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## *Let's Trust the (skilled) Subject!*

*A Reply to Froese, Gould and Seth*

The article by Froese, Gould and Seth is a survey rather than a commentary, dealing with the intertwined issues of the validity of first-person reports and of their interest for a science of consciousness. While acknowledging that experiential research has already produced promising results, the authors find that it has not yet produced ‘killer experiments’ providing a definitively positive answer to these two questions, and wonder what kind of experiment would allow it. Our response will address these two questions successively.

### **1. The interest of first-person reports<sup>1</sup>**

Assuming that their validation is possible, what exactly is the benefit of first-person reports? Taking as example the neuro-phenomenological experiment on 3D vision designed by Lutz (Lutz *et al.*, 2002), the authors ask why skilled first-person reports should be more useful for a science of consciousness than behavioural data on the one hand, and than naive reports on the other.

According to us, what Lutz’s experiment shows very convincingly is that the distribution of neuro-electrical recordings into classes or ‘phenomenological clusters’ according to the values of an experiential

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[1] In this reply we won’t differentiate ‘first-person’ reports, i.e. reports expressing the viewpoint of the subject himself, in the grammatical form ‘I’, and second-person reports, which have been gathered through another person (a ‘you’) in the context of an interview.

variable (the subject's state of readiness), can highlight distinct neuronal configurations, which would otherwise stay unnoticed. The fact that in this experiment, a behavioural variable (the response time of the subject) could play the same role does not weaken the demonstration: the use of an experiential category *as a criterion for neuro-electrical analysis* enables the detection of a characteristic neuronal configuration or 'signature', where until now only noise was perceived.

This outcome is of great interest, firstly because there are numerous cognitive processes where no standard behavioural variable could serve as a criterion of analysis, and where only verbal reports are refined enough for this purpose. Secondly and more importantly, the correlation of a neuro-electrical structure with an experiential structure enables us to make a strong hypothesis which is not allowed by the correlation with a behavioural variable (or only indirectly by reference to an experiential variable that supposedly underpins the behaviour). We can indeed hypothesize the *nature* of the experience associated with the neuro-electrical structure detected. In the experiment made by Lutz, only the correlation with the attentional state of the subject — but not the response time taken in isolation — enables us to hypothesize the nature of the subjective experience associated whenever the same 'neuronal signature' will be detected. In the study on the anticipation of epileptic seizures, only the detection of a subjective 'preictal state' allowed us to hypothesize the nature of the subjective experience associated with any case of decrease of neuronal synchronization before the seizure (Petitmengin *et al.*, 2007). As Lachaux writes (this issue), 'If I don't know which cognitive processes the subject is using, I can simply not make any sense of the brain activity I measure.'

But — as Froese and Gould ask — what are the benefits of the sophisticated first-person methods you use? Had not the prodromes to epileptic seizures already been identified for centuries? And could not the attentional states described in Lutz's experiment have been detected by naive, untrained subjects? We agree. But we have now examples of experiential categories that first-person methods enabled us to highlight, which are difficult to detect without training or expert guidance. For instance, the specific mode of perceptual experiencing which Hurlburt and Heavey subsume under the experiential category 'sensory awareness' (Hurlburt & Heavey, 2009), the threefold structure of our 'perceptual position' in a scene, which concerns visual perceptions as well as auditory and kinaesthetic perceptions (Andreas & Andreas, 2009), or the threefold generic structure of auditory

experience (Petitmengin *et al.*, 2009), had until recently remained almost unnoticed. Let's note that these generic experiential categories — like Lutz's attentional states — do not concern the *content* of perception, which may vary indefinitely, but the manner of perceiving, which has a definite *structure*.<sup>2</sup> The states of readiness of Lutz's experiment may have been identified by naive subjects. But Lutz's study is a pioneering study, which shows us the way: it is now up to us to design protocols using more refined experiential categories as criteria for neuro-electrical analysis, in order to detect their possible neuronal signature.

One can nevertheless wonder if the interest of these experiential structures for a science of consciousness lies solely in their capacity to guide the neuro-electrical analysis and make sense of it. The question of the *interest* of first-person results must be carefully distinguished from that of their *validity*: a science of consciousness must be built on valid data, and first-person data are not exempt from this requirement, so we must find ways of validation — we will come back to this issue in a moment. But once these data are validated, are they not *interesting* in themselves? Why should their interest always be measured in terms of a possible neuro-physiological correlation? If the criterion of interest of a discovery is heuristic, could not experiential structures also be evaluated according to their heuristic power *on the experiential level*? We will give below an example of the heuristic function of a discovery on this level.

## 2. The Validation of First-Person Reports

In the second half of their article, Froese and Gould propose an experiment intended to bracket the opposition between the 'deep' and 'shallow' conceptions of consciousness, and the related question of the existence of a pre-reflective consciousness. The central aim of this experiment is to tackle the crucial question, upon which the very possibility of a science of consciousness depends: can we access past experience? In the vast majority of cases, a report of experience is indeed achieved *a posteriori*. Even if the experience which is described just occurred, it is past: how can we verify that the memory is true to the initial experience, and is not a false reconstruction?

This question is impossible to answer directly, because it is impossible to compare a memory with the corresponding past experience. It is impossible as well to compare directly the *description* of the past

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[2] That is 'a network of relationships between descriptive categories, independent of the experiential content' (Delattre, 1971).

experience based on this memory, with the past experience. The experiment proposed by the authors is therefore intended to provide an objective measure of the validity of a memory by comparing the description of the past experience with *the objective reality* at the moment of the experience. It consists in briefly presenting participants a ‘crowded display’, i.e. a display of a large number of items, and to compare the final outcome of the reported experience to the original display. This would enable us to assess the ability of the participants to access their past experience, but also to compare the performances of several participants, the expertise of the interviewers who accompany them, and ultimately the power of the interview techniques which were used.

Let’s answer first that this kind of experiment has already been done many years ago, with positive results (Sperling, 1960). Even more importantly, the design of this protocol, as it confuses stimulus and experience, seems to fall into the ‘stimulus error’ (Titchener, 1912). First-person interview methods do not aim at describing *stimuli*, but at describing the *experience* of these stimuli, which is very different. An explicitation interview (EI) might show that the subject has not paid any attention to the objects presented, that his experience was quite different. Even if he is expressly requested to pay attention to them, and actually does it, the perception of the objects is far from exhausting the experience of the situation — emotions, inner discourse and images, bodily feelings. And even if the perception of the objects is part of his experience, the EI will be less interested in the perceived objects than in the way they are perceived, in ‘what’ than in ‘how’, in the *content* of the perception than in the perceptual process. For as we noted above, it is at this level that experiential invariants or structures can be detected, making it possible to develop a science of consciousness ‘in which experience matters’ (Varela, 1998). In fact, in an EI, recalling external stimuli, i.e. elements of context, is usually only a means used to elicit a state of evocation, in order to enable the subject to access the ‘how’ of his experience, which is of a different order. Even if it were shown that a subject, when guided by an EI, is able to remember more stimuli than the unguided subject, the description of these stimuli would give only a very impoverished idea of what an EI is conceived for, of what it enables us to discover. It is therefore vain to try to compare the description of the *content* of an experience with the objective reality in order to probe the quality of subjects’ access to their own experience.

That said, the idea of designing ‘experiential protocols’ demonstrating, through objective measurements, that participants are

actually able to describe accurately their past experience, is relevant. However such measurements should not aim to compare the content of the described experience with the objective reality, but what the subject *does* with what he *says* he does. They must focus not on the experiential *content* but on the experiential *process*. The internal operations that the subject achieves are not directly observable, but some objective clues frequently enable the experimenter to verify their correspondence with the description which is given. For example, the cognitive process being studied may be complemented by questions chosen in such a way that the response time varies according to the strategy adopted for achieving this process. Pierre Vermersch (this issue) gives examples of such indirect objective measurements.

Another means of assessing the accuracy of a set of descriptions of a given type of experience is intersubjective validation. The detection of processual regularities in several descriptions of the same type of experience provides an intersubjective validation of the collected descriptions. If identical structures are detected by different research teams working independently, this brings an additional mark of validity to the initial descriptions. For example, the listening mode dubbed ‘heard sound’, consisting of listening to the sound as a sound, without particular interest for the object which produces it (Petitmengin *et al.*, 2009), seems to correspond, for auditory experience, to the ‘sensory awareness’ phenomenon that Hurlburt detected for the visual and tactile experience as well (Hurlburt & Heavey, 2009). Such a convergence seems to confirm the trustworthiness of the descriptions produced by both teams. This convergence would also have a heuristic function, by suggesting a new hypothesis and research line on the experiential level: can the threefold structure identified for auditory experience be transposed to the other senses? Could it be a generic structure of perceptive experience?

Let’s now assume that we have gathered enough objective evidence of the possibility to access past experience and describe it accurately. The question that immediately arises is: how do we go about accessing our experience? What does the subject who gives an accurate description carry out, that the one who gives an inaccurate description does not? How does the interviewer elicit this process of accurate description? Let’s also assume — as suggested by Froese, Gould and Seth — that we have refined our assessment of the accurateness of a description by identifying finer objective criteria: for instance the degree of fragmentation of the temporal unfolding of experience, the variety and degree of granularity of the experiential dimensions described. The question then arises: what does the subject do to adjust his

‘microscope’ in order to observe this level of detail, and learn to see what remains invisible to someone naive? Which internal operations does he accomplish? Which devices does the interviewer use to elicit these operations?

Let us not deceive ourselves: the trustworthiness of a first-person report lies in the accurate fulfillment of this process. For neither the experimenter or interviewer nor the subject can compare directly an experience with its description. Thus no one can claim that a description is an accurate reflection of a ‘pure’ experience to which it would correspond exactly. All we have is the experience of specific acts enabling us to apprehend our (just past or past) experience, acts which can be triggered by specific devices, and enable us to detect components of experience that vary together regardless of personal spatial and temporal situations — that is generic structures.

The situation is no different in the experimental sciences. We cannot ignore the epistemological tradition that since Kant demonstrates that we do not have access to the objects ‘in themselves’ apart from the very accessing process. A scientific model is not the exact reproduction of an independent external reality, but a set of technological acts which highlight a set of invariants, acts which have stabilized, and which have obtained an intersubjective agreement. Just as experimental data cannot be assessed on the basis of their correspondence with absolutely real properties of the world, so introspective reports cannot be assessed on the basis of their correspondence with ‘pure’ experience, but only on the basis of the coherence of the acts which construct them (Petitmengin & Bitbol, 2009; Bitbol & Petitmengin, submitted). To make a science of consciousness, we have no choice but to refine our knowledge of these acts, that until now we have not given ourselves the means to study.

In our opinion it is on this pragmatic level that the disagreement between DES and EI methods may be resolved. Unlike Froese *et al.*, we do not believe that these methods are driven by fundamentally different conceptions of consciousness, respectively a ‘shallow’ and a ‘deep’ conception of consciousness, which would determine two different ways for investigating experience. We believe that the apparent conceptual differences between these methods can be explained by differences in their empirical scope, not the reverse. For both methods agree that the perception naive subjects have of their experience is usually poor and distorted, and that the guidance of an expert interviewer may gradually help them to apprehend it and recognize it as it is. Both methods claim to train one to see dimensions of experience that are usually unrecognized — what else would they be useful for?

The essential difference between the two methods is that EI is interested in what the subject *does* to apprehend his experience in the course of an interview. While DES, by construction, focuses exclusively on what happens ‘before the beep’ — ‘pristine experience’ — and not on what the subject does *after* the beep to describe his experience. The conceptual differences between the two methods originate in the type of experience they authorize themselves to explore — their experiential scope — more than in theoretical presuppositions.

What our investigation of the process of describing led us to discover is that to describe their experience, whether past or just past, subjects begin by ‘recalling’ it. This recall or ‘evocation’ is only one of the operations or ‘gestures’ required for recognizing one’s experience. Another gesture consists of redirecting one’s attention from the ‘what’ to the ‘how’, from the experiential content to the experiential process. Each of these gestures can be realized more or less accurately in the course of an interview, and elicited more or less skillfully by the interviewer.

The main difference between EI and DES is that EI tries to improve the knowledge of these gestures and the way they are triggered, while DES does not allow this exploration. But why not use the EI method to explore what happens *after the beep*?

How can we improve the completeness and accuracy of a description without knowing the operations that provide access to the various dimensions and levels of detail of experience? How are we to develop and improve interview devices without knowing what they generate for the interviewee? Should we just blindly proceed by trial and error? These questions cannot just be dismissed out of hand. The process for accessing experience cannot remain a ‘black box’. It is essential for the emerging science of consciousness to provide to itself the means for this exploration. Nothing prevents EI and DES from collaborating actively in this direction.

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