



HAL
open science

Surprise and Unconscious

Natalie Depraz

► **To cite this version:**

Natalie Depraz. Surprise and Unconscious. Is there a Phenomenology of Unconscious? Springer Heidelberg, 2016. hal-02121804

HAL Id: hal-02121804

<https://normandie-univ.hal.science/hal-02121804>

Submitted on 6 May 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Surprise and Unconscious

Natalie Depraz

Université of Rouen (ERAC)

University Member at the Husserl-Archives (ENS-CNRS/Paris)

EMCO-Emphiline ANR (2012-2015)

ADOCHRONIQ GRR IRHIS

(2016-2019)

Abstract

In this contribution I would like to make a room for another unconscious, which I name the “heart unconscious”. To me it appears as a remarkable possible thread in order to bridge, more, to weave together two already well-known threads, that is, broadly speaking, the physical and the subjective, which first appear ontologically irreducible. Why? Well, one initial argument in favour is that the heart-unconscious allows a pre-conscious continuity of our experiential dynamics because of its very twofold structure, organic (the heart-muscle) and lived (heart-affectivity).

In order to reveal the specificity of such an experiential pre-conscious heart-unconscious, I will put to work a very simple and daily experience, the experience of surprise. Why surprise? My idea is that surprise is a remarkable marker of heart-unconscious, insofar as, in a similar structural way, it also appears as a twofold objective-subjective pre-conscious, easily conscious becoming occurrence, manifesting as a physiological-cardiac startle as well as a lived perplexity.

Keywords

unconscious, heart, surprise, emotion, pre-conscious, explicitation interviews, first-person methods, micro-phenomenology, neuro-phenomenology, cardio-phenomenology

Introduction

It is usual today to talk about a cognitive, a bodily neural or a psychic unconscious (Kihlstrom, 1987; Buser, 2005, Dehaene et al., 2006). These forms of unconscious all appealing to a sub-

personal level where automatic processes, be they neural, biological or psychic-libidinal occur as not directly accessible to my first personal introspective lived experience.

Now, there is an increasing interest in trying to cross the data-experimental dynamics of such automatic events with the subjective experiential micro-processes of my lived experience (Petitmengin & Lachaux, 2014; Desmidt et al., 2014, Depraz & Desmidt, 2015). There is a correlatively growing awareness of the abstract character of the dichotomy unconscious/conscious and of the still external distinction between third- and first-personal approaches (even though both latter distinctions only partially map), and also consequently of the necessity to provide a more gradual description of the fined-grained continuum of pre-conscious states and dynamics.

In this contribution I would like to make a room for another unconscious, which I name the “heart unconscious”. To me it appears as a remarkable possible thread in order to bridge, more, to weave together two already well-known threads, that is, broadly speaking, the physical and the subjective, which first appear ontologically irreducible. Why? Well, one initial argument in favour is that the heart-unconscious allows a pre-conscious continuity of our experiential dynamics because of its very twofold structure, organic (the heart-muscle) and lived (heart-affectivity).

In order to reveal the specificity of such an experiential pre-conscious heart-unconscious,¹ I will put to work a very simple and daily experience, the experience of surprise. Why surprise? My idea is that surprise is a remarkable marker of heart-unconscious, insofar as, in a similar structural way, it also appears as a twofold objective-subjective pre-conscious, easily conscious becoming occurrence, manifesting as a physiological-cardiac startle as well as a lived perplexity.

1. The hard problem of unconsciousness

When one broaches the issue of unconsciousness, one immediately has in mind various forms of unconscious that are already well known. In experimental neurosciences and in cognitive psychology, we face a cognitive unconscious: it amounts to a neuronal processing of perceptions, memories, learning activities or verbal expressions with no subjective awareness

¹ With « unconscious » here in the expression « heart unconscious », I mean a structural meaning of unconsciousness : what is not directly accessible to consciousness, but needs to be triggered or paid attention to. The heart unconscious may therefore easily emerge to consciousness, hence be « pre-conscious », awaiting for being conscious, insofar as my heartbeats are easily « conscientisable » (consciousizable), if I pay attention to them.

of any possible kind but it can be measured through different techniques (EEG/Fmri); in psychophysiological sciences, we investigate a bodily unconscious made of non- or pre-verbal organic (cardiac, breath-frequency, skin-temperature) and behavioural expressions (face and motor-gestures). Such parameters may also be measured and traced back when video-recorded; in psycho-analytic approaches, the unconscious is said to be purely “psychic”: it is made of repressed feelings, subliminal perceptions, train of thoughts, habits, and also complexes, hidden phobias and desires, symbolized in dreams and in slips of the tongue, thus only indirectly identifiable in language or behaviour and sometimes best revealed thanks to an analytic therapy.

These different aspects of unconscious take place at a sub-personal level of the mind, of consciousness or of psychism and refer to automatic neural, biological or libidinal processes. They share an indirect way of identification through neuronal electric measures, video-recordings, language or behavior. As I already mentioned, they are not directly accessible to my introspective subjective lived experience.

We thus face the “hard problem”, not of consciousness as it has being long claimed since David Chalmers, but of the unconscious itself: indeed these forms of accessibility to unconscious are third-personal ones (neuronal/behavioural/linguistic). The question is: what is and *is there* a first-personal unconscious? — If yes, it will be an unconscious that could directly be accessible to consciousness. But to what extent would it still be a full-fledged unconscious if it is meant to change itself into its reverse, that is consciousness, or again, if it is “consciousizable”? Thus stated, the problem has an unsolvable paradoxical structure which is due to the apparent but in fact misleading too clear-cut distinction between conscious (first) and unconscious (third) or if not, to the confusional mixture of both dimensions going one into the other, which makes unconscious disappear into its contrary.

We know some recent thrusts in cognitive sciences which aim at unfolding the dynamics of the becoming aware of such automatic events of the mind: this was the pioneering goal of Varela with neurophenomenology (1996/1999), where the author makes the hypothesis of the fertility of mutual generative constraints of third person data and first person subjective experiences for a better complexer understanding of consciousness. It was early applied to visio-motor-time-perception (Lutz, 2002), who shows how first person data can be used to detect and interpret neural processes, while the latter help control the variability of subjective fluctuations. In a far more reductionist way, S. Dehaene and his team (Marti, 2010) showed how introspection is not necessarily to be dismissed as an inappropriate

measure but can be used in experimental work in a quantified way while taking into account the detailed descriptions of the subjects of the time and effort spent on a task.

Such theoretical thrusts however only account for a dynamic going from a third-personal unconscious to a possible first-person consciousness, either by using co-generative constraints between first person lived events and third person brain data, on the joint-basis of Husserl's conceptual dynamics of the living present and of an experiment of anticipatory time-dynamics of visuo-motor perception (Varela), or by indicating not only the formal correlation between objective and subjective data but the gradual processing of consciousness out of unconscious subliminal processes (Dehaene). Such endeavours therefore still claim to "bridge a gap" between two heterogeneous ontological realities, the physical and the subjective-conceptual (à la Descartes), with at best the location of a "pre-conscious" intermediary step within the process, as it is exemplified with vegetative states such as coma, anaesthesia and sleep (Naccache), which only succeeds in providing a last resort. Of course, an alternative statement (Damasio) is the ontological non-dual monism (à la Spinoza), where conscious and unconscious events unfold parallel in their own dynamics as co-dependent aspects of an only reality. Indeed, Damasio's statement relies on the ontological contention of the unity and the continuity of our only reality as brain-subject. So the methodological epistemic question of access consciousness is not fitting here, since the unconscious is a neurophysiological one, that can only be registered through measures. It is therefore completely inaccessible to the subject as a conscious and selfconscious subject. But in this latter case there is no felt need whatsoever to articulate any different kinds of data (first personal vs. third personal), since we have to do to a unique and homogeneous ontological reality, as W. James would have early claimed it.

In the following, my claim therefore is methodological and epistemic, not ontological.

II. Heart unconscious as the index of cardio-phenomenology: an integrative approach

My proposal therefore is the following: we observe a phenomenal difference in the *mode of givenness* of subjective lived experiences and physical data, and such an observation is theoretically argued by phenomenological accounts, in Husserl and Merleau-Ponty mainly ; we also observe the felt unity of our reality as an individual, attested for example by Descartes both in the 6th Meditation and in his Letters to the Queen Elizabeth, on the basis of which we also experience dis-functionings between our body and our mind. How can we

think together such a felt unity and our experience of modal differences in our way of knowing and experiencing ?

My suggestion is that a heart-centred model provides such an opportunity to think together both modal differences of the givenness of our self and its immediate felt unity. The advantage of the heart-unconscious against a neural-cognitive or an analytic psychic unconscious lies in its experiential first-personal accessibility. Unconscious is here the fact that the heart beats without my being necessarily conscious of it, though I may easily access to its beating while simply putting my hand on my chest.: whereas I am thus able to directly feel my heart beating, I will never feel directly my neurons activating, neither my libido processing: I have direct organic sensations of my heart (I feel it pulse), I don't experience as such my libido, even though I may bodily experience a sexual desire (orgasm) as an indirect manifestation of my "libido". With the heart rhythmic movements, we get a phenomenal spontaneous accessible and light experiential *continuum* in the organic-subjective dynamics. We neither need to go against our common observation of the difference of the structural givenness of first personal (subjective) and third personal (physical) data.

One objection still exists though: what about the bodily unconscious? It seems that we do not need to promote a specific heart unconscious, since: A) the heart is a bodily organ: a muscle in the body; B) I can feel the sensations of my body (painful, pleasant) as much as the beatings of my heart (and sometimes even more directly). So what? What is the need for a "cardio-phenomenology", since phenomenology is as such a bodily-somatic-phenomenology? Indeed there is a general experiential continuum sensation-feeling. My contention is directly against the discontinuity between brain and consciousness, and puts the heart to the fore as a central organ which offers a specific case for such a continuity. The heart unconscious therefore does not go against the bodily unconscious but offer a complementary dimension more specifically dedicated to emotions-affects and able to interact with subjective experience more smoothly than the brain: A) it suggests thanks to the heart-organ a refined, focused and also easily measurable access to our organic-subjective continuous dynamics; B) it allows to identify more precisely the proper affective dimension of the lived body; C) it provides a more integrative system of the self including emotions as full-fledged components and not only as derived from the body or from the brain.

The idea therefore is to make a room for the heart unconscious — not to promote it as an exclusive system — in order to braid together with it the two already better well-known threads, that is, the physical-bodily and the neuronal-cognitive. An epistemology of the braid thus emerges with *three* threads instead of two: brain, body, heart, originally linked together.

Such a triangular model is more complex et flexible and therefore helps going beyond the limitations of such dualities as subjective/objective, or consciousness/brain.

Cardio-phenomenology therefore appears as a nice experiential phenomenology initially operating with a very simple common sense argument, since we have a direct first person sensation of our heartbeats: you feel your pulse, you feel your heart beat in your breast, in your head, your pulse races when you get anxious or after running, you feel your pulse reduce at rest, the rhythm of your heart always beats faster when you have drunk too much coffee or when you fall in love. You can feel it at the very moment with a minimum of trained attention... Or even without it! Hence the remarkable experiential ‘automaticity’ of the heart-rhythm: it beats *within myself without myself* but I can spontaneously ‘turn’ to my heart beating and “feel” it. This is the very amazing thing of the pre-conscious modality of my being aware, its light peculiarity: unceasingly “running” in myself without having to be reflected upon to be effective but easily “coming” to me if only I turn my attention to it !

This being said, it results clear how much with cardio-phenomenology we make a step beyond neurophenomenology (Varela, 1996). The latter provided mutual generative constraints between the time-embedded experience of the subject and her subpersonal neurodynamics. Now, the limitation of this approach proceeds from the ontological time-discrepancy existing between a priori timeless philosophical categories (here the living present as a constant overlapping of protention, impression and retention) and the subpersonal milliseconds neurodynamics: my hypothesis is that in fact we have to do here to an interaction between two theoretical third person approaches (the Husserlian a priori generic structures of subjectivity and of experience vs. the sub-personal generic structures of the brain), which both leave out the experiential lived 1st personal approach. Cardiophenomenology instead (Depraz, 2015/Depraz-Desmidt, 2015) apply generative constraints to a twofold continuous unitary pre-conscious experience, both organic (heart beating) and lived (emotional-affective). The so-called gap therefore disappears as an ontological problem while being reduced and then phenomenally seamed thanks to one common experienced time-dynamics both measurable and qualitative. With more appropriate tools, that is, physiological/cardiac measures and ‘explicitation’ interviews, we favour a real effective productive crossing between a third-person approach and a first-person approach, with the goal of synchronizing the timing of the cardiac-organic-physiological components *and* of the lived heart/affective experience into a common shared seconds-scaled time. Thus it is based on a correlation between cardiac and lived components but it is going beyond it while co-producing potential new aspects of the

affective experience and of the physiological one, that would remain unseen if you used only one level of approach.

In short, the heart system results more integrative than the brain system. It is more integrative because it includes a dimension, the heart-dimension revealing the emotional aspect, that was not taken into account in the previous systems, hence less integrative. Cardiac rhythmicity thus appears as a genuine clue to “sew” together the discrepancy of the explanatory gap generated by the irreducible ontological discontinuity between consciousness and brain.

A first step was already made with the introduction of body and context as twofold dimensions, both lived and measurable: the two-fold unity *Leib/Körper* (Husserl, 1912-1915/1918-1936) on the one side; the autopoiesis of the living being as a circular coupling of the living body and its environment (Varela, 1989/1991) on the other side.

Husserl’s *modal* distinction of object-body (*Körper*) and subject-body (*Leib*) is innovative insofar it questions both the Cartesian *substantial* duality of body and mind but also the naive view of a sheer ontological unity of our bodily experience. Husserl thus encompasses the unity of our bodily experience while insisting on the multifarious way of bodily appearances, along a graduality between strong objectified bodily automatisms and quite subtle subjective lived bodily proprioceptive sensations.

Varela’s contention with *autopoiesis* is the self-organisation of the living being as emerging from its constant inter-actions with its environment. The notion of “operational coupling” describes the double move at work between an individual organism and its motor-perceptive context of action, which is both an activity directed towards objects and a reception from them. The organism and the environment thus mutually build and produce each other.

The next present step consists in proposing the heart-system as an experiential “remedy” to the explanatory gap. We have different kinds of arguments at our disposal: 1) an embryogenetic argument. The heart self-organizes during the first weeks of the embryo as spontaneous contractions independently of the brain (Coghill and Gesell as quoted by Merleau-Ponty in his *Nature Lessons*). 2) A linguistic indication. Parallel to the twofold unity of the body as physical/lived revealed for example in German language as *Körper/Leib*, we have a similar twofold unity with the heart respectively with the words *Herz* and *Gemüt* (Ricœur, 1950, V &I, vol. 2). 3) A phenomenological argument. The heart is the matrix of the person as both lived (affection) and organic (muscle) and it is therefore at the core from which emerge the first- and third-person experiences of the subject (Husserl, SSB, 1908-1914).

In short, the heart-rhythmicity results an interactive circular dynamics at three levels at least: (1) the circular organicity of cardiac pulsation; (2) the mobility of emotional micro-fluctuations; 3) the structural breath-rhythm (Depraz, 2008; 2009).

III. Surprise as an experiential-experimental remarkable clue for accessing heart unconscious

The theoretical and methodological framework being settled, I will explore further its relevance while putting it to work thanks to a nice and easy enough case study.

My hypothesis is that surprise is an interesting subjective phenomenon that reveals parts of our pre-conscious heart-functioning (both cardiac and affective) and opens the way for its emotional laden specific temporality. The fact that it is pre-conscious is crucial because then it can become conscious (for example also thanks to explicitation interviews for a more articulated explicit consciousness). Surprise is here a specific case study that allows to exemplify the general more structural statement about the hypothesis of a heart unconscious.

Surprise is quite a common and ordinary variable² and experience,³ at once easy to measure through physiological startle and immediately lived in most daily situations, be they relational or individual: I am waiting for a friend and I am surprised at his coming to me with my worst enemy. Here surprise emotionally associates with disappointment, anger and irritation, or even with fear; I am looking forward to going to theatre with my lover and he calls to tell me that he finally got tickets for the opera: my surprise then associates with an overflow of joy, gratefulness and euphoria. In each case, surprise, though not being an emotion as such, immediately *associates* with different kinds of state-emotions defined by their valence (Smith, 1795: “surprise of joy/of grief”;⁴ Husserl, 1908-1914: “Freudenüberraschung”⁵; Depraz 2015); surprise is embedded into a bodily succession of

² D. Dennett, ref., 2001, p. 927 : “Surprise is a wonderful dependent variable, and should be used more often in experiments; it is easy to measure and is a telling betrayal of the subject’s having expected something else”.

³ Ch. S. Peirce, ref., 1903, p. 295 : “Experience is learning us through surprises”.

⁴ A. Smith, ref., 1795, p. 295 : “Surprise is not to be regarded as an original emotion of a species distinct from all others. The violent and sudden change produced upon the mind, when an emotion of any kind is brought suddenly upon it, constitutes the whole nature of Surprise. (...) The change produced by a Surprise of joy is more sudden, and upon that account more violent and apt to have more fatal effects, than that which is occasioned by a Surprise of grief.” It thus brings about a heart-temporality of surprise, where the surprise of joy may be temporally distinct from the surprise of grief: “The heart springs to joy with a sort of natural elasticity, it abandons itself to so agreeable an emotion, as soon as the object is presented (...) But it is otherways with grief; the heart recoils from, and resists the first approaches of that disagreeable passion, and it requires some time before the melancholy object can produce its full effect. Grief comes on slowly and gradually, nor ever rises at once to that height of agony to which it is increased after a little time. But joy comes rushing upon us all at once like a torrent” (*op. cit.*, p. 295).

⁵ E. Husserl, *Studien zur Struktur des Bewußtseins* (1908-1914) : « [A VI 12 II/131 „53“]Die Schwierigkeit ist es, der Schicht gerecht zu werden, in der die Unterschiede <zwischen> der „still beseligten“, der „stürmischen“,

cardiac-, breath-rhythms and peripheral temperature oscillations, in relation with attentional or emotional physiological increases or decreases, though it is not exclusively explainable by the bodily structure ; surprise unfolds as an experiential organic-lived time-continuity made of multifarious pre-conscious micro-ruptures and organized in a recurrent model of three phases : anticipation/crisis/aftermath, which are mapping each other in turn (Depraz, 2001 ; Desmidt et al. 2014), though it is not reducible to such a time-dynamics. Furthermore it may appear as a micro-rupture within a cognitive perceptive temporal process (Peirce, 1903, Husserl, 1939), irreducible to an instant-shock but manifesting as an articulated process qua dynamics of phases (Husserl, 1905): 1) an awaiting phase characterized as an implicit anticipation and affective tension; 2) an aftermath phase made of reminiscence and affective resonance; 3) a crisis phase identifiable as an affective zero point of rupture.

Along previous investigations (Depraz, 2008, 2015), I was led to question the one-sidedness of such approaches of surprise. In physiology indeed, surprise is reduced to its bodily startle reaction basis (Darwin); in psychology, it is considered as a primary emotion among others (Ekman, 1971); in cognitive sciences, it is seen as the upsetting of my beliefs within a cognitive process (Davidson, Dennett); in neuro-computational ones it is identified to a brain mismatch, that is, as an error within a predictive coding which tends minimize surprise (Friston); in ontological metaphysics finally, which would reject surprise as too much empirical in favour of an astonishment (*thaumadzein*) only referable to man (Heidegger), it equates to the very source of questioning proper to philosophy (Plato, Aristotle). My contention instead is to consider surprise as a multivectorial process that has its inner duration, therefore not reducible to an instant-abstract shock, including a three-phased micro-dynamic and associating emotional and bodily dimensions that need to be described and articulated precisely (Depraz, 2015). Thus, in phase one, we have a valence with specific emotions associated (hope/anxiety), inner thoughts and discursive processes; in phase 3 a valence with other specific emotions associated (disappointment/satisfaction), perseverative memories, and phase two an emotional blank associated with a latency time (silence, interjections or exclamations and intense bodily cardiac reaction).

Such an integrative non-linear approach obviously does *not* exclude startle, admiration, wonder, astonishment, upsetting of beliefs or even mismatch, but rather situate them into a more articulated complex scheme not reducible to any of them, be that physiological,

leidenschaftlichen Freude, der Freudenüberwältigung und -überraschung – das Herz steht still und eine große Woge der Seligkeit strömt in das weitgeöffnete Herz hinein, dann Aufregung oder Freudenschmerz, <das> Herz droht zu zerspringen vor Freude – <und> der ausgeglichenen sonstigen Liebe ohne Leidenschaft usw. <liegen>.“

emotional, neural, cognitive or ontological. If we stuck to an approach involving a subpersonal unconscious, we would only understand surprise as a startle, a neural mismatch or a cognitive upset; if on the contrary, we contended a philosophical approach of surprise, we would favour an underlying reflective or questioning self-conscious meaning of surprise as wonder, admiration or astonishment (Aristotle, Smith, Maldiney, Heidegger).

Now, both levels of approach capture only one aspect of surprise: with the heart-unconscious on the contrary, we have a two-fold experience of surprise encompassing an organic cardiac response and a psychic affective reaction. Contrary to neural or cognitive inner processes it is directly accessible to consciousness, and contrary to the philosophical reflexive consciousness, it is embodied as a lived experience. Besides, heart-unconscious is not opposed to bodily unconscious, which is also pre-conscious. It is rather embedded into a lived bodily approach but suggests a more focused approach of cardiac affectivity.

With such an integrative model as a background we currently lead a startle/lived surprise experience-experiment, both in the psychiatric framework of depressed patients (at the Tours CHU, with Th. Desmidt) and with students taking part in a psycho-linguistic task (at Paris-Diderot University, with P. Goutéaux). In both cases, strong emotional images are shown to the subjects, either shocking photos (injury/erotic images from the IAPS base-date) contrasting with neutral ones (objects), or contemporary disturbing paintings alternating with more classical ones. In one case we electronically measure physiological cardiac, breath, skin temperature reactions and brain-activity and, in parallel with these third person physiological measures, which provide significant markers of the reactivity to surprise and to associated emotional valence, I am leading explicitation interviews, in the course of which I guide the subject back to the lived moment of the specified and situated appearing of one particularly shocking image chosen by herself, with the goal of collecting a refined first person account of the lived bodily, verbal, emotional and cognitive micro-time-embedded pre-conscious experience of surprise of the patient during the three phases; in the second case, we record the verbal spontaneous verbal reactions of the students and I lead explicitation interviews with them about one chosen art-image. In each case, I was led to unexpected discoveries regarding surprise, for example, either concerning its peculiar pre-conscious disturbed time- and language-process or about its specific emotional content and dynamics irreducible to the standard distinction between affection and cognition.

IV. The psychotic depressive heart-unconscious: circular repetitive time-dynamics, emotional peaks and stammering-non elaborative language

The leading hypothesis of the experimental physiological task (at the Tours-CHU) is the following: in contrast with a standard-subject group, depressed patients would undergo a hypo-reactivity to surprise (Kaviani et al, 2004). An intermediary remission group might help modulating such a contrast. Commonly speaking, the idea to test is: the more you are depressed, the less you are surprised! It truly matches a type of depression linked to a melancholic coming back to oneself, with a diminished opened fear linked to the indeterminacy of the future, a secure self-coiling into the past (Tellenbach) and a tendency to an-hedonia. Some other patients I interviewed though manifest a different form of depression with an increasing anxiety, which gives way to the exact reverse of hypo-reactivity: hyper-reactivity, and is often linked with a will to control. Whatever the form of depression is, it results that the implicit protentional awaiting time of the surprise is disturbed, either because protention quasi-disappears as a process, like in the melancholic closure of my coming horizons, or, on the contrary, because it is hyper-pathologically mobilised, like in anxiety.

So the temporality is highly relevant for the study of unconsciousness: in the first person descriptions I gathered already, the time of surprise indeed is not successive nor linear like in explicit consciousness where sequentiality is dominant, but it is circular, and in some cases, in depressive subjects, it is blurred, with gaps, holes in sequences or at least difficulties to identify them.

The pathological time of surprise in depression may also be characterized in a broader way as disturbed or blurred with regard to its standard dynamics of its three articulated micro-phases, anticipation/crisis/aftermath, as described above. In order to characterize more precisely some modalities of disturbance of the depressed time-dynamics of surprise I was able to notice till now, I will present two accounts of depressed patients at the visual perception of an image of mutilation, that is, during the crisis-phase.

A. D-03's map of depression at the heart-unconscious level

- Time: blurring of micro-sequentialities: unnoticed synchronizing of sensations, motor-reactions and emotions
- Language: strongly bodily-emotional echolalia, obsessive-compulsive and denial-laden
- Emotion: dynamic ambivalence of immediacy and distantiation

One crucial indication of the temporality at work for patient D-03's experience of surprise is the recurrence of one obsessive *leitmotiv*, which crystalizes in one ever-repeated expression when seeing an image of mutilation: "it is only an image!"⁶

Such an exclamatory expression occurs at an uncountable number of times. And the ever and ever coming back of "it is only an image" produces a feeling of blurring and even confusion of the sequences corresponding to phases two (crisis) and three (aftermath). Such a nagging repetition helps the patient so it seems distancing from the deep emotional shock generated by a face where no distinctive feature appears ("a melted face"⁷) and takes the recurrent formal "it is not"⁸ structure of a denial: "I have a jolt, *but I...mean, it's not, um... I have no jolt, it is, yes, I have empathy, yes that um... that seizes me somewhere, but I mean it's not... here, it's not something that I...that that... really gets under my skin...um... that I... um... sss... I don't have... um... yes, um... surprise, not a jolt, but a small movement backwards*"⁹. Or again: "and I have difficulty bursting into tears, or anything like that because *it's only* an image... um... here... it is, here it it it's not beautiful to see, *but it isn't... here...there, it's only* a photo, an image... a photo, here, it's... um... it's... it's not beautiful to see, here, but it's...ugh, but *it's only* an image...after, here, *it's only a...it's not* reality... yes, *it's only* an image... here, um... well... there... well... here... it's, um... I have difficulty to express myself with respect to an image, there...*it's it's not* that, but it's here there's (silence for a few seconds), *it's only* an image, here, um... well... in brief, but, *it's only* an image... and ugh... and then ugh... (silence for 4-5 seconds)...*it's only* an image... it's it's... but *it's only* an image. It was a *photo* (she stresses the word) of a *person* (she stresses again) no, I don't see, no I see no hair... I see nothing, no *I see only* this face! Ah, I feel fine."¹⁰ The recurrence and

⁶ « c'est qu'une image ! »

⁷ « un visage fondu ». Recurrence of the adjective *melted*: "a melted face without expression, without eyes, without mouth, without nose, all was melted, as though it were plastic"; "yeah, melted, um... which didn't have a human shape, which, without form, without eyes...we can guess it is a face, but after one doesn't see the eyes anymore, one doesn't see anymore"; "in the end, we guess that it is a man, we guess, but it is...um...his traits have melted...it's, it's not..." (no mention of colors, nor of spatial disposition center/periphery); "no, I don't see, no I don't see the hair, I see nothing, no I only see this face"(« ben un visage fondu sans expression, sans yeux, sans bouche, sans nez, quoi, tout était fondu, comme si c'était du plastique... »); « waouais fondu, fin qu'avait plus de forme humaine, que, voilà, sans forme sans yeux.. fin on devine que c'est un visage, mais après on voit plus les yeux, on voit plus... »; « voilà, fin on devine que c'est un homme, on devine, voilà, mais c'est... euh... ses traits sont fondus, voilà, c'est... c'est pas... » [pas de mention des couleurs, ni de la disposition spatiale centre/périphérie]: « non, je vois pas, non j'vois pas de cheveux.. j'vois rien, non je vois que ce visage »).

⁸ « C'est pas... »

⁹ « ben j'ai un sursaut, *mais je... veux dire, c'est pas, fin j'ai pas* un sursaut, c'est, oui, j'ai de l'empathie, oui ça m'a fin ça me saisit quelque part, *mais j'veux dire c'est pas.. voilà, c'est pas... pas quelque chose qui me...* qui qui ...me prend vraiment aux tripes... fin qui m' euuuuuuh, sss... *J'ai pas de euh...* oui fin surpris, *pas un* sursaut, mais un peu de recul quoi... »

¹⁰ « et j'ai du mal à fondre en larmes ou quoi que ce soit parce que *ce n'est qu'une image* euh voilà c'est... voilà c'est c'est c'est c'est pas beau à voir, *mais c'est pas* voilà. ... là *c'est qu'une photo*, fin une image.. une photo,

repeated alternation of the syntagms “it is that... it is not...” strongly refers to a language of denial mixed with concessive and defensive tones (example: “Ah, I feel fine”), forms and contents: “there nonetheless a barrier that puts itself in place”¹¹. In a nutshell, we can speak of an important global emotional shielding both in language and in contents expressed.

Besides, the intensity and the anxious-character of the enduring emotion during the task is strongly expressed by a repeated phonetic “sss” expression, which may also refer to a bodily sensation of stomach-spasm and to an emotional anxious feeling, here re-lived in such a direct bodily language, and also by an important difficulty of speaking, best expressed in the repeated echolalic expressions: “it’s, it’s, it’s...” as well as in her recurrent stammering. In short, she gives the clear impression of strong endeavouring to control her emotions while trivializing the vision of horror she mentions though: “it is horrible to see someone who is totally disfigured”¹².

To summarize, we can underline three main aspects, one regarding the language, the other related to time, the last concerning her relation to emotions. Concerning the former, I already mentioned her difficulty to verbalize: “I have difficulty to describe,”¹³ she says. Here is an exemplary verbal sequence of it: “it’s it’s not that I am heatless, but it there’s (silence for a few seconds), it’s only an image there... it’s perhaps a... it’s it’s it’s perhaps a woman that has been burnt, um... sprayed, um... well... but, well... it’s only an image...and... er..., and then... er... (silence for 4-5 seconds) yeh, it’s only an image... it’s it’s...”¹⁴. Her stammering shows here its climax: she speaks in monosyllables, in stereotypes, keeps reciting in a drone; her predicative sentences are full of holes, hence often very poor and simplified, negative and mostly bodily and emotional. In short, we have to do with frequent nominalizations and with no descriptive-predicative language, except for the contextualisation of the experience at the beginning. Furthermore, no inner discursive thoughts are to be found during phases two (Crisis) and three (Aftermath) in the form of “I said to myself”, which would mean a certain

voilà, c’est.. fin ça, c’est pas beau à voir, voilà, mais *c’est... euh mais c’est qu’une image... après, voilà c’est qu’une... c’est pas la réalité.. oui, c’est qu’une image, quoi, fin, bon après fin voilà c’est, fin j’ai du mal à m’exprimer par rapport à une image, voilà... c’est c’est pas que, mais c’est voilà y a (silence for a few seconds), c’est qu’une image voilà.... fin bon, bref, mais, bon moi c’est qu’une image... et euh, et puis euh (silence for 4-5 seconds) ouais, c’est qu’une image... c’est c’est... mais c’est qu’une image, C’était une *photo* (she stresses the word) d’une *personne* (she stresses again) non, je vois pas, non j’vois pas de cheveux.. j’vois rien, non *je vois que ce visage ! Ah, ben je me sens très bien fin.* ». I underline.*

¹¹ « y a quand même une barrière qui s’instaure »

¹² « c’est horrible de voir quelqu’un qui est complètement défiguré »

¹³ « J’ai du mal à décrire »

¹⁴ « c’est c’est pas que je suis pas quelqu’un sans cœur, mais c’est voilà y a (silence for a few seconds), c’est qu’une image voilà.... c’est peut-être un c’est c’est c’est peut-être une femme qui a été brûlée, fin, aspergée, fin bon, bref, mais, bon moi c’est qu’une image... et euh, et puis euh (silence for 4-5 seconds) ouais, c’est qu’une image... c’est c’est... »

degree of elaborative-cognitive distanced attitude. The only moment of inner discourse is to be found in Phase one (anticipation, during the six seconds when she is expected a image related to the word “mutilation” she already saw: here it is interesting to note that her expectation is higher than what she will see, so that she accounts at once or successively for the inner resonance of the word in her mind (Phase 1b: “I think that it was really serious mutilations, well... I expect... I expect... er... I don’t know... as if it was in the series of burns, I waited for something... more...”¹⁵, and for ideas than come to her mind, in form of hypothesis she makes, linked to the meaning of the word “mutilations” and its inner visualizing power (Phase 1c: “mutilation,” “burnt people,” perhaps they are burnt, um... I know not, after, there, because “mutilation” it is something, yes, that we *can* impose upon oneself, or that we can impose upon another, to damage him psychologically”¹⁶

Regarding the time-sequentiality of the experience, if the macro-dynamic of the three phases Anticipation/Crisis/Aftermath is broadly identified by the patient, the micro-sequentialities inherent in the Crisis-Phase 2 are mostly blurred: not only doesn’t she subsequence it spontaneously, but she does not when asked by me,¹⁷ even if it means hesitating

¹⁵ « je pensais que c’était vraiment des graves mutilations, ben j’m’attends à ... j’attends à... euh, je sais pas euh...comme c’était dans la série des brûlures, j’m’attendais à quelque chose de... plus... ».

¹⁶ « ‘mutilation’, ‘personnes brûlées’, peut-être qu’on les a brûlées, fin je sais pas, après, voilà, parce que, ‘mutilation’ c’est quand même quelque chose, oui, qu’on *peut* s’infliger à soi-même, ou qu’on inflige à l’autre, pour le détruire psychologiquement... » (I underline the hypothetical register called upon by the occurrence of the verb *can*).

¹⁷ At different moments of the interview, I ask her what appears to her first, and I can never get a clear and constant answer :

1) A: “see, when the image appears on the screen... err...What does happen?” (« voyez, quand l’image apparaît sur l’écran, euh qu’est-ce qui se passe ? »). B: “errm... nothing happens, because it’s... um... I have I have... I have some empathy, I have some, but, hm... err... It’s difficult... It’s difficult to grasp” (« ben y s’passe rien, parce que moi c’est... fin si, j’ai j’ai de la...j’ai de l’empathie, j’ai de la, mais après euh...euh... c’est difficile... c’est difficilement palpable »).

2) A: « Ok, so, when you see the image appearing... Hm...errr... » (« d’accord, donc quand vous voyez l’image apparaître... euh... euh... »). B : “well, I am startled, but I ... I mean, it’s not, well, I am not startled, it’s, yes, I feel empathy, yes, it, well, it is startling somewhere, but I mean, it’s not... There you go, it’s not...” (« ben j’ai un sursaut, mais je... veux dire, c’est pas, fin j’ai pas un sursaut, c’est, oui, j’ai de l’empathie, oui ça m’a fin ça me saisit quelque part, mais j’veux dire c’est pas »).

3) A: “Right, so you have a, a, a movement in which you are surprised, you have a startle, you’re startled... You said” (« d’accord, donc vous avez ce ce ce mouvement où vous êtes surprise, vous sursautez, vous avez un sursaut...vous avez dit »). B: “yes, well surprised, it’s not a startle but more of a setback, right...” (« oui fin surpris, pas un sursaut, mais un peu de recul quoi... »).

4) A: “there you go you have this movement... First a movement of surprise, then, you say, there, it’s just an image...” (« voilà vous avez ce mouvement... un mouvement d’abord de sursaut, ensuite vous dites, voilà, c’est qu’une image... »). B: “That’s it” (« voilà »).

5) A: “Are you startled at this very moment, or, on the opposite, do you have this “it’s just an image!” movement?” (« euh est-ce que vous avez ce sursaut à ce moment là, ou bien au contraire, vous avez ce mouvement de ‘ce n’est qu’une image !’ ? »). B: “Yes, well, it’s only an image, right, well, then you see, well, it’s hard to express myself on an image, there...” (« oui, c’est qu’une image, quoi, fin, bon après fin voilà c’est, fin j’ai du mal à m’exprimer par rapport à une image, voilà... »).

or saying you do not know what came first.¹⁸ It is therefore difficult to know if she startles first, or if nothing happens (like a silence) as she also says, or if she has first this inner talk about it is only an image. Hence the confusing feeling of a strong temporal ambivalence about the non-successivity of the different micro-moments of Phase 2. If we wish to restore some experiential coherence at the very appearing of the image, we might want to suggest an initial threefold quasi-simultaneous model formed by lived body/verbal latency/emotion associated with differences of duration and partial mapping for each: according to neuro-scientific evidence it is consistent to hypothesize 1) a very short time of the motor bodily startle (cardiac reaction) and pulse reaction; 2) a short time enough of silence and bodily language made of stammering's and hesitations, and finally 3) a longer time of the raw emotional reaction. Such a three-dimensional emergent lived experience of surprise seems to be nicely clear-cut and complex enough. Nevertheless the experience of surprise for this depressed person shows in reality a great confusion in her account of the three levels with no specific spontaneous temporal sequentiality: what I nicely reconstituted in terms of a three-dimensional differential duration with partial mapping is a nice but partly false reconstruction of something that is probably far more chaotic and mixed up. Furthermore, we would normally tend to consider the inner distancing reaction about "it is only an image" as a next micro-sequence following this initial threefold emerging sequence, where also a physical bodily distance and a feeling of empathy emerges. But the problem is that such a process is at work in an anticipatory way at the very beginning of the appearing of the image with this expression "it is only an image" as well as her empathetic move. In short, the temporal process is confused, blurred, for the best part highly circular, in any case hardly a sequence.

As for emotions finally, they permeate as we saw time and language. Beyond the obsessive negative valence linked to the shocking "mutilation", the inner dynamics is characterized by a contradictory ambivalence. It expresses itself as a concrete antinomic double movement of a strong immediate intensity of being struck and a neutralizing distance coupled with a co-occurring passive overflow and active control. Such an ambivalence appears as object-linked, relational and internal: 1) as object-linked, the emotional valence (-/+) is blurred and twisted: "yes, it's a calm image nonetheless, err, a quiet being, which is lying down, um... yes, it's it it it would be like quietness, but... instead, it's actually torture

¹⁸ Indeed such an inner reflexive discourse about the difficulties and possibilities of sequencing is a good indication of the ability to step back from the lived experience and evaluate its temporal articulation. See for example S-010 of the linguistic task about which I will tell more below: B': "(...) the image appears, I feel reassured, err, and all that, the internal smile let's say, and half a second later, that's when I start questioning more the image, that's when, when, simultaneously, I realize it's a sculpture (...)" (underlined by the author).

err...physical torture, right... um... it's sss it is an amputation... it is a mutilation, it's...»¹⁹. Or again: Or again: “it's not pretty to look at, but it's not, right... There it's only a picture, well an image (...)»²⁰; 2) On the relational aspect, the ambivalence mixes empathy and neg-empathy: “Yes, I feel empathy, yes, it did, err, strike me somewhere, but, I mean, it's not... Right, it's not... not something that... that that... really strikes me to the core...»²¹; “It's disturbing, it's, there... but I feel compassion, but err, I don't have...»²²; “Well nothing happens, because for me it's... well... um... yes, I have I have some... I have some empathy... I have some... but, then, err... err... it's difficult... it's difficult to grasp... so, err, right, I have... there is. Nonetheless that I fix to myself err...»²³. Finally, as an internal tension, the emotional ambivalence refers to a controlled defensive shield, which permits all the more a surge of emotional overflow to happen: “Whereas here, it was *rather*... it was *awful* (she accentuates this word) because the person was... because the person was burnt, but it was *rather* soft... I mean the image, it was not... filled with blood, filled with... violent, yes... yes, it's not trivialised, but err ... it's, err... right, it's err... it's, it's, it's a terrible image, it's someone who has no face anymore, who's completely disfigured, but it's err...there's no blood, I mean... there's no... there, it's not... (long silence for several seconds) err, I don't know (prolonged excessive laughter), no, it's, it's... normal, I mean, normal, *um... shocked, right... but not shocked*»²⁴. Or again: “I find it hard to break down in tears or something because it's only a picture»²⁵.

B. D-05's map of depression at the heart-unconscious level

- Time: spring fall/domino effect of repeated surprises of different kinds generating

¹⁹ « oui, c'est une image calme quand même euh, un être qui est reposé, qui est étendu, qui est calme, enfin oui, c'est, ça ça ça s'apparenterait à de la quiétude, mais... sauf que c'est de la torture euh... de la torture physique quoi... fin c'est sss c'est une amputation.. c'est une mutilation, c'est... »

²⁰ « c'est pas beau à voir, mais c'est pas voilà. ... là c'est qu'une photo, fin une image (...) »

²¹ « oui, j'ai de l'empathie, oui ça m'a fin ça me saisit quelque part, mais j'veux dire c'est pas.. voilà, c'est pas... pas quelque chose qui me... qui qui ...me prend vraiment aux tripes »

²² « C'est troublant, c'est voilà mais je compatis mais euh.... J'ai pas »

²³ « ben y s'passe rien, parce que moi c'est.... fin si, j'ai j'ai de la... j'ai de l'empathie, j'ai de la, mais après euh...euh... c'est difficile... c'est difficilement palpable, donc euh voilà j'ai ... y a quand même une barrière que je m'instaure euh... »

²⁴ « alors que là, c'était *quand même* assez... c'était terrible (elle accentue le mot) parce que la personne était... parce que la personne était brûlée, mais c'était *quand même* assez soft... fin l'image, c'était pas... plein de sang, plein de.. violent oui... oui c'est pas banalisé, mais euh... c'est euh.. fin voilà c'est euh...c'est c'est c'est terrible comme image, c'est quelqu'un qui a plus visage, qui est complètement défiguré, mais c'est euh.. y a pas de sang, fin y a pas...voilà, c'est pas... (silence de plusieurs secondes) euh, je sais pas (rires prolongés et excessifs), non, c'est c'est... normale, fin normale, *fin choquée, mais pas choquée* »

²⁵ « j'ai du mal à fondre en larmes ou quoi que ce soit parce que c'est qu'une image »

each time specific emotions and bodily reactions

- Language: appears as strongly bodily-emotional, silence laden with no inner discourse nor rational elaboration during the crisis-phase
- Emotion: repeated immediate emotions triggered by external perception, inner associations and moral judgments

During the vision of the image of mutilation below (crisis-phase), what becomes salient for the patient D-05 is the domino effect of surprises that overlap and generate each time a distinct emotional effect; such a overlapping of surprises then carries on in the phase 3 (aftermath phase), with a specific emotional coloration due the strong impact of the image: the patient says the image remained persistently in her mind even after disappearing physically from the screen: “I was stuck...”²⁶, “there, she is in my mind, yes”²⁷, and the enduring emotional intensity completely absorbs her visual attention, so that she does not see nor remember having seen crosses, the word “réagir”²⁸, etc., and also misidentifies the next object-image : “it felt to me that it was a plate, but I wasn’t so sure”²⁹. In fact, the next image was a person with white shoes carrying a bag with apples and the image of a plate she mentions was shown earlier.

Phase 2 is the place of a repeated overlapping of a visual focal perception and emotion, a bodily motor-reaction of startle and emotion, an inner memory-association and emotion, a second bodily reaction and emotion, and finally a peripheral perception with moral judgement and emotional flashback. In short, each cognitive event (be it perceptive, memorial or moral) gives way to an immediate emotion overflow, as if it was impossible to contain it.

The general scheme of Phase 2 (Crisis) is as following:

Phase 2: emergence of the photo, a few seconds:

- a) Focal vision: “the head!”
- b) Sudden emotion: “horrible!”
- c) Startle: “already that made me jump!”³⁰

²⁶ « ben j’étais restée dessus quoi... »

²⁷ « ah ben là, elle est dans mon esprit, oui »

²⁸ To react

²⁹ « il me semble que c’était une assiette, mais j’suis pas trop sûre... »

³⁰ « déjà ça m’a fait sursauter! »

- d) Sudden emotion: “that shocked me!”³¹

Phase 2’: inner lived duration when the image still being seen (a few seconds)

- a) Memory association: “right away, that reminded me of my brother”³²
- b) Bodily reaction: “my eyes are full of tears”³³
- c) Empathic emotions: “this is sad, he was small... one can do nothing”³⁴.

Phase 2’’: Swaying look of the image as a visual duration (a few other seconds)

- a) Peripheral perception: “there was someone with a shovel to exhume”³⁵ (silent emotion in the voice)
- b) Moral judgement: “this is macabre!”³⁶; “dead people must rest in peace”³⁷
- c) Re-emergence of emotions: “it is too much!”³⁸

The process of the spring fall of surprises is as follows:

I. Emergence: vision-emotion-startle-emotion:

—> Cardiac reaction (somatic)

II. Inner duration while seeing: memory-bodily emotional reaction (crying)-empathic emotion

—> Lived surprise (inner)

III. Swaying look: peripheral perception-emotion in the voice-moral judgement-emotion

—> Perplexity (cognitive) and stronger cardiac reaction

We have to do with an embedded micro-temporality of many micro-phases both successive and mapped together alternating perceptive (focal or peripheral)-inner associative and emotional phases. As far as language is concerned, the bodily-emotional language is dominant (especially in the crisis-phase 2), genuinely reactivated in her evocation of the just lived moment, which attests a strong presence to the lived experience. The only room for an inner discursive thought is to be found in the awaiting phase 1: “I thought gold, I thought 30.

³¹ « ça m’a choqué! »

³² « ça m’a tout d’suite fait penser à mon p’tit frère »

³³ « ben ça m’a donné les larmes aux yeux quoi »

³⁴ « triste quoi! Il était p’tit.. On peut rien faire... »

³⁵ « y avait quelqu’un avec une pelle qui déterrait... »

³⁶ « macabre... quoi! »

³⁷ « les morts ça doit r’poser en paix »

³⁸ « c’est trop... »

Money, it is the first word that I said which came into my head”³⁹; “it is the size of ingots that we find, um... ordinary things, which we see on television, things like that, um... this is what I’ve said to myself when I saw them...”⁴⁰. Then it completely disappears and gives way to an immediate bodily emotional language with no elaborative rational distance.

Provisional conclusion: we have to do with two distinctive forms of circular temporality, either taking the obsessive form of a continuous loop or having the dynamic of a repeated self-generating spring fall. In both cases, the time of surprise is dis-articulated, non-linear, be it blurred, disturbed, or spontaneously self-unfolding along the generic image of the chaos, with contrast with the standard ordered and articulated micro-dynamics of the three anticipation-crisis-aftermath phases.

IV. The standard ‘normal’ emotional dynamic of heart unconscious: an intriguing case of “mixed emotions ” associating to surprise

The linguistic task of the Emphiline study (ANR EMCO) guided by Pascale Goutéraux at the University Paris-Diderot invites the selected students to look at work of art pictures (paintings and sculptures mainly). Among the 80 students who will be included mid-2015, I could already lead 60 interviews. A certain number of expressions of surprise mention clear valence laden-emotions, either positive (wonderful, marvellous) or negative (horrible, disgusting). Some other stress cognitive expressions of non-understanding, of questioning, of difficulties of identification or mis-identification. Some other underline bodily expressions of startle or shivering. Finally I discovered some other emotional expressions that do not seem to strictly fit into the valence, the cognitive or the bodily components of surprise. I would like to inquire more precisely into these unexpected emotions associated to surprise insofar as they account for a peculiar experiential dynamics that might have to do with the heart unconscious process, especially if we want to think it in its specificity, that is, in its irreducibility either to a clear-cut polarized valence, or to cognition or again to the bodily cardiac basis of the heart. I call such unfitting emotions “mixed emotions ” in order to underline their displaced character with regard to clear expected bodily, here negative (disgust) or inner, here positive (marvel) ones.

So the idea and expression of mixed emotions is directly drawn from the first person interviews and descriptions I led and analysed : their evidence is experiential. I rely on the

³⁹ « j’ai pensé or, j’ai pensé 30. argent, c’est le premier mot que j’ai dit qui m’est passé par la tête »

⁴⁰ « oh ben c’est la taille de lingots qu’on trouve, fin ordinaires, qu’on voit à la télé, des choses comme ça, fin, c’est que j’mesuis dit quand j’les ai vus... »

statements of interviewed subjects who talked about the pictures they are shown using adjectives such as “weird”, “strange”, and talking about their own emotions while seeing them as having been “stunned” or “captured”. Such mixed emotions are related to an unconscious functioning, insofar as our explicit standard consciousness would rationally chose to favour one or the other, while our unconscious functioning does not chose, keeps both and thus generate lived tensions, what is ultimately called for example in psychiatry a ‘double bind’ functioning (Bateson, 2008, Wittesaele, 2008, Elkaïm, 1989). They are related to the heart-unconscious in the sense that, as emotions, they are the manifestations of the heart both as a cardiac rhythm and as the affective core of my subjectivity.

Let me start with mentioning some of such unfitting or displaced occurrences of emotions linked to a surprise reaction in the first eleven interviews. While staring at contemporary paintings, some students indeed express themselves in the following way:

- “First of all, I was surprised, I told myself ... it was... that it is a *very uncanny* choice of representation... especially since the other character doesn’t have a real head either, like I tell you it’s a kind of balloon...”⁴¹ (Giorgio De Chirico, *Disquieting Muses*, 1918)
- “I was maybe a bit more, err, I wouldn’t go as far as saying stressed, but I was all in all err, *curious* at this point”⁴² (Camille Claudel, *Sakountala*, 1905)
- “So, I was immediately surprised, err, I thought this was *very weird*, because it reminded me of... It looked like many things... At the same time, I didn’t really know... In the middle it looked like something had been eaten, at the same time, err, devoured, I don’t know, it looked like a croissant that would have been devoured, like a *weird croissant*, err, (laughter) like many things, I don’t know (laughter)... I was asking myself questions, I was wondering what it was because it looked like some precise thingy, and at the same time it was abstract... So... (...) it was a bit, well, not

⁴¹ « j’étais étonnée avant tout, je me suis dit... que c’était..., c’est *très étrange* comme choix de représentation..., surtout que l’autre personnage n’a pas non plus une vraie tête, c’est je vous dis un genre de ballon... »

⁴² « j’étais peut être un petit plus euh, j’irais pas jusqu’à dire stressé, mais en tout cas euh, *curieux* sur le moment »

scary, it did not scare me either, but it was *a bit weird*, right, so, well, yes...”⁴³
(Louise Bourgeois, *Janus fleuri*, 1968)

- “Then I started to look more closely, I looked at the shape of the body, let’s say, well, maybe I didn’t look at it well, but it seemed *just a bit twisted*, a bit ...(sigh) it’s not a real spider’s body...”⁴⁴ (Louise Bourgeois, *Spider*, 1996)
- “I also used the expression “*twisted*”. “It’s twisted”, it’s rather vulgar, sorry, but this is *twisted to see*, that thing is sick, really, right...”⁴⁵ (Paul Rebeyrolle, *Implosion*, 1994)

In these different extracts of explicitation interviews, what appears is a vocabulary of the weird (*étrange*), the curious (*curieux*), the strange (*étrange*), the unseemly (*incongru*), which is sometimes directly linked to the disturbed cognitive process of not being able to identify what it is (“It looked like many things... At the same time, I didn’t really know... In the middle it looked like something had been eaten, at the same time, err, devoured, I don’t know”), or to the production of an effect of global lived ill-at-easiness in relation with the structural ambivalence attraction-repulsion (“it’s rather vulgar, sorry, but this is *twisted to see*, that thing is sick, really, right...”). These mixed emotional-cognitive trans-valence laden features are intriguing: they refer to a dimension of the *different* experience of surprise, which drives confusion, perplexity, puzzlement or bafflement, unsettling, disconcerting.

Contrary to the lived surprise of the two patients, who manifest a circular repetitive time-dynamics, emotional peaks and stammering-non elaborative language characteristic of a mainly psychotic depressive heart-unconscious, we have to do here to students who account for a standard ‘normal’ emotional dynamic of heart unconscious. In that respect, the time-dynamics is mainly clearly sequenced and articulated, and the discursion lets appear multifaceted aspects ranging from bodily and emotional expressions to inner discourse and rationalizing judgments. The mixed emotions I just mentioned above appear in such a

⁴³ « Alors, j’étais immédiatement surprise, euh j’ai trouvé ça *très bizarre*, parce que ça me rappelait, ça ressemblait à plusieurs choses... à la fois, je savais pas trop... avec le milieu qui semblait être quelque chose qui était mangé, en même temps, euh, dévoré, je sais pas, cela ressemblait en même temps à un croissant dévoré, à un *croissant bizarre*, euh, (rires) à plein de choses, je sais pas (rires)... je me posais des questions, je me demandais ce que c’était, parce que ça ressemblait à qu’chose de précis, et en même temps c’était abstrait... donc.. [...] c’était un peu fin pas ef-fray-ant, ça m’a pas fait peur non plus mais c’était *un peu bizarre*, donc du coup, fin oui... »

⁴⁴ « après j’ai commencé à regarder plus précisément, j’ai regardé la forme du corps, on va dire, fin, j’ai peut être pas bien regardé, mais ça m’a semblé *juste un peu tordu*, un peu...(soupir) c’est pas un vrai corps d’araignée... »

⁴⁵ « j’ai aussi eu l’expression « *tordu* ». « C’est tordu », c’est assez vulgaire, désolé, mais c’est, c’est *tordu à voir*, c’est malsain comme truc, vraiment fin.. »

standard experiential context all the more intriguing. My hypothesis is that they provide us with remnant expressive conscious traces of the normo-pathetic neurotic functioning of my unconscious as manifested at its heart emotional pre-conscious level. With such non-clear-cut emotional-cognitive transvalenced reactions, we may become aware of small breaches of disruptions in our habitual rational-controlled way of behaving-reacting.

Of course surprise is in itself, as a direct bodily and inner reaction to an unexpected event, a nice marker (both physiological and lived) of a rupture into the on-going flow of my pre-conscious lived experience. It first appears as an easy somatic *and* inner marker of unconscious processes, be they pre-conscious or strictly unconscious. In that respect, from a psycho-analytic viewpoint, surprise could be characterized as a symptom or as an indirect manifestation of hidden and veiled processes, equivalent in its structure to slips of the tongue or subconsciously deliberate mistakes, through which it is commonly said since Freud that unconscious reveals itself. More precisely, surprises would be the micro-conscious revelation of light disturbances, tiny breaches in our inner life, dubious felt senses, diffuse ill at ease feelings, which remain most of the time pre-conscious and are commonly identified in psycho-analysis through the common expression of *Unheimlichkeit*. But is it doing genuine justice to surprise to reduce it to such a conscious instant revelation of unconscious processual events? Not really, especially if we understand surprise as we articulated it above as a dynamic three-micro-phased anticipatory-crisis-aftermath process and not as a still abstract instant symptom.

If we leave as we did above one-sided approaches of surprise which limit it to a cognitive process, to an emotional reaction or to a bodily response and move to integrative perspectives of surprise, we find researchers and research projects who account for the embarrassment about the way to name and categorize surprise: is it a “cognitive emotion” (Ortony), is it a global process (Reisenzein), is it irreducible to valence because it may be pleasant or not (Depraz 2015)? We agree with integrative approaches that surprise includes and articulates all these components and require a temporal finely articulated dynamics favouring an interplay at different moments between emotional peaks, cognitive events, bodily and verbal reactions (Depraz/Desmidt, 2015). However, along explicitation interviews (Vermersch 1994/2001) I came across first-person descriptions that do not completely fit into the picture of surprise as a multivectorial process. Not that it reveals a contradiction, but it may require so it seems to search for complementary models of understanding.

In that respect, I would tend to interpret such mixed emotions as neurotic colorations of surprise understood as a multivectorial process, which reveal a peculiar pathological figure of surprise.

Conclusion

Beyond the peculiarities of surprise at the heart unconscious level for depressed patients and for standard students, a common feature for both of them with the two different tasks appears in the ambivalent structure of mixed emotions. As a still tentative conclusion about the heart unconscious, we could say – according to what we could explore thanks to the explicitation interviews —, that is not so far away from the psychic unconscious, but probably not so deep anchored, that is, more lightly occurring at the surface and in experiential continuity with conscious events. In that respect, either emotional peaks in depression or mixed emotions in standard experience are vivid manifestations of our heart-unconscious. Even if the case of the two psychotic depressive experiences of surprise we studied also brings about a circular repetitive time-dynamics and a stammering-non elaborative language, the standard experiences with the students we mentioned let emerge a peculiar form of surprise laden with the ordinary neurotic dimension of mixed ambivalent emotions.

Bibliography

G. Bateson, *Vers une écologie de l'esprit*, Paris, Seuil, 2008.

P. Buser, *L'inconscient aux mille visages*, Odile Jacob, 2005.

D. Dennett, (2001) “Surprise, surprise,” Commentary on O’Regan and Noe. *Behav Brain Sci* 24(5), p. 982.

S. Dehaene, J.-P. Changeux, L. Naccache, J. Sackur and C. Sergent. « Conscious, preconscious, and subliminal processing: a testable taxonomy ». *Trends Cogn Sci*, 10:204-11, 2006.

N. Depraz, “The Rainbow of emotions: at the crossroads of neurobiology and phenomenology” *Cont. Phil. Rev.* 2008 41: 237-259 (B. Heiner ed.). [As a first step : “The heart: the body’s body” (2008, Coll de France, B. Andrieu ed., 2009, Tours Medecine School, online Conference)].

N. Depraz, “Looking forward to being surprised. — at the heart of embodiment”, in *Theoria et Historia Scientiarum : International Journal for Interdisciplinary Studies*, 7 : 5-11. Special

Issue : *Embodiment and Awareness : perspectives from phenomenology and cognitive sciences*, N. Depraz & S. Gallagher eds. (2003).

N. Depraz, "Phenomenology of surprise. Lévinas and Merleau-Ponty in the light of Hans Jonas ", in *Advancing Phenomenology. Essays in Honor of Lester Embree*, T. Nenon & Ph. Blosser, eds. Heidelberg, Springer, 2010, pp. 223-235. Texte français : "Phénoménologie de la surprise ", in *L'héritage de la phénoménologie et le problème de la vie*, a c. di D. Rocchi, Lithos editrice, Roma, 2011.

N. Depraz, "The Surprise of Non Sense ", *Enactive Cognition at the Edge of Sense Making*, M. Cappuccio & T. Froese (eds.), Palgrave MacMillan, 2013.

N. Depraz & Th. Desmidt, "Cardiophénoménologie ", in *La neurophénoménologie vingt ans après* (J.-L. Petit ed.), *Cahiers philosophiques de Strasbourg* n°38, 2015.

N. Depraz, "Surprise, Valence, Emotion. The multivectorial integrative cardiophenomenology of surprise ", in N. Depraz & A. Steinbock eds., *Surprise, an Emotion ?*, Springer, Heidelberg, to appear.

M. Elkaïm, *Si tu m'aimes, ne m'aime pas. Approche systémique et psychothérapie*, Paris, Le Seuil, 1989.

E. Husserl, *Expérience et jugement* (1938), Paris, P.U.F, 1970, §21, a) "L'origine de la négation ".

E. Husserl, *De la synthèse passive* (1918-1926), Grenoble, J. Millon, 1999.

E. Husserl, *Studien zur Struktur des Bewußtseins* (1908-1914), Volume III, edition in preparation in german at the Husserl-Archives in Leuven under the responsibility of Üllrich Melle and Thomas Vongehr.

J. F. Kihlstrom, « The cognitive unconscious », *Science (New York, N.Y.)*, vol. 237, 18 septembre 1987, p. 1445-1452.

A. Lutz, J.-Ph. Lachaux, J. Martinerie and F. J. Varela, « Guiding the study of brain dynamics by using first-person data: Synchrony patterns correlate with ongoing conscious states during a simple visual task », vol. 99 no. 3, 2002, pp. 1586–1591, doi: 10.1073/pnas.032658199.

S. Marti, J. Sackur, M. Sigman S. & Dehaene, « Mapping introspection's blind spot: Reconstruction of dual-task phenomenology using quantified introspection », *Cognition*, 115(2), 2010, pp. 303-313.

C. Petitmengin & J.-Ph. Lachaux, « Microcognitive science: bridging experiential and neuronal dynamics", in *Frontiers in Human Neuroscience* 7:617. doi: 10.3389/fnhum.2013.00617 ; french transl. in : Première, deuxième, troisième personne, N. Depraz éd., Bucharest, Zeta books, 2014.

A. Ortony, Clore, G., Collins, A., *The cognitive structure of emotions*. Cambridge: Cambridge University Press, 1988.

C. S. Peirce, “Sur la phénoménologie ” (Conference de Harvard, 1903), in *Pragmatisme et pragmatisme* (OC I, Paris, Cerf, 2002, pp. 295-296).

R. Reisenzein, Meyer, W.-U., & Schützwohl, A., “Analyse von Reaktionen auf überraschende Ereignisse : Ein Paradigma für die Emotionsforschung ”, in H. Mandl (Hrsg.), *Bericht über den 40. Kongreß der DGPs in München 1996*, pp. 830-836, Göttingen, Hogrefe, publié en anglais sous le titre “Reactions to surprising events. A Paradigm for Emotion Research ”, in N. Frijda (ed.), *Proceedings of the 9th Conference of the International Society for Research on Emotions*, Toronto, Canada, 1997, pp. 292-296.

A. Smith, “Wonder, Surprise, and Admiration” one feels when contemplating the physical World (1795), *Lecture on Astronomy, Section I: Of the Effect of Unexpectedness, or of Surprise, Glasgow Edition of the Works and Correspondence Vol. 3 Essays on Philosophical Subjects [1795]*, ed. W. P. D. Wightman and J. C. Bryce, Indianapolis: Liberty Fund, 1982.

Th. Desmidt, M. Lemoine, C. Belzung & N. Depraz, « The temporal dynamic of emotional emergence », *Phenomenology and the Cognitive Sciences, Emotion Special Issue*, 2014, Springer, Heidelberg.

F. J. Varela, « Neurophenomenology: A methodological remedy for the hard problem », *Journal of Consciousness Studies* 3, 1996, pp. 330-49.

F. J. Varela and J. Shear (1999), « First-person methodologies: why, when and how », *J.Consc.Studies* 6 (2-3), 1999, pp. 1-14.

J.-J. Wittesaele, *La double contrainte. L'héritage des paradoxes de Bateson*, Bruxelles, De Boeck Université, 2008.

Structure of the ANR Emphiline Research Project (2012-2015)

- Natalie Depraz, Archives-Husserl, UMR 8547, <http://www.umr8547.ens.fr/>, for the leading and supervision of the ANR Emphiline research project : “La surprise au sein de la spontanéité des émotions: un vecteur de cognition élargie ”
- Thomas Desmidt, Partner team n°2 : Equipe de psychophysiologie à Tours (équipe 4 troubles affectifs), Inserm, U930, imagerie et cerveau,

<http://www.u930.tours.inserm.fr/>

- Pascale Goutéraux, Partner team n°1 : Equipe de psycholinguistique à Paris-Diderot, CLILLAC-ARP EA 3967, http://www.clillac-arp.univ-paris-diderot.fr/user/pascale_gouteraux