A V and a Naught Spell Infinity

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1

One of the most obvious and exhausted aspects of Pynchon's works is surely the significance of the V-words in his first novel. Moreover, critics were quick to comment on the fact that the name of the major symbol in *Gravity's Rainbow*, the rocket, is homophonous with "V too," so the game of spotting the V could be extended into Pynchon's later works. The letter then served as a kind of trademark or signature when *Vineland* was published. Received wisdom has it that in *V.* the omnipresence of the initial creates an ever-increasing system of signifiers that cannot be brought together in any coherent way: the reader's attempt to find coherence resembles Stencil's endless search for the enigmatic woman V. and leads to a paranoid perspective on the world as text or the text as world.

In a recent article one of us has argued that in *V.* not only the V-words but also the V-shapes are of particular importance, especially in those cases in which they are linked to circles.[1] Not only does the round dot after the initial turn it into the literary passe-partout; in other instances (such as the Malta episode) the circle serves as a symbol of totality while the wedge-shaped V appears as its part. Thus the part and the whole are fused: a multitude of Vs form the circle, and the circle turns the Vs into a form of totality. Finally, in a few instances the V and the circle are merged in a three-dimensional conical structure (the spinning top and the gyroscope which start Bloody Chiclitz's industrial empire, Yoyodyne Inc.; the waterspout that sinks Sidney Stencil's ship on the last page), and these images are again of particular importance.

In *Gravity's Rainbow* one can hardly fail to notice that the V-2 itself is shaped like a cone and that the ultimate rocket is marked by not one but five zeroes. The conical shape turns up again in Slothrop's Rocketman costume, the Wagnerian helmet without its horns resembling the nose cone of the rocket (366). In this essay we want to show that in *Gravity's Rainbow* the V-shape also appears on a larger scale, in Slothrop's movements, and that it is again linked to a circle.[2] The resulting figure we then read as a mathematical sign of some importance in physics and gravitation theory. Finally we argue that the scientific meaning undermines the original image. Thus in this instance the text's deconstruction of its own system of signification can be not only claimed but actually demonstrated. We acknowledge that our argument requires some specialized knowledge of mathematics and physics that few readers command, and thus the point we want to raise can hardly be at the core of the text. We suggest that it is one example of the way Pynchon uses allusions and images that some readers may notice and others will not. Their abundance makes it probable that each reader will be able to decipher a few of them, while the attempt to achieve completeness can succeed only in the cooperative enterprise that has been going on in Pynchon criticism for the last forty years.

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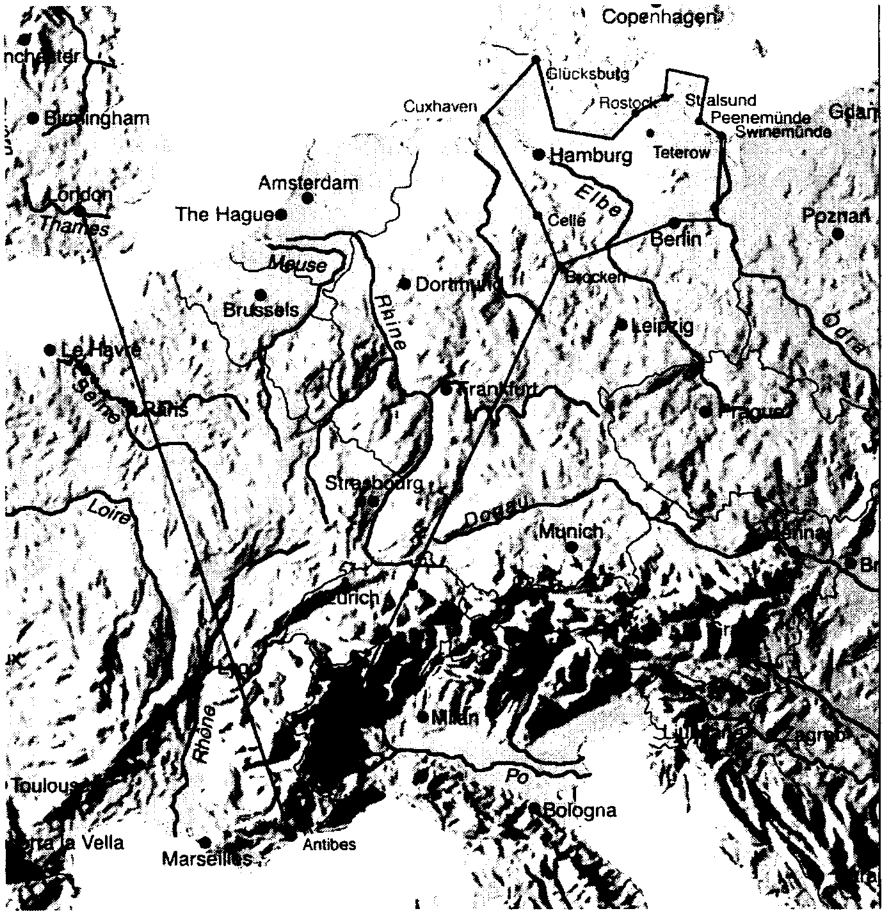
Slothrop's first major movement is from London to the Riviera. As far as we can see, no particular reason for the choice of the French location is apparent from the text; any British sea resort such as Brighton would have served the same narrative purpose. In southern France, Slothrop is under control—supervised and guarded. He then escapes this control and moves to Nordhausen via Nice and Zürich. London was the destination of the Rocket, Nordhausen the place where it was built; both are at 51.30° north latitude. Slothrop thus traces the rocket's journey back to its origin. And the route he takes is shaped like a V or, if we draw it as a curve, like a parabola. At the highest—or rather, lowest—point of this parabola, the control ends—similar to the rocket's *Brennschluss*—and afterwards Slothrop moves without further guidance, under his own momentum.[3] His kinship to the rocket is further corroborated by the astrological sign of his birth: as Douglas Lannark reminded us at the 2002 Pynchon conference in Köln, Slothrop is "a double Virgo" (GR 699), that is, a V2.

From Nordhausen and the Brocken, Slothrop travels to Berlin and Potsdam, and then via the Spree-Oder Canal further east. Having reached the Oder River, he follows it north. Some of the locations mentioned in the text are not to be found on any map (for example, Bad Karma), but he clearly does not change his general direction until he reaches Swinemünde and, shortly afterward, Peenemünde. At this point (509) the word scatter is first used in relation to Slothrop himself; the process that will finally lead to his dissemination, "Scattered all over the Zone" (712), seems to have begun on board the *Anubis* but is first mentioned on 509.

After going around Rügen to Stralsund by boat, Slothrop begins to move westward, and corresponding to his thinning and scattering, the places he touches upon are far less precisely defined than the earlier ones. They include "a river valley far south of Rostock" (551), "some blue anonymous lake [. . .] all the way north from Pritzwalk" (553), "a coastal town, near Wismar" (567) and, "alone on the Baltic coast" (575), the fictitious town Zwölfkinder. Since Zwölfkinder is north of Lübeck (398, 429), 280 km from Peenemünde (419), and Denmark may be barely visible from the great ferris wheel (398), it is probably east of Glücksburg, which is about 290 km from Peenemünde.

Slothrop's next destination is Cuxhaven and thus once more a clearly defined place, but afterwards his route is again obscure. He hears Pirate Prentice's plane on its way toward Celle (619), so he must have turned southward. And then we find him as he "moseys down the trail to a mountain stream" (622). A look at a map will show that there are no mountains in the area of Celle nor, indeed, anywhere else in northern Germany. The first hills are south of Brunswick, and the first mountains worthy of the name are in the Harz region, in the area of the Brocken, where the narrative of Slothrop's journey through the Zone gets properly under way. And if we follow a line from Cuxhaven to Celle further, that is where we arrive. Moreover, the passage about the magician and the mandrake root (625) may also point, if inconclusively, to the notion that Slothrop has again reached the Harz; for the Brocken and its vicinity are the proverbial area of witches and sorcery, "the very plexus of German evil" (329). Finally, perhaps it is Slothrop who plays the "blues on a mouth harp" (642) that Paddy McGonigle and Eddie Pensiero hear in the episode of the colonel's haircut, since Slothrop has just found his harmonica again (622). The haircut scene is set in Thuringia (640), possibly close to Nordhausen, for the light bulb under which the colonel gets his haircut is the very one "Franz Pökler used to sleep next to in his bunk at the underground rocket works at Nordhausen" (647). Whether or not Slothrop is that blues player, and no matter where in the Zone his mountain stream is, he must have moved farther south.

We suggest he has, in fact, travelled in a kind of circle. Of course, the shape of his later travels does not resemble a circle as precisely as his earlier route from London to Nordhausen via the Riviera resembles a V. *Gravity's Rainbow* is a novel, not a study in geometry, and the geography of Germany cannot be altered according to the author's wishes (assuming our reading does, indeed, capture some of the ideas informing the text). Thus a straight or curved flight from Stralsund over the Baltic Sea to Zwölfkinder would hardly fit into the text. Allowances must be made, but we can still recognize the general shape of an admittedly bumpy circle. What we see when we look at a map of Slothrop's tour is a V with a circle next to its right top,[4] something very close to a V^0.



This reading might seem like an overinterpretation, but the v^0 has, as mentioned above, some significance in gravitation theory; and since the sign is found in a novel called *Gravity's Rainbow* written by an author famed for his interest in and knowledge of contemporary physics, our reading may not be gratuitous.

3

To discover and visualize the v^0 in the text, we make use of the results of geodesic measurement, geographical mapping which is a product of applied geometry. The map is a projection of the surface of a three-dimensional object, the globe, onto a two-dimensional plane. London and Nordhausen are both at 51.30° north latitude. That is, they lie on the same geodesic, a line denoting the shortest distance between two points on a given geometric structure. Geodesics are basic geometric elements in the theory of general relativity.

There are two ways to read v^0. As an expression for v taken to the power of 0, it does not make much sense, since anything taken to the power of 0 is defined as 1. But the superscript 0 in v^0 can also be read as a form of notation physicists associate with the basic geometric concepts of general relativity.

In the context of general relativity, Slothrop moves in four-dimensional spacetime. A geometric description of four-dimensional spacetime requires four coordinates, three for space and one for time. For a measurement in curved spacetime we need the definition of a point in its geometry, just as we use a needle to mark London or Nordhausen; but we necessarily face the problem of how to pin a needle into four-dimensional spacetime. A point in spacetime is characterized by its location but also by what happens there—by an event. Events can be brought into an ordered sequence by the use of their coordinates. Drawing an arrow from one event to another creates a mathematical object called a vector, one of the fundamental mathematical objects in physics by which any point is characterized. A vector $\mathbf{v}$ is described by listing its components, v^0, v^1, v^2, v^3, in the coordinate system (like all vectors, $\mathbf{v}$ is expressed in bold type as a shorthand that includes all components without their having to be explicitly written down). Other conventional forms are v^a or v^α, where a or α = 0, 1, 2, 3 (Misner 9), so v^0 is mostly contained in general terms like $\mathbf{v}$, v^a or v^α.[5]

Searching for the expression v^0 in a book about general relativity is like looking for maps in *Gravity's Rainbow*: the expression appears only if one applies some geometry, which is more difficult in general relativity than is drawing a route on a map of central Europe.

Following Slothrop on the globe's surface by using coordinates and vectors in the traditional space represented by a map results in the expansion of that picture into the four-dimensional spacetime geometry of general relativity through the appearance of v^0. v^0 is the time coordinate of the vector $\mathbf{v}$ in general relativity, whose geometric concepts are based on Riemannian geometry.

This geometry relates to the development of the principles of an infinite geometric space or the problem of space in general. In Riemannian geometry, space is a three-dimensional amorphous manifold,[6] its content and form defined by the metric content (leading to a Quarter-Pounder being called "Royal" in Paris just because of the metric system). Euclidean geometry is a special case of Riemannian curved space, a parabolic space. The metric content of a Riemann space is determined by functions and vectors. The number of functions and vectors needed defines the dimension. To speak of an "*n*-dimensional Riemann space" would not be completely correct and would be to some extent confusing, because Riemann avoided the term space. But the metric of a Riemann space allows the introduction of vectors, and the geometry of vectors leads to the use of *n*-dimensional geometry like the four-dimensional geometry of spacetime in physics.

By evoking v^0 and its significance in geometry, Pynchon's text expands straight into the world of geometric concepts in modern physics, where the vector itself goes beyond the original limitations of Riemannian geometry to infinite dimensional structures: v^0 marks the step into the next dimension, identified as time in contemporary physics.

4

Now, what does all this amount to? In a linear text[7] we get a movement that can be plotted on the plane of a map. The map itself is the two-dimensional representation of a landscape, that is, a three-dimensional space. But then, the sign that results from plotting the movement in time on the map, that is, plotting the four-dimensional succession of events, self-referentially indicates a concept in physics that concerns itself with four-dimensional spacetime and ultimately also with *n*-dimensional geometry. On each level the text undermines its own system of signification or, rather, explodes it, moving from 1 to infinity—a movement very well represented by the expansion indicated by the shape of the letter V. The text turns back on itself; our rather intricate interpretation leads once more to the single but omnipresent letter and thus to the very beginning of our investigation. We have come all the way round, having moved, ultimately, in a circle.

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Notes

[1]Vanderbeke, NT; some of the relevant issues were already discussed in Vanderbeke, TPV.

[2]For a different approach that treats the geography of *Gravity's Rainbow* as unmappable, see Arich-Gerz. Steven Weisenburger (9–10) posits a circular design, a mandala, rather than the more commonly assumed arch for the novel's trajectory.

[3]Slothrop's short trip to Geneva is a detour from the ideal shape of the V, and this side trip may indeed have helped him get rid of the military intelligence that still had him under observation (GR 270). But the trip to Geneva and back

does not change the general image of the V: if we add it to the map, we get an inverted A—as for the Aggregat, like the rocket that is hanging over us on the last page of the text.

[4]We would like to thank Rüdiger Thonius, who prepared the map for us.

[5]Misner, Thorne and Wheeler show how superscripts are used in general relativity ("Table of sign conventions," n. pag.). Their seminal book presents one of the most popular concepts by which students in America and all over the world are introduced to this field, so their convention of naming a vector *v* should be well known to students of physics. There are no strict conventions for naming vectors or coordinates in the physics of general relativity. Studying literature about general relativity means at first mostly getting used to the authors' conventions for naming coordinates, vectors and superscripts.

[6]A central visualization problem in pure geometry is to create pictures of manifolds situated in space. Informally speaking, surfaces are 2–manifolds, and volumes are 3–manifolds. When we twist the ends of a strip of paper and glue them together, we get a one-sided surface, a Möbius strip. If we glue opposite pairs of edges of a square together, we get the 2–torus, a 2–manifold that looks like the surface of a donut.

[7]We do not use the word linear in any of the recently fashionable senses, but merely to indicate a property most texts share: they consist of words that are lined up and read from beginning to end.

Works Cited

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