Oscillation & Pulse:

Vibrational Ontology in the Work of Gail Priest and Thomas Burless

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To enter the dimmed space of *Five Self-Vibrating Regions of Intensities* is to be immediately transported into a mineral, metallic and vegetal world whose surfaces turn into gyrating motion. A darkened corridor lined with metal letters pinned to the wall spell out text by Jane Bennett and Ursula Le Guin and others reminding us that the universe is in constant movement – throbbing, assembling, vibrating – because 'all living beings are all oscillators'.[1] But the sonic conjurings of Priest and Burless reveal that it's not only animate entities that oscillate but any material which experiences a pulse.

A pulse is defined as a single vibration or short burst of sound, electric current, light or other wave, but is also more commonly understood as the repeat rhythm of blood pulsing though our organs; our body's internal life-force. Yet *Five Self-Vibrating Regions of Intensities'* sonic-material experiments amalgamate these definitions, revealing pulsation not as a single beat but a modality of animating vibrations. How do we learn this? Through the humble materials of weeds and grasses, puddles of water, sugar crystals, latex and shellac, which

become performative actors in a choreographic suite of sonic-generated palpitations.

In *Pond Life*, a grid of indented metal plates hold little pools of water, interspersed with beds of vegetation. This checkerboard of plant and

metal lies tranquilly until two alternating pitches puncture the space, blasting soundwaves through the air. As the frequencies pass through the metal plates the small pools burst into life, their surfaces instantaneously thrust into elaborate striations. The sound stops and the patterns vanish. Another soundwave blasts and they instantly return. Pulse. Arrest. Action. Lull. Like a heartbeat rhythm the patterns appear and disappear in a matter of seconds, oscillations of motion and stillness.

Pulsations of a different order occur in *Tridophone*; a recreation of historical experiments in cymatics: the science of visualising audio frequencies. The term was coined by the Swiss scientist and doctor Hans Jenny in the late 1960s while studying the effects of vibration on matter; specifically, metal plates or membranes covered with a thin layer of powders or pastes. When vibrations passed through the plates, the particles on the surface would leap into life, forming

extraordinary, pulsating geometries. Jenny's systematic studies in cymatics built on 18th century experiments by the German musician and physicist Ernst Chladni who first observed the way in which grains of sand set atop vibrating metal plates would launch into nodal patterns, shifting and re-arranging with each change in vibrational frequency.

Such examination of the effects of vibration and the science of acoustics itself have been traced to Pythagoras in the 5th century BCE, who used shells, hammers, pipes and string to test vibration. He also invented the monochord; a single stringed instrument with movable bridges which allowed for the measurement of pitch intervals. Pythagoras' experiments have since been credited as the first vibration research laboratory.[2]

Priest and Burless, however, are more interested in lesser-known acoustic experimenters, such as the Welsh vocalist Margaret Watts Hughes. In 1885 Hughes designed an instrument she called the Eidophone to measure the vibrational effects of her own voice. The instrument was comprised of a mouthpiece connected to a wooden resonating chamber stretched over with a rubber membrane. When grains of sand or lycopodium powder were sprinkled over the membrane and the mouthpiece sung into, the voice-generated vibrations would marshal the substances into visual effects that Hughes termed 'crispations'. She tested modulating her voice, sustaining pitch notes, raising or lowering her frequencies to reconfigure the granular arrangements. In addition, she experimented with pastes and liquids such as coloured glycerine, charting their different behaviours in producing variegated visual patterns she later called Voice Figures.

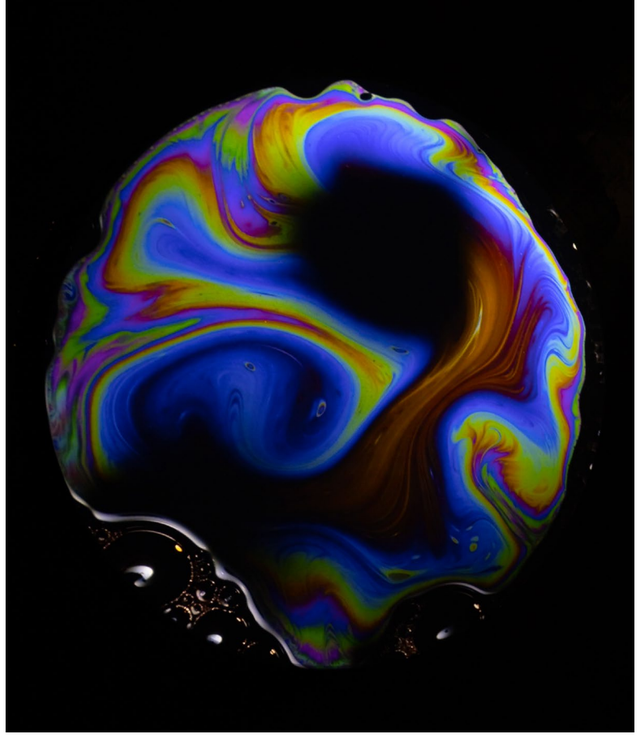
Tridophone takes its point of departure from the Eidophone, substituting vocalisations with a kinetic sculpture that shoots vibrations through a plates sprinkled with crystals of sugar. A projection shows, at macro scale, how each sonic pulse hurls the crystals into life. The succession of rhythmic beats turn the particulate matter into a cinematic experience; a mesmerising, mineral-coloured field of granular syncopations.

If this is a world of constant oscillations – pulses and patterns through matter – then perhaps this is really the natural of order of things. Spinoza's 6th proposition in his Ethics was that 'each thing, in so far as it is in itself, endeavours to persevere in its being.'[3] In a letter to G.H. Schaller in 1674 he explicitly tied this ethic to motion, using the example of a stone. Spinoza posited that although a stone might be made to move from an external impulsion, it would, as far as it could, attempt to continue its motion – a principle of vitalism picked by Bennett three and a half centuries later.[4]

In a memorable anecdote inspiring her notion of vibrant matter, Bennett recalls a time walking along a street when she came across a few discarded objects – a glove, a bottle cap, a dead rat and a pollen mound. The way these objects shimmied back and forth between detritus and thing showed her that when objects form contingent arrangements they take on a set of new relations – a kind of vibrancy – with each other and whoever might be their chance witness. Is it significant that Bennett's moment of heightened perception embodies the very principle of oscillation? The objects that caught her gaze fluctuated between two poles, 'at one moment disclosing themselves as dead stuff and at the next as live presence'.[5]

Similarly, Manuel De Landa postulates the capacity of inorganic entities to self-organise, arguing that 'even the humblest forms of matter and energy have the potential for self-organization'.[6] Waveforms or crystals are such examples but De Landa suggests that inorganic matter has even greater potential for complex creativity than we may have hitherto imagined. Priest and Burless's sonic installations underscore matter's self-organising capacity but draw out the principle further, suggesting that vibrations through matter are intrinsically spectacular.

We see this in *Membrane* (2023) where the scale of minute matter is enlarged to reveal



its glorious pattern-making capacity. The work closely reproduces another 19th century experiment with an instrument parallel to the Eidophone, the Phoneidoscope, invented by British music scholar Sedley Taylor in 1878. Like the Eidophone, the apparatus featured a resonant chamber, its aperture covered with a thin soap film. When notes were sung through the mouthpiece, vibrations split the soap bubble's surface into moving lines of colour. Priest and Burless's recreation projects the surface of the tiny soap bubble onto a large disc, magnifying the oily whorls' effect. When Priest sings, the vibrations set off the orb into a round of swirling colours like a living fractal planet.

Yet these vibrations implicate me too. Speaking of music, Nina Sun Eidsheim argues that it is never externally fixed but only comes into being through a particular 'material-vibrational' transmission.[7] But this extends past music to the wider category of sound and even beyond acoustic phenomena itself. As I hear – and watch – the patterns of sonic pulses, vibrations enter my body, forming a continuous field between exterior and interior realms. The vibrancy that Bennett detects between 'things' actually runs deeper, taking place on the level of energetic transference. Priest and Burless reveal these physics of matter as hypnotic oscillations within and across elements, environments, bodies and membranes; vibrations as the ontology of an all-encompassing field.

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Images: Damien Raggatt

Endnotes

[1] Ursula Le Guin, 'Telling is Listening', *The Wave in the Mind: Talks and Essays on the Writer, the Reader and the Imagination* (Boston: Shambhala, 2004), 190.

[2] A.D. Dimarogonas, 'The Origins of Vibration Theory', *Journal of Sound and Vibration*, 1990, Vol. 140 No.2, 185.

[3] Benedict de Spinoza, *Ethics* (New York: Hafner Publishing, 1954), 135.

[4] See Spinoza, Letter 62 (58) to G.H. Schaller, *Selected Correspondence* (The Hague, 1674), https://www.faculty.umb.edu/gary_zabel/Courses/Spinoza/Texts/Spinoza/let6258.htm

[5] Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (London: Duke University Press, 2010), 15.

[6] Manuel De Landa, *A Thousand Years of Nonlinear History* (New York: Swerve Editions, 2000), 16.

[7] Nina Sun Eidsheim, *Sensing Sound: Singing and Listening as Vibrational Practice* (Durham: Duke University Press, 2015), 156.