Understanding the Imponderable in Nature

A Report on the 2014 Natural Science/Mathematics-Astronomy Section Annual Meeting in Portland, Oregon: "A Path To Understanding the Imponderable in Nature: Enlivening Our Understanding through Color"

We met December 4-7, 2014 at the studio of Jannebeth Röell and James Lee. A wonderful companionship was fostered as we daily sat around their table enjoying delicious meals they prepared in their home adjacent to the studio. The conference furthered our continuing theme of "inner capacity building" toward a qualitative science, with a focus this year on the "feeling understanding" spoken of in Rudolf Steiner's lectures on *Colour*.[1]

Johannes Kühl, Natural Science Section leader at the Goetheanum, opened with a public presentation at the Cedarwood Waldorf School on his recent book, *Rainbows, Halos, Dawn and Dusk: the Atmospheric Colors and Goethe's Color Theory* (Adonis Press). Along with gorgeous photos of rainbows, halos, glories, and coronas in the sky, he brought a suitcase full of diffraction gratings and other demonstration equipment for us to experience "that all subjects of optics are approachable via atmospheric color phenomena." In the end, he brought everything from the archetype of dawn and dusk to the wave-particle duality of light into an overview of the whole, in true Goethean fashion—re-weaving the rainbow, one might say. His closing image was an intense halo complex around a sun low in the sky, appearing as a central cross with two adjacent crosses on the Golgotha hill, indicative of the sacred feeling these atmospheric color phenomena engender.

Friday morning we began in the studio, with several artists invited to join us from up and down the West Coast. The impromptu inter-Sectional collaboration was delightful, thoughtful, and full of humor. Presentations and exercises led by Jannebeth, conversations, painting, and wonderful skits on the qualities of color, enabled us to begin to feel the more inner natures of color and to experience "art" as a research tool. Jannebeth began our first session by showing her beloved hand-bound copy of Willem Zeylmans van Emmichoven's doctoral dissertation, holding it up to her nose for that familiar 1960s' photocopy smell. She acquired it when training as a nurse with Dr. Zeylmans' son-in-law. Combining quantitative and qualitative, Dr. Zeylmans had measured the heartbeat of children exposed to different colors as they spoke of how they felt that the color affected them. Jannebeth next introduced her art school's approach, typified by one class exercise: a quite "scientific" array of hues and values.

We then dove into Steiner's *Colour* lectures. Starting with prismatic color phenomena, we explored the color circle Steiner imagined as a bending of the linear Newtonian spectrum around to meet as magenta (p.38). Johannes noted that the resulting "Purpur" of Goethe's spectrum is also called "Incarnat"—indicative of a baby's changing complexion from a bluish hue shortly upon cutting the umbilical cord toward the living hue brought on by the first breaths. We then turned to Steiner's scheme of Image colors (p.27), which Jannebeth enhanced with characterizations from other Steiner sources. This scheme engages questions of the continuous inter-relations of the physical (black), living (green), soul (magenta), and spirit (white).

After noon, Jannebeth led a "shout out" of the qualities by which Steiner's Lustre colors (blue, yellow, red) affect us. After observing bouquets of flowers that adorned the studio in either the Image or the Lustre color combinations, we considered seven sheets of the separate Image and Lustre colors displayed along the wall, in order to play a simple drama game. Someone would say "So, I was right!" and each person was to reply, "That remains to be seen," acting and speaking in the mood of a given color. Discussion transitioned to harmonious, characteristic, and non-characteristic color combinations, as well as turbidity, brightness and darkness phenomena, and related subjects.

Johannes brought us news of the Goetheanum and preparations for the *Evolving Science 2015* conference in Dornach at the end of September at which he hopes for more participants from the States.[2] He informed us that Wolfgang Schad, turning eighty this year, had a stroke a few months ago. With funding assistance from the An-

1 Page numbers to follow refer to the second edition of 1996 (reprinted 2008) of *Colour*: three lectures given in Dornach 6 to 8 May 1921 with nine supplementary lectures given on various occasions; Rudolf Steiner Press.

2 http://science.goetheanum.org/topics.6875.0.html?&L=1

throposophical Society in America, the Section is organizing an international academic conference to follow Adonis Press' publication in English of the second edition of Schad's *Man and Mammals* later this year.

Johannes freely held the Seventeenth Class Lesson that evening and we had our conversation on the Lesson and theme Saturday morning. (One important comment made in our final review was how valuable it is to have a conference solely with those who have made a commitment to the School for Spiritual Science. On the other hand, some wondered whether tactful treatment of Class material in discussions—excluding the Lesson itself—might be a fruitful introduction for others not yet members of the School who share our interests and concerns.)

Jannebeth then led a painting exercise suggested by the "color method" of artist Beppe Assenza.[3] In unpremeditated abstract patterns we were to juxtapose specific combinations of two Image and one Lustre color and to feel how the different combinations affected us.

After lunch, John Barnes led a discussion of imagination and methodology in qualitative science. We touched on Goethe's sensory-moral nature of color and considered how Goethean "participation" in phenomena in general puts the scientist in a personal stance, a moral position even, with regard to the "subject." Participatory methodologies can complement conventional, value-free "objective" science—recalling E. F. Schumacher's distinction between "science of understanding" and "science of manipulation" in his book, *A Guide for the Perplexed*.

We touched on mainstream science's new discovery of a non-visual photoreceptor system in humans, by which "blue" wavelength light stimulates brain alertness and "orange-red" light allows sleepiness. These physiological effects upon our circadian rhythm, cognitive performance, and mood[4] could perhaps be considered another aspect of Goethe's "sensory-moral effects" of color. When the oft-repeated notion was raised that, in speaking of the "wine-red sea" (or "wine-dark sea"), ancient Greeks could not see "blue," the vision scientist present had to caution against a literal acceptance of such a statement. Considerations of physiology, language, and the evolution of consciousness continued after the meeting by email, with reference to Arthur Zajonc's nuanced treatment of this notion in his *Catching the Light*.[5] That thread will be uploaded to the Section website.[6]

Saturday evening we read stories we composed overnight from a child's point of view, incorporating all the Image and Lustre colors. Then we shared wonderfully creative characterizations of the colors, coming up with poetry, drama, music, eurythmy, and mime. There were insightful impromptu works as well as hoots and hilarity, yet here again art served as a modality of research.

Sunday morning, artists and scientists alike, we considered the nature of Section and inter-Section work, further discussed Goethean and conventional methodology, and appreciated the discipline of scientific practice as well as the value of artistic capacities. Marveling at the yet-unfathomed depths of our subject, we felt we had moved from awe the first evening with Johannes to awe at our creative artfulness the night before, all in the loving hospitality of James and Jannebeth's home and studio.

A key theme of earlier meetings in Portland with Jannebeth was "art as a viable research tool," investigating the formative forces expressed in leaf and flower through drawing and other media. This theme has been part of our approach ever since in other venues, as the past few annual meetings have progressed from the physical to the etheric to the astral and to the human being last year.[7] Now Jannebeth had led us masterfully, once again, as a company of researchers in participatory exploration of our colorful, soulful world, aiming for that "feeling understanding" Rudolf Steiner spoke of, which is brought to life and concrete experience by an artistic sensibility.

by Barry Lia, together with the planning committee: James Lee, Jannebeth Röell, Jennifer Greene, Andrew Linnell, and John Barnes.

3 http://lucianobalduino.it/method.html

4 For example, Chellappa et al. (2014) *Proceedings of the National Academy of Sciences* 111:6087-6091.

5 Arthur Zajonc, *Catching the Light: the Entwined History of Light and Mind*, 1993, Bantam Press, pp. 13-18.

6 http://www.naturalsciencesection.org/

7 **2010**, Chicago, "Building Capacities—a Study of the Spherical and Radial Principles in the Human and Animal Organisms with a focus on Horns and Antlers," Michael Holdrege and Gary Banks; **2011**, Water Research Institue, Blue Hill, Maine, "Experiencing Moving, Forming, and Rhythm In Water Flow: An Approach to the Fluid Event of Water," Jennifer Greene and David Auerbach; **2012**, Chicago, "The Threefold Principle in the Human and Animal Organism with a Focus on Recursion: Cultivating Metamorphic Thinking," Mark Riegner; **2013**, The Nature Institute, Ghent, NY, "The Supersensible within the Sensible: Experiencing the Inner Qualities of Animalness and Humanness," with Craig and Henrike Holdrege.