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NATURALIZING PHENOMENOLOGICAL PSYCHOPATHOLOGY

abstract

The relevance of a purely descriptive phenomenology to psychiatry is overshadowed by naturalistic approaches that are both explanatory and predictive. A naturalized transcendental phenomenology, however, carries with it the possibility of explaining and predicting not only the nature of normal subjective experience but also the origin of phenomenological psychopathology in a manner acceptable by scientific standards. A purely mathematical naturalized phenomenology remains in the phenomenological sphere, does not rely on neuroscientific data in its development, is consistent with the Husserlian view of man as free and capable of using reason to influence behavior and focusses on temporality in its definition of normal subjective experience and phenomenological psychopathology. Because what is being naturalized is subjective experience and not any part of the physical world, the project it is not meant to replace the natural science's understanding of psychopathology but to provide a complementary view that is acceptable by scientific standards.

keywords

temporality, Husserl, universality, methodological naturalism

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1. Why naturalize transcendental phenomenology

In the introduction to his final book "The crisis of European sciences and transcendental phenomenology", Husserl rhetorically asks if there is, in view of their constant successes, really a crisis of the sciences. Although he had targeted scientific naturalism throughout his life as an inappropriate forum to develop a science of consciousness, he also describes in this book the philosophical and sociological dangers of reducing man to a naturalistic framework. Naturalism excludes in principle those questions that "concern man as a free, self-determining being in his behavior toward the human and extra-human surrounding world and free in regard to his capacity for rationally shaping himself and his surrounding world." (Husserl, 1970, p. 6). He continues in asking what science has to say about reason and about ourselves as subjects of this freedom and concludes that, sadly, the science of bodies has nothing to say since its abstracts from everything subjective. Had he been alive today Husserl would have similarly indicted the unopposed biomedical model and would have also implied that medicine, as currently practiced, is in crisis. Even in psychiatry in which there is still reliance on phenomenological descriptions of experience for the sake of diagnosis and treatment, the explanatory basis for the origin of a patient's symptoms and the mechanism of successful treatment is still deferred to scientific frameworks.

If medicine is in crisis because of the view of man that it either explicitly or implicitly expounds, how is possible to overcome this crisis? Those sympathetic to phenomenology recognize that the human subject cannot be reduced to the valueless facts assumed by the biomedical model and do not need further convincing. Since the crisis relates to those who view the natural sciences as the only domain relevant to the practice of medicine, it is they who would need to be convinced of the relevance of the phenomenological perspective. The difficulty lies in how to accomplish this goal. Using the idiom of phenomenology and its reference to Being, temporality or Dasein will do little to alter the perspective of those who accept the naturalistic worldview as the final word. To convince these contrarians it will be necessary to demonstrate the relevance of the phenomenological perspective in an idiom acceptable to the worldview that they presently hold and with the criteria that they accept to assess validity. This will entail the demonstration of the explanatory relevance of phenomenology to medicine over and above its descriptive function in a manner consistent with the methodology of the sciences. This in turn will entail the successful naturalization of a transcendental phenomenology.

Transcendental phenomenology assumes that those meaningful experiences elaborated in a descriptive phenomenology are actively synthesized by the subject and that the processes involved in that active synthesis are regarded as the conditions for the possibility of those

experiences. The demonstration of how meaningful experience is constituted from the transcendental condition for experience thus has explanatory relevance and may compete with the natural sciences in rigor. But Husserl struggled all his life to explain the nature of his proposed science of consciousness. “If one reads continuously from “Ideas 1” to “The crisis in the European sciences and transcendental phenomenology”, one is aware of covering the same ground over and over again. Husserl tortures himself constantly in an effort to lay firmly the foundation upon which the philosophical edifice would be constructed.” (Lauer, 1965, pp. 35-36) Subsequent wisdom has it that the transcendental project that Husserl envisioned can never reach scientific status. For such to occur phenomenology would need to be naturalized and it is currently felt that the transcendental project, understood as discovering the conditions for the possibility of the nature of subjective experience, is not amenable to naturalization (Zahavi, 2013). More contemporary discussions accept the non-scientific nature of phenomenology, limit its domain to that of description and set the relation between phenomenology and the sciences as one of reciprocity where results from one domain can inform the study of the other (Varela, 1996, Zahavi, 2013).

But for all the talk of informing each other, the relationship between descriptive phenomenology and the neurosciences will always be asymmetric, the cultural climate being such that the subjective is always overshadowed by the objective. The sciences ability to explain, predict and support counterfactuals outstrips any phenomenological approach that remains purely descriptive. Although certainly relevant to understanding a patient’s symptoms or promoting a more humane approach to a patient, the impact factor of descriptive phenomenology in medicine pales in comparison to the sciences who’s pharmacological and surgical successes continue to impress. Similar to Putnam’s “no miracles” argument for scientific realism that argues that the best explanation for the practical success of the sciences is that the sciences describe the true nature of reality, the practical success of the biomedical model argues that it describes the true nature of humans and there is no need to complicate the situation with the inexactness and ambiguities of descriptive phenomenology. A successful naturalized transcendental phenomenology, however, will have explanatory import based on the criteria used in the natural sciences and may allow phenomenology and the natural sciences to be viewed by the contrarians as equal and complementary partners in the study of the nature of humans.

2. Naturalizing transcendental phenomenology

Although a number of arguments have been presented as to why transcendental phenomenology cannot be naturalized, they can be summarized as follows: since the goal of transcendental phenomenology includes the description of the conditions for the possibility of the application of any framework to experience, including that of science, taking science as the framework to describe the possibility of science within experience simply assumes that which needs to be explained. But this argument against the possibility of naturalizing phenomenology applies only to ontological naturalism that assumes a framework in which everything that exists, including our subjective experience, is an element of Nature as defined by that framework. Methodological naturalism, however, need not assume any definitive ontological framework but accepts that the concepts and methods used in contemporary science exhaust those needed to address the phenomenological project (Kelly, 2016). If no domain of science such as neuroscience or psychology is taken as an explanans and if the principles used to describe the conditions for the possibility of experience are consistent with methodological science, that is, the approach uses concepts of theory, models, explanations and empirical confirmation as they are used in the natural sciences, it is argued that phenomenology has been successfully naturalized.

What is being proposed is a purely mathematical naturalization of subjective experience that makes claims only to necessary forms or structures of experience.[1] Because it makes no reference to the empirical contents of experience, including those of natural science, it is not subject to the criticism of question begging that applies to ontological naturalism. In fact, it takes the natural science as an explanadum rather than the explanans. It relies on universality conditions for a specified mathematical form to show how systems can have universal properties independent of the fine dynamical details of the systems. Because what is being naturalized is subjective experience and not any part of the physical world, the project is not meant to replace the natural science's understanding of the man but to provide a complementary view that is acceptable by scientific standards.

The concept of universality in dynamical systems is critical in the development and understanding of a naturalized transcendental phenomenology. Dynamical systems that operate at the edge of chaos can have properties that are universal and are the same across different systems as long as certain qualitative resemblances exist between these systems. In addition, these qualitatively similar systems that operate at the edge of chaos may have quantitative properties that are also the same across all such systems (Barzel and Barabasi, 2013 and Pujals, 2009). These mathematical properties are relevant to a naturalized phenomenology since phenomenological analysis suggests that skillful coping, that state of interaction with the environment that seems the most natural and that results in an optimal grip on the environment, is best represented by the balance between constraint and spontaneity that characterizes the dynamics that occurs at the edge of chaos (Dreyfus, 2014). The implication is that subjects who adopt an environmental interaction and worldview that seems the most natural, that is, operates at the edge of chaos, may have universal characteristics across all subjects despite the fact the specific details may differ between subjects.

3. Relevance to psychiatry and psychopathology

There is a specific difficulty in applying the naturalization of transcendental phenomenology to psychiatry and the origin of psychopathology. This is the difficulty with reconciling the view of the subject as free in their interaction with the environment and free in the establishment of meaningful experience based on their aspirations and personal history with the fact that the subject clearly did not choose to have the particular psychiatric symptoms that defines the diagnosis. This lack of control over the origin of symptoms fits more with the view of the subject as the passive recipient of symptoms secondary to biological processes totally beyond their control rather than the Husserlian view of a self-determining subject. This explanatory advantage simply further supports the biomedical view of the subject at the expense of the phenomenological. A successful naturalized transcendental phenomenology must be able to show how it is possible that detrimental, painful psychopathology may arise in a subject who is free and self-determining in their behavior toward the human and extra-human surrounding world and free in regard to their capacity for rationally shaping themselves without recourse to standard explanations based on psychology or neurobiology. Specifically, if one asks for the explanation of why a schizophrenic is delusional or why their social interaction differs from non-schizophrenics, one could relapse into naturalistic thinking and provide a causal explanation based on current neurobiology. Alternatively, it is possible to approach the same problem

1 Even though mathematics does represent a framework, it makes no reference to the objective outside world allowing the exercise to remain within pure subjectivity. The purely mathematical approach to cognitive science and a naturalized phenomenology has been extensively developed by researchers at the Centre de Recherche en Epistemologie Applique. See Petitot (2011) as an example.

transcendentally and ask what are the conditions for the possibility of experience such that this type of phenomenological psychopathology could emerge.

4. The Mathematical Naturalization of Transcendental Phenomenology

The first step in the strategy to naturalize transcendental phenomenology is to identify a universal invariant form that characterizes all of experience. Because it is universal and invariant across all experiences, it is the condition for the possibility of all experience thus representing the foundation that is sought by a transcendental phenomenology. The second step is to express this universal form mathematically. In this way, the necessary consequences of this proposed universal form are explicitly described. The eventual goal of such a project is to show how natural science is possible within subjective experience. This will involve demonstrating the origin of the activities of idealization, abstraction, representation which are the foundation of modern scientific theorizing. The elaboration of this project is more relevant to the philosophy of science and the naturalization of normal experience rather than phenomenological psychopathology and lies outside the scope of the present paper.

This universal invariant form of subjective experience that will provide the foundation for a naturalized transcendental phenomenology has been variously described as the Visible and Invisible in the later Merleau-Ponty (1968) or simply as "presence in absence". The implication is that within subjective experience there is always a visible, a sensorimotor flux that defines the present moment, and something else, the invisible that confers meaning onto the present sensorimotor experience. Standard naturalistic approaches to consciousness would take this invisible as some objective aspect of nature, be it brain function, the unconscious or functional psychological modules. To be consistent with phenomenology, these options must be excluded since they would assume an explanatory framework that the phenomenological reduction prohibits. Since experience is claimed to have a universal form consisting of the visible and invisible, the only possible origin of the invisible is the visible, the sensorimotor flux. So we have the seemingly paradoxical situation where the present sensorimotor experience is meaningful because of the invisible but the invisible originates from the present sensorimotor flux.

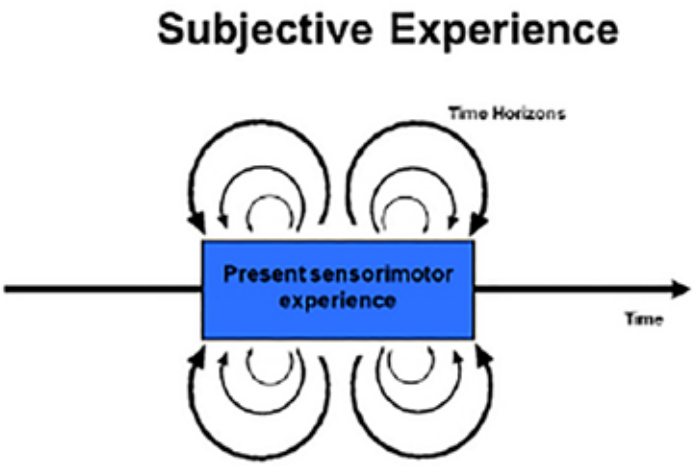
In the mathematical model being proposed, the invisible is identified with the temporal horizons that are generated by the visible. The universal form of experience is thus identified with temporality that is specifically characterized as present sensible flux that is enveloped by temporal horizons that confer meaning to the present moment.[2] The present sensible flux can be mathematized as any function of time f(t) and the horizons can be mathematized as the time scales embedded within the present signal f(t) that feed back onto the system itself (figure).[3] The result is a dynamical system in which the present sensible moment and the mathematical signature of the past and future are simultaneously involved in the computation.[4] It is a hermeneutic characterization of subjectivity where the present sensible

2 This identification of temporality with "presence in absence" has been developed by Russon. "Rather than recognizing presence as the ultimate ground of reality, the full-fledged description of experience-the philosophical approach called phenomenology-would show...absence to be the primary term in which the ...substance of the world is to be articulated" (Russon, 2003, p18). "It is this temporal character of experience that is the "negativity" that lets there be presence" (Russon, 2003, p19). Also "The very nature of our subjectivity, then, is to be "simultaneously" in the past, present, and the future" (Russon, 2003, p19).See also Gallagher (2012) for a review of phenomenology and time. This conceptualization of phenomenal experience is also in accord with Merleau-Ponty's description of the Visible and the Invisible in which these two components of experience are intertwined as the mathematical formalism suggests (Merleau-Ponty, 1968).

3 A Fourier decomposition of the time series would yield such time scales.

4 This is unlike the "metaphysics of presence" that characterizes the traditional natural sciences. The simultaneous access to and use of the past, present and future characterizes our meaningful subjective experience and distinguishes a system that operates according to reasons as opposed to a system that operates according to causes.

generates temporal horizons to provide for meaningfulness of the sensible moment but the pre-existing horizons are the basis by which the present sensible input is already meaningful.



If the present visible generates the temporal horizons that constitute the invisible the obvious problem with this formulation is the question of how the present contains any information about the past or the future. It seems like an absurd proposition. The present dynamics does contain information concerning the future and past if the dynamics of the system is self-similar. Although application of the concept of self-similarity in spatial dimensions is commonplace, it is also relevant to temporal dimension. If a dynamical system is self-similar its activity over a short time interval surrounding the present carries information concerning its past and future modified by a scaling factor.
Self-similar temporal process are known to have a scale free frequency distribution in which there is no dominant time scale. They are felt to represent those dynamics that incorporate the best balance between spontaneity and constraint. Certainly in our interaction with the environment there is phenomenological evidence to suggest that skillful coping is characterized by this same balance between spontaneity and constraint suggesting that a scale free dynamics best characterizes the phenomenology of this experience. If it is taken as a hypothesis that our active synthetic experience always returns to the state in which this interaction is automatic and effortless after we have experienced a disturbance, this translates, in the proposed mathematical model of subjectivity, into the requirement that the dynamics of the system always returns to a scale-free dynamics upon perturbation.

5. Implications concerning the origin of phenomenological psychopathology

In the mathematical model of subjectivity that is proposed (figure), access to our past and future temporal horizons can be obtained from the present sensorimotor flux if the experience is one of skillful coping, that is, if the experience is the one that feels the most natural and automatic. Even though the temporal horizons (the invisible) and the present sensorimotor experience (the visible) are experienced separately, they are both involved in the computation.
The nature and evolution of these temporal horizons or time scales that envelop the present sensible dictate the nature of the experience at that moment. For example, if the time horizons have no dominant time scale, the phenomenal experience is one of skilful coping in which there is no distinction between subject and object. If the time scale distribution is bimodal (two peaks) the present sensible moment is experienced as two simultaneous

experiences. (Borrett *et al*, 2011). If the future horizons are abbreviated and cannot be expanded to allow the future to provide meaningfulness, the experience can be viewed as a lack of hope. Episodic memory loss is characterized by lack of access to past temporal horizons. Conflict can be characterized by a persistent bimodal experience that is unable to return to the balanced unimodal distribution of skilful coping. The need for immediate gratification can be reflected in a dominance in the shorter time scales. In all these cases, temporality, or more specifically the nature of the time scale distributions in the dynamics, is the parameter than defines the nature of the experience.

Any subject can be characterized by the set of specific parameters that define the details of these horizons. If a subject is identified as constitutionally having abbreviated long term horizons, then, as the dynamical system that defines that subject evolves with the intertwining of the visible and invisible, necessary consequences emerge that would be different from a subject whose access to long term horizons are more full. Because these consequences are necessary, the subject has no active control over the nature of the result forms or structures. Because of the universality applicable to scale free dynamics, all subjects with this parametric signature experience the same qualitative and quantitative consequences. The subject can still be regarded as free and self-determining because the model of the subject contains all the accessible past, present, and future information available to the subject as they attempt to optimally interact with the environment.[5] The necessary dynamical consequences of the parametric signature is simply a limitation to their freedom. Why a particular subject has abbreviated long term horizons is a causal question and is more suitably addressed by natural science. How it is possible for a self-determining subject to experience necessary but painful experiences if they tend to focus on the present moment is more appropriately addressed by the present model.

The question concerning the origin of delusions in a schizophrenic would be approached similarly. The causal answer to the question would require a neurobiological explanation. The transcendental answer to the question would require identification of the temporal horizon parametric profile that results, by necessity, in this particular pathological form of experience.

This focus on temporality or time scale distributions in subjective experience distinguishes the phenomenological approach to psychopathology from biomedical approaches in which disturbances in causal networks, be they neuroanatomical/neurochemical as in the case of neuroscience, abstracted functional modules as in the case of psychology or conflated combinations of both, define the pathological basis of psychiatric conditions. Because temporality has been mathematized in the form of time scale distributions, it is amenable to empirical experimental confirmation, as is necessary for methodological naturalism to apply. The analysis of such time scale distributions can proceed theoretically based on the fundamental mathematical form or empirically with the use of models of the basic equation and its correlation with human data through EEG/MEG studies.[6] In the case of phenomenological psychopathology, the details of the nature of the disturbance in temporality in specific psychiatric syndromes as described by patients will need to be addressed to allow correlation with predictions from the models.

5 This claim related to freedom and self-determination requires extensive elaboration and justification but for the purposes of this paper will be taken for granted.

6 The use of neural networks or autonomous agents would be viewed as models of the more fundamental theoretical dynamical equation.

6. Conclusion

Until phenomenology achieves the status that Husserl envisioned, a science of subjectivity, its relevance to psychiatry will always be overshadowed by naturalistic conceptual frameworks whose ability to explain symptoms and predict treatment directions continues to impress. A naturalized transcendental phenomenology carries with it the possibility of explaining and predicting not only the nature of normal subjective experience but also the origin of phenomenological psychopathology. A purely mathematical naturalized phenomenology remains in the phenomenological sphere, eschews any reference to data from the natural sciences in its development, focusses on temporality in its identification of normal subjective experience and phenomenological psychopathology, allows for empirical confirmation based on time scale analysis such as with EEG and is consistent with Husserlian view of man as free and capable of using reason to influence behavior. Because what is being naturalized is subjective experience and not any part of the physical world, the project it is not meant to replace the natural science's understanding of phenomenological psychopathology but to provide a complementary view that is acceptable by scientific standards.

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