

Site-Specific: Pynchon|Germany— A Multiplicity of Critical Eigenvalues

Hanjo Berressem

The self does not undergo modifications, it is
itself a modification.

—Gilles Deleuze (DR 79)

Nature does not know extinction; all it knows is
transformation.

—Wernher von Braun (qtd. in Pynchon, GR 1)

This issue of *Pynchon Notes* collects the papers presented at the conference Site-Specific: Pynchon|Germany, which was held at the University of Köln in June 2002, while John Krafft was a Fulbright Senior Scholar in the University's English Department. The idea behind the conference was to trace "Germany"—or better, various "Germanies"—in Pynchon's work.

In the call for papers, John and I noted that the *Pynchon Notes* index to *Gravity's Rainbow* is framed, quite symptomatically, by two German references: the real city Aachen and the imaginary city Zwölfkinder. Apart from the fact that John was in Germany at the time, "Germany" seemed to us to be an interesting topic for a conference on Pynchon held in Germany because in Pynchon's work Germany has been repeatedly and relentlessly coded and overcoded, has been a text to decipher and redecipher, a glyph to read and reread, a discursive as well as a real space to walk, drive or ride through, to fly across, to traverse from the height of the Brocken to the landscapes of "Deep Germany" (Pynchon, AD 661) and the *Stollen* of the underground Mittelwerke.¹ Germany has spawned fictional filmmakers such as Gerhardt von Göll, companies such as Spottbilligfilm AG and Psychochemie AG, witches such as Geli Tripping, engineers such as Kurt Mondaugen, impresarios such as Miklos Thanatz and G. M. B. Haftung, *Verbindungsmenschen* such as Wimpe, and feats of specialization such as the infamous toiletship *Rücksichtslos*. German references span Wagner to Weber, Rilke to Rathenau, Euler to Einstein, IG Farben to Ufa, Grimm to Grimmelshausen, Thurn and Taxis to Radio Cologne, and Bavaria to Peenemünde. At the same time, Pynchon's work has had a notable influence on contemporary German literature.²

At first glance, Germany is to Pynchon as Tom is to Jerry: an evil, relentless force whose sole mission is to kill and to destroy. It is also, however, as the Catholic Church is to Weberian Protestantism and as German Idealism is to American Pragmatism. Given the tendency to conceptualize such pairings only as oppositions—Tom’s world needs Jerry as much as Jerry’s needs Tom—Germany has come to embody one of the most consistently puzzling oppositions in Pynchon: “transcendent meaning, or only the earth”; “the truth’s numinous beauty . . . or only a power spectrum” (Pynchon, CL 181). Pynchon’s texts abound in moments—such as the Kirghiz Light in *Gravity’s Rainbow* and the Tunguska Event in *Against the Day*—when it is impossible to decide whether one has to do with the profane|physical or the sacred|transcendental.

Germany is so darkly fascinating to Pynchon because it is a site where the grim rationality of the profane—such as the “Schwärmerei for Control” (GR 238)—and the grandeur of the transcendental are conflated. Most of Pynchon’s German references concern the unsolvable function of Germany and of the German soul. What is often forgotten, however, is that Germany, as an important site of science—particularly physics and mathematics—also provides references that are not immediately loaded in this way. Pynchon uses one of these references in a general way to conceptualize nothing less than a vectorial subjectivity and, with it, a vectorial poetics.

The reference is the term Eigenvalue, which appears in both *V.* and *Against the Day*. The term is emblematic of the topic of Site-Specific not only because it is a curious fusion of the German “*eigen*” (proper, inherent, intrinsic, characteristic, own or self) and the English “value” but also because its properly arcane history is a German|Austrian affair that goes from German physicist Hermann von Helmholtz to German mathematician David Hilbert and to Austrian physicist Erwin Schrödinger, and, in a second wave, from Austrian physicist Heinz von Foerster to German sociologist Niklas Luhmann and to German chemist Friedrich Cramer, with, of course, a number of international spin-offs, such as Chilean biologists Humberto R. Maturana and Francisco J. Varela.

Pynchon’s interest in eigenvalues begins in *V.*, where psychodontist Dudley Eigenvalue, pondering the seemingly contingent vicissitudes of historical events—which he sees as more like caries than cabals—comments on Herbert Stencil’s unduly limited historical sense:

Perhaps *history* this century, thought Eigenvalue, is rippled with gathers in its fabric such that if we are situated, as Stencil seemed to be, at the bottom of a fold, it’s impossible to determine warp, woof or pattern

anywhere else. By virtue, however, of existing in one gather it is assumed there are others, compartmented off into *sinuous cycles* each of which come to assume greater importance than the weave itself and destroy any *continuity*. Thus it is that we are charmed by the funny-looking automobiles of the '30's, the curious fashions of the '20's, the peculiar moral *habits* of our grandparents. . . . We are accordingly lost to any sense of a continuous tradition. Perhaps if we lived on a crest, things would be different. We could at least see. (155–56; emphases added)

On the crumpled surface of history, Eigenvalue's generation is caught in a valley. Lacking an overview and therefore without a sense of continuous history, all they see are singular, dissonant events, curious fashions and people with weird habits spinning around in unrelated sinuous cycles.

To understand Pynchon's alignment of eigenvalues, sine waves and habits, it helps, as so often with Pynchon's scientific references, to do some historical research. Hilbert introduced the term eigenvalue—together with eigenfunction—into linear algebra in his 1904 essay "Grundzüge einer allgemeinen Theorie der linearen Integralgleichungen." Already this mathematical context creates a German connection in that much of nineteenth-century mathematics developed in Germany, which is why, for instance, *Against the Day's* Kit Traverse travels to Göttingen to study. One can easily imagine the young Pynchon's being intrigued when he learned about *Eigenwerte*: to an American engineering-physics student with a strong interest in language, the term must have sounded more than slightly surreal.³

For Hilbert, the mathematical context of the term's introduction was the modeling of transformations or operations by way of 1) the identification of those vectors within the transformation|operation that remain invariant and 2) the measurement of the scalar changes of these vectors, such as those brought about by operations of stretching or compression. Hilbert called a preserved direction in such a transformation|operation an eigenvector (the eigenvectors of a linear operator are non-zero vectors which, when operated on, result in a scalar multiple of themselves) and the associated amount by which the vector has been scaled its eigenvalue (if there is a vector, object x , that has been preserved by H apart from submitting it to a scalar multiplier k , x is called an eigenvector of H with the eigenvalue k). A transformation that does not affect the direction of a vector, Hilbert called an eigenvalue equation (*Eigenwertgleichung*). The notion of eigenvalue, then, concerns the orientation and the scale of vectors within a mathematical transformation|operation.⁴

The reason the term could become more than a throwaway reference for Pynchon lies in the possibility of generalizing from vectorial change to systemic change.⁵ As eigenvalues|eigenvectors define invariants within not only mathematical but also physical and biological systems while these systems undergo changes, they can be used to model these systems in relation to the changes they undergo. Or, if one stresses the processual rather than the systemic, as eigenvalues|eigenvectors define invariants within transformations, they can be used to isolate systems within sets of transformations: If to identify an eigenvalue|eigenvector means to define a system as the cluster of invariant characteristics within a process, a system—such as a Pynchon character—can be defined within this process as “something undergoing change.” Any system x , accordingly, might be defined as “the invariance in undergoing the transformational process y ,” or as what Gregory Bateson calls “*pattern[s] through time*” (MN 14).⁶ “Eigenfaces”—as instances of “eigenimages”—for instance, are sets of facial eigenvectors used in computerized face-recognition.⁷ In *Gravity’s Rainbow*, Pynchon relates eigenfaciality to genetic invariants within overall evolutionary drift: Because of “the high intricacy to the weaving of [. . .] molecules, [. . .] the living genetic chains prove even labyrinthine enough to preserve some human face down ten or twenty generations” (10).

In physics, eigenvalues are used to model systems in terms of wave functions, resonances and their invariant eigenfrequencies. These fields of research are especially important for Pynchon because they reverberate through what might be called, not only in reference to *Against the Day*, Pynchon’s general theory of vibes.⁸ This theory relies on both physical and psychic media that form the grounds on which shifts of frequency (for instance, with the help of “frequency-shifting device[s]” [AD 444]), “wave-modulation[s]” (453), “wave interference[s]” (500) and resonance phenomena can occur. Some of the most prominent of these media in Pynchon are water, the aether, wind, light, and, in particular in *Against the Day*, electricity and sand. As Roswell Bounce, inventor of the “Hypopsammotic Survival Apparatus” (425), and Professor Heino Vanderjuice explain when the Chums of Chance are given a mission involving underground travel, “to submerge oneself beneath the sands and still be able to breathe, walk around, so forth[.] / ‘You control your molecular resonance frequencies, ‘s basically all it is.’” Vanderjuice adds, “‘If we may move about these days beneath the sea wheresoever we will, [. . .] the next obvious step is to proceed to that medium which is wavelike as the sea, yet also particulate’”; and Bounce observes, “‘He means sand, [. . .] but it almost sounds like light, don’t it’” (426).

The conversation identifies the characteristics common to all these media: 1) they are made up of loosely coupled elements that can be formed and that have an arbitrary relation to these forms; 2) these forms can, in turn, function as the loosely coupled elements for other form(ation)s. As the painter Andrea Tancredi in *Against the Day* explains about *divisionismo*, in which images are constructed from loosely connected dots of color, "[t]he energies of motion, the grammatical tyrannies of becoming, in *divisionismo* we discover how to break them apart into their component frequencies . . . we define a smallest picture element, a dot of color which becomes the basic unit of reality.'" In this accelerated pointillism or visual atomism, Hunter Penhallow comments, "somehow you've got these dots behaving dynamically, violent ensembles of energy-states, Brownian movement"; and indeed Dally Rideout sees in a painting of Tancredi's a "contra-Venezia" "emerging from the glowing field of particles" (587). As every medium both looks and feels continuous with the level on which it is formed—in the sense that despite the "graininess of the medium" (440), sand is practically continuous with the level on which it is formed into a sand-castle—while every form is a discrete unit (one, however, that can become itself a continuous medium for an even higher assembly), the medium|form alignment invariably oscillates between the analog|continuous and the digital|discrete, a relationship that is a familiar motif in Pynchon's work.

Although according to their recursive logics the analog and the digital are at least as interwoven as the physical|secular and the metaphysical|transcendental, in Pynchon there is "a propensity of character ever toward the continuous as against the discrete" (58), an inclination toward "intensity" (CL 10), "'energies'" (105)⁹ and the "pre-digital" (Pynchon, VI 38).¹⁰ The point-at-infinity of this propensity is the vision of the whole planet as one giant "'resonant circuit'" (AD 33), not only as in Nicola Tesla's vision, cited in *Against the Day*, of free electricity, but also as in the notion in *Gravity's Rainbow* of the planet as a multiplicity of resonating systems and forces,¹¹ which notion leads to "the discovery that *everything is connected*, everything in the Creation [. . .]—not yet blindingly One, but at least connected" (GR 703). In *Against the Day*, finally, this vision is what makes Kit Traverse understand "for a moment that forms of life [a]re a connected set" (782). In such a planetary circuit, every moment is made up of and pervaded by an infinity of subtle and not so subtle, perceptible and imperceptible resonances and influences. Material reservoirs of such resonances are not only living beings but also inanimate objects, such as the mattress of the alcoholic sailor in *The Crying of Lot 49* (126, 128) and the "'[t]ransient beds'" in *Against the Day*, which "'for some

reason are able to catch and hold these subtle vibrational impulses of the soul," accounting for "'the way [in hotels] your dreams are often, alarmingly, not your own'" (578).

A further field that is intimately related to resonances and subtle shifts in frequency is music and musical theory. In fact, Hilbert might have taken his inspiration for the term eigenvalue from von Helmholtz's study *Die Lehre von den Tonempfindungen als Physiologische Grundlage für die Theorie der Musik*, in which von Helmholtz coined the word *Eigentöne*—that is, "proper tones," such as the "eigentone of the resonator" ("*Eigenton des Resonators*" [75])—to designate "tones of highest resonance" ("*Töne stärkster Resonanz*" [150]). Pynchon's numerous musical references align his theory of vibes with his interest in the continuous|discrete, as when in *Vineland* he adumbrates a "premodal"—analog rather than digital—poetics of the fretless bass (223–24), and when in *The Crying of Lot 49* Mucho Maas not only does Fourier analyses but actually breaks up complex resonance architectures into their component eigenfrequencies, aligning all the single iterations of a string of words—considered as assemblages of frequencies—across time to create perfect synchronicity:¹²

"Everybody who says the same words is the same person if the spectra are the same only they happen differently in time, you dig? But the time is arbitrary. You pick your zero point anywhere you want, that way you can shuffle each person's time line sideways till they all coincide. Then you'd have this big, God, maybe a couple hundred million chorus . . . and it would all be the same voice." (CL 142)

If the psychedelic experiments that produce Mucho's planetary "vision of consensus" (143) concern the eigenfrequencies of sound waves, Mondaugen's electro-mysticism in *Gravity's Rainbow* extends the notion of eigenfrequencies to human lives in general. "We live lives that are waveforms constantly changing with time, now positive, now negative" (GR 404), he reportedly believes. As so often with Pynchon, however, there is also a complementary desire to escape the modulations that make up the subject into a subjectless, unmodulated state. Thus the Mondaugen passage above continues, "Only at moments of great serenity is it possible to find the pure, the informationless state of signal zero" (404). Similarly, on the one hand,

"Personal density [. . .] is directly proportional to temporal bandwidth[.]"
[. . .] the width of your present, your *now*. [. . .] The more you dwell in the past and in the future, the thicker your bandwidth, the more solid your

persona. But the narrower your sense of Now, the more tenuous you are.
(509)

On the other hand, Pynchon's work is constantly punctuated by the desire to escape the density of the self, by the desire for and moments of zero frequency—"the informationless state of signal zero," or the "entire loss of Self, perfect union with All" (Pynchon, M&D 10)—whether it be Tyrone Slothrop "just feeling natural" (GR 626), Pirate Prentice "without a thought in his head" (6), Takeshi Fumimota approaching "some state of literally mindless joy" (VI 180), the "innocent child" Prairie lying on the glass of the pinball machine (314) or Fleetwood Vibe telling Kit, "all I'm looking for now is movement, just for its own sake, what you fellows call the vector" (AD 165). Ultimately, one of the most important German contexts in Pynchon is *Gravity's Rainbow's* Zone functioning as the figure of a "vectorless" (AD 473) signal-zero geography.

Although all material systems have eigenfrequencies, only living systems are what is called, in cybernetics and systems theory, eigenorganizations. Eigenorganizations, which show both physical eigencharacteristics (*Eigenschaften*) and psychic eigenbehaviors (*Eigenverhalten*) within their specific eigenspaces, are the result of computational habits, recursive functional|formal operations|iterations that reproduce the same value on every reentry into the system's underlying formalism(s). Cybernetically, they are strange attractors; biologically, they are what Maturana and Varela call "autopoietic systems," living units that are, according to the fundamental split the theory of autopoiesis introduces into the system of life, informationally|operationally closed off from the world, but, simultaneously, energetically open to that world, if it is understood not as the one they construct but as the one in which and with which they are constructed and in which their living unfolds and is realized. *Mason & Dixon* comments directly on the genesis of auto- or eigenpoietic systems in the tale of Vaucanson's Duck. In this genesis, Vaucanson's "'Attention to Detail, whose Fineness, passing some Critickal Value, enabl'd in the Duck that strange Metamorphosis, which has sent it out the Gates of the Inanimate, and off upon its present Journey into the given World'" (M&D 372). At some point, the inanimate system becomes a living eigenorganization simply by passing "'some Threshold of self-Intricacy, setting off this Explosion of Change, from Inertia toward *Independence, and Power*" (373). The moment it becomes a living, eigenorganizing system, however, it falls under the shadow of the Second Law of Thermodynamics, which is another characteristic linking eigen-

organizations to Pynchon's poetics from his short story "Entropy" onward. Although negentropic in that they are eigenorganizing, eigenorganizations travel down an entropic slope, an irreversible movement that haunts Pynchon's prose and that is related to vectorism in that time itself is relentlessly vectorial: "'the one-way vector 'time''" (AD 457); the vector of "'identical Seconds, each proceeding in but one Direction, irreclaimable'" (M&D 27); "'Time unredeemable'" (45); "the cruel flow of Time" (605).

Pynchon's extended theory of eigenvalues, then, defines humans as eigenorganizations, as sets of invariants within a complex field of vectorial transformations and processes.¹³ Human lives, in fact, can be described as vectorial movements, which is why the narrator in *Against the Day* can wish for a group of dancers to find a vector through the times lying ahead:

May we imagine for them a vector, passing through the invisible, the "imaginary," the unimaginable, carrying them safely[. . .] A vector through the night into a morning of hosed pavements, birds heard everywhere but unseen, bakery smells, filtered green light, a courtyard still in shade . . . (1082–83)

Pynchon's prose develops different forms of vectorism. *Mason & Dixon* mentions "'A Vector of Desire'" (96), but the main vector in that novel is, of course, the Visto, which is, in its straightness, comparable to the vector created by a bullet. As the axman Stig notes, "'these Lancaster County Rifles, with an amazing Fidelity, create their own Vistoes of moving Lead, straight as a Ray of Light for a Mile or more'" (613). Some of the vectors Pynchon describes even involve a rotation through the fourth dimension, like the one performed—in an intertextual reference in *Against the Day* to Martin Gardner's story "The No-Sided Professor"—by Dr. V. Ganesh Rao. Rao proposes to define humans quite literally as vectors and yoga as a vectorial practice:

"If you were a vector, mademoiselle, you would begin in the 'real' world, change your length, enter an 'imaginary' reference system, rotate up to three different ways, and return to 'reality' a new person. Or vector."

"Fascinating. But . . . human beings aren't vectors. Are they?"

"Arguable, young lady. As a matter of fact, in India, the Quaternions are now the basis of a modern school of Yoga[. . .] The 'Quadrantal Versor Asana.'" (539)

The process of eigenorganization is also tied to habits, the last term emphasized in Dudley Eigenvalue's ruminations above. As eigenvalues

are literally sets of physical and psychic habits, one can develop from them a general theory of habits. As William James—from whose *Varieties of Religious Experience* Jess Traverse quotes Emerson in *Vineland* (369)—argues, because “the law of habit . . . is a material law” (1.126), “the philosophy of habit is thus, in the first instance, a chapter in physics rather than in physiology or psychology” (1.105). Even what are generally considered natural laws are, as Charles Sanders Peirce observes, nothing but natural habits: “habit is by no means exclusively a mental fact. Empirically, we find that some plants take habits. The stream of water that wears a bed for itself is forming a habit” (342). Gilles Deleuze (who has entered Pynchon’s work by way of the infamous “*Italian Wedding Fake Book*, by Deleuze & Guattari” [VI 97]) refers to both physical and psychic habit-formation as the operation according to which “the subject is constituted within the given” (ES 104), and his description of the constitution of the subject resonates directly with Pynchon’s vectorial poetics:

[P]erceptual syntheses refer back to organic syntheses. . . . We are made of contracted water, earth, light and air—not merely prior to the recognition or representation of these, but prior to their being sensed. Every organism, in its receptive and perceptual elements, but also in its viscera, is a sum of contractions, of retentions and expectations. . . . by combining with the perceptual syntheses built upon them, these organic syntheses are redeployed in the active syntheses of a psycho-organic memory and intelligence. (Deleuze, DR 73)

Subjects are formed through “the primary habits that we are; the thousands of passive syntheses of which we are originally composed” (74). Habit formation does not exclusively concern conscious, mental habits; even eigenorganizations are modeled as the contraction of habits. If “[i]n essence, habit is contraction” (73), every organism may be said to be contracted from chemical habits: “What organism is not made of elements and cases of repetition, of contemplated and contracted water, nitrogen, carbon, chlorides and sulphates, thereby intertwining all the habits of which it is composed?” (75).

While passive syntheses constitute our “habit of living” (74), even during these passive processes of contraction, an emergent self feedbacks with these forces of contraction through subindividual processes of psychic contemplation which are responsible for the constitution of a “passive self” that is nothing but the “body of resonance” of specific habits. It “contemplates and contracts the individuating factors of such fields [the ‘pre-existing fields of individuation’] and constitutes itself at the points of resonance of their

series" (276). It is "simultaneously through contraction that we are habits," therefore, "but through contemplation that we contract" (74). Even operations that seem to be natural are actually what Peirce calls "inattentive habit[s]" (328) that operate on the same unconscious level as perceptual judgments.¹⁴

According to these habitual logics, the psychic realm extends deep into subindividual levels and shades into unconscious, biochemical contemplations and modifications, while active, individual(izing) syntheses emerge from passive syntheses and "our thousands of component habits" (Deleuze, DR 75). Invariably, "below the level of active syntheses, [there is] the domain of passive syntheses which constitutes us, the domain of modifications, tropisms and little peculiarities" (79). "Beneath the general operation of laws . . . always remains the play of singularities" (25), and beneath the realm of psychic reality lies "the lived reality of a sub-representative domain" (69). In more positive terms, psychic reality emerges from lived reality. As Sidney Stencil reflects in *V.*, "Any Situation takes shape from events much lower than the merely human" (483).

If the subject is "a *habitus*, a habit, nothing but the habit in a field of immanence, the habit of saying I" (Deleuze and Guattari 48),¹⁵ habit formation as the basis of the construction of subjectivity promises—within a set of systemic constraints, of course—evolutionary freedom and the possibility of unconditional change. The less habits have hardened into routines, the more plasticity and movement there is. Pynchon comments on this plasticity when he notes in the introduction to *Slow Learner* that "[w]hat is most appealing about young folks, after all, is the changes, not the still photograph of finished character but the movie, the soul in flux" (23).¹⁶ Unfortunately, however, in the practice of the subject, habits tend not only to harden into routines but also to become addictive—too much of a habit, as with the "'scaleno-hedral habit'" (AD 391) or the "Cyclomite habit" (184) in *Against the Day*. As Bateson observes,

in the ongoing life of the organism there is a process of sorting, which in some of its forms is called habit formation. In this process, certain items, which have been learned at "soft" levels, gradually become "hard." . . . The converse of "habit formation" . . . is a form of learning which is always likely to be difficult and painful and which, when it fails, may be pathogenic. (SU 138)

Because human beings are nothing but "walking bundles of habits" (James 1.127), habits are "the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within the

bounds of ordinance” (1.121). While habits are less strict than immutable laws, too often subjects cannot kick the habits they themselves consist of.¹⁷

From the beginning of his career, Pynchon has treated this creeping routinization of habits as a shift from individual *virtù* (V 198–99; AD 529) to generalized processes of the “rationalization” and bureaucratization of the “terrible disease [. . .] charisma” (GR 81). The—once more deeply ambiguous—““routinization of charisma”” (325) runs from the Lady V.’s “unique and private gloss on *The Prince*” (V 199) to what is called “the Führer-principle” in *Gravity’s Rainbow* (GR 81) to Brock Vond in *Vineland* and further to Scarsdale Vibe in *Against the Day*. Some habits, such as the habit of colonization or the habitual desire for fascisms and masochisms, seem so deeply ingrained in the system’s operations of passive contemplations as to be almost unbreakable. *Vineland*’s Frenesi Gates feels “a fatality, a helpless turn toward images of authority, . . . as if some Cosmic Fascist had spliced in a DNA sequence requiring this form of seduction and initiation into the dark joys of social control” (83); and *Against the Day*’s Lake Traverse falls in lust with her father’s killers.

In *Against the Day*, a novel about anarchists—anarchy being a state without habits—and routinized state operators, as well as an extended meditation on the nature of waves|vibes, whether electrical, optical or historical, Pynchon brings the discussion of eigenvalues back to the moment of their conception, in a scene that has the fictional character Yashmeen Halfcourt discussing “[t]he nontrivial zeroes of the ζ -function” with Hilbert in Göttingen. ““Might they be correlated with eigenvalues of some Hermitian operator yet to be determined?” (604), she asks him. In the ensuing exchange, Yashmeen provides a term that relates mathematical eigenvalues both to the physical invariants that make up processual people (people with a “fluid Identity” [M&D 469]) and to the psychic invariants that make up what these people construct as their reality:

“Apart from eigenvalues, by their nature, being zeroes of *some* equation,” he prompted gently.

“There is also this . . . spine of reality.” Afterward she would remember she actually said “*Rückgrat von Wirklichkeit*.” “Though the members of a Hermitian may be complex, the eigenvalues are real. The entries on the main diagonal are real. The ζ -function zeroes which lie along Real part = $1/2$, are symmetrical about the real axis, and so . . .” She hesitated. She had *seen it*, for the moment, so clearly. (AD 604)

As the invariant vector that turns a process into a process undergone by x , the spine of reality holds eigenorganizations together both physically and psychically. As eigenorganizations, humans have a physical, energetic spine as well as a psychic, informational|operational (and, as humans, observational) spine¹⁸ that is radically different from the physical one, although it remains attributed to the physical coherence of the system and emerges from it.

The mention in *Against the Day* of Hilbert's Spectral Theory (324) is an instance of what Pynchon elsewhere calls the "high magic to low puns" (CL 129). Spectral Theory is an inclusive term for theories that extend the eigenvector and eigenvalue theory of a single square matrix, "'which requires a vector space of *infinite* dimensions. His co-adjutor Minkowski thinks that dimensions will eventually all just fade away into a *Kontinuum* of space and time'" (AD 324). The pun lies in the analogy between this spectral theory and Pynchon's spectral poetics, both in the latter's sensitivity to the ghostly realm and in its conceptualization of history as an infinitely complex vector-space where the movements of individuals are defined as eigenmovements within a complex spatio-historical matrix.

Showing once more how he expands scientific references into the larger historical and cultural realm, Pynchon extends the conceit even further when Prof. Vanderjuice goes on to mention "'Hilbert's recent work on Eigenheit theory'" (324). As far as I can make out, that theory is fictional as concerns mathematics, but it ties eigenvalues to politics via Max Stirner's anarchist philosophy, which Pynchon references in a conversation of the Belgian nihilists Policarpe and Denis: "'Don't mind Denis, he's a Stirnerite,'" Policarpe says, to which Denis replies, "'Anarcho-individualiste, though you are too much of an imbecile to appreciate this distinction'" (528). The tie-in is that the first part of part 2 of Stirner's *Ego and His Own* (*Der Einzige und sein Eigentum*) is titled "die Eigenheit." Stirner promotes any number of eigen- compounds in his anarcho-individualistic philosophy, such as *Eigentum* (property), *Eigenheit* (individual characteristic, ownness) and *der Eigene* (the individual, the owner). Somewhat curiously, almost the only eigen- term Stirner does not use is eigenvalue.

Eigenvalues, however, do not define only Pynchon's fictional universe. Pynchon includes himself as an author in the logic of eigenvalues when he notes, in *Slow Learner*, "Somewhere I had come up with the notion that one's personal life had nothing to do with fiction, when the truth, as everyone knows, is nearly the direct opposite" (21). Accordingly, even if writing is not explicitly autobiographical—symptomatically, an autobiography is defined by the identity of the author's proper name, or Eigenname, as that of the

narrator—it is eminently eigenbiographical if by that one means that it is a direct product of the author’s life.¹⁹ As Wilhelm Dilthey observes in his theory of the autobiography, written only a couple of years after Hilbert introduced the term eigenvalue into mathematics, “each life has its own sense. It consists in a meaning-context in which every remembered present possesses an intrinsic value [*Eigenwert*], and yet, through the nexus of memory, it is also related to the sense of the whole” (221). The integration of singular, dissonant moments into a general coherence organizes|reduces the multiplicity of unrelated psychic values into an overall harmonics of psychic eigenvalues.²⁰

Which brings me back to the conference, which, like every conference, assembles a multiplicity from a number of eigenorganizations that bring to the occasion their respective personal and academic histories and perspectives. It provides a site and a time dedicated to the search not for an objective truth but for resonances and patterns of interference. The epistemology of a conference, therefore, can only be “of such a kind . . . that it explains itself, or in Hilbert’s language, that it is an eigentheory. . . . Experience is the cause | The world is the effect | The epistemology is the rule of transformation” (von Foerster 368–69; my translation). In this light, a conference brings about, in the best of cases, a democratic multiplicity of critical eigenvalues: a site, ideally, of thought and life in flux.

—*University of Köln*

Notes

¹See the essay by Galena Hashhozheva and that by Bruno Arich-Gerz and Luc Herman for discussions of the architectonics of the Mittelwerke, physical (Hashhozheva) and psychic (Arich-Gerz and Herman).

²See Thomas Eckhardt’s essay on contemporary German writers Pynchon has influenced.

³A common misconception has it that the term was named after the German biochemist and Nobel Prize winner Manfred Eigen, who happens to work mainly in the field of eigen- or self-organization.

⁴See Friedrich Kittler’s essay for the relation of eigenvalues to Hilbert space.

⁵See Bernd Klähn’s essay for the complex ways Pynchon expands and generalizes scientific references, such as Leibniz’s theory of calculus and integration.

⁶See Heinz Ickstadt’s essay for Pynchon’s use of the term eigenvalue to describe the movements of his characters.

⁷See Inger H. Dalsgaard’s essay for her alignment of our post-9/11 universe with Pynchon’s postwar German Zone.

⁸See Douglas Lannark's essay about Slothrop's dislocations in Berlin, in which astrology functions as a science of subtle resonances and frequencies.

⁹Such as "'Telluric Energies'" in *Mason & Dixon* (218).

¹⁰"[T]he highest state of the analog arts all too soon to be eclipsed by digital technology" (VI 308).

¹¹In *Mason & Dixon* Pynchon uses the terms "'Complexity'" (252), "Perplexity" (433) and "'Multiplexity'" (523).

¹²See Markus Erbe's essay for a discussion of Lissajous figures in *The Crying of Lot 49* and for the importance of tonal multiplicity.

¹³See Jim Neighbors's essay for a discussion of Nietzschean perspectivism and its relation to a contextual and processual notion of the self.

¹⁴See the essay by Terry Reilly and Stephen Tomaske for a description of such subindividual contemplations in *Gravity's Rainbow* as possible cases of what are called, in *Against the Day*, "precognitive alarms" (206).

¹⁵Or, as Deleuze comments in the preface to the English translation of *Empiricism and Subjectivity*,

We start with atomic parts, but these atomic parts have transitions, passages, "tendencies," which circulate from one to another. These tendencies give rise to *habits*. Isn't this the answer to the question "what are we?" We are habits, nothing but habits—the habit of saying "I." Perhaps there is no more striking answer to the problem of the Self. (x)

¹⁶See Victoria de Zwaan's essay for Pynchon's concept of life as a movie as well as for various metaphorical attractors in Pynchon's work.

¹⁷See Alexei Lalo's essay for the fight against mental habits, for attending to our direction of motion and rejecting fixity. Also see Tiina Käkälä-Puumala's discussion of "d[ying] a weird death."

¹⁸As Kit understands in a dream,

this zigzagging around through four-dimensional space-time might be expressed as a vector in five dimensions. Whatever the number of n dimensions it inhabited, an observer would need one extra, $n + 1$, to see it and connect the end points to make a single resultant. (AD 675)

¹⁹Cf. Pynchon's use of the autobiographical *Journal of Mason and Dixon* and Henry Adams's *Education*.

²⁰See Thomas Schaub's essay for a discussion of Richard Wagner's infamous dissonant chord.

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