

*Discovering the structures of lived
experience*

**Claire Petitmengin, Anne Remillieux &
Camila Valenzuela-Moguillansky**

**Phenomenology and the Cognitive
Sciences**

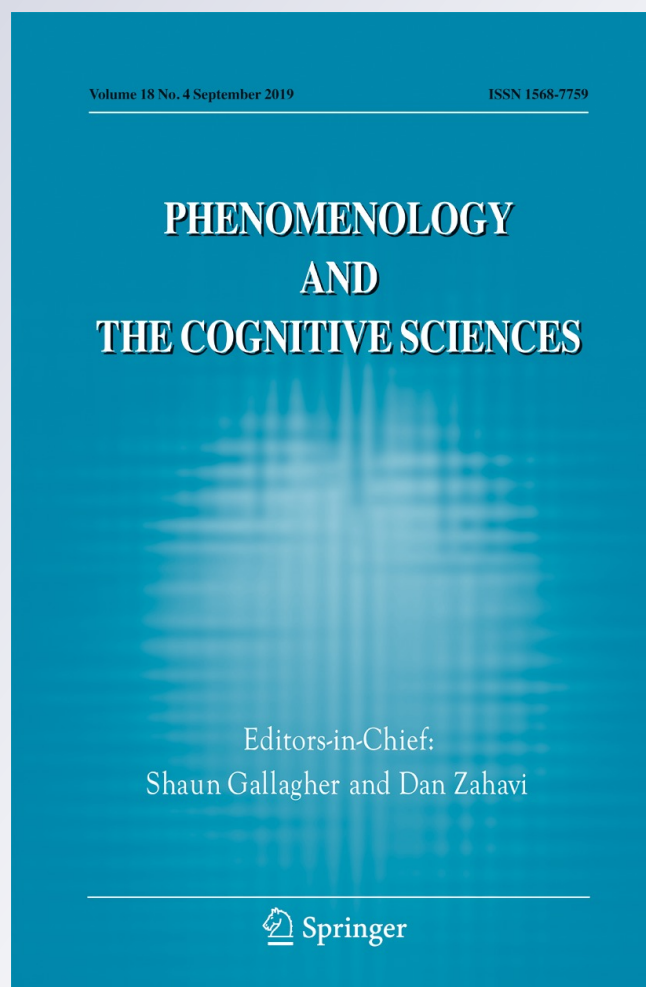
ISSN 1568-7759

Volume 18

Number 4

Phenom Cogn Sci (2019) 18:691-730

DOI 10.1007/s11097-018-9597-4



Your article is protected by copyright and all rights are held exclusively by Springer Nature B.V.. This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your article, please use the accepted manuscript version for posting on your own website. You may further deposit the accepted manuscript version in any repository, provided it is only made publicly available 12 months after official publication or later and provided acknowledgement is given to the original source of publication and a link is inserted to the published article on Springer's website. The link must be accompanied by the following text: "The final publication is available at link.springer.com".



Discovering the structures of lived experience

Towards a micro-phenomenological analysis method

Claire Petitmengin^{1,2}  · Anne Remillieux³ · Camila Valenzuela-Moguillansky^{3,4}

Published online: 11 December 2018
© Springer Nature B.V. 2018

Abstract

This paper describes a method for analyzing a corpus of descriptions collected through micro-phenomenological interviews. This analysis aims at identifying the structure of the singular experiences which have been described, and in particular their diachronic structure, while unfolding generic experiential structures through an iterative approach. After summarizing the principles of the micro-phenomenological interview, and then describing the process of preparation of the verbatim, the article presents on the one hand, the principles and conceptual devices of the analysis method and on the other hand several dimensions of the analysis process: the modes of structural unfolding of generic structures, the mutual guidance of the processes of structural and experiential unfolding, the tracking of analysis processes, and finally the assessment of analysis results.

Keywords Entretien d'explicitation · Micro-phenomenology · Micro-phenomenological interview · Micro-phenomenological analysis · Qualitative analysis · Diachronic structure · Synchronic structure

✉ Claire Petitmengin
cp@clairepetitmengin.fr

Anne Remillieux
anne.remillieux@free.fr

Camila Valenzuela-Moguillansky
milamogui@gmail.com

¹ Institut Mines-Télécom Business School, Paris, France

² Archives Husserl, École Normale Supérieure, Paris, France

³ Laboratory of Micro-phenomenology, Paris, France

⁴ Laboratorio de Fenomenología Corporal y Experiencia Musical, Facultad de Psicología, Universidad Diego Portales, Santiago, Chile

1 Introduction

This article describes a method for analyzing a corpus of descriptions collected through micro-phenomenological interviews.¹ The specificity of the micro-phenomenological interview method is that it focuses on a *singular* experience. The premise of the method is indeed that only the exploration of a singular concrete experience makes it possible to practice an *époche*: to “bracket” or suspend our preconceptions and theorizations about experience, and notably our implicit belief in the existence of an objective world independent of experience. This act enables us to leave our “natural attitude” of absorption into the content of experience (the “what”), to reorient our attention towards the way this experience appears to us (the “how”), and notably towards the usually pre-reflective micro-acts through which this appearance is constituted.

However the focus of micro-phenomenological interviews on singular experiences does not mean that the method is exclusively restricted to singularity and limited to only describing individual tokens of experience. Beyond the infinitely varying contents of singular experiences, this method makes it possible to identify experiential invariants which constitute the *structure* of the experience under study. But Husserl’s Phenomenology and Micro-phenomenology differ in the process of identification of this structure. While Husserl uses a method of “eidetic variation” consisting in varying in one’s imagination the characteristics of an experience considered as an example, in order to identify a priori and conceptually its invariant essence, micro-phenomenological analysis proceeds by iterative unfolding and refinement of the structure of the experience under study from the description of singular lived experiences.²

It should be noted that the micro-phenomenological method was not initially created with the aim of identifying generic structures, but to describe singular lived experiences (Vermersch 1994/2017). But whenever we have analyzed a corpus of descriptions of singular experiences collected for a given study, we have been able to discover generic structures (see references below). Moreover, interestingly, the most pervasive structures as well as the most robust structuring processes, such as the micro-acts that create and sustain the experience of duality between subject and object or between inner and outer space (i.e. Petitmengin 2017) are detected at the most fine-grained levels of description, corresponding to the most persistently pre-reflective aspects of experience.

¹ This article is the continuation of (Petitmengin 2006) which describes the interview method. The French “entretien d’explicitation” (Vermersch 1994/2017), previously translated as “elicitation interview”, is now translated as “micro-phenomenological interview”.

² Husserl invites us to scroll through in our minds, for example the different types of red, until the essence of red emerges from this process. But this process corresponds to an imaginary variation which is situated at the level of possible and not actual facts. Micro-phenomenology, on the other hand, tries to highlight invariants from singular actual facts.

However it seems that Husserl’s thought evolved over time from the idea of an eidetic variation and a characterization of the invariant as *a priori* (independent of the experience and the singularity of the facts) (in *Logische Untersuchungen*, 1901 and *Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie*, 1913), to an “empirical phenomenology” understood as an universal science of the facticity, where eidetic variation is defined as a process affected by the singularity of facts (*Phänomenologische Psychologie*, 1925, §9c) (on this issue, see Depraz 2014, pp. 85–95). A detailed comparison of eidetic variation and micro-phenomenological analysis would fall beyond the scope of this article.

To summarize, in the micro-phenomenological perspective, in order to discover the essential pre-reflective structures of experience, we cannot avoid the detour through singular experiences. However at the core of singular experiences, what we discover is not private features proper to the history and peculiarities of each individual, but the shared intimate structures through which the world appears to us, as well as the shared intimate processes through which these structures arise, and eventually vanish. Surprisingly, if universal structures were to be discovered, it seems that it would be in the most invisible and the most intimate.

The article aims at presenting the main devices and processes of an analysis method that we have developed through a dozen studies on various types of experience: from the intuitive experience (Petitmengin 1999, 2001; Remillieux 2014) to the auditory experience (Petitmengin et al. 2009), from the experience of change managing by leading participative workshops (Remillieux et al. 2010) to the “rubber hand” illusion (Valenzuela-Moguillansky et al. 2013), from the emergence of a thought (Petitmengin 2007, 2016) to that of an epileptic seizure (Petitmengin et al. 2007), from the experience of pain (Valenzuela-Moguillansky 2013) to meditative experience (Petitmengin et al. 2017). This article results from an analysis of the analysis processes that we conducted in these projects. It does not claim to unfold step by step an example of analysis – which would be another article (Valenzuela-Moguillansky and Vásquez-Rosati, *forthcoming*) – neither to describe the whole process of analysis – which would have been a methodological manual. It does not claim either to present a fully completed method. The article presents however a proposal intended to be tested, discussed and refined, notably on the basis of the methodological lexicon presented in the *Annex*.

After summarizing the principles of the micro-phenomenological interview, and then describing the process of preparation of the verbatim, we will firstly present the principles and basic concepts and devices of the analysis method, and secondly the description of several dimensions of the analysis process: the modes of unfolding of generic structures, the mutual guidance of the processes of structural and experiential unfolding, the tracking of analysis processes, and finally the evaluation of analysis results.

2 Principles of the micro-phenomenological interview

The micro-phenomenological interview³ is a method of descriptive phenomenology inspired by the “*entretien d'explicitation*” initially developed by Pierre Vermersch (1994/2017, 2009, 2012)⁴ to help persons engaged in professional practices to become aware of the implicit part of their mental or physical actions. This interview method was then adapted to research in cognitive sciences (Petitmengin 2006) to describe any type of lived experience, in the clinical and therapeutic domains (Petitmengin et al. 2007; Petitmengin 2010; Valenzuela-Moguillansky 2013; Balzani et al. 2014; Bourvis

³ For a more detailed description of the method, we invite the reader to refer to the articles and books which are devoted to it. References are available on the Microphenomenology website: <http://www.microphenomenology.com>. A film made of interview excerpts can be found on: <http://www.microphenomenology.com/home>

⁴ An English commentary of Vermersch's book “*Explicitation et Phénoménologie*” (2012) is provided in (Petitmengin 2014)

and Vion-Dury 2016; Depraz et al. 2017; Cavaletti and Heimann, [forthcoming](#)), in the cognitive and educational domains (Petitmengin et al. 2009; Remillieux et al. 2010; Gore et al. 2012; Balas-Chanel 2013; Valenzuela-Moguillansky et al. 2013; Gould et al. 2014; Quidu and Favier-Ambrosini 2014; Petitmengin 2016; Van-Quynh 2017; Horwitz et al. 2018; Ollagnier-Beldame & Coupé, [forthcoming](#)), in the technological domain (Remillieux 2014; Hogan et al. 2015; Créno and Cahour 2016), in the artistic domain (Petreca et al. 2015, Petreca 2016; Vásquez-Rosati 2017; Weisen, [forthcoming](#)) and in the contemplative domain (Petitmengin et al. 2017, Przyrembel and Singer 2018).

The micro-phenomenological interview method starts from the observation that a large part of our experience remains usually unnoticed. Whether we are touching, seeing, listening, imagining, remembering, understanding or deciding, whether we are performing a concrete or an abstract activity, a large part of this activity, although “lived through” subjectively, is not immediately accessible to reflective consciousness and verbal description. We experience it, but in an unrecognized, unnoticed or “pre-reflective” way. The most surprising thing is that we are not aware of this deficit of awareness, which is the first obstacle in the way of becoming conscious of this unrecognized part. However this difficulty of access does not mean that our lived experience is out of reach. It means that accessing it requires a particular expertise, which must be acquired. This expertise consists in carrying out specific acts (Depraz et al. 2003; Petitmengin 2006, 2007, 2011; Petitmengin and Bitbol 2009; Bitbol and Petitmengin 2013; Petitmengin et al. 2013). The micro-phenomenological interview method aims at triggering these acts, through specific prompts and questions, in order to help interviewed subjects become aware of the unrecognized part of their experience and describe it precisely.

The first key to an effective interview consists in eliciting an *époque* by helping the subjects to choose and describe a singular experience and bringing them back to it each time they shift from it towards the verbalization of generalities, comments, beliefs, judgments, explanations or theoretical knowledge *about* it: these “satellite dimensions” do not indeed correspond to what they are experiencing but to their often implicit preconceptions about their experience. One of the devices consists, whenever the interviewee uses an abstract term likely to convey an implicit preconception, in reformulating it in the interrogative form by inviting her to describe the concrete action that underlies this term. For example, if she says “I experienced a resistance”, the interviewer replies: “Take your time to return to the moment when you experienced a resistance... at that moment, how do you resist?” or “...how do you know that you are resisting?”

How best to choose a singular experience? If the type of experience under study is easily reproducible (for example memorizing a list of nouns, solving a little math problem), the researcher can devise a protocol enabling the interviewee to live the experience here and now, and then just afterwards help her describe it. If the experience being studied cannot be reproduced at will (for example the emergence of a new idea or an emotion of joy) the researcher has to help the interviewee find in the past a particular occurrence of this experience.

However in both cases, it is usually not possible to describe the experience while it is unfolding, there is a temporal gap between the initial experience and its description. The second key to the micro-phenomenological interview is thus to help the subject to re-enact or “evoke” the experience, whether it is in the more distant past or only just over, by retrieving the precise spatio-temporal context,

and then the visual, auditory, tactile, kinesthetic and possibly olfactory sensations associated with the experience to be described. The subject “evokes” this moment when she recalls it to the point that the past situation becomes more vivid for her than the present situation is. A set of precise objective clues (which are listed in section 3.3.2) allows the researcher to assess the intensity of the evocation state which has been reached.

As noted above, the main reason for our blindness to our experience is the absorption of attention into the content or “what” of our activity, to the detriment of the “how”. The third key to the interview is thus to help the subject loosen the focus of her attention on the “what” of the evoked experience, in order to let the “how” unfold.⁵ This unfolding has two distinct dimensions, a synchronic and a diachronic dimension. The synchronic dimension corresponds to the configuration of the experiential space or “landscape” of the subject at a given moment in time. The diachronic dimension of the experience corresponds to the evolution of this landscape in time.

To collect the diachronic description of the experience, the interview method consists in asking questions that guide the subject’s attention towards the various moments of its unfolding without suggesting any content, such as “How did you start?”, “What happened then?”. These questions enable the collection of a large mesh description of the experience as a succession of phases. The same type of questioning is then reiterated to deepen the description of a phase: “Can you look at this step again? When you did this, what did you do? How did you start?” so as to obtain the description of a succession of sub-phases. And so on, for each sub-phase, until the level of detail that is required for the research purposes is reached, or until it seems impossible to fragment the description further. This “content-empty” or “structure-driven” questioning enables the researcher to obtain a fine-grained diachronic description⁶ without infiltrating her own presuppositions. To collect a synchronic description, the researcher helps subjects reorient their attention from the content of the experience towards its structural characteristics at a given instant. For example, if it is a matter of describing an inner image, instead of asking questions concerning its content (the objects seen), she asks questions such as “When you see this, how do you see it?”, in order to draw the subjects’ attention towards the size, distance, direction and persistence of the image... or any other generic or structural feature that gradually emerges from the analysis work.

Micro-phenomenological interviews have an iterative structure which helps subjects repeatedly evoke the experience to be described while guiding their attention towards a progressively finer synchronic and diachronic mesh. The description of just a few seconds of experience usually requires about one hour of interview.

⁵ Micro-phenomenological descriptions of the process of becoming aware of one’s experience show that it does not consist in reorienting a focused attention from the “what” towards the “how”, “observing” it as an object, but through an open, receptive and bodily anchored mode of attention, in coming into contact with one’s experience in order to let its awareness unfold progressively (Depraz et al. 2003 chapter 1.2, Petitmengin 2007, Petitmengin and Bitbol 2009 pp. 373–381, Bitbol and Petitmengin 2013, 2016).

⁶ The issue of the relationship between experience and its verbal description is notably addressed in (Petitmengin and Bitbol 2009 pp. 387–390) and (Bitbol and Petitmengin 2013, 2016).

3 Preparation of the verbatim

Once the descriptions have been collected, a thorough and meticulous work is necessary to detect and represent the structure of the experience under study, which begins with the preparation of the verbatim.⁷

3.1 Transcription

It is of course advisable to audio-record (and if possible video-record) the micro-phenomenological interviews, which involves a work of transcription. The transcription consists of noting not only word for word each verbal intervention of the two interlocutors, but also paraverbal information such as changes in the pace of speech, silences (with their duration), hesitations, repetitions, stammerings, onomatopoeias: these clues will help the researcher to evaluate the intensity of the state of evocation and the effectiveness of the process of becoming aware of the experience and putting it into words, and therefore the authenticity of the description produced (for conventions of notation see (Valenzuela-Moguillansky and Vásquez-Rosati, [forthcoming](#))).

When the interview has been filmed, it is interesting to also note non-verbal information such as the possible loss of eye contact, the postural synchronization of the subject with the interviewer, and co-verbal gestures, which inform the researcher respectively on the state of evocation of the subject, the quality of her relationship with the interviewer, and possible pre-reflective inner micro-acts. The use of punctuation, of course absent from oral discourse, is double-edged: it may create illusions of sequences, but at the same time a transcription without punctuation is very difficult to understand. We therefore advise introducing the minimum punctuation necessary for the interview to be easily readable.

As the transcription task is long and tedious, it is tempting for the researcher to “subcontract” it. However, by enabling her to evoke the experience of the interview very precisely and to imbue herself with it, it allows (better than only reading the transcription does) a preparatory work which is indispensable for analysis: identification of information that had not been previously noticed at the time of the interview, evaluation of the quality of the questions and prompts (which the pressure exerted by the management of the interview itself makes it difficult to carry out in real time), identification of key passages, or preliminary hypotheses about the structure of the experience. If the researcher does not do the transcription herself, she is strongly advised to listen carefully to the interview before undertaking the analysis.

3.2 Numbering

The next task consists in numbering the questions and answers, and when answers are long, to number their parts. This numbering will facilitate the subsequent phases of refinement of the verbatim and sequential reorganization of the description, and then the identification of the diachronic and synchronic structures. Moreover, throughout the process of abstraction that the work of analysis is, this numbering will make it possible

⁷ For a description of the different steps of this preparation, the reader may also refer to (Vermersch 2012, chapter 11), and (Valenzuela-Moguillansky and Vásquez-Rosati, [forthcoming](#)).

to never lose track of the concrete experiences from which the abstract categories emerge. When presenting the results of analysis, it will make it easy to retrieve the concrete descriptions that give meaning and body to each category.

3.3 Refinement of the verbatim

3.3.1 Detection of non-descriptive statements

This stage consists in distinguishing in the verbatim statements describing singular experiences, termed *descriptive statements*, from general statements. The latter, which are characterized by the use of abstract terms, the pronoun “we”, generic (always, usually, ordinary), or frequency (occasionally, frequently) adverbs (Molinier 2004) associated with the imperfect or a generic present (“usually I always feel”) are highlighted or eliminated, and will not be taken into account in the analysis. Only the statements describing a singular lived experience, characterized by a concrete and detailed vocabulary, the use of the pronoun “I”, and the reference to specific moments and places are kept.

The “satellite dimensions” of the experience, namely statements of commentaries, beliefs, judgments, explanations and theoretical preconceptions *about* the experience, are also highlighted or eliminated. Although the description of the context is considered as a satellite dimension that does not inform the researcher precisely of the unfolding of the experience, its description (when, where, with whom... the experience took place) can be preserved: it makes it possible to verify that the experience is indeed situated in space and time, and moreover it can facilitate the understanding of the experience and therefore its analysis.

3.3.2 Evaluation of the reliability of descriptive statements

The next stage consists in evaluating the reliability of descriptive statements. Microphenomenology advocates a “performative” view of the reliability of these statements, as opposed to a “correspondentist” view (Petitmengin and Bitbol 2009; Bitbol and Petitmengin 2013, 2016, 2017; Petitmengin 2017). Since the initial experience is definitely past, it is impossible to evaluate directly the correspondence of the *content* of the past experience with the *content* of descriptive statements. However, we can evaluate the *process* that generated these statements, through (processual) clues informing us about the reliability or unreliability of the interviewee’s and interviewer’s *acts*.

The evaluation of the reliability of descriptive statements is thus based on the one hand on the assessment of the *interviewer’s* interventions, and on the other hand on clues of reliability or lack of reliability detected in the *interviewee’s* answers. In terms of the interviewer’s interventions, content-empty questions gives a presumption of reliability to the corresponding answers. On the contrary, responses to inductive verbal, para-verbal or non-verbal questions or interventions of the interviewer will usually be considered unreliable and highlighted. For example, if the interviewer reacts to the statement “I feel sad” by the question “How does this feeling of sadness appear in your mind?”, the answer to this question will be considered suspect (especially if the subject follows the interviewer’s invitation to describe her sadness as a process unfolding in her mind!). However on the contrary, a rectification in response to an inaccurate induction

or reformulation of the interviewer brings a presumption of authenticity to the corresponding description.

In terms of the interviewee's answers, the main indicators of reliability are the verbal, non-verbal and para-verbal clues of contact with experience.

- Verbal clues are the use of the present or past simple tenses (“at that moment, I felt”), short and simple sentences, action verbs, and the presence of concrete details. Another verbal clue is the use of strange words or syntactic formulations, and the use of metaphors that the interviewee is inventing in order to try and describe something she is discovering, which she has never described and might have never been described. These means are notably used to describe dimensions of experience where the distinctions we usually consider as given - between inside and outside, between mind and body, or between sensory modalities - weaken. The subject's ability, facilitated by the interviewee's content-empty questions, to provide a fine-grained description, is an additional guarantee that this description does not correspond to an implicit theory, because no theory describes inner processes at such a level of detail. The consistency of a description, in spite of the iterative structure of the interview, is a strong complementary criterion of its authenticity. The difficulty, if not the impossibility, of inventing a coherent detailed narrative without the guiding thread of a lived experience has been demonstrated by studies on confabulation in the juridical context (Bénézech 2007; Vrij and Granhag 2012). This difficulty is increased in the context of a micro-phenomenological interview, characterized on the one hand by a constant circulation between various levels of detail and various moments of the described experience, and on the other hand by the amount and fine granularity of the evoked details. The hypothesis of a description which is "copied" on that of a third person is also very unlikely. Micro-phenomenological questions are indeed unpredictable, constructed in interaction with the interviewee, and relate to a singular experience exclusively lived by the interviewee: how could the third person have constructed a detailed narrative by answering questions that he/she was never asked?

The distribution of the speaking time is also a quality criterion of the description. Unless the interviewed subject is herself an expert in the practice of interviewing, long statements on his part without intervention from the interviewer are generally the sign of an unreliable or superficial description. In order to provide an authentic description, and to discover the pre-reflective part of her experience, a non-expert subject needs to be supported in the process of evocation and guided in the fragmentation of her description by numerous interventions from the interviewer.

- Detecting non-verbal clues means viewing the video recordings corresponding to the verbatim. Non verbal clues include the shifting and unfocusing of the eyes (i.e. the fact that the subject drops eye contact with the interviewer and looks off into empty space), and the presence of gestures that accompany or replace verbalization without the subject being aware of them. These gestures are iconic gestures that at least partially reproduce an actual gesture, the shape or movement of an object, or indicate its spatial location, deictic gestures that designate the zone of the body where a

- feeling arises, and metaphoric gestures that “mime” inner processes (McNeill 1992, 2005). These indications show that the subject is indeed retrieving a past experience that becomes more vivid for her than the current situation is.
- The slowing down of the verbal flow and the presence of hesitations and silences, are then considered as para-verbal clues that the interviewee is not rehearsing received knowledge but is *discovering* pre-reflective processes.

Only passages of the verbatim associated with a sufficient degree of authenticity should be kept, other parts will be considered suspect and highlighted or eliminated.

A tool to help evaluate the degree of authenticity of a statement according to these different criteria is being designed. Once the degree of authenticity of each statement or group of statements is assessed, it will allow the visualization of the evolution of the authenticity of the statements during the interview in the form of a graph.

3.4 Chronological reorganization of the description

As the interview is an iterative process, the chronology of the description and the chronology of the experience are not identical. When the subject evokes the experience for the first time, she provides a quite coarse “large mesh” description. She needs to go over it several times, with the help of the interviewer, to become aware successively of all the dimensions of the experience, and to provide a fine mesh description. The report is therefore a jigsaw made of descriptions of scattered moments of experience, of which the analyst has to reorganize the chronology. A detailed example of such a reorganisation can be found in (Valenzuela-Moguillansky and Vásquez-Rosati, forthcoming).

The reconstitution of the temporal course of the experience is closely based on the iterative structure of the questioning, which allows the description of the experience in the form of a succession of moments, themselves divided into sub-moments, up to the desired level of detail. The interviewer's frequent recapitulations, which allow her to verify her understanding of this chronology, while allowing the interviewed subject to rectify or complete it, are essential to this work of reordering.

At the end of this reorganization stage, it is possible to remove from the verbatim the questions and recapitulations of the interviewer. The verbatim is then presented in the form of a succession of statements organized in moments and sub-moments. As noted in the previous section, when this reconstitution results in a consistent sequence, this gives the report a strong additional presumption of reliability.

The reconstitution of the temporal course of the experience does not mean that it is always possible to identify a strict succession between the different moments of experience: some moments unfold in parallel, partially overlap or repeat. These chronological indications must be noted meticulously and will be taken into account in the diachronic analysis.

Finally, it is often on the occasion of this reconstitution that the researcher discovers incomplete sequences, deficiencies or shortcomings in the description. These deficiencies may be investigative avenues for future interviews, so they should also be carefully recorded.

4 Analysis principles and tools

This section presents the fundamental principles of the micro-phenomenological analysis method, and the main tools - concepts and operations - that are used in the process of analysis.

4.1 Principles of the analysis method

4.1.1 Focus on the structure of the experience

The actual analysis process starts from authenticated and chronologically reorganized descriptions of singular experiences, in which implicit elements have been systematically detected and made explicit through the interview questioning, and from which satellite dimensions such as beliefs, preconceptions, judgments and commentaries about the experience have been removed. The analysis consists in progressively abstracting from these descriptions generic structures which are independent of the context and content of the singular experiences described. It is precisely this focus on the structure of the experience and not on its content or context, which determine some of the particularities of the micro-phenomenological analysis method.

A precise comparison of the micro-phenomenological analysis method with qualitative analysis methods would be beyond the scope of this article. However, we can note three important specificities of micro-phenomenological analysis compared to other methods, which determine the criteria for assessing the quality of its results. These specificities concern the mode of access to experience, the role of interpretation in the analysis process, and the reproducibility of the analysis results.

Firstly, even methods which share the objective of Micro-phenomenology of trying to describe phenomena as they appear to consciousness are not intended to analyze data collected through a disciplined method of access to lived experience like the micro-phenomenological interview. For example, in the Descriptive Phenomenological Psychological Method (Giorgi et al. 2017), the phenomenological *epochè* or suspension of the preconceptions and beliefs is not prescribed to the interviewee describing her experience, but to the researcher analyzing it. In other words, Giorgi's descriptive method does not include processual criteria enabling the researcher to assess the conditions of production of the analyzed data; all the attention focuses on the conditions of production of the analysis results.

Some of these conditions, such as iterativity, traçability (or transparency) and intersubjectivity, notably specified in the Systematic Text Condensation (Malterud 2012) which specifies the steps of Giorgi's method, are also relevant in micro-phenomenological analysis (we will come back to them in section 5.4). However, in Giorgi's method as in most qualitative analysis methods - a huge part of the analysis assessment is devoted to the researcher's interpretation. This is another important difference with micro-phenomenological analysis. Since micro-phenomenological interviews do not focus on the content of the experience but on its structural elements, distinguish between the description of the experience and the preconceptions, judgments and comments about it, and enable a fine-grained level of description where most implicit elements of the experience have

been made explicit, the part of interpretation by the researcher in the analysis is significantly reduced.

The focalization of the micro-phenomenological interview and analysis on the structural elements of the experience under study has another important epistemological consequence: it allows the reproducibility of analysis results. Despite the fact that the content of an experience is singular and non-reproducible, either by others or by the person who lives it, the analysis of a corpus of descriptions of the same type of experience enables the researcher to identify regularities of structure. Once detected by a research team, such a structure constitutes a hypothesis, likely to be supported or not supported by analyzing experiences of the same type. In other words, the singular and non-reproducible character of the *content* of a given experience does not prevent the intersubjective validation of experiential *structures*. In contrast, the focalization of most qualitative methods on the contents of experience rather than on structures makes this reproducibility more difficult or even impossible.

4.1.2 Specific and generic, synchronic and diachronic structures

The analysis process thus consists in detecting in the refined and chronologically reorganized descriptions of singular experiences, the *specific* structures of these experiences, while progressively unfolding the *generic* structure of the type of experience being investigated. Both specific and generic structures have two dimensions, a *synchronic* and a *diachronic* one. In the previous section we compared an experience to a landscape that evolves over time. The synchronic analysis consists in identifying the architecture or topography of this landscape at a given moment in time. The diachronic analysis consists in identifying the evolution of this architecture or topography over time, and the micro-acts that trigger and accompany this evolution.

The diachronic analysis is another specificity of the micro-phenomenological analysis method. Most qualitative analysis methodologies focus on thematic analysis: they describe procedures to identify thematic categories and relationships between them, which in our method corresponds to the synchronic analysis. However, they do not provide a specific method to identify the temporal dynamics of the experience under study. For example, the analysis process of Grounded Theory, which is, like the micro-phenomenological analysis method, an iterative and inductive process of abstraction, provides guidelines on how to identify categories and how to establish relationships between them (Tracy 2013). But it does not provide guidelines to identify the temporal unfolding of the experience. Similarly, the Interpretative Phenomenological Analysis focuses on the identification of themes that capture the essential qualities of the experience, and are then grouped into clusters or concepts to provide an overall structure. However, it does not either provide procedures to identify the temporal structure of the experience under study (Smith 2011; Smith and Osborn 2003; Smith et al. 2009).

The narrative analysis approaches (Riessman 2005) are interested in life stories and in the temporal dimension of the experiences recounted in these stories, but they apprehend these stories at a macro level, or focus on the micro-dynamics of the form or conditions of production and reception of the narrative itself. In particular,

conversational analysis (Goodwin and Heritage 1990) deals with the social interactions involved in a conversation, that is, in our context, with the interview process rather than the process of the described experience. Neither the Descriptive Phenomenological Psychological Method (Giorgi et al. 2017) nor the Systematic Text Condensation (Malterud 2012) propose a diachronic analysis of the experience under study.

Moreover, none of these methods explicitly defines the operations used to identify themes and elaborate a hierarchy of themes, while the micro-phenomenological analysis method defines them precisely and also extends them to the diachronic analysis – this is another specificity of the method.

Therefore, the design of the method was not inspired by qualitative research in social sciences, but by two methods used in information system design: Semantic Networks (Smith and Smith 1977; Sowa 1984; Lé and Peugeot-Petitmengin 1988) and Remora method (Rolland et al. 1988), which provide concepts to identify respectively the synchronic structure and the dynamic or diachronic structure of a system.⁸

Micro-phenomenological analysis relies on a fine-grained description of experience which is as far as possible devoid of preconceptions and theorizations, in order to extract progressively abstract categories. Therefore we do not start, either in the interview or in the analysis, from a set of predefined categories supposed to characterize any experience, such as the “layers of experience” identified by Vermersch (2006) or the bodily, cognitive, emotional and discursive dimensions of experience recognized by Depraz et al. (2017). We consider that these too familiar distinctions might be preconceptions characterizing a superficial level of awareness of experience, and hindering the awareness of its deeply pre-reflective structures. For example, establishing straightaway a distinction between bodily and cognitive processes may generate needless efforts to understand the bodily anchoring of thought and to bridge the gap between these two dimensions that are not separated in experience. Instead of starting from such predefined structures considered as given, we consider micro-phenomenological research as the investigation of the genesis of these distinctions and of the possible micro-processes through which they are constituted. However we allow ourselves to keep as a guiding thread, in the interviews and their analysis, the distinction between sensorial modalities, while keeping clearly in mind that these distinctions might be superimposed to experience. We are thus especially attentive to clues that could inform us on their process of emergence. In the same way, on the diachronic level, we rely on the Husserlian principle, resumed by Vermersch (2012), that lived experience unfolds in time, without losing sight of the hypothesis that this temporal structure might be created and sustained by a micro-activity.

⁸ One of the co-authors of this article was a consultant and researcher in information system design for ten years. Designing an information system consists in identifying the main entities used by a system or organization (for example a “book” in a library), and the evolution of these entities over time (a book may be on the shelves, loaned, reserved, etc.) The Semantic Network method is used to represent the static aspects of the system in the form of a network of entities related by abstraction relationships. The Remora method makes it possible to represent the dynamics of the system as transitions between the different possible states of an entity that are triggered by events. These methods inspired us 1) to differentiate the synchronic and diachronic dimensions of an experience, 2) to structure the synchronic dimension in the form of abstraction relationships between descriptive categories, and 3) to structure the diachronic dimension in the form of transitions between the values of descriptive categories, that are triggered by events.

4.1.3 Content and structural statements

The whole phenomenological project relies on the redirection of attention from the object or content of experience and the identification of its characteristics, towards the experience of the object and the identification of its structure, an identification which is precisely the aim of the analysis. An essential part of the analysis is thus to differentiate, in the description of an experience, the elements of descriptive statements related to the object of the experience from those which concern the experience itself. For example, if I suggest that the reader imagines an elephant and describes this experience, statements such as “I see a Maharaja on an elephant in an old movie” and “I imagine Babar in New York” describe the object of the experience, in this case the content of the image. We propose to call them “content statements”. Whereas a statement such as “I see a blue elephant”, while describing the content of the image (what is seen), also includes a descriptive element of the image itself (how it is seen): “blue”. Moreover, this descriptive element indicates a characteristic likely to be found in any inner image, a potential structural element of the experience of imagining: the color of the image. We propose to call such statements “structural statements”. In the same way, the statement “I see Babar as if I was sitting on its back”, while describing the content of the image, includes a descriptive element which indicates a potential structural element of the experience of imagining: the perceptual position of the subject in the imagined scene (which is in this case a “first person” perceptual position (see for example Petitmengin 2006: 251).

It should be stressed that by definition, all descriptive statements describe singular experiences, precisely situated in space and time, whose content is unique. Structural statements, as content statements, thus vary indefinitely: “a light blue elephant”, “a dark blue elephant”, “a turquoise elephant”, “a sky-blue elephant”, “an elephant with a slightly lighter blue than the previous one”... However in spite of the infinite diversity of the described experiential contents, all these statements indicate a common structural characteristic. The name of the structural characteristic does not usually appear in descriptive statements, which are characterized by a concrete and detailed vocabulary, and are as devoid as possible of abstract categories. But the particularity of structural statements is to include instances or such a category, from which a specific operation of abstraction – to which we will come back in the next section - enables the analyst to extract the category. The iteration of such abstraction operations allows her to build progressively an *experiential structure*, defined as “a network of descriptive categories, independent of the experiential content” (Delattre 1971).

It is important to note that the detection of structural statements is prepared and facilitated by the particular questioning mode of the micro-phenomenological interview, a content-empty or structure-driven questioning consisting precisely in helping the subject to reorient his attention from the “what” or content of the experience towards the “how”, in other words towards its structural characteristics. However the differentiation of content and structural statements in a verbatim can be more or less easy according to the type of experience described. For example in the description of an inner discourse, it is rather easy to differentiate immediately the statements describing the content of the discourse (such as “I tell to myself that Tom should be more modest”) from structural statements indicating potential generic characteristics such as the volume, tone and location of the voice uttering the discourse. In such cases, to identify a statement such as “I talk to myself with a loud voice” as a potential structural statement indicating a generic characteristic “volume”, the

analyst can rely on an inner operation consisting in varying the content of the discourse while verifying in her own experience the concomitant variation of the volume. This inner operation - of which a careful micro-phenomenological description remains to be done - only leads to a hypothesis, which the remainder of the analysis will enable the researcher to confirm or falsify.

However in many cases, such as those of the intuitive experience and of the tactile experience that we will develop in section 5, the identification of structural statements is much more delicate. The experience seems initially reduced to its content and structural statements may be not identified as such. Structural statements only appear progressively in the interviews, and are gradually identified in the analysis. In such cases the distinction between content statements and structural statements is not possible before an advanced stage of research.

4.1.4 Descriptive categories and descriptemes

Micro-phenomenological analysis consists 1) in identifying in structural statements minimal units of meaning, that we call *descriptemes*,⁹ potentially referring to or instantiating descriptive categories, and 2) in abstracting - in the etymological sense of the term: “pull-out” (*ab-strahere*) - from these minimal structural statements, more and more generic descriptive categories, on the synchronic and on the diachronic levels, through a number of abstraction operations, which are the main analysis tools.

4.2 Abstraction operations

Abstraction operations have long been known to logicians. These are the operations of classification/instantiation, aggregation/fragmentation, and generalization/specialization. We use them constantly in everyday life, but usually implicitly, without knowing that we use them. The definition of these operations is the first necessary step in the development of a shared methodological lexicon, indispensable to refine or compare analysis methods. In this section we present first the synchronic abstraction operations, and then the diachronic abstraction operations. This order seems to facilitate their understanding but does not necessarily correspond to the order in which they are carried out in the analysis process. In section 5, we will give examples of their sequence of use in the context of different processes of analysis which have actually been carried out.

Figure 1 gives the definition of these abstraction operations. To represent them, we use here the formalism of Semantic Networks (Sowa 1984). But we do not wish to prejudge the formalisms that could be used in future projects, formalisms that depend closely on the evolution of techniques (from pencil to sophisticated graphic softwares, via Word and Excel).

We will now identify the specific structure of a particular experience entitled “Spring morning” using the abstraction operations presented in Fig. 1.

⁹ Descriptemes can be compared to “meaning units” defined in the Descriptive Phenomenological Psychological Method (Giorgi et al. 2017) as passages of the transcript which elicit an experience of “transition in meaning” in the researcher. However they cannot be assimilated with them. Meaning units may indeed be long, not instantiate a precise experiential category and contain information that is considered as “satellite” in Micro-phenomenology.

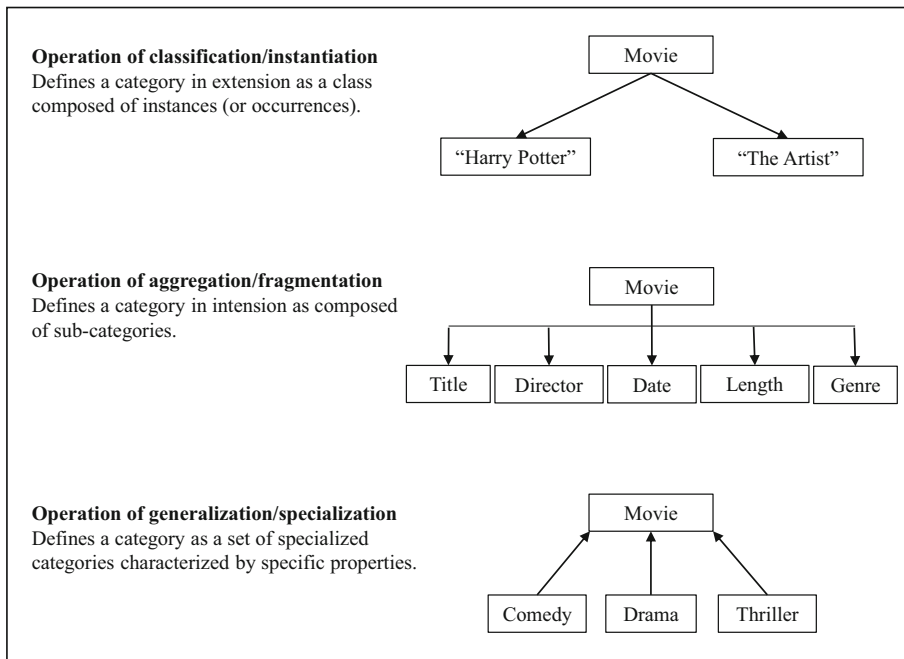


Fig. 1 Abstraction operations

4.2.1 Synchronic abstraction operations

Synchronic classification and instantiation Let us imagine that we are beginning some research on bodily feelings, and have to analyze the following verbatim.

“(1) It was in Puiseaux one April morning, last spring. I just hung up the phone after a conversation with Tom. (2) I feel sad. (3) My heart is tight, like a frozen ball in the middle of my chest. “.

First we identify in this verbatim the description of a satellite dimension: the context in which the feeling is experienced (1), which shows that this description actually refers to a singular experience which is precisely situated in space and time. The next statement, “I feel sad”, introduces a predefined category “Sadness”. This rough category covers a concrete experience of which the question “how do you know that you feel sad?” enabled the interviewee to provide a first description: a bodily feeling which corresponds precisely to the

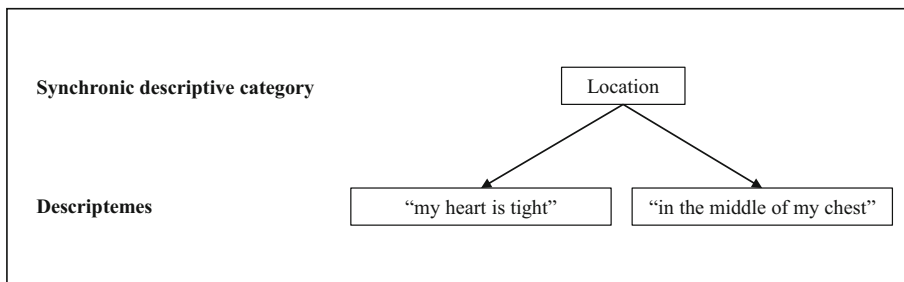


Fig. 2 Example of synchronic classification

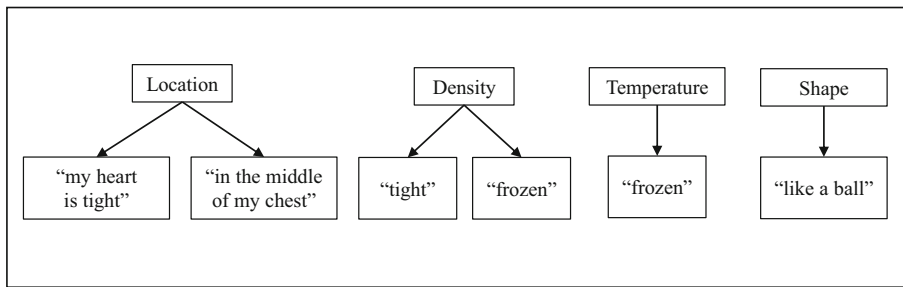


Fig. 3 Other examples of synchronic classification

research object. In (3), both statements “my heart is tight” and “in the middle of my chest” are instances of *location*, a characteristic that might be essential to any feeling, regardless of its content. These are thus potentially structural statements. We consider these two statements, both presenting a unity of meaning, and potentially indicating a structural feature, as *descriptemes*. We carry out an abstraction operation consisting in considering these descriptemes as two instances of a *synchronic descriptive category* that we call “Location” (of the bodily feeling). This abstraction operation is an operation of *synchronic classification* (Fig. 2).

We could then go on to identify, by analyzing other descriptions of feelings, other descriptemes illustrating the category “Location”. As opposed to the bottom up operation of classification, we would then perform a top down operation of *synchronic instantiation*.

Let us return to our short verbatim. We find other descriptemes: “tight” and “frozen” that we recognize as indications of density,¹⁰ “frozen” giving also an indication of temperature, the metaphor “like a ball” giving an indication of shape. Through operations of classification, we subsume these descriptemes under three new descriptive categories, “density”, “temperature” and “shape” (Fig. 3).

Note on the experience of abstracting What does the abstraction operation that allows the researcher to go from the descripteme “in the middle of my chest” to the descriptive category “Location” consist in? To our knowledge, the lived experience corresponding to the process of abstracting or “pulling out” general categories from concrete descriptions has not been described precisely, and this work remains to be done. In the context of micro-phenomenological analysis, the fine-grained character of the description and the prior identification of satellite dimensions and content statements make this operation more similar to a process of detection, than to a process of interpretation of the description that could differ considerably from one analyst to another. However what makes one researcher “see” a category or a network of categories emerge from a description, while another does not see them? This work of micro-description of the experience of abstracting (to which we will come back in section 5.3) is one of the ongoing projects of Micro-phenomenology.

Synchronic aggregation and fragmentation We have just identified four possible descriptive categories of a feeling: Location, Density, Temperature and Shape. The

¹⁰ Two descriptemes may be compared in terms of their proximity of meaning as in this chosen example, and / or their “proximity of expression” at the para-verbal or non-verbal level, for example when they are accompanied by the same gestures.

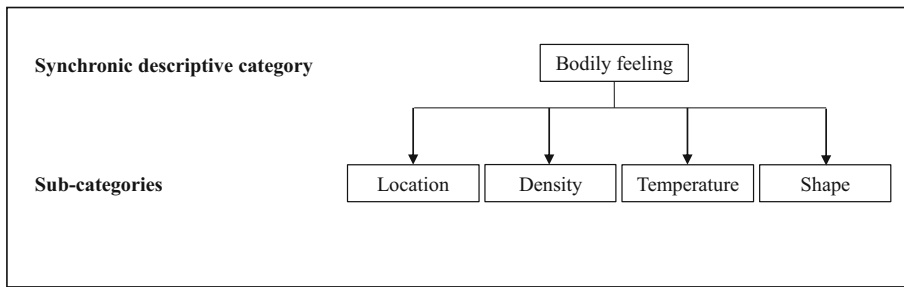


Fig. 4 Example of synchronic aggregation

operation consisting in grouping them under the more abstract category “Feeling” is an operation of *synchronic aggregation*. It is a bottom up operation of abstraction (Fig. 4). The reverse operation, consisting for example in dividing the category “Location” into sub-categories such as “Height” and “Depth”, would be a top-down operation of *synchronic fragmentation*.

Let us now turn to what comes next in the verbatim: “[1) It was in Puiseaux one April morning, last spring. I just hung up the phone after a conversation with Tom. (2) I feel sad. (3) My heart is tight, like a frozen ball in the middle of my chest.”] (4) At one point, the song of a turtle-dove comes through the open window. (5) And suddenly, this ball begins to melt, to dilute, a new heat invades my whole body.”

Synchronic generalization and specialization In (5) we identify (by an operation of instantiation) a descripteme illustrating the already recognized descriptive category “Location”: “my whole body”.

We consider then that the three descriptemes identified until now to instantiate the category “Location” (“my heart is tight”, “in the middle of my chest” and “my whole body”) can be distributed into two sub-classes corresponding to *specialized categories* or values of the category “Location”: “Chest” and “Whole body”. This operation, which consists in dividing the instances of a category – namely the corresponding descriptemes – into several sub-classes corresponding to specialized categories or values of a more general category, is an operation of *synchronic specialization* (Fig. 5). The reverse operation, consisting in grouping for example the categories “Chest”, “Whole body”, “Head” and “Hands” under one more abstract category “Location”, would be an operation of *synchronic generalization*.

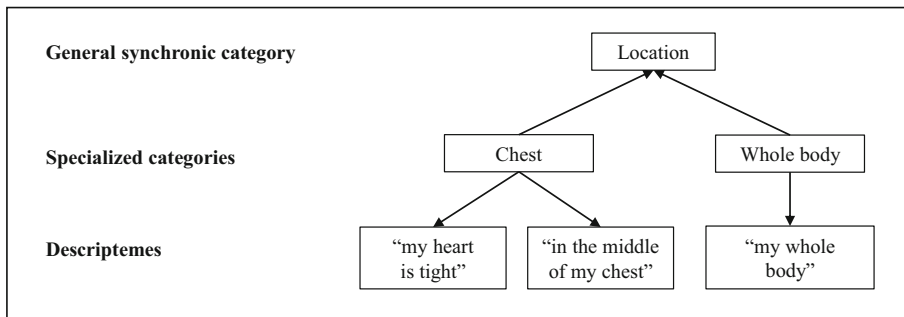


Fig. 5 Example of synchronic specialization

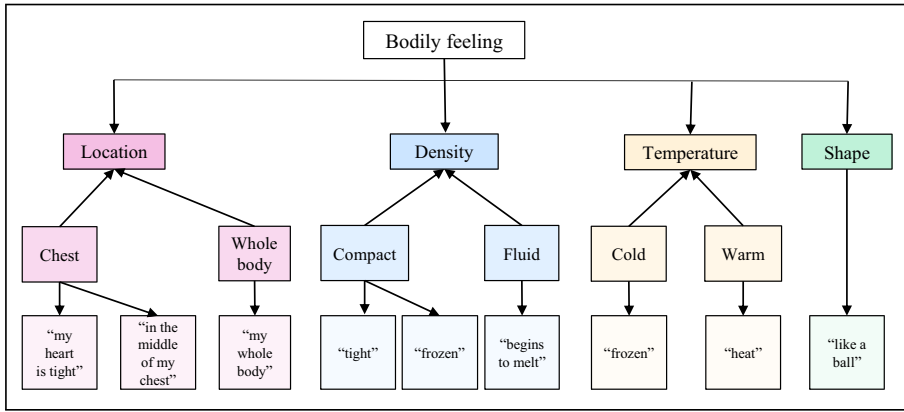


Fig. 6 Other examples of synchronic specialization

We carry out the same operation of specialization for the other descriptive categories. The descriptemes “tight” and “frozen” on the one hand and “begins to melt” on the other hand, are distributed into two specialized categories of the category “Density”: “Compact” and “Fluid”. The descriptemes “frozen” and “heat” are distributed into two specialized categories of the category “Temperature”: “Cold” and “Warm” (Fig. 6).

4.2.2 Diachronic abstraction operations

Diachronic aggregation and fragmentation The next part of our analysis focuses on the temporal evolution of the feeling. We identify in the verbatim the description of a *transitional event*: “At a given moment, the song of a turtle dove comes through the open window” (4). This event separates the “One April morning” experience into two *phases*, the first one described by the set of descriptemes (3) appearing before the statement of the event, the second one described by the set of descriptemes (5) appearing after the statement of the event. We have just performed a top down operation of *temporal or diachronic fragmentation (or segmentation)* (Fig. 7). The reverse operation, consisting in grouping several phases under one phase, is a bottom up operation of *diachronic aggregation*.

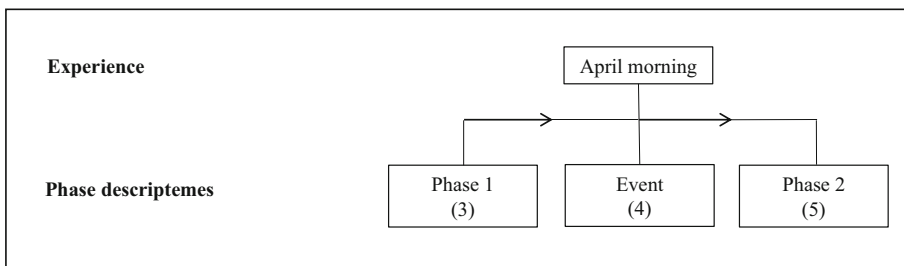


Fig. 7 Example of diachronic fragmentation

A *transitionnal event* is a modification in the subject's experience which in turn induces significant transformations in her experience. It may correspond to the appearance of a sensation (which was auditory in our example), an idea, an inner discourse, but also to a change in the value or intensity of one of the parameters of the experience, a change whose detection requires a subtle operation of evaluation which is often deeply pre-reflective. An event may occur unexpectedly in the experience of the subject (for example the auditory event in the "One April morning" experience), but may also be a voluntary action or "micro-gesture", such as a change in attentional disposition (of which an example will be developed in section 5.1.2).

The operation of diachronic segmentation makes it possible to divide the description of an experience into phases, a phase into sub-phases, a sub-phase into gestures, and so on until the level of very subtle micro-acts and micro-processes. Even if a precise typology of these diachronic structural categories remains to be done, this operation of segmentation is characteristic of the micro-phenomenological method, whose mode of questioning makes it possible to obtain diachronic descriptions, and thus to detect diachronic structures, characterized by a very fine level of granularity. This fine level of diachronic description also makes it possible to highlight subtle chronological structures between the temporal segments which have been identified, to which we will come back in the next section.

Diachronic classification and instanciation We can subsume the set of descriptemes (3) corresponding to the first instance of phase under a descriptive category of phase that we call "Tightness phase", and the set of descriptemes (5) corresponding to the second instance of phase under a descriptive category of phase that we call "Loosening phase". These are two bottom up operations of *diachronic classification* (Fig. 8).

In the same way, the descriptemes corresponding to an instance of event can be subsumed under an event descriptive category through an operation of classification. The reverse operation, consisting in detecting descriptemes corresponding to an already defined phase or event category, is a top down operation of *diachronic instantiation*.

Diachronic generalization and specialization If we consider the descriptemes associated with "Tightness Phase" and "Loosening Phase" as instances of two sub-classes of a more general category that we call "Feeling phase", we carry out a bottom up operation of *diachronic generalization* (Fig. 9). The reverse operation consisting in distributing

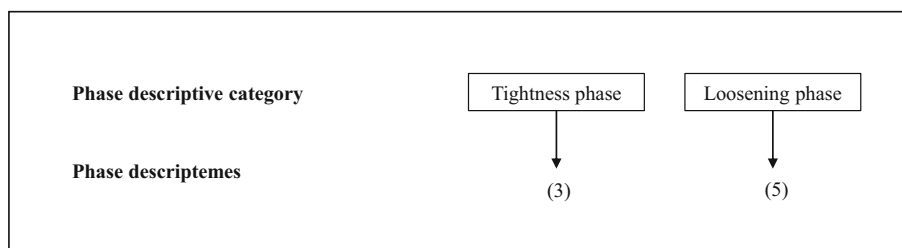


Fig. 8 Example of diachronic classification

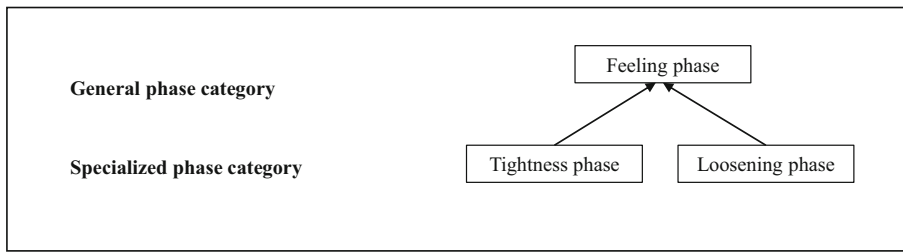


Fig. 9 Example of diachronic generalization

the instances of an already defined phase category into specialized phase categories is a bottom up operation of *diachronic specialization*.

In the same way, the descriptemes corresponding to instances of a general event category can be distributed into sub-classes corresponding to specialized event categories. The reverse operation consisting in distributing the instances of an already defined phase or event category into specialized categories is a bottom up operation of diachronic specialization.

We have just presented the abstraction operations in an order that seems to facilitate their understanding, starting with the synchronic operations. However, in the process of analyzing a verbatim, it may be easier to start with the diachronic analysis, i.e. to identify the phases and sub-phases of the experience, and then to perform the synchronic analysis of each sub-phase.

4.2.3 Combination of synchronic and diachronic structures

The construction of *dynamic lines* makes it possible to combine diachronic structures and synchronic structures. A dynamic line represents the evolution of the values of a descriptive category throughout the different phases of an experience.

Table 1 shows the dynamic lines which are associated with the four descriptive categories of a bodily feeling that we identified in the “One April morning” experience. This figure is the combination of Figs. 6 and 7. Each dynamic line of the experience can be compared to a melodic line in a musical range, each value to a note. If we had gathered a description of another dimension of the “One April morning” experience,

Table 1 Dynamic lines of a bodily feeling

One April morning				
Bodily feeling	Phases	Tightness phase	Auditory event	Loosening phase
	Categories			
	Location	Chest		Whole body
	Density	Compact		Fluid
	Temperature	Cold		Warm
	Shape	“Like a ball”		Undescribed

for example the attentional disposition of the subject and its evolution throughout the experience, we could construct a second range.

In Table 1, most of the descriptemes which were still shown in Fig. 6 have disappeared, because the rudimentary graphical tool that we use does not allow us to make them appear. But a more sophisticated tool would make it possible to “open up” each category in order to display the set of descriptemes from which it is derived.

The construction of a dynamic line may be used to show the evolution of the (discrete as well as continuous) *values* of one experiential category according to different chronological structures such as succession, alternation or iteration. It may also be used to show the *transformation* of one experiential category into another. For example, while illustrating these chronological structures, Fig. 10 displays in the form of a dynamic line the transformation into one another of the sensory modalities mobilized during an experience of acrylic painting. A transduction (a word that we borrow from Vermersch 2012:349) is a particular case of transformation where a sensorial modality is transformed into another modality through the intermediary of a transmodal sub-modality: for example, a sound characterized by a given rhythm is transformed into a gesture of the same rhythm; in the experience of acrylic painting described below, a feeling is transformed into forms and colors through a movement.

The construction of a range also makes it possible to show the relationships between several dynamic lines (simultaneous evolution or overlapping), as well as the events that impact several dynamic lines. From a micro-phenomenological study of the experience of surprise, (Depraz et al. 2017) show the subtleties of the chronological structures that micro-phenomenological analysis makes it possible to highlight, and

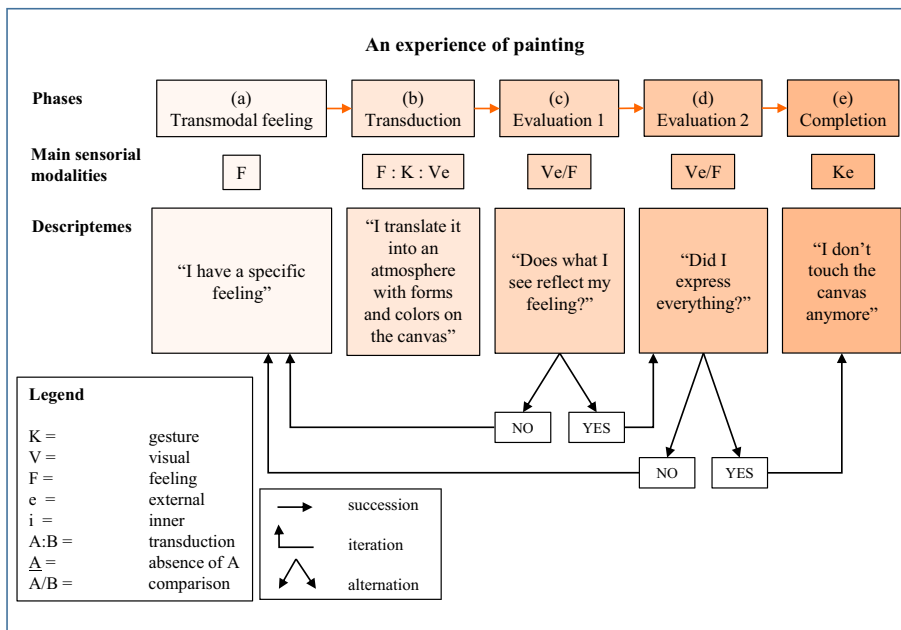


Fig. 10 An example of dynamic line showing a transformation

propose a precise typology of these structures, that further research should test and refine.

The construction of dynamic lines and ranges also makes it possible to refine the definition of transitional events, and sometimes to discover new ones which had not been identified during the initial division into phases or during the first operations of diachronic refinement (an example is given in section 5.1.2). The detection of these new events may lead to a reorganization of the division into phases around the most structuring transitional events, namely those which have an impact on the greatest number of dynamic lines.

4.2.4 Choosing category names

Whenever a (synchronic or diachronic) descriptive category is identified by classification, aggregation, fragmentation, generalization or specialization, it is necessary to name it. The choice of these “labels” is tricky, because it makes it necessary to go, often from the beginning of the analysis, from concrete (structural) statements (such as “in the middle of my chest”) to abstract terms that are not present in the description (such as “Location”).

It may happen that there are no known categories to which the described experience can be linked. For example, when exploring the emergence of sensations, we met descriptions of sensory experiences which, however, do not belong to any particular sensory modality. In this case, we have to risk creating new terms (such as “transmodal”). If, on the contrary, the experience seems familiar to us, we may be tempted to call immediately upon a pre-existing abstract term, which infiltrates an implicit theoretical presupposition, sometimes under the cover of a metaphor. Rather than risk losing the emerging sense, it is then preferable to use temporarily a word that only “points” to it (“this”), whilst waiting to find or create a term that allows us to refer more precisely and intersubjectively to this experience.

In all cases, it is essential to keep track of the descriptemes from which an abstract category has emerged, so as to be able to retrieve the concrete experience from which it is derived, and possibly adopt a more satisfactory label in the course of the analysis.

Once the name has been chosen, it is necessary to complete the definition in extension of the category in question (namely the set of descriptemes that illustrate it or the set of sub-categories that compose it), by a definition in intension.

4.2.5 Levels of abstraction

The analysis process consists in navigating between different levels of abstraction that we recapitulate in this section. The analyst starts from descriptemes (such as “my heart is tight”) to create instances of *synchronic descriptive categories* (such as “Bodily feeling location”), and instances of *diachronic descriptive categories* (such as “Opening phase”). To do that, she relies on a set of synchronic and diachronic *structural categories* or classes of descriptive categories, and on the *structural operations* that make it possible to create descriptive categories. The main synchronic structural category we have identified in this section is

“Synchronic descriptive category”. The main diachronic structural categories are “Phase category”, “Event”, and the chronological structures listed in section 4.2.3 (such as “Sequence”, “Overlapping”, “Transformation” or “Transduction”). The main structural operations are the eight abstraction operations. Structural categories are sometimes called “meta-categories”. They are listed and defined in the Lexicon presented in the Annex of this article. We can note that in the analysis process, each category is an instance of a category of the upper level of abstraction: “my heart is tight“ is an instance of “Bodily feeling location“, which is an instance of “Descriptive category” which is itself an instance of “Structural category”.

5 The analysis processes

After detailing the analysis principles, concepts and devices, we present in this section different dimensions of the analysis process: possible modes of unfolding of generic structures, mutual guidance of the structural and experiential unfolding processes, and finally tracking and assessment processes.

Figure 11 recapitulates the different description and analysis processes involved in micro-phenomenological research. A specific micro-phenomenological analysis [a1] relies on the transcript of the description [D1] of a given experience [e] resulting from an interview [D (e)], and consists in highlighting the specific structure of [e], [S (e)]. The iteration of this process of description and analysis results in unfolding the generic structure [S (E)] of the type of experience [E] being studied. We will focus on this iterative process and the mutual guidance of the structural and experiential unfolding processes in section 5.2.

The reproducibility of the structures resulting from the analysis is the kingpin of their validation. To make this reproducibility possible, it is highly important that the structures are accompanied by a description of their process of detection. This meta-analysis

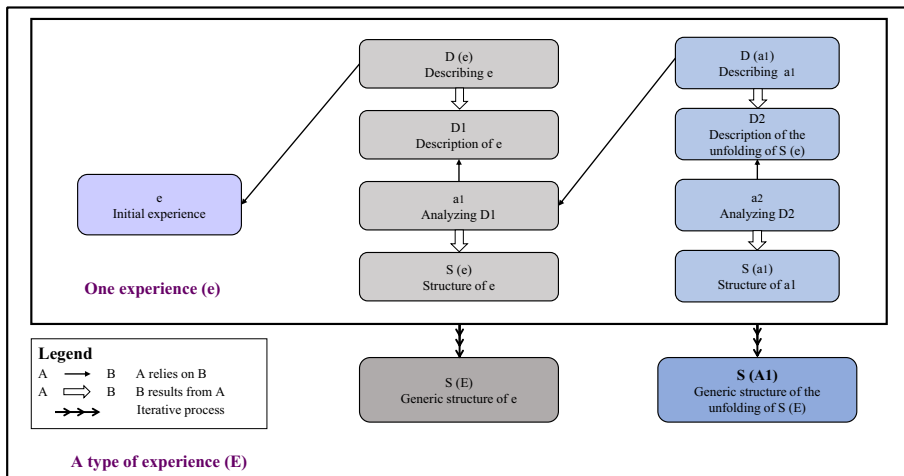


Fig. 11 Levels of description and analysis

process (displayed in blue on the right of Fig. 11) relies on a careful description [D (a1)] of the analysis process [a1] of each experience [e], taking place ideally in parallel with this analysis. This description consists on the one hand in keeping track of the successive versions of the specific structure [S (e)] and of the concomitant unfolding of the generic structure [S(E)], and on the other hand in describing the very process of detection of each category and structure – two tasks on which we will come back to in section 5.3: “Tracking and elucidating the analysis process”. The analysis [a2] of the resulting description [D2] highlights the structure of the specific analysis process [a1], which includes the structural categories on which the detection of the diachronic and synchronic descriptive categories relies, and the structural operations enabling this detection – as we did in section 4.2. The iteration of this process of meta-description and meta-analysis results in the structure [S (A1)] of the unfolding of the generic structure [S (E)], including the structural operations that enable this unfolding. The next section (5.1) will provide examples of this, and Fig. 15 a graphic representation.

5.1 Processes of structural unfolding

The examples below show two possible structures of the process of unfolding of a generic structure [S (E)]: the first is a process of diachronic and synchronic unfolding through the abstraction operations described in section 4. However while in section 4 these operations were used to unfold the specific structure of a singular experience, in the next section they are used to highlight the progressive unfolding of a generic structure. The second example shows a process of unfolding of a generic structure through the detection of an *experiential partition*.

5.1.1 Structural unfolding through abstraction operations

The first example comes from a research project on the experience that accompanies the emergence of an intuition, defined as “knowledge that comes about without the intermediary of a deductive mechanism”: a new scientific idea, the solution of a personal problem, a therapeutic insight or an artistic intuition.

The generic structures [S (I)] of this experience were progressively extracted from the description [D1] and analysis [a1] of 24 singular experiences. A description of the analysis process and of the resulting structures is provided in (Petitmengin 2001), and a synthesis in (Petitmengin 1999). This section is an attempt to highlight the structures [(S A1)] of the analysis process itself. It unfolded in four stages, two of which were divided into two sub-stages.

First stage: Internal synchronic unfolding by specialization

After an initial moment of perplexity - what can be found to describe knowledge deemed immediate, emerging suddenly and in an unpredictable way, except its content? - we have, however, collected several descriptions of the sensory form of the intuition at the moment of its appearance: an intuition can emerge as an image, as sounds or words, as a bodily or transmodal feeling. It

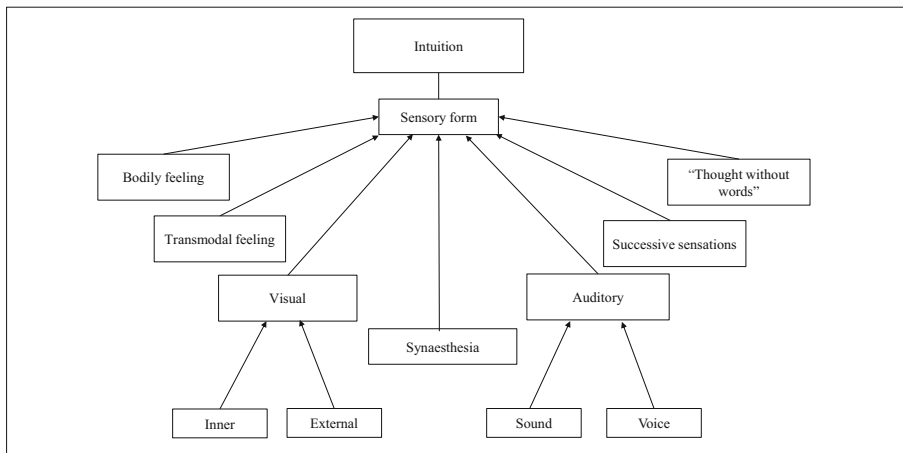


Fig. 12 Internal synchronic unfolding by specialization

may also arise in several simultaneous or successive sensory forms, or as a “thought without words”. The structure of the intuitive experience first emerged in the form of different possible values of a single descriptive category, its sensory form. This was a stage of *internal synchronic unfolding by specialization* (Fig. 12).

Second stage

1) **Backward diachronic unfolding**

Encouraged by this first result, we began to identify in the subsequent descriptions the clues of a phase preceding the emergence of the intuition, previously considered as instantaneous, under the form of an attentional disposition favorable to this emergence. This was a stage of “backward” diachronic unfolding of the structure of the intuitive experience.

2) **Synchronic unfolding by fragmentation**

The analysis of the corresponding descriptions enabled the synchronic unfolding of this pre-intuitive attention mode. It is first characterized by a movement of the area considered as the source of attention from the head (the eyes, the ears) towards the belly, the hands, the entire body, or to a zone situated behind the head. Contrary to the focused mode, which is concentrated on a particular narrow content, this mode of attention is panoramic, peripheral, while at the same time being very fine, sensitive to the most subtle discontinuities. Finally, this attention is receptive, characterized by the loosening of the tension towards the goal to be reached. Four descriptive categories of this favorable mode of attention thus emerged by synchronic fragmentation of the initial category, which we called the Source, Span, degree of Resolution degree, and Direction of attention (Fig. 13).

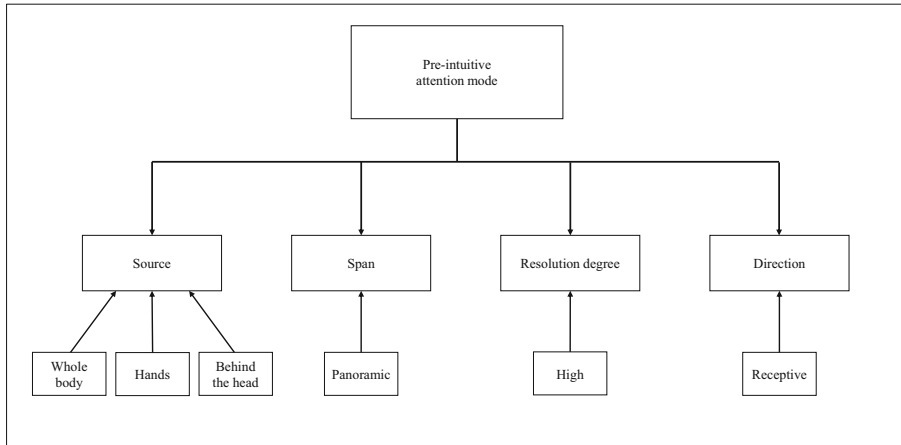


Fig. 13 Synchronic unfolding by fragmentation

Third stage

1) Backward diachronic unfolding

The identification of this propitious mode of attention gave us the idea of exploring its conditions of appearance. This allowed us to unfold further the diachronic structure of the intuitive experience “upstream”, through the detection of a gesture of “letting go”. This was a second stage of backward diachronic unfolding of the structure of the intuitive experience.

2) Diachronic unfolding by specialization

The analysis of the corresponding descriptions enabled us to identify different types of gestures of letting go, characterized by specific diachronic structures, and to separate these types of gestures into two subclasses: voluntary gestures corresponding to a modification of either the relation to the body or the relation to mental activity, and gestures that do not seem to be voluntarily provoked.

The inventory and identification of the specialized diachronic structures of these types of gestures is an example of diachronic unfolding by specialization (Fig. 14)¹¹.

Fourth stage: Internal diachronic unfolding by fragmentation

Progressively, it also became clear that, once the propitious state is reached, the content of an intuition rarely emerges all of a sudden and complete, as an “illumination”, but most often in a progressive manner, in the form of a slow ripening. The instant of sudden emergence of the intuition thus began to unfold “from within”, in the form of the progressive transformation of a fuzzy and transmodal feeling into an idea with a precise content and a definite sensory form, through a process of transduction (illustrated in Fig. 10). This was a phase of internal diachronic unfolding by fragmentation.

¹¹ In Fig. 14, the number in parentheses under each category indicates the number of occurrences in the interviews of the description of the corresponding process.

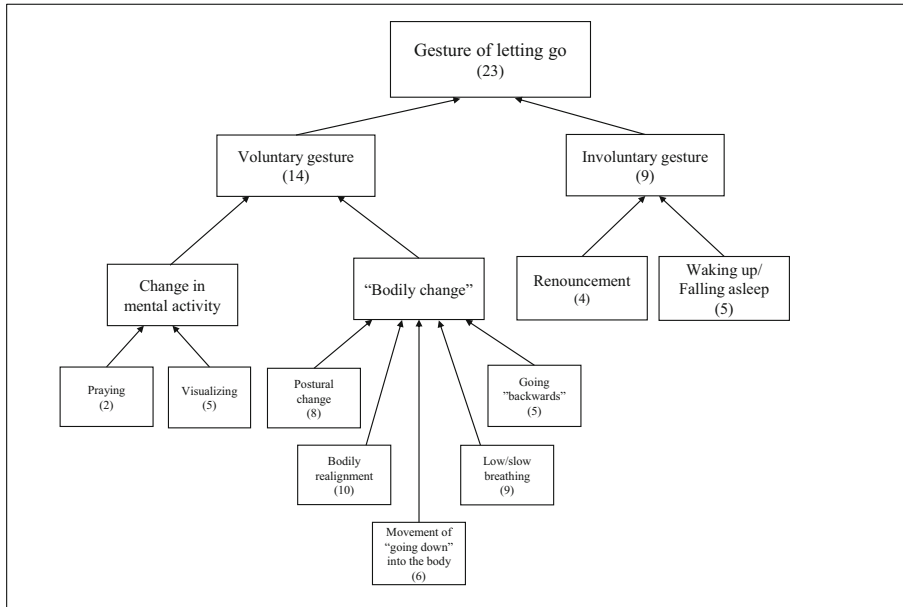


Fig. 14 Diachronic unfolding by specialization

We decided to call “microgenesis” a process which, like the emergence of an intuition, 1) unfolds in time whereas initially considered as instantaneous, 2) is accompanied by a feeling of an absence of control of the subject on the unfolding of the experience,¹² and 3) involves a succession of transductions.

The generic structure of the intuitive experience, initially reduced to a synchronic structure, thus progressively unfolded over time through three stages, two stages of backward unfolding and one stage of internal unfolding. Figure 15 represents:

- the generic diachronic structure of the intuitive experience in the form of a succession of three phases;
- the chronology of unfolding of this structure in the course of the analysis process;
- the abstraction operation used to unfold each phase.

The study of the well known “rubber hand illusion” (where a rubber hand is felt as if it were one’s own hand) is another striking example of diachronic unfolding of an experiential structure which was initially considered as synchronic. While the numerous studies of this illusion usually focus on the characteristics and effects of the final illusion, the micro-phenomenological method made it possible to unfold the successive phases of the genesis of this illusion, in particular the successive transfer from the real hand to the rubber hand of two dimensions of tactile experience that are usually felt as inseparable, the “touching” and the “touched” dimensions (Valenzuela-Moguillansky et al. 2013).

¹² The descriptions of the emergence of an intuition almost always mention such a feeling of an absence of control: “It happens to me”, “It’s given to me”, “It escapes from me” (Petitmengin 1999, 2007). In this instant, the “sense of agency” that is “the sense that I am the one who is generating a certain idea in my stream of consciousness” (Gallagher 2000, p. 15) seems to be altered. The subject does not say: “I have an idea”, but “an idea is coming to me.”

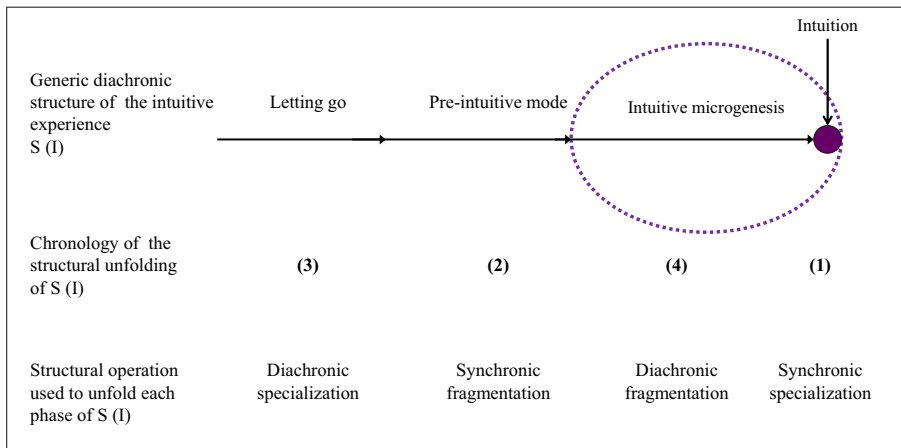


Fig. 15 Generic diachronic structure of the intuitive experience and its chronology and mode of unfolding

Our study of the auditory experience (Petitmengin et al. 2009) also enabled us to reorient our attention from the content of this experience towards its genesis, which made it possible to unfold the experience, which was initially considered as instantaneous, “backward” through the detection of an attentional disposition, itself elicited by specific inner gestures.

5.1.2 Structural unfolding through the detection of a partition

We illustrate below the unfolding of a generic structure through the detection of an experiential partition.

Consider a type of experience characterized by a generic synchronic structure. A partition is a set of specialized structures, each of them associated with a specialized category or particular value of one category of the generic structure. This organizing category is called the “specialization criteria” or “partition key”. A partition makes it possible to highlight two or several sub-graphs in the semantic network corresponding to the synchronic structure of a type of experience. Figure 16 displays a sketch of generic structure of an inner image and its partition according to the values of the category “Perceptual position”. It shows that the descriptive categories of an inner image are very different according to the perceptual position of the subject. For example, when a person sees a scene “in the first person”, as she is “in the scene”, she does not see it at a distance and in a certain direction: these categories make no sense in her experience. When she sees the scene “in the third person”,

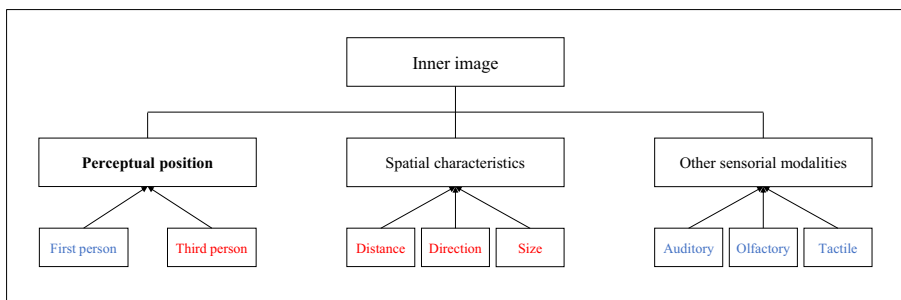


Fig. 16 Specialized structures of an inner image according to the perceptual position (first sketch)

as she is “out of the scene”, the other sensorial modalities are absent (or much less intense). Each sub-graph below corresponds to a subset of instances of inner images that we can call a phenomenological “cluster” (the blue subgraph corresponding to the first person perceptual position, the red subgraph corresponding to the third person perceptual position).

To illustrate the process of detection of an experiential partition, we will take as an example a study on tactile experience carried out in the context of the Laboratory of Micro-phenomenology (2016, unpublished). We started it by collecting eighty descriptions of an experience of tactile exploration of a fabric for a few seconds, eyes closed. A first analysis of these descriptions led us to identify in each of them a random sequence of micro-operations and sensations that we categorized as follows: micro-gestures made to explore the fabric (with the fingertips, the inside of the fingers, the palm, the back of the hand, the cheeks), appreciations often formulated verbally (“comfortable”, “inviting”, “well tied together”), evaluation of the dimensions of the fabric, identification of the tactile qualities of the fabric (density, heaviness, thickness, smoothness, granularity, elasticity, sponginess, temperature, wetness), identification of the fabric composition (“it must be cashmere”), evocation of memories elicited by the fabric, emotions (surprise, joy), emergence of inner images (imagination of the visual appearance of the fabric and in particular of its color, visualization of the fabric once worn), smell or even taste of the fabric. Our analysis was initially reduced to making an inventory of these categories, without it being possible for us to distinguish a more robust structure, whether diachronic or synchronic.

One of the described experiences¹³ consisted of two phases of exploration of the fabric, which have been called “First touch and examination” and “Arm inside”. In the first phase, the fabric was actively explored with the fingertips, and described as “dense”, “granular” and “warm”. In the second phase, during which the interviewee had wrapped the tissue around her arm, the sensation was that of “being caressed by the fabric”, and it extended to the whole body instead of being limited to the tips of the fingers.

By becoming familiar with the “range” resulting from this analysis (Table 2), we hypothesized that the event allowing the transition from one phase to the other was not the change in position of the fabric (from the fingertips to the arm), but a change of attentional mode which had remained implicit in the description: the transition from an active “touching” mode to a passive “being touched” mode (Fig. 17, red line). Strikingly, while the “notes” (values) of each dynamic line previously appeared to be randomly distributed, their distribution according to these two modes took on meaning and consistency.

After distributing the values of the categories which had been identified in the whole corpus of descriptions according to these two (initially unrecognized) attention modes, considered as the values of a partition key, we detected two very robust specialized structures (in blue and red) corresponding respectively to the experience of an active touch and that of a passive touch. In other words, the detection of this partition key allowed us to move from a “flat” inventory of descriptive categories to the identification of two multidimensional landscapes with contrasting architectures, which were confirmed by further investigations (Fig. 17).

¹³ An experience described by Teresa, a member of the Laboratory of Micro-phenomenology who participated in this study.

Table 2 Range of Teresa’s tactile experience

Phases / Descriptive categories	Phase 1	Event	Phase 2
	First touch and examination	Position change	Arm inside
Attentional mode	Touching	Attentional change	Being touched
Location of the sensation	Inside the fingers/the hand		On the other hand (that was supporting the fabrics) and the exterior of the arm
Extension of the sensation	Fingers		The whole body: “I felt it in my face as well, and all over the body.”
Movement	Active micromovements: “I was moving my fingers, scrunching, exploring out.” “I rubbed it.”		Passive movement: sensation of “being caressed by the fabrics”
Tactile qualities	Qualities of the touched object: density, granularity, warmth		Qualities of the tactile feeling: “Gentle caressing, feeling like wearing it, feeling warm in my whole body.”

What is particularly interesting in the analysis of Teresa’s experience is that it does not only highlight a partition key and the contrasted experiential spaces associated with the values (touching/being touched) of this key, but an inner micro-act or micro-gesture, namely a subtle change of attentional mode, enabling the transition from one space to another. Furthermore, it is the detection of this micro-act which, by highlighting the values of a partition key, made it possible to discover these two architectures (we will come back to the micro-phenomenological description of this discovering process in section 5.3).

We created a partition of the same type in a study devoted to the auditory experience (Petitmengin et al. 2009). An iterative process of collecting and analyzing descriptions of the experience of listening to different types of sounds enabled us to divide the described experiences into three distinct sub-classes according to the orientation of the attention either towards the source of the sound, either towards the characteristics of the sound itself, independently of its source, or towards the bodily felt sound. Each of these modes of attention induces a very particular structure of the experiential space of the subject. As in the previous example, the attentional mode is the organizing category. In another study on the process of technical invention (Remillieux 2014), it is the “degree of awareness of the idea” which constitutes the partition key of the described experiences. The (more or less active and focused) attentional strategy of the inventor, the form of the idea and the emotional tone of the experience evolve according to the evolution of the degree of awareness of the idea.

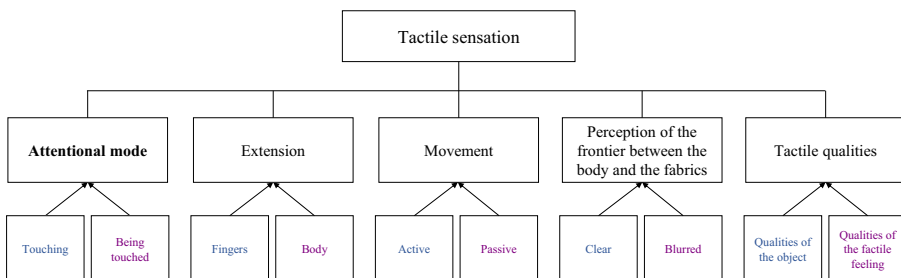


Fig 17 Specialized structures of the tactile sensation according to the attentional mode (first sketch)

5.2 The mutual guidance of structural and experiential unfolding processes

As we have already noted, micro-phenomenological research is not a sequential process consisting in collecting a set of descriptions and then analyzing them, but an iterative process consisting of an alternation of phases of interview and phases of analysis allowing the concomitant unfolding of the awareness and structure of the experience under study. During this process, the unfolding of the awareness of the experience of course enables the unfolding of its structure. Conversely, the unfolding of the structure of the (type of) experience being studied guides the process of becoming aware of this experience. From the analysis of the first interview(s), a draft of generic structure emerges which makes it possible to refine the questioning and therefore the awareness of the experience in the following interviews. Their analysis will enrich the initial structure and allow the researcher to refine the “experiential protocols” and the questioning in the subsequent interviews, and so on following an iterative process.

Each step of the iteration begins with the following tasks:

- 1) Choosing the dimensions of the experience on which to focus the research. It is not possible to explore exhaustively all the diachronic and synchronic dimensions of an experience down to the finest levels of detail. In other words, researchers cannot construct the full range of each instrument for the whole of a type of experience. Depending on the research objective, they have to choose the mode(s) of diachronic and / or synchronic unfolding to favor, and the degree of granularity necessary to reach before stopping the investigation.
- 2) Defining or refining the experiential protocols according to the definition or redefinition of the research objective. The design of a new protocol includes the definition of the course of the experience to be described, including the possible use of “front-loaded” categories (Gallagher 2003). It must also take into account its invoked or provoked character, its place in relation to the interview (before, just before or during the interview), but also the required level of expertise for the interviewed subjects and for the interviewer, and the number of interviews per subject.

For each hypothetical category that appeared in the previous iteration, and that one wishes to verify and possibly unfold, it is necessary to identify the particularities of the protocol and / or the questions that allowed its emergence, in order to be able to reproduce them. It is then necessary to imagine the protocol and questioning adjustments that could make it possible to unfold the category.

Protocol and questioning adjustments should also be designed to verify the existence of “candidate” complementary structures, which have not been described yet but are suggested by the possibility of applying the abstraction operations to structures which have already been detected. For example, the identification of an “attentional disposition” makes it possible to hypothesize a “process of generating this attentional disposition” and suggests refining the protocol and questioning in order to try to highlight this candidate process. More generally, each synchronic structure suggests looking for a possible “backward” diachronic unfolding. Such an exploration requires the design of an appropriate experiential protocol enabling the interviewed subject to come into close contact with the state corresponding to the (front-loaded) synchronic

structure which has been detected and to describe it very precisely, in order to let the awareness of a possible unnoticed “before” emerge. In such a case the structural unfolding precedes and generates the experiential unfolding, the abstraction operations playing a heuristic role.

We can note that the guidance of the experiential unfolding by the structural unfolding occurs in the interviews themselves, since the micro-phenomenological questioning itself is structured by objectives of fragmentation, segmentation, specialization... which are nothing else than abstraction operations.

The iterative character of this approach has a disadvantage. Since the unfolding of the structure of the studied experience guides the unfolding of the awareness of this experience, it is difficult to know why a dimension of experience does not appear in a description: is it because it is not present in the subject's experience, or is it because the subject was not aware of it and that the researcher, at this stage of the research, has not been able to draw her attention to this dimension? Unless several interviews are conducted with the same person at different stages of the research - which is interesting but sometimes difficult to implement - an uncertainty remains. This uncertainty may be taken into account, and may not necessarily hamper the process. However it makes it difficult to quantify the experiential categories (for example, to allocate a number of occurrences to each value of a category). If this quantification is necessary for research purposes, the solution is to carry out a pilot study in order to reach categorical saturation (when new interviews do not produce new categories), followed by a new series of interviews of which the analysis will make it possible to quantify the categories that were identified during the pilot phase.

5.3 Tracking and elucidating the analysis process

Like any action, the process of analysis is almost entirely oriented towards the “what” (the production of results - in our case the identification of structures), whereas the “how” (the way in which these results are produced) remains largely implicit. As we already noted, it is essential to describe this process carefully (task D (a1) in Fig. 11). This description consists on the one hand in recording the successive versions of a structure and their sources, and on the other hand in describing the very process of detection and unfolding of these versions.

Recording the history of the successive versions of each structure amounts to noting meticulously the chronology of appearance and refinement of the diachronic and synchronic descriptive categories composing the structure, and of possible structural categories. This task is all the more necessary as a structure does not automatically keep track of its construction process. As shown in Fig. 15, the chronology of the phases of an experience, resulting from the analysis process, and the chronology of their appearance during the analysis process, are not identical. The conservation of this history is indispensable for the researcher to be able to verify, refine and justify his/her own analyses. The “sources” of an experiential category, that is to say the descriptemes from which it is derived, constitute a second type of trace which it is important to preserve: to allow the reuse of the data with a new analysis axis; to facilitate the communication of the results, which require the selection of descriptemes adapted to the purpose and to the public; to quantify the descriptemes associated with a category.

The second task, which is even more delicate than the previous one, consists in describing the operations and processes involved in the detection and unfolding of a descriptive category or structure. This description is essential since it is the very basis of the analysis of the analysis process [a2], which makes it possible to highlight the diachronic and synchronic structures of this process, and notably the structural categories and operations used to detect descriptive categories. Highlighting this meta-structure is crucial for several reasons: it allows the reproducibility and therefore the verifiability of the analyses by a third party (that a mere inventory of successive structures would not allow); it makes it possible to refine and improve the analysis process, to teach it more efficiently, and to compare different analysis methods; it also allows the progressive creation of an increasingly refined and shared vocabulary concerning the analysis methods, an essential condition for constituting a research community in this domain. Depraz and colleagues (2017) provide a significant step in that direction. In the context of a study of the experience of surprise (with an application to depression), they use a “generative” method of experiential analysis enabling them to present not only the resulting generic structure of the experience of surprise but also the process of refinement of the initial synchronic descriptive categories from which they start, on the one hand, and of the diachronic structural categories they use, on the other hand. We consider it important to complete such descriptions by describing also the genesis of the diachronic descriptive categories (of the experience under study), and the structural operations that make it possible to unfold both – synchronic and diachronic – generic structures.

One aspect of the elaboration of a structure, although essential, is particularly unknown and little explored: the emergence of the awareness of a structure in the experience of the researcher. We have already observed (section 4.1) that thanks to the systematic elimination of pre-conceptions and beliefs from micro-phenomenological descriptions, the identification of content statements, and the very fine-grained level of the descriptions, this process cannot be assimilated to an interpretation of the description that could differ considerably from one analyst to another. In the micro-phenomenological perspective, the only way to elucidate this process further is to carry out careful descriptions of singular experiences of detection of structures, a task that to our knowledge has not been done so far. This work can be facilitated by micro-phenomenological interviews helping the researcher describe the key moments of the analysis process, and by a regular work of self-description (for example through a “logbook”). The sketches of self-descriptions presented in section 5.1.2 show clearly that the most structuring categories, such as the partition keys that make it possible to move from a “flat” structure to a multidimensional structure, are not found by mechanically applying a sequence of logical operations, for example as a result of a mechanical process of evaluating the impact of the change of value of one category on the others. A partition rather appears in the same way as a three-dimensional image emerges from a cloud of points - to take up an often used metaphor.¹⁴ But the metaphor of the adjustment of the gaze is misleading, as a structure emerges rather in the form of a sensation of emergent coherence, in other words in the form of a feeling that

¹⁴ “The mechanism at work is of the order of a particular type of “focusing”, a little like the one that makes three-dimensional images emerge, of which the motif, invisible at first sight, appears after a certain amount of time if one knows how to adjust the eye properly.” (Paillé et Muchielli 2012, p.351)

undergoes a process of transductive transformation into an abstract formalized structure. This process is not exceptional but seems to correspond to the ordinary microgenesis of an idea, of a meaning: an idea, even an abstract one, seems to be felt before it is named (Gendlin 1962, 1996; Petitmengin 2007, 2016).¹⁵ However what are the conditions of unfolding of such a microgenesis?

As already noted, a given experience may be compared to a landscape of which the analysis tries to identify the architecture. The analyses we have already carried out lead us to the hypothesis that an experiential landscape is structured by an essential gesture, which determine the architectural characteristics, the essential “lines of force” of this landscape. For example, in the above-mentioned study of the auditory experience, it is the subject’s attentional disposition - “touching” the sound or “being touched” by it - which determines the depth, extent and texture of this landscape, as well as the solidity of the boundaries between sensory modalities and between subject and object. This attentional disposition is a generic “micro-gesture”, the realization of which creates a given type of architecture, similar from one experience to another and from one subject to another. Interestingly, our study of the tactile experience shows that this structuring gesture is detectable from a singular experience, and not by comparison of several experiences.

We hypothesize that detecting an experiential architecture or structure consists in detecting the gesture that creates it. Whether it is explicitly described in the verbatim or not, the work of the analyst consists in imbuing herself sufficiently with the description so as to be able to “feel” this gesture. This is a little like Cezanne who, before painting a landscape, contemplated it for a long time, “germinated” with it, in order to capture its constitution “as a nascent organism”, to discern its essential movement, its “motif” (Merleau-Ponty 1948: 32). However this hypothesis needs to be tested through meticulous micro-phenomenological descriptions of the process of emergence of structures in the experience of the micro-phenomenologist.

5.4 Assessing analysis results

The assessment of analysis results relies, in the same way as the evaluation of the descriptive statements which are analyzed (§ 3.3.2), on the reliability of the process that generated them, that is to say on a criterion of “performative consistency (or coherence)” (Petitmengin and Bitbol 2009; Bitbol and Petitmengin 2013, 2016, 2017; Petitmengin 2017). We identified four modes of evaluation of the performative consistency of analysis results. The first and second modes evaluate the internal consistency of the process, the third mode relies on the triangulation with neural (or neuro-physiological) measures, the fourth mode evaluates the intersubjective consistency.

The first mode is a confirmation / invalidation *by iteration*. The iterative approach we adopt is in itself a confirmation / invalidation of the detected structures. When a structure is detected, it becomes a hypothesis that the gathering and analysis of subsequent interviews will either confirm and refine or invalidate. When the detection of a hypothetical or candidate structure makes it possible, through the development of

¹⁵ The reader may also refer to (Vermersch 2012, Book IV), where the author describes the process of semiosis or creation of meaning as an operation that “does not begin with language, with the fact of naming, but with the fact of detaching, of becoming aware of a new ipseity, of a new identity, unity”, an awareness which often appears in the form of an “intellectual feeling” (p. 342).

an appropriate “structure-driven” questioning, to guide efficiently the next interviewed subjects towards the awareness and description of their experience, these descriptions provide a strong presumption of validity to the structure that allows this guidance.

The second mode is confirmation / invalidation *by partition*. When the detection of a partition key makes it possible to distribute the occurrences of the type of experience under study into clusters each characterized by a specific experiential structure or “signature”, and thus to move from a “flat” inventory of descriptive categories to a multidimensional structure, this detection provides a strong presumption of validity to the identified structures. This presumption is particularly strong when it allows a retroactive detection of clusters in descriptions where no regularity had initially been identified.

The third mode of confirmation is *neurophenomenological* confirmation. For example, when the distribution (or partition) of neuro-electrical recordings into “phenomenological clusters” according to the values of an experiential category, enables the detection of distinct neural configurations or “signatures”, where until now only noise was perceived, this provides a strong confirmation of validity of these structures (and therefore of the reliability of the reports from which they were abstracted). Lutz’s findings (2002) are a striking example of this type of confirmation.

The fourth mode of confirmation is *inter-subjective (or inter-researcher)* confirmation. This can be done through “investigator triangulation” (Thurmond 2001) or “cross-verification”. In this process two or more researchers carry out the analysis of the same set of interviews and compare the structures they have found. It is important for the different researchers involved in the triangulation process to agree on the research objective since, as mentioned in section 5.2, the privileged type of structural unfolding and the level of detail of the structure will depend on the research question. The comparison of different structures does not aim at establishing the “right” structure, but consists in comparing the processes that enabled their detection, in order to determine which one makes it possible to reach the more robust result.

Another mode of intersubjective confirmation consists in comparing the results provided by different independent research teams. Once detected by a research team, a structure constitutes a hypothesis likely to being confirmed or falsified by the work of other teams. As we already noted, an important condition of possibility of this process is the reproducibility of the results, which requires that the scientific result is accompanied by a description of its process of production. In our case, this requirement means that, as we noted above, an experiential structure must be accompanied by a careful description of its genesis.

The analysis of the process of analysis that we have carried out in this article leads us to hypothesize that the detection and unfolding of experiential structures is a precise process with a generic dynamic structure, which can therefore be reproduced by other researchers. In addition to enabling the intersubjective confirmation or invalidation of structures, this meta-structure (sometimes called the “meta-model” of the analysis method) makes it possible to compare different analysis methods and to understand why they eventually lead to divergent results.

6 Conclusion

The method we describe in this article provides guidelines for detecting generic experiential structures from the description of singular experiences. It thus contributes to the

establishment of standard processes for the inter-subjective validation of first-person results. It opens up various avenues of research, four of which seem particularly interesting to pursue. The first consists in deepening the micro-phenomenological study of the microgenesis of structures. The second consists in refining our knowledge of the processes of mutual guidance of experiential and structural unfolding. The third consists in designing a graphical tool to support the analysis process, the evaluation of the analysis results and their presentation. The fourth consists in refining the procedures for intersubjective confirmation of the analysis results, in order to help consolidate the growing community of researchers engaged in micro-phenomenological research.

Acknowledgements We thank Shirley Carter-Thomas for the linguistic revision of the article.

Annex

Lexicon

Abstractions operations: Set of operations making it possible to “pull-out” (*abstrahere*) a generic (synchronic or diachronic) structure from the description of a set of instances of a given type of experience.

Aggregation: Abstraction operation defining a category in intension as composed of sub-categories. The reverse operation is Fragmentation.

Alternative definitions:

Aggregation: Abstraction operation making it possible to consider a group of categories as one category.

Fragmentation: Abstraction operation making it possible to divide a category into sub-categories.

Classification: Abstraction operation defining a category in extension as a class composed of instances (or occurrences). The reverse operation is Instantiation.

Alternative definitions:

Classification: Abstraction operation making it possible to consider a set of instances as a class, by neglecting the details which differentiate the instances.

Instantiation: Abstraction operation making it possible to consider an entity as an instance of a class.

Class of experiences: Set of instances of experiences of the same type.

Content statement: Excerpt of a transcript describing the “what”, content or object of the experience.

Descripteme: Short statement taken from a descriptive statement, presenting a unity of meaning, and corresponding to an instance of a descriptive category.

Descriptive statement: Excerpt of a transcript describing a singular experience, precisely situated in time and space.

Descriptive category: Grouping together of descriptemes of close meaning through an operation of classification or grouping together of experiential categories into a more abstract category through an operation of aggregation or generalization.

Diachronic dimension of an experience: Evolution of the experiential space or “landscape” of a subject in time.

Diachronic structure of experience: Evolution in time of the architecture or topography of the experiential space of a subject.

Dynamic line: Representation of the evolution of the values of a descriptive category along the different phases of an experience.

Experiential structure: A network of descriptive categories, independent of the experiential content.

Generalization: Abstraction operation defining a category as a set of specialized categories associated with sub-classes and characterized by specific properties. The reverse operation is Specialization.

Alternative definitions:

Generalization: Abstraction operation making it possible to extract from the description of several classes a more general class, by highlighting the properties shared by the specialized classes and by neglecting the details that differentiate them.

Specialization: Abstraction operation making it possible to distribute the instances of a class into subclasses characterized by specific properties.

Generic structure: Structure of a type of experience.

Instance of experience: A singular experience, precisely situated in space and time.

Partition: A set of specialized synchronic structures, each of them being associated with a particular value of one category of the corresponding generic structure, and with a sub-graph in the corresponding semantic network.

Partition key (or Specialization criterium): Particular category of a generic synchronic structure enabling the distribution of the instances of the corresponding experience into specialized categories.

Phase: Stage in the temporal evolution of an experience.

Satellite dimensions of the description of an experience: Statements of commentaries, beliefs, judgments, explanations and preconceptions *about* the experience.

Specific structure: Structure of a single experience.

Structural statement: Excerpt of a transcript describing the “how” of the experience, and indicating a possible descriptive category.

Structural category: Class of descriptive categories.

Structural operation: Operation making it possible to highlight a structure, such as an operation of abstraction or a partition.

Synchronic dimension of an experience: Configuration of the experiential space or “landscape” of a subject at a given moment in time.

Synchronic structure of experience: Architecture or topography of the experiential space or “landscape” of a subject at a given moment in time.

Transitional event: Modification in the subject’s experience which in turn induces significant transformations in his/her experience.

Type of experience: Set of instances of experience presenting common properties.

References

- Balas-Chanel, A. (2013). *La pratique réflexive: un outil de développement des compétences infirmières*. México: Elsevier Masson.
- Balzani, C., Naudin, J., & Vion-Dury, J. (2014). Phénoménologie expérientielle de l’écoute musicale en psychiatrie. *Annales Médico-psychologiques, Revue Psychiatrique*, 172(7), 524–529.
- Bénézech, M. (2007). Vérité et mensonge: l’évaluation de la crédibilité en psychiatrie légale et en pratique judiciaire. *Annales Médico-psychologiques, Revue Psychiatrique*, 165(5), 351–364.
- Bitbol, M., & Petitmengin, C. (2013). A defense of introspection from within. *Constructivist Foundations*, 8(3), 269–279.
- Bitbol, M., & Petitmengin, C. (2016). On the possibility and reality of introspection. *Mind and Matter*, 14(1), 51–75.
- Bitbol, M., & Petitmengin, C. (2017). Neurophenomenology and the micro-phenomenological interview. In S. Schneider & M. Velmans (Eds.), *The Blackwell companion to consciousness* (2nd ed.). Hoboken: Wiley & Sons.
- Bourvis, N., & Vion-Dury, J. (2016). Phénoménologie expérientielle de l’algie vasculaire de la face (AVF). *Annales Médico-psychologiques, Revue Psychiatrique*, 175(3), 247–252.
- Cavaletti, F., & Heimann, K. (forthcoming). Longing for tomorrow: phenomenology, cognitive psychology, and the methodological bases of exploring time experience in depression. *Phenomenology and the Cognitive Sciences*.
- Créno, L. & Cahour, B. (2016). Les cadres surchargés par leurs emails : déploiement de l’activité et expérience vécue. *Revue @ctivités*, 13(1).
- Delattre, P. (1971). *Système, structure, fonction, évolution*. Paris: Maloine.
- Depraz, N. (2014). *Attention et vigilance*. Paris: PUF.
- Depraz, N., Varela, F. J., & Vermersch, P. (2003). *On becoming aware*. Amsterdam: John Benjamins.
- Depraz, N., Gyemant, M., & Desmidt, T. (2017). A first-person analysis using third-person data as a generative method: A case study of surprise in depression. *Constructivist Foundations*, 12(2), 190–203.
- Gallagher, S. (2000). Philosophical conceptions of the self: Implications for cognitive science. *Trends in Cognitive Sciences*, 3(1), 14–21.
- Gallagher, S. (2003). Phenomenology and experimental design: Toward a phenomenologically enlightened experimental science. *Journal of Consciousness Studies*, 10(9–10), 85–99.
- Gendlin, E. (1962). *Experiencing and the Creation of Meaning*. Northwestern: University Press.
- Gendlin, E. (1996). *Focusing Oriented Psychotherapy*. New York: The Guilford Press.

- Giorgi, A., Giorgi, B., & Morley, J. (2017). The descriptive phenomenological psychological method. In C. Willig & W. S. Rogers (Eds.), *The sage handbook of qualitative research in psychology* (pp. 176–192). London: Sage.
- Goodwin, C., & Heritage, J. (1990). Conversation analysis. *Annual Review of Anthropology*, 19(1), 283–307.
- Gore, G., Rix-Lièvre, G., Wathelet, O., & Cazemajou, A. (2012). Eliciting the tacit: interviewing to understand bodily experience. In J. Skinner (Ed.), *The interview: an ethnographic approach* (pp. 127–142). London: Bloomsbury.
- Gould, C., Froese, T., Barrett, A. B., Ward, J., & Seth, A. K. (2014). An extended case study on the phenomenology of spatial form synaesthesia. *Frontiers in Human Neurosciences*, 8, 433.
- Hogan, T., Hinrichs, U., & Hornecker, E. (2015). The Elicitation Interview Technique: Capturing People's Experiences of Data Representations. *IEEE Transactions on Visualization and Computer Graphics*, 22(12), 2579–2593.
- Horwitz, E. B., Stenforde, C., & Osika, W. (2018). Writer's Block Revisited: A Micro-Phenomenological Case Study on the Blocking Influence of an Internalized Voice. *Journal of Consciousness Studies*, 25(3-4), 9–28.
- Lé, F., & Peugeot-Petitmengin, C. (1988). Quelques problèmes liés à l'introduction du concept de généralisation/spécialisation dans le modèle Entité/Relation. *Modèles et Bases de Données*, 10, 3–16.
- Malterud, K. (2012). Systematic text condensation: A strategy for qualitative analysis. *Scandinavian Journal of Public Health*, 40(8), 795–805.
- McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*. Chicago: The University of Chicago Press.
- McNeill, D. (2005). *Gesture & thought*. Chicago: The University of Chicago Press.
- Merleau-Ponty, M. (1948/1966). *Sens et non-sens*. Paris: Editions Nagel.
- Molinier, C. (2004). Adverbes d'habitude et phrases habituelles. In Plenat M. (2004). *L'emprise du sens. Structures linguistiques et interprétations* (pp. 207-215). Amsterdam: Editions Rodopi.
- Ollagnier-Beldame, M. & Coupé, C. (forthcoming). Meeting you for the first time: descriptive categories of an intersubjective experience. *Constructivist Foundations*.
- Paillé, P., & Muchielli, A. (2012). *L'analyse qualitative en sciences humaines et sociales*. Paris: Armand Collin.
- Petitmengin, C. (1999). The intuitive experience. In F. Varela & J. Shear (Eds.), *The view from within. first-person approaches to the study of consciousness* (pp. 43–77). Exeter: Imprint Academic.
- Petitmengin, C. (2001). *L'expérience intuitive*. Paris: L'Harmattan.
- Petitmengin, C. (2006). Describing one's subjective experience in the second person: An interview method for the science of consciousness. *Phenomenology and the Cognitive Science*, 5, 229–269.
- Petitmengin, C. (2007). Towards the source of thoughts. The gestural and transmodal dimension of lived experience. *Journal of Consciousness Studies*, 14(3), 54–82.
- Petitmengin, C. (2010). A neuro-phenomenological study of epileptic seizure anticipation. In: Daniel Schmicking and Shaun Gallagher (Ed.), *Handbook of Phenomenology and Cognitive Sciences* (pp. 471-499). Berlin: Springer.
- Petitmengin, C. (2011). Describing the experience of describing? The blind spot of introspection. *Journal of Consciousness Studies*, 18(1), 44–62.
- Petitmengin, C. (2016). The scientist's body at the source of meaning. In D. Schoeller & V. Saller (Eds.), *Thinking thinking. Practicing radical reflection* (pp. 28–49). Freiburg / München: Verlag Karl Aber.
- Petitmengin, C. (2017). Enaction as a lived experience. Towards a radical neurophenomenology. *Constructivist Foundations*, 12(2), 139–147.
- Petitmengin, C., & Bitbol, M. (2009). The validity of first-person descriptions as authenticity and coherence. *Journal of Consciousness Studies*, 16(10–12), 363–404.
- Petitmengin, C., Navarro, V., & Le Van Quyen, M. (2007). Anticipating seizure: Pre-reflective experience at the center of neuro-phenomenology. *Consciousness and Cognition*, 16, 746–764.
- Petitmengin, C., Bitbol, M., Nissou, J. M., Pachoud, B., Curalucci, C., Cermolacce, M., & Vion-Dury, J. (2009). Listening from within. *Journal of Consciousness Studies*, 16(10–12), 252–284.
- Petitmengin, C., Remillieux, A., Cahour, B., & Carter-Thomas, S. (2013). A gap in Nisbett and Wilson's findings? A first-person access to our cognitive processes. *Consciousness and Cognition*, 22(2), 654–669.
- Petitmengin, C. (2014). Comment on Vermersch's book "Explicitation et Phénoménologie". *Journal of Consciousness Studies*, 21(11-12), 196–201.
- Petitmengin, C., Van Beek, M., Bitbol, M., Nissou, J.-M., & Roepstorff, A. (2017). What is it like to meditate? Methods and issues for a micro-phenomenological description of meditative experience. *Journal of Consciousness Studies*, 24(5–6), 170–198.
- Petrecă B., Sharon Baurley S., & Bianchi-Berthouze N. (2015). How do designers feel textiles? *Affective Computing and Intelligent Interaction (ACII) International Conference Proceedings*, 982-987.

- Petrea, B. (2016). An understanding of embodied textile selection processes and a toolkit to support them. Unpublished PhD Thesis. Royal College of Art, London.
- Przyrembel, M., & Singer, T. (2018). Experiencing meditation – Evidence for differential effects of three contemplative mental practices in micro-phenomenological interviews. *Consciousness and Cognition*, 62, 82–101.
- Quidu, M., & Favier-Ambrosini, B. (2014). L'articulation des données en première et troisième personnes. De la genèse d'une méthodologie originale en sciences du sport. *Intellectica*, 62, 7–34.
- Remillieux, A. (2014). Les coulisses d'une invention: Une description expérientielle du processus d'invention technique. (Behind the scenes of an invention: An experiential description of the technical invention process). *Intellectica*, 61, 273–310.
- Remillieux, A., Petitmengin, C., Ermine, J.-L., & Blatter, C. (2010). Knowledge sharing in change management: A case study in the French railways company. *Journal of Knowledge Management Practice*, 11(3).
- Riessman, C. K. (2005). Narrative analysis. In *Narrative, Memory & everyday life* (pp. 1–7). Huddersfield: University of Huddersfield.
- Rolland, C., Foucault, O., & Benci, G. (1988). *Conception de systèmes d'information. La méthode Remora*. Paris: Eyrolles.
- Smith, J. A. (2011). Evaluating the contribution of interpretative phenomenological analysis. *Health Psychology Review*, 5, 9–27.
- Smith, J. A., & Osborn, M. (2003). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods*. London: Sage.
- Smith, J. M., & Smith, D. C. P. (1977). Database abstractions: Aggregation and generalization. *ACM/TODS*, 2, 2.
- Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method, research*. London: Sage.
- Sowa, J. F. (1984). *Conceptual structures: Information processing in mind and machine*. Addison-Wesley.
- Thurmond, V. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), 254–256.
- Tracy, S. (2013). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact*. Sussex: Wiley-Blackwell.
- Valenzuela-Moguillansky, C. (2013). Pain and body awareness. An exploration of the bodily experience of persons suffering from fibromyalgia. *Constructivist Foundations*, 8(3), 339–350.
- Valenzuela-Moguillansky, C., O'Regan, J. K., & Petitmengin, C. (2013). Exploring the subjective experience of the “rubber hand” illusion. *Frontiers in Human Neurosciences*, 7, 659.
- Valenzuela-Moguillansky, C., & Vásquez-Rosati, A. (Forthcoming). An Analysis Procedure for the Micro-Phenomenological Interview.
- Vásquez-Rosati, A. (2017). Body Awareness to Recognize Feelings: The Exploration of a Musical Emotional Experience. *Constructivist Foundations*, 12(2), 219–226.
- Van-Quynh, A. (2017). Intuition in Mathematics: a Perceptive Experience. *Journal of Phenomenological Psychology*, 48(1), 1–38.
- Vermersch, P. (2006). Vécus et couches des vécus. *Expliciter*, 66, 32–47.
- Vermersch, P. (2009). Describing the practice of introspection. In C. Petitmengin (Ed.), *Ten years of viewing from within. The legacy of Francisco Varela* (pp. 20–57). Exeter: Imprint Academic.
- Vermersch, P. (2012). *Explicitation et phénoménologie*. Paris: PUF.
- Vermersch, P. (2017). *L'entretien d'explicitation*. Originally published in 1994. Paris: ESF.
- Vrij, A., & Granhag, P. A. (2012). Eliciting cues to deception and truth: What matters are the questions asked. *Journal of Applied Research in Memory and Cognition*, 1(2), 110–117.
- Weisen, M. (Forthcoming). Bringing the architectural thinking of Juhani Pallasmaa and Peter Zumthor into dialogue with the lived experiences of visitors: an empirical micro-phenomenological study at Kolumba Museum. In *Installations as a phenomenological and cognitive experience*. Paris: L'Harmattan.