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Process Thought as a Heuristic for Investigating Consciousness

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Background, Motivation, and Orientation of the Present Volume of WPN Studies

The Whitehead Psychology Nexus (WPN) is an international scholarly society that takes its immediate mandate from issues important to contemporary philosophy and psychology, but seeks creative (possibly daring) solutions, drawing its inspiration from the process-oriented thinking that emerged in the late nineteenth and early twentieth century, which includes the thought of Henri Bergson, Charles Sanders Peirce, and William James, but is most closely associated with the organic philosophy of Alfred North Whitehead (1861–1947).[1] WPN promotes dialogue and is not shy of controversy. The present volume of the WPN Studies places consciousness at the focus of disciplinary cross-elucidation. It taps leading researchers and theorists in the study of consciousness and Whitehead scholars to explore an interface between process thinking and the burgeoning field of consciousness studies. The rationale for such a project has at least two facets worth mentioning by way of introduction. They have to do with the state of an educated debate that seems, first, unproductive and peculiarly burdened by its deep modernist origins and, second, marked more by disciplinary rivalry than interdisciplinary synthesis.

A good part of what fuels the current boom in consciousness studies is the robust progress of cognitive psychology and neuroscience toward reaching consensus explanations of just about anything *except* consciousness. Psychology, neuroscience, and artificial intelligence have produced many astonishing results and upset many old beliefs. Nevertheless, it remains controversial what implications these discoveries have for a general theory

of consciousness. Despite hopes that empirical research and computational modeling would constrain theory, consciousness (to judge from a literature in which the most cited figure continues to be Descartes!) is a topic that still lies wide open to speculation. Indeed, the literature is fond of noticing that the contemporary discussion is defined by the same set of theoretical options that became established in early modern philosophy, ranging from materialism to epiphenomenalism to various forms of attribute or substance dualism. Even idealism remains on the table if we include the extreme forms of social and linguistic constructionism, where the world-creating subject of traditional modern philosophy is replaced by the world-creating language or social praxis. In short, it seems that scholarly debate has not so much reached an impasse as remained at one reached in the seventeenth century. Given the massive effort currently invested in research and debate, the lack of progress toward a general (and generally accepted) theory of consciousness begins to make consciousness look like a kind of twenty-first-century Philosopher's Stone, whose hidden nature seems to hold the key to the greatest mysteries, but continues to elude us.

This situation explains one part of the rationale for the present volume. A philosophical intervention in the consciousness debate that does not take for granted the same assumptions that define and limit traditional approaches should not be unwelcome, especially if the goal is a more positive accommodation with empirical research than is achieved by many current models of consciousness. For example, an objection to functionalist models that will emerge from discussions in this volume is that they imply that *consciousness* per se *has no evolutionary or even any cognitive value*. If this assessment is correct, it is easy to see why empirical research in biology or psychology has had relatively little impact on the construction of theoretical models of consciousness and why the philosophical debate continues to be exercised by ideas that predate the very existence of psychology and biology as sciences. Because it provides ways to understand how consciousness has cognitive and evolutionary value, process thought has attracted the attention of a number of researchers whose work is featured or discussed in this volume.

Due to its continuing dominance within the discipline of cognitive psychology, functionalism looms largest over those who seek to reject it. In fairness, then, we should, here at the outset, give the reader some idea of the sorts of arguments and provocative suggestions she can expect from the later chapters of this book. How do our authors propose to deal with the vexed problem of the evolutionary value of consciousness, and why do we claim that this topic poses an insuperable problem for functionalism?

Consciousness could confer a selective advantage only if it enhanced an organism's ability to survive, allowing it to adapt better or more flexibly to its environment. But the computational paradigms of cognitive science

have led us to the following impasse: any function, even biological ones, can in principle be executed mechanically; consequently, consciousness cannot be necessary to the performance of any function. In fact, any function consciousness appears to perform (unless perhaps it can do something "supernatural") is superfluous since the underlying neural architecture is *ipso facto* already sufficient to enable this operation, leaving consciousness with no possible role to play. This conclusion follows directly from the computational understanding of a "function." It is therefore *impossible* for conscious as such to have any function. What this finally means is that consciousness is not the sort of thing that could be selected for in the course of evolution: an evolutionary account of consciousness is impossible.

At the point where cognitive scientists arrive at the insight (as David Chalmers does; see 1996) that consciousness, whatever it is, cannot have any function or survival value—at this point we might want to step back and ask if we haven't taken a wrong turn. Since the conclusion follows inexorably from the computational paradigm according to which any function is by definition Turing machine computable, other ways of understanding neurocognitive function may prove to be well worth looking in to.

Neuropathology makes it clear that consciousness depends on the functional architecture of the brain, as damage to specific areas of the brain correlates with specific impairments of consciousness. But some of the phenomena of neuroplasticity adduced by Shields in his contribution (specifically, those that appear to result over time from the deliberate control of one's attention) suggest that the functional architecture of the brain is also, in part, dependent on consciousness! It is easy to see that neuroplasticity is something that could confer an evolutionary advantage, as it would allow for more adaptive behavior. But if, at least in some cases, neuroplasticity depends in part on consciousness, then these are cases where consciousness itself confers a selective advantage. It is certainly possible that the intervention of consciousness in the evolution of an individual brain's plastic infrastructure could turn out to be illusory—just a case of the brain affecting itself according to a predetermined neurofunctional program in which consciousness plays no causal role. But this is hardly a foregone conclusion.

Although it is often asserted as fact, it is by no means clear—and certainly not clear *a priori*—that any function the brain performs could indeed be achieved computationally (Putnam 1992). And even if a given function *could* be achieved computationally, it is not necessarily the case that it *is* achieved computationally. The role of quantum indeterminacy in synaptic activity (also discussed by Shields) and the peculiar causal role the "observer" plays in the collapse of the probability wave function (and hence in the calculation of further probabilities of synaptic activity) suggest a functional role for consciousness that does not fit neatly into the framework

of computationalism, and this suggests one way that consciousness might confer a selective advantage.

Drawing on ideas of Karl Popper, David Griffin's contribution will suggest another way that consciousness might confer an evolutionary advantage: consciousness allows an organism to conduct thought experiments, that is, to try out possible strategies for survival without exposing itself to real risks, by imagining what their differential outcomes might be. The critical element here is counterfactual ideation. In effect, the organism poses the question: if I were to do such and such, then what? Behaviorism almost certainly cannot explain counterfactual ideation (it needs rather to deny its existence). What about cognitive science, behaviorism's heir to the mechanistic agenda in psychology? It seems unlikely that strictly computational functionalism, which is only interested in a program that generates real outputs from real inputs through real operations, could provide what Hilary Putnam (1992) calls a "perspicuous representation" of this peculiar process—the cognitive process of counterfactual ideation—and if it cannot, then we would have another good candidate for a neurocognitive function that confers an evolutionary advantage, but is not (and possibly *cannot* be) a computational function.

Now the question may be raised: what does that have to do with consciousness? Is there any reason why such a neurocognitive process must be conscious, seeing that most neurocognitive processes are not? Regardless of the conclusion one ultimately draws, here is a point where Whitehead's ideas could stimulate productive debate in contemporary cognitive science, for Whitehead claims—to a rough approximation—that counterfactual ideation is precisely what consciousness *is*. There is no need to add something to such a process to make it conscious, and nothing could be removed that would render it unconscious. If Whitehead is right about this, then Donald Redfield Griffin is entirely justified in his contribution to see evidence of counterfactual ideation in monkeys as evidence of consciousness.

For their part, Pachalska and MacQueen offer a comprehensive theory of brain function that is noncomputational. Consequently, in their account of consciousness as an activity or function of the brain, no conflict with evolutionary biology need arise. In fact, their account is altogether evolutionary. According to the model developed by Jason Brown, brain function in humans organizes progressively over three levels, corresponding to the evolutionary strata of the brain (brain stem, limbic system, and cortex, which correspond to the reptilian, paleomammalian, and neomammalian brains). Activity occurs in a dense volley of overlapping waves that radiate from the phylogenetically oldest and anatomically deepest part of the brain, the brain stem, toward the youngest and outermost part, the neocortex. Consciousness is not so much the property of a system in a steady state, as something the brain brings about, moment by moment, through a microgenetic process (measured in

milliseconds) that must unfold over all three levels. Continuity of phenomenal consciousness results from the overlapping waves of microgenesis.

Because this theory of brain activity is holistic, not modular, consciousness cannot occur at higher levels of activity without being implicated in some way at lower levels. Consciousness is only refined at higher levels; it does not arise *de novo*. This puts the question of the evolutionary value of consciousness in an entirely different light. Consciousness is not something purely cortical that attends to or even commandeers functions that are already executable unconsciously. Consciousness is integral to function because it is the overall unity of function that can be realized at one of three levels: wakefulness (facilitating globalized, essentially reflexive responses), emotion (facilitating more differentiated and purposeful responses), and articulated perception (facilitating separation of self from a world of enduring, independent objects).

A distinct kind of consciousness thus correlates with each level of activity, and its evolutionary value lies in the discriminating response to the organism's environment that it facilitates, with a higher, more adaptive degree of discrimination arising in the outer, more evolved strata. Most important, the higher functions do not supplant the lower ones: we do not cease to be awake because we feel emotion, or cease to feel emotion because we enjoy articulated perception. Rather, the higher functions build on the lower ones, incorporating them as more basic phases in their own genesis. Since microgeny recapitulates phylogeny, the value of consciousness is nothing less than the cumulative value of the organism's adaptive evolution.

As with the radical theory of consciousness advanced by Velmans in his contribution to this volume, so too with microgenetic theory: what needs explaining is not so much how or why consciousness arises at the highest levels of brain function, as why it appears largely absent from lower levels of functioning. According to Brown's model, primitive functions appear unconscious because they no longer occupy the terminal point in the moment-to-moment microgenesis of consciousness. They have been reduced (through a kind of neoteny of microgenesis) to early and incomplete phases in the genesis of a more complex and differentiated consciousness. They recede from foreground to background, becoming the global backdrop presupposed by the more sophisticated function. It follows that they remain present in higher consciousness vestigially, even if this is not obvious from the phenomenology of normal consciousness.

The crucial contribution of primitive brain functions to higher consciousness is precisely what breaks to the surface in the neuropathological symptom. Depending roughly on the depth of the brain lesion along the radius from brainstem to any point on the cortical surface, the genesis of normal conscious behavior is interrupted at a more or less primitive phase.

Deeper lesions cause more global pathologies; more superficial lesions, closer to the brain's outer shell of gray matter, cause more specific and localized pathologies. What appears to be a deficit, however, is really the abnormally exposed competence of a more primitive level of information processing. Disturbed behavior does not replace normal behavior. Rather, the normal process through which conscious behavior comes about is derailed before completion, exposing a less differentiated competence than expected, but a competence nonetheless—one that informs normal consciousness and without which normal consciousness would be impossible.

For example, the patient sees the word *cat*, but reads it as *dog*. It is not by accident that the categorization is correct (four-legged domestic animal). The disrupted ability to fully differentiate meaning exposes the ability to categorize as a more primitive and independently functioning competence. What neuropathology shows, then, is that the importance of a competence's contribution to consciousness is inversely related to how noticeable it is. The more fundamental the competence, the more removed it is from the foregrounded differentiation of conscious attention. It is not categorically unconscious, but its presence in normal consciousness is so global and diffuse that its noticeability is pathological.

Reminiscent in some respects of Kurt Goldstein's (1995) application of the categories of Gestalt psychology to biology, this model leaves no berth for functionalist theories that would deprive consciousness *per se* of cognitive function or survival value. It has the advantage of being an empirical theory, based not on an *a priori* conception of what a physically instantiated function "must be," but on neuroanatomy, evolutionary biology, and neuropathology. Even if further research should leads us back to a more modular understanding of brain function, Velmans in his contribution offers a coherent account of how consciousness could evolve—and how, in particular, diffuse consciousness could evolve into attentional consciousness—without having to be directly subject to natural selection.

In sum, while computational paradigms are hard pressed to assign any evolutionary value to consciousness, the present volume offers no less than four arresting possibilities. If nothing else, this fecundity demonstrates that models based on a Whiteheadian process approach can be a valuable heuristic in developing an evolutionary account not just of the brain, but even of consciousness.

Another reason for approaching the study of consciousness from a Whiteheadian organic or process thought perspective has to do with the unique complexity of consciousness as an object of study. For a single object of study, consciousness lies at the intersection of an unusual number of disciplines—many of them are represented by contributions to this volume, which draws on philosophy, psychology, psychiatry, psychotherapy, zoology,

neurobiology, neuropathology, and even physics. This disciplinary polyvalence tells us something about the complexity of consciousness. Any attempt to approach consciousness from one discipline alone is bound to result in a reduction both obvious and unacceptable to the other disciplines. Indeed, for this reason many of the individual contributions to this volume are themselves interdisciplinary in perspective. But once we acknowledge the disciplinary polyvalence of our topic, we face an important philosophical question, one that was uppermost in Whitehead's mind in defining a continuing role for philosophy in the age of empirical science and its multiple specializations. If consciousness can be understood only through the convergence of many different kinds of knowing, then the old problem of the one and the many comes back as a methodological challenge: How are the different approaches to be coordinated? How do we ensure that the convergence of so many perspectives results in a coherent model? How do we resolve conflicts between their different presuppositions—and in a nonreductive way? Whitehead's process philosophy was animated by this problem.

The contributors to this volume are not all "process philosophers" or even Whitehead specialists, and by no means do they share a single point of view. However, they do share the conviction that dominant, mainstream approaches to the study of consciousness, whether philosophical or empirical, have failed to integrate the relevant perspectives in a way that does justice to important evidence—indeed, that these approaches lack an appropriate framework that would allow them to do this. Lacking such a framework, each of these dominant approaches may come up short in different ways, but their shortcomings reflect a common failure to integrate diverse perspectives. This was Whitehead's diagnosis of the intellectual scene of his own day, and the situation does not seem to have changed. Our contributors' sympathies with Whitehead come from the shared sense that his philosophical theories, right or wrong, were a painstaking and often insightful response to the same limitations that still hamper contemporary philosophy and psychology.

The disciplinary rivalry alluded to above illustrates this point. In its *most* acute form this rivalry takes shape as a conflict between scientific and humanistic outlooks, each contesting the primacy of the other. In this case, the failure to integrate relevant perspectives seems obvious. There can be no denying that here we still see the disconnection between different disciplinary approaches that Whitehead deplored. It results from a long-standing stalemate, the origins of which can be traced to the seventeenth century (Descartes' substance dualism, Spinoza's attribute dualism, Leibniz's preestablished harmony, or the contrasting roles played by *perception* and *reflection* in the British empiricists) and to Kant, who cast the problem in the form it has since retained. Kant tried to resolve the tensions between the two domains *by separating them from one another* (Weekes 2003, 347–366). As

though they were squabbling children who resented sharing, Kant established rigid boundaries, giving each of them nonoverlapping domains of safe space, forbidding them, in effect, to talk to one another. As any parent knows, this solution is only temporary: ultimately the world is something we all must learn to share. The insularity of different domains of discourse that nevertheless bear on the same topic is a problem more than ever now that the children are grown up.

Whitehead is famous for having constructed a solution to the philosophical problems he diagnosed that seems highly artificial. How much of this intricate construction is useful is a matter for debate. However, all of our contributors agree that Whitehead's motives are sound and that his critique of modernity is especially relevant to the issues currently under debate in the consciousness literature. But they also agree that at least some of Whitehead's constructive proposals can and should be rehabilitated and brought to bear on this topic. This may turn out to be the needed expedient to enable theories of consciousness to profit from a positive accommodation with the historical and phenomenological evidence valued by humanists and the empirical research valued by scientists, *both* of which must be integrated if we are to move beyond speculations of the seventeenth century that still control so much of the discussion.

In short, although our contributors do not agree on how much of Whitehead's approach can be endorsed without significant reconstruction, to a greater or lesser extent they all exploit aspects of Whitehead's "categoreal scheme" because they share the conviction that the conceptual and analytic framework of Whitehead's process philosophy offers the outlines of something that mainstream approaches often lack: a promising schematic for assessing and integrating the *full* range of evidence relevant to the nature of consciousness. As noted, the diversity of evidence includes not just the results of empirical research. To be exact, it includes two other important sources: the uncontrolled, but ubiquitous evidence of everyday experience and the evidence to be found in the history of philosophical opinions about consciousness. Of course, philosophical opinions cannot be taken at face value any more than the conceits of everyday experience, but in both cases an adequate theory of consciousness must be able to make sense of prevailing opinions and reconcile them with an accurate phenomenology. The hermeneutic principle here is the Aristotelian one that includes "opinion" among the phenomena that an adequate explanation must "save": if things are not as they seem, to philosophers or ordinary folks, there nevertheless must be a good explanation why things seem to them other than they are. In sum, the contributions to this volume use a broadly conceived process framework to draw on three sources of evidence about consciousness, often confronting one with another: empirical research, phenomenology, and philosophical doxography.

Methods and Definitions

Since we have yet to define our terms or set specific methodological constraints, we should say a few words in advance about how we understand phenomenology, how empirical research and doxography will bear on our investigation, and above all what we mean by consciousness.

By "phenomenology" we mean a methodologically self-conscious procedure of description, which takes as its object not the way things are thought to be "in themselves" or independent of any particular manner of access, but the way they appear in experiential real time in some actual mode of givenness: for example, how something is given (appears) to vision, or hearing, or memory, or the imagination. It is a difficult phenomenological question how some things we *obviously experience* are *actually given*—the animal body, for example, or mathematical certainty. It is a very difficult phenomenological question whether some things are given at all—for example, the reality of the past or the external world. And, it is a matter for phenomenological description if some things are habitually imbued with phenomenological misinterpretation—a possibility Whitehead was not alone in seeing. We also use "phenomenology" to designate the object of phenomenological description—the same way "psychology" can mean not only the clinical science of the way people think but also the typical or characteristic way a particular person or group of people thinks. Thus, for example, we refer below to the "phenomenology of certainty," meaning: *how certainty appears* to the consciousness experiencing it (second meaning of phenomenology). Describing this appearance yields (at least some of) the specific experiential conditions under which something can be given as certain (first meaning of phenomenology).

It will become clear as we proceed, but let us note at once that our understanding of phenomenology differs from that of its best-known practitioner, Edmund Husserl. Nothing in the preceding description presupposes the specifically Husserlian method of the *epoché*. Unlike Husserl, we are not convinced *a priori* that the transcendent reality of the empirical world is not something that could appear to us as a primitive phenomenological datum, that it must be something consciousness "constitutes." Consequently, we do not see the *epoché* as a precondition of successful phenomenological description. We must look to how things are actually given, yes; but we need not assume in advance that their existence depends on their givenness. To avoid confusion, therefore, we will always capitalize "phenomenology" and its cognates when we have in mind the more specific interpretation of phenomenology made famous by Husserl and lease as lowercase our own more general use of the term, which seeks not to prejudice the answer to this important philosophical question.[2]

One of the most important targets of phenomenological description is the everyday world of ordinary experience and social existence—what Husserl calls the life-world. Because it is pragmatically and performatively presupposed by everything we say and do, it constitutes in some sense a transcendental condition. The significance of this kind of pragmatic presupposition is of course far from obvious (not to say controversial) and requires elucidation. Description of how the life-world is given and how its givenness is habitually understood (i.e., how it seems to be given in discursive reflection if this is different from how it is *actually* given in immediate experience) must form one part of such an elucidation. An idea that Whitehead shares with Husserl is the implicit or nonthematic way in which the life-world is actually given, as well as the elusiveness of this fact. This has important methodological implications that might be brought out best if we briefly compare Husserl and Whitehead, for both philosophers came to this discovery unwillingly.

Husserl originally thought of Phenomenology as a way to transform philosophy into an exact science: "reduced" to pure phenomena, the world of experience could be handled in a precise and rigorous way on the model of the mathematical theory of manifolds. Husserl eventually abandoned the idea of philosophy as rigorous science, saying famously that the "dream was dreamed out" (Husserl 1969, 508). He did not abandon the idea of a foundational stratum of experience that Phenomenology could access and assess, but only the idea that it could be fixed like a specimen in formaldehyde, delineated with morphological exactitude, and rendered conceptually without ambiguity. It is clear from Husserl's fantastic comments on Manifold Theory in the "Prolegomena" to his *Logical Investigations* (1900) that this had been his ideal of scientific rigor, and the fact that just a few years later he describes the methodology of his new science, "Transcendental Phenomenology," in similar terms lets one know that Manifold Theory was his original paradigm for Phenomenology.

Similarly, Whitehead was intoxicated at first with the idea that a mathematically formal analysis of the world, what he later calls "morphology," could be the epistemologically recovered foundation of our knowledge and experience of the world.[3] But in the years following the publication of his three great works on the philosophy of natural science (PNK, CN, PRel) he comes instead to the opposite conclusion—that the decisive and indispensable foundation of experience is everything that morphology leaves out! Like Husserl, he became convinced that what is fundamental always has the character of background, horizon, or tacit presupposition: "The necessities are invariable, and for that reason remain in the background of thought, dimly and vaguely" (MT vii). But this means that what is "foundational" in experience is incapable of focal objectification and must be accessed indirectly. This same realization led Husserl to his method of indirection or

"questioning back from the pre-givenness of the life-world" (Husserl 1969, Part III A, 105–193). Whitehead advocated a similar kind of questioning back to find fundamentals. His philosophy looks to the "presuppositions of language rather than its express statements" (MT vii) and to the "generalities which are inherent in literature, in social organization, in the effort towards understanding physical occurrences" (MT 1). Philosophy's "ultimate appeal," he says, "is to the general consciousness of what in practice we experience. Whatever thread of presupposition characterizes social expression throughout the various epochs of rational society must find its place in philosophic theory" (PR 17). This explains the stress Whitehead lays on the fundamental importance of "unscientific" sources of information such as poetry, religion, or collective anthropological experience. The evidence they provide is indirect, but indispensable. Because this indirection is the manner in which the life-world is actually given, we do not hesitate to call its description *phenomenological*.

What do we mean by consciousness? Because some of the proposals that follow, both in these introductory chapters contributed by the editors and throughout the book, are highly unorthodox, it bears stressing at the outset that the consciousness we—the editors and the contributors—seek to circumscribe, understand, or explain is the same one that is at stake in the current debates in philosophy and psychology. We share in the large consensus of opinion that sees consciousness as the qualitative feel of an experience impressed with such hallmarks as unity, intentionality, reflexivity, perspectivity, and personality. But we seek more vigorously than some of our colleagues to find explanations of consciousness that preserve the phenomenology of these features of our experience. Also like other parties to the consciousness debates, we understand the phenomenon targeted in this standard description to be the consciousness experienced (post-infancy) by any "normal" human being.

However, "abnormal" consciousness is by no means irrelevant to our inquiry. On the contrary, a great deal can be learned about normal consciousness from the altered or diminished consciousness consequent to trauma or impairments (e.g., neuropathology, psychopathology, coma, catatonia, anesthesia, intoxication), to say nothing of states of consciousness that are clinically normal yet marginalized in the usual understanding of normal consciousness (e.g., sleep, fatigue and duress, yogic meditation, religious and aesthetic experience, consciousness at its lowest thresholds, implicit or nonobjectifying consciousness, animal consciousness). This explains the prominence given in this volume to findings of empirical research, on the one hand, and to phenomenology, on the other. Empirical research teaches us about states of consciousness that fall outside the compass of clinically normal consciousness (or outside the compass of *human* consciousness in the

case of animal studies), while phenomenology teaches us about modalities of normal consciousness that are often omitted (suppressed or overlooked) in the lay, scientific, or philosophical descriptions.

Among the contributors addressing the former topic, Schweiger et al. focus explicitly on what can be learned about normal consciousness from the stages through which consciousness passes during recovery from coma; Weber looks at clinical experience with mental illness, Pachalska and MacQueen at brain pathology, Shields at meditation and attentional therapy, Donald Griffin at experiments assessing consciousness in animals, Velmans at the assumed biological and evolutionary thresholds of consciousness, and so on. Addressing the latter topic, several of our contributors draw attention to implicit or performative aspects of ordinary consciousness that are easy to ignore or even to deny precisely because they are normally operative without being thematic. David Griffin, Shields, and Katzko look at the implicit performative presuppositions of objectifying, theoretical consciousness; Verley, Shields, and Weekes examine the implicit performative conditions of time consciousness and memory, Weber looks as the implicit social aspects of rational consciousness.

In this circumspection we are radicalizing a fundamental precept of Whitehead's; it is well known but worth quoting again:

> In order to discover some of the major categories under which we can classify the infinitely various components of experience, we must appeal to evidence relating to every variety of occasion. Nothing can be omitted, experience drunk and experience sober, experience sleeping and experience waking, experience drowsy and experience wide-awake, experience self-conscious and experience self-forgetful, experience intellectual and experience physical, experience religious and experience sceptical, experience anxious and experience care-free, experience anticipatory and experience retrospective, experience happy and experience grieving, experience dominated by emotion and experience under self-restraint, experience in the light and experience in the dark, experience normal and experience abnormal. (AI 226)

The motive for this broad approach has its roots in an insight of William James:

> Some years ago I myself made some observations on this aspect of nitrous oxide intoxication, and reported them in print. One conclusion was forced upon my mind at that time, and my impression of its truth has ever since remained unshaken. It is that our

> normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence; but apply the requisite stimulus, and at a touch they are there in all their completeness, definite types of mentality which probably somewhere have their field of application and adaptation. No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded. How to regard them is the question—for they are so discontinuous with ordinary consciousness. Yet they may determine attitudes though they cannot furnish formulas, and open a region though they fail to give a map. (James 1902, 387–388)

The lesson Whitehead took from James was perhaps more sober, but daring nonetheless. It becomes possible to dismiss a vast amount of evidence about ourselves and the world as "unscientific" or "not really empirical" simply by restricting what counts as cognitively relevant consciousness to states that are in fact exceedingly rare:

> We [. . .] objectify the occasions of our own past with peculiar completeness in our immediate present. We find in those occasions, as known from our present standpoint, a surprising variation in the range and intensity of our realized knowledge. We sleep; we are half-awake; we are aware of our perceptions, but are devoid of generalities in thought; we are vividly absorbed within a small region of abstract thought while oblivious to the world around; we are attending to our emotions—some torrent of passion—to them and to nothing else; we are morbidly discursive in the width of our attention; and finally we sink back into temporary obliviousness, sleeping or stunned. Also we can remember factors experienced in our immediate past, which at the time we failed to notice. When we survey the chequered history of our own capacity for knowledge, does common sense allow us to believe that the operations of judgment, operations which require definition in terms of conscious apprehension, are those operations which are foundational in existence either as an essential attribute for an actual entity, or as the final culmination whereby unity of experience is attained? (PR 161)

The present volume carries forward Whitehead's program of developing a more adequate understanding of normal consciousness by attending to

occurrent states that are excluded by normal consciousness or marginalized by our usual *understanding* of normal consciousness. To the extent that it only radicalizes the bias inherent in normal consciousness, philosophical and psychological reflection attempts to "epiphenomenalize" these normally excluded or marginalized states. This is closely related to the modern tendency, noted by (among others) Dewey and Heidegger, to think of consciousness as a spectator. Probably because it is reinforced by the phenomenology of (epistemic) certainty, this tendency is still palpable in much of the literature on consciousness. Certainty about the characterization of an object attaches to consciousness at the moment of optimal focus and peak acuity. Consciousness at this moment is indeed very much like a dispassionate spectator. Its attitude is fact-oriented, which means that it is objectifying and theoretical, possessed of acute self-consciousness and analytic attention. The question is whether this particular delineation of consciousness—which consciousness arrives at because it is indeed in this state when it goes looking for itself and what it is—captures its base form, its "essence" so to speak, representing a sort of "pure consciousness" presupposed by its other forms.[4] If so, then all other forms would constitute so many *modifications* of this fundamental sort of consciousness: attenuations, perturbations, accretions, distortions, etc. This has been the implicit (or even explicit) position of the mainline tradition of modern philosophy. It should perhaps not surprise us that consciousness, seeking certainty about what consciousness is, ends up by identifying itself with the limited certainty it can have.

Like Bergson, Whitehead thinks that consciousness as it has come to be known and come to understand itself in the sharp delineation that it owes to modern European thought yields a filtered, straitened, and truncated experience. In its notion of scientific objectivity, European philosophy unwittingly canonized as normative and definitive an extreme idealization of that way of experiencing the world that allows us to maximize our power over nature: above all, to exercise power with algorithmic certainty. As a result, information from other modalities of experience (which certainly occupies a great part of our consciousness, even if it cannot or normally does not take pride of place at the objectified focus of attention) was—and still is—devalued. It is customarily assumed that the information provided by marginal and alternative modalities of consciousness, to the extent that it differs from what normal consciousness does or would disclose directly in otherwise similar circumstances, is simply normal content degraded by "subjectivity" (inattention, suboptimal function, dysfunction, emotions, prejudice, etc.). Such modalities are seen as offering nothing of objective value that could not become the focus of deliberate and thematizing attention, resulting, moreover, in an experience of greater cognitive value. In other words, the nonpreferred modalities of consciousness are treated as "deficient modes" of

an assumed normative state, which, uncorrupted, possesses (would possess) the world as a crystalline cognitum.

We are tempted to say this modernist prejudice is refuted by Impressionist and post-Impressionist painting, to say nothing of the magical phenomenology of writers such as Proust or Virginia Woolf, which discovers in every banality a suppressed ontological nimbus, an unsuspected abundance of detail overflowing the thing of "normal" consciousness and indispensably qualifying how the thing exists. What these works of art do is make directly available to normal consciousness the information that would otherwise remain unthematic, marginal, and fleeting. The fact that they reveal so much important information that conditions normal consciousness without being directly available to it is the reason they astonish us. If they exposed nothing more than a degraded form of something perfectly accessible to normal consciousness, they would not, as they so often do, seem like revelations. It goes without saying that when marginal information is revealed in this artificially direct way to objectifying consciousness, it is no longer performing its proper function, which explains why it is art rather than life. But it also explains how an artwork can be more or less "true" even though it is entirely fictional. As a mapping of the marginal onto the focal, it can be more or less faithful, even if such a focal objectification of the marginal is impossible in the real performance of an activity and its execution necessarily an exercise in make-belief. In short, marginal information possesses a preeminence that is unique to its marginal status, and far from being the degraded content of (a possible) direct normal consciousness, it is only through the degradation of its preeminent function that it can ever be turned into the content of direct normal consciousness. Degradation of precisely this kind is characteristic of artistic representation, and we might go so far as to say that here lies the cognitive value of art. (A question that does not belong to the compass of this investigation, but certainly to its horizon, is whether religion does not perform a function similar to art. It makes directly available to normal consciousness something that is otherwise necessarily marginal in one of two ways: it can be directly available to consciousness, but only in extreme and exceptional states of consciousness; or available to normal consciousness, but only indirectly, remaining fugitive and implicit, despite being somehow fundamental.[5])

Whitehead rejects these modernist prejudices. To name one of his reasons: a significant consequence of these assumptions is none other than the famous mind-body problem. As we will detail in the last chapter of Part I, the world as disclosed to "normal" consciousness is a medium in which consciousness of any sort could not arise and cannot exist. How then consciousness is related to this medium that excludes it becomes the greatest of philosophical puzzles.

Needless to say, no philosophical discussion can avoid presupposing normal consciousness. The question is whether we shall do this uncritically, accepting the narrow interpretation of normal consciousness bequeathed to us by modern philosophers along with their assumption that it is uniquely cognitive. One very Whiteheadian aim of this volume is to find out and critically assess just what we are thereby presupposing. We need to know, above all, what such a presupposition excludes. The fact that we must begin with normal consciousness does not mean we have to remain there. Whitehead thinks that marginal experience offers an opportunity to circumscribe a very different concept of subjectivity than the one we are accustomed to—a *weak* subjectivity, which is only faintly like the strong subjectivity of consciousness. If he is right, it may turn out after all that consciousness is the Philosopher's Stone. For if we can find within consciousness (or at its fringes), in its liminal, implicit, or fugitive states, or in states deviant, weakened, or disturbed on normal accounting, the vestige of a world differently disclosed and no longer incompatible with the existence of consciousness, then we can use consciousness against itself to transmute the false show of objectivity into something possibly less transparent, but probably more real. If what we lose is the transparency of the world dear to normal consciousness, what we gain is the meaningfulness of that world. Whitehead thinks this process of transmutation, which after all is just a biological critique of normal consciousness, is indeed possible and that it reveals to us a world urged on from countless centers of weak subjectivity, whose evolving interactions are the course of nature alive with possibilities. This is a nature in and from which the coming-to-be of the strong subjectivity of consciousness is no longer impossible. If the epiphany of such a world flickers in the meditations of philosophers or in the margins of everyday experience, it might be better described not as a transmutation, but as a reversal—however brief, partial, or unstable—of the transmutation already wrought upon the world by normal consciousness.[6] The dramatic implication for psychology, however, is that clear and distinct consciousness requires elucidation from more primitive (and usually marginal or transmarginal) forms of awareness, not the other way around.

With these comments we hope to have clarified not only what we mean by consciousness, but also the role played in our investigations by the various sources of evidence on the nature of consciousness. Because contemporary *theories of consciousness*, like the contemporary *self-understanding of ordinary consciousness*, owes so much—so much that Whitehead rejects—to the intellectual accomplishments of modern European philosophy, it is necessary for us to take account of this influence doxographically and critically. Verley's and Weekes' contributions, which look at early modern figures and Whitehead's critique of them, fall in this category, while David Griffin, Katzko, and Shields bring this doxography up-to-date with the current literature.

To some extent the critique of modern philosophy and its contemporary legacy can be an immanent one, assessing their success in terms of their own goals by their own criteria. But ultimately we must question the validity of the phenomenology they presupposes. To do this, we must have recourse to a description of conscious experience that is not hamstrung by modern ideology. The Phenomenology of Husserl fails on this account, while the radical empiricism of William James presents a promising alternative. Several of our contributions make use of a description of everyday experience in tune with Jamesian radical empiricism. The result is the critique of modern and contemporary accounts of consciousness implicit in David Griffin's appeal to "hard-core common sense notions," in Shields' "deep protocols of common sense," and in the descriptive account of memory deployed by Shields, Verley, and Weekes. The agreement between Shields and Weekes on this point is noteworthy given the wide differences in their backgrounds and in the figures they examine. Shields approaches Whitehead from a generally Analytic perspective and focuses his critique on Russell and current Anglo-American literature; Weekes approaches Whitehead from a generally continental perspective, focusing his critique on early modern philosophy and Phenomenology.

If phenomenology brings us to the margins of consciousness, empirical research on abnormal consciousness brings us to what is normally beyond the margins, but nevertheless always there, shaping the contours and coloring the content of normal consciousness. In their contributions, Schweiger et al. and Pachalska and MacQueen argue that these normally transmarginal modes of experience are not so much an alternative to normal consciousness as its concealed foundation. They are simply the lower tiers in the substructure of normal consciousness, which have become directly exposed because the genesis of normal consciousness finds itself arrested at a preterminal phase. In other words, the clinical presentation of abnormal consciousness gives descriptive phenomenology unique access to the genetic process by which normal consciousness comes to be.

Notes

1. For an overview of process philosophy, see Rescher 1996 and 2000, Weber 2004 and Weber and Desmond 2008. The term "process philosophy" appears to have been coined by Bernard Loomer (1949).

2. What Husserl calls phenomenology is more specific than our definition because Husserl has already taken a decisive position on the question of the givenness of transcendent things. As transcendent, Husserl believes, they *are not* given—he seems to regard this not as a phenomenological finding, but as a sort of analytic truth: if

transcendent, not given, if given, not transcendent. In Husserlese: *Erlebnisse* (lived experiences) are *ipso facto* immanent, and the act of meaning, which interprets (apperceives) some of them as the appearances of transcendent things, is equally immanent, *ergo etc*. Husserl thinks it is a *non sequitur* to suppose that one of the things capable of being given to a description that makes no *assumptions* about the independent being of objects might be . . . the independent being of objects! It follows from this initial commitment that any description that does not, for the sake of methodological purity, *deny* the independent existence of objects is *ipso facto* unphenomenological. (For reasons that cannot be addressed here, Anglophone readers of Husserl are unlikely to recognize in this précis the philosopher they think they know.) There is, however, no need to exclude *a priori* the possibility of transcendence being given, and it will be licit to admit transcendence as long as we can describe its particular manner of givenness. Perhaps it is not given; perhaps its givenness is phenomenologically impossible, but this is surely not a logical impossibility. The important upshot of these differences between Husserl and us is that properly phenomenological statements for Husserl will always be "transcendental" statements—statements about the unworldly Absolute Consciousness—while properly phenomenological statements for us could very well turn out to be ordinary empirical statements—statements about things given to consciousness, but not dependent on consciousness, or about consciousness itself insofar as it is given to itself, but not dependent on its own self-givenness. It is only so as not to prejudice these questions in advance that we must reach for the word "phenomenology" at all. Otherwise, "precise empirical description" would do just fine. This and other differences between a Whiteheadian and a Husserlian phenomenology are broached in chapters 4 and 15. It should be noted that Husserl has no monopoly on phenomenology. It was practiced by Brentano, Stumpf, Hodgson, Bergson, Bradley, James, Mach, and many others. Perhaps none of these figures qualify as Phenomenologists, but all of them are phenomenologists.

3. This parallelism is not coincidental. Both Whitehead and Husserl had been stimulated by the seminal paper of Riemann's, "*Über die Hypothesen, welche der Geometrie zu Grunde liegen*," which first introduces into mathematics the abstractly defined multidimensional manifold, to develop the idea of a deductively generated formal ontology/meta-theory of theoretical models. See Husserl's *Formal and Transcendental Logic*, § 30 (1981, 81–82) and Whitehead's early *Treatise on Universal Algebra* (UA 13).

4. For example, Hans Thomae: "That this 'actual individual totality' [of consciousness] indicates an actual reality [*Wirklichkeit*] can only be demonstrated by pointing to the particular experience of self-observation [*Selbstbeobachtung*]. Thus, we can only *point* to self-observation and the inner reality it grasps if we want to make the factual existence [*Tatbestand*] of this totality in someone else's thinking the logical subject of judgments regarding its characteristics. But precisely in this way this concept reveals itself as the description of a thoroughly concrete reality [*Tatbestand*] to which all other 'modes,' 'forms,' or varieties of consciousness are to be reduced" (1940, 540).

5. This is a recurring theme in William James' *Varieties of Religious Experiences*: "Rationalism insists that all our beliefs ought ultimately to find for themselves articulate grounds. Such grounds, for rationalism, must consist of four things: (1)

definitely statable abstract principles; (2) definite facts of sensation; (3) definite hypotheses based on such facts; and (4) definite inferences logically drawn. Vague impressions of something indefinable have no place in the rationalistic system, which on its positive side is surely a splendid intellectual tendency, for not only are all our philosophies fruits of it, but physical science (amongst other good things) is its result. [. . .] If you have intuitions at all, they come from a deeper level of your nature than the loquacious level which rationalism inhabits. Your whole subconscious life, your impulses, your faiths, your needs, your divinations, have prepared the premises, of which your consciousness now feels the weight of the result; and something in you absolutely *knows* that that result must be truer than any logic-chopping rationalistic talk, however clever, that may contradict it. This inferiority of the rationalistic level in founding belief is just as manifest when rationalism argues for religion as when it argues against it" (James 1902, 73).

6. Note that besides being the fabled process sought by alchemists, transmutation is also a category in Whitehead's metaphysical scheme of basic concepts having to do with the emergence of aggregate effects—such as the qualitative continuity of passively displayed appearances—from the activities of a manifold of discrete micro-constituents.

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