Surprise
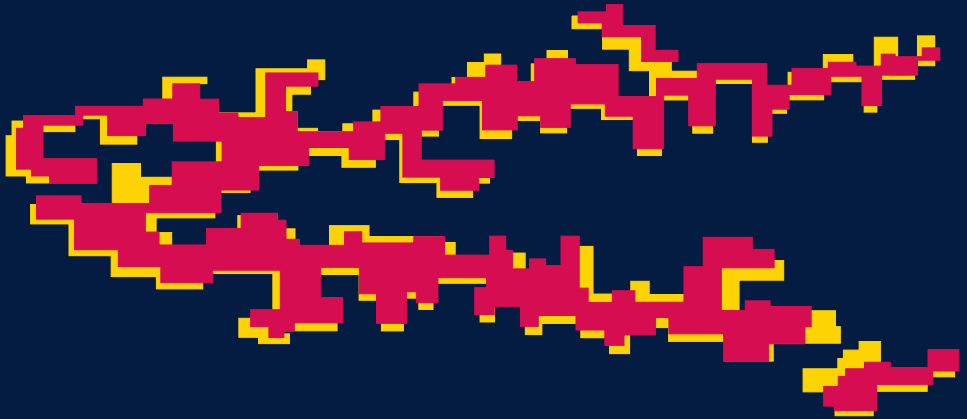# at the Intersection
# of Phenomenology
and Linguistics

*Edited by Natalie Depraz
and Agnès Celle*

John Benjamins Publishing Company

Surprise at the Intersection of Phenomenology and Linguistics

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Volume 11

Surprise at the Intersection of Phenomenology and Linguistics
Edited by Natalie Depraz and Agnès Celle

Surprise at the Intersection of Phenomenology and Linguistics

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Part III. Emotional experience, expression and description

Introduction

Natalie Depraz and Agnès Celle

Surprise is a promising issue both theoretically and empirically. It has received little attention and has been regarded as a side issue in philosophy and, if thematized, mainly connected to the affective realm (Aristotle 1990; Descartes 1649; Smith 1795; Kant 1798; Ricœur 1950/2009; Maldiney 1993); it has been taken to be an emotion in classical experimental psychology (Darwin 1872; Ekman 1971; Izard 1977; Plutchik 2002; Reisenzein 1997; Soriano et al. 2017); it has been addressed indirectly in historical phenomenology – through disappointment or joy in Husserl (1991, to appear), anguish in Heidegger (1985), trauma in Levinas (1976), but recently more directly (Depraz 2013, 2014, 2016), (Depraz and Serban 2015) – or reduced to a break in cognition (Davidson 2004; Dennett 2001). Only recently was it broached in linguistics, with a focus on the lexicon (Levin 1993; Grafmiller 2013; Mathieu 2000; Tutin 2009, 2017) and its classification into categories. There is yet no consensus on whether surprise, as a noun, behaves like an emotion noun. As for the expression of surprise, it has been largely left unexplored by linguists and relegated to psychologists, with the exception of Celle et al. (2017).

Our contention is that these different approaches can yield fruitful results if they benefit from each other.[1] A comprehensive account of surprise is still missing and can only be provided by crossing disciplines. We have carried out such a pluridisciplinary project since 2012 and hope to break new ground, which might not have been possible had our approach been confined to a single disciplinary perspective. Our aim is to arouse the interest of a multidisciplinary audience keen on crossing disciplinary borders, namely:

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[1] The present book results from a Colloquium organized by N. Depraz on March 21–22, 2013 at the University of Rouen Normandie (France) with the initial goal of delivering some preliminary results of a project funded by the French National Agency for Research entitled: "Surprise at the core of the spontaneity of emotions: a vector of extended cognition" (ANR 11-EMCO-0005 P. I. N. Depraz (philosophical phenomenological pilot-team), with A. Celle, University of Paris Diderot, linguistic partner-team, and T. Desmidt, Inserm Tours, psycho-physiological partner-team). For more details about the Emphiline project, see http://www.umr8547.ens.fr/spip.php?article371. For a synthesis of the results of the Research Program, see its publication on Researchgate under the name Natalie Depraz.

–   cognitive scientists
–   phenomenologists open to cognitive and empirical studies, to pragmatism and the philosophy of mind and language
–   linguists interested in the psychology-pragmatics interface.

Adopting an integrative methodology in order to give primacy to surprise itself rather than to the disciplinary concepts that contribute to its emergence, we present a collection of articles based both on experiments and on corpus data. We believe that our theoretical approach needs to rely on practical and empirical results coming from different areas – microphenomenology, psychology, linguistics, physiology.

In this introduction, we outline the theoretical articulations of the different contributions and reveal some common structural schemes and cross-disciplinary tendencies. The volume is therefore structured around cross-disciplinary thematic chapters in order to bring to light converging patterns whatever the disciplinary setting. Our starting heuristic hypothesis is tested against three main areas of investigation, namely time, language and emotion.

Time appears to be a crucial parameter for the characterisation of surprise, surprise being commonly equated with an event that is unexpected or that runs counter to the subject's expectations. Now, our cross-disciplinary investigations lead us to conclude that surprise should not merely be identified as or reduced to a punctual event or a bodily shock. It should be taken as the experience of a break in the time-flow continuity, this break being intrinsically related to the subject's immediate experiential horizons, be they past, i.e. retentional, or future, i.e. protentional. We argue that surprise is more accurately defined as a process rather than a discrete event. This process takes the form of a circular micro-time dynamics unfolding into sub-phases, the time of crisis, i.e. discontinuity, being directly linked to its implicit protentional anticipation and to its subsequent remanent resonance (Depraz 2015; Depraz & Desmidt 2015).

The emotional dimension of surprise is generally taken for granted in the literature. Our findings lead us to make the claim that surprise is not an emotion in the sense of a primary feeling like fear, anger, disgust, joy or sadness. Nor is it a psychological noun from a lexico-syntactic perspective. In a more complex way it is the very source of emotional experience as a multi-vectorial – i.e. bodily, cognitive, verbal – change undergone by the subject facing an event different from what had been anticipated. Although surprise remains frequently associated with emotional valence when correlated to joy, grief, anger or pleasure, it may also appear as a neutral, mixed or epistemic emotion, i.e. as an expectation violation affecting both action and cognitive processing (Desmidt et al. 2014; Depraz, Desmidt, Gyemant 2017; and Depraz 2018).

Language is both the locus of emotional disturbance when a discontinuity occurs and the locus of control over emotions. Surprise lexemes (such as the noun *surprise*) may be used not only to describe an emotional state of affairs, but also to express metonymy or metaphor. In some language groups, surprise is encoded by a specific grammatical category, namely the mirative (cf. DeLancey 1997, 2001; Celle & Tsangalidis 2017; De Wit 2017; Guentchéva 2017; Peterson 2017; Zeisler 2017). In the languages investigated in this volume, however, there exists no specific morphological marker of surprise. In English and French, surprise can be detected through disfluencies and the use of expressive patterns such as exclamative sentences, verbless sentences, interrogative sentences (Celle 2018), interjections and specific constructions (Celle & Lansari 2015). Some constructions also typically encode expectation and counter-expectation and it is argued that surprise results from the speaker's epistemic state (Barto et al. 2013).

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The temporality of surprise

A dynamic process opening up possibilities

Neurophenomenology of surprise

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A theory of the central nervous system was formulated recently, in general thermodynamical terms. According to it, the function of a central nervous system, and more generally of living autopoietic units, is to minimize "surprise". The nervous system fulfills its task, and the animal maintains its viability, by changing their inner organization or their ecological niche so as to maximize the predictability of what happens to them, and to minimize the correlative production of entropy. But what is the first-person correlate of this third-person description of the adaptation of living beings? What is the phenomenological counterpart of this state of minimal suprise? A plausible answer is that it amounts to a state of "*déjà vu*", or to the monotony of habit. By contrast, says Henri Maldiney, surprise is lived as a sudden encounter with reality, a reality that is recognized as such because it is radically unexpected. Surprise is a concussion for the brain, it is a risk for a living being, but it can be lived in the first person as an awakening to what there is.

Keywords: surprise, phenomenology, neurophenomenology, biological adaptation, homeostasy, neurobiology, disruption of expectations

Introduction

Anticipating the chain of events of the environment is a condition of *life*; but the breaking of its continuity, the disturbing surprise, opens the doors of *existence*. This can be taken as a short statement of an apparent gap between biology and phenomenology. Biology concentrates its studies on the adaptive routines of the living beings, whereas phenomenology is primarily concerned by the universal singularity of moments of experience, and recommends to see the banality of one's being-in-the-world as if it were for the first time.[1]

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1. The project of phenomenology is to bring out: "the exceptional character of any phenomenon when it is seen as it presents in itself beyond concepts, and not as constituted and reduced to the status of an object" (Marion 2012: 151).

The documented divergence between biology and phenomenology however seems to pertain to values, rather than factual differences. Both disciplines are able to deal with singularity and regularities as well, but with two different priority scales.

Phenomenology represents a decision to cultivate systematically the state of maximal loss of landmarks called the "*epochè*", and then to bring out the transcendental genesis of perception of objects, ordinary judgments, and scientific theories by reversing the direction of this loss.

By contrast, biology favors collective states of equilibrium that are easy to categorize, and accepts only marginally the isolated breakaway of organic structure. True, biology includes some correlates of astonishment or disruption; but it tends to underrate them and to insist on accommodative power instead. The biological correlates of disruption are genetic or behavioral variations, together with increased distance from the optimal domain of viability of species. Such deviations invite individuals to take the risk of exploring the vast adaptive landscapes instead of sticking to the habits of their ecological niche. Thus, spontaneous variations are the indispensible conditions of natural selection and expanding fitness. But biology handles them reluctantly, as random, wild, and unruly events capable at most of pushing living beings towards this edge of chaos that has become their specific mark (Kauffman 1996).

Bridging biology and phenomenology

A connection between biology and phenomenology can be envisaged at this point, and a mutual teaching of these two disciplines about the novelty of an event can be obtained. For instance, the reason why taking momentary distance with respect to the constraints of adaptation is often experienced as a welcome leap into the open space of existence, despite the threats heralded by the surprise of uncharted environments, may well be that this feeling of liberation is the lived couterpart of the capacity of phenotypic variations to promote the emergence of new forms in living organisms.

It is precisely in this spirit of mutual clarification of biology and phenomenology that I will examine some biological theories of cognition. I will not be satisfied with their insistance on the quest for recognition and repetition by the organism endowed with a nervous system, but rather analyze the rare references they make to the aftermath of major *deviations* with respect to stereotypes, and connect them with their most likely phenomenological correlate.

Since the most relevant theories of neurobiological function are indirectly derived from Von Uexküll's theory of "own-worlds" (*umwelt*), this will be the natural starting point of our inquiry. According to Von Uexküll, the own-world of each

animal species is defined as a set of targets for coordinated actions that aim at ful-
filling the needs of its members. Von Uexküll points out that an animal is able to
"distinguish as many objects in its environment as there are actions it can perform"
(Von Uexküll 1958: 55). Actions are shaped by motor anticipations, and these mo-
tor anticipations in turn are presumptive shapings of a world into a collection of
bio-behaviorally significant objects. The final sensation confirms or disconfirms
the anticipation, and it either satisfies or disappoints the quest of a pre-determined
meaning. In this framework of thought, surprise is the name of a disconfirmed
anticipation, of a disappointed quest for meaning, of a brutal expulsion of the
organism out of its own-world.

The existential tonality that corresponds to that, namely the genuinely *lived*
surprise, is well described by Ludwig Binswanger (Binswanger 2012: 35). His de-
scription starts with an extatic and blind expectation that abandons itself with trust
to its embodied convictions. When the radically unexpected occurs, the ground
gives way under the feet of the being who is moving forward; its own-world is so
to speak missing. What replaces that feeling-of-a-world after it has been lost, has
the flavor of a vertiginous free fall that can be stopped only by a global reorganiza-
tion of the *umwelt,* in such a way that the trauma is retrospectively categorized as
an intelligible fact. However, another strategy can be used in order to react to the
loss of categories; a strategy that is diametrically opposed to the demand of new
benchmarks. Indeed, the radical *epochè* of committed phenomenologists, and the
enlightenment of contemplative practitioners, are tantamount to learning how to
remain constantly in a state of lived free fall without fearing the disappearance of a
firm practical world. The method for this alternative strategy is to universalize the
state of surprise, to let oneself be surprised even by what was until now considered
prosaic or commonplace.

A neurobiological model of minimal surprise

Current neurocognitive theories add an important yet disputable (Varela et al.
2017) ingredient to Von Uexküll's sensori-motor definition of "own-worlds", namely
the idea that the organism elaborates a kind of *intracerebral representation* of what
it expects. These theories also supplement Von Uexküll's conception with a math-
ematical model of the varying distance between what is anticipated and what is
met, and with a process of optimization by which the conditions for reducing
this distance can be specified. Several mathematical formalisms have been used to
this end, but I'll only retain one of them which is inspired from thermodynamics
and information theory. The concept borrowed from thermodynamics is "free en-
ergy", that usually represents the fraction of ordered energy available for subsequent

transformations into mechanical work. Free energy is obtained by subtracting, from total energy, its orderless and useless part, the latter being measured by way of another function called *entropy*. This traditional definition is then worked out by statistical physics, that replaces macroscopic quantities like energy and entropy with microscopic molecular variables having a certain probabilistic distribution. At the end of the day, probabilities themselves become central variables of the theory, and serve as a substitute of those variables of which they predict the frequency; this shift then allows one to translate statistical physics in terms of information theory (Jaynes 1983).[2]

A substitution of this kind is highly significant for the problem of surprise, and it can be better understood by relying on the "subjective" or "rational" conceptions of probabilities. According to the "subjective" conception, formulated by Bruno de Finetti (1974: 69), a probability is a sort of intuitive valuation by which an individual who is immersed in a situation of uncertainty tries to anticipate as precisely as she can what will happen next. According to the "rational" conception of probabilities, upheld by John Maynard Keynes (1929), probabilities are the degrees of belief that former knowledge would force *any rational subject* to evaluate about what will happen next. In both cases, one enters into a game of convergence/divergence between what is expected and what occurs.

But theoretical neuroscientists want to go beyond assessing the conjectures of a subject left in the background as if it were a *transcendental* subject. In agreement with their naturalistic tendencies, they wish to offer a detailed description of the anticipations that can be made by an *empirical* subject endowed with a manipulable and objectively knowable brain. Accordingly, they consider two kinds of probabilistic functions and elaborate another function out of them in order to represent the *free energy* of brain states (Friston et al. 2006). The first function depends on the probability that some given sensation occurs jointly with some given environmental circumstance that may cause it. Theoretical neuroscientists call it the probability of *perception* of this cause in the environment. The second function depends on the *a priori* probability, fixed by an inner representation of the brain, of the alledged causes of the sensation. And the difference of these two functions is a third function called the "free energy". This being granted, the condition which is supposedly fulfilled by the organism and its brain, is the *minimization of the free energy function*. Now, what does such minimization mean exactly? This is quite easy to understand, provided one notices that the former probabilities represent respectively: (1) the uncertain power of perceptive inference out of some sense data, and (2) the equally uncertain ability to mentally anticipate what is perceived. When the free

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2.   Here, entropy is defined as negative Shannon information: $S = -\Sigma_i P_i \ln P_i$, where Pi represents the probability of a state of the system under consideration.

energy function reaches its minimum, this means that one has reduced as much as possible the distance between the most probable cause of the sensation, and the cause that the model of the world elaborated by the brain predicts *a priori* with a given probability. In other terms, this means that the perceived configuration is not too different from what was anticipated by the brain. The authors of this theory consider in this case that the organism has minimized its *surprise* with respect to the environment; and they point out that the said organism can survive, namely maintain itself within a homeostatic range, only this way. In their own terms "if agents minimize free energy, they implicitly minimize surprise" (Friston 2010). Along with this conception, the brain is considered as nothing else than a machine that purports to minimize surprise.

An evolutionary approach of the persistence of surprise

The former reflections however suffice to introduce an important limitation to the ideal of a mere *suppression* of surprise. The algorithmic surprise, as modelized by the functions that enter into free energy, never disappears. The task ascribed to the brain then does not consist in eliminating it completely, but, once again, to *minimize* it. Moreover, the process of minimizing surprise never comes to an end because surprise usually diverges from its smallest possible value. Surprise, including when it is theorized in a neuroscientific framework, is a massive and ineliminable fact. Life should be construed as an unended dialectic of divergence and normativity, of speechless surprise and efforts to overcome it by further categorization; there is no real rest for life. How can the theory of neural free energy accommodate this permanent surplus of surprise?

According to this theory, a true environmental novelty, introduced by a geological accident, or by some unexpected competition, increases the neural free energy of the individuals of the species that happen to meet it. Hence, the first step towards minimizing the neural free energy of these individuals consists in actions aimed at changing their own environment by way of a migration to some new ecological niche. The individuals thus manage to substitute sensations suggesting perceptive inferences that do not fit with the brain's *a priori* anticipations, with new sensations that decrease this discrepancy. But a second step can be taken in order to minimize surprise, or brain's free energy, in members of the disturbed species. This further step consists in altering the field of *a priori* expectations of the brain, in order for it to assimilate new sensorial inputs that remain permanently remote from its former predictions. For that purpose, living organisms can either use the resources of their presently available neural plasticity, or they can adopt the path of genetic mutations that will increase the range of this neural plasticity. By the way,

the latter strategy is likely to be the mark of hominization in the history of apes. However, one should not loose sight of the fact that the second step that has just been described depends on the first one, since the sensory inputs to be anticipated by the organism depend on the ecological niche. Adaptation, that consists in elaborating a structure of anticipation that nearly fits with what occurs, is guided and determined by the affordances of an environment that is partly imposed and partly chosen (Piaget 1976).

The phenomenology of minimal and persistent surprise

Now, what about the phenomenological correlates of this process? To begin with, the evolutionary and genetic aspects of the minimization of algorithmic surprise are likely to have no phenomenological correlate, because it is a collective and low-level process. But things are quite different when other components of the situation of surprise are considered. Taking refuge in a protective environment, or adopting a new pattern of behavior in order to avoid the damaging consequences of an excessive distance between events and expectations, is an individual move that is likely to have a lived counterpart. But the lived tonality of the urge to move is well known by the physicians who studied the consequences of cerebral injuries that decrease the capacities of anticipation and adequate reactions of their patients. This tonality is nothing else than anxiety: the anxiety which, according to Kurt Goldstein, "appears when the realization of a task that corresponds to the essence of the organism has become impossible" (Goldstein 1983). Sollicitations that were formerly trivial here become highly surprising and almost impossible to control, after certain cerebral injury have suppressed the rich activity schemes that once served as embodied anticipations. The patients who undergo these untamed sollicitations and who attempt in vain to cope with them by means of simplified schemes, first try to counter their own inability to elaborate an adapted answer by what Goldstein calls a "reaction of catastrophe". Then, in order to avoid such a trauma, patients actively avoid to meet the unrecognizable situation, or they react to it in an apparently inappropriate way that has no other function than to alleviate the anxiety that is connected to it. These reactions are tantamount to look for a narrower and more protective environment in which the cerebral deficiency have no harmful consequences.

But why should the lived quality of the unpredicted, of the uncategorized, of what eludes pre-conceived schemes, be *always* as negative as suggested by neuroscientists? We all know, and I have alluded to that earlier, that this is far to be true in every case. In its felt dimension, surprise is often gratifying and exciting, as if it gave us renewed access to the vast reaches of open space, after a long stay in the

security of the predictable. We are so shaken by it that we live again intensely, that we gain a panoramic lucidity and an ability to feel wonder, far from the routines that leave our empty mind permeated with the flavor of boredom. Our own-world may well crumble; but its crack holds the promise of opening us to a new world. Our narrow-minded projects may well break down; but hosting the unpredicted broadens the perspective of our future.

The capacity to welcome surprise, to redefine ourselves according to what it teaches us, and even to experience happiness in front of the unexpected, might well be definitional of a healthy psychical state. Conversely, an excess of fear in front of the unknown might be one sign of a psychotic state. The eudemonic disposition to accept novelties, to receive serenely the events that break a habit, is called "transpassibility" by Henri Maldiney (2007: 304). According to the etymology of this neologism, transpassibility consists in knowing how to let oneself be infused passively by what is still unspoken and uncategorized: either the transformations of things, or the unfathomable spontaneity of our own actions, or the permanent metamorphosis of our fellow human beings. Let's examine these three passivities in turn.

On the healthy acceptance of surprise

Firstly, the passivity with respect to unanticipated changes of states of affairs feeds our feeling of reality. For the real is phenomenologically indistinguishable from what is merely *given*,[3] yet remains inexhaustible by the forms of our own conceptual framework (despite the possible idealizing *hybris* of scienticism). As Maldiney pointed out, "surprise is the mark of reality; the real is what is unexpected, what can*not* be expected, and what has been there for ever as soon as it has appeared" (Maldiney 2007: 257).

Secondly, a sufficient dose of passivity with respect to this opacity to ourselves that we interpret as freedom, is a preliminary condition to recognize ourselves as agents of our own acts. Even if I have not deliberated before I do this gesture, even if I remember so little to have wished it that it looks surprising to myself, I have seen its inexorable development out of my dance of movements in space, I have felt its emergence in me and by me, and I therefore accept it as *mine.* It then becomes mine, it is covered by the dome of my responsibility, and I become the self-recognized subject of this gesture.

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3.   "What should mobilize philosophy are the areas of lawlessness, where one can no longer impose a process of pacification by way of objectification, where unpredictable things or 'events' occur" (Marion 2012: 139).

Finally, our benevolent passivity towards the incomprehensible aspects of our alter-egos' behavior is what enables us to establish fruitful personal relations. Emmanuel Levinas helps us to understand this by highlighting a contrast between our relations with others and our thought about scientific objects. "The object of knowledge, he writes, is always done, it is already done and outran" (Levinas 2003: 65). The theoretical object locked up in its formal definition, endowed with well-identified properties, is a *fact*, in latin *factum* which means "done". An object is past and fixed even when one considers its future vicissitudes since, according to science, the latter unfold predictably according to laws that were enforced once and for all. The scientific object is (or should be) what no longer interpellates us, what no longer worries us or delights us with surprise, and only presents what we have allowed it to show in the framework of the rules prescribed by our pure understanding. When it no longer fulfills its anticipative function within a theory that presupposes it, a scientific object can disappear during a paradigm shift, and be replaced with another object with a larger amount of predictability.

In deep contrast with the object of science, the alter-ego is constantly present, not past, because she is "called to the word" (Levinas 2003: 65): she must be *here* in order to produce herself in the discourse she is voicing presently and in the acts she is sketching now. Indeed, being a person, she is not restricted to what can be recorded of her behavior, she cannot be reduced to her body and to its past activities, but she extends towards what she can now *decide to be*. Her present creativity breaks the solid box in which one wished to enclose what happens, and melts the walls erected by our classification of things. She forces us to pay renewed attention to what is still undecided and inventive, beyond our attempt to set limits on it and to render it predictible.

According to Henri Maldiney, the schizophrenic lacks these three transpassibilities, she lacks these three modalities of our ability to welcome surprise. The schizophrenic is forever immune to events, since her power of acceptation of novelties seems to have been annihilated in her past by a unique unacceptable event (Maldiney 2007: 230), by a confusion between her own movements and the movements of things (Castel 2009: 125), or may be simply by the immensity of the event of *Being*. The events of the world, the renewed event of the gush of oneself, and the event of meeting the other, are no longer acceptable to her. Being closed to the surprise of what comes to her from the world, the schizophrenic suffers from a feeling of derealization, that sometimes takes a demiurgic tinge, according to which reality is in fact only her production. Being closed to the surprise of her own spontaneity, the schizophrenic objectifies herself into several hallucinated characters that dictate her behavior. According to Maldiney, the psychotic tends to freeze any project into an object (Maldiney 2007: 227). The project of being and doing has been stripped of its creativity, and ossified into stereotyped voices that demand obedience from

the schizophrenic, thus imposing her a depersonalization. Being also immune to the surprise of her confrontation with the others, the schizophrenic often suffers from a progressive withdrawal from social life (Hirsch & Weinberger 2003: 481).

A neurobiological approach of the acceptance of surprise

The healthy ability to welcome surprise, the openness to the unknown, can also be associated to neural correlates. In the theory of cerebral function that has just been stated, we have seen that one of the factors that allow us to come back to a region of low free energy after some environmental factor has increased this variable, is neural plasticity. More generally, the living being does not content itself with trying to incorporate environmental anomalies to its preestablished schemes. It transforms its anticipatory schemes in order to perceive these anomalies as meaningful, or it broadens them enough to be able to react efficiently to increasing changes in the environment. Accommodating surprise here means being capable of a kind of self-transformation that offers better opportunities. The delight of surprise is understood in this case as expressing a promise of amplification of one's own-world, a perspective of proliferation of meaning off the beaten tracks, or even, why not, a vision that announces the generalized meaningfulness of the raw presence of being.

We can also remember that, according to one of the most widespread neuroscientific theories of consciousness (Dehaene et al. 2011), routine mental or motor activities are determined by more or less autonomous localized areas of the cerebral cortex. The motor schemes of *habit* have no access to the associative areas and extended synchronized neural activities that unify the information coming from specialized areas. Now, the activation of this crossroad called the "global neuronal workspace" is associated with the possibility for a subject to provide a verbal report of what she has experienced during a certain episode, as well as with her ability to reflect on it. This explains why an activated global neuronal workspace is usually taken as a neural correlate of *consciousness*. Even though considering the neural global workspace as a spatio-temporal locus of phenomenal consciousness is highly disputable (Bitbol 2014), its connection with the possibility of reflection, binding of information, verbalization, and episodic memory (which partake of the function of access consciousness) is well established. From a phenomenological standpoint, one easily sees what is at stake here. The usual activities, the beaten tracks, the repetition of identical actions, do not mobilize attention; they are done in distraction, in forgetfulness of what is only an indifferent token in a long series, and consciousness then evades towards *imagination* that feeds it better by its fantasies. Only the surprising circumstances, the meetings that catch us unexpectedly, are striking enough to wake up our interest, to become objects of a reflection, and to

be retained as something that really *happened* to us. Surprise arouses the feeling of existing, of being challenged, of having to answer creatively with all our resources rather than automatically.

Whereas in habit and ease, we step forward like hollow passers-by moving through a stereotyped own-world, surprise transforms us into subjects of a world offered to discovery, subjects that gain a true biographical identity, since only true *events* are narrated.

A neurophenomenology of extreme disruptive surprise

Until now, we have restricted ourselves to relatively moderate states of surprise, in a phase of retrospective digestion. What can we say of the generative constraint that unites neural processes and phenomenological description when the surprise is extreme, sudden, unable to be assimilated, or merely too recent to have been recategorized? To explore the neural correlate of the sudden occurrence of some sensory event, one often uses the "evoked potential" technique (Vion-Dury & Blanquet 2008), which consists in adding many electroencephalographic patterns after having repeated a constant stimulus, and obtaining an average signal that displays the specific reaction of the brain submitted to such stimulus. This highly dynamical technique, that differs from the neurofunctional and neuroanatomic methods such as fMRI, has the interest of capturing neural processes in their development and to have an excellent time resolution. The auditory evoked potential can then be analyzed in three main components that follow each other during an interval of ten to several hundreds of milliseconds after the sound: the short-term, average-term, and long-term components. Each one of these components can be associated (in the normal awaken subject) with the activity of three brain areas. The short-term component corresponds to the nervous conduction of signals along the brainstem; the average-term component corresponds to the activity of the auditive primary sensory area of the temporal lobe; and the long-term component corresponds to the activity of the associative area around the frontal lobe. In the early period, when the stimulus has just been imposed, the only activated regions are the brainstem and the primary sensory areas of the cortex. The operations of categorization, and the connection with the personal history of the subject, which both involve the associative areas, have not yet been initiated.

Now, what kind of experience is associated to these early neurological processes following a sudden and intense stimulus? According to the standard position, there is no such experience at all: the moment of extreme initial surprise (not to say the germinal shock) must be entirely unconscious since it is not yet integrated into the global neural workspace. But some alternative neuroscientific theories of

consciousness tend to question this hasty claim. According to them, each cerebral activity, even when it is narrowly localized, even when it is restricted to a primary sensory area of the cortex, is likely to be associated to some sort of elementary experience (Zeki 2008). If we accept that possibility, what is it like to experience a formless, uninterpreted and unexpected sudden episode, beyond the mere bodily start? Some classical texts can be read as a tentative answer to the latter question. The impact of the sensory, as described by Hegel in the first chapter of his *Phenomenology of Spirit,* or by Husserl after a reductive unweaving of perceptive experience able to give us contact with its "matter" or "$\nu\lambda\eta$", is a moment of *dumbfounderment,* of *undifferenciation* of an appearance that is both unanticipated and unintegrated into a history; and also a moment of pure *immediacy*, in the relational and temporal sense of the term. Let me then explain the words that have just been used: dumbfounderment, undifferenciation, and immediacy. Dumbfounderment is used to mean that at the very moment in which a high intensity sensory event occurs, nothing else is left in the field of what appears. Undifferenciation is the analytic translation of dumbfounderment, since it implies that the singularity of the sensitive episode is absolute, that there is no difference or no contrast between it and anything else, that nothing allows one to posit a determination that would be grounded on the negation of what it is not. Immediacy in the relational sense expresses the felt isolation of the sensitive event, the absence of any preparation (of any mediation) of its sudden outbreak, the lack of any connection with a network of present or retrospective facts that would allow one to formulate a *judgment* about it. Finally, the immediacy in the temporal sense refers to the short-lived actuality of the sensory impression, to its manifestation precisely *now*. But, as Simplicius, the neo-platonician philosopher of the sixth century, pointed out, "... the now, being indivisible, is already in the past while being spoken and apprehended" (Sambursky & Pines 1971: 25). Conversely, now can be localized in no moment of time as long as it is neither spoken nor apprehended. Experiencing a sensory flash then excludes any (reflective) realization that it is occurring, since realizing this would require to detach it on the background of what it is not, namely on the background of a later moment from which it appears as having occurred just before. Experiencing without realizing that one experiences, coinciding so well with experience that the distance required by realization is missing: this is the first-person aroma of the isolated and sudden sensory impression.

Surprise beyond objectivism

These features are sufficient to sketch the picture of an extreme and yet quite frequent experience. The experience of sensory surprise, of a lighting of advent, is so powerful that there is no retrospect from which it can be noticed. It breaks former conceptual frameworks (Atmanspacher & Fach 2005), leaving nothing in its wake. It is simultaneous with bewilderment, and the *nothing* of radical disorientation is the very first breach it makes when stupor is just starting to decrease. But according to Maldiney, the said *nothing* is itself an "… event from which all the dimensions and the rays of the world irradiate". From this *nothing* of disarray, "… the existant irrupts to itself in the surprise of being" (Maldiney 2007: 232). The first existential flavor of this nothing hollowed out in the aftermath of the sensory commotion is that of unspecific anxiety, since it looks impossible to find one's bearings after the conceptual form of an own-world has been destroyed by its compulsory presence. This "nothing" does not reduce to dumbfounderment: it represents a further phase after the extreme surprise has taken place, because it is openness, dehiscence, unperceptible detachment with respect to what has just occurred, and it therefore clears a boundless space for any future possibility. Maldiney's *nothing* represents the amazed absence of prejudice that has been digged by the storm of the event, and it thus allows world-reorganizations and readiness to new judgments. Just before that, however, the *nothing* drills a short, usually unnoticed, access to the ultimate surprise of *suchness*. Since there is nothing that can be identified and recognized, things manifest pristinely as they are (Clerc 2011; Dôgen 2009; Bertossa et al. 2004). This given manifestation is clearly out of reach of any anticipation, for the obvious reason that anticipating means going beyond what is given.

It is precisely at this point that neurobiology is seen to be no longer relevant. Indeed, neurobiology is itself a conceptual framework that partakes of our civilizational *own-world*. True, it allows us to identify a physiological correlate of the state of shock and disorientation that follows a sudden sensory stimulation. But this apparently empirical status of the precondition of the empirical, this attempt at conceptualizing the aconceptual, this project of gathering the entire space of possibilities in a special location of the system of rational coordinates, is completely foreign to the phenomenological and gnoseological meaning of surprise. From a phenomenological standpoint, surprise is not an object of thought among many others, but a radical challenge to the claim of universality of objectification. Surprise is not something that happens to somebody; it rather forces this somebody to fuse with what happens at the moment of its occurrence. From a gnoseological standpoint, surprise is not a topic of knowledge among many others; it replays the drama of the origin of knowledge, it brings us back to the fundamental deficiency and bewilderment that once impulsed the project of knowing. Then, far from being

clarified by neuroscientific knowledge, surprise allows us to come back for a short moment to the fertile ground and the existential motivation of our desire of objective knowledge, of which the advances of neurobiology are only one aspect among many others.

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Shock, twofold dynamics, cascade

Three signatures of surprise.
The micro-time of the surprised body

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Surprise is commonly seen as a sudden instantaneous, intensively emotional, exclamative interjective, bodily startling "shock". I would like to show that it would better be also understood as a processual dynamics, which presupposes a deep transformation of its commonly taken-for-granted experiential meaning as a shock. Such a dynamics unfolds along multifarious vectors, exemplarily time, emotion, cognition, language, inter-subjectivity and body. Since I already focused elsewhere on four of these vectors of the dynamics of surprise, namely time, emotion, cognition and language, I will deal here with the *bodily* time of surprise and reveal how the latter cannot be reduced to startle but refers to a multifaceted generative embodied process.

Keywords: surprise, body, microphenomenology, time, shock, twofold dynamics, cascade

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"L'éclair me dure".
(René Char, *Les matinaux*, 1950)

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1. Introduction

Surprise is commonly seen as a sudden instantaneous, intensively emotional, exclamative interjective, bodily startling "shock". I would like to show that it would better be also understood as a processual dynamics, which presupposes a deep transformation of its commonly taken-for-granted experiential meaning as a shock. Such a dynamics unfolds along multifarious vectors, exemplarily time, emotion, cognition, language, inter-subjectivity and body. I already focused elsewhere on four of these vectors of the dynamics of surprise, namely time (Desmidt et al., 2014;

Depraz & Desmidt, 2015 chapter 1), emotion (Depraz, 2016; 2017, 2018), cognition (Depraz, 2013a, 2014a) and language (Depraz, 2015). In this contribution, I will deal with the *bodily* time of surprise and reveal how the latter cannot be reduced to startle but refers to a multifaceted generative embodied process.

In that respect, René Char's baffling epitaph, "l'éclair me dure", poetically manifests the para-doxicality of surprise, that is, its counter-intuitive antinomic character, which provides the experience with a deeper multi-vectorial meaning (Tschumi, 1987, p. 168): the time of lightning, as the time of surprise, apparently instantaneous, is dynamic. It is both an expecting time, worked out by a feeling of imminence, and a lingering time, resisting its disappearance; such expecting and lingering processes, emotionally ambivalent, may have hope or anxiety as contents, may harm or dazzle; whatever it be, there is a cognitive gap or a mismatch between the expecting phenomenon itself and its subjective perception, in the same way as the lightning tears the sky apart from the just previous horizon of a dark heavy atmosphere; it is also verbally embedded in a stylistic oxymoron, as is obvious in such daily expressions: "I *expect* to be surprised", "I *prepared* you a surprise". Also, the light of the lightning *persists* on the retina of my eye in as much as the shock of the surprise leaves a mark, reverberates in my body and may linger in my mind long after its physical disappearance. Interestingly enough, the philosopher Paul Ricœur in his own way quite nicely describes such a fragile duration of the surprised body: "la surprise se nourrit du retentissement corporel; le choc du connaître est sur le trajet de reflux du tressaillement" (Ricœur, 1950/2009, p. 239; Depraz, 2015). I will come back to it later more thoroughly.

I would like here to account for the bodily micro-time of surprise in some of its forms, along three main figures that emerged from the empirical-experiential analysis of microphenomenological first person explicitation interviews (Vermersch, 1994/2011).[1] Vermersch's psycho-phenomenology characterizes itself as a pre-reflective description of the specified micro-actions of a subject in their unfolding in time. Like Husserl, Vermersch contends that every experience is time-based. More precisely, he provides us with a fine-grained sequentiality of an experience that is each time presented as "specified," that is, as the unique and singular experience of a time- and space-anchored subject. So, in contrast to Husserl, for whom the

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1.   In the framework of the Emphiline EMCO-ANR I directed 2012–2015, I led 42 explicitation interviews with subjects (depressed, remitted and control) at the Tours Hospital and 75 with students at the Paris-Diderot University, which are in the course of analysis. Some preliminary results on twenty one interviews (12 in Tours, the common point of which being the choice by the subjects of the same buried baby picture; 9 in Paris, from the first interviews-day 22/06/2013) allow me to suggest these first conceptual schemes with regard to the micro-time of the surprised body. Of course these preliminary results are in need of confirmation once the analysis is completed.

time- and perception-structures of experience are generic, Vermersch's thrust lies in considering the experience each time anew. More specifically than time-based, an experience is succession-based: "diachronic," he says, and can be refined in its micro-sequentiality through the microphenomenological technique, which helps to unveil further, still unseen micro-sequences of the experience. Sometimes, though, the interviewed subject has trouble detecting in her experience of a past-specified moment what occurs first, what comes next, what arises before. It was often argued that the retrieval of the past moment cannot be genuine insofar as it refers to another time-moment than the moment of the interview and may be modified while being remembered. The specificity of the microphenomenological interview, though, is to appeal not to a willful remembering but to a passive memory that welcomes the vivid fresh embodied past moment, thus allowing the subject to actually go back to it with a peculiar technique of "evocation" (Vermersch, 1994/2011). Even though, it remains sometimes difficult to enter into the fine-grained sequences of the moment, either because of the blurring of the lived experience itself (in depressive subjects for example), or precisely because the time-sequentiality is so thin that it becomes harder and harder to identify, or again because some aspects of her experience may occur "simultaneously." This adverb has to be taken cautiously because the experience in its structure is successive (even micro-successive, though it is not perceived as such by the subject). Nevertheless, some modalities of our perception may happen in a quasi- or partially simultaneous way. This led Vermersch to introduce the notion of "synchronicity" and of "synchronic aspects" of the experience, which helps to clarify what happens when we are dealing with a global (bodily, emotional) state or with an event and not with an action, the action being more easily described as sequential (Depraz, Desmidt, Gyemant, 2017).

I thus wish to offer a more concrete experiential meaning and description of the tiny duration of the surprised body than the one some philosophers (exemplarily Paul Ricœur, Adam Smith and Charles Sanders Peirce) already quite rightly contended in a theoretical way. So my methodology here amounts to appealing to analyzed empirical-experiential data and to theoretical-philosophical statements which mutually confirm, enrich and constrain each other.

As a first step, I will describe the short unfolding of the lived motor-bodily shock; *second* I will account for the double-staged or twofold body-emotion/cognition rhythmic dynamics inherent in the emergence of the inner surprise; *third* I will deal with a threefold layered simultaneous synchronicity of surprise; *finally* I will mention the broader process of the overlapping embodied lived mobilisation of a generative cascade of surprises for the subject.

The time-moment I focus on here is the very emergence-segment of the surprise at the appearing of a surprising object, event or situation: it corresponds to a sub-phase (250 millisecond to a few seconds) within the phase of the crisis

I described elsewhere as the phase 2 of a broader temporal dynamic including anticipation (phase 1) and aftermath (phase 3) (Desmidt et al., 2014; Depraz & Desmidt, 2015). I will therefore not focus here on the paradox of surprise regarding its broader macro-temporality, that is, its expectation or implicit anticipation before the appearance of the picture, which is at the core of our hypothesis in the Emphiline ANR Research project and which could be dramatically expressed as follows: no surprise that is not implicitly expected! (Desmidt et al., 2014). Rather, I will deal with its immediate bodily resonance, remanence or reverberation during the very crisis phase, that is, while the picture is still before my eyes, and not even during the later aftermath (which corresponds to the phase of the visual disappearance of the 'object' generating surprise).[2] Besides, the bodily experience I will account for obviously also refers to a bodily expressive language, which may refer either to a bodily language (gestures, mimics, face expressions like eyes wide open, frowning, etc.), or to an embodied language (indexicals, exclamations, interjections: woo!, etc.). However, I will not consider it here in its expressivity proper in contrast with other forms of expressions of surprise (inner discourse, embodied exclamative or interjective language, articulated expressions, logical or meta-cognitive reasoning) (Depraz, 2015), but simply in its bodily phenomenality.

In the following I will account for these four modes of bodily micro-time of surprise I extracted from the empirical-experiential investigation: (1) the short unfolding of the lived motor-bodily shock; (2) the double-staged or twofold body-emotion/cognition rhythmic dynamics inherent in the emergence of the inner surprise; (3) the threefold layered simultaneous synchronicity of surprise; (4) the process of the overlapping embodied lived mobilisation of a generative cascade of surprises. Thus these four figures are not meant to exhaust the microphenomenological description of such a duration nor furnish us with a priori concepts, but are merely indicative of different possible schemes of embodied duration of surprise. In so doing, my idea is to suggest a more integrative model of this micro-phase of the appearing of surprise, not reducible to a physiological startle but involving it (Meinck H. M., 2006), thus inserting it into an extended æsthetic æsthesiological model of surprise.[3]

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2.   Husserl has nice analyses about the awaiting horizon of surprise understood as a non-filling in of expectations (as disappointment or, more broadly, as a non-satisfaction) (exemplarily in *Experience and Judgment*, 1939, §20) and about the lingering of surprise as an affective tonality (*Stimmung*) in the very absence of the 'object', which perpetuates a state of joy or sadness without any objective reference (*Studien zur Struktur des Bewußtseins*, 1908–1914). For more details, see N. Depraz, "Husserl et la surprise", in: "La surprise", n°24, *Alter. Journal for Phenomenology*, Paris, *Alter*, 2016. He however does not focus on the very tiny moment-process of appearance-resonance of surprise as I will do in the following. I therefore intend to contribute here to a microphenomenological analysis, here of surprise, but also of time and body.

3.   With 'æsthesiological', I mean both (1) the enduring living sensation as æsthesis: a lived sensation that takes time, even short and subtle, *and* (2) an æsthetic lived lasting contemplation.

2.   The motor-bodily shock: An unseen unfolding

In this first part, I would like to show the multifarious *immediate* bodily expressions of surprise and identify their peculiar micro-duration. My leading thread will be the following: the surprised body is first and foremost a moved-moving body, I would even say a 'mobilized' body, or again a body that is also innerly set in motion (Depraz, Zeltner, Mauriac, 2009). We commonly see the surprised body as a passive body 'caught' by surprise as we say, that is, a captured and captivated body, concretely unable to move, paralyzed, stunned, tense or speechless. For a caught body ("pris" in French) is a stricken, trapped, prisoned, furthermore, alienated, estranged, suffering or raped body ('sous l'emprise' in french). On the contrary, I would like to underline and detail the activity inherent in the surprised body, not its pure passivity, hence its specific mobility, which is the first and main characteristic of bodily action (Sheets-Johnson, 2016; De Preester, 2013; Depraz, 2013b), and its openness, which goes along with its receptivity and generativity (Depraz, 2001, for a definition of the lucid body as a mobile and receptive one). Of course, I do not exclude the external (or even inner) motionlessness of the caught paralyzed body but I consider it is *only one* modality of being bodily surprised among others, the paradigm of which being mobility and mobilization, as it is manifest in startle (Vrana et al., 1988; Grillon and Baas, 2003), cardiac defense (Vila et al., 2007), often mentioned in the scientific literature, but also in shiver and shudder (Ricœur, 1950/2009), or in facial expressions in paintings (Le Brun, 2010), recurrently mentioned in literature and artistic practices.

   If we now go through the 21 explicitation interviews, we discover a series of different instant-like motor-bodily, both physiological and lived expressions of surprise (see Tables 1 and 2a).

Table 1a. Signature of the bodily micro-time of the appearing surprise

Subjects	Modes	1. Motor-bodily physiological shock	2. Twofold body-emotion/ cognition dynamics	3. Overlapping generative process
Time		Instant-like	Double–time rhythm	Duration
Students Paris-Diderot University				
1	002 N	Heart-beats	1. unpleasant feeling of void; 2. astonishment	
2	004 C			Vision-motricity: 1. feeling of being absorbed in a tunnel; 2. Vision of two shadows; 3. Of angels
3	005 L		1. astonishment; 2. Pure pleasure	

(continued)

Table 1a. (*continued*)

Subjects Modes Time		1. Motor-bodily physiological shock Instant-like	2. Twofold body-emotion/ cognition dynamics Double–time rhythm	3. Overlapping generative process Duration
Students Paris-Diderot University				
4	006 T	Startle Exclamative interjection: « waouh ! »	Horror-sadness	Cognitive process of identification: 1. Non-understanding; 2. Curiosity; 3. Search for meaning
5	007 J	Intense shock-sensation of disgust	Feeling of being aggressed	Cognitive dimension of perplexity
6	008 S			Cognitive process: 1. Non-understanding; 2. Confusion; Meaning; « grotesque »
7	009 Ann			Cognitive confusion: 1. "weird"; 2. questioning; 3. identification
8	010 V		1. Inner smile; 2. disappointment	
9	011 Ant	Smelling sensation « nauséabond »; Wide opened eyes: « s'écarquillent »	Moral emotion: Attraction-repulsion: « tordu, malsain »	
Signature of surprise		Shock-surprise	Double staged surprise	Cascade of multiple surprises

Table 1b. The chosen image

Students Paris-Diderot University		
1	002 N	G. De Chirico, *Disquieting Muses*, 1918
2	004 C	G. Doré, *Vision du Paradis*, 1861
3	005 L	C. Claudel, *Sakountala*, 1905
4	006 T	P. Rebeyrolle, *Implosion*, 1994
5	007 J	C. Soutine, Carcass of Beef, 1925
6	008 S	P. Rebeyrolle, *Implosion*, 1994
7	009 Ann	L. Bourgeois, *Janus fleuri*, 1968
8	010 V	L. Bourgeois, *Spider*, 1996
9	011 Ant	P. Rebeyrolle, *Implosion*, 1994

Table 2. Signature of the bodily micro-time of the appearing surprise of the buried baby picture

Subjects	Modes	1. Motor-bodily physiological shock	2. Twofold dynamics: body-emotion/ cognition	3. Threefold simultaneity	4. Overlapping generative process
Time		Instant-like	Double–time rhythm	Layering synchronicity	Duration
Subjects (depressed, remitted, control) Tours University Hospital					
1'	D 2/5	Startle of horror			
2'	D 3/7			Attention-Affection-Non-understanding	
3'	D 23/32		Awareness > pain-sadness		
4'	T 8/14		Not-awaiting > emotional shock		
5'	T 19/27	Startle of disgust		Startle Not-awaiting Disgust	Cognitive answer Enigma resolution
6'	T 22/30	Displeasure	Surprise of understanding > feeling of manipulation		
7'	T 24/33	Startle of fear and laming			
8'	T 30/49	Startle of disgust –>	Surprise of non-understanding		
9'	R 13/19	Startle of laming: "ice-shower"			
10'	R 31/55	Inner startle –>	Uneasiness-disturbance		
11'	R 38/67	Startle of shiver and nausea –>	Horror		Capture Astonishment
12'	R 41/74		Understanding_> Anxiety		
Signature of surprise		Shock-surprise	Double staged surprise	Layered surprise	Cascade of surprises

Startle clearly results here as the major bodily expression of surprise (8 out of the 21), since it occurs in a bit less than a half of the immediate reactions. Among the 13 others, we find inner sensations, feelings and also some cognitive processes as initial reactions of surprise, which we will deal with below. What is striking though is

that startle is never mentioned as a mere motor-startle, but is each time associated, either with an exclamative interjection: "wow!" (subject S4), or with an emotion: startle *of horror* (subject D1'), startle *of disgust* (subjects T5' and T8'), startle *of shattered fear* (subject T7'), *of shattering*: 'ice shower' (subject R9'), *inner* startle (R10'), or again startle *of shiver and nausea* (subject R11'). In some other cases (3), we face negative intense sensations: "intense sensation of disgust" (subject S5), close to both startles of disgust, "smelling sensation" ('nauseous/repulsive') (subject S9), close to the startle of nausea, or more broadly "displeasure" (subject T6'); we also meet two subjects with motor inner or external sensations, "heart beats" (subject S1) and "wide opened eyes": 'wide-eyed' (subject S9).

To sum up, *the signature of the shock-surprise* in the different forms we mentioned is quite present (13 out of 21 subjects) as a *motor-bodily surprise*, either as startle in a major way or more punctually as heart beats or wide open eyes, and it is nearly always associated with negative emotions or presented as an intense negative sensation. So even the shock-surprise results are not completely instantaneous but a micro-process of emotional or sensory feelings unfolding from an initial motor-move, which, though extremely short, involves an inner duration.

This is already Paul Ricœur's insight in his book *Le volontaire et l'involontaire,*[4] when he insists on the abstraction of the experimental psychological meaning of surprise as a reflex or as something "atomic" ("punctiforme" in French). Ricœur's contention lies in showing how surprise is not a merely physiological objet-bodily reaction, but (1) takes time, (2) involves thought and not only body, (3) refers to a durative "circular" dynamics. So even though surprise is a shock-emotion, it refers to a process that involves a unique continuity of thought and body. A word that

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4.   P. Ricœur, *Philosophie de la volonté*. T1: *Le volontaire et l'involontaire*, Paris, Aubier-Montaigne, 1950 (1988), pp. 237–239 (Seuil, coll. Points, 2009); am. transl., E. V. Kohak, *Freedom and Nature: the Voluntary and the Involuntary*, Northwestern University Press, 1966, 6th printing 1987, pp. 252–255. "Surprise" in this crucial ricœurian analysis is translated by "wonder", and "émotion-surprise" by "emotion of wonder". Let me be suspicious about the relevance of such a translation: Descartes, who is Ricœur's leading thread in this analysis, never developed an analysis of "émerveillement", which is the right translation for "wonder", and besides, A. Smith makes an clear distinction in his *Lectures on astronomy* (1795) between surprise, wonder and admiration ("Of the effect of unexpectedness or surprise", *The History of Astronomy, in Essays on Philosophical Subjects*, London: T. Cadell and W. Davies, 1795, p. 5–10). But above all, regarding Ricœur's analysis itself, the translation by "wonder" makes his point un-understandable, since "wonder" (émerveillement) is spontaneously a state-emotion characterized by its duration and not a shock-emotion understood in its instantaneous character. Why would Ricœur need to argue for the durative character of surprise if it is taken for granted as it is the case in wonder? Ricœur's challenging contention disappears completely with such a translation, and the reader does not understand at all the point. I therefore propose my own translation of the crucial passages of this analysis.

comes again twice in these few pages is illustrative for such a durative process: it is the noun "saisissement" and the verb "saisir", which are quite badly translated by "awe" (in French, it means "effroi", and this radical fear-emotion has little to do with the lived bodily capturing-process at stake with "saisissement"). Let me quote a few sentences, which are good examples of the point I want to make: "C'est par le saisissement que la durée est colorée" ("The capturing process is what colors duration"); "le corps amplifie et magnifie l'instant du penser, en lui donnant pour épaisseur de durée le temps de saisissement du corps". ("The body amplifies and increases the instant of thinking, giving the bodily experience of shock a thick duration"). In terms of fine processes, Ricœur also talks a couple of times of the "'tressaillement' du corps", which is, again, quite awkwardly axiologically translated by the "disturbance of the body", while 'tressaillement' would better be translated by the descriptive process of "shuddering". Such lived bodily processes which account for what Ricœur means by surprise are finally identified as a "circular phenomenon between thought and body" or, again, as a circular process, where the body gives a density to thinking. I can't resist quoting a few sentences, which account for Ricœur's remarkable ability to magnificently describe the lived embodied process of surprise: « (la surprise) est à la fois et d'un seul jet un choc du connaître et un tressaillement du corps, mieux, un choc du connaître dans un tressaillement du corps » (Ricœur, 1950/2009, p. 238):

> Le choc du connaître est sur le trajet de reflux du tressaillement et de la stupeur corporelle sur la pensée. »; « le corps amplifie et magnifie l'instant du penser, en lui donnant pour épaisseur de durée le temps de saisissement du corps; par la surprise une pensée s'impose en quelque sorte physiquement.(Ricœur, 1950/2009, p. 239)

Provisionary conclusion: the empirical accounts provide us with fine-detailed elements of description of the very moment of the arising of surprise, coupled with a motor startle inherently associated with an open range of multifarious negative emotions (horror, lame, fear, shiver, nausea); Ricœur's philosophical analysis more broadly but originally offers a contention about the bodily-thought circular process of the duration of surprise. Both levels together furnish us with complementary and content-convergent entries into the micro-processual appearing of surprise.[5]

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5.   For a complementary analysis on Ricœur and on his insight about surprise, see N. Depraz, "La surprise: une dynamique circulaire de verbalisation multivectorielle", in: N. Depraz & Cl. Serban eds., *La surprise à l'épreuve des langues*, Paris, Hermann, 2015, pp. 14–34.

2.   The double-stage rhythmic dynamics of body-emotion-cognition

I called the second signature of surprise that emerges from the analysis of first-person interviews a double-stage dynamics because of its broader and enduring unfolding in two different aspects, the first one being frequently a bodily one (then referring to the first signature of surprise as a startling shock) and developing into a second step by including either a broader emotional component, or a cognitive one. Or, a third option is possible, a double staged cognitive-emotional dynamic.

2.1   A two-fold body-emotion dynamics: A first sub-signature of surprise

In some cases, the dynamics of surprise thus work as motor-bodily/emotional one, with a differentiated range of forms. Among the students we found: heart-beats followed by an emotion of unpleasant feeling of void and of astonishment (S1); startle and then mixed emotions of horror and sadness (S4); an intense sensation of disgust followed by a feeling of aggression (S5); a bodily mixed sensation of negative smell and wide opened vision, and then moral ambivalent attractive-repulsive emotions (S9). Among the hospital-patients we found: a startle of shiver and nausea which gives way to an extreme emotion of horror (R11').[6]

2.2   A two-fold body-cognitive dynamics: A second sub-signature of surprise

In some other cases, this dynamics proceeds in a bodily-cognitive rhythm: a startle of disgust gives way to a surprise of non-understanding (T8'); a first displeasure opens up a surprise of understanding and a feeling of manipulation (T6'); or again, an inner startle and then uneasiness-disturbance (R10') (Depraz, 2013a; 2014b).

2.3   A two-fold cognitive/emotional dynamics: A third sub-signature of surprise

In some few cases, we face an inner dynamics without any explicit bodily anchorage, either first cognitive, where a becoming aware process generates an emotion of pain-sadness (D3'), where a state of unexpectedness lets emerge an emotional shock (T4'), where an inner move of understanding provokes a feeling of anxiety (R12').

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6.   About such a dual body-emotion mechanism of surprise, see N. Depraz & T. Desmidt, "Cardiophenomenology: an refinement of neurophenomenology", *Phen. & Cog. Sc.*, 2018.

2.4   Some atypical dynamics

Finally, for two students we find a dynamics of surprise characterised by alternating emotion and body: emotion of astonishment, then a sensation of pure pleasure (S3), or, still more complex, a sensation of inner smile merges into a cognitive emotion of disappointment (S8).

Given the multifarious combinations of bodily, cognitive and emotional components of this second dynamics of surprise it would be artificial to try to synthetize our second double-staged signature. I prefer to leave it open in its diversity and concentrate on the last case I mentioned, which offers maybe a particular complexity.

The student (S8) I interviewed chose the picture by the sculptor Louise Bourgeois representing a giant black spider created 1996 and also called *Spider*. The dynamics of surprise she accounts for unfolds as mentioned in two phases as (1) an inner smile, (2) a disappointment, which refer to a succession of two different surprises, inner bodily and emotional-cognitive. Let us quote what she says about what happened to her at the very emergence of the picture: "there was simultaneously, well, how can I say, an appraisal, like an inner smile, but I was disappointed that it was a sculpture, because I am less attracted in general by a sculpture than by paintings, by drawings…"[7] Later on in the interview, while coming back to the very moment and eliciting it, she will be more specific and say that the first inner bodily surprise took place "one half second" before the emotion of disappointment and she will also re-live this moment of disappointment as a global "feeling thinking", either inner nor physical, like a "collapse", "something heavy on my stomach". What is striking here is the blurring of linear succession into an immediate lived experience of simultaneity then re-appreciated as a micro-succession: a lived experience first expressed as "synchrone" (in P. Vermersch's words, 1994/2011) results successive at a close examination by the subject of her own experience. It raises the issue of the bigger complexity of the micro-fine grained time of the subject. First said synchrone by default, the two segments result more finely articulated, either mapping each other, the first one starting earlier, partially mapped by the other, the latter lingering further one beyond the first one, since they are not merely successive either. The life of our consciousness thus lets coexist and articulate different plans and moments of lived experiences in time and intensity.

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7. "simultanément, il y a eu euh, comment dire? Un moment d'appréciation, comme un sourire intérieur, mais j'ai été déçue que ce soit une sculpture, parce que je suis moins en général attirée par la sculpture que les tableaux, que les dessins".

2.5   The layered threefold synchronicity of an integrated surprise

Finally I would like to do justice to a few cases of surprise where the synchronicity of the different components (bodily, emotional, cognitive) is identified and claimed as such by the subject and gives way to what I called a layered surprise. The fact that it is not to be found in the students population and only twice among the 12-Tours CHU patients does not mean that it might not be a specific signature of the bodily micro-time of surprise. At this stage though, it is not widespread enough to be considered as a signature as such. I therefore indicate it here for the time being as an extension of the second signature characterized by a twofold double staged dynamics, as a three-fold layered synchronic dynamics.

     The two cases of such a simultaneous layered surprise mix either emotional and cognitive aspects (2'-D3/7) or bodily, cognitive and emotional ones (5'-T19/27): in the first case, surprise is given as integrating at once attention, affection and non-understanding, whereas in the second, we have to do with a synthesis of startle, disgust and un-expectation. In both cases, we could say first what we already hypothetized in the Spider-example, that is, features indicated as "synchrone" are at a closer further explicitating look successive or at least only partially mapping each other. But in these cases, the subject does not express any doubt or hesitation as does the student with the spider-picture. He plainly reports a global experience composed of these three different components of surprise. So we are left with such a synthetic apprehension and have but to accept it as such, unless we carry out a second explicitation microphenomenological interview this time targeted upon this very tiny moment of the surprise-experience!

     If we look at A. Smith's analysis of surprise (Smith, 1782/1995), it is identified as a change in the form of a shift due to the novelty of an element within a familiar situation. Smith also shows how valence based emotions then spontaneously join. It is remarkable to notice the fine articulation of this initial move with emotion in general:

> 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. Surprises of joy when the mind is sunk into grief, or of grief when it is elated with joy, are therefore the most unsupportable   (Smith, 1782/1995, p. 33)

As in the sub-signatures n°1, n°3 and in some atypical dynamics, emotion is associated with surprise as a dynamics, here as surprise 'of joy' or as surprise 'of grief', but it is not an emotion as such. And again:

> 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 (...) The change produced therefore 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; there seems too to be something in the nature of Surprise, which makes it unite more easily with the brisk and quick motion of joy, than with the slower and heavier movement of grief.   (Smith, 1782/1995, p. 34)

So the bodily component, here the inner move of the heart, is central in Smith's analysis. What is left behind though is the cognitive component of the twofold dynamics of surprise we find in signatures n°2 and 3, either coupled with body or with emotion, but never to be found alone. So it seems to be that the strong cognitive understanding of surprise reduced to the computational view of a reaction to prediction error signals that proceed from a mismatch in a predictive coding based on a Bayesian model, which exemplifies the plasticity of the brain to minimize errors thanks to the spontaneous emergence of feedback loops (Friston, 2010, p. 127–138) remains one-sided. It needs to be complemented and integrated into a multifaceted bodily-emotional-cognitive model of surprise.

3. The third signature of surprise: The 'cascade' as illustrating an overlapping generative process

I will finally analyse a third micro-model of surprise that emerges from 5 out of 9 of the students' interviews and from 2 out of the 12 patients' interviews.

I named it metaphorically a "cascade of surprises" to catch the generative and overlapping process at work in the unfolding of at least three heterogeneous time-segments which refer to different kinds of surprises.[8]

Let's go through the content-occurrences of such cascades of surprises in the interviews I analyzed. I could here notice three different sub-signatures: first, a visuo-motor series of surprises; second, an integrative cascade, ending up as a cognitive assessment but including as preliminary bodily and emotional surprises; third, a merely cognitive process of surprising steps finally leading to the identification of an object.

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8.   I introduced the term "cascade of surprise" in some talks about surprise since 2012. I used it here in this contribution and happily discovered that Gilles Deleuze also mentions it in his *Logique du sens* (1969, p. 325), yet not in direct reference to surprise, but still in relation to bodily experience: "le développement du corps procède en cascade: un bourgeon de membre est déterminé comme patte avant de l'être comme patte droite, etc. On dirait que le corps animal hésite, procède par dilemmes". I thank Claudia Serban ("La surprise comme mise en question de l'espace logique. Remarques sur la construction narrative d'Alice's Adventures in Wonderland", in: N. Depraz & Cl. Serban, *La surprise dans les langues, op. cit.*, p. 241) for having drawn my attention to Deleuze's understanding of the word "cascade", which I understand though not as a hesitation or as a bifurcation creating doubt and freedom within the bodily growth (as he does), rather as a continuous forward going self-nourishing and self-creating dynamics of the lived body (Depraz, 2015, p. 36).

3.1   A *visuo-motor-cognitive* cascade

This signature is actually a hapax. It occurs as the peculiar experience of the student 2–004C at the appearing of Gustave Doré's *Vision du Paradis* (1861). Is it so striking that I chose to consider it as a potential micro-model of a generative cascade process of surprises. It presents as follows:

–   first arises a feeling and move of attraction into what is named a 'tunnel', of being merged, absorbed into it: "I was drawn toward the center of the picture"; "it is almost physical-bodily, my look was quasi-immediately attracted by the center"; "there is a move forward (…) rather in the breast". She accompagnies these sentences by an embodied language made of interjections and exclamative forms: "Just this tunnel-effect, directly, 'poof'! … Bingo, immediately, like a three D-effect!!".[9] In addition to these bodily indications, she also behaves in the interview while reliving the moment of experience as if willing to physically go into the picture. So this initial surprise is strongly sensory-kinæsthetic though innerly situated, like an inner move, and it is also clearly passive, as it is expressed in the passive grammatical form of the sentences of the student. Although the word 'surprise' or assimilated is not pronounced here, the reference to a being-attracted echoes a form of capture, a being caught which is the very meaning of 'sur-prise' (from the french "prendre", lat.: *capere*).
–   second comes a bodily-cognitive surprise which is this time explicitly named as a surprise.[10] It corresponds to the visual perception of two small shadows at the fore-front of the picture, which were first unseen and then were at second sight aperceived. The cognitive mechanism of aperception/awareness is triggered by the sudden visual focalized perception and based on a counter-perception of them not-being present, hence the un-expectation. However, such an un-expectation does not take the form of a deceptiveness like in Husserl's perceptual analysis of the billiard-ball being at first sight green and smooth and at a second approach while looking backward red and uneven (Husserl, 1975, §20). It is rather associated to a positive "astonishment" expressed as a "why?", of discovering something new and simply different. The bodily aspects of such a surprise are multifarious: (1) the student moves her body forward ("you move nearer the screen to see what it is"); (2) a non-startling is mentioned but

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9.   About the distinction between a bodily language (gestures, behavior, face expressions) and an embodied language (exclamations, interjections, deictics, etc.), see Depraz (2015, pp. 29–32).

10.   "Ah yeah, it is surprising, you don't expect to see them here." (« Ah oui, c'était surprenant, on s'attend pas à ce qui soient là »).

a raising of the voice; (3) an inner feeling of having one's place stolen: "I had the impression the shadows were taking my observer's place."

– third surprise, entirely visuo-cognitive: the discovery of the presence of a multitude of small angels all around the sun. It is a later and smaller surprise, which generates an open questioning in the form of a perplexity: "it is more like a perplexity!!"

Such a series of surprises unfolds along the rhythm of the visual exploration of the different aspects of the picture. Hence the heterogeneity of the lived surprises, bodily, emotional and cognitive, of the subject, as triggered each time by an different objective surprising property of the picture (About such a series of suprises amounting to micro-becoming aware processes, see also: N. Depraz, F. J. Varela & P. Vermerch, 2003).

3.2   A *sensory-startle-emotional-multifaceted cognitive* cascade

With this second sub-signature of "cascade", we have to do with a still more complex dynamics. It is all the more significant that it concerns four out of the 21 subjects, two students and two hospital-subjects, so nearly one-fifth of them.

The general form of the dynamics is as follows: first (a), almost always a startle immediately associated with a negative intense emotional sensation (it corresponds to our first shock-surprise signature), then (b), frequently (three times out of four) another intense pure emotion (this time not bodily based), horror or aggression feeling, finally (c) in all four cases a cognitive surprise, either punctual (5–007J –> "perplexity"; 5'-T19/27 –> "enigma-anwer"; 11'R38–67 –> "astonished capture"), or, once, processual, unfolding in different micro steps of gradual identification (4–006 T –> (1) Non-understanding; (2) Curiosity; (3) Search for meaning).

In order to illustrate more finely the micro-dynamics of this sub-signature of cascade of surprises, let us take the exemple of the student 5–007J. Although the word "surprise" is not mentioned at any moment, the student, at the appearing of C. Soutine's *Carcass of Beef*, accounts for an immediate reaction of surprise named as an intense shock and content-identified as a sensory disgust. We could stop here and conclude that it refers exactly to the first signature of a shock-surprise. What is striking however is the following up in micro-phases that emerges therefrom and seems to *self-generate itself from* the very disgust-shock: first as a feeling of being agressed by the carcass, second as a questioning of perplexity about the identity of the object, which is first mis-identified as a chicken. In addition, during this cascade of surprises an enduring sensation of disgust runs continuously as a 'basse continue'.

3.3   A *cognitivo-cognitive* process of cascade

With this third and last sub-signature of cascade finally, we have to do with a far more homogeneous process, since it is merely cognitive. In one case (6–008S), it starts with a non-understanding (1), goes through confusion (2), ends up with an identified meaning as "grotesque" (3); in the other case (7–009Ann), it begins with a state of confusion named as "weird" (1), which is then opened up with a questioning (2) and results as an identification (3). What is striking with these two students is their facing an objectively disturbing picture linked to the difficulty of directly identifying what is at stake: if you have a look at the two paintings chosen by the students for the interview, P. Rebeyrolle's *Implosion* and L. Bourgeois' *Janus fleuri*, it will unavoidably generate in you a mixed feeling of non-understanding and uneasiness. Such a mixed cognitive-emotional reaction is well emblematized by the two adjectives that come out for each student: "grotesque" or "weird", which account in their own way for the commonly noted subjective state of "confusion", or, with more clearly cognitive variants, "perplexity", "non-understanding", "questioning". If we look more closely at the experience described by 7–009Ann, the cascade-process of surprise defined as un-knowledge is linked to an enduring, unceasing and repeated difficulty of identifying: "I did not know, I don't know… It looked like an eaten up croissant, a weird croissant, a lot of things… I kept asking myself what it was…"

Provisionary conclusion: a cognitive component is at work in each sub-signature together with an inherent emotional aspect, which blurs the understanding. The specific signature of surprise is here supported by the impossibility or difficulty of identifying what it is: it is therefore a durative surprise, precisely because of the resistance and freezing objectively present in the picture.

3.4   Ch. S. Peirce's series of surprises

Strikingly enough the American author of the *Stanford Lectures* (1901), Ch. S. Peirce, understands experience as a non-stop self-generating series of surprises. Similarly, E. Husserl identifies surprise in the multiple partially mapping micro-moments of conflicts between preconscious resistance and openness of the subject affected by implicit experiences of dizziness or satisfaction (Husserl, 1991, 2001, to appear).

To focus further on Peirce's approach of surprise as experience, which has the advantage of being highly thematic and directly connected to the generative aspect of the cascade through the notion of "series", we notice that the author speaks less of surprise than of "surprises" in the plural:

> (…) how does this action of experience take place? It takes place by a series of sur-
> prises. (…) At one time a ship is sailing along in the trades over a smooth sea, the
> navigator having no more positive expectation than that of the usual monotony
> of such a voyage, when suddenly she strikes upon a rock. The majority of discov-
> eries, however, have been the result of experimentation. Now no man makes an
> experiment without being more or less inclined to think that an interesting result
> will ensue; for experiments are much too costly of physical and psychical energy
> to be undertaken at random and aimlessly. And naturally nothing can possibly be
> learned from an experiment that turns out just as was anticipated. It is by surprises
> that experience teaches all she deigns to teach us. (…).
>
> (Peirce, 1994, §2, Struggle, 51, p. 3736)

Although Peirce sometimes talks of surprise as an emotion, he has a general cogni-
tive understanding of it as a "phenomenon" that brings about novelty, is grounded
on (non-) expectation and accounts for the resistance of reality.[11] Furthermore, as
it is noted in the previous quotation surprise is for him a crucial opportunity to
learn something: it therefore has a knowledge-acquisition function.

But surprise is also understood by Peirce as a dynamic phenomenon in itself
and not only as one triggered by some external event (even if it is also the case, as
shows the experience of striking upon a rock in the quotation). In this regard, it
ends up being considered as the very conflictual inner dynamic of consciousness,
which remarkably echoes the self-generative process we discovered from the first
person interviews:

> The phenomenon of surprise in itself is highly instructive (…) because of the em-
> phasis it puts upon a mode of consciousness which can be detected in all percep-
> tion, namely, a double consciousness at once of an *ego* and a ***non-ego,*** directly
> acting upon each other. (…) Examine the Percept in the particularly marked case
> in which it comes as a surprise. Your mind was filled [with] an imaginary object
> that was expected. At the moment when it was expected the vividness of the repre-
> sentation is exalted, and suddenly, when it should come, something quite different
> comes instead. I ask you whether at that instant of surprise there is not a double
> consciousness, on the one hand of an Ego, which is simply the expected idea sud-
> denly broken off, on the other hand of the Non-Ego, which is the strange intruder,
> in his abrupt entrance.   (Peirce, 1994, 52–53, p. 3736)

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11. I don't intend here to offer a general view of Peirce's conception and theory of surprise,
although it would be worth undertaking it given the important number of occurrences of this
phenomenon in his work (around 100 important ones at least). What I will limit myself to saying
though is that it is a crucial phenomenon for Peirce, which is as we saw highly cognitive and
quasi-coextensive with the very notion of experience.

Clearly enough here, surprise refers to the lived inner dynamics at work in the process of generating novelty from and occuring against previous expectations. The image of the strange intruder within consciousness shows quite well how surprise is not plainly the subjective result or reaction of an object affecting me from outside, but is active within myself as a force self-generating novelty from within. Besides, even if the body is not mentioned as such but only consciousnes, the latter is so concretely and embodiedly described as a force in action with opposed embodied figures (Ego, Non-ego) that we actually visualize the scene of the dramatic conflictual dynamic at work (Depraz, 2013a, 2014b).

What adds the analysis of the first person interviews about this peculiar cognitive generative signature of a cascade of surprises is the overlapping process of different contrasted contents of surprise, either cognitive (non understanding, perplexity, questioning), emotional (mixed, intense, durative) and bodily (startle, sensation, shiver, shudder), what Peirce's analysis does not concretely describe.

4.   Conclusion

While mirroring experiential results from first-person analysis and philosophical third-person analysis, we were able to prove the variety and the complexity of the dynamics of surprise as a lived bodily one involved in a micro though finely unfolded and articulated temporality of duration. Among the three signatures I could describe, even the shock-surprise results unfolded and cannot be reduced to an abstract point. As for the others, the double-staged dynamics and the cascade, they allow us, in their multifarious finely grained and multifaceted process, *to confirm and to refine* Adam Smith's and Charles Sanders Peirce's philosophical descriptive intuitions about the bodily micro-duration of surprise.

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The representation of surprise in English and the retroactive construction of possible paths

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The current article considers the linguistic representation of surprise in English within the framework of the Theory of Enunciative and Predicative Operations. English appears not to have any markers specialised in the expression of surprise. Here I argue that English does nonetheless possess numerous formal configurations which may be shown to derive from a recurrent schema of surprise. I consider three such configurations: the concessive YET, OF ALL + plural noun and ONLY TO + verb in narrative context. Each configuration mobilises an abstract schema involving a discontinuity between an anticipated situation and an actual situation, i.e. an opposition between a – retroactively re-constructed – virtual class of expected possibilities and a validated occurrence.

Keywords: Theory of Enunciative and Predicative Operations, mirativity, surprise, discontinuity, concession, quantification, interrogation

0.   Introduction

In the third scene of *A Midsummer Night's Dream*, the four young lovers are in the woods not far from from Athens, where Demetrius and Lysander, who have so far both been in love with Hermia, fall under a spell cast by Puck. They declare their new passion to Helena, rejecting Hermia violently. Hermia, left alone on the stage laments: "I am amazed and know not what to say".

   And so it often is with surprise: it deprives us of our faculties, leaving us speechless. Language accounts for this amply through the images it deploys in the evocation of surprise: one is stunned, staggered, one's jaw drops etc. on a corporal level, and, closer to the domain of verbal expression, one is left speechless, dumbfounded etc. It might therefore seem somewhat paradoxical to wish to speak of the linguistic expression of surprise in so far as the phenomenon very often goes hand in hand with

an absence of speech, an incapacity, a sort of cognitive aporia brought on by the very event. It is interesting in this respect to note that the interjections associated with manifestations of surprise, in English and in French, "Oh" and "Ah", respectively, correspond to open vowel sounds, as if in this way the language represented the lower jaw dropping under the effect of a sudden and unforeseen catatonia.

In the present paper, I will leave provisionally to one side the spontaneous manifestation of surprise as an emotion, the analysis of which lies beyond my skills, to focus on its necessarily *post hoc* linguistic representation. More precisely, I isolate three linguistic representations of surprise, taken from different grammatical categories, and argue that each contributes to the construction of a basically similar cognitive template. The phenomena studied are taken from English and are all authentic examples culled from the British National Corpus, a multi-genre, synchronic corpus of 100 million words, compiled in the early 1990's.[1]

1.   Theoretical perspective

I situate my research within the framework of the Theory of Enunciative and Predicative Operations, a theory elaborated by Antoine Culioli and his collaborators over the last forty years or so.[2] This theoretical position ought not to pose any major problems for comprehension but is hoped on the contrary to favour possible dialogues – building bridges between grammatical categories, linguistic theories and indeed linguistics and other disciplines – in the spirit of the present collection.

If the representation of surprise seems to imply specific markers in some languages, under the disputed label of mirativity,[3] in English, apart from various lexical markers of surprise, there does not appear to be a family of markers specialised in this function.[4] There does exist, however, a number of formal configurations which enable us, via the underlying operations which these configurations evoke, to (re-) construct a recurrent, univocal schema of surprise.

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1.   For the current paper I accessed the British National Corpus or BNC via the online interface at http://corpus.byu.edu/bnc/. I indicate with an alphanumerical reference the text and sentence references for the different examples quoted.

2.   The theory, which is similar in some respects to movements in cognitive linguistics, is presented in French in Culioli (1990a and 1990b), for example, and at some length in English in Culioli (1995). The editor's introduction (pp. 7–8) and footnotes highlight similarities and differences between the theory and work by Langacker in particular.

3.   Cf. DeLancey (1997) and (2001), Lazard (1999) and Hill (2012), for example, on the mirativity debate.

4.   Cf. Filippi-Deswelle (2015) for a study of lexical representations of surprise in a literary corpus.

I will consider three such configurations, taken from different categorial domains, all of which nonetheless refer us to similar schemata. Firstly, we shall see how the *a priori* aspectual adverb *yet*, can construct a modal representation, signalling the surprising or unexpected nature of an occurrence. This will allow us to present in detail the model of the branching path (*bifurcation* in French, cf. Culioli 1995 for example) and the role that this plays in the polyoperation involved in the representation of surprise. Secondly, I will consider the dialectic relationship between the situated occurrence and the class of potential occurrences, in the frame of nominal complementation *of all things* etc. Lastly, I will study the use of an infinitival complement *only to + verb*, in narrative contexts.

Having described how each of these categorially heterogeneous configurations functions, we will go on to consider common features, which enable us to derive in each instance particular representations of surprise, and differences between types of surprise, which can, using the current approach, be construed as just so many ways of parametering a common schema.

2. *Yet*[5]

The marker *yet*, habitually described as an adverb, is typically illustrated in two contexts:

1. In intrapredicative position, where it is often associated with the marker of negation *not*:

    (1)   *I haven't finished yet.*   CCP 309

2. In initial position with extrapredicative scope, *yet* is rivalled by markers such as *however*, *nevertheless*:

    (2)   *Yet people were friendly, you know.*   H4B 533

The first case is clearly aspectual, in so far as it engages a representation of the ordered class of instants, on the one hand, and a particular perspective as regards the validation of a predicative relationship, on the other. The second case is clearly modal, situating the speaker in a process of argumentation where a proposition introduced by *yet* is presented in opposition to some previous propositional content. I am going to propose that these two apparently distinct meanings may be given a common operational representation.

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5.   The following modelisation of the functions of *yet* is a development of Ranger (2007). Cf. also DeVogüé (1992) for work on related schemata in French.

2.1   Aspectual functions

Firstly, consider (1) without *yet*:

(1')   *I haven't finished.*

In uttering (1') a speaker marks the non-validation of the predicative relationship <I/finish>,[6] as a determining element of the speaker's current situation. /FINISH/ is a process which itself functions aspectually to determine another process, of course, but I will not be dealing with this side of the question, which is not immediately relevant to our purpose.

If one represents the ordered class of instants conventionally with a line oriented from left to right, one may then place on this line a point representing the predicative relationship <I/finish> as in Figure 1:
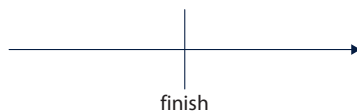
finish

Figure 1.

The presence of *yet* indicates that the speaker (since here the speaker and the grammatical subject coincide) places himself to the left of the process /FINISH/ while at the same time locating this position relative to a preconstructed anticipated position, to the right of the last point of the process /FINISH/ (Figure 2).

constructed   finish   preconstructed
position   position
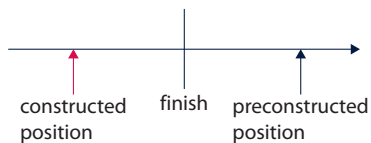
Figure 2.

By "constructed position", I understand the endorsement of a proposition by the speaker at the moment of speech and, by "preconstructed position", I understand an endorsement attributed to a hypothetical enunciative source, relative to which the source speaker can situate himself in various ways.

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6.   Predicative relationships are conventionally represented untensed, between angle brackets. Notions are represented in capitals and placed between slashes.

2.2   Modal functions

(2)   *Yet people were friendly, you know.*   H4B 533

We are closer here to our topic, since this use of *yet* corresponds to a form of concession, a notion often described in terms of surprise. Let us quote in this respect Quirk and Greenbaum, for example, for whom: "concessive clauses imply a contrast between two circumstances; ie the main clause is surprising in the light of the dependent one" (Quirk and Greenbaum 1973: 324).[7]

What is the link between the aspectual acceptation of the term – the *not yet* – and its modal, concessive acceptation – the *surprising*?

Consider Example (1) above, *I haven't finished yet*. In the absence of *yet*, I haven't finished, one might imagine two interpretations. Either it is a question of some piece of work which is not finished, but which will be so one day, i.e. *not yet*, or it is a question of some piece of work which is not finished and which will never be so, something *incomplete*, in short. The presence of *yet* excludes this second interpretation, leaving only the first.

In terms of the notional domain, the second interpretation – the *incomplete* – corresponds to a position on the Exterior of the domain, that is, to an irrevocable mismatch between a representation and a state of affairs, while the first, the *not yet finished*, corresponds to a position on another, disengaged plane, from which both the Interior (completion) and the Exterior (irrevocable *incompletion*) remain accessible.

If we adopt the usual notational conventions, using I for the Interior, E for the Exterior and IE for the disconnected position allowing access to I or to E, we obtain the following figure.
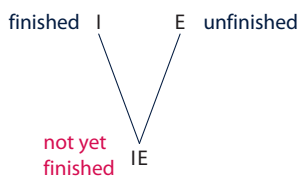
Figure 3.

I consider that the modal use of *yet* corresponds, like the aspectual use, to a position on an alternative plane, at IE, located relative to a preconstructed position in I. What is involved here is a form of backtracking whereby a path which was in principle no longer an option becomes virtually available again.

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7.   This quotation, from a standard university grammar, provides a common enough presentation of the concessive function.
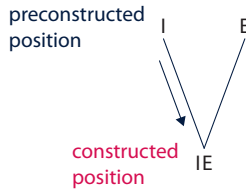
preconstructed position — I   E

constructed position — IE

Figure 4.

Let us examine this hypothesis against some authentic examples:

(2) […] *there was quite a lot of unem–unemployment, quite a lot of poverty. Yet people were friendly, you know.*   H4B 532–533

In Example (2) reproduced in context, the speaker first presents a situation of unemployment and poverty. He then hastens to specify that the people in this situation were friendly, in spite of their material deprivation. Let us represent the first proposition "unemployment and poverty", by *p* and the following proposition, preceded by *yet*, by *q*. These two propositions *p* and *q* are in potential opposition, in such a way that from *p* one might infer non-*q* and from *q* one might infer *non-p*. We can look at this as two superimposed domains where the Interior of the domain *p* corresponds to *non-q* and the Interior of the domain *q* to *non-p*. We consider that in affirming *p yet q*, the speaker, after an initial position on the Interior of *p*, uses *yet* to return to a disengaged position from which he can once again accede to the Exterior of *p*, that is *non-p*, represented by *q*. The reader will recognize the schema opposing a disengaged position at I**E** and a preconstructed position in I, with the difference that here things are not situated uniquely on the ordered class of instants, in linear manner, but on subjective or modal representations which contribute to determining the notions in question.

We can represent this very schematically in Figure 5.

poverty I   E friendly

yet   IE
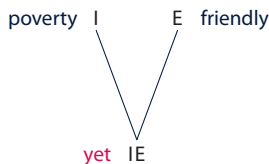
Figure 5.

Example (3) functions very similarly, on the basis of a similar topos, moreover.

(3) *I had space, my own front door and key, privacy when the door was shut and light when the weather was bright. And yet I wasn't happy.*   HD7 974–975

The presence of a certain number of material advantages *p* might incite one to believe that the subject was happy *non-q*; this inference is contradicted by *q I wasn't happy*, a proposition heralded by the reconstruction of the linguistic complement (*q* versus *non-q*) with *yet*.

And so the marker *yet*, in the general configuration *p yet q*, enables one retroactively to reconstruct access to a proposition *q* in potential contradiction with a preconstructed proposition *p*. The effect of surprise results from the potential cooccurrence of *p* and some occurrence *q* from which *non-p* might be inferred.

As far as *yet* is concerned, the effect of surprise appears to be exploited rhetorically in three fundamental ways.

Case one: in saying *p yet q* the speaker undermines the assertion *p*, endorsing *q* and attributing *p* to some other speaker. In schematic terms, *you say p, yet q* (4).

(4)   *You also said that the government sh-- should should do more supply housing. This year you have the option of using a right to buy receipts to build more housing and yet you are turning it down. If there was ever a more golden opportunity to do that, and you are spurning it, I've never seen it*   JT7 358–360

Case two: in saying *p yet q* the speaker reinforces the assertion *p*, by endorsing *p* and attributing *q* to some other speaker. In schematic terms, *p, yet you say q* (5).

(5)   *You know nothing about me, and yet you insist on crediting me with a lifestyle more likely your own!*   JY8 2297

Case three: in saying *p yet q*, the speaker does not differentiate between the endorsement of *p* and *q* which are maintained simultaneously in the evocation of a contrasted or paradoxical situation (6):

(3)   *I had space, my own front door and key, privacy when the door was shut and light when the weather was bright. And yet I wasn't happy.*   HD7 974–975

2.3   The branching path and retroactive movement

After this first analysis of *yet* it it important to insist upon two points in particular:

Firstly, the schema of the branching path and the disengaged position IE reconstructed from an actual situation I forms a sort of *Leitmotiv* which we shall see again in the other cases studied.

Secondly, I must underline the fact that surprise, whatever its cognitive or physiological manifestations, is represented linguistically by a retroactive movement, at least in the cases we are currently dealing with. The possibility of some other path *q* is constructed *a posteriori*, in reaction to some actual situation *p*. In this way we shall see that, despite the morphological indications, the *expected* appears primarily to be constructed from the impetus provided by the *unexpected*.

3.   Of all + plural noun

The second configuration I will consider may be illustrated by the following examples:

(6)   *we went to Frinton of all places*   D90 248

(7)   [...] *she collided surprisingly, almost nightmarishly, with a nun. What was a nun doing, hurrying in the opposite direction in the rush hour, flashed into her mind as the nun spoke. 'Why, Ianthe Broome, of all people!' she exclaimed. 'Don't you remember me?'*   HA4 2199–2201

(8)   *It's my job to offer reassurance, if that's what's required, as well as medical treatment. You of all people should know that.'*   JXW 3426–3427

(9)   *He guessed her to be worrying about money. Temper defeated pity and he attacked her rabidly for, of all things, going to her Anglican church.*   FRH 1511–1512

The common point in all these examples is the evocation of some strongly determined term, located relative to a situation of reference, whether it be a toponym *Frinton*, a person *Ianthe Broom*, *you*, or the nominalised predicate *going to the Anglican church*. The preposition *of* relates this term to some hypernymous set, respectively *all places*, *all people*, *all things*.

The preposition *of* relates a locatum to the left and a locator to the right.[8] Etymologically it evokes a movement from some place. Hence the sequence *Frinton, of all places* determines *Frinton* relative to a class of terms from which the term *Frinton* is taken. It is however important to realise that this class is reconstructed retroactively, even when the choice is no longer available: *Frinton* has already been selected. The construction of a relationship between *Frinton* and the class it belongs to is only operated to indicate the unexpected or surprising nature of an actual state of affairs, relative to an initial set of potential states of affairs. *Frinton* is thereby constructed as qualitatively different from the other members of its class.

This metalinguistic reflexion has led us to evoke a schema analogous to the one at work in the use of *yet*:
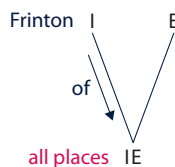

Figure 6.

Taking IE as the starting point one can envisage a whole class of possible destinations. There is little interest in representing these as an infinite number of possible paths, even if, in logistic terms, that may in fact be the case; the important thing is that they form together an alternative which is the complement set of the actual validated occurrence *Frinton*. We are once again in a configuration of retroactive reconstruction: it is from an actual, validated term that one reconstructs a virtual paradigm of terms that might have formed alternative choices. Surprise again is represented *a posteriori*.

To what extent are these remarks language-specific, one might ask? The construction in question here is not easy to render in French, for example. One possibility might be the quasi-lexicalised expression *allez savoir pourquoi* (literally: *go and know why*)[9] which challenges a virtual co-speaker to retrace a causal path that might lead to the existence of the term in question. Again, one goes back, from what is actually the case to what might have been, but instead of considering a term relative to a class of potential occurrences, what is insisted upon here is the absence of motivating factors in the passage from the class to the actual occurrence, hence its arbitrary and indeed surprising nature.

Another possible translation for similar cases is the slightly old-fashioned expression, *ça par example* (literally: *that for example*).[10]

Here the strategy seems closer to that used in English: an actual occurrence (*ça/ that*) is highlighted and located, with the use of *par exemple / for example* relative to a potential paradigm.

Of course the sequence *Noun of all Plural Noun* is not always associated with effects of surprise. For this to happen, there must be in particular a context in which the two nouns are in an occurrence/class relationship and in the relationship of differentiation. Two cases appear especially significant:

1. The first term is located relative to a specific referential frame, *Ianthe Broome, of all people!* The surprise here is that such an individual should be in such a situation;
2. The first term is located relative to a specific property, *you of all people should know that.* The surprise here is that the subject should not validate the predicate.

If the basic mechanism, i.e. the retroactive reconstruction of the possible from the actual, remains the same, the "surprise" manifested in *Noun of all Plural Noun* is not quite the same as that invoked by the *p yet q* configuration.

In the case of *yet*, surprise is part of an argumentative strategy. In uttering *p* then evoking the possibility of *q* a speaker might destabilise *p* (which is no longer

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9. (6) could be rendered in French as *nous sommes allés à Frinton, allez savoir pourquoi.*

10. (7) … *Eh bien, Ianthe Broome, ça par exemple!*

really p), might reinforce *p* (which *resists q*) or might signal a paradoxical situation, maintaining the tension between opposites.

In the case of *Noun of all Plural Noun* constructions, the surprise is of an epistemic nature. It opposes a validated but improbable occurrence and a class of non-validated but in principle probable occurrences.

4.   The infinitive of result *only to*

The third configuration I will consider is the "infinitive of result", limited essentially to narrative contexts as below:

(10)   *A taste of aquavit would do her no harm. She lifted her glass, only to have her arm stilled*   HA5 788–789

(11)   *HEALTH inspectors swooped on a flower stall suspected of illegally selling tortoises – only to find they were made of stone.*   CH6 7270

(12)   *Yesterday we rang Frank at home only to be told by his mum: "Oh No. He'll be furious when this gets out."*   CH1 812–814

Schematically, a first proposition *x* is followed by a second infinitival proposition *y*, preceded by the restrictive adverb *only*.[11]

This configuration may fairly simply be linked to a schema close to the previous ones. On the one hand, the infinitive *to + verb* projects the validation of the predicative relationship, i.e. the passage from I**E** to I. On the other hand, the adverb *only* specifies the qualitative unicity of a term, thereby excluding other possibilities. So *x only to y* signals the passage from I**E** to I, or from *x* to *y*, while at the same time marking a differentiation between *y*, an unexpected but unique and actual result, and other results which were available and possibly expected but which are ultimately non-validated and hence belong to E.
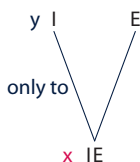

y I   E

only to

x IE

Figure 7.

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11.   I use *x* and *y* here simply to avoid confusion with the earlier use of *p* and *q*.

This schema does not necessarily give rise to effects of surprise. For these to emerge there must be, on the one hand, a narrative context and, on the other, a certain type of relationship between the processes in *x* and *y* such that *x* features an agentive subject and *y* a non-agentive subject. The effect of this is to eliminate any teleonomy – or intentional pattern – between *x* and *y*, or rather to signal a thwarted teleonomic project: the result *y* appears surprising or unexpected relative to cause *x*, and contrary at the very least with the expectations of an agentive subject. It is interesting to note that targeted queries on the British National Corpus reveal a particular salience of the non-agentive processes /FIND/ or /DISCOVER/, as well as the use of the passive voice among the terms found to the right of this construction, in narrative context, cf. Examples (10)–(12) above.[12]

Unlike the previous cases, in which one had to backtrack in order to reconstruct IE and alternative paths from an instantiated occurrence on I, in the case of *only to* constructions, the linear order is "IE, only to I". I would nonetheless argue that the restrictive adverb ONLY signals in (10)–(12), as before, a retroactive movement, in that it implies the construction, based upon an unexpected and unique actual state of affairs, known to the narrator, of a paradigm of expected but non-validated possibilities.

This representation of surprise is, as I have said, limited exclusively to narrative contexts. While *yet* uses surprise in an argumentative strategy and while *of all* signals an epistemic surprise, *only to* evokes the preconstructed expectations of a subject who is agentive but powerless before a transcendent narrative instance.

Concluding remarks

Let me sum up the ground covered above.

I set out with the aim of showing that, despite the absence of a family of markers specialised in the expression of surprise, English mobilises configurations from a range of grammatical categories, all of which enable the construction of representations of surprise.

We then looked at three specific configurations all involving some representation of surprise and attempted to show that they all engage a recurrent schema by which, starting from an actual state of affairs, there is a retroactive movement to reconstruct, *post hoc*, a point from which other expected, but non-validated states of affairs are potentially accessible.

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12. By "salience" I refer here to the frequencies of these processes, in *only to contexts*, measured by mutual information or Log-likelihood.

While these specific configurations all engage representations of surprise, they are nonetheless not synonymous. The linguistic traces of the mode of construction, the terms opposed and the different subjective positions lead to diverse manifestations of the same phenomenon.

The schema evoked is not limited to the three configurations studied here but appears in other forms. We might mention in this respect the infinitival expression *to think* in initial position; the construction *who should… but…?* and, more generally, monologal question-answer sequences where an already chosen path is problematised *a posteriori*. Similar problems are also present in certain constructions involving what in transformational grammar is known as "subject-raising" such as *happen to*, *turn out to* etc.

What is common to these configurations is not to be found in the linguistic forms, but in the metalinguistic form – the recurrent schema, which can on each occasion be reconstructed, in the framework of a theory that considers the forms of a language as traces of underlying operations that can only be formulated through explicit metalinguistic discourse.

We have spoken of how possibilities are constructed retroactively from what is in fact the case; this is an important point. Surprise, at least in the linguistic representations studied here, implies a confrontation between a state of affairs which is actual but unexpected and states of affairs which are expected but non-validated. Contrary from what one might expect it would appear that surprise is constructed *post hoc*: in other words, it is on the basis of an unexpected situation that one may envisage *a posteriori* the situation that might have been expected instead.

The mechanism is somewhat paradoxical but seems cognitively plausible: we do not necessarily entertain mentally a whole series of expectations. These only materialise under the impulsion provided by the unexpected. In this perspective it appears problematical to consider as an emotion a phenomenon which is first and foremost a physiological reaction, the linguistic representation of which necessarily involves a form of rationalisation or retroactive realisation.

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PART II

Verbal interaction and action

Encoding surprise in English novels

An enunciative approach

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After studying surprise words of variable intensity, I presently turn to "mirative" clause constructions conveying surprise in the same type of literary corpus data in English, providing an enunciative treatment of characters as experiencers, not agents at first. Culioli's T(P)EO defines surprise as the deconstruction of expectation in that the outcome of a situation is other than expected, valued positively or negatively according to the subjects' norms. The linguistic encoding of surprise relates to prior subjective representations which the characters' referents have to abandon when confronted with something new: unusual, unknown, or unthinkable. The communicative situation thus requires them to manage a certain otherness, necessitating some kind of agentive response in terms of adjustment to a new state of affairs.

Keywords: surprise, mirative constructions, Culioli's Theory of (Predicative) and Enunciative Operations, deconstruction of expectation, adjustment to otherness

1. Introduction

The linguistic encoding of surprise has often been associated with the semantic categories of evidentiality and mirativity since they deal with knowledge, its various sources and information processing (DeLancey, 1997 chapter 1, 2001, pp. 371–380, 2012, pp. 529–531; Aijmer & Simon-Vandenbergen, 2004, pp. 1790–1792; Celle, 2006, pp. 39–107; Peterson, 2017, pp. 85–86). Because both modality and affect are at stake here, newness may entail unexpectedness, which in turn may lead to emotional responses such as surprise (Celle & Lansari, 2015b, pp. 297–298; Celle & Lansari, 2017, pp. 2–3; Celle & Tsangalidis, 2017, pp. 305–311; Celle et al., 2017, pp. 218–219; Eisman, 2015, pp. iii–iv, 1–35). However, it is worth noting that the afore-mentioned categories are not necessarily grammaticalised as such in English, contrary to Cheyenne, Hare, Lhasa Tibetan, Navajo or Turkish. As DeLancey

(2001, p. 377) states: "Mirativity is not directly expressed in the morphosyntactic system of English, although […] it exists as a covert semantic category." It would therefore be more appropriate to talk about *mirative* intonation contours and syntactic constructions in languages such as English or French: some uses or interpretations of *wow/oh* interjection markers in English can be called "mirative(s)", as exemplified in Celle & Lansari (2015a, p. 87) and Celle et al. (2017, pp. 218–225, p. 240); as for French *waouh/oh/ah*, see Depraz (2015, p. 32, p. 39), Goutéraux (2015, p. 71) and Ranger (2015, pp. 43–44).

In the present paper, I use data from *North and South* (1855) by Elizabeth Gaskell (hereafter *N&S*) and one extract from *Jane Eyre* (1847) by Charlotte Brontë (hereafter *JE*), in order to examine some syntactic constructions conveying surprise, in situations when some of the characters are confronted with something totally unthinkable. The specificity of the written literary genre under scrutiny accounts for the fact that, in novels, the sense of surprise is rendered by the narrative voice through external or internal focalisation. In both cases, the focus is laid on the immediate lived experience of the referent of the character(s) as subject(s)/speaker(s). It gives way to a more reflexive phase, both in dialogues and descriptive narrative passages, in which the narrator and/or the characters try to decipher the resulting situation in order to make sense out of it.

The event/news taking the subject by surprise thus requires management of a certain otherness, necessitating adjustment to a new state of affairs as a response to "the sense of surprise at an unanticipated situation" (DeLancey, 2001, p. 376), on account of an "unprepared mind" (Peterson, 2017). Characters compare the current situation to counter-oriented preconceptions. The findings from the corpus data indicate that they gradually move on from the roles of experiencers to that of agents. Aijmer & Simon-Vandenbergen (2004, p. 1784) explain that "the negotiation of meaning in the communication situation involves the continual updating of these assumptions, which may be explicit or only assumed, for example by challenging them or denying them." Or by coming to terms with them when the reality of the new subsequent situation can no longer be ignored, and thus by *regaining a form of control* over one's own self (Filippi-Deswelle, 2015, p. 230: "*gather my wits*", in *JE*, p. 79), and over one's own life, as shown in some passages from *N&S* in the present paper, instead of remaining a subject defined by "lack" (Peterson, 2017)/"loss of control" (Kövecses, 2017).

In Section 2, I introduce some *metalinguistic tools* relative to the T(P)EO framework (Culioli, 1976, p. 72: "the importance of carefully-controlled descriptive language"), which I will use to address the issue of lived surprise through the various means of its linguistic encoding in English. In Section 3, I provide some explanations relative to the methodological choice of working on written literary corpora. In the present case study from *N&S* in Section 4, I aim to show how canonical clause

types – such as exclamatives (Celle & Lansari, 2015a, pp. 80–85, p. 96; Jugnet, 2015), as well as interrogatives, imperatives and declaratives introduced by the subjective predicate *think* –, can take on *mirative* readings. In Section 5, I finally argue that the term *adjustment* not only conveys a behavioral meaning of adaptation but also refers metalinguistically to the way subjects negotiate meaning production and reception, in order to regain control in verbal interaction in post-surprise contexts.

2.   An enunciative approach to the encoding of surprise in English

The present study of the linguistic means of encoding surprise in English is set within the Theory of (Predicative and) Enunciative Operations (hereafter T(P) EO). T(P)EO can be defined as an integrated model that does not separate morphology and syntax from prosody, semantics and pragmatics (Culioli, 1976, pp. 72–73, p. 80; 1982, p. 96, p. 106; 1985, p. 12, 1994, p. 83), i.e. "*une pragmatique intégrée*" in French (Culioli, 2002, p. 76, p. 92; Filippi-Deswelle, 2012, p. 315, pp. 328–332; Mélis, 2012). This theoretical framework partially derives from Benveniste's theory of enunciation dealing with indexicals and other modal markers of speaker (inter-) subjectivity (Dufaye & Gournay, 2013; Filippi-Deswelle, 2013, 2014a, 2014b). It is speaker/cospeaker-oriented and can be summed up by what Culioli and his followers call an *enunciative* approach (Culioli, 1989, p. 180–181; Filippi-Deswelle, 2012, p. 336–339; Mélis, 2012; Ranger, 2012).

As Ranger (2012, p. 40) puts it, "in natural languages, meaning is not given but, on the contrary, continuously constructed and re-constructed by speakers as they engage in the activity of speech" (Culioli, 1978, p. 139 note 7: "*l'activité énonciative (de production d'un côté, de compréhension de l'autre)*". Culioli himself (1989, p. 179, p. 181) explains that "*Systems of representation endowed with complex properties […] make it possible for a subject to produce meaningful shapes that are recognized by another subject as having been produced in order to be recognized as interpretable.*" – "shapes" equate with patterns of markers of operations. In the present paper I use the terms "subject(s)", as well as "speaker" and "co-speaker", following Ranger (2012, 2014a, 2014b) when communication participants function as parameters referring to enunciative origins.

Since the present study is concerned with the effects of surprise on the subject/ speaker (hereafter "subject" in short), it focusses on how surprise is lived "*in situ*" by a subject who is constructed as an experiencer but not as an agent to begin with. When experiencing surprise the subject goes from the stable representation of a state of affairs to its destabilisation. The new state of affairs, subsequent to surprising circumstance or news (the source/cause/trigger of surprise), corresponds to an effective spatio-temporal situation. It undergoes two sorts of modal judgments:

a. a mental evaluation in terms of conformity to the subject's notional norm. This can be paraphrased by a question like, "Is it or not a typical occurrence ("token") relative to the "(proto-)type"? – which consists of a bundle of expected, transindividual, physical and cultural semantic properties. Then it leads to reassessment of the validation of the predicative relation (thus also involving a type of assertive and/or epistemic evaluation on the T-based parameter): "Is this truly happening or not in the time and place of the situation of utterance?"

b. an axiological evaluation assessing the beneficial or detrimental effect of the event/news on the subject as far as (inter-)personal standards are concerned (Culioli, 1976, p. 78; 1989, p. 181: "weighting"): "Is this good or bad for me? Is this a pleasant or unpleasant experience?"

This is a specific kind of evaluation called "*valuation*" in T(P)EO's French terminology, meaning "valence" (understood in terms of a linguistically encoded affect in context). It also involves a type of aspectual evaluation in terms of resulting states on both T-based and S-based parameters: "How does/will it impact my personal/ moral/social/professional status in the present and in the future?"

In T(P)EO, experiencing surprise can then be defined as a subjective process of deconstruction of expectation(s) in that the outcome of a situation is other than, and sometimes contrary to, what the subject was prepared for in the first place (Culioli, 1985, p. 66: "*attente déjouée*"). It thus conveys lack of conformity to former cognitive and affective standards of evaluation (Celle, 2006, p. 52; Celle & Lansari, 2015a, p. 85; Filippi-Deswelle, 2015, pp. 221–222; Ranger, 2015, p. 56).

3. Presentation of the written literary corpus data based on English novels: A qualitative study of surprise (lexemes and) syntactic constructions

The linguistic data from *JE* (Filippi-Deswelle, 2015) and *N&S* (Filippi-Deswelle, this volume) have been manually collected in order to gather a sufficiently representative sample of surprise words/constructions, without aiming at an exhaustive quantified corpus study. Even in the days of corpus linguistics which offers access to both written and spoken data on a very large scale, working on written, instead of spoken, English is not a rare thing as shown in Ranger (2014b, p. 2 referring to p. 13 note 1, pp. 3–4; 2015, pp. 53–55). Though written, novels provide genuine contextualised data, which give full access to the morphosyntactic, semantic and pragmatic surrounding environment(s) of the specific items/structures needed to be singled out, in order to carry out enunciative analyses in enlarged context.

Novels contain various sub-genres such as narrative passages including different planes of enunciation: (i) that of the progression of the narrative, (ii) insertions

of dialogues imitating oral conversations as if they were really taking place (i.e. direct speech), and (iii) insertions of the two afore-mentioned kinds within the narrative itself: descriptions including reported speech, and introspective passages accessed through free indirect speech. Using tools from studies in narratology is therefore consistent with the scientific objects of the present paper in so far as novels contain both narrative passages and dialogues explicitly constructed as fictional.

Novels are also an endless source for studying both modes of communication, either "emotional" or "emotive", as far as *expressing* (by "a spontaneous, uncontrolled outburst" the lived emotion on the spot, i.e. "emotional") and *describing* (by means of "an assertion" serving to comment on the emotion, i.e. "emotive") *surprise* are concerned (Celle & Lansari, 2015a, pp. 85–88; 2017, p. 1, pp. 3–4; Celle et al., 2017, pp. 215–225, pp. 236–242).

The corpus data date back to mid-19th century. Despite this span over time the surprise lexicon and syntactic constructions have remained quite stable. There may be differences linked to sociolinguistic considerations with respect to language registers and social classes, though these issues have not been looked into in the present paper.

4.   Some grammatical means of conveying surprise

As already mentioned, surprise is triggered by the fact that "the speaker had no previous inkling of the situation" (DeLancey, 2001, p. 376). More specifically, experiencing surprise may refer to subjects' various reactions to something (i) unusual, (ii) unknown, or (iii) totally unthinkable/unpredictable. This typology of surprise experiences is loosely adapted from Valetopoulos's (2015, pp. 163–164, pp. 172–173) "cartography" of the semantic sources that cause surprise (p. 164: "*le sémantisme de la cause provoquant la surprise*"): (i) "*l'inhabituel*", (ii) "*l'inattendu*", (iii) "*l'inexplicable*" (p. 173).

In the present paper the focus is mainly laid on type (iii), i.e. the unimaginable/unconceivable/incomprehensible/unreal/extra(-)ordinary. The subjects/speakers functioning as fictional characters from *N&S* have no understanding whatsoever of the current situation or any notions as to what awaits them next. This total lack of anticipation is what gives the news the force of a blow: Mr Hale's wholly unsuspected decision – to move up to industrial North to become a private tutor – comes as a shock to both daughter ("Margaret") and wife/mother ("Mrs Hale"). In (1), (2) and (3), they first react to it verbally, construed as speakers responding to the co-speaker's news. In Celle & Lansari (2015a) and Celle et al. (2017)'s terminology, they *express* their surprise through syntactic constructions related to clause types that all indicate, on the part of the speaker(s)-as enunciative origin(s), quantitative/situational and qualitative/affective disqualification (Culioli, 1998, pp. 137–138)

of the co-speaker's predicative relations, i.e. those of the news-bearer's referent ("Mr Hale").

(1)   'Margaret! <u>I am going to leave Helstone</u>.'
       'Leave Helstone, papa! But why?'
       Mr Hale did not answer for a minute or two. […]
       'But why, dear papa? Do tell me!'
       He looked up at her suddenly, and then said with a slow and enforced calmness: '<u>Because I must no longer be a minister in the Church of England</u>.' […]
       'Oh! what is it? Do speak, papa! Tell me all! Why can you no longer be a clergyman? […]'
       '[…] <u>I can meet the consequences of my painful, miserable doubts</u>; but it is an effort beyond me to speak of what has caused me so much suffering.'
       'Doubts, papa! Doubts as to religion?' asked Margaret, more shocked than ever. '<u>No! not doubts as to religion; not the slightest injury to that.</u> […] You could not understand it all if I told you – my anxiety, for years past, to know whether I had any right to hold my living – <u>my efforts to quench my smouldering doubts by the authority of the Church</u>. […]'
       'But, papa, have you well considered? Oh! It seems so terrible, so shocking, said Margaret, suddenly bursting into tears.'   (*N&S*, Chapter IV, pp. 34–36)

(2)   **'Where are we to go to?'** said she at last, struck with a fresh wonder as to their future plans, if plans indeed her father had.
       '<u>To Milton-Northern</u>.' […]
       'Milton-Northern! The manufacturing town in Darkshire?'
       'Yes,' said he, in the most despondent, indifferent way.
       'Why there, papa?' asked she.
       '<u>Because there I can earn bread for my family</u>. Because I know no one there, and no one knows Helstone, or can ever talk to me about it.'
       'Bread for your family! I thought you and mamma had'– and then she stopped, checking her natural interest regarding their future life. […]
                                           (*N&S*, Chapter IV, p. 38)

(3)   'Mr Bell […] tells me that he hears <u>there is a good opening for a private tutor there</u>.'
       'A private tutor!' said Margaret, looking scornful. **'What in the world do manufacturers want with the classics, or literature, or the accomplishments of a gentleman? […] When do we go?'**
       '[…] I think, <u>in a fortnight</u> […].'
       Margaret was almost stunned.
       'In a fortnight!'   (*N&S*, Chapter IV, p. 40)

4.1 Echo exclamatives

In the exclamatives highlighted in bold in the three extracts from *N&S* above, it is worth noting that none corresponds to *wh*-structures of the forms *What + NP (it is)/How + AdjP (it is) + full stop or exclamation mark*, as in "What a bad idea (it is)./!"/"How wrong of you (it is) to say such a thing./!". Exclamatory constructions in (1), (2) and (3) follow the same elliptical, anaphoric syntactic pattern consisting of the *repetition of only some parts* of the lexical material from the clause (fully underlined) just previously uttered by the co-speaker – either *predicates in the bare infinitive* or *NPs*. Such shortened word-to-word repetitions show that new information is considered from a distance by the speaker through a process of dis-qualification, since it cannot be taken in properly: (i) on a quantitative plane (T), as in (1), "'*Leave Helstone, papa!*'"; in (2), "'*Milton-Northern!*'", "'*Bread for your fam-ily!*'"; in (3), "'*In a fortnight!*'", or (ii) on a qualitative plane (S), as in (1) "'*Doubts, papa!*'" and (3), "'*A private tutor!*'". Such phrases denote the speaker's rejection of the validation of the co-speaker's assertions in sign of suspension of understanding and endorsement. It is only *their echo property* in context – signalling operations of situational and affective disconnection – that gives these repetitions a surprise meaning, in association with an exclamatory intonation contour conveyed by an exclamation mark in this kind of written literary genre, and not the exclamation clause type itself. This is why such echo exclamatives can take on mirative readings in situations characterised by pragmatically context-dependent factors based on verbal interaction, in which counter-expectations are involved and made accessible through the specific syntactic patterns of markers under scrutiny.

4.2 Echo interrogatives

(4) '<u>Mr Rochester</u> […] broke off acquaintance with all the gentry and <u>shut himself up like a hermit at the Hall</u>.'
     '**What! <u>did he not leave England?</u>**'
     '**Leave England?** Bless you, no!'   (*JE*, p. 452)

Such exclamatory echo repetitions – which may be summed up by *what* with an exclamation intonation contour – can be associated with interrogative clauses in direct speech ended by interrogation marks, as in (4): "'*What! did he not leave England?*'". Those do not necessarily imply word-to-word repetition but convey inferred information from the preceding context, "not leave England" rephrasing "shut himself up […] at the Hall". When the co-speaker expresses surprise in turn, anaphoric echo interrogatives may play the same pragmatic mirative role as ex-clamatory echo repetitions, as in (4) with "'*Leave England?*'" referring elliptically back to "'*What! <u>did he not leave England?</u>*'".

In canonical questions, i.e. those serving to seek information unknown to the speaker, (*wh*-word) subject-auxiliary inversion indicates that the speaker suspends the validation of the predicative relation and locates it relative to the co-speaker's enunciative sphere. Thus the change of word order in the syntax reflects the lack of speaker endorsement as far as the meaning of the predicative relation and the modality attached to it are concerned. This is exemplified in (2) "'*Where are we to go to?*'"; "'*Why there, papa?*'", and (3) "'*When do we go?*'" as well as in (5) "'*What makes you say so?*'", and (6) "'*John! Is that you?*' […] '*What has brought you home so early?*'".

(5)   'Mamma! Papa is going to leave Helstone!' she blurted forth. 'He's going to leave the Church, and live in Milton-Northern.' There were the three hard facts hardly spoken.
'What makes you say so?' asked Mrs Hale, in a surprised incredulous voice.
'Who has been telling you such nonsense?'
'Papa himself,' said Margaret […]. Mrs Hale sat down and began to cry.
(*N&S*, Chapter V, p. 45)

(6)   'John! Is that you?'
Her son opened the door and showed himself.
'What has brought you home so early? I thought you were going to tea with that friend of Mr Bell's; that Mr Hale.'
'So I am, mother; I am come home to dress!'
'Dress! humph! […] Why should you dress to go and take a cup of tea with an old parson?'
'Mr Hale is a gentleman and his wife and daughter are ladies.'
(*N&S*, Chapter IX, p. 77)

Yet, syntax and prosody are not the only access to the linguistic encoding of surprise, since they cannot be dissociated from lexicalised items that interact with grammatical constructions. In the written transcription of oral speech typical of novels, the lexical epistemic and/or valence component(s), linked to operations of (i) suspension of belief and endorsement, as well as of (ii) subjective disqualification, can be found both in direct speech and in the narrative passages introducing it, as exemplified in (3), "*said Margaret, looking scornful*", and (5) "*asked Mrs Hale, in a surprised incredulous voice*". Attitude and manner adverbials mediated by the narrative voice as speaking origin contribute to the *description* of the syntactic subject's lexically negatively-valenced surprise: "looking scornful" can be paraphrased by "*with a scornful look*", in parallel to "in a surprised incredulous voice".

Expressive means of encoding surprise also co-occur with *descriptive* means in direct speech with characters as speakers in the form of elliptical echo questions eliciting the co-speaker's intentions, as in (1) "'*Doubts as to religion?*'" and (2) "'*The manufacturing town in Darkshire?*'". They suspend endorsement of the

predicative relation while pressing the co-speaker to help the speaker understand what is going on.

In fact, a lot of questions, or answers as in (4), include qualitative markers of adversativity and negatively-valenced modality denoting the speaker's counter-oriented expectations (in (1) *'but'*, (3)*'what in the world'*, (4) *'bless you, no'* and (6) *'home so early'*, i.e. "earlier than expected"), which account for the pragmatic construction of surprise by means of patterns of both syntactic and lexical markers of underlying cognitive and affective operations (Culioli, 1989, p. 179: "I insist on using the term *markers*, which is short for *markers of operations*", pp. 212–213).

As underlined in (1), "'*But, papa, have you well considered? Oh! It seems so terrible, so shocking.*'", the co-occurrence of adversative *but*, form of direct address *papa*, followed by a polar interrogative containing modal adverb *well* and interjection *oh*, associated with gradable adjectives intensified by *so* and modalised by subjective copular verb *seem*, contributes to (1)'s mirative interpretation; in (5), it is constructed by the lexically negative noun *nonsense*, in the NP *'such nonsense'*, used anaphorically in the second *wh*-question in the present perfect continuous, which enables the speaker to put the blame on the unknown syntactic subject *who*: "'*Who has been telling you such nonsense?*'"; in (6), "'*Dress! humph! […] Why should you dress to go and take a cup of tea with an old parson?*'", the echo exclamative *dress!*, interjection *humph!*, modalised question *why should you* including subjectively negatively-valenced lexical items *(have tea) with an old parson*, give it its mirative reading.

4.3   Imperatives

Another way of showing lack of understanding and endorsement is to press the co-speaker to provide further explanation concerning the new situation by using imperative clauses, sometimes reinforced by the presence of emphatic auxiliary *do*, in order for the speaker to emerge from a state of ignorance, i.e. lack of notional representations in conformity to the new state of affairs, by attempts at eliciting verbalised answers from the co-speaker. It is exemplified in (1): "'*But why, dear papa! Do tell me!*' […] '*Oh! What is it? Do speak, papa! Tell me all! Why can you no longer be a clergyman?*'". As a matter of fact various means of *expressing* surprise once again interact in order to construct mirative readings of imperative constructions: adversative *but*, *wh*-questions in *why (no longer)*, direct addresses *(dear) papa*, interjection *Oh*, and short, insisting imperatives, often repeated syntactically – hence the pressing interpretation of intonation contours via the graphic presence of exclamation marks. This shows how closely intertwined *expressive* and *descriptive* linguistic means of encoding surprise are, since it is not any lexical material that is involved in (1) but a relevant use of speech verbs (*tell*; *speak*).

4.4   Declaratives introduced by "I thought"

The contrast between the new state of affairs and former expectations can be expressed through declarative clauses introduced by the cognitive verb *think* used in the past tense (see Doro-Mégy, 2002, p. 188, p. 199): counterfactuality as a kind of otherness. This syntactic construction takes on a mirative reading only in association with previous syntactic constructions conveying lack of speaker endorsement (an echo exclamation or a question containing some counter-expectation). The embedded clauses state a previous belief that the speaker(– as former endorsing origin) has now relinquished as it is no longer possible to endorse the content of the zero conjunction (hereafter Ø) nominal clause, whose predicative relation functions as a positively valued standard of comparison: in (2), "'*Bread for your family! I* **thought** *Ø you and mamma had*' – *and then she stopped*."; in (6), "'*What has brought you home so early? I* **thought** *Ø you were going to tea with that friend of Mr Bell's; that Mr Hale.*'" – which can be paraphrased by: "*But now I realise how wrong I was.*". In (6), there will be ladies present for tea, hence the need for the character referred to as "John" to *dress*.

Doro-Mégy (2002, p. 189, p. 191) claims that such a counterfactual use of *think* in first-person past tense involves temporal discontinuity, yielding a new state of affairs resulting from some irreversible passage from one value to the other through a kind of "branching paths/bifurcation otherness", i.e. one value is not only no longer validatable but also excluded from actual validation in the current communicative situation ("*altérité radicale*" in French). In *N&S*, this is lexically *described* by the referent of Margaret as "*the one terrible change*" (p. 39). In such cases, it is the nominal zero-clause that is stressed, not the verb *think*.

According to Celle et al. (2017, pp. 238–241) the use of some of the aforementioned syntactic constructions corresponds to means of "rationalizing surprise", as a kind of "control strategy".

5.   Adjusting to the new state of affairs: From loss of control to control regained

5.1   Regaining control through more descriptive-like patterns of markers

When the syntactic and semantic contents conveyed by the co-speaker cannot be located relative to the speaker's enunciative sphere they need to be put at a distance for reassessment of their validity in context through a process of comparison with a former set of assumptions. These correspond to expected preconceptions which can be verbalised by means of a mix of syntactic structures and lexical items. Such

is the case whenever the speaker reacts by suspending understanding and endorsement of co-speaker assertions through various linguistic means that *express* and also come to *describe* lived surprise. As seen in Section 4, the process of comparison mentioned above is made explicit by speaker use of declaratives introduced by "I thought". This explicitness puts the surprised speaker in a more agentive position, since the character's referent tries to control the unexpected current situation by confronting the news-bearer with repeated imperatives in (1) and the newcomer with more and more pressing questions in (6), urging the co-speaker to give sense to unexpectedness – or to "nonsense" in (5) –, by forcing them to provide explanations which they can no longer elude. Such attempts at rationalising surprise correspond to various degrees of success given the force of the surprising news/event and account for the kinds of the linguistic means at hand: newness of information triggers *expressive*-like constructions such as echo exclamatives and interrogatives, interjections, whereas, once it has been taken in, the speaker uses *descriptive*-like constructions such as modalised questions with scornful or accusatory tones, as in (3) "'*What in the world do manufacturers want with the classics, or literature, or the accomplishments of a gentleman?*'", (5) "'*Who has been telling you such nonsense?*'", and (6) "'*Why should you dress to go and take a cup of tea with an old parson?*'". This is a way of regaining control over meaningless and/or devastating information through a discursive strategy aimed at making sense out of the unusual in (6) or the unthinkable in (3) and (5).

5.2   Adjustment in post-surprise contexts

Regaining control over the surprising situation and over oneself may lead to acceptance of the new state of affairs. Gradually, the subject/speaker's referent ("Margaret") has to come to terms with the co-speaker's decision (that of "Mr Hale"): there is no other choice but to *adjust* to the challenge lying ahead: a new life in industrial North away from the countryside in southern Helstone in (7), and the breaking of it to "Mrs Hale" in (8).

(7)   'Margaret, I return to the old, sad burden: <u>we must leave Helstone</u>.'
    '**Yes! I see**. But when?' […]
    '<u>Next Sunday</u> I preach my farewell sermon.'
    Was it to be so sudden then? thought Margaret; **and yet perhaps it was as well.**
    (*N&S*, Chapter IV, pp. 37–38)

(8)   'Go, Margaret, go. I shall be out all tomorrow. <u>Before night you will have told your mother</u>.'
    '**Yes,**' she replied, and she returned to the drawing-room **in a stunned and dizzy state.**   (*N&S*, Chapter IV, pp. 41–42)

It means accepting it at a qualitative level of *notional adjustment* by considering the validation of leaving Helstone as the true notional representation that corresponds to what is *really* going to happen at a quantitative level of *situational adjustment* ("in a fortnight") in (7); adjusting to otherness means de-endorsing "not leave Helstone" in order to endorse "leave Helstone" instead. In (8), this is about not endorsing "tell your mother" (since the news-bearer is unable to tell his wife himself: "not tell your mother") and talking his daughter into endorsing it herself. This kind of acceptance can be conveyed by an either/or assertion (in (7) "*Yes! I see.*"; in (8) "*Yes,*" she replied") or by a modalised assertion (in (7) "*and yet perhaps it was as well.*"). Such assertions, even modalised ones, illustrate two aspects of inter-subjects adjustment: *intersubjective* in direct speech and *intrasubjective* in free indirect speech.

After a heroic inner struggle, involving various phases of both affective disqual-ification, on the S-based parameter, and temporal discontinuity, on the T-based parameter, as shown in bold in (8) and (9), out of deep sympathy for the co-speaker, the subject/speaker consents to tell another co-speaker (i.e. the still ignorant mother) about the necessity to leave Helstone.

5.3   The circular dynamic of surprise

Depraz (2015, pp. 35–41) refers to *the circular dynamic of surprise* within a phe-nomenology-based philosophical framework, both in novels and in elicited forms of speech. In (7), (8) and (9), *control strategy, loss of control and regaining control* can occur in succession in time but also in different orders:

(9)   'What does mamma say?' asked she, with a deep sigh. […]
'Margaret, I am a poor coward after all. […]'
Margaret was almost overpowered with the idea that her mother knew noth-ing of it all, and yet the affair was so far advanced! […]
'Would you dislike breaking it to her very much, Margaret?'
Margaret did dislike it, did shrink from it more than from anything she had ever had to do in her life before. She could not speak, all at once. Her father said, 'You dislike it very much, don't you, Margaret?' **Then she conquered herself, and said, with a bright strong look on her face:**
'It is a painful thing, but it must be done, and I will do it as well as ever I can. You must have many painful things to do.'   (*N&S*, Chapter IV, pp. 38–39)

(i) in (9), lack of control through being *speechless* ("*She could not speak*"); control regained through *mental, physical and verbal victory* over the surprise attack/blow/shock ("*Then she conquered herself, and said, with a bright strong look on her face: […] 'I will do it'*"); (ii) control through power of decision and speech (in (7) "*Yes! I see.*"; in (8) "*Yes,' she replied*"); lack of fully endorsed assertion (in (7) "*and yet*

perhaps it was *as well*.”); loss of mental and physical control (in (8) “*and she returned to the drawing-room in a stunned and dizzy state*”).

In (5) quoted in Section 4 above, the speaker has had time to be sufficiently in control again and finally manages to break the news to “Mrs Hale”, first stated in direct speech, then commented on in free indirect speech: “‘*Mamma! Papa is going to leave Helstone!*’ she blurted forth. ‘*He’s going to leave the Church, and live in Milton-Northern.*’ There were *the three hard facts* hardly spoken”.

Thus, post-surprise contexts are linguistically encoded by factual assertions in declarative clauses. In the corpus data under study, those are located relative to future time reference as far as the validation of the predicative relations is concerned.

6. Conclusion

To sum up, I have shown that when experiencing (more or less great) surprise the subject/speaker is first construed as an experiencer going through various verbal, mental and physical reactions in response to what is truly happening in the communicative situation, before becoming an agent of change. The experiencer of surprise is therefore a subject/speaker that is identified to an endorsing origin in need of relinquishing a preconstructed occurrence, as it finds no situational location relative to the *intra-* and/or *inter-subjective* situation of utterance *specific to novels*. It is necessary to renounce former preconceptions that function as stable standards of comparison in order to fully understand and adjust to what the new state of affairs has in store for the future. This otherness component thus corresponds to an operation of *temporal and affective discontinuity*, involving the construction of two zones/values and the passage from one to the other (Culioli, 1992, p. 156) via the process of de-endorsing a set of former expected assumptions, leading to the actualised endorsement of a set of new resulting states of affairs.

I have outlined *the polyoperation of deconstruction* at work in surprise words and clause constructions, which involves an *underlying process of comparison* through *categorisation, comparability and typification*. It is therefore linked to an operation of *qualitative and quantitative negation* (Culioli, 1988, pp. 93–97: “opération *primitive* de négation et opération *construite* de négation”) as the subject/speaker has to realise that what was expected (*identification*) is not actually the case and can no longer be so (*differentiation and/or disconnection*).

I have examined how the *disqualification* of the unthinkable/unpredictable, associated with the *destabilisation of previous expectations*, is conveyed through linguistic means such as pragmatically context-dependent syntactic constructions, which, more often than not, are closely interwoven with lexicalised surprise words. Through *various patterns of markers, word orders and intonation contours*, I have

laid emphasis on the fact that clause types such as exclamatives, interrogatives, imperatives and declaratives introduced by "I thought", can take on "mirative" readings, when they convey *loss of control/suspension of understanding/lack of endorsement* on the part of the subject/speaker facing new information in the form of some unanticipated news/event. In novels especially, with the mix of back and forth movements from narrator to character/from character to narrator, both *expressive* and *descriptive* modes can be used by the subject/speaker or the narrator as enunciative origins of various kinds. However, I have also shown that they serve another function: they pave the way for *a new kind of agentivity through (i) rationalisation of surprise and (ii) acceptance of change*, as a means of *regaining control over oneself and access to meaning*. Complementary kinds of *adjustment* – notional, aspectuo-temporal and modal (both intra- and inter-subjective) – are all constitutive of the underlying polyoperation of deconstruction/reconstruction characterising surprise and post-surprise contexts.

Acknowledgements

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How implicit is surprise?

Confronting a phenomenological description with a radical pragmatist approach

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As if it challenged the subject, surprise upsets somebody's routine: it hastes one to realize how he usually thinks and acts, if it still fits with reality after that surprising event, even if he must create other ways of thinking and acting. Is surprise an experience that makes me aware of an implicit world which suddenly appears through a surprising event? Or, does surprise question that world as taken for granted, by constraining the subject to assess his implicit way of experiencing the world? Surprise is not always what happens in the underlying intentionality. In a practical sense, surprise is a kind of reality check: it urges to go back to reality. Describing the implicit intentionality in my lived experience, this paper aims at asking to what extent a surprising experience converges with the implicit world the subject takes for granted: firstly, thanks to a phenomenological approach of surprise as an implicit lived experience (Husserl, Schutz); secondly, by crossing that phenomenological description with a pragmatist approach (Dewey, Peirce), namely the radical Peirce's thesis on surprise as a challenging experience; finally, by dealing with differences between phenomenology and pragmatism about the relation between emotion and cognition, subject's self-control and passivity.

Keywords: surprise, implicit, emotion, cognition, phenomenology, pragmatism

Introduction

A surprised reaction is so particular that it is anything but an explicit lived-experience: it becomes difficult to express oneself, except by interjections and onomatopoeia. But anyone can quickly identify surprise through implicit clues or gestures (eyes wide open, cardiovascular rhythms, movements of the head …). Just like implicit lies in every conversation, surprise represents the arrival of a new making-sense beyond a present or an obvious one.

Is being surprised an experience that makes me aware of an implicit world which suddenly emerges through the experience of a surprising event? Or, does surprise question the "world as taken for granted", by constraining the subject to reevaluate his settled and fixed ways of experiencing the world?

We will tackle the question of how surprise upsets our every day routine, how it challenges us in some way: it hastes one to realize how he usually thinks and acts, to evaluate his schemas of thought and action. If these are no longer adjusted to reality after the surprising event, we can even create other ones. What is at stake is understanding how a surprised reaction creates a very high emotional reaction within the subject while contributing to the creation of new normative processes.

The aim of this paper will be to try and determine to what extent a surprising experience converges with these implicit processes at work, in practice, within the subject: firstly, through a phenomenological approach of implicit intentionality (Husserl) and of the "world as taken for granted" (Schutz), secondly, by crossing the phenomenological method with a pragmatist approach initiated by Schutz quoting Dewey, finally by reviewing the radical pragmatist thesis of Peirce on surprise as a challenging experience.

Surprise is a suspension, even a reduction of the implicit lived-experience

Why establish a link between surprise and the implicit world? While experiencing surprise, one may become aware of an implicit world operating in the background through expectations, background perceptions and fore-judgments (*Vorurteil*).

A surprise is not a punctual event which occurs in an instant. The surprise is not only the fact that something happens. Of course, it is this experience of the new and the unexpected. But it is a more or less strong emotional reaction which makes a subject be aware of a new element in the reality on the one hand, and which, can, on the other hand, constrain the subject to raise questions and to reevaluate the perception and relation to the world. We will analyze the surprise as it implies a lived-experience for the subject and an emotional and cognitive process that both exceed the event which takes place *hic et nunc*. Surprise emerges from an implicit world, that is to say from a global lived-experience which, most of the time, remains in the background. "Implicit" is what is already there and takes part of my experience, even if I am not conscious of it. Indeed in linguistic terms, it generally means all that is implied in a discussion and must be interpreted using extra-linguistic elements. But beyond the linguistic field, according to its Latin etymology, it is what is contained in a reasoning or a behaviour but not

expressly formulated.[1] This nonlinguistic but ordinary direction is not a sense by extension of the word: it comes from a Latin etymology and a use of the word in logics which indicate how "implicit" is related to a cognitive life of a subject and the way judgments are made. That is why we will firstly understand "implicit" as a process which *ontologically* underlies an experience without being in the foreground of the discussion or the situation *from the subject's conscious point of view.*

In phenomenological words, background lived-experience is a hidden intentionality. Husserl describes and calls it "passive synthesis": what happens in me but without me, that is to say without me explicitly constituting objects to aim at. In that sense, Husserl talks about hidden, passive, latent intentionality, even about "implicit intentionality" in *Analyses concerning Passive and Active Synthesis* (§36):

> The affective accomplishment is not merely carried out in the form of the distribution of an affective force on something that is already differentiated, that is, on something that is affectively at work. Rather, we already encounter an entirely peculiar affective accomplishment within the living present, namely, the accomplishment of awakening the element shrouded in implicit intentionality. An influx of affective force, which naturally has its primordial source in the impressional sphere, can enable a retention (which is poor in or completely empty of particular affective content) to restore what is concealed in it concerning an overcast content of sense.   (Husserl 2001a, p. 222)[2]

At the beginning of *Analyses Concerning Passive and Active Synthesis*, Husserl takes an example to define the hidden intentionality which operates in a background lived-experience: if we are admiring a landscape, we will have a "foreground lived-experience" made of elements we are aware of; but we will also have a "background lived-experience". For example, when looking at a landscape, our "background lived-experience" is made of all sorts of things we do not pay attention to (for example a tree or a flying bird), even if it is part of our foreground lived-experience. Husserl points out that this is not only a perceiving experience since it can concern any of the subject's cognitive, volitional or affective acts:

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1.   About "implicit" in linguistics, namely pragmatist linguistics, see Kerbrat-Orecchioni (1986, 1998), Ducrot (1966, 1991), Ducrot and Todorov, T. (1972), Grice (1975): these studies reveals the link between language (implicit one) and logic (implicit logic). About a non linguistic approach of the word, including its etymology and history in logics, see de Libera, Rosier, Nef (2004). About researches about how our values are constituted implicitly and remain implicit to a subject, see Pariente-Butterlin (2008). About implicit reasoning, see Rattan (2009).

2.   Husserl only uses this expression once, but "implicit intentionality" can be seen as an expression which both includes the description of the latent, hidden and passive intentionality, and the genetic phenomenology he wants to create.

> Taking place in the life of consciousness is a constant transformation of the modalities of execution; foreground lived-experiences, egoic acts, lose this form of execution and then take on the altered form and vice-versa. That holds for all types of lived-experiences of consciousness. Cognitive acts, acts of pleasure, volitional acts do not simply disappear when we no longer carry them out from the standpoint of the ego; they become background lived-experiences.   (Husserl 2001a, p. 20)

According to his project of constituting a genetic phenomenology, phenomenology is no longer a "descriptive doctrine of the essences of" lived-experience as it was founded in *The First Logical Investigation or in Ideas I* (§75 as in Husserl, 2014, p. 134), but a way to understand the genesis of our conscious life, in order to sketch a genealogy of judgments. The fact that Husserl uses all these words does not mean that he does not conceptually define passivity. Indeed, he defines it as an archeological exploration of the sedimented layers of meaning which we experience through habits, attention, motivation, bodily affections, and unconsciousness.

Implicit does not mean that it has to be consciously constituted, that it has to be explicit. Implicit must be understood as a potentiality rather than a flaw or a loss in our conscious life (Jacobs, 2010, p. 194). "Potentiality" means giving sense to some present impressions by reactivating indistinct, unnoticed and retentional elements left in the background. Implicit intentionality keeps the affective pull of an object alive, settled in the background, so that it cannot become a conscious object or on the contrary, an unconscious object. Because it is neither unconscious nor conscious but implicit: it can affect me again, while experiencing a new situation, but in a new way since it was settled in the background. Implicit intentionality is not only a dynamical process which links the retentional and the protentional processes through lived-experiences. But the potential space is a condition for forming new acts, judgments or decisions. If logic and language distinguishes explicit from implicit, latent from patent, foreground from background, when Husserl uses the expression "intentional implication", he reminds us that the first meaning of "implicit" is the logical term "implication" (or reasoning by *modus tollens* for a mathematician). He explains how implicit intentionality leads to an awakening by "intentional implication" (Husserl, 2001a, p. 21). That is why an implicit intentionality embodies a dynamical process where passivity operates at the genesis of judgments, acts, thoughts and even sense.

So what happens if reality does not correspond to that implicit intentionality? In order to be surprised, the surprise has to come from the background lived-experience along with its forejudgments, expectations, affects and background perceptions, but there also has to be a rupture with this background lived-experience. If not there would be no surprise. Is implicit intentionality the background from which surprise rises or is surprise the condition for the subject to become aware of his implicit world? If implicit intentionality was a foreconstituted world, it would

reduce new and surprising events to similar past experiences. But implicit intentionality does not mean that the person being surprised will be blind to the affective effects generated by the surprise. On the contrary, implicit intentionality remains in the affective background. Thus, we must focus on the tension between implicit intentionality and surprise.

The whole background lived-experience is a practical world: in *Choosing among projects of action* (Schutz, 1962, pp. 67–96), Alfred Schutz describes the implicit world made of beliefs, forejudgments, habits and settled through various experiences, as a "world as taken for granted" (Schutz, 1962, p. 74). This world should be considered as a "stock of experience" that can be used as a "recipe" when having to react to a new situation: if it worked in the past, I can do it again. Schutz shows how efficient that implicit world is. Reducing implicit intentionality to a fore-constituted world raises the question of knowing how a subject can react to a surprise, that is to say to an experience which is unexpected and creates novelty. To be more precise about Schutz's "world as taken for granted", he does not reduce lived-experiences to a world of typified situations. He insists on how important it is to doubt and question. Because we live in this world as taken for granted, we do not question it any more: to us it seems so familiar, obvious and handy. What is always interesting with experience is the way in which it urges us to become aware of what our usual way of thinking and acting is every time we face new and unexpected situations. Thus, Schutz points out that this "world as taken for granted" is an unquestioned world as long as the subject can still react with efficiency to the situations he experiences. But these recipes or this stock of experience are only useful "so far", as long as they fit with reality. But each and every new situation or unexpected event makes the subject become aware that this unquestioned world of his does not fit with reality anymore. A surprising event obliges the subject to no longer take his world for granted and to evaluate his subjective processes of perceiving, thinking, acting and deciding.

Through his analysis of *epoché*, Schutz refers to the Husserlian concept of "life-world" which appears in his latest writings. But, according to Schutz, the hugest challenge to phenomenological *epoché* is to suspend what never is suspended, to question what is never questioned but worth questioning. Schutz's aim is not to describe an implicit world which would determine our conscious life. Schutz uses the *epoché* to analyze "natural attitude" (my way of believing, thinking and acting based on my implicit world that I take for granted) instead of putting it into brackets. As a result, we can say that surprise is a suspension, even a reduction of our implicit world. Through surprise, I can experience the non-transparency of my life-world, even though that implicit world is ordinarily experienced as an obvious one. A surprise urges the subject to become conscious of his implicit way of thinking and acting at the same time that it urges him to assess whether it still

converges with a new reality. It means that surprising elements can be in contradiction with that world as taken for granted, which explains why I feel surprised, even uncomfortable. Then, I have to change my way of being in relation to the world: thus, each and every surprising event is the opportunity for a redirection, a conversion, resulting from the "natural *epoché*" – a concept which is defined in *On Multiple realities* as follows:

> Phenomenology has taught us the concept of phenomenological epoché, the suspension of our belief in the reality of the word as a device to overcome the natural attitude by radicalizing the Cartesian method of philosophical doubt. The suggestion may be ventured that man within the natural attitude also uses a specific *epoché*, of course quite another one than the phenomenologist. He does not suspend belief in the outer world and its objects, but on the contrary, he suspends doubt in its existence. What he puts in brackets is the doubt that the world and its objects might be otherwise than it appears to him. We propose to call this epoché the epoché of the natural attitude.   (Schutz 1962, p. 229)[3]

In a practical sense, surprise consists in returning to the things themselves by becoming aware of what is happening in the underlying intentionality. If being surprised makes me aware of my implicit way of being in relation with the world, a surprise can act as a kind of *critical* review of the implicit world *so far* constituted by the subject.

Alfred Schutz coined the concept of "world as taken for granted" after reading Husserl's *Experience and Judgment* and *Formal and transcendental Logic.* But he crosses his phenomenological approach with a pragmatist one, especially by quoting William James's "stream of consciousness", John Dewey's *Nature and Conduct* and his theory of values and decision. Schutz explains, in a phenomenological description, how passive the genesis of our lived-experience really is, in order to show, in a pragmatical way, how efficient the world as taken for granted can be until we realize that it no longer fits with reality. That is why Schutz reflects on how we can modify the elements which constitute our implicit world in order to stick to reality.

But in order to evaluate the part of implicit in being surprised, we have to be specific about the practical effects of surprise upon implicit intentionality in order to distinguish a pragmatical from a practical approach.[4] Either surprise is an effective, a critical and cognitive means of obtaining a normative correction of implicit intentionality so that it can fit better with reality (in that case, surprise is an emotion which underlies all cognition): this is a pragmatist approach we will discover

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3. For more details concerning the "natural *epoché*" and the precise sense it gives to reduction, see Depraz (2002).

4. See Deledalle (1979) and also Kreplak and Lavergne (2008).

hereinbelow. Either surprise is not a normative regulation of our implicit world since it is a radical experience of when our implicit world goes through a crisis with all the emotional effects it implies: this is a phenomenological analyze with a practical approach that we will lastly compare to the pragmatist and cognitive approach.

A pragmatical logic of surprise

First, quoting Dewey, wondering if my entire implicit world does or does not converge with reality is not the same thing as being surprised:

> Wonder and surprise. It is evident that wonder is to be distinguished from surprise. Surprise is the emotion experienced when the mind finds itself confronted with an order contravening its established associations. Wonder is the emotion experienced before all objective orders whatever. We feel surprise when, expecting to find a building in a certain place, we find only a heap of smoking ruins. We feel wonder both at the presence of the building and of the ashes. We feel, that is to say, in both cases a challenge to our intelligence. We find an appeal made to our minds to discover what exists there and why it exists. It may come about that we grow so used to our customary environment that we feel wonder when the shock of surprise strikes us, but the normal healthy attitude of the mind is wonder at all facts, familiar or novel, until it has mastered their meaning and made itself at home among them.
> (Dewey 1967, p. 262)

Implicit intentionality does not belong to surprise: surprise is an emotion that I can feel because of new things or events in contradiction with what I have experienced so far. Questioning the world as taken for granted is a cognitive act when I am looking for an explanation after being surprised. Surprise as an emotion is different from questioning it. But, when Dewey uses the word "wonder", he does not mean an intellectual operation such as questioning: "wonder" initiates a logic of discovery without being an objective operation. By using the word "wonder", Dewey is referring to practical logic or implicit reasoning (Dewey, 1967, p. 193). Dewey invites us to behave everyday as if we were permanently surprised. Because being surprised will lead us to wonder about the change and wondering about the change will lead us to question it. The logic of discovery corresponds to the pragmatist theory of knowledge which consists in solving problems by a practical logic where emotion initiates cognition. Experience is the best road to discovery and a logic of experience *is* a logic of enquiry (Dewey, 1938).

But the difference between Dewey and the father of pragmatism, Charles Sanders Peirce, is the relation between emotion and cognition. If Dewey defines being surprised and wondering as emotions, Peirce defines being surprised as a

cognitive operation. The difference between the two authors highlights how difficult it is to describe our implicit lived-experience, or to describe an emotion such as the one experienced when being surprised, without objectivizing the experience. Defining "implicit (in logic)" and "*modus ponens, modus tollens*" in J. M. Bladwin's *Dictionary of Philosophy and Psychology* (1902), Peirce mentions the scholastic distinction between an explicit and inferential logic, *logica docens,* and an implicit logic, *logica utens*, which is a non-inferential and practical logic.[5] Dewey also differentiated an explicit reasoning from an implicit reasoning considered as a practical logic which enables us to think within our lived-experience (Dewey, 1967, pp. 193–194). But Peirce defines surprise as a practical logic without making a difference between emotion and cognition. Logic of surprise is a logic of experience with an epistemic status: being surprised is "being constrained by reality" so that I can become aware of mistakes in my implicit beliefs so far constituted.[6]

Peirce refers to "a negative subconscious expectation", which is the moment when I realize that what I believed in was in fact wrong (Peirce, 1908, CP 6.469). Thus, surprise is not only a logic of experience by which I become aware of my mistakes, but also a logic of experience which contributes to shaping my beliefs and helping them evolve.[7] Thanks to surprise, I am not in a process of continually self-confirming of beliefs. Surprise is a kind of "reality check": the goal is not to erase the beliefs, but to correct them in order to better adapt them to reality. *Implicit* is more than a passive world which I come to recognize through surprise. Implicit is the way that surprise becomes practical logic. It is as if being surprised forced us to come out of our inner-world and return to reality. Reality, and especially a surprising experience, urges us to adjust our forejudgments and beliefs "which we had before hardly being conscious", in order to be more efficient in the new situation (Peirce, 1902, CP 7.189).

The implicit logic of surprise is not a normative process which regulates my cognition and beliefs. According to Peirce, a practical logic or implicit logic (*logica utens)* is above all a logic of creativity called abduction. Indeed, surprise is a logic of discovery, of inquiry within experience, not a normative process or an inferential logic. Peirce's approach gives a heuristic status to surprise since it helps one resolve

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5. In Peirce (1902, CP 2.773). Concerning *logica utens*, see: Peirce (1992, pp. 108–109); Peirce (1903, CP 4.476). To quote the *Collected Papers of Peirce* (1931–1958), please notice that we refer to the typical abbreviation, CP, followed by volume and paragraph number, and preceded by the year of the author's writing (not the year of the publication) in order to underlie the evolution of the author about the question.

6. Concerning *logica utens* in Peirce's theory of knowledge, see Harvard Lectures on Pragmatism in Peirce (1903, CP 5.108) and Peirce (1903, CP 5.130). Concerning a logic of surprise as a logic of experience, see Nubiola (2005).

7. Concerning the role of error recognition in surprise according to Peirce, see Cooke (2011).

problems by creating a new way of thinking and believing which fits better to reality. An emotion is an index which leads to a cognitive response and aims efficiency in reality (Peirce, 1998, p. 88). Surprise does not annihilate the implicit world "so far constituted": it forces us to adjust our implicit world to reality in order to become more efficient.

To analyze surprise as an implicit lived-experience is to enlighten the implicit intentionality which is immanent in my lived-experience (Husserl, Schutz). Surprise is not always the emergence of what happens in the underlying intentionality. Surprise can be the suspension, even the reduction, of the implicit world or world as taken for granted (Schutz) which both imply expectations, habits and 'fixed beliefs' or opinions (Peirce). In a practical sense, surprise consists in returning to the things themselves by becoming aware of one's relation to the world: surprise is a kind of reality check, like a reminder of 'being constrained by reality' (Peirce).

Creativity and spontaneity recovered

Is there an implicit cognitive gain each time I experience an explicit emotional rupture? There are two ways of regarding surprise: the pragmatists will consider that *the emotion I feel when being surprised will lead to a cognitive process which aims at solving a problem.* The phenomenologists describe surprise through passivity, meaning *without the subject being in control of the constitution of his affects and thoughts, by insisting on the tension experienced by the subject.*

Although Peirce defines surprise as an operator of cognition, we are led to wonder if this pragmatical approach does not reduce surprise to efficiency and normative experience instead of trying to understand what kind of subjective crisis it implies. On the one hand, the logic of surprise is a logic of creativity through experience: an emotional background which operates as a cognitive adjustment to reality. On the other hand, we must ask ourselves if surprise should be reduced to a logic of efficiency understood as a cognitive adjustment since each time the subject is surprised, he experiences a tension generated by the contrast between what he is feeling and what he thought so far. According to Peirce, the way the subject adjusts to reality through surprise corresponds to a logic of self-control:

> An experiment shall be an operation of thought. Of course, that ultimate state of habit to which the action of self-control ultimately tends, where no room is left for further self-control, is, in the case, of thought, the state of fixed belief, or perfect knowledge. (Peirce 1998, p. 337).[8]

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8. About self-control, see also Peirce, CP 5.440.

This is the subject's answer to the change in his habits which is generated by surprise: I am surprised when I notice irregularity in something that I expected to be regular. By contrast, I would not be surprised to notice irregularity in the shape of the trees and its branches in a forest. This is why Peirce considers surprise as a change in my rational habit of having such or such beliefs. Surprise is a logic of efficiency and self-control because one will become able to transform a problem into an opportunity.

Insisting on the cognitive and pragmatical gain is a logic of efficiency which tends to ignore what we were feeling at the moment. *One can not act as if he were not surprised, because each time one experiences surprise he has an emotional reaction, even when there is a cognitive gain. Otherwise, if he felt nothing, it would not be a surprise.* Instead of thinking that reason has to be opposed to emotion since emotions disturb the cognitive processes, or instead of inversing the axiology by saying that cognition relies on emotions, we should consider creativity and spontaneity as the two specific features of surprise and implicit.

Implicit intentionality does not mean that subjectivity responds to a codified way of living experiences. On the contrary, implicit refers to what is spontaneous in the way that a subject lives an experience. There is an implicit part of our experience which enables us to recognize our mistakes and to create another store of knowledge (Schutz) or cognitive diagrams (Peirce) in order to respond to the practicality of our lived-experience. But giving an epistemological status to the implicit dimension of experience does not fully encompass what a lived-experience, considered in all its subjectivity, really is. The pragmatical approach insists on the cognitive gain and on efficiency, as if the experience of being surprised was a way of resolving problems before being a lived-experience, whereas each individual necessarily experiences surprise before this experience becomes an opportunity to reflect. Practical phenomenology will analyze the tension generated by the experience of being surprised without presuming a cognitive gain. The phenomenological method coined by Husserl in his *Prolegomena to Pure Logic* implies analyzing a lived-experience without giving into reductionism (naturalism, psychologism, logicism).[9] Although cognition (beliefs, and forejudgments) and emotion (affects and intentional implications) are inseparable in the passive process, their relation creates a tension within the subject and it is this very tension that the phenomenologist will be focused on describing: he does not presume that this tension is solved.

The problem is that of a teleological vision of surprise and of implicit which would consist in wanting to solve each moment of tension felt by the subject, while this tension founds the subjectivity of the subject's experience and cannot be explained without him.

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9. See Husserl (2001b, pp. 9–162).

Husserl shows that *concerning the way science and objective judgments are made*, the teleological process – from implicit and passive judgment, to subject's reason and activity – is important: it aims at making out the way objectivity and logic judgments are made. That is why, we can say that each implicit statement or thought *has to be* explicit at last. In his *Formal and Transcendantal Logic* (1929), Husserl points out a new level of logic, namely the the subjective foundation of logic as a transcendental phenomenology of reason. It means a transcendental criticism of cognition:

> If the investigation of constitutive consciousness, the inquiry into the whole tele-ology of the intentionalities belonging to cognitive life, could be proved essentially necessary for making genuineness of the sciences possible, it would have to be accepted by us. [...] Without any commitment on our part, the thematizing of the subjective – more distinctly: of the intentional-constitutive – a thematizing whose essential function is still to be clarified, shall henceforth be designated as phenomenological.   (Husserl 1969, p. 173)[10]

Teleology of reason in phenomenology makes sense for describing cognitive life of consciousness in order to found sciences, namely history as Husserl did in *Krisis*.[11] In the same time, a genealogy of logic means describing originary pulsions, habits, affects which are part of the finality of the lived-experience. *For a genealogy of logic*, describing passivity and implicit intentionality is necessary since it gives sense to the whole passive lived-experience of a subject at the genesis of cognitive life:

> But certainly, despite all of its ties through [passive] positionality, so long as the ego has not actively formed its world, we cannot expect the firm path of knowl-edge given by a teleological relation to guiding ideas, and even the constitution of firm unities of identity, which unities, as genuine objectivities, give to the ego an environing-world and a rule for its further activities.   (Husserl 2001a, p. 288)[12]

A genetic phenomenology consists in discovering an "archeology of the subject" (Ricoeur, 1965, p. 481)[13] to analyze how originary strata of meaning, affects and pulsions of the subject constitute passivity. That is why, we have to distinguish a teleological approach of reason available for the whole cognitive life of a subject,

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10. In *Formal and transcendental Logic*, §67 (quoted here).

11. See Husserl (1989), but also Bernet (1979) and Bégout (2015) about teleology in Husserl's work about sciences and specifically history.

12. In *Analyses Concerning Passive and Active Synthesis*, §52 (quoted here).

13. Ricoeur shows how a teleology of reason in Husserl's work is related to a genealogy of logic when Husserl brings passivity and implicit intentionality to light. Teleology of reason and ge-nealogy of judgments from passivity both explains the genesis and the finality of a subject's lived-experience.

and an archeological or genetic approach where the way judgments and thoughts are made is ingrained in a passive lived-experience made of affects, habits and pulsions of a subject. On the one hand, a teleological approach of surprise proves how a subject can fit better to reality thanks to an implicit logic of discovery. On the other hand, this implicit cognitive life of consciousness has to face an affective and passive lived-experience made of tension and made by implicit intentionality. At that moment no one can expect what new normative processes could be created by a very high emotional reaction within the subject: but phenomenologists have to describe it and the whole variation of lived-experience it creates.

Thus by considering that a surprising experience changes our implicit forejudgments, we reckon that there is indeed a tension between cognition and emotion, but this tension must not be described in an axiological way. Surprise is a *critical* review of the implicit world *so far* constituted by the subject but this critical sense can be seen either teleologically as a *cognitive* gain, or as *the lived-experience of becoming aware of a subjective, passive and implicit way to be related to the world* even if it implies a strong emotional reaction and a high confrontation to reality. Because of this confrontation between a phenomenological or affective approach of surprise with a pragmatist and cognitive one, we have to pay attention to the words that are being used to describe surprising and implicit experiences: "disturb", "correct", "disrupt", "trouble", and "tension". These words generate an axiological way of thinking the link between cognition and emotion instead of describing how it is passively constituted. If pragmatism presumes a cognitive gain and shows how we can solve problem thanks to an implicit logic, phenomenology describes an implicit lived experience where tension makes part of subject's experience.

Implicit intentionality is at the very core of surprise. It is not a mechanical process. Instead, it highlights everything that is spontaneously generated within me without me having any control on what I am experiencing. Being surprised is a radical experience: it is a critical experience of what I did not put in doubt, a world as taken for granted, a subjective world which has to face a new and unexpected reality. In experiencing a new situation, I become aware of the implicit world which I have constituted this far. It is because there is an implicit intentionality that I will experience surprise when something unexpected occurs.

Acknowledgements

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CHAPTER 6

Surprise in native, bilingual and non-native spontaneous and stimulated recall speech

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This article discusses surprise markers in a spoken corpus of reactions to works-of-art and of retrospective interviews with forty English and French natives, bilinguals and learners of English. Following Reisenzein (2000), the study posits a three-phase psycholinguistic scenario: disruption of representations, reaction and rationalizing. In this model, cognitive discrepancy results from the interaction between the properties of the aesthetic source and the subject's sociocultural representations and memories. Few neutral surprise episodes were identified and discourse was usually marked by intensity and emotion, supporting the hypothesis that surprise is both a triggering mechanism and a component of emotion. The analysis reveals the richness of the network of surprise markers. Work-in-progress indicates that the range of surprise-related linguistic markers elicited by aesthetic objects partly depends on linguistic status (native, bilingual and non-native) and idiomatic proficiency.

Keywords: psycholinguistic scenario, surprise linguistic markers, native, bilingual, learner, emotion, metaphorical competence

1. Introduction

The present study discusses the psycholinguistic phenomenon of surprise as a cognitive process experienced by the self and communicated to others through verbal manifestations. Using the cognitive characteristics of the experience of surprise as a reference framework (Reisenzein 2000), it posits the existence of a psycholinguistic surprise scenario based upon cognitive phases of expectation, disruption, reaction and rationalizing and distinct from emotion responses such as joy, anger, fear, fun or disgust. A surprise episode is a complex phenomenon, triggered by the interaction of the semantic properties of a disrupting event or 'source' (Plantin, 2011) and the experiencer's general or specific expectations built on individual socio-cultural representations. Surprise differs from emotions because of its cognitive specificity

(a disruption of expectations followed by attempts to make sense of the disrupting event and restore some form of cognitive balance); thus intellectual surprise can be accompanied by 'neutral' emotional reactions. However, we hypothesize that the expression of intense surprise is often connected with the semantic charge of the 'source' or event as an external independent parameter and with past traumas, phobias or good or bad memories acting as a dependent internal parameter (Schrauf and Durazo-Arvizu, 2006). Strongly positive or negative valences resulting from the disruption of affective expectations make it difficult to disentangle surprise from emotional features, particularly in speech. As surprise may trigger (or blend into) powerful emotions, conversely, positive or negative valences reinforce the strength of the surprise experience. At the discourse level, numerous linguistic markers include a surprise element associated with one or several cognitive stages of the scenario: interjections and exclamations, surprise-laden lexical items, intensifiers and metaphorical locutions as well as interrogative forms and epistemic modal structures used by speakers to try to make sense of the surprise episode. Surprise speech is also characterized by non-verbal markers such as laughter, filled or unfilled pauses, sighing or sharp breath-catching. This research hypothesizes that the linguistic expression of surprise is composed of cumulated networks of markers in a given context. Some markers are more explicitly mirative *per se* (interjections, exclamations or surprise lexemes) and mark the core pivotal phase of disruption according to DeLancey's definition of mirativity as "the linguistic marking of an utterance as conveying information that is new or unexpected to the speaker" (2001, pp. 369–370). Indirect surprise markers borrow from other categories such as emotional adjectives or nouns or the modal verbs *could, would, should* and can be identified thanks to contextual linguistic clues in the reaction and puzzlement phases of the psycholinguistic scenario.

The paper reports on an experimental study carried out over three years (2012–2015), as part of the interdisciplinary *Emphiline Project*, to explore the linguistic expression of surprise by assessing the verbal reactions of seventy-five university students to works-of- art, paintings and sculptures. A corpus of spontaneous utterances and of stimulated recall interviews in English and French (to be released in 2020) was collected to analyze the volume and range of surprise or surprise-related markers (work-in-progress).[1] This article presents a preliminary study of a sub-corpus of

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1. The spontaneous reactions were transcribed with PRAAT and in txt; the consecutive interviews were transcribed in a txt format with conventions and annotations used for conversational learner corpora (LINDSEI University of Louvain-la-Neuve and DIDEROT-LONGDALE, University Paris-Diderot). Wordsmith5 was used to identify the frequency and diversity of surprise or surprise-laden tokens and the *MIP* qualitative method (*Metaphor Identification Procedure*) developed by Steen and al (2010) was applied to hand-search the corpus for metaphorical surprise-related phrases.

forty transcriptions out of seventy-five recordings (transcribing is still in progress), i.e. a total of 141 142 words; ten native speakers of English, ten native speakers of French, ten bilinguals and ten advanced learners of English were selected in order to compare the richness of surprise markers depending on the linguistic status of the participants. The study aims at reconstructing the surprise cognitive scenario from networks of speech markers and at eliciting invariant characteristics and variation patterns. Three variables were triangulated: the properties of the event or source, the participants' sociocultural background and expectations, and their linguistic proficiency. From a Second Language Acquisition perspective, the research also examines whether surprise discourse can be affected by linguistic status, focusing on the example of metaphorical language.

2.   Surprise: An emotional or a cognitive state?

While some psychologists and linguists support the traditional view that surprise is an emotion (Plutchik, 2001; Johnson-Laird and Oatley, 1987; Kövecses, 2000, 2010) marked by a strong positive or negative polarity (Goossens, 2005), other researchers have chosen a more qualified approach. For Ortony, Clore and Collins (1988, p. 32) surprise is characterized by an absence of valence and best described as a cognitive state which might turn into positive or negative surprise depending on the quality of the stimulus. Ekman (2003, p. 148) insists that surprise is short-lived, followed by a state of consciousness which can morph into an emotional state or be neutral if the triggering event is perceived by the subjects as a being of no importance to them; Plantin (2011) contends that intense emotions always include a surprise component. For Valetopoulos (2013, p. 114), surprise combines the unexpected and unexplainable dimension connected to the origin of surprise and the intensity dimension inherent to the qualitative description of surprise. Soriano et al. (2015, p. 443) also distinguish surprise from (other) emotions and argue that "novelty captures variation in suddenness and expectedness and differentiates surprise from other emotions." From a cognitive perspective, Stein and Hernandez (2007, p. 302) define surprise as a general affective response:

> Some general affective responses, such as surprise, are elicited when inferences have been made about the unexpectedness or novelty of a precipitating event. Inferences about the novelty of events are critical to the experience of emotion and are produced by pattern recognition and pattern matching procedures that are continuously carried out in states of wakefulness and sleep.

Other cognitive scientists focus on the disconnection and reconstruction process at work, for instance Meyer et al. (1997, p. 253):

> If a discrepancy between schema and input is detected, surprise is elicited, schematic processing is interrupted, and a more effortful, conscious and deliberate analysis of the unexpected event is initiated.

Reisenzein (2000) articulates four phases in his componential cognitive scenario of surprise: expectation, disruption, emotional and surprise reaction, questioning and (eventually) problem-solving; this rationalizing and repairing phase of the surprise scenario addresses both its emotional and cognitive dimensions to achieve the reorganization of disrupted representations (Goutéraux, 2015).

3.   Experimental research

Aesthetic objects are potential rich sources of surprise and specific emotions (Heath et al., 2012, pp. 212–213). Fontaine, discussing aesthetic surprise (2015, pp. 108–109), holds that works-of-art often cause surprise by reversing expectations and that they contribute to moving the viewer from the field of perception to the realm of sensation. In this experiment, the potential richness of reactions to artistic objects determined the choice of paintings and sculptures as visual stimuli likely to trigger surprise episodes.

3.1   Working hypotheses

The experiment was designed from a psycholinguistic perspective. It was posited that disentangling the elements of surprise and the emotional facets is necessary to access the underlying psycholinguistic scenario; however, the emotional component cannot be discarded since many words commonly used to express surprise in English and French – the two languages used in the experiment – are emotionally colored. Firstly, I examined the hypothesis that any surprise episode presents a core invariant of disconnection or differentiation from world representations pre-constructed by an individual subject. Secondly, I tested the idea that the intensity and the emotional valence entailed by this cognitive discrepancy partly result from the interaction of the semantic content of the 'source' as an independent variable and of the subject's autobiographical memory as a dependent variable. Whether surprise is an onset mechanism triggering emotions or is part of the emotional reaction and is masked by the dominant expression of fear, disgust, sadness, joy, pleasure or fun, one can surmise that surprise episodes are located on a gradient of valences rather than at two ends of a positive/negative bipolar axis. The complex intricacy of a surprise phenomenon including discrepancy, intensity and valence components explains why so many expressive verbal and nonverbal markers

could apply to the expression and description of both emotions and surprise. The pragmatic concepts of emotional and emotive discourse (Caffi and Janney, 1994; Plantin, 2011) can be revisited to account for the discourse of surprise. For instance, spontaneous outbursts and disordered utterances often characterize both emotional and surprise responses and in-depth analysis of the linguistic context is necessary to distinguish whether surprise is dominant or not. One discriminating parameter seems to be the presence of markers of puzzlement and rationalizing (final phase of Reisenzein's scenario). Contrary to emotional discourse, surprise discourse is likely to include truncated questions, surprise-laden metaphorical language and elaborate grammatical and syntactic forms of questioning and explaining.

3.2   Experimental protocol

The experiment originally involved a total of seventy-five volunteer students aged twenty to twenty-eight (most of them from the Department of English Studies) ranging from Bachelor's to Master Two levels. They were told that this experiment was about language and cognition. At the beginning of the one-to-one session, the subject was informed that he or she was going to see works-of-art and should react verbally to them. In the first part of the experiment, the participant was shown a series of twelve digitized and anonymized works-of-art (two different series were alternated). Some pictures were pre-selected to trigger surprise and (or) emotional reactions, others were chosen as distractors. Each visual was prompted by a short announcement by the interviewer in English (*picture one, picture two*) or in French (*image une, image deux*) followed by a one- or two-minute interval for spontaneous verbal reaction before the next picture was displayed. This first part was carried out in English for English natives and advanced learners of English, in French for French monolingual natives. The reaction part was immediately followed by a retrospective interview either in English or in French, depending on the language used in the first part. The bilingual speakers were treated differently: they were shown the two series and were instructed to react and to discuss the first series in English and the second one in French. The interviewees were asked to remember the surprising episodes they had experienced and talk about the most striking ones; then they were shown the pictures again to confirm (or disconfirm) their initial reaction and discuss the reasons for their feelings. Here is a selection of questions for the interview in English:

1. When I told you you're going to see some works of art, what were you expecting?
2. Did you find any of them more striking than others? Were you surprised by some of the pictures?

3. So what did you ask yourself when you saw that picture? What were you telling yourself /what were you thinking?
4. So what do you think originally triggered your reaction? Was it the content, the colors, the shape, the meaning?
5. Could you say whether the emotions you had were positive or negative or kind of neutral and what words come to mind?
6. Also, I was wondering if some of the pictures bring back some good or bad memories or dreams or experiences.

The first question addressed the subjects' artistic expectations when the interviewer told them they were going to see works-of-art. Questions 2 to 4 induced them to revisit their reactions to the pictures they remembered as most surprising, mentally first and then visually as they were shown the visuals again. Questions 5 and 6 targeted possible emotional associations and memories connected with the pictures which had triggered surprise. For the sub-corpus discussed in this article, the duration of the spontaneous reaction part to a series ranged from 4:56 min. (n°32, a bilingual student in English) to 18 min. (n°3, an advanced learner in English) with a 9:36 min. mean and a 8:35 min. median. The interviews lasted from 8:27 min. (n°32) to 27:18 min. (n°3) with a 14:42 min. mean and a 12:57 min. median. The heterogeneity of the volume of production indicates that some participants were more talkative than others, regardless of their linguistic status; however, the speed of delivery and number of words uttered (temporal fluency) are not taken into account in this study which focuses on lexical fluency and variety in the production of surprise markers.

The participants also filled out a sociolinguistic questionnaire including questions on their nationality and their parents', the languages spoken at home, the languages of schooling and the length of time spent in an English-speaking country and in a French-speaking country. To establish the bilingual status of a participant, biographical criteria from the questionnaire were combined with informal information retrieved from the interviews. The bilingual category was a mixed one, including participants with one English-speaking parent and one French-speaking parent, individuals who had been raised in the two languages (First-language bilinguals), but also students who, born and raised in one country, had lived, worked and studied at least five years in the other country. The term 'advanced learner' was used for ten third-year or fourth-year French college students of English[2] whose linguistic proficiency was achieved either from academic learning (seven of them

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2. The expected level of proficiency for French Bachelor's and Master One students of English is the C1 level of the Common European Framework of Languages although the participants were not tested for linguistic proficiency.

had no immersion experience in an English-speaking country) or from a mix of academic learning and immersion experience. The second part of the questionnaire ranked their likes, dislikes and phobias on a Likert scale, which proved useful to explain some surprise reactions.

4.   Psycholinguistic scenario of surprise: Results of the experiment

According to Meyer et al (1997), Reisenzein (2000), Stein and Hernandez (2007) and Goutéraux (2015, 2018), surprise is elicited by the disruption of general or specific expectations or a failure of the process of cognitive pattern recognition and matching due to the novelty or the puzzling nature of the precipitating event – what Depraz (2014) refers to as the "nonsensical aspect of surprise". The data yield various scenario configurations, all attesting to the disruption of beliefs as a pivotal invariant feature. Those scenarios where the participant spontaneously and explicitly stated being surprised or gave a positive answer to question 2 (*Were you surprised by some of the pictures*?) were labelled 'surprise episodes'. The next part presents a psycholinguistic model of surprise based on three phases of disruption, surprise and emotional awareness and action (rationalizing) illustrated with examples from the corpus.

4.1   A model of surprise processing: From disruption to repair

Phase 1: Disconnection

a.   Cognitive level
     Expectations are disrupted by the stimulus, source or event; these expectations can be task-based with the presentation of a directive, the announcement of visual or auditory stimuli to come; they can be internal and induced by the subject's life story or more generally funded on pre-constructed sociocultural representations.
b.   Discursive level
     These are nonverbal and verbal manifestations: silent and filled pauses (*er, erm, euh, uhm*) tongue clicks, swallowing, laughter, non-verbal phonemic interjections *wow, aargh, oh, ha*, what Caffi and Janney (1994, p. 128) name "spontaneous emotional leakage" or "bursting out of emotion in speech". In the category 'spontaneous surprise responses' were included interjections or exclamations (*my God* or *no!*), truncated questions, false starts, repetitions and dislocations of the syntactic order.

Phase 2: Surprise and emotion awareness

a. Cognitive level
    The subject is aware of the disruption, emotional properties are attributed to
    the source; there is some consciousness of the surprise sensation and its impact
    on the self, with two possible variants:
    1. Strong disturbance, destabilization and confusion reinforced by the ex-
        pression of intense positive or negative emotion usually masking surprise.
    2. Disturbance, destabilization and confusion without any emotional out-
        come (moderate intensity, neutral or vaguely positive or negative valence).
b. Discursive level
    The speaker expresses appreciation and explicitly names surprise – *this is sur-
    prising me* or *c'est surprenant* (Fr.) –, indirectly refers to the experience of
    surprise by surprise-laden markers expressing perplexity (*I don't know, I'm
    confused, curious, intrigued, it's weird, bizarre, disturbing*) or uses strong posi-
    tive or negative emotional forms for instance adjectives *disgusting, gore, awful,
    amazed* or *ébloui* (Fr.) and intensity high degree adverbs *really, very* or *vrai-
    ment, très* (Fr.).

Phase 3: Action (questioning, rationalizing and repairing)

a. Cognitive level
    The subject undertakes exploratory action aiming at re-establishing the cogni-
    tive balance or adjusting to the new event, eventually moving towards a state
    of enlarged cognition or moral or artistic repositioning.
b. Discursive level
    The speaker ponders on the reasons for his surprise – *what is it?* or *qu'est ce que
    c'est?* (Fr.), uses modal verbs (*would, could, should*) to elicit the artist's motiva-
    tions and expresses moral and aesthetic judgement – *Why should someone do
    this*? *On ne devrait pas, c'est pas beau* (Fr.).

4.2   Interpreting surprise scenarios: Invariants and variations

Tables 1 and 1bis display several surprise scenarios with productions by two ad-
vanced learners (Examples 1 and 2), and three bilinguals (Examples 3, 4 and 5). The
speakers spontaneously reacted when they first saw a picture in a series of twelve
('reaction' label). The retrospective account of the surprise and emotions they ex-
perienced mostly appeared in the 'interview' part. Discourse phases do not always
follow the linear order of the cognitive script and often present a more chaotic
appearance with repeats and feedback loops, mostly between phases 2 – surprise

impact and emotions – and 3 – action or rationalizing (Goutéraux, 2015). Slots may be filled or remain empty, depending on the speaker's choice to verbalize surprise or not.

Table 1. Scenarios 1 and 2

Example 1: learner (*La Banquière*)	Phase 1: disruption	Phase 2: surprise impact	Phase 2bis: emotion (negative)	Phase 3: rationalizing
Reaction	(2s) <sniffs> uh	I'm confused <laughs> I'm confused with the (3s) all the (2s) yeah I I don't really understand at first at least er (2s) what the the the art wants to to represent	<draws breath> and it's kind of scary also	
Interview	er yeah er the the one one with er <tongue click>	the shape of a person where there is some splashes of things I don't understand [...] it's just you know disturbing	it's a little gory also <laughs>	Maybe he was she was thinking of so many things at once [...] Why why is that here and not someplace else?
Example 2: learner (*Paradiso*)	**Phase 1: disruption**	**Phase 2: surprise impact**	**Phase 2bis: emotion (positive)**	**Phase 3: rationalizing**
Reaction	oh (1s)	I'm drawn into it <laughs> yes it's like a tunnel but I'm I've no idea what it means	that's beautiful er cos (2s) that's quite poetic	I also (2s) okay I wonder who are the people on the foreground
Interview		I felt drawn into it like there's a a force like a tunnel effect		and then you wonder why there are people on the bottom I mean it definitely raises questions why are there angels why are they drawn into the sun but I really wouldn't know how to answer

Table 1bis. Scenarios 3, 4 and 5

Example 3: bilingual (*Pumpkin*)	Phase 1: disruption	Phase 2: surprise impact	Phase 2bis: emotion awareness (positive)	Phase 3: rationalizing
Reaction	oh wow oh	that's so strange	that's so funny interested definitely interested	I'd quite like to (1s) you know pick it up see if it's real or something wow
Interview		I don't know it's just surprising yes surprising I quite appreciate it in a strange way [...] the colors I think because it totally changes I mean jars with my imagination of a squash or a pumpkin or whatever it is	you may laugh but the pumpkin the squash or whatever it was I like that's funny \<laughs\>	Why why did someone do that? \<laughs\> why why would someone do that? \<laughs\>

Example 4: bilingual (*Implosion*)	Phase 1 : disruption	Phase 2: surprise impact	Phase 2bis: emotion awareness (negative)	Phase 3: rationalizing
Reaction	ha		that's really gore that's really really gore er yeah yucky \<laughs\> to see the tripes like that to see someone torn open eeww really disgusted definitely disgusted yeah I think it's sick \<laughs\>	
Interview		well first it that sort of stood out with the red for the blood and yeah everything the skin it's really disturbing for one	everything even the style makes makes it so dark and gloomy	but I was wondering what it exactly looks like babies ripping the mother apart to get out or I don't know [...] I don't know if it was I'm not sure if it was a baby or er if it's just the tripe coming out that woman

Table 1bis. (*continued*)

Example 5: bilingual (*Illu*)	Phase 1: disruption	Phase 2: surprise impact	Phase 2bis: emotion awareness (positive)	Phase 3: rationalizing
Reaction	(3s) <laughs> okay makes me want to laugh <laughs> (3s) er <swallows>	it's very unusual	I like it [...] makes me happy in a way because it makes me laugh	
Interview		but it was er well it was unexpected	yeah I think it makes me laugh <laughs>	It's a human being with leaves it looks it like a a swimming suit or something yeah er what did the painter think when painting this?

In all these scenarios, Phase 1 includes pauses (silent pauses encoded in seconds), false starts, exclamations, interjections. Repeats or broken speech expressing disruption eventually appear in Phase 2 as in Example (1): two tokens of *confused* and disordered segments (*with the (3s) all the (2s) yeah I I don't really*). In Example (4), disruption markers also feature in Phase 2: repetition of the intensifier *really* (*really gore, really gore, really disgusted*) and the interjection *eeww* expressing both surprise and disgust. Surprise is either explicit (*surprising*, Example (3)) or implicit in surprise-laden words expressing the effect of the visual upon the subject (*confused*, *disturbing*) or properties the speaker ascribes to the picture (*strange, unusual, unexpected*). Figurative speech is used to characterize the source as a force one cannot resist – *I'm drawn into it, it's like a tunnel* Example (2) or an attention-catching element: *that sort of stood out* Example (4). The speakers assign negative or positive emotional properties to the picture (*scary, gory, beautiful, poetic, gore, yucky, sick, dark and gloomy, funny*) or describe its emotional impact on their state of mind (*disgusted*, *happy*). Most attempt to make sense of the surprising event through direct or indirect questioning (rationalizing phase):

–   Why why is that here and not someplace else? Example (1)
–   I wonder who are the people on the foreground why are there angels why are they drawn into the sun but I really wouldn't know how to answer Example (2)
–   Why why did someone do that? Why why would someone do that? Example (3)
–   But I was wondering what it exactly looks like, babies ripping the mother apart to get out or I don't know Example (4).
–   What did the painter think when painting this? Example (5).

Queries eventually remain unanswered as attested by the use of negated cognition verbs *I don't know, wouldn't know, don't understand.* Epistemic modal forms are produced to wonder about the painter – *maybe he was she was thinking of so many things at once* Example (1) or as an attempt to identify objects – *it looks it like a a swimming suit or something yeah* Example (5).

5.   Disrupting artistic expectations

This section deals with the nature of pre-constructed representations and the way speakers experience and verbalize the disruption of their artistic expectations.

5.1   General beliefs

Aesthetic surprise and reflective reports mostly appear in the interview part. Half the students (20) acknowledged being surprised by some pictures in answer to question 1 (*when I told you 'you are going to see some works of art' what were you expecting?*); even those who loved museums were expecting impressionist, classical, figurative or even early twentieth century modern art – given the academic setting of the experiment. Here are some examples of aesthetic surprise:

(1)   Maybe classical images er mainly stuff like that cubism er I wasn't expecting that kind of things.   (bilingual)

(2)   I suppose traditional works of art ones you know we see in the Louvre you know we see everywhere.   (bilingual)

Some equated art with beauty, hence their sensation of surprise.

(3)   Ça donne une personne qui est difforme euh ça correspond pas à l'esthétisme habituel.
      It's like an ill-shaped person er this does not fit with our usual idea of aesthetics.
                                                                          (French native)

(4)   I don't know for me art it's supposed to be beautiful and the gory ones were beautiful in a way but er they're still shocking because they're gory it's never really expected in art.   (bilingual)

(5)   Well for me a work of art is supposed to represent a kind of beauty but not violence.   (bilingual)

Others felt disoriented and shocked by the artistic modification of their representation of everyday life objects (Oppenheim, *Breakfast in Fur*):

(6)   J'ai été surprise par la tasse [...] parce que c'est c'est ce sont des choses qu'on voit d'habitude mais pas comme ça et je m'dis que quelque part ça doit pas servir à grand-chose et les poils dans la nourriture [...] c'est la matière qui me choque parce que ces ustensiles-là sont pas choquants choquants en soi.
I was surprised by the cup [...] Because it is it is they are things you are used to seeing but not like that and I'm saying to myself that somehow it can't be very useful and the idea of hairs in the food [...] the material is shocking to me because these utensils are not shocking shocking per se.   (French native speaker)

Surprise being multi-layered, two subjects also expressed intense surprise at their own reactions. This three-way psycholinguistic scheme seemed more elaborate than the source-to-experiencer cause-to-effect cognitive script. The speakers distanced themselves from the experience, as if acting out the scene for themselves or staging it for the benefit of the interviewer, a line of enquiry that might be worth pursuing in further studies. Whether their reaction to the source was genuine or not matters less than the intensity of the self-directed surprise wording. One reported strong surprise (*kind of overwhelmed*) at her lack of positive appreciation (Freud, *Naked Man, Back View*):

(7)   the one with the naked man from behind was er was quite yeah was quite surprising because we are not used to that kind of art style I was saying to myself I don't want to look like a philistine but I don't like it and it's not art and er er yeah I was I was kind of overwhelmed by the by that I didn't like it. (bilingual)

The other insisted that she was *meta-surprised* at herself because she actually did not dislike Soutine's *Carcass of Beef*, which she kept calling 'the bloody turkey':

(8)   And erm I was like meta-surprised I was surprised at my reaction to the bloody turkey [...] I was surprised that I didn't find it repulsive.   (bilingual)

Two other speakers were dismayed by their inability to recognize the artists or paintings.

(9)   D'un côté ça correspondait à mes attentes puisque c'était des tableaux et j'imaginais mais en même temps j'imaginais plutôt voir des choses que j'aurais reconnues et là j'reconnaissais rien.
On the one hand it matched my expectations since they were paintings and I imagined but at the same time I imagined I would see things that I would recognize and here I did not recognize anything.   (French native)

(10)   Some of them are erm really unexpected er insofar as they don't seem to represent anything we know.   (advanced learner)

5.2   Deliberately-induced surprise

The task was partly designed by using the classic induction method, *i.e.* "a sudden, unannounced change of the mode of stimulus presentation after a series of no-change trials" (Reisenzein, 2000), which aims at disrupting expectations pre-established within a series of visuals – A French speaker recalls his reaction to Bourgeois' *Janus Fleuri* when the within-the-task routine was broken:

(11)   Ben enfin c'était dans la série des entre entre plusieurs photos de nature tout ça ça m'a enfin j'm'attendais pas spécialement à ça quoi !
Well actually it was in the series of the between between several photos of natural landscapes and all that and it made me … well I did not particularly expect this really!

The frequent use of the word *contrast* (37 tokens in English only) highlights the predominant role of cognitive mismatch with general beliefs and task-induced specific expectations.

(12)   I was expec er expecting er paintings but not that kind especially perhaps more famous paintings I dunno er no I I was not er expecting it because all of them are really different […] I dunno at the beginning there were two er like classic er pictures and after one totally different and yeah there is a contrast and that's er what is surprising.   (English native)

The speaker's general representations of art (*paintings*) and expectations (*more famous ones*) are disconfirmed by the visuals (*but not that kind*). Surprise is perceived as the outcome of a *contrast* between two classic pictures and a *totally different* one. In this cognitive scenario, intensity (*totally*) and discrepancy (*contrast, different*) are the main features and emotional valence is turned off.

However, contrasting pairs also triggered affective surprise. For instance, Mabuse's *Danae*, the first visual of a series of twelve, was positively perceived as the epitome of sensual womanhood, inducing a release of the initial tension due to the experimental situation and confirming vague artistic expectations. This pleasurable state of mind was shattered by the second one (Rebeyrolle's *Implosion*), a bloody picture of a dog-like woman expelling a fetus, which left some viewers speechless, gasping or uttering bouts of laughter or expletives. While some could not decide whether the character was a woman or a dog, others could not bring themselves to explicitly identify the character or the effect it had upon them (*the second one which is quite yeah…*).

(13)   and er .. yeah … and probably it's all the contrast between the two like the first one which is quite you know kind of classicalish thing er which you would expect in you know to be hanging in a museum or something er and then just right right after that the the second one which is quite yeah.   (advanced learner)

To conclude with this preliminary approach to aesthetic surprise, the disruption of general or contextualized artistic representations and expectations appears to constitute a recurrent characteristic of these surprise episodes, an invariant feature to be confirmed or not by further analysis of the remaining productions to be transcribed.

6.   Emotional components of the surprise experience

A neutral valence can be identified when the subjects intellectualize their surprise by using unemotional speech. And yet only 16 episodes out of 151 (10.59%) were reported as 'neutral' (in answer to question 5 of the interview). Most pictures triggered surprise associated with or blending into a variety of emotions as shown by Table 2 below (only those pictures which triggered at least five surprise episodes feature in the table). The most surprising pictures (1 to 4) were negatively perceived. The others elicited a range of valences depending on individual experiences and representations; four of them triggered positive, negative or neutral appraisal.

Table 2. Emotional valences and surprise episodes

Source	Surprise episodes	Valence
Implosion	26	Negative
Janus Fleuri	19	Negative
La Banquière	14	Negative
Slaughtered Pig	12	Negative
Green Man	12	Positive/negative
Pumpkin	12	Positive/negative/neutral
Carcass of Beef	11	Positive/negative
Illu	11	Positive/negative/neutral
Paradiso	9	Positive/negative
Naked Man	8	Neutral/negative
Fur Breakfast	6	Positive/neutral/negative
Mother	6	Negative
Disquieting Muses	5	Positive/negative

Although *surprise* (as a lemma) is most frequently used – 118 tokens of *surprise, surprising, surprised* in English, plus 24 French tokens (*surprenant(e)*, *surprendre*, *surpris*), many surprise-laden lexemes such as *strange, disturbing, unexpected, different, confused* (*cf.* examples) also convey a surprising effect and are closely associated with emotion-laden words in the speakers' utterances. Speakers sometimes evolved from assessing surprise as a neutral reaction to a view of surprise associated to strongly positive or negative emotions, or the other way around. One

bilingual student first contended that surprising objects did not elicit any feelings nor emotions in her (*Pumpkin*).

(14)   To me it's just er you know decorative so it doesn't the the ones that surprise me the most are the ones I don't really feel anything kind of towards.   (bilingual)

And yet, when asked to recall the most surprising picture she had seen, she named *Janus Fleuri*, a '*totally repulsive and surprising'* sculpture. This apparent contradiction can be solved by adopting a two-fold interpretation of the phenomenon of surprise, as a neutral onset mechanism and a key component of any emotion. The speaker did not have much to say at the aesthetic level (*not worth discussing*) but at the emotional level, she experienced surprise and disgust when confronted with an object she associated with a tumor.

(15)   (2s) comme j'ai dit je (2s) euh euh celles qui me surprennent c'est celles pour qui j'ai pas vraiment de euh j'ai pas grand-chose à dire ouais ça me fait penser à une tumeur je sais que c'est dégueulasse.   (bilingual)
(2s) as I said before I (2s) er er those which surprise me are those for which I don't really have er I don't have much to say about yeah it makes me think of a tumor I know it's disgusting.

The analysis of the corpus reveals a complex network of connections between surprise and emotion as the stimulus-response process mediated by the subjectivity of the individual speaker often resonates with specific episodes or fleeting sensations retrieved from autobiographical memory (Schrauf and Durazo-Arvizu, 2006). The sensitivity to emotional topics or past traumas heightens the likelihood of intense surprise. Dore's *Paradiso* often triggered surprise, emotions and references to past experiences. One very religious participant reported experiencing '*Christ-like rapture'* while another strongly rejected the same painting that evoked negative memories of her religious education; others recalled dreams of endless falls in tunnels and vortex sensations. The questionnaires highlight links between surprise and traumatic experiences or phobias: for instance, a participant who wrote that she hated yellow expressed surprise, sickness (*nauseous*) and destabilization (*dizzy, disturbing*) at the sight of *Pumpkin*:

(16)   This makes me dizzy <laughs> er I think the patterns and the light that's setting this er this photograph just just makes me kind of nauseous and dizzy and it's the kind of thing that I want to look away from just because it's it's this bright yellow with these black dots and and visually it's disturbing for me <laughs> er it doesn't didn't doesn't even allow me to see that this is like it seems like a fruit or (er) like almost like a pumpkin perhaps I can barely even see what the actual thing is er because it's so disturbing by the colors and design <laughs>.

Mother, Bourgeois' huge bronze sculpture of a giant spider, elicited violent reactions from six participants who signaled (in their questionnaire) that they were scared of spiders. In Example (17), a spontaneous manifestation of surprise (interjection *ah*) merges into a negative emotional response (*I hate it*) accompanied by the metonymic expression of physical symptoms (*shivers*) and sickness (*it makes me uncomfortable*):

(17)   Ah je déteste les ça me fait penser à une araignée on dirait une grosse araignée c'est <laughs> ça me fait des frissons un peu là [...] je suis pas à l'aise.
Ah I hate it makes me think of a spider it looks like a big spider it's <laughs> I get shivers down my back [...] it makes me uncomfortable.   (French native)

During the interview, the speaker first recalled her initial panicky reaction when seeing this monstrous animal and felt petrified again (*I'm petrified*) – a metonymic effect of surprise and fear – when she was shown the sculpture for the second time:

(18)   Alors y'avait ben l'espèce d'araignée ben d'insecte là alors ça c'est vraiment euh ça me tétanise en fait [...] ouais ça me j'peux même pas regarder en fait ah ça euh très très très négatif enfin c'est une peur enfin ouais.
Well there was well this sort of spider well of insect there well that it's really er it actually I'm petrified yeah it makes me I can't even look actually ah it er very very very negative well it's a sort of fear well yeah.

Vegetarian speakers expressed surprise and disgust (or horror) at *Slaughtered Pig* or *Carcass of Beef*. One English native called *Slaughtered Pig* 'the carcass', said it was *sad, shocking, barbaric*, *violent* and *repulsive,* and that it reminded her of unpleasant childhood memories:

(19)   erm this one's kind of sad and shocking erm I'm not a meat eater myself so so it's not the kind of thing that I like to see erm er it seems kind of barbaric and er very violent and ... unfortunately erm ... it's perceived as normal ... especially to the two behind who don't seem bothered by it . erm ... kind of repulsive in a way really and very dark.   (reaction part)

(20)   I used to go to school every morning busing to the main city and there was a a butcher's van that had its doors open and just had it when I went past it and got stuck in traffic and <u>I'd see like ten or fifteen carcasses and I didn't like it every morning</u> <laughs>.   (interview)

Another vegetarian *caught off guard* by 'the meat' explicitly connected his repulsion and disgust (*quite repelled by that in real life*) with memories of meat hanging in butchers' shops.

(21)   Raw meat in general was never my thing I think that kind of yeah I've and I remember seeing those er pickers with meat hanging from them in er butcher shops and I always thought that was really raw and I don't know why raw kind of disgusts me but I've always been quite repelled by that in real life so seeing it so well rendered in a picture kind of triggered that.   (advanced learner)

7.   The metaphorical expression of surprise

Invariant features characterize the metaphorical language (encompassing metaphors and metonymies, Steen, 2007) used by the participants to express and describe surprise. For Kövecses, surprise is a physical force entailing destabilization and loss of control (2000, p. 5) and dislocating the self (2010). The corpus is replete with metaphors standing for the source of surprise and metonymies expressing the mental or physical effect of surprise upon the subject. Metonymic phrases refer to surprise causing shock, destabilization and dizziness, sweeping the viewers off their feet or pulling them in. Speakers describe surprise as a blow or a shock, use onomatopoeias (*bang, splash*), conventional metaphorical adjectives to refer to the source – *striking, shocking, startling, appealing* or *frappant, impressionnant* (Fr.) – or to their state of mind; they are *shocked, startled, appalled, impressed* in English or *impressionné, interloqué, choqué* in French. Metaphorical language is frequently introduced by 'tuning devices' (Cameron and Deignan, 2003, p. 150), which can be paraphrased as vague language or hedging informing the interlocutor that an utterance or a phrase must be interpreted metaphorically rather than literally. For instance, *Implosion* brought about reactions of surprise and horror conveyed by a mix of metonymic phrasal verbs (*take aback*), adjectives (*shocked, unsettling*) and collocations (*sheer goriness, bleeding gore*) introduced by tuning devices:

(22)   c'est (er) <u>c'est très (er) c'est très</u> déstabilisant et ouais et <u>j'dirais</u> dé dégoûtant.
        (bilingual in French)
        it's (er) it's <u>quite (er) it's quite</u> unsettling yeah and I'd say dis disgusting.

(23)   [...] <u>like it's</u> the sheer goriness of it it <u>kind of</u> takes you aback.   (bilingual)

(24)   first I I saw the head of the dog [...] I didn't expect the rest of the picture because it was <u>pretty like</u> well-drawn or painted I don't know and the next part is <u>really</u> messy and <u>rather I would say</u> bleeding gore at first look I was pretty pretty interested in what it could be and <u>then pretty</u> shocked at what it was actually representing.   (advanced learner)

A typical surprise metaphor is that of a sweeping force the viewer must fight to regain control (G. Doré, *Paradiso,* 1861):

(25)   Wow feels almost like I'm falling into the picture with the spirals and everything […] it does pull you in.   (bilingual)

(26)   I it's also one of these you know one of those whirlwind holes and (er) that idea of things going falling into something you know kind like the rabbit hole or something except you know you're not in Wonderland.   (bilingual)

Visual impact is expressed by linguistic forms connecting the literal (*the eye*) and the figurative domains of vision as well as the concrete and abstract domains of movement and stillness (*catching the eye*, *fascinating* or *hypnotized*) as in Examples 27 (Soutine, *Carcass of Beef*) and 28 (*Paradiso*):

(27)   I'm split between feeling (uhm) disturbed a bit like the woman before and (er) maybe it's it's catching the eye it's (er) I love to look at it the colors are amazing and (uhm) it's fascinating.   (advanced learner)

(28)   Je me sens menacée à la fois un petit peu hypnotisée mais (euh) plutôt menacée oui avec (euh) les couleurs violettes là.   (French native)
       I feel threatened both a bit hypnotized but (er) rather threatened yeas with (er) the purple colors there.

There are differences in the amount and type of surprise or surprise-related language produced by the thirty English-speaking participants, who can be divided in two categories. The first category regroups the ten native speakers of English, the ten bilinguals (expressing themselves in English) and three very advanced learners with a one or two year immersion experience. The second category displays seven learners with an academic background mostly. The first group tends to rely on phrasal verbs and collocations to produce conventional metonymies of surprise (*suck in, fall into, draw in, lift up, pull in, thrown, taken aback, caught off guard, grossed out, it turned me off, flashed out at me, jumped out at me, struck a chord, in your face, etc.*).

Graph 1 present the cumulated frequency of metaphorical productions by this sample of 30 speakers expressing themselves in English: 10 English natives, 10 bilinguals and 10 learners (reproduced from Goutéraux 2017, p. 376).

The natives followed by the bilinguals were more productive than the learners, except for one (55 tokens), who produced numerous repetitive forms (*cf.* Table 3). Six advanced learners out of ten produced poorer metaphorical language, used fewer markers, tended to repeat them or produce metonymic adjectival forms only.

To the exception of a literary translation student (23 surprise tokens), the most productive learners (55, 33, 21 tokens) had benefited of extended stays in an English speaking country. The roles of acquisition in natural environment and learning in instructed environment as possible differentiating factors merit to be further investigated with a larger group. However, this small sample points out links between the linguistic status of the 30 English-speaking participants, their general linguistic proficiency and the lexical richness of their surprise discourse.

Metaphorical Production
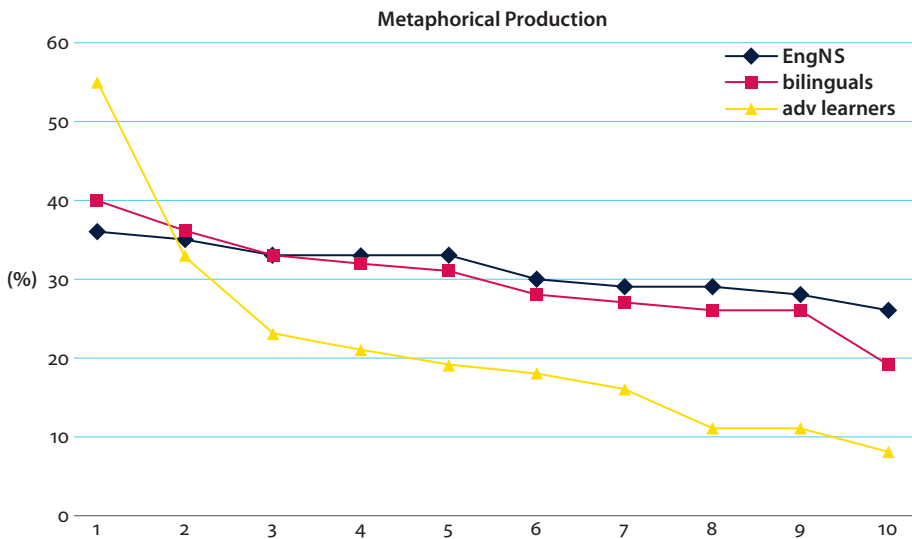
Graph 1. Cumulative frequency of metaphorical surprise markers

Table 3. Ten non-native speakers: Cumulated metaphorical surprise forms

Number of tokens	Types of surprise related markers
55	8 *repel*, 6 *appeal*, 6 *attract*, other forms
33	Varied forms
23	Varied forms (lit. translation student)
21	Varied forms
19	6 *attracted*, 7 *aggressive* + other forms
18	7 *aggressive* + other forms
16	8 *disturbed* plus other forms
11	Adjectives
11	Adjectives
8	Adjectives

Conclusion

This empirical study of the productions of forty speakers provides some indicative results as to the interrelatedness of the cognitive and pragmatic scenarios at work. It confirms that subjects go through a series of invariant stages even if the cognitive and the discursive temporal phases do not always coincide (Goutéraux, 2015, pp. 69–72). Speakers expressing spontaneous surprise or revisiting their experience of surprise produce similar networks of markers ranging from non-verbal

markers of disruption to surprise and emotional lexemes and multi-words as well as questioning and modal forms in the rationalizing phase of the scenario. Surprise is partly due to the source properties and the task conditions but individual subjectivity is a determining factor if one considers the variety and range of reactions elicited by a picture (surprise, surprise and intensity, surprise and valence or surprise, intensity and valence). The results suggest that autobiographical memories may exacerbate the intensity (arousal) and valences of a surprise experience insofar as subjects vividly re-experience these memories when they visualize elements triggering some recall (a color, an animal, an event). By focusing on the sample of thirty interviews in English, we found that linguistic status and proficiency act as differentiating factors with a larger amount of collocational metaphoric language used by English natives and bilinguals than by learners. The hypothesis that immersion experience could favor metaphorical productivity and diversity in learner surprise speech must be further explored. There is room for improvement among academic learners who attempt to use surprise language since utterances are occasionally flawed by inaccuracies and transfer from their mother tongue. Familiarizing advanced learners with searches of multi-word-chunks (Meunier, 2012) and collocations expressing appraisal, surprise and emotions in authentic electronic corpora as well as carrying out consciousness-raising and contrastive interlanguage activities on metaphorical language (Boers, 2000 and others) could be fruitful as well.

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Emotional experience, expression and description

Interrogatives in surprise contexts in English

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Verbal reactions to surprising situations or surprising information often include interrogative structures rather than exclamatives, contrary to what is assumed in traditional grammars. In such contexts, interrogatives combine requests for information and the expression of surprise (possibly associated with other emotions). Based on enacted data drawn from film scripts, our claim is that different (more or less canonical) forms of interrogatives imply varying levels of cognitive integration: clarification requests, ordinary (non-inferential) questions and inferential questions are on a continuum from less to more cognitively integrated information. Different forms of interrogatives may thus correspond to different speaker-addressee relations and pragmatic patterns. The overall frequency of interrogatives and variety of forms and patterns used may reflect the fact that surprise is more cognitive than other emotions.

Keywords: surprise, interrogative structures, questioning, cognitive emotion, schema theory, evidence

1. Introduction

This study is part of a broader project[1] analysing verbal reactions to surprising situations in the scripts of three movies (*Ed Wood, War of the Worlds, Dr. Strangelove*).[2]

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1. This study is part of the Emphiline project (ANR-11-EMCO-0005), a project funded by the French National Research Agency: "la surprise au sein de la spontanéité des émotions: un vecteur de cognition élargie".

2. The choice of movies was motivated by the fact that the identification of sequences of surprise was made easier by visual clues indicating para-linguistic gestures (e.g. body language) and intonation (two aspects that seem crucial in the expression of surprise but that we cannot address or analyze in detail in this study). We are aware that movie dialogue does not represent spontaneous speech but enacted data, that is to say, data that may reflect stereotypical rather than genuine language tendencies. However, Scherer et al. (2011, p. 409) report that the vocal

All verbal reactions of surprise in the three movies were cross-annotated by four colleagues, using the platform Glozz,[3] which allowed for the specification of syntactic, semantic as well as pragmatic/discourse parameters (such as clause types, the presence of interjections, as well as the types of questions and types of answers at stake). A variety of linguistic structures and markers were found, but a notable observation is that the most frequent forms of reaction of surprise in our corpus are interrogative utterances. This informs our research questions: what are the isolable, predictable and robust relations between surprise and questions? What is the role of questioning in the cognitive integration of surprising information? Are questions involving surprise 'prototypical' questions, implying epistemic questioning and relying on the addressee's ability to answer? Can a connection be established between the expression of surprise in questions and mirativity? Do all questions under scrutiny express "pure surprise"[4] or are some question types associated with more valenced emotions, such as anger or reproach, as part of complex argumentative strategies? More broadly speaking, what does the affinity uncovered here between surprise and questioning tell us about surprise as an emotion?

Section 2 lays out our theoretical framework. Using Littell et al.'s (2010) typology, we distinguish two different types of interrogative structures: those that are mapped on the 'default' interpretation of interrogatives, i.e. requests for information, and those that are linked to other speech acts. The former constitute direct speech acts and include clarification requests, non-inferential as well as inferential questions. The latter correspond to indirect speech acts and are represented by rhetorical questions and what Littell et al. call *conjectural questions*. The present paper focuses on the former (more frequent) type, and the different forms and uses of interrogatives as direct speech acts in surprise contexts. Indirect speech acts (and the argumentative strategies they involve) are examined in a distinct study by Celle (2018). Section 2 also disentangles surprise-related interrogatives and the semantic category of mirativity as defined in linguistic typology.

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parameters associated with happy and sad states yield the same differences in experimentally induced and enacted emotional expressions. We therefore assume that enacted data do not invalidate our findings as regards the link between surprise and interrogatives.

3.   Glozz is an annotation tool designed by Yann Mathet and Antoine Widlöcher. It is particularly well suited for the annotation of surprise episodes, as it allows coding units, relations and schemas as well as the links between these three levels. http://www.glozz.org/

4.   In psychological studies, surprise is generally associated with neutral valence, since it is neither positive nor negative in itself. For a recent overview of the status of surprise as an emotion, see Soriano et al. (2017). However, some scholars do regard the feeling of surprise as negatively-valenced (see Miceli and Castelfranchi 2015, p. 50) because it involves "the thwarting of the predictive pseudo-goals and more generally the thwarting of the pseudo-goals that regulate the system's cognitive functioning, such as belief consistency and accuracy. It is precisely this feeling of disturbance that induces a motivation to reduce or eliminate the inconsistency when it is detected."

Sections 3, 4 and 5 examine three forms of interrogative structures associated with direct speech acts, the interrogatives under scrutiny conflating request for information/confirmation and expression of surprise. Our claim is that interrogatives in surprise contexts do not drastically differ from usual forms of interrogatives, which may confirm the essential link between surprise and epistemicity established by recent works (see Soriano et al. 2017; Celle et al. 2017; who show that surprise belongs to a cognitive rather than strictly emotional category). Section 3 examines clarification requests, which can be considered as (syntactically) non-canonical structures reflecting the speaker's failure to integrate new information. Section 4 is devoted to "ordinary" questions, whose standard form and function are very similar to that of usual, or not surprise-related, interrogatives. Section 5 investigates inferential questions, which involve a different type of source of surprise: the source is not direct but rather inferred from some situation or news, this indirectness being related to formal and pragmatic differences.

2. Questions, speech acts and mirativity

2.1 Questions and speech acts: The standard view and a refinement

In this paper we work with a number of standard assumptions which take the structure of speech acts as the relation between clause type (the syntactic form of an utterance) and illocutionary forces (what the utterance expresses in conversation). To begin with, we assume that *direct speech acts* are defined by the direct relation between the four major clause types (specific kinds of syntactic structures) in English and the 'default' illocutionary forces expressed by them. These are given in (1):

(1)   a.   **Declarative:** Gwen opened the box.
      b.   **Interrogative:** Who opened the box?
      c.   **Imperative:** Open the box![5]
      d.   **Exclamatives:** What a nice box that is!

(1a) is a *declarative* clause type that constitutes the speech act of *assertion:* upon uttering "Gwen opened the box" the speaker commits herself to the truth of the proposition expressed by this sentence, that Gwen opened the box. In typical conversation this is a direct speech act because sentences of this form (i.e. the transitive clause in (1a)) by default are used to assert. Declaratives are necessary for meaningful conversation, as the assertion of facts (according to the speaker) is at the core of what propels conversation. Example (1b) is an *interrogative* clause type: these are syntactically distinguished from declaratives by the operation of *wh*-movement,

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5.   See, for example, Higginbotham (1996).

auxiliary inversion, and other phonetic cues, such as a rising intonational contour.[6] The illocutionary force of an interrogative clause is to express a request for information: the speaker of the utterance in (1b) is requesting information as to who opened the box. The third major clause type in English is the *imperative*, the form of which is a (syntactically) subjectless clause with an uninflected verb. Upon uttering (1c) the speaker has the intention to cause the addressee to undertake some action, such as opening the box. Although less frequent than the other three clause types, *exclamative* clauses (1d) have a similar yet systematically distinct syntactic structure from interrogative clauses. Exclamative clauses can constitute a variety of related speech acts (dismay, disbelief, etc.) that center around the notion of surprise.[7]

Indirect speech acts are defined by the use of certain clause types with illocutionary forces other than the 'default' ones. Among the most common kind of indirect speech act is using a declarative clause to ask a question. For example the utterance *I would like to know who opened the box* has the form of a declarative, but it is not used to assert; rather, it is a request for information. Declaratives, interrogatives and imperatives can be mapped to other illocutionary forces, which are generally considered to be an open class.

This is our point of entry. What we are concerned with is how the other kinds of speech acts (illocutionary forces) can be mapped to question clauses. Litell and al. (2010) and Brown and al. (2016) identify a typology of question types enriched by parameters that take into account what the speaker knows and what the speaker believes the addressee knows in a particular context. This speaker-oriented 'epistemically-based' typology is given in Table 1.

Table 1. Epistemically-based typology of questions (Littell et al. 2010; Brown et al. 2016)

	Speaker (S) knows the answer	Speaker (S) believes that the Addressee (A) knows the answer
Ordinary Questions (OQ)	No	Yes
Rhetorical Questions (RQ)	Yes	Yes
Conjectural Questions (CQ)	No	No

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6.   We include in the *wh*-type standard *wh*-questions, verbless *wh*-questions and *wh*-sluices.

7.   In this section, we present the four major clause types from a syntactic viewpoint. We are nonetheless aware that an analysis in terms of clause types is not fully adequate to tackle the complex phenomenon of exclamation. In our data, exclamatives in *what* and *how* are non-existent in surprise reactions, whereas sentence exclamations – i.e. declarative clause types with the intonational contour of an exclamation – are quite frequent. See, for example, Zanuttini and Portner (2003) and Rett (2011) for more details.

Ordinary questions correspond to standard interrogative clauses, as described above. Note that *clarification requests* are absent from this typology, but we show in Section 3 that they are based on the same epistemic criteria as *ordinary questions* (the speaker does not know the answer and believes the addressee does) while having distinguishing features insofar as they constitute metalinguistic questions. What are commonly called *rhetorical questions* are defined in this typology using these parameters: the speaker of a rhetorical question knows the answer to the 'question'; as such, it is not actually a request for information (which could then be defined broadly as another kind of indirect speech act). This is the key feature that distinguishes rhetorical questions from ordinary questions (cf. Caponigro and Sprouse 2007). The third type in this typology, *conjectural questions*, are those utterances which seem to express a request for information, but also reflect in the language that the speaker does not believe the addressee knows the answer. In their study, Littell et al. (2010) propose that conjectural questions are found in languages that have grammatical evidentials, where the insertion of an evidential into an interrogative clause 'reduces' the interrogative force of the question. In English this space is occupied in the grammar using wonder-like statements. For example, *I wonder who opened the box* has the form of a declarative, but it requests information with no obligation on the addressee to answer it (unlike an ordinary question, which does require a response from the addressee). Other interrogative forms seem to be best analysed as *unresolvable* questions (as demonstrated by Celle, 2018).

We propose a two-fold refinement of Littell et al.'s (2010) typology of questions. First, we distinguish clarification requests, (Ed: *I met a movie star! Somebody really big!* Dolores: <u>*Robert Taylor?*</u>), ordinary questions and inferential questions (Ed: *Sorry to bother you while we're shooting, but the guy who owns the stage needs his money.* Loretta: <u>*Well then you should pay him, shouldn't you?*</u>); each type of questions is examined in turn. Secondly, we show that questions are not only based on the speaker's knowledge and beliefs. They also contribute to dialogue in a dynamic way by requesting the addressee's commitment. Therefore, an epistemically-based typology of questions should accommodate the request for commitment update that distinguishes questions from assertions. Ordinary questions request both information and commitment from the addressee. In a rhetorical question, the speaker believes that the addressee knows the answer because the answer is suggested by the question itself, although speaker and addressee may differ in their beliefs and appraisals, as shown by Celle (2018). In the case of rhetorical questions, the commitment update cannot be taken for granted as it may be hindered by disagreement. These considerations lead us to propose a new typology of questions presented in Table 2:

Table 2. An epistemically- and dialogically-based typology of questions

	Speaker knows the answer	Speaker believes that the addressee knows the answer	Speaker requests addressee's commitment
Ordinary Questions	No	Yes	Yes
Rhetorical Questions	Yes	Yes	Yes
Conjectural Questions	No	No	No

2.2   Surprise-related interrogatives and mirativity

The most frequent surprise reactions in dialogue are interrogatives. We argue that the expression of surprise cannot necessarily be equated with mirativity, although mirativity may be broadly defined as the linguistic encoding of surprising facts (DeLancey 1997). Not all surprising facts can lead to the linguistic expression of mirativity. On the cognitive level, mirativity is more specifically defined by several authors (among others, Guentchéva 2017, Peterson 2017) as resulting from a discrepancy between what is observed and what is expected. First we lay the theoretical foundations of the surprise syndrome before taking up the issue of mirativity.

Using the schema-theoretic framework developed by Meyer et al. (1997) and Reisenzein (2000), Peterson (2017, p. 74–75) argues that surprise is a cognitive process involving different stages:

> The initial state can be thought of as the state of the speaker at any given moment; it represents the current situational awareness (active cognitive schema), along with the capabilities of perception (sight, sound, tactile, etc.) that constantly take in NEI [New Environmental Information]. Surprising NEI is evaluated within this process as exceeding some threshold value of schema-discrepancy. In other words, upon perceiving some NEI, one or more of the person's current expectations is violated to a significant degree. The consequence that follows is that the person experiences surprise. Motivated by the feeling of surprise, *the person analyzes the surprising event, consciously verifying its unexpectedness, assessing the cause of the event and deciding whether some response or change in plans is necessary.* If a response is necessary, the person begins responding.   (emphasis ours)

Such a cognitive approach to surprise sheds new light on the utterances found in reaction to surprising events in two respects. We argue below that the surprise-induced interrogatives of our data play a role in the analysis or assessment of the source of surprise. We claim more specifically that each type of questions (clarification requests, ordinary questions and inferential ones, but also rhetorical and unresolvable questions examined in Celle (2018)) corresponds to a different cognitive stage within the appraisal process. Furthermore, we argue that this linguistic act has social implications in the dialogic setting speakers are engaged in.

It should be noted, however, that mirativity depends on the nature of surprising information. A crucial distinction can be made between linguistic information and new environmental information (see Peterson 2017, p. 68). Linguistic information cannot be used miratively, as opposed to new environmental information. Even if mirativity is not grammaticised as a morphosyntactic category in English and only exists as a "covert semantic category" (DeLancey 2001, p. 377–378),[8] it is important to bear in mind this distinction. Our study of surprise-induced interrogatives shows that interrogatives mainly express surprise in reaction to new linguistic information.[9] In these interrogatives, surprise plays a role in a "linguistic transaction" (Peterson 2017, p. 68). Questions are primarily addressee-oriented as they request the addressee's commitment, either because the speaker lacks some information (in the case of questions used as direct speech acts), or because the speaker puts forward an answer without necessarily committing to the truth of the proposition (in the case of rhetorical questions). Crucially, questions are not a simple expression of surprise. They reflect the speaker's stance, i.e. an attitude that involves affective, epistemic and evaluative positioning. This attitude is adopted by the speaker facing surprising linguistic information. As stressed by Du Bois (2007, p. 141), stance-taking is grounded in dialogic interaction:

> Stance is a public act by a social actor, achieved dialogically through overt communicative means, of simultaneously evaluating objects, positioning subjects (self and others), and aligning with other subjects, with respect to any salient dimension of the sociocultural field. (Du Bois 2007, p. 163)

The surprised stance induced by linguistic information corresponds to a stance follow.[10] Surprise is a disturbing factor in interaction. Once the situation has been evaluated as counter-expectational, a surprised speaker will assess the cause of the inconsistency (Peterson 2017; Celle and Lansari 2016). Asking a question is both

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8.   As stressed by DeLancey (2001, pp. 377–378), mirativity is only a "covert semantic category" in English. We argue that interrogatives in English may well serve a mirative function when they are induced by unexpected new environmental information. However, these ordinary questions exhibiting no distinguishing formal features similar to those that encode mirativity in languages that do have the category of evidentiality – mirativity, we are inclined not to use mirativity as a label. This label would be warranted if those interrogative structures developed into a specific construction. See LaPolla (forth.).

9.   However, the new linguistic vs environmental information distinction is more relevant in languages with grammatical evidentials, as reportative evidentials (which target linguistic information) cannot typically be used miratively. New environmental information can be used miratively in interrogatives, as evidenced in several cross-linguistic studies (Friedman 2003, p. 201; Olbertz 2012, p. 85; San Roque et al. 2017, p. 12; Greed 2014, p. 85).

10.   The distinction between stance lead and stance follow is borrowed from Du Bois (2007, p. 161–162).

a linguistic and a behavioural response whereby the speaker seeks missing information and attempts to align with the addressee. As shown by Siemund (2017), in standard communication and especially in spoken registers, speakers try to minimise the social costs associated with information-seeking questions by avoiding content questions, which ask for more substantial information than polar questions.[11] As content questions far outnumber polar questions in surprise contexts,[12] the cognitive and emotional disturbance generated by surprise may be claimed to have social consequences. The expectation violation caused by surprise is conducive to a breach of social balance in communication. Clarification requests, which systematically bear on some prior discourse entity, are a case in point.

3.   Clarification requests

Surprise can be expressed using non-canonical syntactic structures; these have been variously called: "echo questions" (Huddleston 1994; Noh 1998, *inter alia*), "reprise questions" (Ginzburg and Sag 2001), "clarification requests" (Purver, Ginzburg and Healey 2001), "incredulity contour" (Pierrehumbert and Hirschberg 1990), or "other-initiated repairs" (Kendrick 2015). Given that we are interested in the pragmatic properties of these structures and their use in naturalistic dialogue, we use Purver et al.'s terminology ("clarification requests"), avoiding the phrase "other-initiated repairs", which imply communication failures.

As Noh (1998, p. 108) points out, "echo questions" are not syntactically typical interrogatives. They also illustrate the contrast between interrogatives and questions advocated by Huddleston (1994). This type of question differs from the ordinary questions analysed above from a pragmatic perspective: as argued by Purver et al. (2001), clarification requests are "meta-dialogue acts – they concern the content or form of a previous utterance that has failed to be fully comprehended by the speaker making the request." This includes both anaphoric repetitions and questions on the intended interpretation of the previous turn (e.g. *What do you mean?*).

In our corpus study, clarification requests have several forms, some of which are described in Ginzburg's (2012) taxonomy. Table 3 below summarizes the different syntactic forms of clarification requests – the forms described in Ginzburg (2012) are tagged (G):

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11. In certain contexts, especially if the addressee is not in a position to answer, questions may simply be avoided in English. In this respect, English and French are pragmatically different. See Celle (2009).

12. In the surprise contexts examined in this study, constituent interrogatives outnumber polar interrogatives. Conversely, Siemund (2017) points out that polar interrogatives are not used for the expression of surprise in ICE-GB, the British component of the International Corpus of English.

Table 3. Types of clarification requests

Reprise fragments (G): bare phrases used as clarification requests	Lugosi looks pretty old. (he squints across the room): *Which role is Vampira playing?* Ed: **Vampira…?** (bewildered) *Why do you ask?*	20
Wot (G): words typically used to request (more or less verbatim) repetitions	Dolores: (excited) *You got the job?!!* Ed: **Huh?**	11
Wh- substituted reprise (G): almost verbatim repetition of the preceding utterance, but a constituent is replaced by a *Wh-* word	Mandrake: *Jack, I'd love to come. But, what's happened, you see, is the string in my leg's gone.* Jack: **The what?**	3
Fragment: bare phrase corresponding to a possible answer to a salient question	Ed: *What if I told you you could have a star for $1000??* Georgie: *Who?* (Ed opens his valise and whips out an 8x10 glossy of Bela.) Georgie: **Lugosi?**	1
"Declarative questions": declarative structures having an interrogative prosody	Vampira: *Look… would it be possible to make the "Ghoul's Wife" a little less prominent, so people won't really notice me in the movie?* Ed: **You don't wanna be noticed?**	3
Yes/No questions	Goldie: *Major Kong, I know you're gonna think this a crazy but I just got a message from base over the CRM 114. It decodes as Wing Attack plan R. R for Romeo.* Kong: **Goldie, did you say Wing Attack, plan R?**	1
Wh- questions	KATHY: *You're not gonna believe the first picture I ever saw. Your friend's.* Ed: **What do you mean?**	4

As can be seen in Table 3, the most frequent forms of clarification requests in our corpus are non-canonical interrogative structures (38/43), and most (36/43) are verbless. Among these non-canonical interrogatives, most are reprise fragments which indicate the source of surprise quite precisely. This type of request is twice as frequent as the category "Wot",[13] i.e. open initiations of repair in Kendrick's (2015) terms, where the speaker does not locate the source of surprise to a specific turn component (e.g. to a particular word or constituent) – the whole preceding turn being then characterized as surprising. In terms of stance-taking, note that clarification requests are always stance follows whereby the speaker positions him/herself relative to a prior stance lead (Du Bois 2007, p. 161–162).

Two main discourse uses of clarification requests have often been distinguished. As argued by Noh (1998, p. 107) – who analyses only some of the structures

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13. The relative infrequency of "Wot" may be related to the type of data under study, i.e. enacted responses.

mentioned here – these structures "can be used not only when the echoer did not hear properly or understand what was said, but also when he wants to express his incredulity at what he heard". Kendrick's (2015) analysis of "Other-Initiated Repairs" in a Conversational Analysis approach also considers that "their default function is to indicate troubles of speaking, hearing, or understanding, [but that] they can also be used as jokes and teases, can be preliminaries to dispreferred responses, and can display surprise and disbelief."

Occurrences of those structures that clearly involve troubles of speaking/hearing were not included in our corpus, which comprises reactions of surprise only. The examples we examine here therefore involve a secondary use of the structures: the speaker "tacitly claims to have heard or understood the prior turn, even though they may display one's doubt or disbelief towards it" (Kendrick 2015). Feigning incomprehension is then a means for showing/displaying surprise.

Now the most frequent forms of clarification requests in our corpus (i.e. reprise fragments and words typically used to induce repetition, such as *Pardon*, *Huh* or *What?*) are ambiguous: the question can be understood to have a secondary use or to combine primary and secondary uses. In other words, it is often not clear whether the speaker misheard a previous utterance or rather whether s/he is unable (or unwilling) to integrate its content in the set of shared assumptions, as illustrated in (2):

(2) Goldie: Major Kong, I know you're gonna think this is crazy but I just got a message from base over the CRM 114. It decodes as Wing Attack plan R. R for Romeo.

Kong: Goldie, did you say Wing Attack, plan R?

In a few contexts, the clarification request only has the function of expressing disbelief, as in (3):

(3) Ed: I know what that's like. (he pulls out his script) Anyway, I brought a copy of the script. You would play the "Ghoul's Wife."

Vampira: (she grimaces) The Ghoul's Wife?! God, I can't believe I'm doing this…

Kathy: You should feel lucky. Ed's the only guy in town who doesn't pass judgment on people.

Here the speaker does not expect the addressee to confirm the piece of information, as she obviously heard what was said and has a written confirmation of it (i.e. the script), but rather wishes to express her surprise and elaborates on this feeling in the next declarative clause, which combines an interjection and the modal *can't* in a description of her inability to accommodate this new information, i.e. a description of her state of surprise.

Here the utterance could be assigned an expressive function:[14] the speaker comments on the preceding assertion without letting the addressee answer. This clarification request could then be argued to be "indirect", in that its function is not merely to ask for information. This is correlated with the fact that the following answer is not an informative confirmation but rather a reaction to the comment that follows the "noncanonical" clarification request.

As already mentioned, not all clarification requests are 'echoic'; some rather target the addressee's intended content (cf. Ginzburg 2012), i.e. the speaker wonders about the entailment of the addressee's speech, or about the addressee's strategy. Then the speaker does not pretend to have misheard anything but clearly expresses his/her confusion or perplexity.

(4) Cameraman Bill: Which one is the red one?
    Ed: (confused) What do you mean?

The common defining feature of all clarification requests (whether they combine primary and secondary uses or not) is that the speaker has not yet integrated some new linguistic information, and the addressee is assumed to be able to confirm surprising information. Clarification requests may correspond to a first step towards cognitive integration: they differ from ordinary and inferential questions both formally and pragmatically, as shown in the following sections.

4. Ordinary questions

Although ordinary questions and inferential questions share the same syntactic structures, there is sufficient grammatical and lexical evidence to establish a distinction between them. We address in more detail the role of inference and evidence in the next section. First, we focus on ordinary questions and why they do not involve an evidential component.

From a quantitative viewpoint, ordinary questions – i.e. questions requesting information such as for instance *what is going on?* – constitute almost 75% of the interrogative utterances in our dataset (78 occurrences out of 121). Table 4 below provides the different syntactic structures of the ordinary questions found in our data and the number of occurrences for each structure:

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14. A parallel may be drawn here between these expressive questions and the WXDY construction as defined by Kay and Fillmore (1999, pp. 25–26).

Table 4. Syntactic types of ordinary questions

Wh- question: *wh-* word + subject-auxiliary inversion	EXT. PHONE BOOTH – DAY: Ed angrily shouts into the phone Ed: **Georgie, what happened?!** *I thought "Glen Or Glenda" was opening next week! Where's the ads?*	45
Yes-no question: canonical polar questions, auxiliary – subject – verb phrase	Bunny:*WRONG! I'm getting my first series of hormone shots! And once those babies kick in, they're gonna remove my organs, and make me a woman!* Ed is astonished. Ed:*Jesus!* **Are you serious?**	15
Sluice: *wh-*phrases + ellipsis	Georgie (pissed-off): *"Where's the ads"?! The ads are in Alabama, Indiana, and Missouri! You schmuck, it ain't gonna play L. A.!* Ed: **Why not?**	4
"Wot"[15] (Ginzburg 2012): words typically used to request (more or less verbatim) repetition or confirmation	Secretary #1: *You know that Christine Jorgensen freak? He/she/it's in "Variety." Some producer is making a biopic* Ed: **Really?**	2
Declarative question (Gunlogson 2002): declarative structure with an interrogative prosody	Criswell:*There's no such thing as a psychic. People believe my folderol because I wear a turban and a black tuxedo* Ed: **It's that easy?**	2

The first relevant observation in Table 4 is the propensity of *wh-* interrogatives to be used in surprise contexts: in our corpus *wh-*questions are three times more frequent than polar questions, whereas in standard communication contexts, polar questions are more numerous than *wh-* questions (Stivers 2010; Siemund 2017). This suggests a strong correlation between the expression of surprise and *wh-* interrogatives (see below for a possible explanation).

Ordinary questions amount to 68 occurrences and are mostly *wh-*interrogativess from a syntactic viewpoint,[16] as in Example (5):

(5) Bela: I was thinking about killing myself.
     Ed: **What happened?**
     Bela: (near tears) Eddie, I received a letter from the government. They're cutting off my unemployment. That's all I've got. Without it, I can't pay the rent…

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15. The category 'Wot' is borrowed from Ginzburg's taxonomy (2012), based on Purver, Ginzburg, and Healey (2001).

16. This overrepresentation of *wh-*interrogatives may also be linked to the nature of our data. In spontaneous speech, we may expect less articulate questions, such as "Wot" words, to be more frequent.

The speaker encounters new information he was not previously aware of, and seeks to bridge a knowledge gap by requesting an explanation. While experiencing surprise, the speaker strives to make sense of the situation in the ongoing discourse. As such, s/he believes the addressee has the answer.[17] In the case of *wh-* ordinary questions, the knowledge gap is about one precise element which the speaker seeks to identify. The question then bears on one particular syntactic constituent (the subject in the case of *what happened* in Example (5) above).[18]

Epistemic asymmetry in the speaker's and the addressee's knowledge states is a distinguishing feature of questions (Heritage 2012; Riou 2015, p. 160). In terms of the parameters provided by Littell et al.'s typology in Table 1, an *epistemic asymmetry* arises between the speaker's and addressee's knowledge states when the speaker is asking an ordinary question because s/he does not have the answer and believes the addressee does. In our data, the addressee provides the speaker with an informative answer in 42 occurrences out of 67, as in (5). In the film script *War of the Worlds*, however, there is generally no answer to these questions, for various paralinguistic reasons: either the addressee does not know the answer and is too shocked to put forward a tentative explanation, or the addressee may know the answer but prefers action over explanation. In (6), for instance, the addressee seems shocked (as indicated by his lack of response). He is unable to account for the apocalyptic scene and does not even try to venture a possible explanation from situational evidence:

(6) Robbie: **What happened?** (Ray sits down against the wall of the island countertop in the kitchen, <u>not responding</u>)

Rachel: **What's going on?**
Robbie squats down next to Ray as Rachel rests her elbows on the stool at the island.

Rachel: Dad, **what's the matter?**

In this particular case, surprise is induced by new environmental information. The state of surprise is shared among participants and each of them hopes the others might have an answer to account for the unbelievable current state of affairs. The

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17. The addressee should not be taken to serve an ancillary function. Although the addressee is the one to whom the question is addressed, they are not a passive recipient of a message. We argue below that in order to interpret a question precisely it is often necessary to consider the type of reply given by the addressee (i.e. an informative answer vs. justification or another type of response). The whole interaction has to be taken into account in the analysis of reactions of surprise.

18. The data shows that *what*-questions are clearly more frequent (26 occurrences) while *where-*, *who-*, *why-* and *how*-questions are underrepresented (3 occurrences of *where*, 4 occurrences of *who*, 4 occurrences of *why*, 7 occurrences of *how*).

initial question is followed by other questions of the same type: surprise thus gives way to a series of unanswered questions.

In other occurrences, it is not clear whether the speaker asks a non-inferential ordinary question (requiring an explanation for the state-of-affairs) or expresses surprise without expecting an answer, as in (7). In such cases there is no answer, or the answer is not fully informative (cf. "you saw" in (7)).

(7)   Robbie: WHAT THE HELL IS GOING ON!?!?!?
       Ray: YOU SAW! WE'RE UNDER ATTACK!! (*War of the Worlds*)

Robbie's utterance also contains aggressively non-D-linked phrases such as *the hell* which further contributes to the expression of surprise (Pesetsky 1987: 111). Such an ambiguity between genuine requests and unresolvable interrogatives – analysed by Celle (2018) – also characterizes some clarification requests, as shown in (3).

In sum, ordinary questions are true requests for information: the speaker believes the addressee has the answer and thus relies on him/her to ascertain the validity of the whole propositional content or identify one precise referent.

In our corpus, ordinary questions are factual, non-judgmental questions, and they are predominantly *what*-questions of the *what happened?* type. They do not contain any evaluative lexemes[19] or any aspectual/modal forms.[20] The speaker's evaluative stance may nonetheless be conveyed by interjections (*God, Jesus*) or expressions such as *the hell*, which appear almost exclusively with non-inferential ordinary *wh-* questions in our data (7 occurrences). These interjections can be seen as the only lexical specificity of ordinary questions expressing surprise, as opposed to simple requests for information not associated with the expression of surprise.

A comparison of *wh-* ordinary questions with inferential questions and rhetorical questions points to another interesting element: many of our ordinary questions have a short mean utterance length (MUL) – 30 out of 42 are less than 5 words long – whereas inferential questions (e.g. *Why would Lugosi want to be in a sex-change flick?*) tend to be quite long, as will be shown in Section 5. All these features – absence of evaluative lexemes, absence of aspectual/modal forms, shortness – seem to show that ordinary questions constitute a first cognitive stage in the integration of surprise. By resorting to such questions, the speaker experiencing surprise seeks to bridge a knowledge gap by ascertaining a current state of affairs or identifying a precise referent in a non-judgmental way. The strong correlation

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19. Non-inferential ordinary questions are prototypically of the type "What is going on?", not "What crazy stuff is going on?". There is, however, one notable exception: *Whose crazy idea was it to bury him in the cape?*, where the adjective *crazy* clearly expresses the speaker's negative judgment.

20. See Celle and Lansari (2016).

observed between ordinary questions and surprise can now easily be explained. As highlighted by Stein and Hernandez (2007, p. 302), surprise tends to arise "when the perceiver cannot make inferences about the function, identity, and nature of the precipitating event". Non-inferential ordinary questions of the *what* type precisely aim at uncovering the "function, identity, and nature" of the surprising event.

5.   Inferential questions

Inferential questions do not differ from ordinary questions on syntactic grounds, but rather on pragmatic grounds. We argue that, in contrast with (non-inferential) ordinary questions, inferential ones do not question the source of surprise *per se* but rather its possible implications, as evidenced in the following dialogue:

(8)   Georgie: Yeah, well <u>a couple of things have changed</u>. It ain't gonna be the Christine Jorgensen story no more. Goddamn "Variety" printed the story before I had the rights, and now that bitch is asking for the sky.

   Ed: N- (disappointed) **So you're not gonna make the movie?**

   GEORGIE: No, of COURSE I'm gonna make the movie! I've already presold Alabama and Oklahoma.

In this dialogue, Ed is surprised (and disappointed as stated in the stage directions) by the news announced by the addressee. He struggles to go beyond his disappointment[21] and wonders about the possible implication(s) of the new situation he has to integrate into his current knowledge state. He could have simply questioned the validity of the content under discussion using *really?*; however, he goes one step further and puts forward a tentative statement taking the form of a "declarative question" – i.e. a declarative clause with the intonational contour of a question. His tentative statement relies on what he interprets as "precursive evidence" (Matthewson 2011): according to him, the changes announced are clear evidence that the movie will be cancelled. In this example, the evidence-based inference is made explicit by the adverb *so*, which emphasizes the link between the previous utterance and Ed's pessimistic assumption that there will be no movie.[22] The addressee Georgie challenges this inference and proffers the correct inference Ed should have made.[23] This example clearly shows that inferential ordinary ques-

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21. On the intricate link between surprise and disappointment, see Celle et al. (2017).

22. The adverb *so* appears twice in our data, exclusively with inferential questions.

23. *Of course* unequivocally indicates that the inference to be made was obvious.

tions have an important role to play to update knowledge within a conversational interaction. Once the two discourse participants have reestablished some sort of common ground, the conversation may proceed.

Inferential questions are rather infrequent in the corpus; there are only 11 occurrences out of 121.[24] Like ordinary questions, inferential ones may appear as *wh*-questions, *yes-no* questions or declarative questions. In inferential questions, the speaker relies on extralinguistic and linguistic evidence to perform an inference that is expressed in the form of a question, or even simply the intonational contour of a question in the case of "declarative questions".[25] This inference often has to do with future and/or hypothetical actions or outcomes, which allows us to conclude that surprise-related inferential questions are mostly based on "precursive evidence". This is grammatically signalled in more than half of the inferential questions of our corpus by future oriented expressions and aspectual/modal markers such as *be going to* (see (8) above), *want to, be to, would, should*:[26]

As is also the case with ordinary questions, inferential ones retain the epistemic asymmetry defined in Section 1 in that the speaker believes the addressee knows the answer; in most instances (9/11), the addressee provides the speaker with an informative answer: s/he either confirms or disconfirms the inference made by the speaker. In this way the speaker-addressee relationship is nonetheless slightly different: in inferential questions, the speaker draws her own inferences based on the available "precursive evidence" in the speech context, and asks the addressee to confirm whether the inference is correct or not. As inference-based requests for confirmation, inferential questions tend to be more biased than non-inferential ones, especially when they take the form of "declarative questions" as in Example (8) examined above. Although not all inferential questions are declarative clause types, there seems to be a strong affinity between this syntactic clause type and this specific speech act: out of the 8 "declarative questions" of our data, 4 function as inferences. A connection can be made with Gunlogson's claim that "declarative questions" "make poor speculative questions, i.e. questions designed to instigate thought or discussion without necessarily being answered or answerable" (2002, p. 127): they are biased questions since the declarative form orients towards what the speaker takes to be the correct answer. The speaker is not neutral and attempts to make the addressee commit to the content under discussion. Additional support for this line

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24. Given the paucity of inferential questions in our data, a table summarizing their different syntactic structures would have been irrelevant.

25. On "declarative questions" and their intonational contour, see Gunlogson (2002).

26. The presence of the *be going to* periphrasis in inferential questions is not surprising. It is shown in Celle and Lansari (2009) that *be going to* is an evidential marker of futurity.

of reasoning is found in Beyssade and Marandin (2009), who point out that there is a form of speaker commitment (reflected by the declarative form): the speaker is committed to the content under discussion and the addressee is asked to confirm the initial inference.

As requests for confirmation, inferential questions might be seen as very close to clarification requests. We nonetheless argue that these two categories should be kept distinct: unlike clarification requests, which are metalinguistic questions, inferential questions are evidence-based requests for confirmation that ponder over the implications of the source of surprise. As such, they are at the opposite end of the cline from less to more cognitive integration.

In sum, inferential questions rely on a more complex cognitive operation than clarification requests and (non-inferential) ordinary questions: the speaker no longer asks questions about the source of surprise but aims at understanding the possible implications of the surprising (discourse) event. This shows that the surprising element has been integrated and is now part of the common ground: the speaker can now "make inferences about the function, identity, and nature of the precipitating event" (Stein and Hernandez 2007, p. 302). Consequently, what is at stake is no longer the identification of the source of surprise but the possible aftermath of the surprising event. Inferential questions thus constitute less immediate surprise reactions, which explains why they may contain more complex verb forms, explicit syntactic links with the previous utterance (such as the adverb *so*) and cognitive verbs, as in (9), where the tentative inference reflects the speaker's fear of a dreadful conclusion:

> (9) Turgidson: **Ahh, am I to <u>understand</u> the Russian Ambassador is to be admitted entrance to the War Room?**
> Muffley: That is correct. He is here on my orders.

As (9) shows, inferential questions also tend to have a longer MUL than non-inferential ones, as if the speaker had had enough time to integrate surprise and utter an articulate response to it. These questions also tend to express surprise associated with other emotions (such as disappointment, fear or anger).

6. Conclusion

The aim of this study was to demonstrate the propensity of interrogatives to express surprise (possibly associated with emotions such as fear or disappointment). We have shown that surprise conveyed by questions mainly arises in reaction to a surprising discourse entity. These questions are generally content questions, which are known to be the least frequent questions in standard communication in English. This is an indicator of the socially disturbing function of surprise in conversational interaction.

On the basis of an epistemically- and dialogically-based typology of questions, we have revealed the correlation between reactions of surprise and the nature of questions. Proposing a refinement of Littell et al.'s (2010) typology, we highlight a cline in the cognitive integration of novelty as reflected by clarification requests, ordinary questions, and inferential questions. Clarification requests, which have a non-canonical form and are metalinguistic, can be assumed to reflect a failure in the cognitive integration of a surprising discourse entity. Ordinary questions, which have a non-canonical interrogative form and bear on the source of surprise, are shown to constitute an initial cognitive stage in the integration of surprise, which may be induced either by a discourse entity or by new environmental information. Inferential ordinary questions involve a more complex cognitive operation. Taking the surprising element as part of the common ground, they aim at clarifying the implications of the source of surprise and generally have the form of declarative questions. They also differ from ordinary questions in that they can express other emotions (fear, disappointment) associated with surprise. The variety of forms of interrogatives can then be associated with different types of (speaker-addressee) interactions, reflecting various ways of integrating new information into the common ground. Besides, the overall frequency of interrogative structures in surprise contexts (as opposed to imperative, exclamative or declarative structures) may indicate that surprise is more epistemic than other emotions, in other words the fact that surprise tends to be expressed by interrogatives may be related to its epistemic, or cognitive, status, which sets surprise apart from other emotions. Our findings thus confirm the conclusions of recent works on the lexicon of surprise (see Soriano et al. 2017; Celle et al. 2017). They also show that the expression of surprise is not necessarily mapped to the linguistic expression of mirativity. Only surprise questions induced by new environmental information, i.e. some ordinary questions, can be taken to serve a mirative function, although they are not encoded as such in English. These are not as frequent as surprise questions induced by linguistic information. Surprise questions induced by linguistic information, i.e. clarification requests, inferential questions and some ordinary questions, which are the overwhelming majority of surprise-induced questions, are not mirative. They correspond to stance follows taken in reaction to a discourse content from the addressee – which explains why they may be associated with other emotions such as disappointment or fear. These findings point to the crucial role of surprise as a question trigger in dialogue. The boundary between the mirative and non-mirative functions of ordinary questions based on the distinction between new environmental information and new linguistic information needs to be investigated further in future research.

Acknowledgments

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Looking at 'unexpectedness'

A corpus-based cognitive analysis of *surprise* & *wonder*

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The nouns *surprise* and *wonder* have often been included in the subclass of potentially polysemous psych nouns, which can denote a psychological state and have a derived source reading. Our corpus-based analysis leads us to conclude that these nouns tend to refer to sources of surprise, and as such could rather be termed "source nouns" instead. First, we show that a metonymic link can be established between the primary source sense and the derived state sense of the nouns. We argue that this reversed link can be re-analysed as involving a synecdoche. We then look at the discourse functions of these nouns, notably at their role as "shell nouns", which confirms our analysis of these nouns as characterizing sources of surprise.

Keywords: prototype semantics, shell nouns, corpus, surprise, psych nouns

Surprise (N) has been analysed as a stative psychological noun, related to the psych verb *surprise* (V). In their lexical semantic study of psychological nouns in French, Barque, Fabregas & Marin (2012) argue that a series of such nouns can be used to refer to a psychological state (e.g. *The fence is high and the walls are thick, but to the* **surprise** *of many, they opened the gates*), as well as to the stimulus or the source of that psychological state (e.g. *They've discovered a* **surprise** *near the south pole – a river running under the ice*).[1] In the case of *surprise* (N), the noun used in its source sense is expected to be countable (*a surprise*), while the noun used in its state sense is expected to be uncountable (*Ø surprise*). They also postulate a metonymic link between the two senses, in which the state sense is primary, and the source sense is a metonymic extension.

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1. In this chapter, we choose to refer to the *source* and not the *stimulus*, as discussed in Plantin (2011) and Celle and Lansari (2014). The term *source* notably implies a link to the expectations of the experiencer, contrary to the term *stimulus*, which is more restricted to a mechanical and systematic reaction.

In this corpus-based cognitive analysis of a narrowly defined semantic field of unexpectedness,[2] we propose a different analysis of *surprise* (N) and *wonder* (N), which relies on issues of frequency, organisation of the semantic networks, as well as pragmatic functions. We argue that *surprise* (N) and *wonder* (N) cannot be identified as psychological nouns so much as what could be termed "source nouns". This is first shown in a revisiting of their semantic network, which suggests that while there is a metonymic link between state and source, it is actually their source sense that must be identified as primary. The source noun argument is further developed with the analysis of the uses of *surprise* and *wonder* in discourse – their uses as "shell nouns". These nouns are often used to characterize objects of discourse and are not experiencer-oriented, as would have been the case if they had been prototypical psych nouns. This chapter thereby shows that working at the interface between semantics and pragmatics is essential to an in-depth analysis of the nouns under scrutiny.

After describing our theoretical background, our corpus data and our methods for their analysis, we move on to a detailed study of the semantic network of *surprise* and *wonder*, in order to show that the metonymic link between the two senses of the nouns must be revisited on the basis of the data at hand. Focusing on the discourse functions of the two nouns, we then show that *surprise* and *wonder* can act as "shell nouns" characterizing objects of discourse, notably in connexion with recurring word patterns in the data.

1. Corpus & background

1.1 Theoretical framework

We propose a corpus-based cognitive approach to the issue at stake. As detailed in the rest of the chapter, we rely on elements from the cognitive tradition, both at the level of semantics (Section 2.2 below) and at the level of discourse (Section 3 below): one of our aims is to show that the study of the semantic field of unexpectedness requires a combination of compatible perspectives on the data, as a more traditional semantic approach runs the risk of missing the singularity of the nouns under scrutiny. Our analysis of the semantic networks of *surprise* and *wonder* thus involves a discussion of conceptual metonymy and its relevance in the recurrent patterns of usage of these nouns under scrutiny. This is complemented at the level

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2.   For a more in-depth look at the concept of unexpectedness, see Celle and Lansari (eds) (2015).

of discourse by Schmid's definition of "shell nouns" (2000). Our approach also aims at fulfilling the four characteristics of corpus linguistics identified by Biber et al. (1998, 4). (i) It is empirical – it focuses on "the actual patterns of use in natural texts"; (ii) it focuses on the analysis of a corpus, defined as "a large and principled collection of natural texts"; (iii) it is at least partly automated; (iv) it combines quantitative and qualitative methods.

1.2 Corpus

Our corpus data relies on the spoken section of the Corpus of Contemporary American English (COCA) (Davies 2008). The COCA is the largest free collection of American English data, as it comprises 450 million words divided up into different sections (spoken, fiction, magazine, newspaper, academic), with about 20 million words per year from 1990 to 2015. Most occurrences analysed in this paper are taken from US TV and radio shows circa 2010–2012. They are all recent examples of actual usage, as opposed to the examples created by Barque et al. (2012) for their study, for instance. Concordance lines and collocation lists were drawn using the BYU interface, which enables one to search for words, phrases, lemma, parts of speech, or a combination of these elements. Each occurrence of a given item can then be analysed in extended context (+/− 80 words before and after).[3] Collocations are calculated using Mutual Information, which is the only statistical test available on the interface. Taking into account the tendency of MI to give high scores to rare events and to hapax legomena (Manning and Schütze 1999, 178–80), a frequency threshold of 10 was decided upon.[4] Additional statistical testing for frequency differences was performed using log likelihood (henceforth LL). In those cases, cut-off for LL was set at 15.13, which corresponds to a p-value inferior to 1e-4 (For a detailed discussion of this cut-off choice, see L'Hôte 2014).

This study focuses on *surprise* (N) and *wonder* (N) as the main noun representatives of the semantic field of unexpectedness, and uses *amazement* and *astonishment* as controls for the findings.[5] These four nouns were selected with a

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3. For this study, occurrences of the selected nouns and their extended contexts were downloaded into an Excel file, which served as a basis for our coding procedure.

4. Church and Hanks (1990) set a frequency cut-off of 5 for their use of MI, but more recent work such as Weeber et al. (2000) suggests that 5 is still insufficient as a frequency threshold.

5. Contrary to *surprise* and *wonder*, *astonishment* and *amazement* can only be used to refer to a psychological state, not to the source of that state.

reliance on the USAS[6] semantic annotation system, notably used by WMatrix, an online software for corpus analysis and corpus annotation (Rayson 2009). The initial semantic tagset for USAS was loosely based on the Longman Lexicon of Contemporary English (McArthur 1981). It was then revised and classified according to 21 main semantic concepts, previously known as "discourse fields" (Archer, Wilson, and Rayson 2002, 16), which branch out into 232 category labels[7] (idem, 2). The sub-concept X2.6- (Unexpected) was selected as the most relevant to the issue under scrutiny (see Table 1 below). It serves as the basis for the identification of the 4 nouns included in our analyses, which were deemed the most relevant inside this concept: *surprise, wonder, amazement, astonishment.*

Table 1. Detail of USAS semantic concept X2.6- (Unexpected) in the USAS tagset

Amazed/**amazement**/amazes/amazing/amazingly/amaze
Astonish/astonished/astonishing/astonishingly/**astonishment**
Astound/astounded/astounding/astoundingly
Bonus/bonuses
Capricious
Dead-end
Happening
Hopeless/hopelessly/hopelessness
Jolts
Mercurial
Mind-blowing
Miracle/miraculous
Off-guard
Open-eyed
Short-sighted/short-sightedness
Surprise/surprised/surprising/surprisingly
Unannounced
Unawares
Unexpected/unexpectedly
Unforeseen
Unpredictability/unpredictable
Unprepared
Wonder

As our study focuses on the spoken section of the COCA (henceforth COCA$_{spoken}$), the number of occurrences available for each noun differs (see Table 2 and Figure 1

6.   UCREL Semantic Analysis System.

7.   See http://ucrel.lancs.ac.uk/usas/semtags.txt for the entire tagset.

below). *Amazement* and *astonishment* may be more typical of written American English overall, as their frequency in COCA$_{spoken}$ is inferior to 100 counts (97 for *amazement* and 47 for *astonishment*).[8] In order to preserve a relative balance between the four nouns under scrutiny, we chose to limit our analyses to the first 200 occurrences of *surprise* and *wonder* for the time being.

Table 2. Number of occurrences for *surprise, wonder, amazement* and *astonishment* in COCA and COCA$_{spoken}$

Noun	COCA (n)	COCA$_{spoken}$(n)
Surprise	22609	4508
Wonder	11024	1275
Amazement	1901	97
Astonishment	1370	47
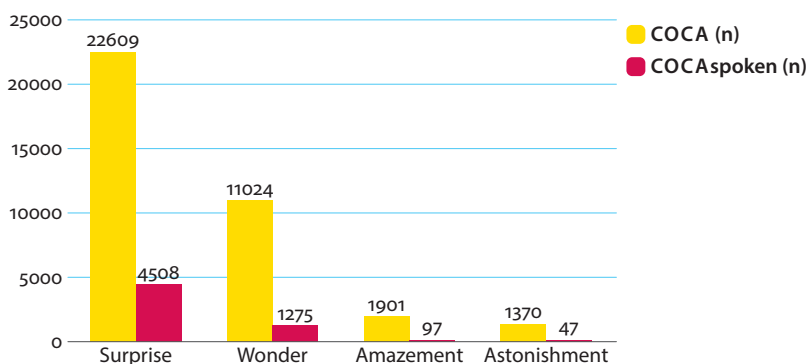
Figure 1. Frequencies for *surprise*, *wonder*, *amazement* and *astonishment* in COCA and COCA$_{spoken}$

As evidenced in Tables 3a and b below, which provide log-likelihood scores (henceforth LL) for frequency comparisons between the four nouns under scrutiny, both in COCA and in COCA$_{spoken}$ *wonder*, *amazement* and *astonishment* are identified as significantly less frequent than *surprise* in COCA$_{spoken}$, which may confirm that the noun is at the core of the semantic concept of unexpectedness, at least as defined by the USAS tagset.

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8.   The initial frequencies for *amazement* and *astonishment* were respectively 101 and 48, but 5 entries had to be deleted in the concordance table, due to repetitions of the same passage twice, as well as to coding errors in the original dataset.

Table 3a. Frequency comparisons for *surprise, wonder, amazement* and *astonishment* in COCA

Noun	COCA		
	LL *surprise* vs. N	LL *wonder* vs. N	LL *amazement* vs. N
Surprise	–	–	–
Wonder	4073.41 (+)	–	–
Amazement	20606.91 (+)	7122.66 (+)	–
Astonishment	22738.87 (+)	8564.50 (+)	86.58 (+)

Table 3b. Frequency comparisons for *surprise, wonder, amazement* and *astonishment* in COCA$_{spoken}$

Noun	COCA		
	LL *surprise* vs. N	LL *wonder* vs. N	LL *amazement* vs. N
Surprise	–	–	–
Wonder	1915.79 (+)	–	–
Amazement	5443.07 (+)	1201.05(+)	–
Astonishment	5791.12 (+)	1426.72 (+)	17.73 (+)

These frequency differences are also due to different uses of the nouns. By definition, *wonder* and *surprise* can refer both to a state and to the source of that state. The Oxford American Dictionary (2009) defines *wonder* as "a feeling of surprise mingled with admiration, caused by something beautiful, unexpected, unfamiliar, or inexplicable", or as "a surprising event or situation". As for *surprise*, it can refer either to "an unexpected or astonishing event, fact" or to "a feeling of mild astonishment or shock caused by something unexpected". These definitions suggest that while *surprise* tends to be used to frame an emotion in a neutral way, *wonder* is used in more positive frames. The other two nouns under scrutiny – *amazement* ("a feeling of great surprise or wonder") and *astonishment* ("great surprise") clearly belong to the same semantic concept, but they are only referenced as denoting a state of surprise, not the cause of that state. This is why they serve controls in this study.

1.3   Coding

1.3.1   *Four criteria*
The occurrences of the four nouns under scrutiny were coded by the two researchers independently: a joint analysis was then conducted, focusing more specifically on those occurrences for which coding agreement had not been reached. Our coding procedure was engineered on the basis of an analysis of the most significant collocates for *surprise* and *wonder* in COCA$_{spoken}$(see Table 4 below).

Table 4. 20 top collocates for *surprise* and *wonder* in COCA~spoken~ (sorted by frequency)

Surprise	MI	Wonder	MI
big	3.64	no	4.00
surprise	6.05	Stevie	11.83
caught	4.87	woman	3.87
biggest	4.43	makes	4.63
October	5.39	drug	4.34
element	6.41	boy	3.92
visit	4.58	wonder	4.30
witness	4.63	one-hit	12.65
huge	3.21	boys	4.00
guest	3.88	bread	6.28
announcement	5.14	natural	3.67
complete	4.02	filled	4.16
total	3.60	wonders	6.38
pleasant	6.50	eighth	5.93
ending	4.60	comic	5.35
appearance	4.41	Taylor	3.71
shock	3.96	Fred	3.27
somewhat	3.12	wheel	5.15
inspections	5.31	magic	3.92
winner	3.14	beauty	3.86

Based on these two collocation lists, *surprise* and *wonder* appear to be used more frequently to refer to a source of surprise than to its corresponding emotional state, which would then go against the prototypical definitions of the two nouns. Additionally, predicative uses of the two nouns appear to be prominent, as evidenced by a number of nouns suggesting N1-N2 structures. Finally, the two nouns seem to occur frequently in recognizable patterns, which may vary in their degree of abstraction (N1-N2, *the element of surprise, surprise surprise, no wonder*, etc.) but are worth focusing on as far as coding is concerned. The data at hand were thus coded for a series of elements: (i) whether the noun had a referential or an predicative function, (ii) whether the nouns referred to a state of surprise or to the source of surprise, (iii) whether the experiencer and the source of the surprise were mentioned in the immediate context of the noun under scrutiny, (iv) whether the noun occurred within a recurring linguistic pattern. (i) and (iv) require further discussion. We start with the issue of referential vs. predicative function.

1.3.2   *Referential vs. predicative*

As remarked in Francis (1999), noun phrases prototypically have a referential function, which means that they prototypically identify a given participant or thing in an action or a situation.[9] However, they can also be used in an predicative function, as in:

(1)   *I was also really happy for another, at least it seemed like a **surprise*** (COCA$_{spoken}$).

In this case, the noun *surprise* is not used to identify, but to say something about the element that satisfies the description: the speaker describes as a surprise the event that was previously identified in other terms. Occurrences of *surprise, wonder, astonishment* and *amazement* in first position in a N_1-N_2 construction (*surprise guest, wonder woman*) were also coded as having an predicative function. This same coding decision was made for verbless sentences in the data, as in (2) and (3) below:

(2)   *Travel + Leisure has ranked the rudest cities in America. Number five, according to them, not us, is Boston, number four… […] And number one, the rudest city in America is New York.*
*GIFFORD: Big **surprise**.*
KOTB: Come on! I disagree (COCA$_{spoken}$).

(3)   *DONALD KENNEDY, President, Stanford University: Sure, we're admitting there's a problem. We're getting adverse publicity*
*ANNOUNCER No **wonder**. Federal grants helped them pay for things like these: liquor, parties, a $1,600 shower curtain, a special reception for the president's new bride* (COCA$_{spoken}$).

We argue that a verbless sentence is "a syntactic structure that includes modality (assertion, exclamation, interrogation or injunction) and a verbless predicate (adjectival, nominal, pronominal, adverbial or prepositional) – in English as in French" (Lefeuvre 1999).[10] According to Lefeuvre, the predicative character of the noun phrases occurring as verbless sentences is often marked by the presence of intensifying elements such as adjectives (*big surprise* in (2)) or exclamative structures (*what a surprise*, for instance). We contend that this argument can be extended to other attribution markers such as negation (*no wonder* in (3)), or aspectual markers (e.g. *still*), as is the case in our data.

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9.   For further discussion of referentiality, see also Charolles, M. (2002).

10.   Our translation from the French: "une structure syntaxique qui comporte une modalité (l'assertion, l'exclamation, l'interrogation ou l'injonction) et un prédicat verbless (adjectival, substantival, pronominal, adverbial ou prépositionnel)".

As far as coding is concerned, one may wonder whether predicative uses of nouns should be included in the data: indeed, if a given noun phrase is not used to identify an element in the situation or the action being talked about, the fact of associating it with one specific meaning of the head noun (state or source) may not be deemed legitimate. Such an argument was taken into account for other coding projects focusing on nouns and nouns phrases, such as Nomage (Balvet et al. 2011). For this study of the semantic concept of unexpectedness, we decided to go against this argument and include predicative uses of the four nouns under scrutiny in our coding process, all the while noting that these uses are significantly different from prototypical referential uses of the nouns. Given that our main goal was to give a detailed description of the semantic concept of unexpectedness, based on the analysis of four of its most prominent nouns, and given that predicative uses of these nouns are quite prominent in the data as far as *surprise* and *wonder* are concerned (see Section 2.1.3 below), the exclusion of all predicative occurrences would have led to a very skewed description of the data, if not to the omission of an essential characteristic of *surprise* and *wonder* in context.

1.3.3   *Patterns*

Given the research questions set in this chapter, the recurring structures identified in conjunction with the four nouns under scrutiny are referred to and analysed not as *constructions*, but as *patterns*. According to Goldberg (1996, 68), a construction is "a pairing of form with meaning/use such that some aspect of the form or some aspect of the meaning/use is not strictly predictable from the component parts or from other constructions already established to exist in the language". Constructions can thus exist beyond specific lexical items, as does for instance the dative construction. Constructions also crucially involve the principle of non-compositionality, according to which the meaning of the construction must be more than the meaning of its component parts. Constructions have been a very productive concept for corpus linguistics and cognitive linguistics, notably with the introduction of collostructions (Stefanowitsch and Gries 2003; Gries and Stefanowitsch 2004), whose aim is to identify those lexical items that form collocations within a given construction. However, these elements do not correspond to the goal of the present study, which does not focus on a given structure, but aims at identifying those patterns within which the nouns *surprise*, *wonder*, *amazement* and *astonishment* occur regularly. This is notably why the concept of patterns was deemed more relevant to our research questions. Patterns can be defined as "all words and structures that are regularly associated with a word and contribute to its meaning" (Hunston and Francis 2000, 37), and as such they allow us to focus on the right type of word-structure connexion, without necessarily relying on non-compositionality as a pre-requisite.

2.   Overview of results & resulting semantic analysis

2.1   Results of coding

Our results suggest a continuum between *wonder* and *astonishment* based on frequency as well as on the various criteria defined for our coding process (source/state; mention of experiencer and source; predicative/referential).

2.1.1   *Source/state*

As far as the two different senses of the nouns under scrutiny are concerned, there is a clear distinction between *surprise* and *wonder* on the one hand, and *amazement* and *astonishment* on the other hand (see Table 5 and Figure 2 below).

Table 5.   Source vs. state senses for *surprise, wonder, amazement* and *astonishment*

Noun	$COCA_{spoken}(n)$	Source	State	$LL_{So/St}$
Wonder	200	180	20	147.23 +
Surprise	200	165	35	91.77 +
Amazement	97	2	95	114.99 −
Astonishment	47	1	46	55.48 −
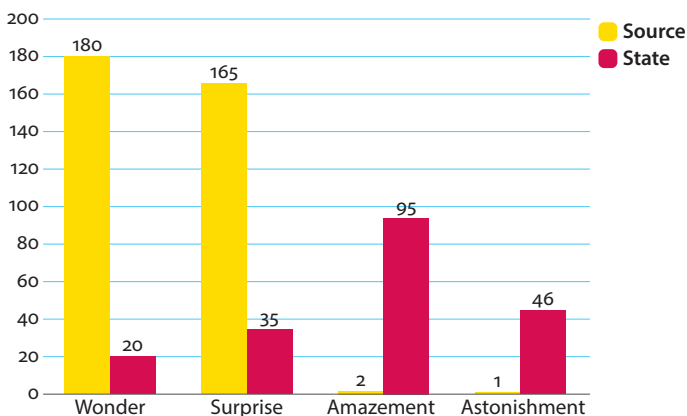
Figure 2.   Source vs. state senses for *surprise, wonder, amazement* and *astonishment*

Both *surprise* and *wonder* refer significantly more frequently to the source of surprise than to the emotional state of surprise ($LL_{surprise} = 91.77, LL_{wonder} = 147.23, p < 1e{-}4$; see also Figure 2 above). *Amazement* and *astonishment*, on the other hand, exhibit the opposite pattern ($LL_{amazement} = 114.99, LL_{astonishment} = 55.48, p < 1e{-}4$) with a

state sense that is almost exclusively attested, except for 3 examples in total, such as in (4):

(4) CURRY: *But may I also say that, you know, there are many who think that this book is amazing. John Updike…*
Mr-GREER: *Uh-huh.*
CURRY: *… wrote in the New Yorker that "It's a resplendently poetic and loftily soaring tale." You've got – you've got a review in Esquire saying this devastat-ingly – "devastating, heartbreaking novel written in the lush velvet-tongued voice of the damned is **an astonishment**." I mean, the list goes on* (COCA$_{spoken}$).

In (4), *astonishment* is used as a count noun, and has an predicative function: it dis-tinctly qualifies the novel debated in the show (*this book is amazing*). *Astonishment* is only used twice as a count noun in the whole COCA: one in COCA$_{spoken}$, and once in COCA$_{magazine}$. This goes to show that such examples cannot be interpreted as indicators of a new trend in the use of the two nouns under scrutiny, but given the contexts in which they occur, one may suggest that the patterns identified for more frequent nouns in the semantic field such as *wonder* and *surprise* have influenced such rare events in the case of *amazement* and *astonishment*.

2.1.2 *Mention of experiencer and source in the immediate context of occurrence*

The distinction between *surprise/wonder* and *amazement/astonishment* is con-firmed by the number of mentions of the experiencer in the immediate context of occurrence of the nouns, as illustrated in Figure 3 below.
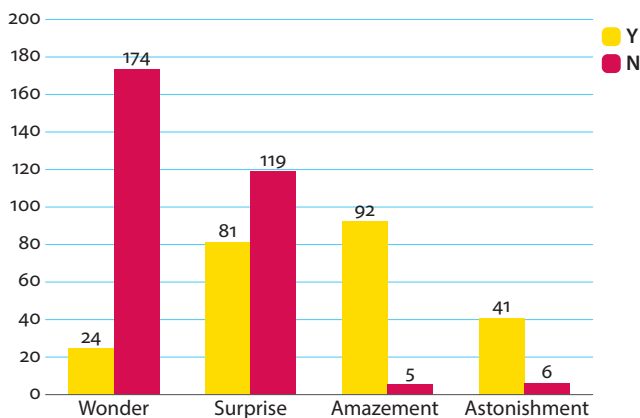
Figure 3. Mention of experiencer for *surprise, wonder, amazement* and *astonishment*

The absence of a clear mention of the experiencer in the case of *surprise* and *wonder* is first connected to ambiguous occurrences of the two nouns, as in (5):

(5)   *Well, Jessica was taken hostage last October 25th. From the moment she was taken hostage, planning would have begun for a rescue operation. […] While operators would have been rehearsing and practicing various contingencies, so that when the time came for them go they'd be ready.*
CHARLIE-ROSE-: *And the thing you worry most about is* **surprise.**
ERIC-GREITENS: *You're absolute – you're worried about* **surprise.** *You're wor-ried about speed and you're also worried about violence of action, three of the key principles for any successful operation* (COCA$_{spoken}$).

In this example, determining whether the two occurrences of *surprise* refer to states or to sources is problematic. The first occurrence of the noun is described as a *thing*, which suggests an event (source) frame rather than a state frame. However, the repetition of the same pattern (*you're worried about N*) for the noun phrases *speed* and *violence of action*, which refer to abstract concepts and may be used as an argument in favour of a state interpretation for *surprise*. Given that *surprise* is used in its uncountable form in both occurrences, a state interpretation was given to these two examples.[11] However, even once the state/source paradigm has been decided upon, identifying the experiencer of that state remains problematic. Based on the available context for this example, it is impossible to determine with absolute certainty whether the speaker means that the *operators* are *worried about surprise* (as suggested by the overall negative prosody of be worried about (Sinclair 1991)), or that the operators worry about surprising the people responsible for the hostage situation.

Identifying a specific experiencer is also made difficult in the case of predicative occurrences of the nouns, as in (6):

(6)   *And the leader of the free world pops in for* **a surprise lunch**, *but then sticks the restaurant with his bill* (COCA$_{spoken}$).

In this example as in a significant proportion of the predicative occurrences in our data, there is no mention of a specific experiencer, and surprise is presented as

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11. As discussed later in this chapter in Section 2.2, etymologically, *surprise* referred to the action of surprising. However, a usage-based analysis of the noun shows that this sense is no longer available to contemporary speakers. This etymological sense is not listed in dictionaries any more. Additionally, the prominence of patterns like *catch by surprise* or *take by surprise* would be unexpected as these phrases could then be considered pleonastic. Finally a prototypical surprise scenario does not necessarily involve an action, as the source of surprise can be a (first-order) object, a piece of information, or an event (as discussed in Section 3).

generalizable to all agents present at the scene, as well as to the whole audience of the show. This also highlights the relevance of extralinguistic context in our coding process: as it is the President of the United States who is having lunch, surprise is generalizable. This is not so in the case of a surprise quiz in a given linguistics class at university, in which case only the students concerned by the quiz may be surprised.

Such ambiguities are less striking as far as the identification of the source of surprise is concerned, as the four nouns under scrutiny attest to a similar pattern (see Figure 4 below).

The identification of the source of surprise follows different patterns: (a) inside the noun phrase: its referent can be identified thanks to the description in the noun phrase it belongs to, as in (7) (CST (ConStrucTion) in Figure 4 below); (b) cataphoric: the source is made more specific in the following discourse (e.g. in the next sentence, as in (8)) (CL (CLause) in Figure 4 below); (c) exophoric: the specific referent of the noun phrase is made explicit in the extralinguistic context (cf. *see* in (9)) (EXO (EXOphoric) in Figure 4 below).

(7) *The idea was to do a surprise <u>flash mob on Caine's arcade</u>* (COCA$_{spoken}$).

(8) *A blog on The Washington Post website looks at a surprise candidate in the Virginia U.S. Senate race. <u>A cat named Hank has a website, a Facebook page, and he's got Twitter too, even his own campaign ad</u>* (COCA$_{spoken}$).

(9) *And you may want to have an extra doughnut in the green room because we do have a little surprise coming up. A surprise appearance at the end of the program that you are only going to see on MEET THE PRESS, particularly as a sports fan. But up next, we're going to talk more politics* (COCA$_{spoken}$).
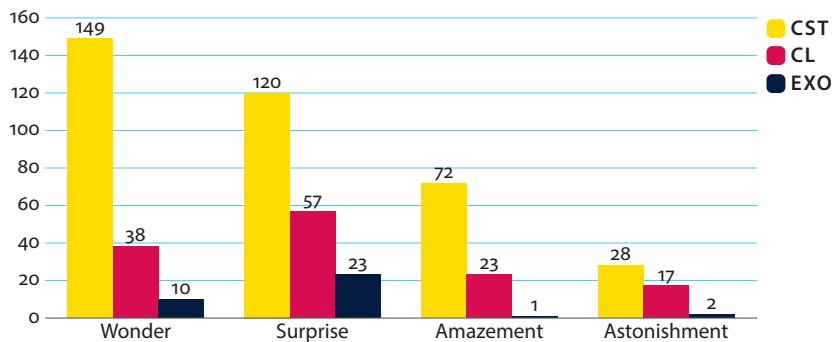
Figure 4. Mention and location of source for *surprise, wonder, amazement* and *astonishment*

2.1.3   *Referential/predicative functions*

As in the previous sections, a distinction can be established between *surprise* and *wonder* on the one hand, and *amazement* and *astonishment* on the other hand (see Table 6 and Figure 5 below). In the case of *wonder*, predicative uses are significantly more frequent than referential uses ($LL = 79.90, p < 1e-4$), while referential uses are significantly more frequent for *amazement* and *astonishment* ($LL_{amazement} = 47.60$, $LL_{astonishment} = 19.25, p < 1e-4$). As illustrated in Figure 5, *surprise* follows a similar pattern to *wonder*, but the difference in frequency between predicative and referential functions does not lead to a significant LL score ($LL = 10.68, p > 1e-4$). Given our current results, we hypothesize that this score would be significant with a larger number of coded occurrences in COCA$_{spoken}$, and we plan to pursue this hypothesis in the next step of the study.

Table 6. Referential vs. predicative functions for *surprise, wonder, amazement* and *astonishment*

Noun	COCA$_{spoken}$(n)	Predicative	Referential	LL$_{A/R}$
Wonder	200	161	39	79.90 +
Surprise	200	123	77	10.68 +
Amazement	97	16	81	47.60 −
Astonishment	47	9	38	19.25 −
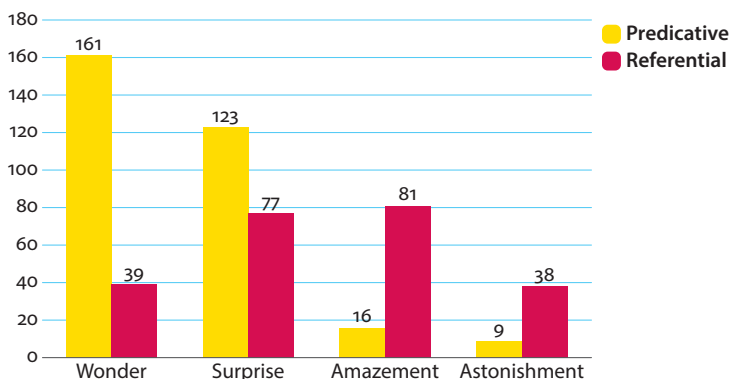
Figure 5. Referential vs. predicative functions for *surprise, wonder, amazement* and *astonishment*

Similarities between *wonder* and *surprise* are not restricted to patterns of frequency. Both *wonder* and *surprise* tend to occur in N1-N2 structures as in (10), in verbless structures as in (11), or in extraposed structures[12] (with or without negation) as in (12) and (13).

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12. *To be no wonder* was already a recurrent pattern in Old English ("Online Etymology Dictionary" 2016).

(10) *Look, Hillary Clinton is not just any ordinary candidate. She is like **Wonder Woman*** (COCA$_{spoken}$).

(11) *No **wonder** McCain just said the fundamentals of our economy are strong* (COCA$_{spoken}$).

(12) *It would have been no **wonder** for such a thing to happen in this area* (COCA$_{spoken}$).

(13) *It's a **wonder** he remembers that, as our countdown continues* (COCA$_{spoken}$).

These elements are directly related to the patterns identified as typical of the nouns under scrutiny.

2.1.4 *Patterns*

Our results indicate a series of patterns associated with state interpretations of the nouns under scrutiny, and a distinct series of patterns associated with source patterns of the nouns, more specifically of *surprise* and *wonder* (see Table 7a and Table 7b below).

Table 7a. Recurring state patterns for *surprise, wonder, astonishment* and *amazement*

State
Prep + Det + X
(*in Ø wonder/amazement/astonishment, to my surprise/amazement/astonishment*)
(*catch/take*) *by surprise*
NP + of + X
(*a sense of wonder, the element of surprise, a day of amazement, a gasp of astonishment*)

Table 7b. Recurring source patterns for *surprise, wonder, astonishment* and *amazement*

Source
X + N
(*surprise announcement, wonder woman**)
N + X
(*boy wonder, girl wonder*)
X of N (*the wonder of childbirth, the wonder of the world*)
Extraposed structures
(*it is a/no surprise/wonder that…*)
Verbless structures
((*No) surprise/ No wonder*)**
Come as a(/n) surprise

* See Section 3.2.2 in the present chapter for a more detailed analysis of *surprise* and *wonder* in extraposed structures.

** The NP *wonder woman* dates back to 1917 and meant originally "a woman who seems wonderful or has wonderful qualities". The superheroine appeared for the first time in DC Comics in 1941, and is not responsible for the coining of the phrase ("Online Etymology Dictionary" 2016).

The positive semantic prosody of *wonder* makes it an ideal candidate for the creation of proper nouns and of brands (as in (14)).

(14) *Well, Larry, I mean, it's his Frenchyness. You know? I mean, he loved all them soft cheeses, and he turned up his nose at **Wonder Bread** and Taco Bell* (COCA$_{spoken}$).

Contrary to *surprise*, *wonder* can also appear in head position in N1N2 structures, with the phrase *boy wonder* as in (15). The phrase is traditionally analysed as dating back to the comic strip Batman, and was originally used to refer to the superhero's sidekick Robin. Our data also suggests an evolution of the phrase to include the noun *girl* in N1 position, as in (16).

(15) *On his knees on the turf, helmet off, bloodied and exhausted, the erstwhile **boy wonder** out of East Texas was at the end of a brilliant career* (COCA$_{spoken}$).

(16) *LINDSEY: It was such a blur, I can't remember much, but that there'd been an accident and my mom didn't make it. I think he said that she had fallen off of a cliff. MANKIEWICZ: (Voiceover) Their dad later called them in tears. (Photo-of-Tom) LINDSEY: (Audiotape) Hello. Mr-TOM-RICHARDSON: (Audiotape) Hi, **girl wonder**. LINDSEY: (Audiotape) Hi, Daddy* (COCA$_{spoken}$).

Cross-referencing our coded data with the entire data available in the spoken section of the COCA, we notably find that some of the state patterns identified occur almost exclusively with the nouns under scrutiny. It is notably the case for *the element of surprise* (as in (17)) and *catch/take by surprise* (as in (18)).

(17) *Two army choppers were called in and carried the SEAL Team and the hostages to Djibouti. MIKE-LYONS-1CBS-N: I'm sure they had it well planned, well timed, and obviously they used **the element of surprise** to get these captives out* (COCA$_{spoken}$).

(18) *GIGOT: So, Kim, explain to me why they seem to have been **caught by surprise**. Because it is no secret. Republicans have been saying since well before the before the vote on the Ryan plan, that they were going to use this in the election* (COCA$_{spoken}$).

In the spoken section of the COCA, *surprise* is the singular noun identified as the most significant collocate of *element of* (MI = 7.26, N = 70).[13] Similarly, *surprise* is the only singular noun identified as a significant collocate of *[catch] by* (MI = 8.82, N = 34), and the third most significant collocate of *[take] by* (MI = 6.80, N = 51).[14]

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13. The other four significant collocates (N sg) for *element of* in the spoken section of the COCA are: *fear, truth, party* and *sort*.

14. Other significant collocates (N sg) for *[take] by* in the spoken section of the COCA are: *ambulance, photographer, photograph, action, poll, decision, position, picture, video, force, camera, administration, government, security,* and president.

2.2 A new metonymic analysis

According to Barcelona (2003, 4), metonymy is "a conceptual projection whereby one experiential domain (the target) is partially understood in terms of another experiential domain (the source) included in the same common experiential domain".[15] Based on the understanding of metonymy provided by cognitive linguistics, we argue that contrary to Barque et al. (2012), who postulate a metonymic link between the state sense and the source sense of surprise, it is actually the source sense of the word that is primary, and its state sense that is the metonymic extension of the latter. We show that a similar conclusion can be reached for *wonder*, based on similar arguments. This reanalysis of the semantic networks of *surprise* and *wonder* takes us further, as we suggest that occurrences of the nouns that have so far been analysed as referring strictly to the source of the emotion may actually refer to the entire scenario of surprise/wonder.

Prototype semantics posits that for any semantic network, there is a prototypical sense, from which extensions can then be derived. "A prototype is a typical instance of a category, and other elements are assimilated to the category on the basis of their perceived resemblance to the prototype; there are degrees of membership based on degrees of similarity" (Langacker 1987, 371). While Langacker only mentions metaphorical extensions, more recent work on the issue within the cognitive semantics framework has also highlighted the relevance of metonymic extensions (Seto 2003; Blank 2003; Radden and Kövecses 1999).[16] Our goal is to revisit the organisation of the network, while keeping as a postulate that there is a metonymic connexion between the source and the state senses of *surprise* and *wonder*. Given that we focus on the direction of this metonymic connexion, a series of arguments apply in favour of identifying the source senses of the two nouns as prototypes (TARGET) and their state senses as their metonymic extensions (SOURCE): (i) etymology, (ii) prototypical cognitive relations, (iii) mention of the experiencer in discourse, (iv) referential function of metonymies, (v) recurring patterns. The following section details these five arguments, starting with etymology.

Etymologically speaking, the source sense is attested before the state sense for both *surprise* and *wonder*. In Old English, *wundor* meant a "marvelous thing, miracle, object of astonishment". The noun started to be used to refer to the state induced by the object of astonishment in Middle English (late 13th century) (Online Etymology Dictionary). Similarly, *surprise* was used in the late 14th century to refer to an "unexpected attack or capture". In 1590 its source sense broadens to mean "something

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15. Metaphor on the other hand involves two experiential domains that are unconnected a priori.

16. Similar claims have been made in different frameworks in lexical semantics (see notably Kleiber 1999).

unexpected", while the state sense of the noun is attested from 1600 onwards, meaning a "feeling caused by something unexpected" (Hoad 1993). This first argument goes in the direction of our hypothesis, which posits that the source senses of the two nouns are the targets, and not the sources, of the metonymic networks under scrutiny.

In their proposal for a theory of metonymy, Radden and Kövecses (1999, 39) argue that the cognitive relation of cause-effect belongs to those that tend to produce metonymies. While in certain rarer cases the cause (source) may be metonymic of the effect (target), they show that the most common scenario involves the effect (target) being metonymic of the cause (source). Thus our hypothesis for *surprise* and *wonder* fits with their observation, as we argue that the effect of an object of astonishment (state sense) is indeed metonymic for that object (source sense). Such semantic networks for *surprise* and *wonder* would in fact be iconic of the scenario of surprise itself: an object of surprise/wonder occurs, which causes a state of surprise/wonder in an (un)identified experiencer.

As established in Section 2.1.2 above, the source of surprise is more easily identified in the extended context of each occurrence of the nouns than the experiencer of that surprise. Our contention is that these results confirm our metonymy hypothesis: the fact that the source of surprise is more easily identifiable in context can be explained by the fact that it is the element that is directly reflected in the prototypical senses of the nouns.

In his analysis of the role of mappings and domains in understanding metonymy, Ruiz de Mendoza Ibanez (2000, 114) argues that a metonymy is rarely used predicatively. In most cases, a metonymy is used referentially. Our data follows this pattern at least partly (see Table 8 below). In the case of *surprise*, only 2 of the 35 occurrences of the noun in its state sense are used predicatively, which amounts to 5.72% of the total number of state uses in our data. The proportion of these 2 occurrences amounts to only 1.62% of all predicative uses of the noun in the data. In the case of *wonder*, the pattern is less clear-cut, as 6 of the 20 occurrences of the noun in its state sense are used predicatively, which amounts to 30% of the total number of state uses in COCA$_{spoken}$. However, this amounts only to 3.72% of all predicative uses of the noun in the data, which confirms at least partly our hypothesis in the case of *wonder*. While these figures are too small for accurate statistical testing, we hypothesize that coding a larger sample of data would lead to a confirmation of the observed pattern for both nouns.

Table 8. State-predicative occurrences of *surprise* and *wonder* in COCA$_{spoken}$

	State (predicative)	State (total)	%	Predicative (total)	%
Surprise	2	35	5.72	123	1.62
Wonder	6	20	30	161	3.72

In his corpus study of the uses of the noun *eye*, Hilpert (2006, 145) shows that all its metonymic extensions occur in recurring linguistic patterns. While the same observation is not true in the case of *surprise* and *wonder*, our results have identified specific patterns for the state senses of both nouns (see Table 7a above), which comprise over 50% of their state uses in the data. (28 out of 35 occurrences for *surprise*, and 11 out of 20 occurrences for *wonder*). As in the case of the previous argument (predicative vs. predicative uses), these figures are too small for accurate statistical testing; we hypothesize that the identified tendency described here will be confirmed with coding of a larger sample of data for both nouns.

On the basis of these arguments (some of which will require coding of a larger sample of data for statistical confirmation of observed tendencies in the next step of our study), we thus propose that *surprise* and *wonder* do not function as prototypical state or psychological nouns, as it is the source senses of the words that are primary, and their state senses that are metonymic extensions of the latter. At this point two interpretations are available to us: (i) state and source are two of the elements comprised in a larger surprise/wonder "scenario" domain, and one element stands for the other, or (ii) the state element is included in a "source" domain and the metonymy is actually a synecdoche. In accordance with Ruiz de Mendoza Ibanez's argument (2000) that all metonymy can be understood as a synecdoche, we propose a representation of the semantic networks of *surprise* and *wonder* based on our second interpretation, but we take the argument further. We suggest that occurrences of the nouns that have so far been analysed as referring strictly to the source of the emotion may actually be interpreted to refer to the entire scenario of surprise/wonder instead.[17] As illustrated in Figure 6 below, this means that source and state are still understood as two elements comprised in a larger "scenario" domain (which also includes elements like the experiencer, their expectations and knowledge of the context, the person causing the surprise if there is an agent, etc). But in this new interpretation of the network, the metonymic link connects the state element (the part) and the "scenario" domain in full (the whole).

This interpretation of the metonymic networks of *surprise* and *wonder* allows for a combination of Ruiz de Mendoza Ibanez's argument on metonymy and synecdoche with a more convincing definition of the "whole" domain of surprise as a scenario. According to Barcelona, a conceptual domain includes "all the entrenched knowledge that a speaker has about an area of experience" (Barcelona 2003, 8); it is thus more coherent for our representation to define the "whole" of the synecdoche in terms of a full surprise/wonder scenario rather than of the source of surprise. Additionally, such an interpretation of the network may contribute to explaining

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17. Within the field of lexical semantics, Kleiber (1999) refers to a similar phenomenon as "integrated metonymy".
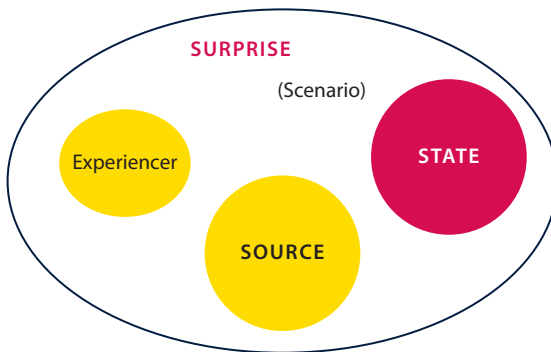
Figure 6. Representation of the semantic network of surprise

the ambiguities noted during our coding process, notably in the case of verbless sentences (see Section 2.1.3 above).

Our analysis of the patterns associated with *surprise* and *wonder* helps us to determine their prototypical functions as "source nouns": these nouns do not describe an experiencer's psychological state but rather tend to denote sources of a psychological state (as shown in Section 2.1.1 above). In the next section, the source noun argument is further developed by looking at their most frequent uses in discourse, notably their uses as "shell nouns", which sets them further apart from prototypical psych nouns.

3.   The discourse functions of *surprise* & *wonder*: Characterizing objects of discourse

Our corpus analysis of *surprise* and *wonder* suggests that they often characterize objects of discourse (whether situations, pieces of news, facts or objects), notably when used predicatively – and are not experiencer-oriented. We will now show that this characterizing function is shared by the "shell noun" uses and the predicative uses of *surprise* and *wonder.*

3.1   "Shell nouns" uses

Surprise and *wonder* can be argued to belong to the set of "shell nouns", i.e. abstract nouns used "as conceptual shells for complex, proposition-like pieces of information" (e.g. *fact* in *the fact that the rest of the world was against him*, or *advantage* in *the advantage is that there is a huge audience* – Schmid (2000)'s examples). This type of nouns has also been labelled "signalling nouns" (Flowerdew 2003), general nouns (Halliday and Hasan 1976), anaphoric nouns (Francis 1993), or carrier nouns (Ivanic 1991).

3.1.1 Surprise *and* wonder*: peripheral shell nouns?*

Shell nouns constitute a functional class: their role is to "supply propositions with conceptual shells which allow speakers to grab them and carry them along as they move on in discourse" (Schmid 2000, 13). This characterization is justified by the fact that shell nouns are used in structures that involve the identification of a propositional content as well as its characterization, as shell nouns characterize shell contents that have to be identified in context. For instance, in predicative sentences whose subject is anaphoric (*th- be* N pattern),[18] a stretch of preceding discourse is taken up by the anaphoric subject, and this conceptual object is then conceptualized as a cause for surprise, as in (19):

(19) *And our early reporting from Jon Karl, our congressional reporter, showed that Jeb Bush could have been at the top of Mitt Romney's list. That was a surprise to me* (COCA$_{spoken}$).

In identificational sentences (N-*be-cl* pattern) the shell noun has a cataphoric use: its content is introduced by the identificational copula, as in (20):

(20) *And I think the biggest surprise for me was that Nina Arianda, I think is the way you say her name, she was very, very good in "Venus in Fur"* (COCA$_{spoken}$).

Now, *surprise* and *wonder* are not central shell nouns, as they occur only marginally in prototypical shell structures: they are only rarely followed by a *that* clause (N *that* clause pattern), and are rarely introduced by an anaphoric or deictic determiner (*th-* N pattern). This can be related to the fact that *surprise* and *wonder* can have different ontological types of referents: the referent of *surprise* can be a first-order, concrete object such as a gift (as in (21), a second-order object such as an event – e.g. a visit (as in (22), or be a third-order, abstract, propositional object, e.g. a piece of information (as in (23).

(21) *… he said, OK, the girls have a surprise for their mom. And my little daughter Lulu handed me **a piece of paper folded in half with a smiley face on the front*** (COCA$_{spoken}$).

(22) *And tonight, they got the surprise of their lives, **a visit from the groom*** (COCA$_{spoken}$).

(23) *You didn't know **that** about me, did you, Charles? I know, a big surprise* (COCA$_{spoken}$).

Surprise and *wonder* differ in this respect from "prototypical" shell nouns such as *fact* or *idea*. Yet according to Schmid (2000, 226–27), the fact that *surprise* and *wonder* can be the subjects of identificational structures (N-*be-cl*) justifies their characterization as shell nouns. More specifically, he argues that surprise shell nouns are a subtype of emotive shell nouns describing states of emotion, which "are used to

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18. In our corpus data, this pattern was identified 27 times for *surprise*, and 6 times for *wonder*.

construe psychological states of emotion as results of knowledge of facts", as they share the semantic features 'mental', 'emotive' and 'fact-related' (Schmid 2000, 227).

Though they are not always used as prototypical shell nouns, *surprise* and *wonder* share central properties of these nouns. We will examine three of these properties in the following sections: their semantic deficiency, their reification function, and their characterizing potential.

3.1.2   *Semantic gaps: Relating shell nouns and shell contents*

First, as mentioned by Flowerdew (1993, 329), "[a] signalling noun is potentially any abstract noun, the meaning of which can only be made specific by reference to its context." Schmid (2000, 79) also mentions that "semantic gaps" are "inherent in shell nouns." The fact that shell nouns are semantically deficient (i.e. share some abstract semantic features, but lack specific descriptive content) is indeed reflected by their compatibility with the above-mentioned structures: their reference is context-dependent, i.e. the referent has to be identified either in the linguistic context or in the extra-linguistic context (i.e. these nouns have to have endophoric or exophoric reference, as mentioned in Section 2.1.2 above). This gap is a central property of these nouns, whether or not their referent is abstract.

As far as their endophoric uses are concerned, the referent can be identified intra-sententially. The shell noun either follows or precedes the description of the shell content.[19] The identification relation is most often made explicit, thanks to the identificational copula *be* introducing a clause (the referent is a state of affairs described by the following clause), as illustrated in (24). But it can also be implicit: in (25) the referent of the indefinite noun phrase cannot be identified thanks to the preceding context – as a more specific description is needed, the right-dislocated indefinite noun phrase *an unpaid tab* is understood as a clarification/elucidation of its referent.

(24)   *Sure, the clips are shocking, but you're probably not surprised to hear that cell phones and driving don't mix. The big surprise is **that you probably don't believe it's true for you** (COCA_{spoken}).*

(25)   *And the White House made a surprise stop for barbecue in Washington, but left the restaurant a surprise when lunch finished on Wednesday, **an unpaid tab*** (COCA_{spoken}).

Two types of exophoric uses can be distinguished. In some contexts, the speaker appeals to shared knowledge – a common ground shared by a specific community (which explains why the referent of *the ninth wonder of the world* is not identifiable to people who are not familiar with the list and do not share the speaker's set of references, as in (26)).

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19. In the following examples, the referent of the shell noun – i.e. the shell content – is underlined.

(26)   *SMITH: We've finally reached the top of our list. Here's a final hint: He once called himself the ninth wonder of the world. Have you figured it out? We'll tell you next on CNN's Top 25.* (COMMERCIAL BREAK) (COCA$_{spoken}$).

Another type of exophoric uses of the noun *surprise* can be found in TV or radio shows: surprise predicates enable speakers/anchors to introduce topics or videos as new and unexpected. Thanks to these predicates the anchor creates suspense and draws the listeners' or viewers' attention to what comes next, as in (27):

(27)   *This teenager is in for a big surprise. TURNER: Yeah, he was totally shocked. His – I think his daddy and his sister knew about it, but he and his mama didn't know anything about it. And so I walk up on stage and he's just... KOTB: I think we might have that. Let's see – let's see the little surprise. (Clip-from-concert)* (COCA$_{spoken}$).

The fact that *surprise* and *wonder* are shell nouns whose shell content has to be identified in context may then be part of speakers' discourse strategies.[20] The use of these nouns involves specific cognitive functions, discussed in 3.1.3.

3.1.3   *Referring to complex or abstract objects: Reification*

Another essential cognitive property of shell nouns is their "reification" function: these nouns "reify complex pieces of information" (Schmid 2000, 369). In other words, these nouns can be used to refer to events or abstract relations (such as pieces of news or states-of-affairs) as simple and stable 'things'. These abstract relations then have a stable and autonomous existence ("hypostatization"), and can be referred to as if they were simple objects (Schmid 2000, 363–369). Our claim is that this reifying function is reflected by the collocations in which *surprise* is found: this noun is often the argument of verbs of possession, such as *have*, *get*, *catch* or *take*, as in (28) and (29). The noun *wonder* is not found in similar contexts – as shown in Section 3.2.3, it appears in less varied patterns.

(28)   *I started yelling out, "Josh, let me in." And I heard him say, "Charlie, I've got a big surprise for you." And then I heard Braden cry out* (COCA$_{spoken}$).

(29)   *Everyone is feeling the pain at the pump, but drivers got a pleasant surprise when the pulled into one Texas gas station* (COCA$_{spoken}$).

The collocations *catch x by surprise* and *take x by surprise* are included here, even though the noun *surprise* is not referential in these patterns, and is not an argument of the verbs *per se*):

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20. This claim is elaborated on in 3.2.

(30)   *Still, the sheer speed of the show's success caught them all by surprise* (COCA$_{spoken}$).

(31)   *…these the first attacks here since gunmen from Pakistan laid siege to the city in 2008, and the authorities were taken by surprise* (COCA$_{spoken}$).

Finally the collocation *come as a surprise to x* also involves a reification of surprise, which is construed as a moving object, as in (32):

(32)   *It should come as no surprise to smart FOX viewers like yourself that there is a strong liberal bias in the mainstream media* (COCA$_{spoken}$).

The motion verb *come* usually selects a single argument, usually a noun phrase denoting an individual or first order object that undergoes a change of location. In the collocation *come as a surprise*, this motion verb is used to describe a transfer of information that is a source of surprise. The notion of surprise is thus again interrelated with the notion of transfer, the piece of news being reified as some moving object.

Finally, a central semantic property of shell nouns is their characterization potential. This feature is examined in the final subsection, which deals with the most frequent patterns in which *surprise* and *wonder* are found.

3.2   Characterization: Foregrounding the speaker's point of view

The patterns considered so far all involve referential uses of *surprise* and *wonder*. Yet a more comprehensive analysis has to include their predicative uses, as they correspond to more than half of the occurrences of these nouns (see Section 2.2 above). The different patterns in which they are found will be examined in turn, from the less frequent (use in compound nouns) to the most frequent (predicative structures and verbless sentences).

3.2.1   *Compound nouns ("NN")*
When the nouns *surprise* and *wonder* belong to compound nouns, they clearly involve some evaluation of a referent. More specifically, *wonder* has a positive prosody (see Section 2.1.2 above), which may account for the fact that it is used in brand[21] names: the product, being exceptional, is presented as a source of surprise (to any customer, the experiencer has to be generic). In the following examples, the head noun, being descriptive, allows us to identify the referent of the compound:

(33)   *I mean, he loved all them soft cheeses, and he turned up his nose at Wonder Bread and Taco Bell* (COCA$_{spoken}$).

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21. For additional detail on N1N2 structures, see Section 3.2.1 in the present chapter.

(34)   *… you can kind of see what they want by the way they wear the Wonder Bra* (COCA$_{spoken}$).

In the same way, though the noun *wonder* is the head of the compound *boy wonder*, it is still associated with a positive prosody (the first noun (*boy*) describing the source of this positive evaluation).

(35)   *You were called a boy* **wonder**. *Was that a blessing or a curse?* (COCA$_{spoken}$)

Surprise, being neutral (associated with neither positive nor negative prosody – as shown by its collocates in Table 4 above), is found in compounds that introduce events or individuals in discourse – its use often highlights the new referent as a source of surprise or interest – here again the experiencer is understood to be generic. In all the above instances, the nouns *wonder* and *surprise* are qualifying, as they describe the referent as surprising (i.e. as a source of surprise to any experiencer, a generic experiencer being implicit). This qualifying function is shared by a series of complex sentences whose main predicates are noun phrases involving *surprise* or *wonder*.

3.2.2   *Predicative structures ("th- be a/no (Adj) N")*

The fact that *surprise* and *wonder* entail an evaluation may account for the fact that they often are the main predicates of complex structures. Two main patterns are examined here: (a) the subject is a definite noun phrase followed by a nominal predicate, (b) the extraposed construction. In these patterns the predicate can be modified by adjectives indicating a degree (such as *real* or *huge*), and the experiencer can be explicit (introduced by the preposition *to*).

a.   *Characterizing a topical referent (the pattern* th- be a/no *(Adj) N)*

In the first pattern under scrutiny (a), the nouns *surprise* and *wonder*, introduced by a copula (e.g. *be*), can be the predicates of a descriptive noun phrase or a clause in subject position: the subject is then characterized as a source of surprise. The subject may be definite because its descriptive content is detailed enough to allow for the identification of its referent (as in (36)), or it may be an anaphoric pronoun, whose referent is described in the preceding discourse (37) – in both cases its characterization as a surprise helps to establish it as a significant topic of discourse, and justifies its being taken up again in the following discourse.

(36)   *And I think the fact that it happened so quickly and such a long time after was a real surprise to all of us* (COCA$_{spoken}$).

(37)   *The charming and attractive brunette loved her job in the fashion industry, a loving aunt with tons of friends, and then at 41, an unexpected gift. She was about to have her first child, a little girl. THAD-REUTER-1RHON# This was a happy surprise for us because we didn't think she would ever have children* (COCA$_{spoken}$).

But the definite noun phrase can also be cataphoric – the source of surprise being made explicit in the following discourse, as in (38). The fact that a referent that is not yet identifiable is characterized as surprising keeps the addressee in suspense – it draws the addressee's attention to a discourse referent whose description is to be looked for.

(38)　*But did the jury see what the sheriff believed he saw?* **The decision,** *when it came, was quite a surprise. (Court-in-session; Ms-STOCKER: I remember when the verdicts were read in the courtroom, there was an audible gasp. Unidentified Judge 3: (Reading verdict in court)* **"We the jury impaneled and sworn in the above titled cause do upon our oaths have been heretofore found the defendant Glen Burton Ake guilty of murder in the first degree for the death of Richard Barry Douglass, and fix his punishment at life in the state penitentiary"** (COCA$_{spoken}$).

The subject can also be deictic – in the following example, it belongs to an inter-polated clause: its referent (the source of surprise) is understood to be the state of affairs described by the main clause. The characterization of the piece of news that is being asserted as unexpected (by any hearer) is supposed to emphasize the significance of the main clause: the complex sentence both introduces a piece of information and highlights it.

(39)　**Reagan also** *– this is a surprise –* **Reagan was actually a social community activist who was born in Kenya** (COCA$_{spoken}$).

This pattern is quite similar to the extraposition construction, which is examined in the next section.

b.　*The extraposition construction ("*it be a/no (Adj) N *Clause")*
In a number of cases, the nouns *surprise* and *wonder* are used in complex sentences involving extraposition. These belong to the more general pattern "it be Evaluative Predicate Clause", in which the syntactic subject pronoun *it* is followed by a copula, which introduces an evaluative predicate, followed by a description of the 'real' or 'logical' subject in the clause – the fact described by the post-verbal clause is characterized as a source of surprise.[22]

Different discourse strategies can be associated with such a structure. When the content of the clause is discourse-new and hearer-new, a distinction may be drawn between cases in which the complex sentence describes the state of mind of an experiencer, as in (40), where *it's a wonder* is echoed by *I'm really surprised* in the next sentence, and sentences whose main point is to anticipate the subordinate clause's content, as in (41).

22.　In such cases, the experiencer can be specific and explicit, or generic and left implicit.

(40) *It is a pet bug. It's great. We watch it all the time. It's really – it's been really a wonder* **for us to see that it's actually lived this long.** *I'm really surprised* (COCA~spoken~).

(41) *KING: And Jeanne, it might be a surprise to some of our viewers***that these officers operate south of the border.** *On any given day, about how many ICE officers would be in Mexico?* (COCA~spoken~)

In other words *be a/no surprise/wonder* may either describe the subject's state of mind, or function as a discursive suspense tool. This type of use is quite similar to that of simple predicative sentences. This similarity explains that it is sometimes difficult to decide whether a given sentence should be analysed as a simple sentence or as an extraposition where the (anaphoric, clausal) argument is not repeated. For instance, in (42) is *it* anaphoric (referring back to the preceding, underlined content) or is it impersonal – the clause *that it is the case* being so easily inferable that it is not made explicit?

(42) *Safety is a big issue for Star Safire, and it's no wonder* (COCA~spoken~).

Both structures involve the same strategy, i.e. adding a comment on information that has already been introduced, or characterizing a given piece of information.

Now, quite often in extraposition constructions the nominal predicates are used parenthetically (Urmson 1952; Hooper 1975; Barbiers 2000; Simons 2007), i.e. the main assertion is made in the embedded clause. Though surprise predicates are factive and associated with semantic presupposition (i.e. the content is presupposed to be true, whether *surprise* and *wonder* are negated or not), their presupposed status does not imply pragmatic backgrounding. On the contrary, the content of the embedding clause is the main point of the utterance (as in (43) – the fact that the main predicate is used parenthetically explains that it can be replaced by an adverb, e.g. *unsurprisingly*).

(43) *NICHOLAS-CASEY: Well, this is really common across Latin America. The prison system isn't anything like what you have in the U.S. It's not very well regulated. It's not very well monitored. So it's no surprise* **that when there was a fire that took place, no one seemed to know where the key was.** *There wasn't any plan for how to get the prisoners out of these cells and into safety* (COCA~spoken~).

This type of use is quite similar to the pattern "*No* N clause", where the characterizing predicate is not introduced by *it* and a copula. We have chosen to differentiate between this pattern and the extraposition pattern for several reasons: (i) it is not certain that this pattern is to be analysed as a complex syntactic structure; (ii) *wonder* seems to have been found in this pattern very early on (see ft. 13 in the present chapter); (iii) *no* is a significant collocate of *wonder* (see Table 4 above). This pattern is examined in the following section.

3.2.3 *Verbless sentences and speaker's comments*

Surprise and *amazement wonder* clearly differ from other nouns found in predicative structures (e.g. *pity*, *shame*) in that they are often not introduced by a copula. *Wonder* is quite often found in the patterns "*No* N Clause" (44) and "*No* N" (45):

(44) *TEICHNER: (Voiceover) What must the Vikings have thought when they settled here in 874? No wonder they believed in a hidden world, a world of ghosts and elves and trolls. Superstitions that linger* (COCA_{spoken}).

(45) *Fewer wrinkles, firmer skin, actual lifting, all without going under the knife. The claims can sound outlandish, but can also be irresistible. And no wonder. Every woman wants to turn back time and everyone has her trouble spots* (COCA_{spoken}).

The noun *surprise* can also be found in such patterns. We consider that these structures are all quite similar, in that they all involve a distinction between the speaker's assertion of some piece of information and an indication of his/her stance towards it. As mentioned previously, the pattern "*No surprise/wonder* clause" enables the speaker to introduce a propositional content as some fact that should be taken for granted (i.e. the speaker's comment aims at justifying its integration in the common ground). The pattern "*No surprise/wonder*" is quite similar, though the speaker's comment or stance is more clearly marked as belonging to a subjective 'level', as opposed to the 'objective' description of a fact. Finally, verbless sentences such as *Surprise surprise* also clearly involve the speaker's stance – they can indicate a form of irony or even have negative connotations. They mark a distanced way of describing situations.

The fact that *surprise* and *wonder* can be used in so diverse discourse strategies reflects their characterizing function: these nouns can involve simple epistemic judgments, but they can also allow a speaker to express his subjective stance towards a given state of affairs.

4. Conclusions

Our corpus-based analysis of *surprise* & *wonder* has led us to question their initial categorization as (potentially polysemous) psych nouns. Based on the annotation of 200 occurrences of these nouns we propose that they can rather be analysed as source nouns.

Our hypothesis is that *surprise* and *wonder* tend to refer to – or, in many cases, characterize – sources of surprise, as the source sense is profiled in the patterns most frequently associated with these nouns. We also show that a link can be established between their primary source sense and the metonymically derived state sense,

contrary to the usual representation of these nouns. This reversed metonymic link can be re-analyzed as involving a synecdoche: even when the nouns are used in their basic source sense, they activate the whole network of surprise. In Langacker's terms, the source is profiled but the associated state and experiencer are landmarks. This analysis allows us to account for the number of 'undecided' cases (i.e. cases where it is difficult to disambiguate the source sense from the state sense).

The study of the functions in discourse of the most frequent patterns in which these nouns are found further confirms our claims about *surprise* and *wonder* being "source nouns": they are often used to characterize objects of discourse and are not experiencer-oriented. *Surprise* and *wonder* differ from other lexical items in the semantic field of unexpectedness in that they do not describe the feelings of an experiencer (the experiencer is often not explicit and is often non-specific), and do not describe a psychological state of surprise: they rather characterize a contextually salient referent as exceptional/outstanding, and therefore often belong in discourse strategies emphasizing the importance of a given discourse referent.

Acknowledgments

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CHAPTER 9

Is surprise necessarily disappointing?

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The article examines the function and status of surprise from Edmund Husserl's phenomenological point of view on experience. Firstly, it is shown that, when experience is defined through concordance and continuity, it becomes difficult to describe surprise otherwise than as deception or disappointment. Secondly, the paper attempts to overcome this negative characterization of surprise without completely abandoning Husserl's method and description. It is indeed shown that conflict is as important and irreducible as concordance and that experience should rather be defined, in a more dynamic manner, as the intertwining of both. The motivational link between the past and the future is then re-evaluated, in order to maintain a balance between the motivation of the past (expectation) and the open possibilities of the future (free anticipation). Thus, surprise can receive a legitimate and consistent place within experience, and a paradoxical expectation of surprise becomes conceivable.

Keywords: surprise, disappointment, Husserl, phenomenology, experience

In his 1963 essay on "The Concept of Reality and the Possibility of the Novel", Hans Blumenberg describes the vision of reality that we find in Husserl's phenomenology as follows:

> The concept of reality as an 'open' context asserts the aesthetic quality of the *novitas*, of the surprising, unfamiliar element, while the 'guaranteed' reality does not really permit the unfamiliar and novelty [...]. This transformation of the reality concept liberates that which is new from its dubious connotation; the *terra incognita*, the *mundus novus* become possible and act as a stimulation for human activity; to put it paradoxically: one can now expect surprise (*die Überraschung wird erwartbar*). (Blumenberg 2001: 52–53)

In Blumenberg's view, as one can see, Husserl's account of reality is particularly propitious to artistic (and especially literary and Romanesque) creation: once the openness of possibilities has been revealed, there is place for surprise. But how

could *surprise* be *expected*? Doesn't this imply a plain contradiction? For surprise seems rather to be, precisely, an experience of the unexpected.

Moreover, Blumenberg's appreciation might appear to be somewhat surprising itself, insofar as the fact of undoubtedly attributing Husserl such an openness to novelty is rather problematic. Indeed, it would be difficult to speak, in a Husserlian perspective, of something like a "phenomenology of surprise" (Depraz 2010). Quite the contrary, within the framework of Husserl's comprehension of experience, what might appear to be the closest avatar of surprise is, unexpectedly, disappointment (*Enttäuschung*).

My goal will therefore be to elucidate and analyze the conditions of possibility and the descriptions of surprise from a phenomenological perspective in order to decide of the sense and legitimacy of an "expectation of surprise". Firstly, I will show that the difficulty to inscribe surprise within experience otherwise than as an *Enttäuschung* comes from the fact that, in Husserl's view, the major feature of experience is concordance (*Einstimmigkeit*). Therefore, every event and every perception that does not correspond to the expectations prescribed by the concordance of experience will be lived or perceived as a conflict (*Widerstreit*), as the negation of that what is expected. Furthermore, the fact that in the case of surprise, expectations are not fulfilled, but deceived or frustrated, seems to imply that any surprise is necessarily, in one way, disappointing. The unfolding of this complex reasoning will be the object of the second part of my inquiry. In a third moment, I will try to overcome this negative characterization of surprise without completely abandoning Husserl's method and description, by analyzing the specificity of the conflicts and discordances contained in experience, of which surprise seems to be an example. My intention will then be to show that conflict is as important and irreducible as concordance and that experience should rather be defined, in a more dynamic manner, as the intertwining of both. Consequently, the motivational link between the past and the future will need to be re-evaluated, in order to maintain a balance between the motivation of the past (expectation) and of the open possibilities of the future (free anticipation). Not only the position of surprise in time will then appear in a different light, but so will the intrinsic variety of its affective charge. Thus, a paradoxical expectation of surprise (like that stated by Blumenberg) becomes indeed conceivable.

1. Dissonance against harmony?

What does it mean, precisely, that concordance has to be held (as in Husserl's view) for the major feature of experience? Let us take into consideration, to start with, an example: listening to a piece of music. But not any piece of music: I would like to briefly examine what happens when one listens to the second movement of Haydn's 94th Symphony (created in 1792), when a sudden *fortissimo* chord interferes with

the *piano* violins, and immediately afterwards, the music becomes quiet and peaceful again. It is this *fortissimo* that does not leave any trace and is not further repeated that justifies the nickname "Surprise" for this London symphony. And the German word for "surprise" might be here even more appropriated: *Überraschung* derives from the adjective *rasch*, which designates the *sudden* dimension of an event. In Haydn's symphony, but also according to a more general opinion, surprise is that what arrives suddenly – even though, perhaps, not (necessarily) unexpectedly. In the particular case of Baroque music, the sudden musical event (like the *fortissimo* chord in Haydn's symphony) illustrates, as the musicologist Gilles Cantagrel puts it, "the ornament that embellishes the melodic line": "Such as the volutes that fracture the orthogonal lines of an architectural edifice, these accidents trouble the linearity of the discourse in order to enrich it […], they create a different movement in order to highlight the expressivity of dissonance, in order to suspend or accentuate the rhythmic flux, to draw attention, to provoke surprise" (Cantagrel 2008: 118). As this description marvelously suggests it, the condition for a genuine receptivity for surprise cannot be a mere lack of attention. Consequently, surprise has to respond to a certain expectation, even by deceiving it; and what is then deceived (as the example of Haydn's symphony shows it) is, more precisely, the spontaneous faith in resemblance, the expectation of the similar, of the homogenous.

This example borrowed to the history of music describes perfectly, in my opinion, Husserl's account of experience as defined by concordance, such as it is presented, for instance, in the 1925 lecture *Phenomenological Psychology*: "In our experience, all the occasional and minor discordances eventually vanish into the harmony of concordance" (Husserl 1962: 60). According to this claim, surprise is not to be understood as an irremediable fracture within experience: as Haydn's symphony shows it, far from being destroyed by the irruption of discordance, the unity and continuity of experience can always be restored. This is why, for Husserl, concordance (*Einstimmigkeit*) is the distinctive feature of experience; as he puts it a bit further, "the extension of our concept of experience coincides with that of the concordant synthesis which grants its unity and therefore makes it precisely concordant" (Husserl 1962: 95). But this does not mean, on the other hand, that experience is *nothing but* concordance, or *always* concordant, insofar as "quite often and, on a larger scale, almost always, concordant experience does not remain concordant for a long time" (Husserl 1962: 124). This is what one of Husserl's favorite examples alternatively suggests: when a mannequin or a wax statue that I have previously taken for human persons are being perceived as what they truly are, this means that, at some point, there was a fracture, a shift in my perceptive experience; and still, illusion or discordance remains here simply local and temporary, insofar as it is essentially corrigible: it can always be neutralized and dissolved into a "higher harmony (*Die Widerstreite im Einzelnen heben sich in einer höheren Harmonie auf*)" (Husserl 1962: 119).

It is this manner of reintegrating discordance within the continuity of concordant experience that I wanted to hint at by evoking the function of ornament in Baroque music: the Baroque is fond of dissonance without questioning the reign of melody; therefore, there is always a higher harmony in the background of the musical accident, and it is this harmony that gives dissonance a meaning and a position. Reciprocally, the accident, the ornament – the surprise – has mainly the function to enrich, to highlight the reigning harmony, exactly like an exception is called to confirm the rule. What is at stake with this recuperation of what is novel and unusual can also be expressed in terms of continuity: "An experience is such only if it is without fractures (*ungebrochen*)" (Husserl 1962: 96, footnote 1). Insofar as experience rimes with continuity and concordance, surprise cannot have a legitimate place and a structuring role within it. It is true that there is no experience without any fractures, without any inner crises. But insofar as concordance is dominant, "no surprises" seems to be the very *motto* of experience in Husserl's perspective.

It is, indeed, this negative status of surprise, regarded solely as discontinuity and discordance, which explains its inevitable comprehension as disappointment (*Enttäuschung*). As long as surprise is regarded only as discordance, its effect can be described as a "fracture of certainty (*Bruch der Gewissheit*)" (Husserl 1962: 125) or a "fracture of familiarity (*Bruch der Bekanntheit*)" (Husserl 2006: 250). But this fracture is never as radical as one might think: novelty remains, for Husserl, a "modification of that which was already (*Umwandlung dessen, was schon ist*)" (Husserl 2006: 239). This double and ambiguous characterization relies upon two different models of temporality: if speaking of fracture or irruption (*Einbruch*) contributes to highlight the crucial place and function of the *present* that constantly renews itself, the more moderate term of modification places the gravity center of time in the *past*. It is what Husserl implicitly does while affirming, again in his 1925 lecture: "The infinite experience of the past world prescribes the resembling style of the future world. […] According to the sense of experience, one can only prefigure (*vorzeichnen*) the undetermined world to be by following the general style of the past world" (Husserl 1962: 70, footnote 1). As one can see, the considerable weight of the past goes together with the promotion of resemblance as a premise for continuity: from this point of view, what will be has to resemble that which already is. Thus, regarding novelty as a modification implies to presuppose, within experience, a motivation through resemblance. And this is precisely what concordance requires: a motivational link between the present and the past, a unity and coherence grounded on motivation. Furthermore, this motivational link will decide of the meaning and weight of any expectation that one might have regarding the future: "The coming of the future (*Eintreten des Künftigen*) is expected thanks to its resemblance (*Ähnlichkeit*) to the past" (Husserl 1966: 187).

2. Protention versus unexpectedness?

How could it then be possible to expect a surprise? How can surprise find its place in our experience? The alternative seems to be clear: either that which is expected resembles to that which has already been, or surprise arrives beyond and against any expectation. This alternative is eloquently expressed by Husserl in his *Bernau Manuscripts on Time-Consciousness (1917–1918)* in terms of a gradual grasp (*Griff*, in French, "*prise*", radix of "*surprise*"): "The grasp of novelty, and consequently that of the original present […], designates the climax of a firm grasp (*ein Kulminations-punkt in der Festigkeit des Griffs*). The newly grasped is fulfillment (*Das Neuerfasste ist Erfüllung*)" (Husserl 2001: 4). There is, as one can see, a clear correspondence between the appearing of novelty and the irruption of the original present: Husserl places himself here within the first temporal model mentioned above. On the other hand, the irruption of novelty is not passively undertaken, but actively taken into possession, insofar as novelty is also fulfillment: fulfillment of an intention (*Meinung*) that is oriented towards the future and can consequently be understood (in spite of all reluctances) as similar to a kind of expectation. It is what Husserl calls *protention*, and its consideration unveils a third temporal model, where the present is no longer to be conceived only as an instantaneous, fulgurating irruption of novelty or as a mere modification of the past, but has to be reshaped following "the form of protentional fulfillment" (Husserl 2001: 14)[1] – otherwise said, as that which responds by nature to a certain expectation, to an intention oriented towards the future.

Nevertheless, this new temporal model seems to involve in spite of everything a limit case, according to which the present, the "now" can also "occur (*auftreten*) without any protention"; that is, "the event can occur […] without any specific expectation" (Husserl 2001: 11). Of course, the absence of a *specific* expectation does not necessarily imply the absence of *any* expectation. This particular case of novelty is named here "event", and it might be quite tempting to conceive surprise precisely as an event (as, for instance, Dastur 2004), as something that occurs without any apparent cause and/or reason, like a comet or a lightning in the sky. But such an understanding of surprise would once again imply taking into account only the present moment, the one-dimensional point of the "now", and would tend to implicitly close or tighten the open horizon of the expectations of the future. The point of view of the punctual event could indeed, against all expectations, remain a static one: for how can one reinsert the event within the tissue of experience, if the event is precisely that which is supposed to irremediably tear it apart? Shouldn't

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1.   See also Husserl (2001: 185): "the more or less prefigured (*vorgezeichnet*) horizon of the future is generated by the constant and yet discreet protention according to the laws prescribing the emergency of expectation".

we conceive surprise instead precisely as immersed within this tissue and within the horizon of expectations that constitutes its fabric, in order to fully acknowledge the temporal dynamics of experience?

3. Fulfillment or disappointment?

And yet, it is precisely when attempting to understand surprise in a dynamic and relational manner, by inscribing it within a horizon of expectations, that the most important difficulty will be encountered: within this framework that allows giving a certain consistency and meaning to the paradoxical *expectation of surprise*, it is rather the *unfulfilled* and not the fulfilled expectation that will give us the key figure of surprise, which will therefore be ineluctably understood as *disappointment* (*Enttäuschung*). The analysis of a basic example can give a hint of the reasons this vision of things is grounded on: I was expecting to see Mildred, but I meet Olivia instead. The surprise of meeting Olivia is here simultaneously disappointment of not having met Mildred. But things can get more complicated: the surprise of meeting Olivia could be clouded by the even greater surprise of meeting also Adriana. There can indeed be different options for valuing a very same event, depending equally on the context and on previous events of the past. But for what reasons should surprise necessarily imply a part of disappointment?

By characterizing surprise as an unfulfilled expectation and thus in terms of disappointment, we implicitly reiterate the distinction between fulfilled and unfulfilled intentions that Husserl elaborates in his *Logical Investigations* (1900–1901), and according to which disappointment (*Enttäuschung*, also translated as "frustration")[2] is the opposite of fulfillment (*Erfüllung*). This implies, when it comes to expectations, that they can be either fulfilled or frustrated – *tertium non datur*. But if this is the alternative, why shouldn't then surprise be grasped rather as fulfillment? Husserl states that an expectation is always an expectation of something – that is, a specific expectation. To put it more rigorously, "every expectation is 'induction'" (Husserl 1962: 137). Thus, expectation seems to be by nature an anticipation which foresees that which will be and thus exposes itself to disappointment or frustration, insofar as nothing ever really fulfills (all) our expectations. Understood as an induction, expectations are in a way always frustrated and never *really* fulfilled. But couldn't an expectation be without judgment, without specific anticipations, without any forecast? Such seem to be, for instance, the expectations that we have when looking through the window, at home or in a train: we expect to see something, but not necessarily a child riding a bicycle or three horses. We simply expect to see something,

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2. By J. N. Findlay, for instance, in his translation of the *Logical Investigations*.

but not something in particular. It is only when there is no fringe of indetermination left in an expectation that the alternative between fulfillment and disappointment is so strict. For highly determined expectations are often the symptom of a constant rationalization of what occurs, of a desire to constantly "hold" reality in one's hands (this is what the notion of grasp, *Griff* in German, previously suggested), in one's control, as if weakening the grasp or "letting it go" would mean accepting to be torn apart. It is why an impassibility to surprise can result from a trauma, as a strategy for preventing further trauma – and this proves precisely that the "excessively surprising" can destroy the "possibility of surprise" (Romano 2007: 544).

If Husserl only conceives surprise under the negative figure of deception, it is insofar as he does not see expectation as intrinsically oriented towards fulfillment; quite the contrary, the "capacity for disappointment" is an "essential moment of expectation":

> Expectations can only be fulfilled by perceptions. According to their essence, they can also be, in any circumstances, frustrated (*enttäuscht*). Perception always brings something new (*bringt ein Neues*): it is its very essence. It is also true that the past consciousness can give it a prefiguration (*Vorzeichnung*): in this case that which is new occurs in conformity with something that is already known, that is already constituted for me as past. [...] But obviously it is perception that firstly decides if that is the case, and novelty can defy any expectation.   (Husserl 1966: 211)

Husserl seems to suggest here that novelty – or the emergency of surprise – necessarily frustrates or defies any expectation. And yet, this description contains a quite visible ambiguity: on one hand, every perception seems to fulfill an intention or an expectation; but on the other hand, disappointment and frustration are equally a possibility for perception. The missing link between these two alternatives is, significantly, prefiguration (*Vorzeichnung*). *Stricto sensu*, prefiguration is required in order to speak of fulfillment. And still, the creative force of perception is most often stronger than prefiguration: that is why perception can be held for a production of novelty. Therefore, on a general scale, there is always fulfillment, no matter what: even when we speak of disappointment, all we really have before us is an *alternative fulfillment*.[3] In this perspective, being open to surprise is simply being open to alternatives – that is, precisely, to *open possibilities*. I will have the opportunity to stress this point in my conclusion.

But first, let us deepen and explore more thoroughly the opposition between fulfillment and disappointment. Announced for the first time in the *Logical Investigations*, this distinction is further elaborated by Husserl almost thirty years later, in *Experience and Judgment* (paragraph 21). Disappointment is defined here as "that which occurs instead of the fulfillment of expectative intentions" (Husserl 1972: 94):

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3.   Ruud Welten prefers to speak of a "discordant fulfillment". See Welten (2011: p. 146).

otherwise said, it is a frustrated expectation; and yet, from another point of view, it can also be considered as a deviant (or discordant) fulfillment. Nevertheless, this discordance is grasped by Husserl only negatively, as a conflict: in this perspective, disappointment expresses the very conflict of expectation and fulfillment, according to the typical scenario: I am expecting something and yet something else occurs. The example provided by Husserl in order to illustrate this point is particularly remarkable for its affective neutrality: it is that of a billiard ball that is first perceived as being red and turns out to be "not red but green", "not round but grumpy" (Husserl 1972: 94). What is here the source of the conflict? Precisely, "the 'suppression' of an anticipative intention, or expectation, by a new impression" (I expect to see a red surface and I see a green one), and "speaking of disappointment is just another way to put it" (Husserl 1972: 97). This is indeed an emblematic case of discordance: the continuity of perception is broken, and even if the fracture is not irremediable (for the concordance of experience is not forever lost), Husserl will not hesitate to extrapolate this fracture and project it on consciousness itself: confronted to discordance, "univocal consciousness explodes into a plurivocal one" (Husserl 1972: 102). One should indeed consider, according to Husserl, that the unity of the subject rigorously depends on the concordance of experience, and that the exposure to discordance (and to surprise) would eventually threaten to fracture the subject itself.

But why should every fracture and crisis be synonymous with chaos and dissolution? If – as Kant states in the *Critique of pure reason* (a passage of 1781 the version Transcendental Deduction that Husserl most probably recalls) while envisaging the chaos (*Gewühl*) of sensations that would occur if cinnabar would constantly change color, shape and consistency – the omnipresence of surprise might ruin the unity and coherence of experience, the total lack of surprises could unexpectedly have the same effect. By stating this, I am implicitly adapting a reasoning that Husserl himself deploys in order to show that the harmony of experience is not to be understood as monotony: "if life was a monotonous existence, resembling a sound that is homogeneous and without any differences, no recollection would be possible. That is very significant" (Husserl 1966: 424). Between monotony and dissonance, the median way of harmony, that I have already evoked while considering Baroque music, requires acknowledging (while giving a more radical status and a constitutive position to discordance) that only rupture is really binding. Experience is a tissue of fractures in its positive structure, and not only from the negative point of view of privation. That is why Husserl can assert that "it is only where that which is given in experience is not uniform that an awakening (*Weckung*) can take place" (Husserl 1966: 425) – that is, the awakening of consciousness itself as vigilant and open to that which occurs to it requires it to be open and receptive to surprises. And reciprocally, a lack of exposure to surprise will be the symptom of a deficient or deferred awakening of consciousness.

I arrive now to my conclusion, where I will face once again my initial questions: first of all, why should surprise be understood as disappointment? And what is the meaning of an expectation of surprise? In order to answer the first question, it is required to overcome the dominant affective neutrality of Husserl's descriptions of experience situations (neutrality that is naturally prescribed by the cognitive orientation of his analysis) and to take into account the "affective dynamism" (Husserl 1972: 366) that intrinsically rules experience. The ambiguity and indecision between fulfillment and disappointment dissipate only when the enlightening prism of affectivity and desire is adopted. In this new light, a very same event or encounter will manifest itself as fulfillment or disappointment according to its affective burden. If a friend invites me to see a theater play, I will perceive this as a pleasant surprise; but if the play is mediocre, my surprise will change into a disappointment. Similarly, I can be pleasantly surprised while receiving a gift and disappointed after having opened it. This transformation of surprise into disappointment can also be read as indicating that desire always exceeds that which is given to us. This is why surprise and disappointment go together without being identical.

The deficiency of the Husserlian analyses that have guided me here comes from conceiving surprise exclusively within the negative horizon of conflict, while neglecting its positive strength and impact in constituting experience. A compensation of this inconvenience can be obtained by taking into account Husserl's fruitful distinction between the "modalities resulting from conflict and those of open particularization" (Husserl 1972: 108). It will then appear that, besides the conflicts and discordances that lead to disappointment (to frustrated or unfulfilled expectations), experience also consists of a horizon of "open possibilities" (Husserl 1972: 108) which, precisely, create room for the emergency of surprise. Open possibility is indeed to be defined as the possibility that escapes motivation, anticipation or specific expectation. Therefore, the expectation of surprise consists in considering and acknowledging such open – because wider than motivation and anticipation – possibilities of experience. Surprise does not exceed *any* expectation, insofar as our experience always has a certain affective color and always delineates itself on the background of open possibilities. From this point of view, surprise does not necessarily result from a lack of attention (as Heidegger suggests in *Being and Time*, Heidegger, 2001 §69a) by taking the univocal shape of the unexpected, and it does not accomplish the plain contradiction of intentionality.[4] *Tertium datur*, and experience is precisely the product of this (inclusive) logic of the third.

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4. As suggested in Marion (1997: 370): "Surprise […] contradicts intentionality".

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Surprise is treated as an affect in Aristotelian philosophy as well as in Cartesian philosophy. In experimental psychology, surprise is considered to be an emotion. In phenomenology, it is only addressed indirectly in phenomenology (Husserl, Heidegger, Levinas), with the important exception of Ricœur and Maldiney; it is reduced to a break in cognition by cognitivists (Dennett). Only recently was it broached in linguistics, with a focus on lexico-syntactic categories. As for the expression of surprise, it has been studied in connection with evidentiality in languages that encode surprise morphosyntactically. However, how surprise is encoded in languages that lack an evidential morphosyntactic system has been largely unexplored.

This book provides new insights into the dynamics of surprise based on a heuristic hypothesis tested against the investigation of time, language and emotion. It is intended to arouse the interest of a multidisciplinary audience keen on crossing the disciplinary borders of phenomenology, cognitive sciences, and pragmatics.

The theoretical approaches adopted in this collection of articles rely on experiments and corpus data. They advance knowledge by building on robust empirical results coming from psychology, microphenomenology, linguistics and physiology.

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