

The Aether and its Double

Martin Howse. May 2007.

To ask what these stories, of technology, science and history of EM could be telling - another story to bring to light, a novel.

Within this frame Thomas Pynchon's *Against the Day* as a prime example of this meta-use of literary and scientific story telling or of language, of science as a genre as much as the detective novel (with arch proponent of this genre Arthur Conan Doyle as we'll see straddling the domains of spiritual EM and fiction). Fiction as the question of substance or embodiment we are concerned with. A ghost-radio story concerned with a thematic of the double - two stories and two quotations:

The agreement of the results seems to show that light and magnetism are affections of the same substance, and that light is an electromagnetic disturbance propagated through the field according to electromagnetic laws.

[A Dynamical Theory of the Electromagnetic Field. James Clerk Maxwell]

Iceland spar is what hides the Hidden People, makes it possible for them to move through the world that thinks of itself as 'real,' provides that all-important ninety-degree twist to their light, so they can exist alongside our own world but not be seen.

[*Against the Day*. Thomas Pynchon]

A ghost hunt for the double - a question of seeing or rendering visible or apparent - to the eyes or senses. The so-called spectrum of human (visible) light (around 400 to 700 nm).

Anecdotal links crossing science and another body/another ghost or twin substance (written within the recent history of electromagnetic phenomena and the functionalism of radio) are both abundant and speculative - too many to rehearse here - the imaginary apparatus of Edison sketched out in an early edition of *Scientific American*, Tesla and Marconi's interest in the uses of such technology to communicate with the spirit world. It's a history, a timeline which is used to found and support the contemporary phenomenon of EVP (Electronic Voice Phenomenon) or ITC (instrumental Transcommunication - a two way conversation with the spirits) - a modern, technology-driven double to spiritualism with white noise (Stochastic Resonance) and recording apparatus as support or "medium" (for messages from the beyond or beside).

The communication terms of signal and noise are called into a different relation under this Stochastic Resonance theory - white noise; at a

microscopic level, the internal thermal noise of a physical circuit (a city) or natural electrical phenomena in the atmosphere - both embraced by radio technology. White noise boosts an otherwise unheard (voice) signal, makes it evident.

EVP is thus a logical extension of the natural disembodiment of broadcast radio - a question of both presence and the lack of a material support (real speaker). An apparatus for invisibility.

EVP and associated phenomena (proof of life after death) proliferate as practise and as anecdote across the global Internet - shared techniques and historical support. The story is traced across colourful figures such as the Swedish Friedrich Jurgenson who first noticed such voices during recordings of birdsong, attracting the attention of Konstantin Raudive (Latvia) (late 50s/60s - Breakthrough 971), Hans Bender and Hans Otto Koenig making an experimental TV appearance in the early 80s in which a clear voice was heard to say: "Otto Koenig makes wireless with the dead."

But what remains more solid, within the early history of a science of electromagnetic phenomena and substance, before the entry of signal, noise and communication on the scene, is precisely this concern with spiritualism - a communication with a higher realm of spirits.

Notable figures here with excellent pedigree in the literary genre of science fact include William Crookes [Crookes' radiometer, Cathode ray tube - experiments with the medium Florence Cook] and Oliver Lodge, under cover of the aetheric ushering in signal and transmission with a broadcast punctuating the work of Tesla (one year before) and Marconi (one year after). At the same time Lodge features as a noted spiritualist, investigator of psychic phenomena and colleague of Sir Arthur Conan Doyle in the SPR (Society for Psychical Research). Physicist Lord Rayleigh, Maxwell' successor as head of the Cavendish Laboratories at Cambridge figures as president of the SPR as a later date. As mathematician Augustus de Morgan (a ghost haunting the future logic of computers) wrote in an introduction to Crookes' work on spiritualism (Phenomena of Spiritualism - Introduction - Spiritualism Viewed by the Light of Modern Science):

I am perfectly convinced that I have both seen, and heard in a manner which should make unbelief impossible, things called spiritual which cannot be taken by a rational being to be capable of explanation by imposture, coincidence, or mistake. ...

The physical explanations which I have seen are easy, but miserably insufficient. The spiritual hypothesis is sufficient, but ponderously difficult.

A double of the physical explanation and the spiritual hypothesis - other members of the cast haunted by the occult force of electromagnetism include Thomas A. Watson, Alexander Graham Bell's assistant - one of first

people to define and listen to a certain noise on the wire:

I used to spend hours at night in the laboratory listening to the many strange noises in the telephone and speculating as to their cause. One of the most common sounds was a snap, followed by a grating sound that lasted two or three seconds before it faded into silence, and another was like the chirping of a bird. My theory at this time was that the currents causing these sounds came from explosions on the sun or that they were signals from another planet. They were mystic enough to suggest the latter explanation but I never detected any regularity in them that might indicate they were intelligent signals.

[Thomas A. Watson, Exploring Life: The Autobiography of Thomas A. Watson]

What is perhaps more interesting is the transition between the potential of invisibility - the world of the hidden people - and a mundane communication with ghosts - the realm of the dead - radio as spirit or deathly communication. A more definitive other side to the radio days. This aetheric noise which is neither transmission nor reception - remains aside from intention which defines these two terms and which is inscribed as we shall see within the substance of a city architecture.

Just as radio and recording technology (a free space of noise, transmission and reception) makes possible the study itself of EVP/ITC, such phenomena come to be explained with reference to encompassing technology, a kind of metaphor to better refine the hidden, yet speaking beings, the dead held in a time relation (the future dead foreseen by the magnetism of the ancient Chinese divining board - an unexpressed encounter with magnetism).

The spirit voices thus become voices from a parallel dimension, invisible beings (hidden people), angels always present yet unseen (hidden from the light). Further, and in keeping with the novel presence of such messages on the magnetic storage medium of the computer, on CRT or printout (denying the medium of software), the messages can be seen as originating from a "universal data file," uniting also the dead within this accumulation. And the possibility of a future - a return to the divining boards with brain as "interface," or intermediary. Widening the field to embrace all psychic or paranormal activity - brain as transceiver - as receiver and transmitter for the unsensed or further sensed. (Upton Sinclair - Mental radio. The nervous system as oscillatory circuit).

Existential relations to technology are defined here - technology as enabling a communication, as medium, as embedding and equally doubled as a ghost within the science and technology of EM itself. The difference between a bringing to light - the hidden being exposed, and the being of this technology itself - embedded within this circuit. What exactly

it means to bring to the light of day.

Embedding also implies the idea of scale and of a frame of reference: the miniature radio receiver hides behind an exterior which cannot be avoided across Maxwell's City swarmed with mushroom antenna. An exterior of wire, of metal intentionally at odds with the buried cables and structural Faraday's cages embedded within concrete. The microscopic of an internal electronic circuit, perhaps a mobile phone, is reflected in the wider copper traces of tramlines, power lines, structural metal - a sibling circuit with its own ghost architecture; the circuit diagram is replaced by an overlapping series of maps. Maps of structure and ownership also. Circuits of detection and translation (less than visible). Capacitance, inductance, blocking, resonance, resistance on a grand Tesla scale.

And with this overlay of map and circuit - a journey through an abandoned city - electromysticism enters:

Electro-mysticism is a materialism and only "gathers that which is". Circuit diagrams and bodies relate to each other as the front and reverse side of the same piece of paper, recto and verso, then "Not even in the worst times of night, with pencil words on your page only Delta-t from the things they stand for?"

[Friedrich Kittler: Pynchon and Electromysticism]

becoming precisely the doubling question of materialism we are grappling with.

And to later become a question of conspiracy, of that which is hidden (a city after wartime in Gravity's Rainbow):

Military conspiracy and thus entering decoding, signal to noise, and encryption issues; VLF, ELF and a low frequency scanning culture - scanning below a range where frequency can easily be made audible/recognisable under some kind of direct connection (a so-called direct conversion receiver, with de-modulation strictly a case for decryption and speculation). Where it can be made sense of - another speculative realm aside from EVP haunted by the acknowledged use of low frequencies for military communications - Russian submarines, cold war. By way of mental radio, ghost radio, brain radio it's a short step under the sign of paranoia and conspiracy into mind control. Inspired equally by the disembodied and by the universal body of Maxwell's aether.

There stands thus a relation to paranoia, the entrance of the pink light of Philip K. Dick - the modulations of VALIS (Vast Active Living Intelligence System) transmitted within this electromagnetic propagation; modulations he claimed had previously been produced by a Soviet mind control experiment and later skyjacked by the benevolent system orbiting the

earth.

Equally the paranoiac work of Thomas Pynchon, day and light - returning to *Against the Day*. Coming to light, revelation, exposure, a transparency or making visible enabled by this crystalline Iceland spar which serves as a doubling - the decomposition of light into two rays (the ordinary and extraordinary, the real and the imaginary component) as it passes through the calcite crystal. Science as a bringing into light, the light of day as opposed to the darkness of spiritualism. Work (and putting the spectrum to work, work and energy and entropy, light as resource and as power) and the day and light.

Deep among the equations describing the behaviour of light, field equations, Vector and Quaternion equations, lies a set of directions, an itinerary, a map to a hidden space. Double refraction appears again and again as a key element, permitting a view into a Creation set just to the side of this one, so close as to overlap, where the membrane between two worlds, in many places, has become too frail, too permeable, for safety... Within the mirror, the scalar term, with the daylight and obvious and taken-for-granted has always lain, as if in wait, the dark itinerary, the corrupted pilgrim's guide, the nameless Station before the first, in the lightless uncreated, where salvation does not yet exist.

[*Against the Day*. Thomas Pynchon]

Light and electric light (against the night), light in the extended sense (after Maxwell), light as that duality (of wave and particle), the doubling within the Iceland spar:

"The ancient Manichaeans out here worshipped light... No matter what transformations might occur, and they expected anything, travel backward or forward through Time, lateral jumps from one continuum to another, metamorphosis from one form of matter, living or otherwise, to another - the one fact to remain invariant under any of these must always be light, the light we see as well as the expanded sense of it prophesied by Maxwell, confirmed by Hertz. Along with that went a refusal of all forms of what they defined as darkness."

[*Against the Day*. Thomas Pynchon]

Both Manichaeism and Gnosticism are concerned with a duality of light: a doubling and duplicitous nature relating to conspiracy (the work of PKD as Gnostic) - the dupe, the double. The looking-glass world of these "lateral jumps" returns us to Conan Doyle, the Society for Psychical Research (SPR) of which author Charles Dodgson (Lewis Carroll) was equally a member.

Mani (the third century Persian prophet) postulated two natures that existed from the beginning: light and darkness. The realm of light lived in

peace, while the realm of darkness was in constant conflict with itself. The universe is the temporary result of an attack from the realm of darkness on the realm of light, and was created by the Living Spirit, an emanation of the light realm, out of the mixture of light and darkness.

Scientific language and light (sense) already present a doubling - empiricism and spiritualism on the same question of substance leading into the question of luminiferous aether.

A duplicity also of serving and instrumentalism within science - the mapping of the electromagnetic spectrum - that which is not real leads directly to an apportioning/state agreements of ownership regarding that spectrum - ownership both by way of mapping and mapping through being able to divide that which is viewed as a resource. division according to wavelength or frequency - equations address a physics (model of a so-called physical reality) with reference point of the speed of light.

The luminiferous aether

In an article on Aether for the Encyclopedia Britannica Maxwell wrote:

Ether or Aether (aiqhr probably from aiqw I burn) a material substance of a more subtle kind than visible bodies, supposed to exist in those parts of space which are apparently empty... Whatever difficulties we may have in forming a consistent idea of the constitution of the aether, there can be no doubt that the interplanetary and interstellar spaces are not empty, but are occupied by a material substance or body, which is certainly the largest, and probably the most uniform body of which we have any knowledge. Whether this vast homogeneous expanse of isotropic matter is fitted not only to be a medium of physical interaction between distant bodies, and to fulfill other physical functions of which, perhaps, we have as yet no conception, but also ... to constitute the material organism of beings exercising functions of life and mind as high or higher than ours are at present - is a question far transcending the limits of physical speculation.

The luminiferous aether acts precisely as a medium for waves, permeating all space and yet undetectable, invisible. An absolute frame of reference, giving light.

The question of "action at a distance" is translated from the microscopic/scientific, a world of models, into the livelier world of the spirits. The luminiferous aether is precisely that medium allowing for propagation, literally bearing light. Aether also as a unifying substance guaranteeing a constant figure (for the speed of light) in Maxwell's equations; yet it's a need which is better fulfilled under Einstein's special theory of relativity - not so much disproving the existence of the aether (left to the Michelson-Morley experiments - (motion of the earth through

the aether)).

Aether rather as a body or substance on the one hand uniting mathematics and theory with substance or material - on the other uniting spirit and matter - becoming spirit, a world substance reminding us of the modern pink light of Philip K Dick in VALIS.

Oliver Lodge again: Ether and Reality (1925):

"... it is manifestly the vehicle or substratum underlying electricity and magnetism and light and gravity and cohesion...

It is the primary instrument of Mind, the vehicle of Soul, the habitation of Spirit."

Einstein's famous 1920 Leiden lecture proposes a new view of the aether - as itself space and time rather than existing within space and time:

Recapitulating, we may say that according to the general theory of relativity space is endowed with physical qualities; in this sense, therefore, there exists an ether.

According to the general theory of relativity space without ether is unthinkable; for in such space there not only would be no propagation of light, but also no possibility of existence for standards of space and time (measuring-rods and clocks), nor therefore any space-time intervals in the physical sense. But this ether may not be thought of as endowed with the quality characteristic of ponderable media, as consisting of parts which may be tracked through time.

The aether becomes dark matter, barely luminiferous as invisible - that which cannot be observed directly but only surmised through an effect. The aether qualities as a medium are obsoleted by particle theory which resides with its double wave. Theory demodulated according to that which is which is not answered by a making visible to the senses enacted by technology under cover of instrumentalism. A story of the aether and its double. A story of refraction.