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Notes on Salience: Where Does It Come From and Where Does It Go?[1]

ABSTRACT: While salience implies a discontinuity with a temporal or spatial surround, one that generates the qualities and meaning of the universes, cosmoses, or *Umwelts* that we inhabit, it nonetheless represents an *artifactual* reality that comprises experience, not a foundational one. To the extent that we are salient sentient beings—well-formed centers of worldly experience—we are discontinuous with the worlds we inhabit. But as material and biological entities, and especially as "minds" continuously metabolizing and integrating the moving particulars of the physical world, we are not "in" the world but actually *are* the world. Our sensory capacities are in no way limited to the apprehension of change that presents uniquely as *distinction*, but also track and participate in the unfolding of reality just as the hot air balloonist's gondola moves with the ambient air so that no matter how turbulent the wind, no hair moves on the heads of the balloon's passengers. To attain experiential knowledge of this external matrix requires a cultivated transformation of the internal world and the ecstatic relinquishment of the stubborn infrastructures of monadic selfhood.

KEYWORDS: Simondon, Spinoza, experience, Whitehead, perception, the numinous, ecology

[1] A version of this paper was originally presented at the "Reading Matters" conference (sponsored by the Comparative Literature departments of Princeton and Berkeley universities) in late 2018. The ostensible topic of the conference, at least as I interpreted it, was to establish a framework to account for the relations between matter and intelligibility.

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> *The salience of an item—be it an object, a person, a pixel, etc.—is the state or quality by which it stands out from its neighbors.*[2]

The ontological problem since the time of the Greeks has been to account for how the Indefinite substance [*apeiron, archē*] or primary material of Nature gives way to an apparent, continuous arising [*physis*] of distinct and interesting qualities or things. At stake, then as now, is to preserve the concept of the unity of Nature while affirming the infinite variety of what actually occurs. A great deal of effort in the history of thought has sought to remove the "breaks" in the continuum of Nature, nowhere more solemnly than in Spinoza who sought to mend the rift between extension (matter) and understanding (mind). But the problem of everyday "intelligibility" has always rested upon the more fundamental one of essential disclosure of unknown or unexperienced things. It is properly conceived as belonging to the effort of thought—or more generally *experience*—to penetrate ever more deeply into the opacities of the material world and the individuating (salience-producing) enterprises through which it expresses itself. And yet, such a one-sided account in no way exhausts the means by which the human nervous system—mind, sensation, understanding—connects to and metabolizes the world around it. Since at least the time of William James (or Nietzsche before him) a certain direct knowledge of the "immanent lawfulness" that underlies the parade of "individuals" has been a pressing object of concern for human understanding. The lyrical intelligibility referred to here does not follow the formal doctrine of differentiable outlines but rather that of an *ascent to undifferentiation* and to the fevers of matter in which "mind" discovers its own processes *outside itself*.

Intelligence

The task is to discover a method of thought that grasps the problem within a single element or frame. And because the "singleness" is also the cardinal feature of its meaning and significance this principle must also serve as a prominent topic of attention. For in both our inner and outer worlds, salience, either emerging or dropping away, is what change

[2] "Salience (neuroscience)," *Wikipedia*, https://en.wikipedia.org/wiki/Salience_(neuroscience).

reveals, but it does so with a reciprocity that must be accounted for. It describes not only what appears in the natural world, but also, and in tandem, what develops in awareness. The burden of expression here is to transmit to understanding the same *unity of presentation* it discovers in perception-reception as it enjoys in the natural world. In other words, to supersede the latent incommensurabilities of what presents in physical (or psychic) existence and what can be adequately made present in formal language. The latter can easily be recognized as among the most unrelenting commonplaces of modern thought.[3]

With the seminal epistemological shift that has taken place in recent decades, toward interest and understanding of how "communication" works in physical and biological systems (and hence away from the parochial bias of human language), we can expand our interrogation of reality to examine how something previously undisclosed in one precinct of the world transmits itself to another part capable of apprehending it. How is information, form, or pattern activated in the world *without partitioning the world into specialized parts*, ones that natively present and ones that natively apprehend, in other words, into matter and mind. Central to this expansion is the principle that those parts of the universe that are engaged in the act of apprehending—grasping, seizing, obtaining, understanding[4]—are the beneficiaries not of a product gained in a transaction that can be stored, but of an *enhancement* or augmentation of potential, the potential to grasp or apprehend.[5] Although this might be construed as a "panpsychism," or at any rate as a problem of "consciousness," it is a consciousness of uncertain or undetermined locality.[6] Yet, a judicious use

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[3] A direct consequence of the perennial but arguably misleading identification of "mind" with language which has operated for some time now in the classical humanities as the tacit foundation for the consensual and hence largely unchallenged bifurcation of reality into segregated domains. This bifurcation is the precondition of the damaged landscape in which idealisms and other foundational confusions are able to grow. Which is not to say they have not been remarkably fecund.

[4] On the semantico-geometric derivations of the Latin term *percipere*, see R. Thom, "From Animal to Man: Thought and Language," in *Structural Stability and Morphogenesis: An Outline of a General Theory of Models*, W. A. Benjamin, Reading, Mass., 1972, pp. 297–330.

[5] W. Singer, M. Ricard, "Neuroscience Has a Lot to Learn from Buddhism," *The Atlantic* https://www.theatlantic.com/international/archive/2017/12/buddhism-and-neuroscience/548120/, (accessed 17 December 2017).

[6] The well-known "wave function collapse" of Heisenberg and Schrödinger represents the transition from the elementary or default condition where there is *superposition* of states of matter and information (and indefinite values including that of position) before disruptive interaction with its environment (or measurement instrument)—from wave to particle—and hence to a set of fixed values. This is felicitously referred to as "decoherence" (moving

of the term consciousness would not be misplaced here, that is, if we were to affirm that the predicate of a '*potential*' distributed in Nature belongs necessarily and indifferently both to the domains of mentation (mind) and to all the versions of the maturation of matter with which we have become comfortable, from evolutionary theory, through its progression to the First and Second Laws of thermodynamics that were the primary *ontological*, and not only scientific contributions of the 19th century.

The common origin of concepts of *potential* and of distributed *intelligence* in Nature as foundational endowments of what is both human and "beyond human" goes back to the Greek concept of a "Logos," a lawfulness, that is said to administer the whole universe: "Wisdom is *one thing*: to know the intelligence through which *all things are steered through all things*."[7] Wisdom, that is, consists in *apprehending* the singleness of the universe's dynamo as a steering intelligence which is the irreducible mode of intelligible appearance. In modern times it was Spinoza who restored the unity of the two seemingly divergent modes—one of which was "thought" or mind, the other "extension" or physical reality (space and matter). He did this through his concept of a single differentiable and expressive *Substance* invested with inexhaustible *potentia*. So invested, Spinoza's concept of Nature was no second in intended majesty to any formal conception of God.[8]

Contemporary audiences attuned to the philosophy of nature as an "onto-epistemological" problem derived from the Spinozist vein—the copula itself of the two branches of study affirms the reciprocal inherence of objective and subjective domains—invoke the work of Gilbert Simondon. The following passage from Simondon's introduction to *Individuation in Light of Notions of Form and Information* provide as concise and radical an affirmation of the logic of Being as can be put forth:

> The individuation of the real, exterior to the subject, is grasped by the subject due to the analogical individuation of knowledge within the subject; but it is through the *individuation of knowledge* and not

from quantum to classical state). Schrödinger's prescient principle of "life," how matter became an animate vector of self-directed autonomy, draws on this "field" principle which he derives from Vedantic literature.

[7] Heraclitus, Fragment 41. Emphasis mine.

[8] The virtual, secular *potentia* of Spinoza was adopted even politically by Antonio Negri in *The Savage Anomaly: The Power of Spinoza's Metaphysics and Politics,* University of Minnesota Press, Minneapolis, 1999, as well as, many argue, including he himself, by Louis Althusser and his cohort including Étienne Balibar.

> through knowledge alone that the individuation of non-subject beings is grasped. Beings can be known through the knowledge of the subject, but the individuation of beings can only be grasped through *the individuation of the subject's knowledge*.[9]

The crux resides in the '*analogical individuation of knowledge*' *within the subject*.[10] For Simondon explicitly asserts that the *capture* of the movement of Being—the appearing of an individual—along with the in*form*ation and hence salience it engenders (Bateson's "difference that makes a difference"), can be accomplished only through a parallel movement in the apprehending entity that meets it. This is not dissimilar to what is expressed in neuroscience by the phrase: "neurons that fire together wire together." For what unfolds in physical reality is matched by what unfolds in brain and mind, and only by force of such coordinated, parallel unfoldings. Hence the careful parallelism in the excerpt above of "within" (the subject) and "beyond" (the subject) carry no further functional distinction in Simondon's thought.

Simondon's full ontological account in his two-volume opus, addresses the four primordial levels of human experience of cosmos—the physical, the living (*biologique*), the psychic and the collective or social.[11] In what proves to be a modular concatenation, each builds on, and draws from, the previous, more simple one that serves, as it were, as a reservoir of *potential*—what he calls "a residue of pre-individual" that is never fully resolved or exhausted—for the next. This "pre-individual" is the component of undifferentiated being that remains immanent and active within (commonplace) "beings," even when invisible and unexpressed. Individuation, whether in thought or matter, represents a penetration to

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[9] G. Simondon, *Individuation in Light of Notions of Form and Information*, University of Minnesota Press, Minneapolis, 2020, p. 17. Emphasis mine. The French original: "L'individuation du réel extérieur au sujet est saisie par le sujet grâce à l'individuation analogique de la connaissance dans le sujet; mais c'est par *l'individuation de la connaissance* et non par la connaissance seule que l'individuation des êtres non sujets est saisie. Les êtres peuvent être connus par la connaissance du sujet, mais l'individuation des êtres ne peut être saisie que par l'individuation de la connaissance du sujet." G. Simondon, *L'individuation à la lumière des notions de forme et d'information*, Éditions Jérôme Million, Grenoble, 2013, p. 36.

[10] I myself missed the importance of this emphasis in my translation of Simondon's "Introduction" to his *L'individu et sa genèse physico-biologique*, published in J. Crary, S. Kwinter (eds.), *ZONE 6: Incorporations*, Zone Books, New York, 1992.

[11] Secondary titles of the two volumes in French, were: "*physico-biologique*," and "*psychique et collective*." The original title of volume 1 included the phrase "*et sa genèse*," a study of individuation *and its genesis*.

an *immanent beyond* made both possible and necessary by the presence of a mobile reservoir that travels with "beings" and perpetually impels them to pass out of phase with themselves. This is what ceaselessly generates the intelligibilities, saliences and distinctions that make up our world. What is grasped or known by the conventional "substantialist" mind is a deficient and improperly understood "reality," Simondon argues, for this attitude habitually mistakes the *products* of Being—things—for the larger, more interesting and primary *system* of operations and modifications through which Being *performs*.[12] Thought, perception, sensation alike are hence themselves compelled to individuate in order to capture the individuations—especially the *new* forms, qualities and expressions in the physical and material world—that delight and inform us. (It would be hard to deny that there is something inherently pleasurable and not only necessary in all such capture.) For this process, Simondon reserves the term "transduction"—the insistent restlessness common to the life of both matter and mind that is driven by that same excess of being—"the reservoir of pre-individual"—that excites and suffuses their every *state*.

The resonant harmonic convergence of the two streams of becoming is described as an "analogic" operation. The analogic principle (sometimes referred to as parallelism) posits a "co-individuation" in which there is a concrete transfer of operations ("structuration") from one milieu or domain to another, what he refers to as a "setting into relation" of two processes—one that operates outside thought (and hence outside of subjects), with ones that operate within, and make up the movement of thought or experience itself.[13] This operation, which sometimes sounds like "cognition" and sometimes like a statement about the advance of Nature itself, need not be "read" substantially differently from the simple act of "putting into relation" of systems of "different orders of magnitude" that Simondon describes as when a plant establishes within itself relations with the molecular capabilities discoverable in soil, minerals and moisture and connects these to the macroscopic—cosmic-scale—forces radiating from the sun in order to establish itself as *plant*.

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[12] Simondon is most widely cited for his critique of Aristotelian "hylomorphism," the "dualist" fallacy that miscontrues salience or appearance because it deprives matter of its inherent, productive dynamism, impetus and intelligence.

[13] The French mathematician René Thom similarly referred to the appearances and particulars of the world as "never-ending embryologies" and derived a set of universal principles that, in combination, accounted for them. For efficiency I use the term "thought" for every interior or sensory disposition that one develops toward the physical world, regardless of whether emotion, perception, thought or pure sensation.

In summary, there is a perennial Monist project, indeed a lucid and sober realism that legitimately pursues an account of world that conceives of mind and matter as "excitable media" both, and which does not divide that world but rather demonstrates the immanence or inherence of the one in the other. For somewhere in that always open and unfolding relation—"mutual sensing"—we ourselves appear, capable of deploying ourselves in as yet unacknowledged and unpronounced ways. What remains undiscovered in the record of human affairs is the variety and scope of human sentience—the human capacity to penetrate by means of directed psychic experience into what is dimly intuited regarding discoverable "relationships with things beyond" (this phrase is Alfred North Whitehead's). For Simondon, the problem to be solved and to be met by understanding are the modes of how beings arise and the relations that this arising both expresses and establishes as concrete occurrence.

Events (Realization as Unification)

Another extraordinary moment in the history of thought in which this problem was developed is found in A. N. Whitehead's first lectures at Harvard on 18th century knowledge,[14] in which he directs our attention to the famous argument of Bishop Berkeley regarding the status of external vs. mental objects. Whitehead begins his lecture by summarizing the intellectual accomplishment of the 17th century—to have not only successfully divided Being into two realms, that of material on one side and mind on the other, but to have conceived these both *abstractly*, meaning to have made them both representable in terms of "simple location." The doctrine of simple location of course is Whitehead's famous dismissal of the poverty of mechanism.[15] He then proceeds with his famous proclamation that the role of philosophy is "to serve as the critic of abstractions" and in so doing he throws the gauntlet.

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[14] See P. A. Boggard, J. Bell (eds.), *The Harvard Lectures of Alfred North Whitehead, 1924–1925: Philosophical Presuppositions of Science*, Edinburgh University Press, Edinburgh, 2017; B. G. Henning, J. Petek, G. Lucas (eds.), *The Harvard Lectures of Alfred North Whitehead, 1925–1927: General Metaphysical Problems of Science*, Edinburgh University Press, Edinburgh, 2021.

[15] Whitehead refers to Bacon's earlier concept of "induction," equally promiscuous in its applicability to knowing and natural appearing and a constitutive precursor to the later notion of "perception." On that subject, see "The Century of Genius," in A. N. Whitehead, *Science and the Modern World*, The New American Library, New York, 1948. pp. 39–56.

Whitehead then draws us to the work of George (Bishop) Berkeley, the curious solipsist-idealist who denied outright the existence of matter and acknowledged as reality only what is held and formed in the mind. Berkeley's widely commented example (from the dialogue "Alciphron") of three disparate entities, "the castle, the planet and the cloud," which he claims are able to exist in the mind, *together as an ensemble right now and here*, although they are demonstrably not the objects "we suppose to exist at a distance" becomes for Whitehead the breakthrough for a transformational insight with respects to his own philosophical system. To Berkeley's question: "What do we mean by a thing being realized in the world of Nature?," Whitehead proceeds to extract from Berkeley's position a theme that remained largely obscured even to Berkeley himself. What was it? The theme of a *unification*, even if it was stated in Berkeley exclusively as the unity of ideas in God. Whitehead then proceeds to transform—actually deliberately to contort and misread—Berkeley's argument by taking hold of his concept of "perception" and applying it now to real physical objects. He takes Berkeley's outlandish idea that natural entities—in the case at hand, castle, cloud and cosmos—are realized through the act of being grasped and perceived within *the unity of the situated mind*, and transposes this condensing perception-operation into the acentric world of extended matter:

> We can substitute the concept, that the realisation is a gathering of things into the unity of a prehension; and that what is thereby realised is *the prehension, not the things*.[16]

For readers unfamiliar with Whitehead's metaphysics and nomenclature, "prehension" is the keystone principle of his Process ontology insofar as it refers to all clumping or "chunking" of aspects of existence into meaningful, relational events. In other words, the world is made up of specific and changing meaningful unifications, each composed of *aspects* of diverse entities entering into composition with *aspects* of other entities, with no entities either proximate or remote being excluded from this perpetual creative process of mutual "ingression." Whitehead removes the "cognitive from prehension," just as Berkeley removed matter, and defines it simply and directly as "*uncognitive* apprehension."[17] Next,

[16] A. N. Whitehead, *Science and the Modern World*, p. 71. Emphasis mine.
[17] *Ibid*., p. 70.

citing both Spinoza's Modes and Leibniz's Monads, he proceeds to declare the underlying activity of prehension as the actual primary concrete activity and manifestation of Being: "Thus, concrete fact is process. Its primary analysis is into underlying activity of prehension, and into realised prehensive events."[18] Then later: "Perception is simply the cognition of prehensive unification [...]"[19] (hence prehension of prehension). In sum, perception and the "actual occasions" of Nature—more simply, reality—are conjoined through mutual interlocking relations in a single expansive development. The units of such a continuum, which are also infinitely separable, are famously called "events" and "organisms:" "Biology is the study of the larger organisms; whereas physics is the study of the smaller organisms."[20]

Consciousness

The principle undertaking of our cited ontologists—the pre-Socratic ancients, Spinoza, Whitehead or Simondon—was to remove the breaks from Nature, to declare that there is *but one world*. Should we not be able to integrate this posture, not only into our language, but into our knowledge, indeed to *experience it* implicitly in life? Can we access this state of continuity, the pregnance of the *undifferentiated* that represents the primary generative *potentia* from whence we, and all particulars around us, arise?

When we approach questions of human interior experience, of how we metabolize the data of our senses, we are forced to admit that we remain largely in the dark. We don't know much about dreaming, for example, and we can still astonish ourselves to be reminded that it is a noological twilight to which we return unquestioningly on a daily basis, hiding the bizarreness of this daily visit to ordered oblivion from ourselves. Where do we go when we daydream, partake in fervid erotic activity, dive deeply below the ocean surface[21], or simply listen to music? Likewise, and equally omnipresent in experience and unexplained, it is

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[18] *Ibid*., p. 71.

[19] *Ibid*., p. 73.

[20] *Ibid*., p. 105.

[21] James Nestor examines the complex biology of the "mammalian dive reflex" that permits humans to perform extraordinary physical feats, not only breath holding (up to five minutes or more) but ability to endure staggering levels of physical pressure. Not only does the body not collapse under these loads, but a set of five different states of consciousness arise at specific progressive depths and pressures. See J. Nestor, *Deep: Freediving, Renegade Science, and What the Ocean Tells Us about Ourselves*, Houghton Mifflin Harcourt, Boston, 2014.

rare to find a person who does not listen to music, impossible to find a culture past or present that does not practice it, and its habit, by most accounts, predates language and the advent of tools. We do not know where music comes from, nor where it inheres, and even when it is in full progress around us we do not know if it is "out there" where matter moves and resonates, or rather inside us, like a pattern that cannot rest and that endlessly and wordlessly sends, receives and transforms across the manifold separatrices of body, world and mind.

Music's foundation can be found in *charismatic sound* generally, a natural phenomenon shared even with animals, insofar as aural attunement and information "pickup" are what constitute the principle of engaged *interest* in the resources and structure of the environment for every organism (including, we now know, even flora). Sound as the common genesis of both the sentient registration of the world and of living matter as an open or cybernetic system may well be the scaffold upon which secondary consciousness is built. The undifferentiated cluster of cells in which every human life (ontogenesis) begins, already registers reception of acoustic stimulus from the proximate but indefinite surround of its mother's body and her domestic universe.[22] From within the oceanically neutral amniotic universe within which the embryo is immersed, the rhythmic sounds of the mother's background heartbeat, breath and gastric burbling would be experienced as at once *originating from* and *terminating within* an undivided incipient "self." The first structured psychic rapport with objects and relationships dimly sensed to exist beyond immediate reach, and hence charged with mystery, would present here, even in the not-yet-individuated bodymind, as the armature of the perennial impulse toward disclosure that is the basis of all intelligibility and existential understanding, if not the full human experience of revelation. (The concurrence of affects exhibited here—simultaneous introceptive excitation and equanimous bliss—will be briefly addressed below.)

These sounds, particularly the regular and reassuring ones such as the unstressed speaking voice of the mother and that of her life partner would become the scaffold upon which the developing nervous system would unfold and in turn serve as the seed around which the massively encephalizing human organism would unfurl its "self."[23] The uninterrupted flow

[22] Newborn infant brains are already "tuned" to the prosody of their parents' native languages, a familiarity and preference that can be demonstrated within 18 hours of birth.

[23] The rate of neurogenesis at this stage of its development is upwards of 1,000,000 neural connections *per second.* The number was updated from 100,000 in 2017 to reflect current

of stimulus is the precondition for neural tissue survival; this obligate neural grasping and satisfaction is the basis of music-sound processing, the principle of the nervous system's design to capture change in its surround, to vacate what was just held, to recharge in real time (the time of matter and its development) and to discern structure in the syntax of its stream.[24] The particularity of this early pre-individuated sensory-cognitive engagement carries with it a latent capacity for somatic reactivation of "peak" or non-ordinary sensory experience in the later individuated, ego-endowed being. This serves as a kind of latent copula, one of many possible avenues of access to pre- and trans-individual feeling and understanding.

The Numinous (Ontologic Emotion)

One among many at the forefront of psychoacoustic research is Bernie Krause, former sound engineer and founder of the field of "acoustic ecology." Composer, bio-acoustician, and author of *The Great Animal Orchestra*[25], Krause began recording natural landscapes in the late 1970s and through deep listening and spectrographic analysis of his field recordings made a series of game-changing discoveries with respect to biodiversity dynamics, niche partitioning, and temporal and succession ecology that had not previously been grasped through orthodox forms of observation or registration. The now increasingly standard terms *biophony* (sound from living systems), *geophony* (sound from the non-living physical world) and *anthrophony* (sound that is a product of human enterprise) are his, and express the scope of the expanded integrative framework of environmental knowledge that is rapidly transforming contemporary understanding.[26]

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research and methods. The best (accessible) technical compendium on neurogenesis is still P. R. Huttenlocher, *Neural Plasticity: The Effects of Environment on the Development of the Cerebral Cortex*, Harvard University Press, Cambridge, Mass., 2002.

[24] The impetus of the so-called "secondary repertoire" hence is so great that it virtually hunts its sensory landscape for "signal" or pertinent features. The brain—sensory processing—is engineered to distinguish variant and invariant features in the environment. This principle, which lies at the basis of J. J. Gibson's *The Ecological Approach to Visual Perception*, Routledge, London, 2014, has been the bible in perceptual psychology for decades.

[25] B. Krause, *The Great Animal Orchestra: Finding the Origins of Music in the World's Wild Places*, Little Brown, New York, 2013. (The 2013 edition and all later ones, but not the original 2012 edition, contain the critical call outs to sound clips that can be accessed online and which provide extraordinary experience often matching the startle power of descriptions provided in the book.)

[26] The godfather of the soundscape studies movement is Raymond Murray Schafer. See his *The Tuning of the World*, Random House, New York, 1977, republished as R. M.

In the early pages of his landmark book Krause describes the psychic impact of one of his first natural recording sessions:

> [...] I was startled by each new sound. Many of the subtle acoustic textures around me were made *larger than life* through my stereo headphones, on which I cranked the monitor levels so that I wouldn't miss anything. The impact was immediate and forceful. Impressions of *lightness and space* were alluring and lustrous. The ambience was transformed into minute detail that I would have never caught with my ears alone—the sound of my breathing; the slight movement of a foot adjusted into a more comfortable position; a sniffle; a bird landing nearby on the ground, stirring up leaves and then pushing air with its wing beats in short, quick puffs as it took off, alarmed [...] I hear pieces of the aural fabric in such gloriously clear detail that I am still surprised by how much I was previously missing [...]. When I turn up the volume slightly above what I can hear unaided, I get an *"out of this world"* impression that I imagine astronomers might feel when they receive Hubble telescope images of exploding supernovas from the far reaches of the universe.[27]

While I call attention in the passage above to one incidental aspect of Krause's work only—the latent capacity of human audition to cull knowledge within experiential dimensions long lost to us by cultural misdirection—it is sufficient to demonstrate an element critical to what follows: the reality of an empirical knowledge achievable in the state or posture of bridging sensorially with the world, in other words, as if perceiving were taking place from a more distributed, primary, de-individuated *noological* state. I invoke the term "noology" with a certain preference these days, sometimes interchangeably with the Latin-American preference for "epistemologies,"[28] and largely to rhyme with William James's choice of the related term "noetic" to characterize a certain quality of rare yet authoritative experience on which he reported in his

Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, Destiny Books, Rochester, 1993.

[27] B. Krause, T*he Great Animal Orchestra*, p. 15. Emphasis mine.

[28] See B. De Sousa Santos, *Epistemologies of the South: Justice Against Epistemicide*, Routledge, London/New York, 2015; A. Krenak, *Ideas to Postpone the End of the World*, Anansi Press, Toronto, 2020; E. Viveiros de Castro, "Cosmological Deixis and Amerindian Perspectivism," *The Journal of the Royal Anthropological Institute*, 4, 1998, pp. 469–488.

Varieties of Religious Experience.[29] "Noetic quality" as James develops it, refers to situations in which the following qualities are present simultaneously: a sensation of the unity of existence, an oceanic feeling (loss of individuality, or in later parlance, "ego dissolution"), and the presence of a deep certainty that these are not only states of feeling but also states of *knowledge*. These experiences are rare but not uncommon,[30] and are typically recorded as permanent insights into realities beyond usual human reach, are often transformative, are accompanied by powerful feelings, include a convincing sense of unity and *identification with outward reality*, and more often than not are characterized as incommunicable (ineffable) ostensibly because ungraspable by the discretizing operations of language but also partly because they are registered in a part of the brain and body that are no longer actively bridged to language centers.[31]

Lacking a better term, James referred to these as "mystical states" and placed them as close as he was able toward the center of human concern stating famously that "no account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded."[32] The firmness of James's conviction regarding states of non-ordinary sentience, penetration and access that lie close to but outside our familiar ones, becomes unsurprising once one learns of his transformative encounter with the transpersonal noesis that determined the course of his philosophical and psychological work. This engagement, referred to as *the anaesthetic revelation*, began with his study and published review of a work by the philosopher Benjamin Paul Blood entitled "The Anaesthetic Revelation and the Gist of Philosophy"[33] in which Blood reported that the inhalation of nitrous oxide could provide extraordinary real access to dimensions of understanding otherwise limited only to rare persons or

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[29] W. James, *The Varieties of Religious Experience: A Study in Human Nature*, Longmans, Green and Co., New York, 1902.

[30] See Marghanita Laski's encyclopedic study, *Ecstasy in Secular and Religious Experience*, Cresset Press, London, 1961, for a sense of Lasky's comprehensiveness (it includes hundreds of examples from world literature as well as testaments and questionnaires, note that she was the single most prolific contributor in history to the *Oxford English Dictionary*.

[31] The crypto-somatic registration of traumatic stress has undergone a sea change of understanding and supportive empirical research in the last 2 decades. Bessel van der Kolk's *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma,* Penguin Books, New York, 2015, is the keystone theoretical foundation of contemporary trauma study and its enracination in flesh and spirit.

[32] W. James, *The Varieties of Religious Experience*, p. 388.

[33] B. P. Blood, *The Anesthetic Revelation and the Gist of Philosophy*, Amsterdam, New York, 1874.

occasions.[34] James reviewed Blood's pamphlet[35], remained captivated by its sober but extraordinary propositions, experimented with nitrous oxide himself, and then experienced a profound and ecstatic "ontologic emotion" and access of understanding that resulted in the dramatic resolution to his life-long antipathy for the work of Hegel and his irritation at the sway it held over the thinkers of his era. James proceeded to publish not only the rational fruits of this achieved understanding—but also a three-page account appended to it of the larger experience of psychic expansion of which it was but a single practical part.[36] These revelations determined the broad character and impetus of James's arguments and insights throughout *Varieties of Religious Experience* (their earmarks are unmistakably legible to anyone attuned to them) and are the ontological matrix to which is attributed much of James's radical emphasis on experience, his overhaul of conventional one-dimensional "empiricism"—his *radical* empiricism, his embrace at once of pluralism, and of the irreducibly *relational* open-endedness of the material universe and of human being.

"Phenomena are best understood when placed within their series, studied in their germ and in their over-ripe decay," James asserted. And although he predominantly used the term "mystical" to describe the state in which mystery and revelation appeared together with a sense of there being *a participation of the act of knowing* within the very structure of the known thing, the state was widely known to the Ancients as "*henōsis*"—Source, primordial Oneness, unity, *unio mystica*—and which served as a more important reference than is typically conceded, as for example in the 2,000 year long tradition of the Eleusinian Mysteries (a prominent Dionysian cult) in which nearly every known figure of antiquity was believed to have participated. Beginning in the early 20th century the term "numinous" came to be used to invoke the state of acute attentiveness and presence to an unbounded realm that is nonetheless both real and cognizable. This state is typically seen as a singular and ecstatic destination for human understanding, frequently associated with some form of a-theistic "divine." Eastern traditions are preeminently concerned with

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[34] James is said to have explored six or seven different psychotropic agents—ether, amyl nitrate and peyote among them—as well as to have explored trance states, spiritualist séances and a range of mediumistic phenomena in his investigation into the scope and diversity of human experience. One account can be found in D. Blum, *Ghost Hunters: William James and the Hunt for Scientific Proof of Life After Death*, Penguin, New York, 2006.

[35] W. James, "Review of 'The Anaesthetic Revelation and the Gist of Philosophy'," *The Atlantic Monthly*, 33, 1874, pp. 627–628.

[36] W. James, "On Some Hegelisms," *Mind*, 7, 1882, pp. 186–208.

the achievement of henosis, cultivated through attentional practices and typically referred to as "enlightenment."

We can easily recognize in Bernie Krause's account of noetic transport, achieved through the bypass of routinized modalities of sensory attentiveness—in his case, entering the spatio-temporal continuum through audition rather than vision—a remarkably reliable method of transforming not only cognition but reality itself. Magicians have been aware of the plasticity of human attention for centuries[37] but the scientific study of non-ordinary states came into its own only with the convergence of 20th century neurology, philosophical psychology, the proliferation of study of eastern religions and interest in psychoactive agents capable of releasing the senses from their confinement in strictly subjectivist matrices of reception.[38]

The Matrix of Matter and Memory

The most systematic study of non-ordinary noological states to this day remains Stanislav Grof's analytic synthesis of early experiments in the late 1950s and '60s in Czechoslovakia and the United States, with LSD-assisted psychotherapy, *Realms of the Human Unconscious*.[39] Among the remarkable findings reported in this work was that although routine human perception may well be coherently catalogued and organized in common practice from the familiar perspective of a discrete and localized perceiving subject—with its attendant spatio-temporal perspectives, delimitations and bias—the preponderance of clinical evidence suggests something different. The contents of the experience actually appear to be captured and stored largely independent of the biasing or "subjective filter" of a so-called separate ego or self, set against the broader extended world. In the re-living of past events during high-dose guided LSD sessions, particularly events that include one or several other actors, subjects

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[37] A remarkable take on the history of magic and its empirical grasp of both innate and acquired perceptual dynamics can be found in S. L. Macknik, S. Martinez-Conde, *Sleights of Mind: What the Neuroscience of Magic Reveals about Our Everyday Deceptions*, Henry Holt and Co., New York, 2010.

[38] These can be modern technological agents such as anaesthetics, dissociatives, stimulants, calmatives, and other medical psychotropics, or plant- and animal-derived agents that have been used for ritual, healing, social cohesion, religious practice or personal revelation for thousands of years by indigenous populations and practitioners. There is a vast anthropological and now also scientific literature on the subject.

[39] S. Grof, *Realms of the Human Unconscious: Observations from LSD Research*, The Viking Press, New York, 1975.

"never" (Grof's judicious usage) report experiencing their own perspectives uniquely, but rather always somatically and cognitively occupy the perspective of all the personas in the situation or structure being remembered.[40] The reliving does not appear to be a reliving specifically of the subjective memory, but realizes an expansive descent *into the event itself* as a fully possessed material matrix. The quality of implicit *participation* in worldly unfolding is a more than common characteristic of so-called numinous experience. It does not matter for example whether the subject was oppressor or victim in a negative karmic situation for it appears that it is rather "the dyadic traumatic pattern [itself] that is imprinted"[41].

There has been an explosion of theoretical and empirical elaboration in the last two decades seeking to account for the varieties of ontological experience that make up human understanding. A highly discussed, if now marginally superseded, proposition is the "Entropic Brain" hypothesis developed by Robin Carhart-Harris and colleagues at Imperial College London.[42] The goal of the Entropic Brain Hypothesis and others like it, is to account for how the mind is able to access and accommodate highly acute material and performances not generally seen or attributable within so-called normal states. The rough basis of the theory conceives of brain states as energetically maintained regimes of greater or lesser stability and capable under specific conditions of transitioning from one regimen to another. The so-called "Default Mode Network" (DMN) refers to the neuroanatomical correlates of one such equilibrium state—is the highly organized but also constrained regime the brain is in when at rest, not focused on the outer world, daydreaming, or just "cruising." It is also the state that most highly favors and activates what is commonly referred to as the ego or self. (Task-directed consciousness, and activation of the

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[40] *Ibid.*, p. 176.

[41] Grof identifies four stages of pattern reception, typically as a developmental progression through which the subject passes or works: the abstract-aesthetic (geometric), the psychodynamic (onto-historical), the "Basic Perinatal Matrices," and finally the Transpersonal. The second "psychodynamic" stage is onto-historical (person specific) and largely preserves the subjectivist format even if it provides extraordinary ability to access detail, affect and sensation. No specific explanation is advanced in this early work of Grof's, simply a detailed reportage from session notes and occasional research when corroboration is possible. For some speculations on other aspects of the present paper, see S. Kwinter, "Are You Experienced?," in *Psychotropisms: Drugs, Specters and Hallucinations for the Transformation of the Present*, Ministry of Culture and the Majorality of Pereira, Colombia, 2017, p. 83–109.

[42] R. L. Carhart-Harris *et al.*, "The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs," *Frontiers in Human Neuroscience*, 8, 2014.

"Central Executive Network" on the other hand, favors less this ego-predominant state, and is naturally congenial to hypotheses of flow, or peak states, or, in a different set of correspondences (MTL or medial temporal lobe involvement) what Carhart-Harris refers to as "primary consciousness"). Certain somatic and attentional practices, as well as psychoactive agents (in the study at hand, agents that activate at the 5-HT2a receptors, the classic psychedelics, psilocybin and LSD) weaken the Default Mode Network regime and hence deliver the brain to a profusion of less constrained but more integrated, active connections. The result is colloquially often described as ego-dissolution but it is accompanied by a high degree of attentive alertness and receptivity—a vast expansion not only of sensory input but a sensation of expansion of both space and time (as if toward a sensible infinite and eternality), and an erosion of "illusory" separative boundaries or structures.

What is effectively occurring is a reversal of the individuating processes that developmentally conditioned an "optimized" but more impoverished and limited mode of cognition, one whose filters favor a more efficient and reality-bound negotiation with the surrounding world. The transition and release from Default Mode Network along with a weakened, possibly dissolved ego anchor—toward a less constrained, more highly connected and hence entropic state—reveals to the senses a more charged and replete world that is arguably partly remembered (from perinatal states) and partly intuited, at any rate one that presents to conscious attention an intense feeling of reunification and redemptive attendance in a truer, more abundant image of being and world.

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