Psycho-topologies: closing the circuit between psychic and material space

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Abstract:

In this article, we present an argument for a psychoanalytic understanding of space. While Freud struggled to move away from his own early, pre-psychoanalytic attempts at mapping the psyche through cerebral localization, he nevertheless found himself compelled to use spatial language and topographical models throughout his career. In his ambivalence, Freud emphasized that the space of the psyche should be read as no more than metaphorical. We argue that the topographical models that Freud struggled with were constrained by the metrics of Euclidean space. The psyche is spatial, just not in topographical terms. For Jacques Lacan, many of the psychic operations that Freud described (such as the transference) are better understood in terms of topological operations. Lacan uses such figures as the torus, the cross-cap, and the Möbius strip to demonstrate how the subject is formed through internal exclusions and external inclusions. Using Freud’s famous case of the Rat Man, we argue that the neurotic’s journey shows him seeking to overcome a psycho-spatial problem, one that resembles a topological conundrum. Through the Rat Man’s story, we demonstrate how Lacan’s topology of the subject (the R-schema as cross-cap) accounts for the Möbius twist that allows the neurotic to situate people, events, and places that are apparently separated in time and space in the same place. Ultimately, we consider the usefulness of topology over Euclidean space for building an understanding of space that is at once psychic and material.
Introduction

There is a famous story in the field of topology. The eighteenth-century city of Königsberg in East Prussia (today Kalingrad in Russia) included two islands in the Preger River that were linked to one another and the shores of the river by seven bridges (Figure 1). The inhabitants of the city became preoccupied with a puzzle. The conundrum was whether one could walk a complete circuit of all the bridges crossing each of them once and only once. Nobody could do it, but nobody could prove it was impossible. In 1735, the Swiss mathematician and physicist Leonhard Euler finally proved the impossibility of such a circuit. By reformulating the problem in abstract terms, representing each bridge with a line and each land mass with a node, Euler initiated graph theory in mathematics.

![Figure 1: The seven bridges of Königsberg, represented pictorially and graphically](image)

Importantly, the problem of the bridges of Königsberg presages the field of topology and is often used to introduce the basic principles of this branch of qualitative mathematics. What Euler’s reformulation shows is that, for the puzzle of Königsberg or any like it, only the connection information is relevant. The pictorial representation of the

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1 All figures were produced by Jeff Levy, Cartographer / GIS Analyst, Gyula Pauer Center for Cartography & GIS, University of Kentucky. Production was supported by a University of Kentucky, College Research Activity Awards (CRAA) mini-grant.
graph can be distorted in any way without changing its properties. The lines that represent the bridges can be stretched long or scrunched short, drawn curved or straight, twisted or flipped over. The nodes that represent their points of departure can be large or small, knocked this way or that, shifted to this side or that. And none of this affects the basic impossibility of crossing all seven bridges only once. Thus the key information is the number of bridges and the ways in which they converge on the nodes, rather than their exact positions. And this reflects a basic insight of the field of topology: that some spatial problems depend not on the exact shapes of the objects involved, but on the ways that they are put together, their continuities and cuts.

From a psychoanalytic perspective, this historical engagement with the Bridges could be diagnosed as obsessional. Yet, while mathematicians and tourists have explored in depth the contours, possibilities, and solutions of these bridges, a psycho-spatial reading can illuminate how material spaces and psychic processes shape one another. This story of the seven bridges of Königsberg introduces what we will be calling a ‘psycho-topology’ in which material and psychic spaces are inseparable from one another.

As we will trace out in this paper, the relationship between space and the psyche has been the site of ambivalence for psychoanalysts since Freud’s early topographical model of the psyche. As a result of what he felt to be the impasses of the topographical model, Freud eventually re-imagined the psyche in structural terms (1923) — when he replaced the systems unconscious, preconscious, and conscious with the psychic structures of the ego, the Id, and the superego. Subsequently, Jacques Lacan argued that the apparent impasses in the topographical model were no impasses at all but rather a topology that

\[\text{Footnote: And at the same time as space has proven a difficult problem for psychoanalysis, psychoanalysis has posed its own set of problems for geography (Callard, 2003; Kingsbury, 2007).}\]
eluded Freud’s Euclidean framework. Lacan uses topological figures to reveal both the conceivable (the torus, the Möbius strip, and the Borromean Knot) and the inconceivable (the cross-cap) ways in which the subject is formed through internal exclusions and external inclusions. We argue that, by articulating a topology of the psyche, Lacan returns to an explicitly spatial account while overcoming Freud’s representational and ideological barriers. We demonstrate how a topological approach allows Lacan to make sense of psychic phenomena otherwise inexplicable (not to mention unmappable) within a Euclidean metric.

From a topological perspective, neurotic enactments, the repetitions of the past in the present, are like the distorted set of nodes and vertices in Euler’s theorem: the structural relations persist despite processes of transformation. It is through material spaces that the neurotic attempts to reconcile what Lacan will identify as the multiples levels, the topological complexity in other words, of psychic space. The case history of Ernst Lanzer, otherwise known as the “Rat Man,” who was treated by Freud in 1907 for an obsessional neurosis, vividly captures the topological operations and inseparability of psychic and material space (SE 10, 1955 [1909]: 153-318). Using Freud’s famous case of the Rat Man, we argue that the neurotic’s journey shows him seeking to overcome a psycho-spatial problem, one that resembles the puzzle of the bridges of Königsberg. Ultimately, we consider the value of topology over Euclidean space for building an understanding of space that is at once psychic and material.

**Freud’s topographies**
The problem of space and the psyche is at the crux of Freud’s most theoretical work, his metapsychology. We suggest that space troubles Freud’s metapsychology for two reasons. First, Freud is haunted by the idea that psychic arenas such as the unconscious might be actual, anatomically defined territories, as we will show with reference to Freud’s early, neurobiological writings. Second, the topographical model founders (and is ultimately abandoned) because of the non-metric topological characteristics of the psychic processes Freud identifies. Ultimately, we argue that Freud is both compelled by the idea of mapping the psyche and frustrated by the geometric, material limitations that such a model imposes. Confronted with this double impasse, Freud chooses to abandon the first topographical model and to emphasize the metaphorical role of spatial representations of the mind.

What would become known as Freud’s “first topography,” elaborated in such well known works as Interpretation of Dreams (Freud, 1999 [1900]) and The Unconscious (Freud, 2005 [1915]), originated in a little known, abandoned neurobiological manuscript, the ‘Project for a Scientific Psychology’ (SE 1, 1966 [1895]: 281-391). Freud not only found the ‘Project’ unsatisfying at the time of writing (Freud, 1950), but also explicitly abandoned its fundamental premises – including the anatomical localization of unconscious and conscious neurobiological realms -- in his subsequent turn away from neurological explanations of mental functioning. Nonetheless, this anatomically localized perception-memory-consciousness (φ-ψ-ω) apparatus put forward in the ‘Project’

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3 Freud himself, and psychoanalysts to this day, referred to his work on topography and structure as “metapsychological.”
resurfaces almost unchanged in Chapter VII of *The Interpretation of Dreams* and becomes the basis of his first topography.⁴

Yet despite this surprising continuity, a significant shift does occur between the ‘Project’ and Freud’s psychoanalytic work. The map becomes a metaphor. In contrast to the neurological model presented in the ‘Project’, in *The Interpretation of Dreams*, the idea of unconscious and conscious locations is presented as a flawed heuristic, a metaphor. The text brims with discomfort and wariness, as though the φ-ψ-ω topography has the power to smuggle in unwanted allegiances to the anatomical goals of the ‘Project’, which Freud was in the process of rejecting. Freud notes his own use of spatially evocative language; terms such as repressing, pushing back, or pushing through are “images drawn from the sphere of ideas about battles for territory” (Freud, 1999 [1900]: 403). He warns that psychical systems (at this stage in his thinking, the unconscious and preconscious) occupy “hypothetical locations” and are no more tangibly sited than an image passing through the lenses of a telescope. The loci are imaginary; the map is a metaphor. The topographical model is only intended to make the complexity of the psyche intelligible (Freud, 1999 [1900]: 349).

The ambivalence of Freud’s first topographical model is replayed in his metapsychological essay, *The Unconscious* (Freud, 2005 [1915]). Written during World War I, the text is rife with the language of bounded territories and military maneuvers. On the border between the unconscious and the preconscious/conscious system, censorious guards exert the power of the checkpoint, turning back poorly disguised infantile wishes striving for passage into consciousness and, ultimately, access to motor discharge and

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⁴ For a different argument that covers some of the same terrain, see Elizabeth Grosz’s (1994) extensive analysis of the role of the body in Freud’s topographies in *Volatile Bodies: Toward a Corporeal Feminism.*
fulfillment. Yet at the same time as Freud’s first topographical model of the psyche finds its most extended articulation within this essay, it is also here that he definitively rejects the vision of psychic space that it rests upon. He writes, “[E]very attempt to go on and hypothesize a localization of psychic processes, every endeavor to conceive of ideas as something stored in nerve cells, or excitations as something traveling along nerve fibers, has been a complete failure” (Freud, 2005 [1915]: 57). Thus while everything in the text leads to an image of unconscious wishes traveling with forged papers in an attempt to circumvent border censors, this almost geopolitical vision of the psyche fails for Freud.

Psychic formations (thoughts, wishes, memories) do not move from one region to another within a mapped and fortified psychic space. What distinguishes a preconscious thought from an unconscious one is not its location, but rather its connection to language, the “overinvestment” that happens when an idea is put into words and thus becomes not necessarily conscious, but potentially so (Freud, 2005 [1915]: 83). The unconscious and the preconscious, then, are not regions, territories, or locations, whether anatomical or structural, but different relationships to the possibility of language. Given that such a relationship is only metaphorically one of distance, the topographical model founders against its own representational limitations.
In 1923, with the publication of *The Ego and the Id*, Freud famously discarded once and for all his first topography in favor of the structures Id, Ego, and Superego, also known as the “second topography” or the “structural model” (*SE* 19, 1961 [1923]: 1-66). Many reasons have been adduced for this shift from the topographical to the structural model of the psyche (Figure 2), including various conceptual rigidities in the original topography. Moreover, with the renunciation of the first topography, the constitutive role of space to subject-formation was subordinated. In *New Introductory Lectures in Psycho-Analysis* (*SE* 22, 1964 [1933]: 1-182) Freud once again warns his students against imagining a “political geography” – artificial, linear, and bounded -- of the psyche:

And here is another warning... In thinking of this division of the personality into an ego, a superego and an id, you will not, of course, have pictured sharp frontiers like the artificial ones drawn in political geography. *We cannot do justice to the*
characteristics of the mind by linear outlines like those in a drawing or in a primitive painting, but rather by areas of colour melting into one another as they are presented by modern artists. After making the separation we must allow what we have separated to merge together once more (SE 22, 1964 [1933]: 79)

The structural model of the psyche thus emerges as part of Freud’s recognition that topographical or Euclidean space is inadequate to the task of mapping the psyche. It is clear, however, that Freud never thoroughly supplanted the topographical with the structural (and there are analysts who continue to adhere partially to a topographical perspective, including Anna Freud). Indeed, Jean Laplanche (1980: 157-164) argues that Freud struggled throughout his career with psychic space. Originally based on cerebral localization, whereby one could literally locate psychic processes in the brain, this version of the relationship between the psychical and the anatomical was not how Freud wanted to represent his growing theory of the psychic apparatus. Consequently, although Freud persisted in thinking of the psyche spatially, he felt at risk of falling back into a form he had rejected but could not supplant in a way that adequately conveyed his understanding of what he meant by psychic space. His compromise was to deploy metaphor as a bridge-term, which enabled him to continue thinking spatially without embedding his theory anatomically. Notably, in Beyond the Pleasure Principle (SE 18, 1955 [1920]: 1-64), much of the rejected anatomical and neurobiological underpinnings of the topographical model resurface. In this text, Freud locates what he is calling the perception-consciousness system both functionally and anatomically on the “borderline between outside and inside” in the cerebral cortex (SE 18,1955 [1920]: 26-27). He also returns to ideas developed in the
‘Project’ to explain how consciousness arises from a transformation of these externally-oriented neurons caused by incomparably large blasts of stimuli from the external world. In short, Freud found it impossible to abandon the thinking of the ‘Project’ and the first topography entirely, despite his own arguments to the contrary.

Lacan and Topology

We argue that the problem that topography poses for Freud arises because the psychic space that Freud is mapping has non-Euclidean topological properties. Euclidean geometry employs a metric understanding of space, in which a distance function is defined for every pair of points in the space. The Cartesian coordinates of Euclidean geometry allow location to be defined in terms of positions along intersecting axes. Euclidean space is thus “topographical;” it refers to mappable, graphable, measurable space. Yet this is not the only way that space works. Originating as a separate branch of mathematics with Henri Poincaré at the end of the nineteenth century, the field of topology focuses on the qualitative properties of space (as opposed to the geometric).\(^5\) Topologically speaking, a space is not defined by the distances between points that characterize it when it is in a fixed state, but rather by the characteristics that it maintains in the process of distortion and transformation (bending, stretching, squeezing, but not breaking). Topology deals with surfaces and their properties, their boundedness, orientability, decomposition, and connectivity – that is, sets of properties that retain their relationships under processes of transformation. Not only are topological figures often impossible to draw or construct, but highly theoretical topologists “not only avoid anything like pictures of these things, they

\(^5\) For an introduction to the field of topology, see Alexandroff (1961), Barr (1964), Munkres (2000), Weeks (2002).
mistrust them,” viewing them as mathematically meaningless (Barr, 1964: 2). In the words of one introductory topology text, “[S]pace as we usually understand it is left far behind” (Barr, 1964: 2).

Freud never uses the term topology; for him, the spatiality of the psyche is caught between the topographical (having to do with regions and locations) and the metaphorical. Yet, the psychic processes Freud describes are in many cases arguably topological: unconscious processes such as condensation and displacement, the transference (within and beyond the analytic situation), and the play of presence and absence, from object constancy to mourning, can all be thought of as topological structures wherein certain relations are maintained despite the distortions of the surface. It is Lacan who re-reads Freud from the perspective of “a topology which, according to Lacan, is budding, if not born, in Freud’s ‘Project’” (Charraud, 2001: 112). For Lacan, the distinction between a topographical and a topological reading hinges on an understanding of structure. Freud’s topographies, as illustrative models of the psyche, are not structures in the sense that Lacan understands the term.6 Lacan argues instead for an understanding of structure “not as a theoretical model, but as the original machine [met en scene] that directs the subject” (Lacan, 2006a [1966]: 544). In Seminar XX: Encore (1972-1973), Lacan refers to the “strict equivalence between topology and structure” (Lacan, 1998: 9); he insists that the topological structure of the subject is not an analogy or a metaphor (Lacan, 1973). If metaphor was a term that Freud used to navigate his own ambivalence about space and the anatomical localization of psychic operations, Lacan forcefully distances himself from this compromise. Thus while Freud’s topographies remained ambivalently located between the

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6 Lacan argues that “Freud did not attribute the slightest reality as a differentiated apparatus in the organism to any of the systems in either of his topographies” (Lacan, 2006a [1966]: 544-55; emphasis in original).
status of metaphor and a uneasy anatomical inheritance, Lacan's topology is explicitly
articulated in terms of the immanent, non-totalized structure of the subject.\(^7\)

Topology allows Lacan to express the structure of the subject without being limited
to surfaces that have an orientation, are defined by invariant distances, or are fully
graphable in three dimensional space. While some paradoxical topological surfaces, such as
the Möbius strip,\(^8\) can be constructed and therefore imagined, other topological figures,
such as the cross-cap (a sphere with a twist, discussed below) or the Klein bottle, are
impossible to graph or construct, though they are “susceptible to symbolic inscription”
through language or mathematical notation (Fink, 1995:124). Topology thus allows Lacan
to map the space of the subject not perspectivally or centrically, but rather “excentrically”
(Burgin, 1990; Dean, 2000).

\(\text{FIGURE 3: A torus}\)

\(^7\) Lacan’s increasing interest in topology in the 1960s and 1970s is often considered a turn to increasing eccentricity
and difficulty. Many of his seminars and writings associated with topology have remained unpublished, and many
of those that have been published in France are yet to be translated into other languages (Lacan 1973, 1975,
1976). Little Anglophone scholarship has focused primarily on Lacan’s topological turn (but see Leupin 2004;
Ragland and Milovanovic, 2004; Rosen, 2006), though there is a significant body of literature in French (Charraud,

\(^8\) The Möbius strip is a topological figure with a single surface, one for which there is no exterior/interior
difference. It is formed by twisting a narrow piece of paper and gluing the ends together front to back. Beginning
from any point on the surface of the Möbius strip, if one were to draw a line it would traverse both sides of the
band over the entire loop.
Topology makes an early appearance in Lacan’s teaching in the context of his address to the Rome Congress in 1953. In this presentation, Lacan introduces the torus, whose “peripheral exteriority and central exteriority represent but one single region” (Lacan, 2006b [1966]: 264). The torus, unlike the cross-cap, is a simple form to envision: it is, basically, a hollow ring, like the inner tube of a tire. Lacan repeatedly returns to this figure because, as the quote above indicates, it encloses exteriority in two ways (Figure 3). The idea that the subject is inhabited by a radical alterity is critical to Lacan’s understanding of the relationship between the subject and its other, the object whose very externality becomes the origin of the interiority of the ego. Lacan calls this relationship “extimacy,” a neologism meant to invoke the externality of our most intimate interiority (Kingsbury, 2007; Miller, 1994). The torus, with its double void, points “to a lack, an absence, the always missing o object” on the circumference and at the center of the subject (Leupin, 2004: 24).

\[ a \quad b \]
\[ a' \quad b' \]

FIGURE 4: Symbolic notation of a cross-cap
In Lacan’s topology of the 1960s, the nonorientable\(^9\) figures of the cross-cap and the Möbius strip became increasingly central to his understanding of the structure of the subject. In a much discussed 1966 footnote to his 1956 presentation of a “conceptual visualization” of the subject that he calls the R Schema, Lacan asserts that “what the R schema lays flat is a cross-cap” (Lacan, 2006c [1966]: 486). A cross-cap is an operation that produces a twisted sphere (projective plane) or, if there are two cross caps, a Klein bottle. To visualize the cross-cap, imagine making a cut in the surface of a sphere, and then reassembling the surface not by suturing the wound in a normal fashion, but by attaching each point to the symmetrical point on the opposite side of the cut. The cross-cap can be symbolically represented as in Figure 4, where one is to imagine performing a Möbius-type twist attaching both sets of the square’s parallel edges. The letters indicate which sides to attach and the arrows indicate in which directions. Obviously, this double twist requires self-intersection and cannot physically be performed. But the cross-cap is nonetheless a real topological surface, one that can we can only approach by suspending our assumptions about interior and exterior spaces.\(^{10}\) The cross-cap and the Möbius strip, as twisted, doubled topological surfaces in which interior and exterior are in a relationship of continuity, demonstrate how heterogeneous elements (such as the ego and its objects) can be both non-identical and continuous, like the two sides of a single-sided figure. These surfaces take relationships that in some ways seem contradictory or impossible and show that there is a mathematical basis for understanding them in this way. Lacan’s turn to topology thus represents a turn to a particular understanding of structure and the

\(^9\) In topological terms, a nonorientable surface is one which cannot be oriented by the order of a series of points upon it.

\(^{10}\) We recognize that it is difficult to visualize a cross-cap. Perhaps the most important thing to understand is that the cross-cap is a self-intersecting surface that is structurally the same as the Möbius strip.
formation of the subject, one that is also bound up with a rethinking of the operations of space.

**The Rat Man's Psychic and Material Journey**

Perhaps the most salient examples of the role of space in psychoanalysis can be found in Freud’s published case histories, which often map urban and domestic spaces and simultaneously link these to psychosexual (interior) mappings. The case history of Ernst Lanzer, otherwise known as the “Rat Man,” who was treated by Freud in 1907 for an obsessional neurosis, vividly captures what for Lacan will be the topological inseparability of psychic and material space (*SE* 10, 1955 [1909]: 153-249).

Central to our argument is the degree to which this patient struggled to imprint his psychic obsessions in real space and time. At the age of twenty-nine, Ernst Lanzer, raised in a bourgeois family living at the outskirts of Vienna, remained undecided both professionally and emotionally as a result of roughly ten years of obsessional thoughts and behavior. He became involved with his cousin, Gisela, at the age of twenty; yet his parents disapproved from the start of the relationship, and Lanzer was unable to make up his mind whether or not to marry her. Meanwhile, his professional life was equally up in the air, as he struggled to complete his doctorate in law. By the time he arrived in Freud's office, Lanzer's obsessional life had overstepped entirely the limits of reality to accommodate his psychic imperatives. His current plan was as follows: he ordered eye glasses which were picked up for him at a post office some distance from his army base. He was told by his captain, hereafter known as the “cruel captain,” that he owed Lieutenant A the money for the glasses. What follows are an array of errors and substitutions, which become near
impossible to represent either graphically or temporally (for the patient, for Freud, and for us as well). Suffice it to say, the whole story hinges on repaying a debt to the right person; otherwise what is known as the “rat punishment” (rats burrowing into the anus) will befall the patient’s dead father and his beloved. Torn between tender and hostile feelings about these two, however, the patient has elaborated an impossible material solution that reflects his psychic ambivalence. Importantly, the patient stands at an impasse between feeling compelled to repay the debt and wanting to avoid it, an impasse that precisely reflects this ambivalence between rescuing and condemning to a hideous death these two “beloved” parties. As a consequence, the patient develops a tortuous scheme necessitating a train trip that could not possibly occur in real time and space, whereby he attempts simultaneously to repay and avoid repaying the crucial debt.

The Rat Man’s itinerary reminds us of the problem of the bridges of Königsberg. His compulsive journey shows him seeking to solve or to overcome a psycho-spatial problem, one that results not in a mathematical proof but a diagnosis. The coordinates of his map/graph – his nodes and lines, vertices and edges – are, like the bridges of Königsberg, capable of endless distortion without any shift in their basic relations. It is precisely this interminable reiteration of the founding coordinates of his subjectivity that Lacan observes in the case of the Rat Man. He argues that the patient’s obsessional plot is merely a slightly modified reenactment of his parents’ situation prior to his birth--his father owing an unpaid debt to a fellow officer and friend as well as choosing the economically advantaged woman over the penniless woman he loved. For Lacan, the situation obtains on two levels (the patient’s ideals and his desire) that he makes it his mission to reconcile on a single level. As Lacan puts it: “Everything happens as if the impasses inherent in the original
situation moved to another point in the mythic network, as if what was not resolved here always turned up over there” (Lacan, 1979: 415). Lacan will later capture this mythic network graphically in his “R schema” (Figure 5).

![Lacan's R Schema](image)

**FIGURE 5:** Lacan’s R Schema, adapted from “On a question prior to any possible treatment of psychosis” *(2006c [1966]*)

Developed in his seminars between 1954 and 1957, Lacan’s schemas (L, R, and I) were from the beginning a different kind of map than Freud’s topographies. In his Seminar IV (1956-1957), Lacan made the point that, concerning the schemas, “It is not a matter of localizations, but of the relations between places” *(quoted in Murphy, 2001: 161)*. As it is developed in the essay “On a question preliminary to any possible treatment of psychosis” *(first published in French in 1958; Lacan, 2006c [1966]*) , the R Schema shows the field of reality (R) framed by and maintained by two triangles whose hypotenuses are the

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11 This essay was originally delivered in lecture form in 1953. In the “Foreword” to this translated version, editor Jacques-Alain Miller notes that Lacan announced a planned revision in the 1966 French edition of his *Écrits*, the same year that he pointed out that the R-schema is a cross-cap (Lacan, 1979: 405).
imaginary, narcissistic relationship (between the ego and its specular image, e-i) and the symbolic relationship (between the ego-ideal and the Mother as primordial object, I-M). On the left side of the R quadrilateral, self-identifications proliferate between m (ego) and I (ego-Ideal). On the other side of the R field, all the objects that substitute for the primordial object shade between i (the specular image) and M (the Mother). Rather than occupying the places where s/he sees her/himself (that is, someplace along the segment m-I), the Subject is at the vertex of the imaginary triangle, in the place of unconscious desire (or the phallic function, φ), while the opposite corner (F) marks the place of the big Other, or the Name-of-the-Father. The R Schema demonstrates Lacan's quadripartite structure of the subject; the symbolic, Oedipal triangle (I-M-F) is redoubled by an imaginary triangle (e-φ-i), and these two configurations maintain and are maintained by a split in the field, the R(eal) quadrilateral.

Understanding the R Schema as a cross-cap means seeing that the relationships between the functions that are marked as vertices in the schema are not only located by the vectors and fields drawn on the page, but are also structured by a double twist that misaligns these places both vertically and horizontally. In other words, it is not a linear path that travels from the ego-Ideal to the primordial object (I-M). The relationships that appear linear in the schema are better understood as ones in which the two positions twist around and turn into one another. Thus, the corner marked F, which can be understood in terms of language or law, is at once radically exterior to and in the same place as the unconscious subject (in the place of φ). In his 1966 footnote, Lacan goes on to suggest that out of the field of this schema, a Möbius strip can be extracted (cut e-i and I-M, attach the
corners e to M and i to l) and this “cut reveals the structure of the entire surface” (Lacan 2006c [1966]: 487).

The R-Schema represents with some precision why Lanzer is stranded in the field of his father’s desire. He is locked the twist of the Mobius strip (extractable from the R-schema) in which the symbolic and imaginary registers work as the two sides of a single-sided surface. Lanzer’s obsessional route is along the contours of the cross cap whereby the symbolic is constantly twisting into the imaginary and vice versa. Yet, just as Lacan’s cross-cap is unrepresentable, the Rat Man’s attempt to play out his psycho-topology in material space is doomed to failure. In contrast to Freud’s topography, Lacan’s topological reading of the train ride traces mental rather than impervious physical coordinates. “[I]t is precisely in the light of the impossibility of bringing these two levels together that the drama of the neurotic is played” (1979, 415). The present thus functions as an interminably reanimated corrective to the past, a past that crucially defines the origins of the subject—her/his desiring mission. The repetition compulsion, overt in the neurotic, is for Freud also a component of normal psychic functioning. While an intensification of the repetition compulsion is at the root of the neuroses it is also the path to cure via the transference neurosis established with the analyst.

As Freud observes, both the logic of his patient’s obsessional plan and his means of fulfilling it seem baffling. The patient commands himself to reimburse lieutenant A for his glasses even when he finds out that it was not A but B who visited the post office. Only later does Freud learn that the patient all along knew that he owed the money for the glasses to neither A nor B but rather to the young lady herself who worked at the post

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office. A “mistake” of some kind gets made—on multiple levels as well as in multiple psychical locations—a “mistake” that both reiterates and culminates in the neurotic in what Freud terms the “mésalliance,” between “an affect and its ideational content” (SE 10: 175). Indeed, these series of mistakes sustain as separate the affect and ideation as though their convergence would be intolerable. As Freud reminds us, however, their convergence is only a problem from the perspective of the patient’s infantile view of things.

It is this confusion of the past with the present that gets acted out in the impossible train sequence. It is the analyst’s job to realign affect and ideation just as it is his role to transform the spatial (il)logic of the patient’s obsessional train schedule into psychic logic. The rat man’s psychic journey is back in time (outside of train time altogether), even to his prehistory as Lacan would maintain, to honor his father’s debt at the same time that he reconciles his father’s obligation to a “poor but pretty woman” as well as avoids confronting the conflict between his love and his hatred.

That the patient winds up in Vienna at Freud’s door is, as Freud comments, part of the delirium itself rather than an effort at overcoming it. He expects Freud to provide him with some sort of certificate that convinces all of the participants of his delirium to agree to assume their assigned roles in his plan. Like the example of the Bridges of Königsberg, Freud’s obsessional patient struggles with a series of impossible spatial arrangements, including the very space of his body. Mahoney (1986) paraphrases analyst Janine Chasseguet-Smirgel’s analysis of the anal origin of obsessionality (1967, 618): “the obsessional is often compulsively driven to confirm what has happened behind (therefore a going back in space and time) in order to verify whether anal penetration has taken place” (Mahoney, 1986: 58n). We could as easily reverse cause and effect here and argue that the
Rat Man’s anal preoccupations arise from his very fixation at the point of past and present, at the point indeed where past diverges into present and present can be reclaimed as a reiteration of the past. The anal cavity for small boys is where they imagine babies come from even though it is also associated with loss and death.\textsuperscript{13} The train as well could be seen as a symbolic rectum whose peristaltic movements enact for the Rat Man simultaneous progression and regression. As Freud points out near the end of the case, fundamentally the patient was still fixated on the question of where babies come from. The rat punishment itself was “based upon the influence of two infantile sexual theories,” one that men can have babies, too, and the other that babies are born through the cloaca. This corporeal map of sexual (in)difference is a precursor to the patient’s obsessional map intended to honor parental debts and reconcile ideal with real parent figures (\textit{SE} 10: 219). To believe that men can have babies is equivalent to imagining that train time and material space will ultimately conform to his neurotic wish. Moreover, the substitution in fact of the two male lieutenants for two young women (an attractive young servant at an inn and the post office mistress) repeats the fantasmatic sexually undifferentiated body to which he cleaves. Freud writes: “But in reality what was attracting him was the young lady at the post office, and the lieutenant was merely a good substitute for her, since he lived at the same place and had himself been in charge of the military postal service” (\textit{SE} 10: 211-212). Yet, topologically speaking, depending on where the patient is situated relative to his desire, it is not clear who is substituting for \textit{whom}.

The patient’s problem is similar to the one confronting the people of Königsberg. The nodes of his itinerary – Vienna, the post office, the base, and the space of maneuvers –

\textsuperscript{13} Lacan suspects death won out in the case of Ernst Lanzer’s whose untimely death in battle in the Great War: “I do not think that the analysis is entirely unconnected . . .” (Lacan 2006d [1966]: 500).
are vertices connected by bridges that cannot be made into a circuit. The problem is
topological and it is both psychic and material. Despite the inconvenience of the patient’s
obsessional practices and their inhibiting effects on his emotional and professional life, it
took the train incident to convince him to seek help. The obsession was serviceable, in
short, inasmuch as it defended the neurotic from his punitive super-ego and staved off
multiple intolerable wishes, until the demands of the obsession exceeded the limits of the
material world. As Lacan writes:

In fact, as is always the case in the actual experience of neurotics, the
imperative reality of the real takes precedence over everything that torments him so
greatly—torments him even on the train that takes him in exactly the opposite
direction from the one he ought to have taken in order to accomplish, with respect
to the lady at the post office, the expiatory ceremony which seems so necessary to
him. Even while saying to himself at each station that he can still get off, change
trains, return, he still goes toward Vienna where he will put himself in Freud's
hands; and, once the treatment is begun, he is content quite simply to send a money
order to the lady at the post office. (Lacan, 1979: 413).

The train intended to take him toward his obsessional appointments in fact takes
him away, incrementally, as though documenting his slow and ambivalent progress toward
cure (signified by his friend [freund in German]/Freud). At the same time, in reverse
fashion, the train trip accurately represents the obsessional’s endless deferrals of action.
Taking him toward the scene of cure and away from this obsessional project, the train’s
movement through material space enacts the rat man’s overdetermined journey. “[W]hen
at the end of the manœuvres he had hesitated so long whether he should travel to Vienna or whether he should stop and fulfill his vow, he had represented in a single picture the two conflicts by which he had from the very first been torn—whether or not he should remain obedient to his father and whether or not he should remain faithful to his beloved” (SE 10: 219). Representing the two conflicts in a single picture constitutes a condensation in which a distortion of time is mirrored by a distortion of space. The patient’s father has been dead for some time and yet the “rat punishment” Lanzer defends against includes both the dead father and the living beloved. His father and his beloved, in other words, are placed in fantasy in the same time frame.

This temporal distortion is converted by the patient into multiple spatial distortions. Freud explains in a footnote that Lieutenant A used to live at ‘Z” where the post office is located, but had several days earlier been transferred (SE 10: 212n). While the “cruel captain” remains in ignorance of this piece of information, the patient is not, and yet he nevertheless bases his obsessional project on the “cruel captain’s” substitution. It seems crucial from a psycho-spatial perspective that the cruel captain make just this error in order for the rat fantasy to take off, thereby both prompting and guaranteeing, as it were, the patient’s own spatial distortions. Elsewhere, the patient mentions that he continues to expect his father to enter the house one night, as though still alive; another way of putting this is that he expects him to be where he is not. For Lieutenant A to be gone but not gone, to be in Z and not supplanted by Lieutenant B, implies limitless movement across time and space that changes nothing; or rather, time becomes yet another space which both living and dead enter and exit at will. Thus, the condensation for the patient entails a bringing together of what Lacan has termed “the neurotic’s individual myth” into an obsessional
project that subjects train time and geographic distance to his psychic schedule. For the obsessional, time freezes into another form of space. Like Freud’s famous example in *Civilization and its Discontents* (1961 [1930]) of the city of Rome as the unconscious, in which all of history occupies the same space and time, for Lanzer, people, places, and events fuse into a kind of twisted coil in which time and space both operate topologically.

Jean Laplanche characterizes topological phenomena in the Rat Man case history as a series of “circuits,” which constitute, as Mahoney phrases it, a “modified sequel to his father’s past” (1986, 55). These circuits are the debt to the friend, marrying for money, and the rat complex. Mahoney adds to the circuits the Rat Man’s own interminable movements from one profession to another along with “the endogamous circulation” within the Lanzer family (after all, they frequently marry cousins!) (Mahoney, 1986: 55-56). The Rat Man’s beloved, his cousin Gisela, is importantly infertile—as though the patient is implicitly threatening to call a halt to his family’s comedy of endogamy that has traversed his social and psychic experience. Laplanche notes that the Rat Man’s choice of Gisela implies “a derision of the father who could only have children via the anus” (1980: 286, translation ours). This is part of Lanzer’s broader mission to reverse his father’s pattern: to pay the debt unpaid by his father; to marry the “poor” woman, who because of her infertility, will lead to his having anal rather than actual children. It is what the father did not do, in short, that becomes his son’s ineffectual mission—torn as he is between repeating the insufficiency of the real father and aspiring to the ideals associated with Symbolic fatherhood. It is precisely because Lanzer’s desiring circuits have “nothing” as their object (other than their own reiteration) that they remain in place, endlessly rehearsed and just as endlessly deferred.
The Topology of Transference

The transference obtaining between patient and doctor in the psychoanalytic situation threatens to reiterate without transcending the neurotic’s incomplete circuits. Since Ernst Kris (1951: 17) complained that Freud spent more time indoctrinating into psychoanalytic theory than treating Lanzer, the question of transference has been central to readings of the Rat Man (17). When Freud treated Ernst Lanzer, his theory of the transference was still evolving. Originally, Freud saw transference as an obstacle (a “resistance”) to cure. At length, however, he came to see the formation of what he eventually termed a “transference neurosis” in 1914 as essential to the treatment (SE 12, 1958 [1914]: 145-156). Famously, in a Postscript to the case of Dora, Freud avers that it was his own misreading of the transference that prompted Dora to break off the analysis. In this Postscript, he defines the transferences as “new editions or facsimiles of the impulses and phantasies which are aroused and made conscious during the progress of the analysis; but they have this peculiarity, which is characteristic for their species, that they replace some earlier person by the person of the physician. To put it another way: a whole series of psychological experiences are revived, not as belonging to the past, but as applying to the person of the physician at the present moment” (SE 7, 1953 [1905] : 115). This combination of the centrality of the transference to analysis and the necessity for the analyst to grasp his assigned “role” in order for the transference to facilitate instead of

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14 See Freud, Studies on Hysteria (SE 2, 1955 [1893-1895]).
15 In the 1912 essay, Freud still thought of transference as primarily resistance to the cure, albeit an inevitable part of the treatment. Subsequently, Freud saw transference as facilitating the cure as well insofar as the transference prompted affection feelings in the patient. He wrote of Dora, “I did not succeed in mastering the transference in good time” (SE 7: 117).
disrupt the treatment lies at the heart of the critical reception of Freud’s technique in the Rat Man case.1617

Lacan suggests that Freud was always working topologically in the transference, even if he didn’t identify it as such.18 Freud’s “depth psychology” did not in fact rely on a topographical distinction between surface and depth. “Freud’s method,” Lacan writes, “isn’t motivated by any kind of topographical priority” (Lacan, 2006d [1966]: 502, emphasis ours). As he elaborates: “[T]he idea that the surface is the level of the superficial is itself dangerous. Another topology is necessary if we are not to be mistaken as to the place of desire” (Lacan, 2006d [1966]: 503).

It is no wonder that criticism of Freud centers on his possible mismanagement of the transference—because the transference is simultaneously the most inevitable and the most fixed of all aspects of the psychoanalytic encounter, yet at the same time the most spatially elusive. Writing about the transference Lacan observes: “At least three sides are needed to make a pyramid, even a heretical one. The side that closes the dihedron I have described here in the gap left in the conception of transference, strives, one might say, to join the edges together” (Lacan, 2006d [1966]: 507).

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16 Freud’s own countertransference becomes a key factor in readings of what for many analysts seem to be his inexplicable technique (Mahoney, 1986: 93-99; Gottlieb, 1989).

17 In addition to being at the heart of the Rat Man case, the transference relationship is decidedly spatial, as Freud himself recognized, if only through metaphor. In his 1912 paper, “The Dynamics of Transference,” Freud writes that “this struggle between the doctor and the patient, between intellect and instinctual life, between understanding and seeking to act, is played out almost exclusively in the phenomena of transference. It is on that field that the victory must be won” (SE 12, 1958 [1912]:108). Later, he refers to the scene of transference as a “playground” into “which [the compulsion] is allowed to expand in almost complete freedom” (SE 12, 1958 [1914]: 154).

18 Lacanian analyst Jeanne Lafont claims that “the transference is the whole Möbius strip’s topology in action” (2004: 21). As she asserts: “The function of such a transference is to propose a frame in which everything . . . will count as an element of the situation.”
Their relationship might appear ever the same, imperturbable—analyst and analysand engaging in the “talking cure” within four walls of an office somewhere, where the one who speaks lies on a couch faced away from the other who listens. Despite the conventionalized interpersonal and spatial aspects of the analytic situation, however, what happens in the gap in the pyramid, in the transference, in the space left ajar by what is simply a dihedron (rather than a closed dyad), opens up to singular transformation this otherwise conventional relationship between the two parties engaged in the analytic situation.

Lacan believes that Freud’s effectiveness in the Rat Man’s case was based precisely on relocating himself from “friend,” in the domain of the Imaginary, to the Symbolic Father.19 The reason that the Rat Man case is paradigmatic for Lacan is that it demonstrates how the relationship with the analyst, that so frequently begins for the analysand in the Imaginary register of identification and similarity (the analyst is the “semblable,” another person “like me”) ultimately unfolds in the Symbolic register where the analyst assumes the role of Other and thereby is divested of her or his individuality, opinions, lifestyle. In “The Seminar on ‘The Purloined Letter,’” Lacan observes that “it is through the pathway of a specific gap in his imaginary relationship with his semblable that he was been able to enter into the order as a subject” (Lacan, 2006e [1966] 40). Thus, Freud’s initial role for Lanzer is in the domain of doctor-friend, like Lanzer’s Viennese friend, Dr. Palatzer. Lacan criticizes the trend in psychoanalysis that confuses “these two couples,” as he puts it, the patient and his “other” (the analyst in the Imaginary register)
which culminates in a “transference-love” whereby the patient is in love with his or her own ideal ego (for whom the analyst is mistaken) (Lacan, 2006e [1966]: 40). Such a “transference-love” (SE 12, 1958 [1915]) depends on the “fundamentally narcissistic nature of all being in love” (Lacan, 2006e [1966]: 41). This analytic “couple” for Lacan is at risk of stagnating at the spatially Euclidean dyadic level where “love” is addressed to a person, the individual playing the role of analyst, rather than the Symbolic Other whose position, from a topological perspective, the analyst only provisionally occupies.\(^{20}\) Lacan is especially critical of the prevailing conviction that “the distance between the analyst and the patient” is the only measurement of a relationship obtaining between the two (Lacan, 2006d [1966] 508).\(^{21}\) He laments that as a consequence his contemporaries can pretend that the whole of the treatment is reducible to an object relation between two individuals (two similar egos, mirroring each other) without reference to the Symbolic order to which the analysand’s speech is truly addressed. Misconstrued as an object relation between two “equals” who share close quarters in which psychic space risks being held captive through forced identification, analysis is always on the verge of reiterating instead of transcending the narcissistic relation; it is this narcissistic relation that Lacan’s topology attempts to transcend.

**Conclusion: The Impasse of the Map**

\(^{20}\) For Lacan, “love is giving what you don’t have” at the same time that the “psychoanalyst has nothing else to give [the patient],” hence the risk of the dyadic relationship between analyst and patient slipping into an object-relation at the level of the ego (2006d [1966]: 516).

\(^{21}\) It is precisely because of the “proximity in the object-relation” in the consulting room that “the third party to the relation” tends to be “neglected” (Lacan, 2006d [1966]: 509).
Psychoanalysts continue to uneasily invoke the topographic because it facilitates representation of unconscious processes that otherwise seem obscure or unmappable; but these maps fail, at least according to the terms of a topographic map, fixed and two-dimensional as it is. An illustration of the failure of topographic maps can be found in Freud’s and the translators’ own difficulties in mapping the patient’s journey, even after all of its perplexities have been resolved. In a footnote to the case added in 1923, Freud writes: “My patient did his very best to throw confusion over the little episode of the repayment of the charges for his pince-nez, so that perhaps my own account of it may also have failed to clear it up entirely. I therefore reproduce here a little map, by means of which Mr. and Mrs. Strachey have endeavoured to make the situation at the end of the manoeuvres plainer” (SE 10: 212n, Figure 6). Then Strachey adds the following to the 1954 edition: “[Unfortunately, the original map, printed in the German editions of 1924 and later, as well as the English translation in Volume III of Freud’s Collected Papers, was itself totally inconsistent with some of the peculiar data presented in the case history. An entirely new one has therefore been constructed for the present edition; it takes account of fresh material contained in Freud’s Original Record of the Case.” (SE 10: 212n, Figure 7).

Patrick Mahoney (1986) points out that even the second emended map “leave[s] matters cloudy,” because the represented chronological framework remains filled with “improbabilities” concerning the time of action, including the arrival of the glasses at midnight on a Sunday (53n).
FIGURE 6: Map of the Rat Man’s itinerary (1923)

FIGURE 7: Revised map of the Rat Man’s itinerary (1954)
The unconscious is spatial, just not in topographical terms. Following Lacan, we consider topology more accurately to represent the various spatial phenomena associated with the psychical apparatus. But we are also arguing for the always already inseparability of psychic and material space. In moments of symptomatic behavior, the apparent separation between psychic and material space is effaced and their equivalence approaches representability; the Rat Man thinks that he can get on a train and resolve the psycho-topological conundrum.

If many geographers have become convinced that the grid is not the whole story of space, Lacan can help us to understand how space works in non-Euclidean ways. We argue that it is because the subject is a topological figure that space as we live it is also more-than-topographical. Our approach also moves away from simply seeing Euclidean space as an arrest of topological becoming. What we find in our re-reading of the Rat Man case study is that there is an impasse between the topological and topographical. The train track cannot be twisted and folded back upon itself, and yet the Rat Man continues to travel in the opposite direction from his goal, as though such a twist might occur and not only turn him around, but (re)turn him to another level, where the relations of his family myth might be replayed. What we are calling material space—lived, day-to-day space—is in fact not always or only lived in recognizable, Euclidean terms. These material spaces are also psychic spaces, and as such we must understand them topologically, because the psyche is not a topographical entity—a conclusion inaugurated by Freud’s struggles with such a model. In short, if the psyche is a topological space, then we are pressed to understand the places, spaces, routes, detours, relays, correspondences and transports through which
space is navigated and produced as themselves working in ways that defy any “closing of the circuit,” that defy, in other words, the topographical.

Despite Euler’s conclusive topological theorem, for a couple of hundred years people continued to attempt the circuit of the Bridges of Königsberg, until WWII when two of the bridges were destroyed by bombs. In the aftermath of rebuilding, these two bridges were replaced by one. It is now possible, if you start on the island, to follow a route that crosses all the bridges without crossing any one of them twice -- thereby conquering once and for all the psycho-spatial aporia occasioned by the specter of the bridges.

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