Springer.

Huxley, J., Mayr, E., Osmond, H. *et al.* (1964). Schizophrenia as a Genetic Morphism. *Nature* 204, 220–221.

Letheby, C. (2021). *Philosophy of psychedelics*. Oxford University Press.

Lysaker, P.H., Pattison, M.L., Leonhardt, B.L., Phelps, S. and Vohs, J.L. (2018), Insight in schizophrenia spectrum disorders: relationship with behavior, mood and perceived quality of life, underlying causes and emerging treatments. World Psychiatry, 17: 12-23. https://doi.org/10.1002/wps.20508

Paul H. Lysaker, Kyle S. Minor, John T. Lysaker, Ilanit Hasson-Ohayon, Kelsey Bonfils, Jesse Hochheiser, Jenifer L. Vohs, Metacognitive function and fragmentation in schizophrenia: Relationship to cognition, self-experience and developing treatments, Schizophrenia Research: Cognition, Volume 19, 2020,

McKay, R. T., & Dennett, D. C. (2009). The evolution of misbelief. *Behavioral and Brain Sciences*, 32(6), 493-510.

Moore MT, Fresco DM. Depressive realism: a meta-analytic review. Clin Psychol Rev. 2012 Aug;32(6):496-509. doi: 10.1016/j.cpr.2012.05.004. Epub 2012 May 22. PMID: 22717337.

Montalvo, S. 2021 Contribution de la biologie de l'évolution à la compréhension des troubles psychiatriques et neurodéveloppementaux. Thèse de doctorat de médecine dirigée par Jardri, R. Univ. de Lille. 2021LILUM383.pdf (univ-lille.fr)

Overgaard M., Gallagher S., and Ramsøy T. (2008). "An Integration of First-person Methodologies in Cognitive Science." Journal of Consciousness Studies 15: 100–120

Ratcliffe, Matthew (2008). Feelings of being: phenomenology, psychiatry and the sense of reality. New York: Oxford University Press.

Renier, L.A., Anurova, I., De Volder, A.G., Carlson, S., VanMeter, J., Rauschecker, J.P. (2010). Preserved functional specialization for spatial processing in the middle occipital gyrus of the early blind. Neuron 68, 138–148.

Sass, L. (2013). Self-disturbance and schizophrenia: Structure, specificity, pathogenesis: (Current Issues, New Directions). *Recherches en psychanalyse*, 16, 119-132. https://doi.org/10.3917/rep.016.0119

Sass, L. A., & Fishman, A. (2018). Introspection, phenomenology, and psychopathology. Oxford Handbook to Phenomenological Psychopathology. OUP.

Segal, S (1996). Collision with the Infinite: A Life Beyond the Personal Self. San Diego: Blue Dove Press.

Stanghellini, G. (2004). *Disembodied spirits and deanimated bodies: The psychopathology of common sense*. Oxford University Press.

Stevens, A., & Price, J. (2015). *Evolutionary psychiatry: A new beginning*. Routledge.

Wakefield, J. C. (1992). Disorder as harmful dysfunction: a conceptual critique of DSM-III-R's definition of mental disorder. *Psychological review*, *99*(2), 232.

Williams, G.C. (1957), PLEIOTROPY, NATURAL SELECTION, AND THE EVOLUTION OF SENESCENCE. Evolution, 11: 398-411. https://doi.org/10.1111/j.1558-5646.1957.tb02911.x