

**A GENERATIVE ART  
OF OUR OWN  
EVOLUTIONARY TRANSMUTATION:  
The Art of Harold Terry Lindahl  
The Science of Stephen W. Porges**

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**ABSTRACT**

This paper seeks to influence the prolonged constitutional capacity to transform our species potential where humans no longer remain implacably bound by Jacksonian dissolution patterns of behavior.<sup>1</sup> To do so, I present the science of Dr. Stephen W. Porges' POLYVAGAL THEORY in conjunction with Harold Terry Lindahl's GESTATION, HISTORY AND POTENTIAL OF HUMANKIND exhibition, which together express an emergence potential for realizing transdisciplinary, generative art perspectives. Since the intelligence embodied in human consciousness is obtained through brain-body connectivity, the bio-psycho-physiological processes described in Porges' and Lindahl's work indicates how the "rupture between the organs of reflection and those of decision-making in society" may become reconciled.<sup>2</sup>

**1. INTRODUCTION**

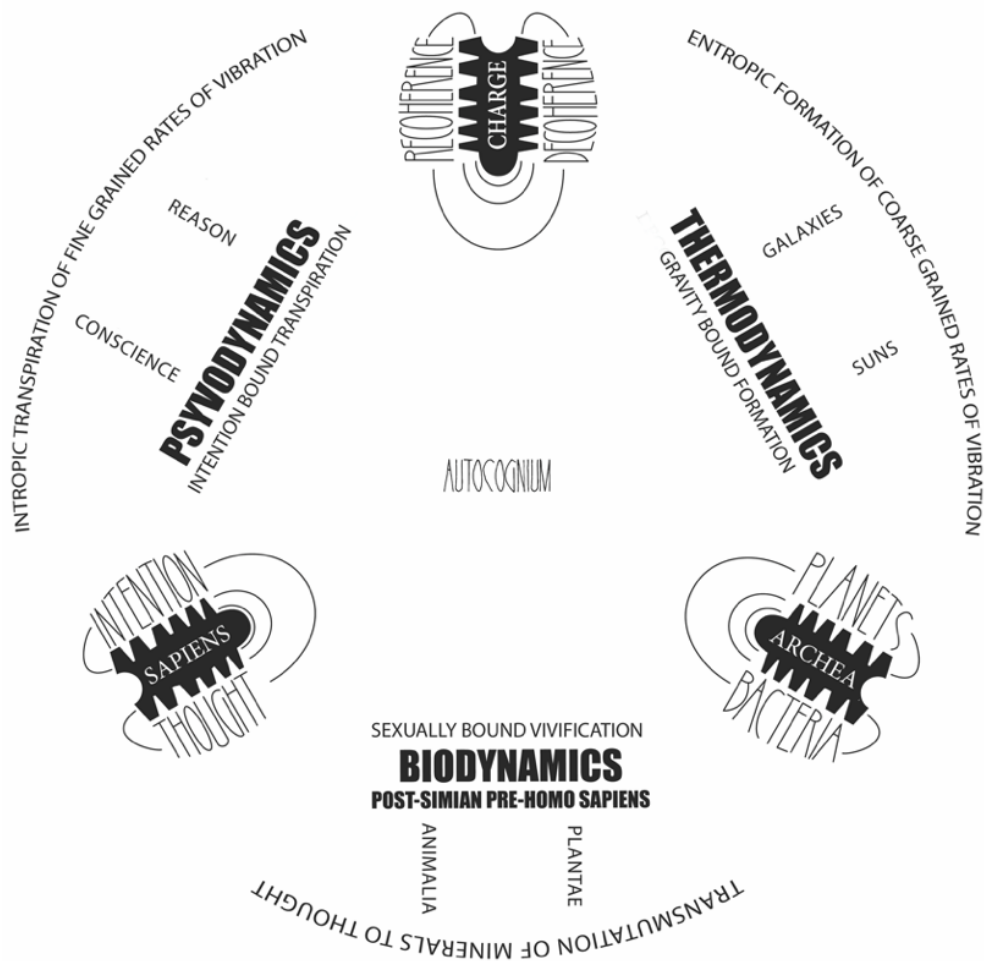
Today, the humanities are culturally and socially aware that much of contemporary science intersects the intuitive knowledge of ancient wisdom traditions. Due to this materialization of common ground, school curriculums around the globe are being pressured to move from metaphysical "training-wheel" explanations to embodied experiential practices. Since it is understood only the intentional engagement of bio-psycho-physiological energies liberate somatic perfunctory habits, development of human consciousness depends first on informing and then assisting, through daily practice, an intentional 'work on one's self' through which predictable dissolution response patterns can learn to engage and develop our higher, more recently evolved, neocortical functioning.<sup>3</sup>

The vagus nerve, an integral structure in the phylogenetic shift in brain-body communication, plays a central role in the reception and transmission of signals that chemically and electrically regulate the autonomic nervous system. Otherwise known as the tenth cranial nerve, it is a bi-directional system that runs from the brain through the face and thorax to the abdomen—a conduit that nurtures higher normative levels of being.<sup>4</sup> By teaching how this bio-feedback loop system engages with modes of inner, bio-psycho-physiological adaptation processes, individuals can learn to nurture their latent psychic, neocortical potential and evolve beyond diabolical, somatic defense (survival) instincts.

## 2. Bringing 19<sup>th</sup> and 20<sup>th</sup> Century findings into 21<sup>st</sup> century action

I first came in touch with the Western esoteric principles of G. I. Gurdjieff in San Francisco, through architect and artist Harold Terry Lindahl in 1993.<sup>5</sup> In 2009, with the aim of advancing 21<sup>st</sup> Century education practices, he initiated the Intropy=Entropy Institute. With a similar objective, my doctoral work, completed at the University of California at Berkeley in 2016, advanced Basarab Nicolescu's Transdisciplinary Educational model (1996) with Stephen W. Porges' Polyvagal Theory (1994) and Lindahl's triptych paintings and Darwin, Einstein, Gurdjieff Ergodic Diagram (2011).<sup>6</sup>

Since Generative Art produces an expansive language integrating principles with form, it's appropriate, within the context of GA's Rome Conference (2019), to introduce Porges' science with Lindahl's art, axiomatically "informing science of religion and religion of science,"<sup>7</sup> to make accessible what Jennifer Gidley calls "Postformal education."<sup>8</sup>



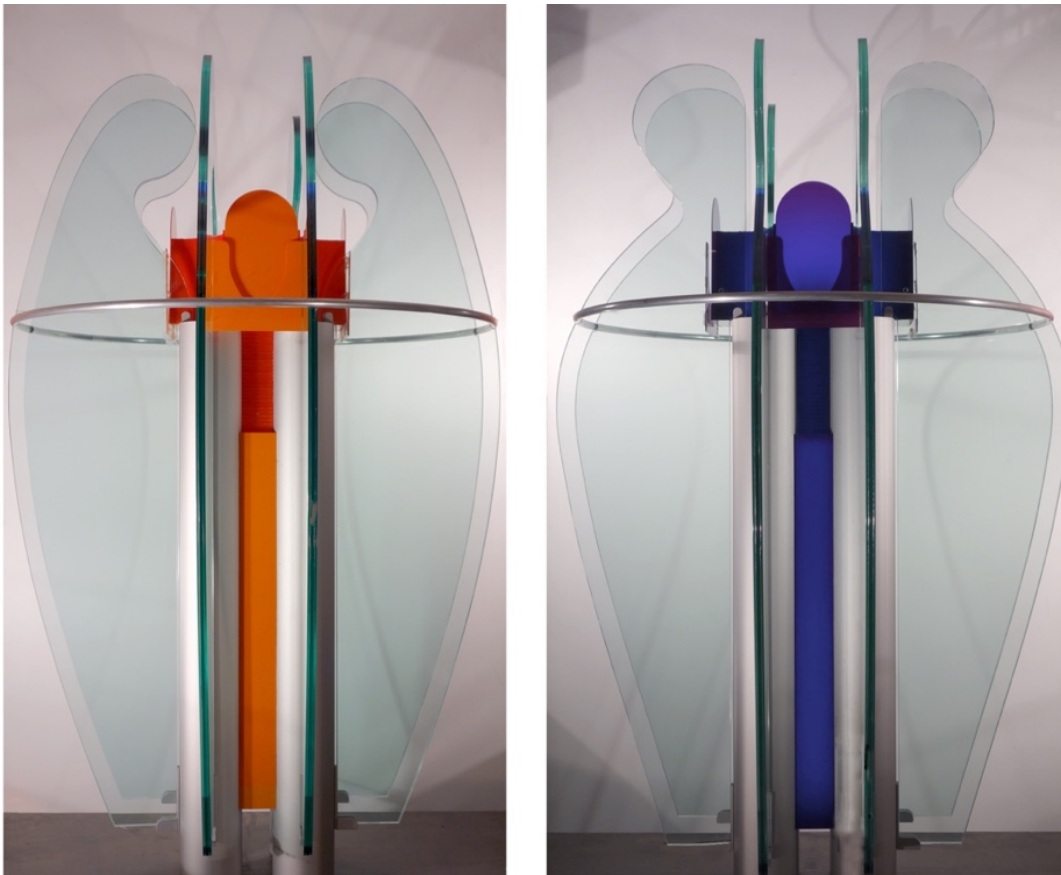
TRIADIC ERGODIC CYCLE OF PHENOMENA (Lindahl, 2019)

**FIG. 1 FUNDAMENTAL FORMATION-VIVIFICATION-TRANSPARATION DIAGRAM**

**Involutionary** granularity feeds on the intropy generated from collisions. **Evolutionary** biology feeds on the intropy generated from the digestion of minerals and atmosphere. **Psyvolutionary** Homo-hynons feed on the intropy generated from the digestion of the impressions of their profligate emotional survival instinct.<sup>9</sup>

### 3. Rectifying the human predicament

As Porges' science provides a pragmatic guide as to how our moving-motor, thinking and emotional centers bi-directionally regulates autonomic functioning, Lindahl's objective art visually signifies the nature of our species morphogenetic, evolutionary potential within a complex *Systems View* that includes our species cosmological purpose. Being Polyvagal informed, **Pensive and Vigilant (Fig. 2)** symbolizes how our social engagement system ("looking in" and "looking out") assists regulating visceral states, which necessarily communicate brainstem source nuclei that ultimately allow emergent properties in higher brain areas and bodily feelings to process and adapt.<sup>10</sup>



**Fig. 2 Pensive and Vigilant** Two 9' high by 5' diameter aluminum core sculptures with eight 1" thick, 3-ply laminated glass wings and back-lit color plexiglass core symbolizing the relation between Sympathetic and Parasympathetic functions of the Autonomic Nervous System. H.T. Lindahl (2016)

In **Pensive and Vigilant** the Sympathetic ephemeral glass wings, positioned relative to the Parasympathetic vivid core, are a leitmotif for the Autonomic Nervous System. As energy potentially *enervates* (expends) or *innervates* (vivifies) through the digestion of light, air, and food, our visceral organs support the ultimate transpiration of our experience of the biosphere to solar realms.

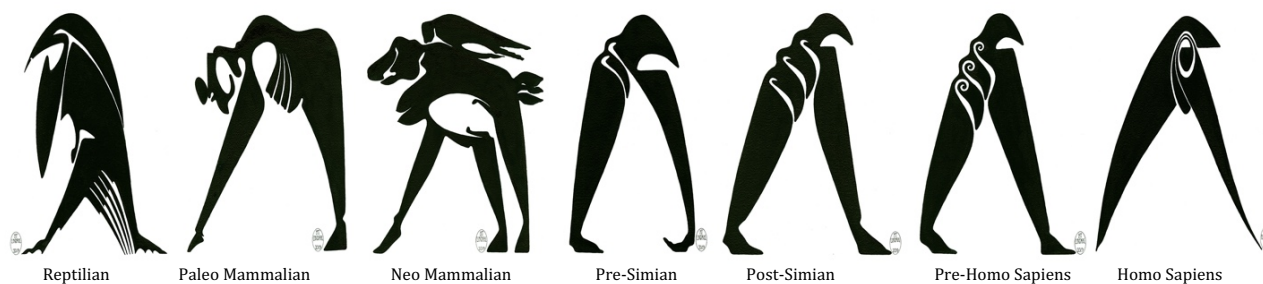
Sensitive to afferent influences, characterized by an adaptive reactivity that is (1) dependent on the phylogeny of the neural circuits, that (2) interact with source nuclei in the brainstem and (3) regulate the striated muscles of the face and head, a horizontal ring, placed at the vertical golden mean between the osmotic divide of our somatic instincts, points to where our human potential meets the obligatory “return” vibrations, which *separate the fine from the coarse*, as foretold in the Hermetic Emerald Tablet (Lindahl, 2019).<sup>11</sup>

#### 4. Psyvolving Post-Simian Pre-Homo Sapiens through alchemical means

Lindahl’s art, suitably described as Generative Art, engages viewers in learning self-reflexive principles. It sets in motion a thought-provoking expression where his objective aesthetic unquestionably aspires to our species universal anagogical ache—that is: *our intrinsic wish to evolve a higher state of reconciled Being*.

In his installation ***Gestation, History and Potential of Humankind***, Lindahl provides a Phylogenetic Index (Fig. 3) that orients viewers toward Porges’ scientific basis. The Index clarifies the different functions of two medullary source nuclei of the vagus and the mammalian modifications of our evolutionary heritage, a past that continues, by natural default, to provoke humans to live as defense machines.<sup>12</sup>

Herein lies the human generative challenge: to be self-consciously aware, while maintaining a feeling for the flux of sensations as we engage our largely infrequent reminders of neocortical functioning. This (ego) treacherous evolutionary line between Post-Simian and Pre-Homo sapiens is the tempering crucible where our lower (early) reptilian and mammalian brain structures may learn to, in Porges words, “repurpose their functioning.”<sup>13</sup> Or, in Lindahl’s account, intentionally redistribute and *psyvolve* from mammalian somatic mental properties to our innate, latent psychic mental properties. (Lindahl, 2019).



**Fig. 3** *Phylogenetic Index* indicating seven aspects of seven octaves. The potential for conscience and reason to emerge is a refinement process unique to humans. India ink on Arches watercolor paper (Lindahl 2018-2019).

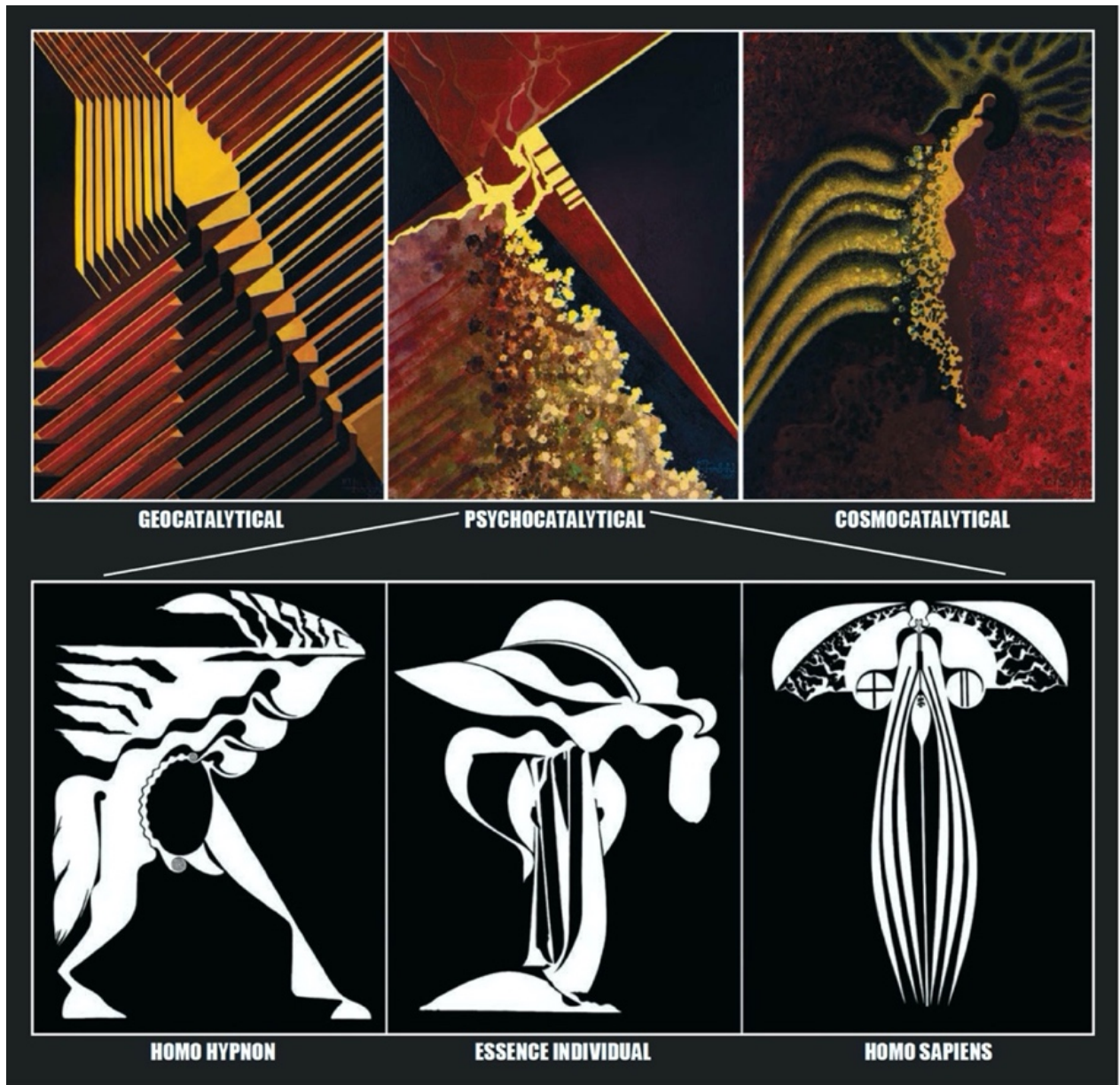


**Fig. 4** *Gestation, History, and Potential of Humankind* told in seven octaves of seven aspects: *Seed, Native Virtue, Indulgent, Searching, School, Listening, and Psyvolving Man*. 49 India ink 11.25"x15.5" plates (Lindahl, 2019).

## 5. A generative art of our own evolutionary transmutation

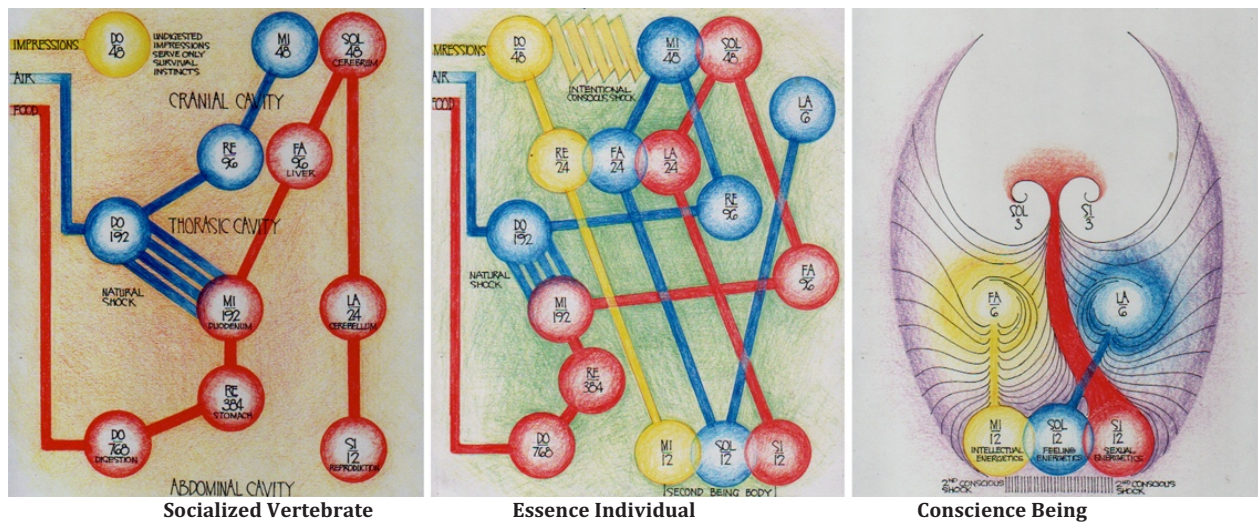
In his chapter *Vagal Pathways: Portals to Compassion* (2017), Porges proposes compassion is an emergent process dependent on one's neurophysiological state. Consistent with this perspective, impartial conscience and objective reason cannot be investigated as a voluntary behavior or a psychological process independent of physiological states of being. This emphasis on shifting physiological state via vagal mechanisms to experience higher normative levels of attention and intention is consistent with the history of wisdom traditions—particularly Gurdjieff's contemplative exercises—or what I refer to as the generative art of our own (individual by individual) evolutionary transmutation.<sup>14</sup>

As previously stated, the vagus is a cranial nerve that innervates all the visceral organs and provides the major bidirectional (motor and sensory) communication between the brain and the body. A component of the parasympathetic branch of the autonomic nervous system, the mediating function of the vagus is specifically to **inhibit** the reactivity of the sympathetic branch of the autonomic nervous system, developing a sensory pathway between the body and the brain. While Porges' study emphasizes vagal-mediated states requiring an environment of compassion (where the feeling of safety enables feeling one's own bodily responses at a given time, while acknowledging the bodily experiences of another), Lindahl's art indicates further, that our latent, *psyvolving* potential, from gestation to *Sapiens*, attends ultimately, in a vital way, to the flux of elements in the cosmos.<sup>15</sup>



Two interactive triptychs illustrating, in three stages of human speciation, the normalization of geocatlytical/cosmocatalytical dynamics through biospheric psychocatalytical processes.

**Fig. 5** One of twelve watercolor and India ink panels (8' by 9') symbolizing six interactive explanatory and predictive psyvolutionary stages of human evolution within cosmological processes that act to normalize the temperature differential between the sun and outer space. In the van of biospheric tempering, the psychocatalytical crux, which refines thought from minerals, sustains intropy/entropy invariance (Lindahl, 2019).



**Fig. 6 CHEMISTRY DIAGRAM:** Organic life obtains by means of the ingestion/digestive refinement of substances on a scale of vibrations from iron to oxygen to reason. (involutionary=iron, evolutionary=thought, psyvolutionary=reason). Human life is fueled by the digestion of minerals, air and the senses. These three foods are processed by three sets of intestines, the small, the alveolar and the cerebrum. As these foods enter beings, digestive processes separate the fine nutrients from coarse materials. From minerals and air, the body manufactures the substances able to reproduce itself (SOCIALIZED VERTEBRATE) and then 'die.' The food of the senses is registered but the organs for their digestion are dormant—latent potential. The practice of first conscious shock initiates the digestion of the finer particles of the air and the sense impressions and manufactures within the vertebrate an ESSENCE INDIVIDUAL. The practice of second conscious shock fully awakens the digestion of the finer nutrients of the sense impressions and from an essence individual manufactures the substance, COHERENT CONSCIENCE. And from impressions of coherent conscience, the substance COHERENT REASON. These finer substances 'die' in their own time. (Lindahl, 2011).<sup>16</sup>

## 6. Human potential

As the seven octaves symbolize in Fig. 4, humans are a phenomenon of nature whose psyvolutionary potential is both immanent and imminent (Lindahl, 2019). Having studied Gurdjieff's food diagrams, Lindahl's art illustrates in three stages how food, air, and impressions of the world of sunlight are automatically refined to the information-processing vibration rate for somatic self-reproduction. But for the digestion of impressions to occur, a potential exists through an additional intentional effort. Energy must vibrate at a rate sufficient to reproduce its somatic host and, by extension, conduct the vibrations necessary to refine somatic emotions and thought to the ergodic fulfillment vibration rate of impartial conscience and objective reason, as indicated in Fig. 1.

## 7. Conclusion

For the 21<sup>st</sup> Century, this paper outlines how an evolutionary, phylogenetic, axiomatic understanding can prepare a more self-evident approach to the evolution of consciousness. By transforming our values, always different in action, individual by individual, humans

carry the ability to shift what is a universally true, predictable default system. It is the hope of the author, the artist and scientist, whose work I have cited, this project of generative art will assist the broad and complex challenges that Integral educators around the globe are seeking to transform. We might now restructure our schools in the direction Jennifer Gidley, *President of the World Futures Studies Federation* (UNESCO and UN partner) develops in *Postformal Education: A Philosophy for Complex Futures* (2016): *“If higher-order, more complex forms of cognition do exist, how can we better educate children and young people so that more mature forms of reasoning appear at the appropriate life stages?”*<sup>17</sup>

Since instinctual aspirations of science, art and sacred traditions are presently transitioning through parasympathetic dynamics, from the predominance of our primitive instincts to civilizing “return” dynamics, humans, must develop the necessary bio-psycho-physiological skills so autonomic nervous system functioning may locate the source of finer vibrational energies that evolve coherent conscience from emotional associative patterns and cogent reason from desultory thought (Porges,1994; Lindahl, 2017; Hays, 2016; Gidley, 2016).

To serve humanity and the cosmos, this guidance prepares our way.

*Susannah Hays* © 2019.

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### **Author Bio with collaborators:**

**SUSANNAH HAYS MFA, MA, Ph.D.** is a fine art photographer and educator whose philosophical approach to image-making contributes to her understanding of the human predicament. By way of *Nature’s Discourse: A Co-Evolutionary Systems Approach to Art and Environmental Design* (University California at Berkeley, 2016) and *Nature’s Discourse: Transdisciplinarity and Vagus Nerve Function* (ATLAS, 2018), she joined Dr. Porges at Cape Cod Institute in August 2019 to discuss the biological and moral imperative for Humanity programs to instill the necessary curricula to responsibly transform our somatically pressured autonomic nervous system, so that our higher, more recently evolved neo-cortical psychic energies may refine and adapt our latent (largely dormant) human potential.

**STEPHEN W. PORGES** Ph.D. is Distinguished University Scientist at the Kinsey Institute, Indiana University and Professor of Psychiatry at the University of North Carolina. He is a neuroscientist working at the intersection of behavioral, clinical and bioengineering strategies. His investigations of the evolution and expression of human autonomic psychophysiology has become a wellspring advancing the theories and practices of multiple disciplines and human service fields of practice. Since 1994, when Dr. Porges announced the basic concepts, POLYVAGAL THEORY has been adopted and used productively in a wide array of psychological and somatic clinical practices. The theory is bringing alive the profound significance of our evolutionary neural organization in daily psychological and relational processes.



**HAROLD TERRY LINDAHL** now in his late eighties, was in his day, a modernist architect, in the Frank Lloyd Wright tradition of Organic Architecture. Having studied the geometric base of art and architecture at the University of Oklahoma in the 1950s with Bruce Goff, he pursued his “Light-Color-Space-Form” watercolor studies in 2008 and developed *The Gestation, History, and Potential of Humanity* as recently as 2018. Fascinated with geometric order and metamorphic form-generation through systematic variations and modulations, his black and white studies became color-filled triptychs influenced by the cosmology of George Ivanovitch Gurdjieff, the Greek-Armenian philosopher and esoteric teacher and his teacher Lord Pentland, in New York and San Francisco from the late 1960s to the 1980s.

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- <sup>2</sup> See Basarab Nicolescu, et. al., for Transdisciplinary Moral Charter online link: [http://ciret-transdisciplinarity.org/moral\\_project.php](http://ciret-transdisciplinarity.org/moral_project.php)
- <sup>3</sup> To heal the split between theory of knowledge and embodied phenomenological experience an individual pursues the engagement of physical sensori-motor experiences where mind-body cognition emerges from a phylogenetic/ontological matrix, such as the cognitive and functional effects of meditation on body-brain circuits or vagal exercises such as vocalization and breathing exercises.
- <sup>4</sup> See Hays, Susannah: “*Nature’s Discourse: Transdisciplinarity and Vagus Nerve Functioning*” (ATLAS journal, 2018).
- <sup>5</sup> George Ivanovich Gurdjieff (1866-1949), was an influential early 20th century Russian Philosopher, Scientist and composer of Armenian/Greek descent. John Pentland, appointed by Gurdjieff to lead ‘the work’ in North America, was Lindahl’s teacher.
- <sup>6</sup> See Hays, Susannah (2016) “*Nature as Discourse: A Co-Evolutionary Systems Approach to Art and Environmental Design*” © University of California Berkeley.
- <sup>7</sup> See H.T. Lindahl, (2017) *The Harmonics of Unity: Endogenous Semiotics of the Vagus Pineal Gyre*, Trioctave Editions San Francisco.
- <sup>8</sup> Gidley, Jennifer (2016), *Postformal Education: A Philosophy for Complex Futures*, p.2.
- <sup>9</sup> Diagram is from page 5 of H.T. Lindahl’s *Program Initiative* published by The Intropy = Entropy Institute in San Francisco, CA 2019. Lindahl’s Ergodic diagrams have gone through numerous reiterations starting with Einstein, Darwin, Gurdjieff triad in 2011.
- <sup>10</sup> Porges, Stephen W., *The Polyvagal Theory: New insights into adaptive reactions of the autonomic nervous system*; 2009. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3108032/>
- <sup>11</sup> In Lindahl’s *Harmonics of Unity* expository treatise, he relates the alchemical knowledge of ancient gnostic wisdom traditions with contemporary science.

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- <sup>12</sup> See Porges, Stephen W., July 1995 “*Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A Polyvagal Theory*”  
<https://doi.org/10.1111/j.1469-8986.1995.tb01213.x>
- <sup>13</sup> Porges, Stephen W. (August 7, 2019) unpublished recorded conversation with Susannah Hays at Cape Cod Institute Eastham, Massachusetts, p.3.
- <sup>14</sup> Porges, Stephen W. (2017) Chapter 15: *Vagal Pathways: Portals to Compassion*, The Oxford Handbook of Compassion Science. Oxford University Press p.189-202.
- <sup>15</sup> G. I. Gurdjef’s philosophy is a Micro-Macro cosmology. See Russian Geochemist Vladimir Vernadsky (1863-1945) wrote about the deep connections between life on Earth and the Biosphere and the profound implications for all of life as a cosmic phenomenon.
- <sup>16</sup> See Selz, Dr. Peter and H.T. Lindahl in conversation with Susannah Hays, Berkeley California, April 12 & 25, 2011, page 16. Chemistry diagrams are hand-drawn by Lindahl, after Gurdjef (for further explanation, see Ouspensky, P.D. *In Search of the Miraculous, Fragments of an Unknown Teaching*, Chapter 9).
- <sup>17</sup> Gidley, Jennifer (2016), *Postformal Education: A Philosophy for Complex Futures*, p.2.

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