Further Notes and Sources for *Gravity's Rainbow*

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The pagination of *Gravity's Rainbow* used here is for the Viking Press and Picador editions. I am grateful to Steven Weisenburger for identifying Grimm's *Teutonic Mythology* as one of Pynchon's important sources (*Pynchon Notes*, 12 [1983]). Some of the notes which follow are intended to supplement his comments. *Deutsche Mythologie* was first published in 1835. Page references in the following pages are to James Steven Stallybrass's translation of the fourth edition, published in four volumes by W. Swan Sonnenschein & Allen and George Bell & Sons (London) 1880-8.

I

p. 32 Zipf's Principle . . .

In 1949 George Kingsley Zipf published *Human Behaviour and the Principle of Least Effort*, the product of some twenty years' previous research and publications. It is a study designed to show 'that an individual's entire behaviour is subject to the minimizing of effort'. Part of Zipf's method is to examine statistically word-frequency, which he plots against rank-orders on graphs. Gloaming is quite right about the slightly different curves obtained on analyzing schizophrenics.

p. 81 MMPI, etc.

The Minnesota Multiphasic Personality Inventory was designed in 1943 as a means of personality assessment after work done in the Psychiatric Unit of the University of Minnesota Hospitals. The MMPI consists of an analysis of 550 statements which are measured along scales whose differences reflect differences in personality. P. E. Vernon and G. W. Allport published a paper entitled 'A Test for Human Values' in the *Journal of Abnormal Social Psychology* in 1931, and the Allport-Vernon Scale was subsequently used to measure goals. R. G. Bernreuter published his *The Personality Inventory* in 1935, and that same year also saw the publication of J. C. Flanagan's *Factor Analysis in the*

Study of the Personality. All these various methods of measuring personality are mentioned and simultaneously questioned as being too narrow or simply anachronistic. Pynchon seems to have taken the names of some of his characters from behavioral psychologists. H. C. Blodgett (Waxwing), R. S. Crutchfield (in Slothrop's Western 'dream') and W. C. H. Prentice ('Pirate') are authorities on maze-performance in rats, conformity and visual recognition.

p. 90 F scale

An anachronistic but relevant allusion to a 1950 study called The Authoritarian Personality by T. W. Adorno, E. Frenkel-Brunswick, D. J. Levison and R. N. Sanford. This work examines ethnocentrism, which it locates within a broader set of attitudes revolving around receptivity to fascist ideas. The F-scale measured these attitudes and thus the inclination to authoritarianism of the subject.

pp. 94-5 kneeling before the Oven

Jacob Grimm (Teutonic Mythology, p. 629) notes that the custom of kneeling before the oven shows traces of fire-worship and can be found in German Märchen. This example and other parallels with Grimm in Gravity's Rainbow imply a regression to pre-Christian primitivism.

p. 216 THE PENIS HE THOUGHT. . .

This ribald song seems to be a variation on a section of Norman O. Brown's Love's Body(1966). The sixth paragraph of Chapter III deals with the absence of genital autonomy: 'In genital organization we identify with the penis; but the penis we are is not our own, but daddy's; or at least, in it we and the father are one. In genital organization body and soul are haunted, possessed, by the ghost of father . . .'

p. 258 Ultra, Lichtspiel and Sträggeli

These so-called 'cafés' actually refer to quite diverse entities. Ultra was the secret British system of intercepting German messages during the war, and was little more than a name in accounts of intelligence activity until the publication of F. W. Winterbotham's The Ultra Secret in 1974. Lichtspiel (literally 'light-play') was the original German word for cinema. Grimm

(p. 934) describes the Sträggeli as a variation of Holda, a member of the 'furious host'. The latter was a mythical company of spirits who swept through the air and wove their magic by night. Pynchon has already established Zürich as the city of espionage, an activity which is transacted through its main meeting-places, i.e. its cafés. The names are thus appropriately cryptic, but prove to bear on some of the novel's main themes. 'Wütende Heer' (furious host) is considered (p. 75) by Myron Grunton as a possible code-name for the Schwarzkommando. The allusion to the Sträggeli thus looks back to earlier cryptonyms in the novel and relates to the actual adoption of Teutonic code-names for covert wartime operations; it also looks forward to the proliferating references to German mythology once Slothrop has entered the Zone. Lichtspiel implicitly refers to the use of film in espionage and specifically to Operation Black Wing (again cf. GR, p. 75), which revolves partly around a spurious film of black troops. Thus deciphered, the names of the cafés become shorthand allusions to espionage, film and German mythology.

p. 277 Sir Denis Nayland Smith. 'I have been through . . . '

At the end of Section II of the novel Pointsman begins to hear an anonymous but strangely subversive voice which feeds his hitherto muffled dreams of power and which suggests that Pointsman dispose of Jessica Swanlake. Mexico is compared to the hero of Sax Rohmer's Fu Manchu novels, Sir Denis Nayland Smith, and a quotation is given from Chapter 5 of The Trail of Fu Manchu (1934). The passage quoted from continues: 'It was fate, I suppose, that made me an officer of Indian police. The gods--whoever the gods may be--had selected me as an opponent for '; at which point Alan Sterling (the romantic hero) names their dreaded adversary. Fleurette Petrie, the daughter of an Egyptologist and Sterling's fiancée, is being held by Fu Manchu and is later used to bargain for his life. Fu himself embodies a whole series of melodramatic sources of power. He is an illusionist, has discovered the elixir of life and is an accomplished hypnotist. Above all, he is a racial

threat. Nayland Smith's exclusive role is to combat Fu, hence Pynchon's ironic references to a puritanical immersion in his work. It is also ironic that Pointsman, supposedly the rational scientist, should fall prey to the melodramatic patterns of Rohmer's 'great Manichaean saga' (GR, p. 631). The Fu Manchu stories replace Pavlov as a guiding text for Pointsman, and one of the crucial points about this quotation is that it appears within an invitation to Pointsman to read his own situation as if it were one of Rohmer's fictions. The latter are referred to several times in GR (Fu Manchu appears in Slothrop's sodium amytal dream [p. 68], for instance) and always to indicate a clichéed thinking in opposites. Pointsman's 'voice' becomes truly subversive because it offers him the possibility of acting out mutually opposed roles--Nayland Smith and Fu Manchu. Pointsman has represented a comic form of the paranoia endemic to the novel and has built his career on theoretical Pavlovian contrasts (cf. GR, p. 88). Therefore, if opposites collapse together, he ceases to exist and from p. 278 onwards more or less drops out of the novel.

p. 327 SCHWARZE BESATZUNG AM RHEIN! (i.e., black occupation on the Rhine)

A photograph fitting Pynchon's description and bearing this title appears in Friedrich Heiss's Deutschland zwischen Nacht und Tag (Berlin: Volk und Reich Verlag, 1934), p. 22. This propaganda volume presents a sequence of photographs designed to show Germany's rise towards a unified national purpose under Hitler. The photograph in question plays on German racial paranoia and supplies a historical precedent for Operation Black Wing. The specific operation is ludicrous, but the paranoia on which it plays is not. The detail of the poster/photograph challenges the reader's sense of plausibility, complicating his sense of the ludicrous. If the poster is possible, then can Operation Black Wing be dismissed as an impossibility?

p. 330 Brockengespenst

Baedeker's Northern Germany (13th edition, p. 402) contains the following note on the Brocken

Spectre: 'an optical phenomenon rarely witnessed. . . . When the summit is unclouded, and the sun is on one side, and mists rise on the other, the shadows of the mountain and the objects on it are cast in gigantic proportions on the wall of fog, increasing or diminishing according to circumstances'. Pynchon seems to have used the map of the Harz Mountains (pp. 348-9) for place-names and possibly even for character-names, such as Ilse (from Ilse-Thal) or Sachsa (from Bad Sachsa, a spa town).

pp. 374-5 the white woman with the ring of keys . . .
An allusion to the Teutonic myths of heroes uncovering buried hoards in mountains, and one which would relate to the Tannhäuser story (GR, p. 299), which Grimm discusses (pp. 935-6). The Wonderflower (Grimm, p. 971) is a magical plant-talisman which will supply access to the mountain. It is sometimes called the key flower 'because it locks the vault, and as symbol of the key-wearing white woman, whom the bunch of keys befits as old mistress and housekeeper, and who has likewise power to unlock the treasure . . .' (Grimm, p. 972)

p. 379 fern seed
Grimm discusses the magical properties of fern seed on p. 1210: 'Fernseed makes one invisible, but it is difficult to get at: it ripens only between 12 and 1 on Midsummer night, and then falls off directly, and is gone'. Grimm then cites the example of a man who was rendered invisible to his family when fern seed fell in his shoes. This and related references in the legends compiled by Grimm suggest collectively that Slothrop has entered a mythic space in the Zone and that he is unconsciously acting out roles from a collective Teutonic race-memory. His much-discussed 'scattering' could be read as a kind of Orphic dispersal into these disparate roles.

p. 436 It's a horse's skull
Grimm (p. 850) cites the horse's skull as a memento mori, a sign of 'dominus Blicero'.

p. 482 Weisse Sandwüsste von Neumexiko (i.e., 'White Sands of New Mexico')
White Sands was the name of the proving ground

chosen by the U.S. military for testing captured V-2 rockets. In late 1944 a contract was negotiated between the military and General Electric for its establishment. The first captured V-2 was launched on June 28, 1946 (details from James McGovern's Crossbow and Overcast).

p. 537 Gospel of Thomas

Part of the New Testament Apocrypha. The Oxyrhynchus papyri were discovered during excavations in Egypt in 1897 and 1903, and were originally thought to be part of the Sayings of Jesus, but have since been identified as part of a version of the Gospel of Thomas. M. R. James gives versions of this gospel in his The Apocryphal New Testament (1924) which describe Christ sometimes as a wonder-worker, sometimes as a malicious child wilfully cursing those around him. The sentiments of Pynchon's 'quotation' would fit, but of course the register is incongruously modern. In the text established by A. Guillaumont (The Gospel According to Thomas, 1959), the gospel consists of 'secret words' of Jesus--proverbs, homiletic sayings, parables, etc.--a Gnostic text which extensively uses an imagery of light and darkness directly relevant to the imagery of Pynchon's novel. The 'quotation' also looks forward to later references to the cabala and secret wisdom in Gravity's Rainbow. Pynchon complicates the reader's sense of textuality by presenting a 'quotation' in a ludicrously modern idiom from an ancient and incomplete apocryphal work. Gravity's Rainbow is saturated with hostile and ironic allusions to a spiritual elitism fostered in particular by Protestantism and regularly directs its attention to the damned or preterite. The 'quotation' thus makes a fitting caption to section 53 of the novel, which describes a 'place of many levels', a possible version of Dante's Hell. The Gospel of Thomas is described by H. E. W. Turner and Hugh Montefiore in their Thomas and the Evangelists (1962), and the 'quotation' is examined in the context of Pynchon's other allusions by David Marriott in his 'Gravity's Rainbow: Apocryphal History or Historical Apocrypha?' (Journal of American Studies 19.i (1985) 69-80).

p. 549 The Nationalities are on the move.

As an epigraph to the last section of Life Against

Death (1959), Norman O. Brown quotes a passage from Henry Miller's essay 'Of Art and the Future', which he wrote during the last stages of the Second World War. Since there is no doubt that Pynchon used Life Against Death as a source for Gravity's Rainbow, it is very likely that he read Miller's essay and used it to develop his sense of 1944-5's being a watershed. Miller predicts an era of confusion starting in 1944 when 'all boundaries will be broken down' (Sunday After the War, New Directions, p. 150). As national divisions collapse, a new collective man will rise out of the confusion, and history will no longer be run for the predatory few. Miller's era of confusion partly resembles Pynchon's Zone, where categories blur, and his view of history as a record of cultural elitism relates to Pynchon's repeated indictment of 'they-systems'. Miller also predicts the death of cities (cf. Pynchon's necropolis) and in the passage quoted by Brown points to a free-flowing humanity which resembles Pynchon's evocation of mixed nationalities at the beginning of Chapter 54. Miller writes: 'The peoples of the earth will no longer be shut off from one another within states but will flow freely over the surface of the earth and intermingle' (p. 155). Pynchon likewise stresses flux because it temporarily breaks down divisions between nationalities and between ruler and ruled. Later in his essay Miller attacks art for having been too masculine and too abstract. Pynchon similarly exposes the sexual bias of a culture driven by masculine impulses of separation and abstraction. However, Pynchon is writing with the benefits of historical hindsight, whereas Miller is offering millenarian predictions of a 'break through'. Brown admits that Miller is a utopian writer but insists on the need to affirm humanity. Pynchon characteristically incorporates some of Miller's criticisms without committing himself one way or the other to the ultimate fate of man.

p. 612 M. F. Beal

Pynchon used to visit Mary Beal in Fresno in the early 1970's when she was teaching English at California State University. They used to discuss various physical phenomena (black holes, etc), but the specific reference here is to a conversation they had

about the lower limits of sentience. In a letter of February 27, 1980 Beal referred me to the physical entry under 'sentience' in the O.E.D., which is a quotation from a work of 1883 and which reads as follows: 'If physical esse is intelligi, and intelligence has been evolved from sentience, clearly physical objective existence has been produced by the ordinary impulse or inherent necessity of evolution'. The application of the term 'evolution' here relates to the local context of the reference in GR. In both cases a continuity is established between man and his environment which counters the hubristic assumption among the scientists and industrialists in the novel that Nature is there to be exploited by man. Pynchon and Beal discussed the age of rocks, hence the reference in GR to measuring change visually through photographic frames per century. Beal implicitly humanized the earth's mantle (containing of course rocks and minerals) by drawing an analogy with skin, and Pynchon in the same vein explores a series of discoveries made by Lyle Bland of 'Earth's mind' (p. 589). In an excellent article on this area of the novel ('Probing a Post-Romantic Paleontology,' Boundary 2, 8 [1980], 229-54), J. D. Black has demonstrated that Pynchon's vitalistic view of Nature places him in a long tradition of writers opposed to inert scientific materialism. Beal is the wife of the novelist David Shetzline (cf. GR, p. 389), for whose De Ford (1968) Pynchon write a promotional statement. To date Beal has produced two novels, Amazon One (1975) and Angel Dance (1977). In 1976 she coedited Safe House: A Casebook of Revolutionary Feminism in the 1970's, and has had stories published in the New American Review (3 and 7) and elsewhere. Angel Dance combines an interest in feminism with influence from Gravity's Rainbow. It revolves around Kat, a Chicana detective, who is hunting for her friend, the feminist writer Angel Stone, and in the process stumbles across political conspiracy. The novel returns Pynchon's friendly reference by having Angel replaced in her flat by a new tenant called I. G. Farb.

p. 649 "Phoebus"

In spite of its name this cartel is not an invention of Pynchon's. The International Glow-Lamp Price

Organization was set up in 1912 but by the 1920's had broken down. In 1924 Phoebus S. A. Compagnie Industrielle pour le Développement de L'Eclairage was set up in Switzerland and renewed in 1935. The figures Pynchon quotes for General Electric ownership are correct for the latter year. An administrative organization and a special laboratory were set up in Geneva (Pynchon's 'monitors'). Details given in Erwin Hexner's International Cartels (London: Pitman, 1946, pp. 357-60) and Robert Jones and Oliver Marriott's Anatomy of a Merger (London: Jonathan Cape, 1970, pp. 38-41).

p. 749 Isaac

In rabbinical scriptures Isaac is the prototypical sacrificial victim. As the supreme test of his faith Abraham is ordered to sacrifice his only son on Mount Moriah. Isaac cooperates completely in the act, but at the moment of sacrifice an angel stops Abraham, and a ram is sacrificed instead. Isaac represents an archetype of the role to be enacted by Gottfried, except that there will be no divine intervention on his behalf.

II
Pynchon's Tarot

Pynchon's source for his details on the Tarot is A. E. Waite's The Pictorial Guide to the Tarot (London: William Rider, 1911). He names Waite (GR, p. 738) and quotes several passages verbatim from his work. Waite describes the significance of the pack as follows: 'The Tarot embodies symbolical presentations of universal ideas, behind which lie all the implicits of the human mind . . .' (p. 59). Pynchon, however, is characteristically non-committal about his use of the Tarot.

(a) Slothrop's Tarot (GR, p. 738)

Slothrop is earlier linked to 'The Fool' in the Tarot pack (p. 501). Waite explains that one variation of this card is the court jester in motley (p. 30). Pynchon significantly describes Slothrop in his Plechazunga costume as a 'trudging pig in motley' (GR, p. 573). The Tarot card of the Fool shows a young man in gorgeous clothes stepping blithely over a precipice. He carries a rose, wand and wallet and is accompanied

by a dog. The card's value is given as zero. Waite describes the Fool variously as 'a prince of the other world', 'the spirit in search of experience' and 'the flesh'. The Fool's meanings can include 'folly, mania, extravagance', etc. or, when reversed, 'negligence, absence, distribution', etc. (Waite, pp. 286-7). The first throw-away reference then makes a useful gloss on Slothrop's mixed qualities, the fool's traditional combination of folly and wisdom. If the fool's value is zero, Pynchon has already led the reader's imagination beyond that zero. Slothrop's anarchic behaviour comically contrasts him with the repressed decorum of other characters and links his style with Pynchon's own verbal extravagance in the novel as a whole.

The 'significator' (GR, p. 738) is the first card which the diviner selects to 'represent the person or matter about which inquiry is made' (Waite, p. 299). The reversal of cards, as Pynchon notes, inverts their qualities. Thus the 3 of Pentacles represents 'mediocrity, in work and otherwise, puerility, pettiness, weakness' (Waite, p. 276). The Hanged Man of course figures in 'The Waste Land' and signifies 'life in suspension' (p. 116), but reversed 'selfishness, the crowd, body politic' (p. 285). The Hanged Man is one of the most mysterious of the cards, possessing 'profound significance, but all the significance is veiled' (p. 116). Appearing in a local context of attempts to define Slothrop, who has now receded into the past of the novel, his Tarot emphasizes how remote and elusive he has become, as if he were already numbered among the dead or preterite.

(b) Weissmann's Tarot (GR, pp. 746-9)

The Knight of Swords, carrying a design of the 'prototypical hero of romantic chivalry', signifies 'skill, bravery, capacity, defence, address, enormity, wrath, war, destruction, opposition, resistance, ruin. There is therefore a sense in which the card signifies death, but it carries this meaning only in its proximity to other cards of fatality' (Waite, p. 230). This impression is increased by Weissmann's pictorial resemblance to Death the rider in Teutonic mythology (Grimm, p. 844). Weissmann's second card, the Tower, signifies apocalyptic destruction: 'it is the ruin of

the House of Life, when evil has prevailed therein, and above all that it is the rending of a House of Doctrine' (p. 132). Waite adds: 'it may signify also the end of a dispensation'(p. 135). The Queen of Swords represents 'widowhood, female sadness and embarrassment, absence, sterility, mourning, privation, separation' (p. 228). The King of Cups represents the aim or ideal here, 'a fair man, man of business, law or divinity' (p. 198). The Ace of Swords suggests 'triumph, the excessive degree in everything, conquest, triumph of force' which Pynchon also glosses as a death card, probably to unify one of the main themes in Weissmann's significance. He may also have had in mind the first part of Eliot's 'Sweeney Agonistes', which revolves around card-drawing. A crisis occurs when the two of spades is turned up, representing the coffin.

The rest of Weissmann's cards read as follows. The 4 of Cups represents 'weariness, disgust, aversion, imaginary vexations, as if the wine of this world had caused satiety only' (p. 218); the 4 of Pentacles 'the surety of possessions' (p. 274); the Page of Pentacles 'application, study, scholarship, reflection' (p. 260); the 8 of Cups 'the decline of a matter' (p. 210); the 2 of Swords 'conformity and the equipoise which it suggests, courage, friendship, concord in a state of arms' (p. 250). Finally the World suggests 'the perfection and end of the Cosmos, the secret that is within it, the rapture of the universe' (p. 156). Waite notes a possible alternative to the latter as 'the Magus when he has reached the highest degree of initiation' (p. 159).

The most famous Modernist text which uses the Tarot is of course 'The Waste Land', and Grover Smith has argued recently that Eliot may have used Waite's Pictorial Guide as a source, although Smith admits that the sources shed little light on the Tarot references within the poem ('The Waste Land',Unwin, 1984, pp. 91-97). Jessie Weston mentions Waite in her From Ritual to Romance, and Pynchon may have picked up the reference when working on studies of myth (Graves, Frazer, etc.) for V. Where Eliot is basically ironic about modern substitutes for religion, Pynchon's use of the

Tarot is more complex. It incorporates into the text the reader's search for certainty about the characters and simultaneously blocks that search by insisting on the diversity of the cards' meanings. It temporarily transforms the two characters into static texts which have to be deciphered and implies that Pynchon has briefly adopted the narrative role of divinator. It also links Slothrop and Weissmann with their archetypes as if the characters are receding into their own past.

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