Subjectivity, Embodiment and Spatialization in Autistic Spectrum Disorder

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Introduction

The aim of the present paper is to reflect upon autistic embodiment. As we shall see, the way in which people from the autistic spectrum inhabit their own body calls for a new understanding of subjectivity, space perception and bodily experience. From a methodological point of view, this this study tries to combine recent research in neurosciences and psychology with phenomenology and psychoanalysis. Whereas neurosciences and psychology have the merit of producing scientific insights about autistic sensomotricity, phenomenology and psychoanalysis deal respectively with questions about world- and self-experience (phenomenology) and self-representation (psychoanalysis). In combining these traditionally well-distinguished theoretical fields, I will try to outline a more general and global understanding of autism and autistic experience.

De Jaegher has already raised a similar question. He notices a "growing awareness that autism is […] characterized by different ways of perceiving and moving, as well as particular emotional-affective aspects" [1]. Instead of considering these differences simply as local and well circumscribed deficits as neuroscientists and psychologists often tend to do, De Jaegher tries to put forth a holistic understanding of these different sensomotoric styles. The way a subject moves, feels and elaborates habitualized patterns of encountering the world and other subjectivities are by no means local operations. They cannot be considered in abstraction of the very global subject's being in the world, of its way of understanding himself and the world he inhabits. In total coherence with these general phenomenological presuppositions, De Jaegher proposes to analyze autistic embodiment as a bodily anchored style of *sense-making*:

> Sense-making plays out and happens through the embodiment and situatedness of the cognitive agent: her ways of moving and perceiving, her affect and emotions, and the context in which she finds herself, all determine the significance she gives to the world, and this significance in turn influences how she moves, perceives, emotes, and is situated.[2]

The lived, active body defines for De Jeagher the center of the process of sense-making. By there, she attaches her own theory explicitly to the so-called *enactive approach* of Varela and Thompson[3]. Instead of considering the subject and the world as two separate entities that only communicate through lines of mono-causal determination, the enactive approach thinks in terms of mutual co-determination and circular causality[4]. Sensorial input and motor output cannot be considered as two different and completely independent systems,

[1] De Jaegher, H. (2013), Embodiment and sense-making in autism, *Frontiers in integrative neuroscience*, 7, 1.
[2] Ibd.
[3] Cf. Varela F. J., Thompson E., Rosch E., (1993), *The embodied mind. Cognitive Science and Human Experience*, Massachusetts: MIT Press; Thompson E., (2007), *Mind in Life. Biology, phenomenology, and the sciences of mind*, Harvard: Harvard University Press.
[4] Thompson E., *Mind in Life*, op. cit., 62.

but rather as being depended upon each other and related through a very specific kind of 'meaning': senso-motoric processes are ways of sense-making.

I wish to analyze the functioning of sensomotoric circles within the autistic spectrum in order to turn subsequently to a more phenomenological and psychoanalytical consideration about autistic world- and self-experience. Such an attempt necessarily runs the risk of being accused of psychological speculation. However, a phenomenological understanding[5] of autism, autistic subjectivity and autistic experience is necessary in every therapeutic decision taken within the psychiatric sector. The danger of speculation seems to me an acceptable price for the potential earning of an insight into autistic experience.

I. Body schema

In general, we can distinguish two different levels of bodily interaction with the world, two different sensomotoric circles, one of them controlling posture and tension of the muscles, the other controlling movement itself through kinesthesia. Whereas the former is nonconscious, the latter is preconscious and refers to the pre-reflective and immediate bodily self-awareness, which is a special field of phenomenological investigation. I propose to integrate both sensomotoric circles within the notion of the body schema as developed by the French psychiatrist Pierre Bonnier[6]. By referring to the Greek word of form or figure (σχήμα), Bonnier intended to substitute the notion of 'general sensibility' with the idea of a spatial mapping of the body as well as of its bodily limbs. The notion of "general sensibility" or "common sense" (*cenesthesia*, *Zönästhesie, Gemeingefühl*) was intended to define the harmonic consensus of the different sensations in order to produce a state of well-being that underlies all thoughts and actions of the soul[7]. According to Bonnier, a definition of the body through cenesthesia alone makes no sense, since this definition "does not contain the notion of topographic figuration (schema) that is indispensible for every definition of corporality."[8]

In contemporary research, the idea of an inner topographical mapping of the body has been scrutinized. New neurological insights have helped deepen its understanding. Instead of the idea of a one-sided process of recording, in which spatial information concerning our bodily limbs is simply inscribed in an internal representation of our body, Gallese and Sinigaglia found out that "proprioceptive systems provide information about the position and the sense of movement of our different bodily parts with respect to themselves and to the external world."[9] The topographic figure of our own body (*body schema*) is therefore not to be seen as a mere static product of a passive inscription of spatial information, but rather as a dynamic process of a constant adjustment of the body towards a concrete situation and action. In the same sense Rochat defines the body schema as "the active propensity to bring sense

[5] Here raises the question of the method: the following reflections certainly do operate local phenomenological *epoches*, whereas a reduction, understood in the Finkian sense as a "reconduction" towards the constituting subjectivity, is strictly impossible, since we do not here reflect upon our own experiences but rather from the starting point of scientific and autobiographic material.
[6] Bonnier, P., 1902, Le sens des attitudes, *Nouvelle iconographie de La Salpêtrière*, 15, pp. 146-183.
[7] Séglas J. (1985), Mélancholie sans délire, *Leçons cliniques sur les maladies mentales et nerveuses*, Paris: Asselin et Houzeau, 282-295.
[8] Bonnier, P., Le sens des attitudes, op. cit., 155.
[9] Gallese V., Sinigaglia C. (2011), "How the body in action shapes the Self", *Journal of Consciousness Studies*, 18, 120.

modalities and regions of the body in relation with each other"[10]. The proprioceptive figuration of the schema itself thus contains spatial information about the enacted body "as a manifold of possibilities for action."[11]

This kind of enacted and dynamic understanding of the body schema highlights a new facet of the word "schema" itself. Irreducible to a static form, this notion has rather to be understood in the Kantian sense as a vivid interplay or process of adaptation of two different entities in order to produce a third, mixed entity, irreducible to one of the former entities. In analogy to the perceptual Kantian schema, the body schema expresses the functional relationship between the spatial information of the external world and the spatial information of one's own body in order to accomplish a goal-directed action[12].

As the neologism "sensomotricity" already indicates, the body schema challenges the mechanistic view of a unilateral causation of movement, commonly understood as a simple reaction to an external or internal stimulus. As the weizsäckerien theory of the *Gestaltkreis*[13] and more recently Thompson[14] have already stated, the biological movement means a constant adaptation of the organism towards its environment. Therefore, both notions do not represent two separate entities; on the contrary: the environment is functionally integrated into the organism itself. In this sense, the body schema is the expression of the vivid and active interface between the environment and the bodily motoric actions. Hence it's not spatial in the sense of an already constituted form, but rather in a more active and enacted sense: it is more "spatializing" than merely spatial – it is constitutive for subjective space itself.

II. Autistic sensomotricity

Within the autistic spectrum, both sensomotoric circles of the body schema are highly affected. Concerning the first, nonconscious sensomotoric circle, several studies confirm impairments in the postural adjustment to a concrete situation in autism. People from the Autistic Spectrum Disorder (ASD) either do not react at all or overreact to changing visual stimuli. On the body-postural level this leads either to hyper- or to hypotonicity[15], which are both characteristic for autistic subjects. Hypertonicity, the increasing tension of the body, is generally an expression of highly emotional subjective states. Fear and anxiety can be the result of a perceptual incapacity of understanding perceptive phenomena, i.e. to categorize adequately a certain situation in order to deal with it. In hypertonicity, this affective state would then find an expression in a rigid posture of the body; a postural adaptation that is not consciously controlled by the subject, but an immediate expression of its originary attunement to the world, manifesting in bodily terms. Hypotonicity, on the contrary, the lack of postural

[10] Rochat P. (2011), "What it is like to be a newborn", *The Oxford Handbook of the Self*, Gallagher S. (ed), Oxford: Oxford University Press, 68.
[11] Gallese V., Sinigaglia C., "How the body in action shapes the Self", op. cit., 129.
[12] It should be noted, however, that whereas the Kantian schema operates *within* the faculties of the subject (justifying by there the idea of a transcendental *idealism*), the body schema operates within the world, i.e. directly on the interface of sensorial input and motor output. If one had to decide which label to choose for the notion of the body schema, one would therefore rather go for a "transcendental *realism*".
[13] Weizsäcker von V. (1997), Der Gestaltkreis, *Gesammelte Schriften. IV*, Frankfurt: Suhrkamp, 111.
[14] Thompson E., *Mind in Life*, op. cit., 244.
[15] Molloy C.A., Dietrich K.N., Bhattacharya A. (2003), Postural stability in children with autism spectrum disorder, *Journal of Autism and Developmental Disorder*, 33, 643-652; Minshew N.J., Sung K., Jones B.L., Furman J.M. (2004), Underdevelopment of the postural control system in autism, *Neurology*, 63, 2056-2061.

tension in the body, may be the result of a perceptual elimination and an ignorance of certain phenomena, i.e. a lack of perceptual stimulation. In general, the prevalence of hypotonicity and hypertonicity in ASD seems to assign for a fundamentally different attunement to the wordly situation, an attunement that finds an immediate non-conscious expression in bodily posture.

Following the same line of thought, Schmitz et al. found out that people from the autistic spectrum show poor capacities of anticipatory control of movement. According to Schmitz, this "raises more general questions on the use of the anticipation function, whether it be for postural control, during motor control, or more generally to anticipate regarding the external world."[16] Anticipation of postural adjustment, for example the adjustment of our foot position in order to catch a ball, is not a cognitive operation. No explicit thought is needed in order to adapt my body's position to the new situation. The catching of the ball is anticipated passively by my body schema itself, which is always bound to a certain *intentional situation*. Postural adaption is only the sensomotoric expression of my general attunement with the world and its affordances. If the autistic subject lacks of such anticipatory sensomotoric skills, it means that his body schema is bound to a different live-world in which balls are not necessarily to be caught. In order to understand the sensomotoric deficits in ASD, we need to adopt a holistic point of view, that sees sensomotoric operations as expressions of the embeddedness of the subject in a certain world, where his movements make sense.

Concerning the second, preconscious sensomotoric circle of the body schema, researchers have shown that the same deficit in processing fast-moving visual events that leads to poor postural reaction may also hinder the concrete realization of intentional movement[17]. It is commonly known that people from the autistic spectrum do have severe problems in adapting their movements and actions to a given situation. Without an appropriate postural adaptation, the movement lacks of a suitable starting point, this is,a stable foundation for an intentional and guided action. Baranek suggests: "perceptually challenging tasks that require smooth integration of visual with vestibular-proprioceptive information, for example, may be particularly difficult to perform and could result in poor quality of motor performance on complex tasks."[18] This view is completely coherent with Whyatt, who identifies "an underlying difficulty with the spatial-temporal control of movement"[19]. The motor impairment in autism is therefore not only restricted to the postural adjustment, but concerns also the dynamic control and the constant adjustment of visual information and movement. Through the example of the catching of a ball, Whyatt identifies an impairment in "*perception-action coupling*"[20], which she describes as an "intricate relationship between the perception of the spatial and temporal characteristics of the moving ball and the control of the moving limb"[21]. Dowd puts forth the hypothesis of a "core difficulty in programming movement in a coherent manner using available advanced visual information, resulting in a

[16] Schmitz C, Martineau J, Barthélémy C, Assiaiante C, Motor control and children with autism: deficit of anticipatory function?, *Neurosci Lett*, 2003, 348, 19.
[17] Gepner B., Mestre D., Masson G., Schonen de S. (1995), Postural effects of motion vision in young autistic children, *NeuroReport*, 6, 1211-1214.
Gepner B. (2002), Rapid visual-motion integration deficit in autism, *Trends in Cognitive Sciences*, 6, 11, p. 455.
[18] Baranek G.T. (2002), Efficacy of Sensory and Motor Interventions for Children with Autism, *Journal of Autism and Developmental Disorders*, 32, 399.
[19] Whyatt C., Craig C. (2013), Sensory-motor problems in Autism, *Frontiers in Neuroscience*, 7, 3.
[20] Ibd.
[21] Ibd.

'piecemeal' motor pattern."[22] The body schema seems to have lost its smooth integration into its environment. The latter cannot be mastered since the body lost its general attunement with its world. According to Dowd, the fragmentation of the movement pattern is also the reason for a longer movement preparation time as well as its programming of "sequential movements in independent steps" (ibd., 1540). In some cases, artificial programming of movement seems to be the only possibility for people from the autistic spectrum to still guarantee the realization of their intended action.

Other researchers, on the contrary, do not impute the "'piecemeal' motor pattern" in autism to an affected reception and coordination of visual information but rather to impairments of pre-reflective bodily self-awareness. Donnellan mentions the autobiographic writings of autistic self-advocates, which "report that they lack sensation or feedback from their bodies and may feel physically unaware of their facial expressions, position in space and movements."[23] The autist Sean Barron even reports, that he sometimes lacks of control over his own movements. His body starts repetitions he feels unable to stop by his own intentions[24]. In the same way, Donnellan quotes another autistic self-advocate, Judy Endow, who reports the following: "Sometimes my speaking is hindered, other times my thinking and sometimes my physical movement."[25] In a recent study, Torres et al. stated that "in autism […], typical volitional control [of movement] is highly compromised often with a striking disconnect between the intentions and the actions of the affected individual."[26] Her study comes to the conclusion that people from the autistic spectrum "cannot discriminate the variability of their own movements from contextual internal and external influences"[27]. Being thus unable to distinguish whether a movement is caused by one's own intentions or merely the result of a reaction to an external stimulus, people from the autistic spectrum have a "noisy, random, and restrictive proprioception of their own physical micro-movements"[28]. Therefore Torres suggests: "In ASD such aberrancies are likely to impede *spontaneous autonomy* of the body, body self-awareness, arousal, affective-emotive behaviors, and overall impair volitional control over the person's actions."[29]

Due to a limited integration of the body into the wordly situation as well as to a lack of basic pre-reflective awareness of the subjective body, in autism, the body does no longer function as a transparent medium that provides a basic and habitualized access to the world. On the contrary, the pre-reflective access turns out to be itself a limit and a barrier that hinders the subject to fully penetrate into the shared intersubjective world.

III. A phenomenological account on kinesthesia

[22] Dowd A.M., McGinley L., Taffe J.R., Rinehart N.J. (2011), Do Planning and Visual Integration Difficulties Underpin Motor Dysfunction in Autism? A Kinematic Study of Young Children with Autism, *Journal of Autism and Developmental Disorder*, 42, 1539.
[23] Donnellan A.M., Hill D.A., Leary M.R. (2013), Rethinking autism: implications of sensory and movement differences for understanding and support, *Frontiers in Neuroscience*, 6, 2.
[24] Barron J., Barron S. (1992), *Hört mich den niemand?*, München: Goldmann Verlag, 195.
[25] Donnellan A.M., Hill D.A., Leary M.R. (2013), Rethinking autism: implications of sensory and movement differences for understanding and support, op. cit., 2.
[26] Torres E.B., Brincker M., Isenhower R.W., Yanovich P., Stigler K.A., Nurnberger J.I., Metaxas D.N., José J.V. (2013), Autism: the micro-movement perspective, *Frontiers in Neuroscience*, 7, 2.
[27] Ibd., 18.
[28] Ibd., 19.
[29] Ibd., 4.

From a phenomenological standpoint, bodily self-awareness, that accompanies all our movements and that founds the pre-reflective knowledge to be actually at their origin, is fundamental not only for the consciousness of being an embodied subject, but also for the perceptive constitution of a three dimensional object and three-dimensional space. Kinesthesia, taken as the implicit awareness of my own bodily movements, is a necessary element in the constitution of the world in which we live in. Pre-reflective bodily self-awareness accompanies all our movements and we have therefore a constant proprioceptive feedback from our body attesting our attunement with the world.

Kinesthetic sensations accompany all sensorial information, regardless the sensorial field they belong to. To each visual perception corresponds a certain proprioceptive awareness of the whole body, especially the head and the eyes. The relationship between kinesthesia and exteroception is understood by Husserl as a "functional unity"[30], which has to be distinguished from any a priori connection: "its about an aposteriori or empirical unity and not about an a priori unity."[31] An a priori connection between kinesthesia and sense-perception is absolutely excluded, given the fact that to each position of my body and sense-organs in space potentially corresponds an infinite number of possible images. In order to engender association between kinesthesia and sense-perception *in every possible situation*, the body schema has to be extremely supple, since "the same K[inesthesia]-manifold is bound together with all the possible manifolds of fields of images"[32]; and therefore: "a definite *K* and a definite *i*[image] are not connected "for once and for all"."[33]

When perceiving an object, our eyes make fast movements (saccades[34]) in order to investigate the object precisely. During this process of investigation, multiple associations between the visual images and the eye's movement are created, which produce a certain perceptive style that belongs inherently to the perceived object. This perceptive style determines a conditional relationship between my eye's movements and the object: I implicitly know that a switch from kinesthesia(0) to kinesthesia(1) will give me a correlative change from image(0) to image(1). In other words, the kinesthetic sensations are subjective "circonstances (*Umstände*)"[35], under which a coherent understanding of the perceived world is possible. Each object presupposes a certain perceptive style that is nothing else than the regularity of the parallel flow of visual images and kinesthetic circumstances. According to Husserl, we recognize and anticipate the perceptive style of a given object even if only a very little increment of the visual flow is actually given; a little increment is sufficient, since the synthetic and passive operations of our bodily founded self- and world-awareness immediately inserts the perceived sides of the given object into a "universal type

[30] Husserl E. (1973), *Ding und Raum. Vorlesungen 1907. Husserliana XVI*, The Hague: Martinus Nijhoff, 170.
[31] Ibd., 179.
[32] Ibd. , 183.
[33] Ibd. , 180.
[34] Cf. Petit and Berthoz: "Lors d'une exploration visuelle, les images du monde successives (exposantes) sont obtenues par des sauts du regard, des saccades. Chaque movement oculaire se signale au sujet par un sens intime du mouvement (motivant)." (A. Berthoz, J.-L. Petit, *Phénoménologie et Physiologie de l'action*, Odile Jacop, Paris, 2006, p. 151)
[35] Hua. XVI, op. cit., 181.

(*Gesamttypus*)"[36] of the object, which even includes and anticipates its non-given sides that remain hidden from our actual perspective[37].

According to Husserl, the general type of the perceived object is recognized through a "*sensuous schema* (*sinnliches Schema*)"[38], which is inherently linked to the body and the kinesthetic body schema. The latter defines therefore an implicit knowledge about the perceived world. In case of dysfunction or impairment, as in autism, intentionality cannot operate appropriately, since it lacks the fundamental kinesthetic "circumstances" that serve as a guide in the process of understanding, apprehending and apperceiving the world as being endowed with a coherent perceptual style.

IV. Autistic sense-perception

In the absence of the capacity of recognizing a coherent perceptive style through sensomotoric visual-kinesthetic schemata, the autistic world likely lacks of a general, object-based structure. Without the sensomotoric foundation that is necessary to the coherent functioning of object-intentionality, it is difficult to imagine what could be the way in which world manifests to people from the autistic spectrum.

Neuroscientific studies led by Markram et al.[39] found a hyper-functioning in various brain regions that might be the reason for the often-mentioned hypersensitivity and hyper-perception in autism. Regarding the sensorial overstimulation to which people from the autistic spectrum are committed, Markram et al. propose the term of an "Intense World Syndrome"[40]. In a very similar way, Mottron defends the idea of a general enhancement of sensorial and perceptual performances in autism. According to Mottron, "enhanced performances involve the automatic processing of some perceptual dimensions beyond the typical level"[41]. The result of this perceptual "enhancement" would be the "capture of attentional resources"[42], which makes it impossible to escape the sensorial stimulation. Sensorial overstimulation would be able to override body schematic processes and disturb the constant and dynamic dialogue between my bodily movements and the visual images. The world looses its coherent perceptive style that only comes into existence through mutual attunement between my body and the perceived world. The outcome of such enhanced perceptual performances must therefore not always be the so-called "savant syndroms" (based upon the recognition of cognitive or sensorial patterns within given perceptive fields), but can also lead to a complete withdrawal of consciousness from the world of perception. Instead of investigating the latter, autistic subjects are often incapable of categorizing sensations in terms of objective properties indicating a certain substance 'behind' the sensorial stimulation. As a consequence of such a lack of objective distance towards the world, autistic subjectivity

[36] Ibd., 183.
[37] Ibd., 188.
[38] Husserl E. (1952), *Ideen zu einer reinen phänomenologischen Philosophie. Zweites Buch. Husserliana IV*, The Hague: Martinus Nijhoff, 37.
[39] Markram H., Rinaldi T., Makram K. (2007), The Intense World Syndrome – an alternative hypothesis for autism, *Frontiers in Neuroscience*, 1, 1, 77-96.
[40] Ibd., 77.
[41] Mottron L., Burack J.A. (2001), Enhanced perceptual functioning in the development of autism, *The development of autism: perspectives from theory and research*, London: Lawrence Erlbaum Associates, 142; cf. Mottron L. (2004), *L'autisme: une autre intelligence*, Springmont: Mardaga, 124.
[42] Mottron L., Burack J.A. (2001), Enhanced perceptual functioning in the development of autism, op. cit., 142.

risks loosing itself into an uncontrolled, overwhelming sensation – as it is the case for low-functioning autism. Coherent with this view, Donna Williams describes moments in which she looses herself into a world of pure sensations, moments, in which no object nor self-awareness is anymore available to her.

> "In this hypnotic state, I could grasp the depth of the simplest of things; everything was reduced to colours, rhythms and sensations."[43]

> "This state of mind was, I suppose, like some sort of semi-consciousness, as though my body was awake but I was still asleep. When I gave up being aware of and responding to things around me, I would return to this state and would only then feel I was being true to my nature. When I stayed aware and alert to what was happening around me, it took a lot of energy and always felt like a battle."[44]

Even though Williams describes this state of mind as being her "true nature", she also declares that there is a difference between herself as a person and this state of "semi-consciousness". Also Temple Grandin reports moments of such a retrieve of self-consciousness from herself, her body and the whole situation.

> "When left alone, I would often space out and become hypnotized. I could sit for hours on the beach watching sand dribbling through my fingers. I'd study each individual grain of sand as it flowed between my fingers. Each grain was different, and I was like a scientist studying the grains under a microscope. As I scrutinized their shapes and contours, I went into a trance which cut me off from the sights and sounds around me."[45]

According to Grandin, these moments of sensory overstimulation describe the very core problem of autism, inherent in both low- and high-functioning autisms. Whereas high-functioning autists would only have to deal momentarily with these moments of "mindlessness", low-functioning autists would live more or less constantly in a radical overstimulating sensorial world[46]. Grandin therefore suggests, that this overstimulating sensorial world is the "autistic world"[47] in the proper sense of the word. Educational programs and therapeutic interventions should try to "pull them out" of this world and bring them back to a state of mind in which there is self- and object-awareness.

The psychoanalyst Donald Meltzer described already in the seventies the autistic state by the term of "dismantling". This means that the very core process of autism consists in a particular kind of "*splitting process*"[48], in which the mind falls into its multiple parts, leaving behind a subjectivity that looses itself within each single sensation to which it is exposed. To explain this process, Meltzer says the following:

> "They employ a special type of splitting process, in which they *dismantle* their ego into its separate perceptual capabilities of seeing, touching, hearing, smelling, etc., and thereby reduce their object from one of 'common sense' (Bion), to a multiplicity of uni-sensual events in which animate and

[43] Williams D. (1992), *Nobody Nowhere. The Remarkable Autobiography of an Autistic Girl*, London, Phiadelphia: Jessica Kingsley Publishers, 66.
[44] Ibd.
[45] Grandin T. (2006), *Thinking in Pictures. And Other Reports from My Life with Autism*, London, Berlin, New York, Sydney: Bloomsbury, 34.
[46] Ibd., 42.
[47] Ibd., 45.
[48] Meltzer D., Bremner J., Hoxter S., Weddell D., Wittenberg I. (1975), *Explorations in Autism. A Psycho-Analytical Study*, London: Roland Harris Educational Trust, 11.

> inanimate become indistinguishable. The consequence is that, in states of Autism Proper, they themselves are reduced to a type of mindlessness equivalent to organic brain defect."[49]

By dismantling the mind, the autistic splitting process allows the different senses to withdraw from the intersensorial unity as it is founded in the body schema. Only intersensoriality, the unity of the different sensorial fields, allows our subjectivity to apprehend an identical object behind the sensorial multiplicity through which it is immediately given. As a consequence of this dismantling process, Lheureux-Davidse suggests that the autistic subjectivity withdraws in one particular sense and its sensation[50]. According to Meltzer, this withdrawal has dramatic consequences for the subjectivity as a whole.

> "When the self is dismantled into its sensual components by the suspension of the ego-function of attention, a coherent ego ceases temporarily to exist; each fragment, or rather component, is reduced to a primitive state dominated by the Id and its economics and dynamics. This primitiveness is, we suggest, essentially mindless."[51]

The autistic state is "mindless" not in the sense of a complete absence of experience as such, but rather in the sense of a coherent unity of the different sensorial modalities and their integration into the dynamic coherence of the body schema. It is only on the basis of such intersensorial connections that the ego-function of object-intentionality can appropriately operate. In order to refer to an object through signitive intentionality (*Bedeutungsintentionalität*), the body schematic processes must already have operated. As we have seen, body schematic processes guide intentionality; intentionality only realizes on a conceptual level what body schematic processes have already done: to insert the object into a coherent perceptive style.

Since the importance of the synergetic operating of the body schema for the ego-function of object-intentionality sever disturbance of the body-schematic processes will also have to affect the existence of the ego itself and its pre-reflective givenness. In the same line of thought, Williams reports moments of a total disappearance of the ego:

> "I learned eventually to loose myself in anything I desired – the patterns on the wallpaper or the carpet, the sound of something over and over again, the repetitive hollow sound I'd get from tapping my chin. Even people become no problem. Their words became a mumbling jumble, their voices a pattern of sounds. I could look through them until I wasn't there, and then, later, felt that I had lost myself *in them*."[52]
>
> "As with anything I became close to, I would try to lose myself within it."[53]

Williams loses herself in the overwhelming sensation that literally fills up her whole consciousness. As many philosophers have stated, the loss of self-consciousness is inherently linked to the loss of object-consciousness: the one can only exist in correlation to the other. In

[49] Ibd., 204.
[50] "Isolation de la conscience en un seul sens et sa sensation." (Cf. Lheureux-Davisde C., conference, 11/02/2014)
[51] Meltzer D., Bremner J., Hoxter S., Weddell D., Wittenberg I. (1975), *Explorations in Autism. A Psycho-Analytical Study*, op. cit., 14.
[52] Williams D., *Nobody Nowhere. The Remarkable Autobiography of an Autistic Girl*, op. cit., 11.
[53] Ibd., 17.

this sense, the disappearance of Williams within the sensation of the object implies, correlatively, the disappearance of the object "behind" the sensation. Words become a "mumble jumble", because the sound is only received in regard to its very sensation. Sounds and sensations in general are not any more apprehended as properties of objects or in regard to an underlying signification. In the moments of dismantling, the world is sensed in such an intense way that the brute sensation is present for itself, standing in the perceptual foreground without referring to any object "behind" the sensation.

In order to explain the very possibility of such an experience, we have to ask whether a sensation must not necessarily be referred to an object, and if not so, what would then be the very nature of such a non-objectal sensation?

In the tactile sensation of an object's surface, the brute sensation can indeed stand for itself. Within the sensations' very givenness we do not necessarily apprehend any intentional character (i.e. *Auffassungscharakter, intentionale Materie*)[54]. This does not exclude, however, the very possibility of such a non-intentional sensation to be *potentially* referred, at each time, to an object – precisely through an intentional act of consciousness. Only in this case, as Husserl would say, the sensation becomes a representative content (*darstellender Inhalt*) of an act from which it receives "animation" (*Beseelung, Aufffassung*). According to Husserl, the sensation of pain through a burning object can be referred to two different "objects": either to the burned limb or to the burning object. The difference simply concerns the animating apperception and not the sensation itself.

The very possibility of the sensation to be apperceived either in a subjectivating or rather an objectivating way, presupposes, however, that the sensation in itself (as being part of the reel (*reell*) flow of experience (*reeller Erlebnisstrom*)), is fundamentally ambiguous, non-determined and belonging neither exclusively to the object nor to the subject; rather: the sensation, as a mere non-intentional sensing, belongs *to the foreign object as well as to the subject itself*. We do actually have access to this originary un-referenced state of sensation – in which a separation between a subject and an object is not yet posited – through that what Husserl analyzed in terms of *the affective pre-reflexive self-consciousness*: a sensation does not only refer to something that is sensed, but always implies a self-sensing within the sensation. He therefore distinguishes, within the sensation, a *sensing* (*Empfinden*) from the content of sensation (*Empfindungsinhalt*) as it is grasped by an intentional act. The sensing is here to be understood as "the internal consciousness of the content of sensation (*das innere Bewusstsein des Empfindungsinhaltes*)" [55]. The latter means nothing else than the equiprimoridality (*Gleichursprünglichkeit*) of the consciousness of sensation and the sensation itself. If therefore Williams, in her dismantled state of (non-)consciousness, looses herself in the pattern of a wallpaper or the sound of a tapping chin, she then returns to this state of mere sensing, in which neither the object nor the subject itself come to a full-blown independent existence. The dismantled subjectivity of the autist is to be situated precisely at a level *before* (*diesseits, en-deça*) any subject-/object-constitution. The "mindlessness" of this state is to be explained by the total absence of any kind of intentional and apperceptive function.

[54] Husserl E. (2002), *Logische Untersuchungen. Ergänzungsband. Zweiter Teil. Husserliana XIX*, The Hague: Martinus Nijhoff, B 392.
[55] Husserl E. (1969), *Zur Phänomenologie des inneren Zeitbewusstseins (1893-1917). Husserliana X*, The Hague: Martinus Nijhoff, 127.

V. World's fragmentation and bi-dimensionality

The lack of intentionality, which was the outcome of the two main impairments that we have analyzed – kinesthesia and sensoriality – has dramatic consequences for the perceived world of the dismantled subject. Without the apperceptive function, the world seems fragmented and chaotic, since the category of unity itself belongs to the intentional act and not to the sensation. The latter is to be seen as completely un-unified, implying nothing but difference, never sameness. At the level of mere sensation in its originary state, every sensation is different from another.

In accordance with the idea of impaired object-intentionality, Mottron notices the lack of categorization in people with ASD. Since people from the autistic spectrum are exposed to an overwhelming sensorial world, categorization, which always presupposes the oblivion of certain perceptual features, cannot operate[56]. Dismantled, the autistic subject remains in the sphere of mere sensing, in which neither objective qualities nor objects are to be perceived. As Meltzer puts it, "it would be a mere coincidence if the most highly colored, arrestingly shaped, most odoriferous, noisiest, tastiest, softest, warmest sensation of the moment were all emanating from the same real external object." [57] To give a phenomenological account of this problem, one could refer to the Lockien billiard bowl, which is given through a manifold of different tones of yellow, whereas we apperceive it as having the same color all over its surface[58]. This example makes clear: the identity of an objective quality can appear – and sometimes necessarily only appears – through a multiplicity of different non-intentional sensations. In the absence of the unitary functioning of the body schema, all sensations seem to be different from one another. In a world of radical heterogeneity, the intentional ego function cannot operate and looses itself in the singular sensings.

The "fragmented world"[59] of the autistic subject, its reduction to brute un-unified sensation, is inherently linked to the absence of three-dimensional representational space. The latter implies at least two features that turned out to be highly affected through the autistic process: kinesthetic self-awareness and apperception. Only on the basis of the kinesthetic self-awareness, the object can be (ap-)perceived as having a hidden side beyond the perspective that is actually given. The idea of three-dimensional space, i.e. the implicit knowledge of an homogenous form of spatiality that includes all perceived objects alike and imposes visual distortion to their images – the representation of such a space is bodily anchored and not an actually perceived feature of the world. As Petit and Berthoz put it, three-dimensional "objective space is nothing but the correlate of the ensemble of bodily motricity"[60]. According to Husserl, space is the result of a "projective representation (*projizierende Darstellung*)"[61].

Three-dimensional space is "pro-jected (*entworfen*)" and not simply apperceived, because it literally sprawls upon a proto-spatial extension that is given through vision and

[56] Mottron L. (2004), *L'autisme: une autre intelligence*, Springmont: Mardaga, 89.
[57] Meltzer D., Bremner J., Hoxter S., Weddell D., Wittenberg I. (1975), *Explorations in Autism. A Psycho-Analytical Study*, op. cit., 12.
[58] Hua. XVI, op. cit., 44.
[59] Firth U. (1992), *L'énigme de l'autisme*, Paris: Odile Jacob, 173; Bertone A., Mottron L., Jelenic P., Faubert J. (2003), Motion Perception in Autism: A "Complex" Issue, *Journal of Cognitive Neuroscience*, 15, 2, 222.
[60] Petit et al., *Phénoménologie et Physiologie de l'action*, op. cit., 161.
[61] Hua. XVI, op. cit., 160.

touch. In Husserl, space is therefore not an a priori "form" of sensibility, an innate structure that necessarily unifies each sensible manifold as in Kant; on the contrary, spatial elements are immediately given through the experience of visual and tactile senses. The sensorial material (*hylé*) belonging to sight and touch has the fundamental feature to contain information about its very spatial position. This is not the case for the other senses, which all presuppose a given space in which they can unfold. It is because of this kind of extension intrinsic to visual and tactile sensation, that the projection of objective space upon visual and tactile sensations can be understood as a process of "assimilation (*Verähnlichung*)"[62].

Nevertheless, similarity does not mean identity: the kind of extension that belongs to tactile and visual sensations is not yet the objective three-dimensional space, but only the "proto-spatial" extension, upon which objective space is projected. Husserl himself uses the world of tactile and visual "fields" in order to differentiate this kind of proto-spatiality from constituted objective space[63]. The access to visual and tactile proto-spatiality does therefore not yet include objective space as such. Quite the contrary: within the visual and tactile fields, we only encounter a certain voluminosity, visually we only see a vague deepness and we do not yet have access to the third dimension. Only through the kinesthetic systems we acquire a notion of concrete distance and spatial depth that underlies the projection of objective space[64] and constitutes the third dimension. Therefore, on the rudimentary level of mere visual fields, lacking real, representative deepness in the sense of the third dimension, the perceptive horizon can be described as a two-dimensional spherical extension that surrounds our visual field like a painting on a huge wall.

Within the process of dismantling, the autistic subjectivity eclipses generally in three kinds of sensations: tactile, visual and self-stimulated kinesthetic sensations. In the dismantled state, these three sensorial modalities are used in connection with curios oblivion of their spatial features. Concerning the withdrawal in touch, Bullinger notices that the "movements of the hands upon the surfaces with particular textures are realized with a very adjusted strength, in order to maximize the effects of texture to the disadvantage of a spatial treatment."[65] The same applies to self-stimulating kinesthetic stereotypes, often observed in situations, which are emotionally too overwhelming. In self-stimulation, autistic subjects "privilege the sensations stemming from movements without considering their spatial representations"[66]. Samaritter, who analyzed the autistic embodiment as an auto-referenced circularity of self-regulating movements, sees very clear that all these movements in nearby space are directed to the subject's own body and not to the outer world[67]. In the same sense, Grandin acknowledged that "rocking and spinning were other ways to shut out the world when I became overloaded with too much noise."[68]

Concerning the visual sphere, one would think that here the dismantled subject is unable to enclose himself in his own body and cut off from the outer world. Nevertheless, the

[62] Ibd., 340.
[63] Ibd., 159.
[64] Ibd., 255.
[65] Bullinger A. (2011), *Le développement sensori-moteur de l'enfant et ses avatars*, Toulouse: Erès, 59.
[66] Ibd.
[67] Samaritter R., Payne H. (2013), Kinaesthetic intersubjectivity: A dance informed contribution to self-other relatedness and shared experience in non-verbal psychotherapy with an example from autism, *The Arts in Psychotherapy*, 40, 147.
[68] Grandin T., *Thinking in Pictures. And Other Reports from My Life with Autism*, op. cit., 34.

above-mentioned example from Williams, who "looses herself" within the pattern of a wallpaper, shows that the idea of an oblivion of the outer world is actually coherent with visual sensation. In the same sense, Mottron showed that besides longer visual fixation and the staring on objects – through which one looses all spatial orientation and the sense of distance in general – people from the autistic spectrum often use lateral glances, which are "associated with the filtering of high spatial frequency (detail perception) information."[69] This kind of intense staring upon objects is known in psychoanalysis under the notion of "adhesive gaze (*regard adhésif*)": "While fixing hardheaded the object with his gaze, the autist annuls the vision of distance towards the perceived object."[70] Within the process of dismantling, vision is therefore used in the same way as touch: the object "behind" the sensation being eliminated, Tustin says, "the touched object seems being a part of the body itself. Without any space of separateness between the subject and its objects, the latter cannot be experienced within the visual and three-dimensional context of spatial relations."[71]

Tactile and visual sensations are always given within two-dimensional fields of extension. Consequently it can be said, that the dismantled subject, that "looses herself" (Williams) within these tactile or visual sensations, puts herself "*in equation* with the sensation in a bi-dimensional manner" (ibd.). According to post-Kleinian psychoanalysis, the type of identification pertaining to the autistic process is therefore not projective (as in psychosis), but rather "adhesive". Dismantled, the autistic mind adheres on surfaces of bi-dimensional extension and must therefore be understood as being itself fundamentally bi-dimensional. According to Esther Bick and Donald Meltzer "adhesive identification"[72] leads to a bi-dimensional body and world conception, in which distance is not recognized as such. The only way in which the body of the dismantled subject can connect to others and to the world would consist in an adhesive bonding of one's own body with the foreign body. Such a bi-dimensional structure of subjective experience does neither exclude a specific voluminosity nor a rudimentary form of depth. It is rather to be understood as a loss of the capacity of distanciation towards the world and other subjects; the loss of the capacity of recognizing oneself as being different from the world. The notion of bi-dimensionality refers here to the idea of experiencing one's own body as being in a sensorial equation with the sensed object. What is bi-dimensional here is the experience itself, a mere sensing that no act-intentionality is able to refer back to an object.

Conclusion

Philosophically, these considerations raise the question of the existence of a correlation between embodied spatialization on the one hand, and psychological and intersubjective capacities on the other. Meltzer suggests that a subject with a bi-dimensional body image, having no conception of a psychic "inside", neither from oneself nor from others, cannot reach a consciousness of other subjectivities. In the same sense, Samaritter notices that

[69] Mottron L., Dawson M., Soulières I., Hubert B., Burack J. (2006), Enhanced Perceptual Functioning in Autism: An Update, and Eight Principles of Autistic Perception, *Journal of Autism an Developmental Disorders*, 36, 33.
[70] Lheureux-Davidse C. (2013), *Conférence lors du Séminaire Maldiney de Toulouse*, le 11 février.
[71] Tustin F. (1986), *Autisme et Protection*, Paris: Seuil, 74.
[72] Meltzer D. (1975), Adhesive Identification, *Contemporary Psychoanalysis*, 11, 289-310.

a circular body-perception, locked up in a "nearby space"[73] is intrinsically linked to a "solipsistic"[74] self. The general lack of intercorporality in autism, that has been the object of multiple investigations, might therefore be linked to a bi-dimensional experience of both the body as well as the world. In a far broader sense, we should therefore ask ourselves in which way our own three-dimensional body-image is linked to an operating intercorporality. A certain conception and mental representation of the body, namely as a three dimensional form that has a psychological inner sphere which is well separated from the outside, might be a necessary presupposition for intersubjectivity. The topological difference (inside/outside), that the phenomenological tradition since Husserl and Heidegger tried to put aside (respectively through intentionality and transcendence), might have, nevertheless, the highest ontological importance which still remains to be understood.

[73] Samaritter R., Payne H. (2013), Kinaesthetic intersubjectivity: A dance informed contribution to self-other relatedness and shared experience in non-verbal psychotherapy with an example from autism, *The Arts in Psychotherapy*, 40, 147.
[74] Ibd.