

Medicine and the Paranormal in *Gravity's Rainbow*: Ephyre, Anaphylaxis, and That Charles Richet

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Je n'ai jamais dit que c'était possible. J'ai dit que c'était
seulement vrai.
I never said it was possible. I only said it was true.
—Charles Richet

Since Lawrence Wolfley's 1977 article "Repression's Rainbow: The Presence of Norman O. Brown in Pynchon's Big Novel," commentators on Pynchon's writing have often found themselves in uncomfortable and sometimes ridiculous positions where they are forced to argue about the importance of something although or because it is *not* explicitly in Pynchon's text. Using various forms of logic, they find themselves "seeking other orders behind the visible" (GR 188),¹ often concluding that something's present *because* it's absent. This paper, which proudly follows in that tradition, is divided into four short parts: the first part is a brief biography of Charles Richet; the second surveys his interests in the paranormal and psychic phenomena, emphasizing what we think are echoes in *Gravity's Rainbow*; the third discusses his work on anaphylaxis, particularly as it relates to *Gravity's Rainbow*; and in the fourth, we will try to connect the pieces and explain *why* Richet is, to our minds, perhaps one of *the* most important historical figures *not* mentioned in *Gravity's Rainbow*.

1. Richet's Biography

Charles Richet was born in 1850 and died in 1935. A Parisian physiologist and student of the occult and paranormal, Richet is best known as the winner of the 1913 Nobel Prize in Medicine for his discovery of anaphylaxis and anaphylactic shock.² Richet, originally trained in the emerging new field of psychology, revived the study of hypnotism (which was falling into disrepute by 1875) and convinced Jean-Martin Charcot, Pierre Janet and later, Sigmund Freud, of its value in psychotherapy (Boadella, 46, Wolf 26-28). Among his research, he conducted one of the first studies of anorexia nervosa in 1896, wrote a treatise on the etiology of shivering and goose bumps (Wolf 50), and predicted the existence of neurotransmitters (Wolf 151-52). To say that Richet was a prolific medical researcher and writer is

an overwhelming understatement: Stewart Wolf's partial bibliography of Richet's oeuvre lists seven hundred and thirty-nine publications on topics relating to physiology and medicine (171-204).

Richet was also an inventor who designed and built several machines that advanced medical technology, as well as an airplane that flew only a few weeks after the Wright Brothers' first flight at Kittyhawk. He also developed one of the first working helicopters and eventually owned a portion of the largest airplane firm in France (Wolf 85-88). He was a leading international peace activist before, during and after World War I. In 1907, he wrote a book titled *Le passé de la guerre et l'avenir de la paix* (*The End of War and the Dawn of Peace*) in which he attempted to thwart pro-war rhetoric by itemizing (and significantly underestimating) the horrific costs of a European war in terms of civilian and military casualties, munitions, and destruction of public and private property (Wolf 117-18). In 1916, in the midst of World War I, he wrote *Les Coupables* (*Those Responsible*) in which he sought to explain the causes of the war and to estimate the costs incurred at that point. Shortly after the war, Richet began to espouse a political position diametrically opposed to the economic theories of Walter Rathenau, in which he argued strongly for the elimination of multi-national weapons industries and cartels—"without arms merchants there is no war" (qtd. in Wolf 126)—and predicted that if the arms build-up continued, "we will have another great war more terrible than this" (qtd. in Wolf 126). These views are evident in Richet's last piece of anti-war writing, *Pour le paix* (*For Peace*), which he published in 1930. We will discuss the importance of this apparent connection to Rathenau in section 3.

2. The Paranormal

Among Richet's personal friends were William James, Alfred Russell Wallace, Oliver Lodge, and Sir Arthur Conan Doyle,³ who covers some of Richet's research into the paranormal in his 1926 book, *The History of Spiritualism*—areas such as hypnotism, clairvoyance, telekinesis, automatic writing, and communication with the dead. However, Richet's interests in existing relationships between medicine and the occult were much broader. One of the founding members (along with Janet) of the French branch of the Society for Psychic Research (SPR) in 1882, he headed the Paris branch for several years and served as President of the London-based group in 1905.⁴

Richet also helped to found the *Institut Métapsychique International (IMI)* in 1919, a public foundation, funded by the government of France, whose explicit objective was to conduct in-depth investigations of claims of the paranormal in spiritualist, mesmeric, or other contexts. Among its first Board members were some folks with wonderful Pynchonesque names—the Italian Minister of Health Rocco Santoliquido (president), Richet (honorary president), Albert Baron von Schrenk-Notzing, astronomer Camille Flammarion, and the

physician Gustave Geley (director). The *IMI* can be seen as an actual historical version of the fictionalized "White Visitation" that appears in *Gravity's Rainbow*. During its early history, as a publicly-funded interdisciplinary institute whose goal was to explore and to explain the paranormal, it sought to integrate such phenomena into the larger scientific community, and eventually to develop practical uses for such phenomena. By 1931, the *IMI* had tried to dominate the international psychic community, in effect, to corner the market on the paranormal.⁵

When constructing the allusive infrastructure of The White Visitation in Parts I and II of *Gravity's Rainbow*, Pynchon provides an extensive study of the history of the paranormal in late nineteenth- and early twentieth-century Europe. The text is peppered with references to individuals such as Pierre Janet (49, 87-88, 142), Madame Blavatsky (269), M. K. Petrova (49), Jean-Eugene Robert-Houdin (675), and to various groups: "Coeuists, Ouspenskians, Skinnerites, lobotomy enthusiasts, Dale Carnegie zealots" (89), ARF (Abreaction Research Facility) (75), the SPR (Society for Psychical Research) (153, 633), and so on.⁶ In short, Pynchon provides a thorough and seemingly encyclopedic survey of people and organizations involved in psychic research (often thinly disguised as scientific and/or medical research) in the period before and during World War II. Given the encyclopedic nature of the text, the names of significant people and/or organizations in the field that Pynchon does *not* mention may be regarded as significant. In this case, while the names Charles Richet and *Institut Métapsychique International* are both missing, the interests and work they represent certainly are not.

Richet founded several journals related to spiritism, including the *Annals of Psychological Science* and the *Revue Métaphysique*, and he wrote two books and dozens of articles on psychic research (Wolf 58-59). His two most significant works on these topics are *Thirty Years of Psychic Research* (1923) and *The Natural History of a Savant* (1927). In *Thirty Years of Psychic Research*, Richet argued that the grand hope of humanity lies in psychical research, with the ultimate goal of contacting and learning from the dead (210-13). This rather radical statement from a lifelong pragmatist and physician may seem out of character, but it reflects the growing confidence Richet had about some sort of existence on "the other side." For Richet, the question was not whether spirits existed after death, but to what extent the human personality survived intact after death. Richet noted, "although in the immense majority of [my] spiritist experiences, it is impossible to admit [the] survival of the personality, there are undoubtedly some very puzzling cases that make one admit the survival of human personality" (210). In *Gravity's Rainbow*, Pynchon explores similar interests, not only in the sections that relate directly to the White Visitation, but also to larger questions about what happens after death to people in general and to Tyrone Slothrop in particular.

Richet also wrote novels, plays, a musical and some children's fairy tales,

many under the pseudonym Charles Epheyre. Two of these, *Soeur Marthe* (Sister Martha) and *Possession*, are novelized versions of his experiences with various psychic mediums, some of whom exhibited split-personality syndrome. *Soeur Marthe*, emanating from a female consciousness, is what we might call a feminized version of Dr Jekyll and Mr. Hyde, one that critic Ian Hacking describes as “a split-personality novel whose characters are far truer to the clinical practice of the day than any Jekyll and Hyde” (437).⁷

Richet participated in some séances with a number of mediums, most of whom were women. The by-invitation-only séances were great social occasions much like that described in *Gravity’s Rainbow* (29-30)—dazzlingly dressed members of the social elite attended and were fed expensive wine and elaborate food while special magnesium lights and photographic equipment were set up to record the events.⁸ In one such picture, for example, Richet and Baron von Schrenk-Notzing hold hands with a medium known as Eva C. (the woman known as *Soeur Marthe* in his novel) while an ectoplasmic form of an emerging spirit begins to take shape on her shoulder and lap. In another plate, ectoplasm begins to solidify into the form of an entity known as Katie King (aka Katje Koenig) over the slumped form of medium Florence Cook.

Richet coined the word “ectoplasm” to refer to the white gaseous or plasma-like substance that occasionally emanated from the bodies of mediums during séances and signalled both the presence of spirits and their willingness to communicate (Crowley 1-3). Such “white visitations”—the formation of ectoplasm on the bodies of the mediums—can be seen in many of the photographs of the séances at <<http://www.survivalafterdeath.org/photographs.htm>>. Pynchon’s familiarity with both the term “ectoplasm” and its etymology can be seen in the two uses of the word in *Gravity’s Rainbow*. In the first, while considering the fate of Slothrop, Pointsman muses, “There’s something there, too transparent and swift to get a hold on—Psi Section might speak of ectoplasms—but he knows that the time has never been better, and that the exact experimental subject is in his hands” (144). Here, the direct comparison is between ectoplasm and Slothrop. Rather than seeing Slothrop as a type of ectoplasm or metaphoric apparition of something from another realm, Pointsman regards him as the literal manifestation of “the exact experimental subject,” who can give him insight into the unknown. The second reference occurs when Greta Erdmann tells Slothrop about her first experience with Imipolex-G:

Through the windows of the board room, I saw them at a round conference table, with something in the center. “What is it ?” I asked, vamping Drohne. He took me out of earshot of the others. “I think it’s for the F-Gerät,” he whispered.

“F ?” sez Slothrop, “F-Gerät, you sure of that?”

“Some letter.”

“S?”

"All right, S. They are like children at the threshold of language with these words they make up. It looked to me like an ectoplasm—something they had forced, by their joint will, to materialize on the table. No one's lips were moving. It was a séance." (487)

Here, the comparison is made between ectoplasm and Imipolex-G, and the industrial process of producing the polymer is compared to a séance. By some sort of narrative transitive property, the conclusion from the two analogies—Slothrop is to ectoplasm, and ectoplasm is to Imipolex-G—is that Slothrop is analogous to Imipolex-G. In both cases, the word "ectoplasm" retains some of its original meaning, but it also becomes a metaphor for a mysterious and inexplicable entity or substance that acts as an interface between the worlds occupied by Slothrop and Imipolex-G.

In *Gravity's Rainbow*, of course, Carroll Eventyr is the medium at the White Visitation, and his control is Peter Sachsa. If we regard the name Carroll Eventyr as a veiled echo of Charles Epeyre, the pen name of Charles Richet, a number of connections begin to take shape. The name Eventyr, as several critics have noted, means fairytale in Danish. As mentioned above, Richet wrote children's fairytales, but the name could also be a verbal pun (and a very bad one at that) on his role as a medium. Another way to phrase Richet's question—to what extent does human personality survive after death?—is to ask where does the spirit go after the body dies? The response, one could say (with your best Billy Crystal Miracle Max accent), "e vent here. No, no, 'e vent over here." On a bit more serious level, Pynchon takes the connection several steps further. While Peter Sachsa is the control and Carroll Eventyr the medium at the White Visitation, during an earlier séance in Germany in 1930 (the same year Richet wrote *For Peace* (his anti-Rathenau treatise against multi-national weapons firms), Peter Sachsa was the medium and Walter Rathenau was the control. During the séance, Rathenau, through Sachsa, comments,

Tyrian purple, alizarin and indigo, other coal tar dyes are here, but the important one is mauve.^[9] William Perkin discovered it in England, but he was trained by Hofmann, who was trained by Liebig. There is a succession involved. If it is karmic, it's only in a very limited sense . . . another Englishman, Herbert Ganister, and the generation of chemists he trained. . . . Then the discovery of Oneirine. Ask your man Wimpe. He is the expert on cyclized benzyloquinilines. Look into the chemical effects of the drug. I don't know. It seems that you might look in that direction. (166).

A bit further, "Rathenau" says "Consider coal and steel. There is a place where they meet. The interface between coal and steel is coal tar" (166). Here, coal tar acts as a type of black semi-liquid, plasma-like interface between coal and steel similar to the way ectoplasm represents a white plasma-like interface

between life and death. Interestingly, Rathenau's comments here reproduce and recall not only features of Richet's conception of ectoplasm and his arguments against Rathenau and international cartels in his 1930 antiwar writings, but as we shall see, they also allude to several important elements in Richet's work on anaphylaxis.

3. Anaphylaxis

Richet's work on anaphylaxis and anaphylactic shock followed the work of Pavlov and involved testing the reactions of dogs to toxins derived from the tentacles of a particularly nasty jellyfish known as Portuguese-Men-of-War (*physalia physalis*). He also worked with squid, octopi, and sea anemone toxins while sailing around the Mediterranean on board the research vessels *Princesse Alice* and *Hirondelle II*, sponsored by the Prince of Monaco Albert I, out of their home port of Monte Carlo (Rojido 364-67).¹⁰ The aim of Richet and his colleagues on board the *Princesse Alice* and the *Hirondelle II* was to study Portuguese-men-of-war in order to develop a protective serum for bathers and divers (Rojido 364). His procedure was rather simple: he gave measured, non-lethal doses of *Physalia* toxin to a group of dogs. Several days after the first dose, he gave a second (supposedly non-lethal) dose to each of the dogs. One of the dogs died within twenty-five minutes of receiving the second dose, another died two hours later, and several of the others exhibited symptoms much more severe than the first dose. In subsequent trials, Richet reduced the amount of toxin in the injections, and rather than building up an immunity to it (which is called prophylaxis or tolerance), the dogs continued to respond more quickly and more severely to the toxin (Rojido 367). The results were exactly the opposite of Richet's working hypothesis.

In subsequent trials, Richet defined anaphylaxis as "the ability of a venom to diminish immunity instead of reinforcing it" (Rojido 366) and he found that "once anaphylaxis had been induced, it persisted for several weeks or longer" (Rojido 366). In other words, the time (or delta t) between stimulus and response, between cause and effect diminishes with each subsequent dose, but the reaction is more severe, even when the dosage is significantly reduced. The theoretical end of this continuum is, of course, beyond the zero, one in which no dose—or simply the idea of a dose—will produce instant death. We need to keep in mind that while the late nineteenth and early twentieth centuries marked the greatest period in history for the development of preventative inoculations and vaccinations (smallpox, diphtheria, tetanus, etc.) Richet's work—conducted in 1901 and perhaps signaling a sea-change between nineteenth- and twentieth-century scientific approaches—went counter to all these other studies (Rojido 365).

Researchers since Richet have combined Pavlovian operant conditioning and allergic reactions to certain substances to produce what is known as

“conditioned anaphylaxis.” In one study conducted in the early 1990s, rats were injected with egg albumin combined with exposure to audiovisual cues. Once the rats were “sensitized,” they were conditioned to exhibit anaphylactic responses to the extent that the audiovisual cues were enough to cause the rats to exhibit anaphylaxis from the egg albumin (Crowe et al. 617-18). Moreover, conditioned anaphylaxis raises a number of questions about behavioral manipulation of the rats. In this case, the audiovisual cues cause the rats to crave egg albumin, even though they realize that it will make them ill or kill them. The conditioning reaches the point that the rats can synthesize the anaphylactic effects of the egg albumin simply through the audiovisual cues (Crowe et al. 622-23). It is not difficult to see, from this instance, that Richet’s dogs, like Tyrone Slothrop, would soon approach the theoretical Zero and then perhaps go beyond, either to anticipate a sting or to react to an imagined sting—or even to react to the smell, sight, sound, or mention of a toxic or allergenic substance—one such as Imipolex G. It appears possible, using conditioned anaphylaxis, to produce a type of ultraparadoxical phase in anaphylaxis—to change a toxic allergy into an obsessive fetish.

One way to make this case is to trace the etiology, development and effects of the substance that is the most common and widespread cause of anaphylaxis and anaphylactic shock—latex 12. References to latex-based or synthetic latex-based products are ubiquitous in *Gravity’s Rainbow*, from everyday items such as bananas to condoms to automobile tires to movie film to Oneirine to Imipolex-G. One look at the contents of Slothrop’s desk bears this out—among the layers of bureaucratic magma are rubber pencil erasers, library paste, envelope adhesive, rubber bands, boxes of gummed paper stars, shoe polish, and so on (18). Latex is an aromatic heterocyclic butadiene polymer (like Oneirine and Imipolex G, and just a bit different from the cyclized benzyloquinilines that Walter Rathenau mentions at the séance) that was developed from the sap of rubber trees in the nineteenth century. Synthetic latex, developed at DuPont jointly by Wallace Carrothers (as Pynchon notes in *GR*: 249, 348) and scientists from IG Farben in the 1930s, was derived from nitrated cloth, or guncotton, another butadiene polymer and the basic explosive of the nineteenth century. Gun cotton (a useful by-product of the gunpowder made at the Dupont plant in Delaware) is derived from hemp, which contains a number of butadiene polymers.¹³ In *Gravity’s Rainbow*, if we work forward in his meta-fictionalized history, hemp leads to gunpowder, then to latex, then to synthetic latex, then to rayon, nylon, Oneirine then ultimately to Imipolex G. Interestingly, the companies that developed these synthetics after 1930—Dupont, IG Farben, and so on—are the same companies that developed the synthetic dyes that Walter Rathenau mentions during the séance in 1930. Oneirine is one of Pynchon’s most interesting psychopharmaceutical products, one whose hallucinogenic effects, as Tchichérine tells us, include “radical-though-plausible-violations-of-reality” that reliably indicate unreality (703).

While several of Slothrop's many fantasies and dreams fall under this category (251, 255–56, 266, 293) we should also keep in mind, as the narrator tells us in *Gravity's Rainbow*, that early research on Imipolex G was done at DuPont labs (249).

4. Conclusion

While critics have often focused on Pavlov's Book and the three Pavlovian stages in *Gravity's Rainbow*, it may be more appropriate to discuss Slothrop's "condition" within a context formed by a combination of Pavlov's research on conditional responses and Richet's findings from his study of anaphylaxis. While Pavlov's nineteenth-century approach stresses cause and effect, Richet's twentieth-century experiments are more relativistic in that they unsettle and in some cases reverse traditional ideas of cause and effect. Richet was a contemporary and colleague of Pierre Janet, who makes a referential cameo appearance in *Gravity's Rainbow* during Roger Mexico's debate with Pointsman about cause and effect and the efficacy of Pavlovian experimentation. Pointsman says,

Pierre Janet—sometimes the man talked like an Oriental mystic. He had no real grasp of the opposites. "The act of injuring and the act of being injured are joined in the behavior of the whole injury." Speaker and spoken-of, master and slave, virgin and seducer, each pair most conveniently coupled and inseparable—the last refuge of the incorrigibly lazy, Mexico, is just this sort of yang-yin rubbish. One avoids all sorts of unpleasant work that way, but what has one said? (88)

Although Pointsman's remarks are made about Janet, they could just as well have been made with reference to Richet—scientist, mystic, and one who *always* challenged relations between cause and effect.

To conclude, then, as these many points suggest, the various parallels between the life and work of Richet and the narrative of *Gravity's Rainbow* cannot simply be regarded as mere coincidence. Instead, they help to connect a number of seemingly unrelated aspects and events in Pynchon's text that can roughly be collectivized under the rubric of Medicine and the Paranormal.

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Notes

¹ All citations from *Gravity's Rainbow* are from the 1995 Penguin edition.

² Because of his diverse interests and abilities, bits and pieces of biographical information about Richet can be found in a number of texts. Stewart Wolf has written

the most informative, book-length study of Richet's life to date.

³ A close personal and professional friend, Oliver Lodge wrote an obituary for Richet in the *Proceedings of the Society for Psychic Research* journal in 1936. Pynchon's familiarity with Lodge's work on aether theory and the paranormal can be seen in references to Lodge in *Against the Day* (58).

⁴ For more about the Society for Psychical Research and about the activities of Richet in the organization, see the London SPR website at <<http://www.spr.ac.uk/>>.

⁵ For the early history of the *IMI*, see Lachapelle. The *IMI* still exists, and for a more comprehensive account of the history and activities of the *IMI*, including a list of past officers, see the Institute's website at <<http://www.metapsychique.org/>>

⁶ We have intentionally left Ivan Pavlov off this list because of his position as one of Richet's immediate precursors and because of his approach to psychic studies and rational empiricism in his work on medicine generally, and on conditional response specifically. We will discuss both of these in section 3.

⁷ Some of Richet's writings are rather difficult to find in the United States. The only copy of *Soeur Marthe* we have located in the US is in the New York Public Library, a place that Pynchon has reportedly used rather extensively for research.

⁸ The photographing of such séances was quite common. Many of the photographs have been preserved and are widely available, particularly on the website <<http://www.survivalafterdeath.org/photographs.htm>>

⁹ Simon Garfield (35-60) notes that mauve dye was discovered by accident, when Perkins was trying to synthesize quinine from a mixture of water and naphthylamine, a substance derived from coal tar (as Pynchon indicates). It was the first dye to be synthesized from a non-vegetable or animal origin, and marked a turning point in the history of the commercialization of chemistry.

¹⁰ Rojido goes into some detail explaining the work of Richet, Portier, and Prince Albert I, but perhaps a more interesting detail with regard to *Gravity's Rainbow* can be found in L. F. Haas's brief article on neurological stamps in the *Journal of Neurological Psychiatry*. Albert I was a renowned stamp collector and in 1950, his grandson, Rainier III, created what is now one of the world's great stamp museums in Monaco. Haas has reproduced an image of a stamp printed in Monaco in 1951 to commemorate the fiftieth anniversary of Richet's work in the Mediterranean on anaphylaxis with Portier and Albert I. The right side of the stamp includes profiles of Richet, Portier, and Albert I, as well as one of the research vessels, and, in the background, a landscape of Monte Carlo, and a building that may be the International Hydrographic Organization, the Monte Carlo Congress Centre, or the Casino. The left side of the stamp, of course, is dominated by an oversized, large purple rendering of a Portuguese Man-of-War, one that at first glance may even appear to some as a giant octopus.

¹¹ Ohad Parnes notes that Richet actually arrived at anaphylaxis while attempting to establish a new notion of a "reflex," which he had conceived as a bodily defense mechanism with a neurological underpinning (218).

¹² For more on latex-based anaphylaxis, see the U.S. Department of Labor Occupational Safety & Health Administration website <<http://www.osha.gov/SLTC/>>

latexallergy/> or the British Health Service website <<http://www.users.globalnet.co.uk/~aair/latex.htm>>. The problem with connections between latex allergy and *Gravity's Rainbow* is one of historical sequence, since most sources report that a formal diagnosis of anaphylaxis as a result of latex allergy did not enter the medical lexicon until the mid-to-late 1970's, although reactions had been noted since latex first began to be used in the nineteenth century (<<http://www.aafp.org/afp/980101ap/reddy.html>>). Thus, any official diagnosis of latex allergy or anaphylaxis resulting from latex products would not have appeared in the medical literature until at least a few years after *Gravity's Rainbow* was published. The many and varied allusions to connections between anaphylaxis and allergic responses as they relate to natural and synthetic latex-based products such as rubber and Impolex-G in *Gravity's Rainbow*, however, suggest that Pynchon may have had some knowledge of their interrelationships, perhaps from his days working with insulation materials at Boeing.

¹³ For more on the history of latex, see <<http://www.immune.com/rubber/nr1.html>>. The historical product line that I outline—from hemp to gunpowder to synthetic latex polymers—can be traced on the Dupont Company website <<http://heritage.dupont.com/>>.

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