Jean-Michel Vappereau, *Fabric – Intrinsic Topological Surfaces*
translated by Marc Etlin

{first draft}

The Mirage of Topology

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In this volume of our series we adopt a local, commonplace style, as suits discussing surfaces. Ever since Lacan ironized about the claim of a psychoanalyst from New York only taking things superficially (E., pp. 393 and 598), surfaces can have a bad reputation in the discourse of psychoanalysis, among those who sustain the social link that the practice of Freud implies. Lacan specifies, nevertheless, that “in itself the idea is dangerous” to think that “the surface is the level of the superficial.” “In regard to the place of desire, another topology is necessary” (E., 601). We undertake the work of constructing this topology through our series of fascicles.

Topological surfaces are (continuous) topological objects (varieties, manifolds...) of dimension two.

- There is dimension (a).
- There is the two (a').
- Dimension is a topological invariant whose definition we provide and whose use should be established in psychoanalysis from the introduction that Dr. Lacan makes of the term of dit-mension [said-(di)mension] (1a).
  - For us the number two corresponds to the Imaginary (1a').
- The dimension of a topological object is defined by the dimension of the cuts that detatch it (into various pieces). This is the definition that Poincaré gives. One dimension is made of much smaller dimensions made, in turn, out of dimensions. As soon as a signifying swarm is a necklace made of rings, each ring in turn a necklace made of rings (2a).\textsuperscript{1}
  - The Imaginary is the body (2a').
- To make another dimension intervene in it does not hold back from bearing consequences. As we just saw in the previous section, it is uniquely on the plane, by an intrinsic manner, where it can be said that the center is interior to the circle (3a).
  - The relation with the body in analytic discourse shows itself as narcissistic (3a').

1. The birth of dimension

We want to submit the description we give of the doctrine to this doctrine itself. Only this torsion produces any kind of consistency. \{14\} The doctrine that Freud makes is presented in terms of apparatus, qualified as psychic. Freud is a neurologist, but provides a causality which is also medical. In this encounter between a conceived technology and a clinical practice, he is forced to say what occurs there and provides itself to him. From his *Contributions to the Conception of Aphasia* [1a], Freud, like others around him, learns that the encountered material has the profile of language. He gets from this the notion of an apparatus that is constructed through successive translations. We see that then his initial model, which represents the representation that is made of the psychic apparatus, shortly will not retain anything more than the manner in which it was constituted. The psychic apparatus is

\textsuperscript{1} *Essaim*, fascicle no. 1, pp. 127-142
converted into the structure of the subject. This way the difference that some establish between a theory and a practice is cancelled, when they do not find something in its treatment by psuedo-theorists or supposed practitioners.

a – Dimension is a topological invariant

Dimension is the main topological invariant, and this term gives place to a difficulty that obeys a curious joke in scientific culture.

“To give the dimensions of an object” consists, in the current language, in measuring it according to the directions of space. One has to take the measurements of its width, depth and height, considering the example of the three dimensions of a solid.

The notion of dimension, therefore, is thus bound to the convincing manner of the measure by the deed of measuring.

From this experience, the novice reader miscomprehends already what topology is, if it consists, as is true, in abandoning recourse to measurements, while dimension is still its main invariant.

Accordingly, it is necessary to give a rigorous definition of dimension that would owe nothing to the measure according to the degrees of volume of an object.

In physics directions are called degrees of freedom. Therefore it is about movements. For example, a plane movement unfolds itself according to two extremities' directions and its intermediary compositions. It is said that it is produced in two dimensions.

In a more general way, when a phenomenon depends on two parameters or two variables, one must speak of surface through a geometrical metaphor.

If we measure volume according to the directions of space, then we are closer to the notion of topological dimension. Dimensions can be defined independently of all measure.

In the first place there exists an inductive definition of dimension, starting from the point taken as an object without dimension in Euclidian geometry. A composition of various points forms a line, of one dimension; a juxtaposition of lines forms a surface, of two dimensions; a gathering of surfaces forms a volume, of three dimensions, etcetera.

But although this presentation continues to be intuitive, we can see in it, however, that a dimension is made out of other dimensions, in the manner in which a swarm is made out of other swarms, yet for our case, it is about another dimension.

To define these with clarity, it is necessary to take things in reverse. A object will be of dimension \( n \) if it can be divided in two non-connected parts by means of a cut of dimension \( n - 1 \).

If we descend in the direction of zero, dimension two is defined by the fact of being able to be split by dimension one; [e.g.:] this is a line because in itself it can be broken up through cuts of the dimension of the point, if the point is considered a null dimension.

Consequently, surfaces are those objects cut apart by lines; the structure of surface is defined by cuts of dimension one. In this volume we study these trajectories that consist on the surface as that which can be cut. The cuts of dimension one constitute the surfaces and indicate the surface structure. The structure of surface is the cut, and we will call fabric the place where these cuts are made.

There are other definitions of dimension in topology. This concept makes room for a theory of dimension (see the bibliography related to this question at the end of the volume). One can find a recent formulation of the inductive definition of dimension—inductive in the restricted and the broader sense—and the overlapping definition of dimension ([14], p. 54). We have noted all attempts to define intermediary dimensions by means of coiling. Like how a sphere is locally of dimension two, yet it envelops a volume but cannot be submerged on the surface of a plane—we render an account of this by
saying that it is locally flattened. A topological surface is locally equivalent to a portion of the plane, yet it can present a magnitude that constitutes a volume.

This question merits being taken up again starting from the specific elements that we intend to reexamine here, as well as many others. At first Dr. Lacan employs the term category to speak of the Real, the Imaginary and the Symbolic; he denominates them with three letters, the $R$ zone (psychic reality), the $S$ zone and the $I$ zone, three distinct zones of his $R$ schema, as we will eventually see. After that he successively substituted the notion of category with that of dimension (which he turned into dimensions (*dit-mension*), to arrive ultimately at that of consistency, when he calls $R$ (the Real), $S$ and $I$ the three rings of thread of the Borromean chain. To come to terms with the passage in Lacan's teaching from psychic reality to the Real, one needs an itinerary like ours. More than being about the density of things, this is about rendering an account of the density of words, their weight in enunciation, or, to say it better, the size of the course of their Reasonance.

In this volume, we will begin to undertake this opportunity through our practice of translation, from words used in the discourse of psychoanalysis and from topological constructions.

**a' – The number of these [two] is the Imaginary**

Momentarily, we must make a division from that of these (d'ieux) from the two (deux) of the planar symmetry of the mirror. This defines an imaginary space, made of tricks, of trompe-l'œil, of images that disappear or interpose in multiple constructions of geometrical optics. In the practice, this space depends on a more precise temporal indication, specified by events, memories whose date are not found, those in which chronology is entangled, without geographical locations; it is inhabited by false recognitions. Barely situated like a dream is, nor in another place, the position of this imaginary space explains, to the contrary, the precise function of historical dating, required by Freud, in analysis (E., p. 183).

Dr. Lacan does not hesitate in initiating his teaching starting from the space produced by the mirror as the case particular to the function {17} of images within the problem of space's signification for the living organism (E., p. 96). But he indicates that if we want to study its limits, there is nothing

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2 Before Poincaré, we owe to Dedekind the particular credit of incidentally bringing the topological character of dimension to stand out, as a result of a letter Cantor wrote him in which he makes explicit his discovery that putting into correspondence point for point the set that constitutes the surface of a square with one of its sides. It is at this opportunity when Cantor declares his poignant formula: “I see it but I do not believe it.” In this way he would demonstrate the inconsistency of the notion of dimension, and with it, its imaginary character. To which Dedekind responds, with remarkable precision, that the construction is well made but completely irregular, and with that he establishes that dimension continues to be a notion tied to continuous accuracy, a topological notion if it is not set theory-ist.

The equivalent notion in set theory is that of number, whose definition and construction are both very problematic. The ordinal number can be constructed as an invariant of a set theory that includes the axiom of choice. As an invariant of this same theory a definition of the cardinal number is deduced, but we do not know how to construct the (cardinal) number as an invariant of any kind of set theory (without the axiom of choice). Will number become a topological invariant? (The cardinal number, clearly is.) This question is important so long as number is truly the mathemata, the main object of mathematics since the Greeks, and to the mathematician with his calculist wonder. In order to realize this difference, one must distinguish number and numeral with their respective functions in the construction of invariants.

* Lacan's neologism, *dit-mansion*, accounts for dimensions of speech, via what has been said, i.e., what has been mentioned already. Dimension homophonically registers dimension and mention in a single utterance, performatively mentioned both of its dimensions through its reading a la lettre. (-Marc's note)

* The French *résonance raisonnante* is a homophonetic neologistic phrase that imbricates reason and resonance within each other. (-Marc's note)
that leaves this imaginary space without recourse to another order (E., p. 70); “Of our antecedents”).

The treatment of the imaginary by Sartrean phenomenology seems to us very antiquated nowadays if one resorts to the solid categories proposed by Lacan [34]. M. Merleau-Ponty seems to us more inspired, when, at the end of his itinerary, he discovers a knot and a chiasma between the visible and the invisible [30]. For some this discovery can be made retroactively, because in this moment of consumation Merleau-Ponty meets death. For our part, we take care, at the entrance of the cave of psychoanalysis, to indicate with clarity its elements and its logic to prevent professors of philosophy and some others from, if not the passage across, then at the least the fall into the misconduct of a bad politics, because for them it is necessary to carry out an act that would be neither passage to the act nor action in the phantasm. This other order of a Baroque aesthetic is not a crazy vision [18] but the rationality of the instance of the letter and logic.

This imaginary space is structured by the appearance and disappearance of features. Among the essential elements that we can consider between the body and the image, the penis will fulfill a function of medium by its presence or absence, as image of the rival, this imaginary other, my semblable. For this reason, we articulate a structure of this space with insistence. This [structure] is made of subjective tension and has a temporal correlative inured by anxiety. Its imaginary modes give its consistency to specular knowledge, made of depersonalization and the hallucination of the double, and are the paranoiac foundation of human knowledge. It does not have any pertinence in locating the phantasm (E., p. 71; “Of our antecedents”).

The function of the optical apparatuses of Dr. Lacan provides us with the dynamic of his L and R schemas. We have constructed an F schema that takes the terms of these two in order to link them with the schema of Freud (see Series Presentation, pp. IV – VIII). We want to speak of the schema whose first version is found in the letter, numbered 52, that Freud writes to his friend Fleiss [1 b], and the second version in the speculative part of *The Interpretation of Dreams* [1 c].

Starting from these schemas, we are proposing to situate the Imaginary in the topology of the subject. Freud's schema is presented here by this dual kind that is its graph of lines. Its linearity is of essential importance seeing that the graph is proposing to render an account of the succession of stages of translation through which, according to Freud's hypothesis, the psychic apparatus is constituted. The process [18] of translation, as is well known in its practice, is not without some shadows. The set of these schemas' functioning, which in Lacan are converted into those of the structure of the subject, endeavour to explicate this process. As in all of our topological presentations, translation is intrinsically present in the schema—and this [schema] itself is caught in a process of translation. Here are the schemas in question.

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Graph of lines from the schema of letter 52

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3 *Essaim*, p. 65
Etlin's translation of Fabric - 8/11/9 – circulation is prohibited without my permission - (pp. 13-49)

- The terms inscribed on top of the line of the graph are those of Freud's letter 52:

The originality of Freud lies in distinguishing between P and Ps, Warhnehmung and Warhnehmungs-zeichen (E., p. 558; “o”). Our objective is to explain that they are perception-signs for Freud, the Freudian einziger Zug or the unary trait for Lacan, the site in which the structure is condensed at the start of the translation, from the entrance of the cave between I and A. This distinction between P and Ps can be proven by whoever wants to in the presence of a speaker of a strange, forgotten language. This is perceived as a verbal surge in the measure in which the listener cannot introduce into it any distinction through a cutting of sequences thanks to the recognition of words and phrases. The reverse realization of the learning of a language can be produced for a speaker in one's own maternal language: this is the holophrase, the recourse to coagulated syntagmas. These Freudian instances are for us stations in Freud's graph, on each one which the structure comes to play. In this work, this is presented in terms of {19} surfaces from optics. One must take up its more imaginative version. In fascicle No. 0 we give a presentation of this structure in terms of an only slightly imaginative mathematical logic, in which these instances are defined better through their opposition. At that time we tackled the difficult problem of the definition of the unconscious and of what constitutes its difficulty for a contemporary Kantian spirit.

- The letters placed under the graph come from schema R:
  M: the primordial object (the mother). I: Ego ideal. A: the Other. S: the Subject (Freud's Es). i: the specular image (the other of the mirror, the Ideal ego). M: the ego.

These elements only find their correct definition beginning with logical articulation and its practice of reading (translation). In particular, the question of the Other, in its definition, follows necessarily, as in the case of the Ics, an original Freudian articulation. Only these elements are situated here in a topology that guides us through this articulation by the act of experimenting with it through reading the graphs and surfaces as far as the knots. This is a matter of style.

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4 I translate this term this way to avoid a potential confusion in writing “signs of perception,” as if these signs were within perception, when it is actually about taking perceptions, generally understood as a continuous process, as discrete signs, rendering perception into discontinuous units. (Marc's note)
5 Nons, fascicle No. 0
6 Nons, fascicle No. 0
The first notations designate segments; the second ones, points.

The grounds for folding this schema into our F schema comes from our reading of Lacan [37 b].
- The shading that we locate in the F schema comes from the R schema.
- The orientation we give to Freud's schema comes from the L schema. If we follow this orientation on the L schema, we traverse two different paths that have the same extremities. One is direct, Aa; the other, indirect, Aa’ a. These two paths illustrate the fact that a message leaving from the Other, upon taking two different routes, arrives at a displayed according to two versions. When it follows the indirect path, the message passes across the unconscious and the Freudian Es to arrive at the ego. It is going to be marked with the stamp of desire (dream) that will give it the profile of its deformation.” By comparing this version with what took the direct path (daytime material), there can be interpretation, in the manner in which Champollion translated the Rosetta stone. That is, by interesting oneself more in the deformation of the message than in the same message's sense. In such a way we can situate Freud's observation ([1 n], pp. 236-7), who says that the unconscious repressed can be communicated with the ego by means of the Es (S).

In a first moment, in the pair aa’ of his L schema, Lacan will notate a’ for the other, the specular image, to reserve the letter a for the ego {20} (E., p. 53, “I”). These are the endpoints between those which, of these [two] (d’eux), the narcissistic relation is stretched.

Immediately afterwards, he situates these letters a and a’ in the R zone of the R schema (E., p. 553; “o”), but reverses their placement.

In the L schema, Lacan situates the imaginary relation and writes it between a and a’.

In reference to these two small letters which are found again in the R schema, Lacan speaks at that time of the imaginary pair aa’ (E., p. 577; “o”).

Previously, in the L schema, he denominates as well an imaginary row for this pair aa’ (E., p. 55; “I”), and it is with this object that he introduces this topology more appropriately in order to “define the status of a and a’ in themselves.”

The topological problem to resolve consists in the construction of the object a, which has to strictly differentiate the ego, anotated m—which is nothing more than the metonomy of this object—from the specular object, i—enveloped in the object a and suffers its tension—. These are the two terms of the process of identification. Freud observes the much more general reach of this transformation that he finds in melancholy. He defines identification in the case of the object that casts its shadow over the ego. It is also a question of interior and exterior: I turn into what I cannot have. The post-Freudians' error consists in reducing the practice of analysis to a mere peeling of the identifications that form the onion that is the ego. Already they do not know where to go when they grasp the nucleus that is nothing, so long as which for us, as we are going to demonstrate, this nothing does not count except in the way in which it was considered not to be nothing.

Since the mirror stage, the image that matters is that of the body. This is designated, ultimately, by i(a) in Lacan’s algebra; this is the specular image. It is the other of the mirror, my semblable, my neighbor; is he myself?

The algebraic expression i(a) through which Lacan anotates the specular image is a mix, produced from the i of the R schema and the a of the L schema. It appears in the graph of desire (E., p. 808; “v”).

But there is more: the issue is a functional writing, where the constant a comes to occupy the outlining placement of the function i(x). Is this function the identical function, identity in our algebra

*Poinçon*, which I have translated here as stamp, also means punch, recalling the lozenge (“◊”) in the formula for the fantasy ($\diamondsuit a$), which belongs to this trajectory through the Es to a. (-Marc's note)
books? The writing adopted by Lacan is more elaborate, because here the letter a is, properly speaking, distinguished from the specular image.

This image \( i(a) \), to the contrary, envelops the object \( a \), like the ego that is constituted by successive identifications, in the manner of the layers of an onion, fixed to the succession of its objects. Freud discovers this process by chance in melancholy. Subsequently he understands that it has a much larger reach. This \{21\} functional writing permits signalling the successive envelopment of these objects. They are images that are composed in the manner of functions,

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i(i(a) \ldots i_2 (i_i(a) \ldots)),
\]

as the figures of the imaginary other (E., p. 553; “o”).

On another level, we will not waver in evoking in this respect the construction of complex numbers starting from imaginary numbers, in which the letter i is an accepted convention. We guide ourselves through an imaginary of this type, in the manner of complex numbers. An imaginary not so imaginative, because we compare it with the function of this number, in the resolution of algebraic equations. It authorizes the existence of fictitious solutions that reveal others—actuals (S. XXII).

What is of them \([d'eux]\) begins at two \([deux]\). Two parallel mirrors suffice to obtain an infinity of images-en-abime. It is right then not to be fascinated by this infinitude and not give in to the vertigo of the reflexive tradition. One must take note, above all, that it suffices that the mirrors would be two to attain this effect. The problem is the same in the couple, or in the group, when it is about making them into One. It is the more feeble meaning of love, what does not correspond, of submission and withdrawal. This matter amounts to saying which type of One it is about. We want to situate our point of departure in this cut of the biological and the social. In the moment of the resurgence of sexuality in boys from the chain of dreams, they confront the amorous amusement as a team. Unique occasion of distinguishing the of them \(d'eux\) from the two \(deux\), because girls take precautions from the urgency of their onset in being paired off among them. Although secondary, these deeds are nevertheless not negligible, and the question remains of knowing how they are knotted with the first process.'

Imaginary space consists in the triangular fabric stretched between the three terms of the R schema that are the mother M, her desire (represented by the phallus F in this manner like for the fraternal rival I) and the child situated in the I position (E., pp. 182 and 552; “g” and “o”), the I zone of the R schema.

We interpret \{construimos\} the traits defining metaphor that achieves translation the utmost triangle in the S zone of the schema. The former should articulate the manner in which the signifier of the father completes it by assuming the function of potency and conciliation, which arbitrates jealous tension, in the foundation of this space. These features define the imaginary function of the phallus just as it is present in the frescos of the villa of the mysteries in Pompeii. This structure is that of modesty, to which we contribute some precisions. We propose it in the articulation of the set of schemas, at play, upon the entrance of the cave, between I and A, in Perception-Signs.

\{22\}

In the case of these schemas, since we are presenting them, we should distinguish two moments.

* Whereas other analysts distinguish Freud's processes along the lines of primary and secondary, Vappereau distinguishes between first (\textit{premier}), primary (\textit{primaire}), and secondary (\textit{secondaire}) processes, arguing that primary is not the first. (-Marc's note)
(A) Incidence of the repetition

The first moment consists in the act of folding and unfolding Freud's graph, in order to render an account of articulation in the analysis of historicity and structure ([29 c], pp. 158-163). We will speak again of this incidence more precisely in chapter IV. It is about the repetitive insistence (of them), in the history of the subject, of the effect of a structure, in its own repetition (two).

Freud drew his schema to account for the elaboration of the psychic apparatus by means of translations that would be made corresponding to successive ages in the life of the subject. With this [schema] an interpretation was being rendered in terms of phases, into which the post-Freudian psychoanalysts threw themselves. One must say that Freud never resolved the problem of the necessary closure of his schema ([1 c], footnote to p. 460).

Lacan proposes closing it in this schema, as we deduce it of the reading of his R and L schemas, and he resolves with it a certain number of Freudian antinomies.

Graph of lines from the schema of letter 52

As in practice, upon being met by the surprise provoked by the resurgence of the psychic event, the orientation given here to Freud's schema seems enigmatic, since it presents a single arrow in a direction contrary to the others. However, with the folding the orientations of each edge begin to take a direction in the reading, if we refer ourselves to the L schema, in which, as we said earlier, they find its source.

Outside of the outline of the solution to the knotting of Perception and the Conscious, from which the imaginary consistency {23} that is maintained throughout these schemas represents a problem, this structure frees us from genetic or evolutionist claims with their presumed stages. Suppose that what is before and what is after can be identified and differentiated.

We recalled the example of the Ego ideal and the superego, which still constitute a problem for many neo-Lacanian psychoanalysts, not to speak of the post-Freudians. The Ego ideal falls under the jurisdiction of an identification prior to the Oedipus complex, a first identification in which the post-Freudian psychoanalytic translators of Freud in France, believe to be saying was lacking a previous choice of object. Freud says that the superego is the heir to the Oedipus complex. How is it possible that these two instances would not form more than one for even those who believe in the pre-Oedipal stage? To put the material into order another dimension is necessary, without having to bear the blame as the rebound of a logical lack. These stages “are not, of course, nonexistent, but analytically unthinkable” (E., p. 554; “o”) due to the structure. The mobile object of the first identification with the

*Sens means not only sense and meaning in French, but also direction. Depending on the sentence, the emphasis of sens has to be shifted, but try to remember in each direction of translation the other ones. (-Marc's note)*
Ego ideal, that is, the father for the son, as I of the S triangle, arrives secondarily to the I triangle. It is hardly surprising that in lieu of this object the post-Freudians only find a void (introjection) while the Oedipus is maintained without consumation (neurosis) for lack of a completed analysis. Thus we see the extreme importance of the distinction introduced by Freud and emphasized by Lacan, between the Ego ideal and the ideal ego, so then this nonexistent object is the Ego ideal enveloped by a voice, a shred of discourse; it was already there.

This material is of language, which is maked by the effect of translation, as much in each one of its elements as in its set. It already corresponds to the body or to thought, Freudian repetition acts upon it. This extreme term, introduced by Freud when he radicalizes his position, is that towards which he conducts his initial hypothesis of the signifier produced through the translation itself.

As far as evolution in historical development is concerned, represented by Freud's schema (figure 2), there is without a doubt a recurring repetition. This, in diachrony (history), is the metonomy of desire. The topology of the subject (structure, double loop of the repetition), is projected in the instant of the phantasm (E., 836; "w"). The problem, in the practice of analysis, is precisely to render an account of the material developed in this way. It depends on the other repetition of two-sided bends that explains the second schema.

In the synchrony of structure, the F schema presents a kind of stability which is repeated, or would be desire irreducibly determined by a condensation. This construction, produced in another place, acts and legisates in diachrony. From there [recurs] the insistence of the repetition.

(A') Composition of Perception and Consciousness

In this other dimension there is another moment between Lacan's two schemas that does not lack identity with the first moment of the repetition, because it is this which is repeated.

It is about the articulation of the different ways of the composition of perception and consciousness. We have elaborated the F schema in order to present this composition. In this case two solutions propose themselves, with their mutual relations.

The reader is now able to realize the first, presented by the R schema, after there is the F schema positioned in the fabric that corresponds, as we have shown in our Conclusion: that of the projective plane.
Another solution, presented by the L schema, is the retraction of psychic reality and the
difficulty that represents for Freud this zone called $R$. It is about nothing less than the *fading* of what
is repeated, in an insistence of fiction.

The introduction of the F schema, on the surface of the projective plane, will serve to show the
relation that these two solutions maintain and is proposed clearly as a reply to the questions raised. The
retraction of the $R$ zone, or it would be the mutual crossing of the P and Cs segments, presents a
dynamic of the cut on the surface of the projective plane.

It is very clear that this happens only if it can be understood on the condition of positioning
these schemas in the fabrics whose study we propose.

*a** - *Fabrics*

The subject is science's term. In an article ([19 a], p. 365), hailed by Lacan, Georges
Canguilhem makes his presentation of psychology begin with the biology of Aristotle. Next he
situates the position of the subject according to Descartes in the flaws of {25} mathematical and
mechanical reason. He makes out that the subject supports the responsibility of the error in experience.
For an error to be able to be spoken about is precisely to define a field of rationality. If the world is
rational and I am no more than an element of this world, I myself rational, how can it deceive me? For
Descartes, reason is mathematical. In such a way, the question of the subject appears when I ask
myself: “How can I not comprehend a demonstration of geometry?” The subject is not the same as the
fabric from which it is produced. Since Galileo, this fabric happened to be mathematical, in which
already the subject cannot be interpreted as from the same God. God, whose existence, in opposition to
this being, is necessary for whoever claims to resort to this mathematics. Lacan develops the question
of the subject from the testimony of Descartes. Psychologists do not account for the necessity of a
mathematics for merely speaking of the subject. Even when this quickly becomes covered over in an
envelope.

In one of his writings (E., pp. 793-827; “v”), at the moment of closing the first topological
chapter of his teaching, while in his seminar he has already opened the following chapter, in which he
begins to present structure in terms of surfaces, Dr. Lacan distinguishes two modalities of fabric.

1) One is the phantasm, written $◊ a$. In this writing it is called the “fabric” (cloth) of the
subject of the unconscious, $S$ (of originary repression) (E., p. 816; “v”). This subject is grasped in the
fading of the act of enunciation. This fading produces the reversal of the terms in the R schema in the
moment of its transformation in the L schema. This moment is instantaneous, it lacks stability; the
fading is brief. The phantasm, in its set, weaves (cloth, upholstery) the way of fastening characteristic
of the entrance of the cave, condensed in the punch $◊$. It needs the unilateral surface's structure.

2) The other is the object $a$, a constant in the mathematical sense of the term, an object in the sense of
set theory. It is the “fabric” of the subject, that thinks it can grasp itself in the *shifter* that marks the
change of place of the grammatical subject in the enunciated (E., p. 818; “v”). This object lies
between the phobic object and the fetish (E., 682; “s”). It is outlined by the drift (*Treib*) of the
unconscious. This mention of the fabric that forms an upholstery (a lining) is presented in our topology
in an arrangement of Perception and Consciousness shown in the R schema. This object projects itself
in diachrony (history), in a recurring repetition that occurs between them, like a ferret’ in the forest of

* In English, parenthetically, in the original. ( -Marc's note)
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◊ Why the Spanish translator has chosen anillo (ring) for the French furet (ferret) is beyond me... ( -Marc's note)
desire. In this respect, a reversal between the \( i \) function and its argument \( a \) is produced. It needs a bilateral surface's structure.

\{26\}

It can seem contradictory, when in reality it is no more than contrary, to put the four elemental intrinsic topological surfaces (sphere, torus, projective plane, Klein bottle) into correspondence with the objects (breast, excrement, gaze, voice) of the three drives indicated by Freud (oral, anal, scopic), those to which Lacan added a fourth (invocatory). As a matter of fact, if for two of them these elemental surfaces are bilateral, this clearly corresponds to the structure of the aforementioned object \( a \); the other two are unilateral, simply closest to structure of the phantasm; and not for this are they less object \( a \), but rather it needs them precisely for situating the place of desire. These four objects \( a \) should be elaborated in the tension between the phobic object and the fetish. One must add that between \$ and \( a \) an inversion indicated by the \( \text{◊} \) is produced. Here [is] the causality of the subject, whose analysis can be reduced to saying which relations the bilateral surfaces and unilateral surfaces maintain [37 h].

2. Classical Mirage and Topological Mirage

We extend the reading of the schemas positioning them over fabrics, to follow the second topological chapter (1961-1971) of Dr. Lacan's teaching. This then turns to intrinsic topological surfaces and mathematical logic, and contributes a greater precision to the concept of dimension.

We study the fabrics by means of cuts, as they are made in mathematics in the case of intrinsic topological surfaces, then the surfaces' structures are properties of connection and connectivity.

a – Lacan and the plays of dimension

As a consequence of the theory of intrinsic topological surfaces, for which a fabric that presents a single face can be transformed into a bilateral \([\text{sur-}]\text{face}\), is sufficient with a closed cut, and only one , that would form a circle. This cut should be made in accordance with a trajectory that consists in the fabric.

Intrinsic topological surfaces are these fabrics whose structure shows the cuts. These reveal the surface structure of the fabrics, their dimension and, more precisely, their kind \{género/genre\}. Cuts make the surfaces. For Lacan, the cuts are surfaces.

Between bilateral fabric and unilateral fabric, the hope for another modality of dimension two attempts to get into knots, as we will develop it in chapter III.

If the faces of a surface would have a good definition, \{27\}, it would be interesting to speak of its dimension. However, in each case a cut of dimension one suffices to separate a face into two non-connected faces. Will the face be an object of dimension two of a intermediary kind among the fabrics \{?\}? We could consider it this way, but in the first place we should define it. The number of faces is an intuitive invariant, corresponding to the well constructed characteristic of the orientable and non-orientable surfaces. On the contrary, in order to give some substance to the notion of face for intuition, it is tempting to connect it with the upholstery that corresponds to the lining of a surface. It is about an activity sufficiently cruel, owing to detaching the face of the surface that we are skinning in a sort of peeling.

This second stage aims to contribute the desired precision in the definition of this other dimension; rather it is about an intermediate kind. The two Freudian moments, that we presented before in terms of schemas, are confirmed in this new formulation in terms of fabrics.
The first of these moments distinguishes and reunites the two aspects of language, that of synchrony (structure) and that of diachrony (history).

On this side of our detailed study, which leads to the construction of language's structure, according to its metaphorical aspect (synchrony), we base ourselves here, not in the “sense previous to the subject,” which is the responsibility of this first aspect, but in the material, the fabric, the consistency of surface, it is valid to say in “the enjoyment in which the subject is brought about as the cut,” and whose introduction as concept of the discourse of psychoanalysis dates from 1958, in the dawn of the second topological chapter.

This substance, neither extension nor thought, in which the cut is made, will there not be a much better substance than enjoyment, as to however it not being about felt or understood sense, but of the sense in carrying it out? We begin to formulate the theory of this enjoyment from the elements of fabrics that are resources for us, commodities. enjoyment weaves where the cut of the subject is brought about, in the presentation that we would not be able to take for a representation of the structure, in spite of this substantial support of the weaving, but which we consider as a stage in the transposition. After, through the knottings of this fabric, the knot itself will be converted into a cut. This cut, our knot, is the structure of “a surface bound to the body” (*Radiophonie*, p. 70; “f”).

Beforehand, this version of the structure in terms of surfaces functioned up to the writing of *L’Étourdit*.

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The first event of the incorporation has through insurpassable effect the originary repression. It would be precisely that were it understood with clarity in which sense what is first is distinguished for us from the primary process. Suppose that what is primary is not necessarily first.

The body proper, my organic support, can only be called body from the bosom of language. In this is called an image that makes the body, body. This body of the symbolic, of being incorporated with the body proper, makes it body. It happens this way with bodies, formed from the scenery in reality made of language. Incorporation responds to the prematuration of the human mammal that constitutes the real component of what characterizes it. This organic deficiency makes of the human mammal a being basically behind that aims to overcome this insufficiency by means of the recourse to the signifier, to the structure of language. But this incorporation is not harmonious, it aims for totality but does not find it, even though this totality is protracted. The successive envelopes of the constituent identifications of the ego are constructed around an incorporeal and insistent remainder. We call narcissism the irreducible imperfection of the seams of this constitution of the person.

This first structuration has consequences in flesh and body. The constitution of this institution encloses a carcass in a shred of discourse.

Even in the sky as under the earth, the arranging of the burial and the roads of the milky way provide us with the unfolded terms of the structure that respond to the dispersion of the body, to its dismemberment characteristic of human narcissism.

Under the earth, burial organizes, around the empty set of the skeletons, the attributes of the enjoyment of the deceased in a set of pieces (*Radiophonie* p. 62; “f”).

In the sky, the name is brought about. It is the effect of a ravishment like a condensation à propos of a word, that is only found if the articulated elements in a space of compositions are counted

* It is time, finally, for an English neologism of “enjoyment” to resolve the issue of translating *jouissance*, as the term for what is neither simply enjoyment nor non-enjoyment can take after Freud's name for what is neither the conscious nor the non-conscious: the unconscious.
well. Inversely, through the rupture of the name a streaming of letters is precipitated, of where reality is dispersed in elementary tufts. Thus there is another function of the name, different from reference; this is not worth more than through discourse, or would be through metonomy (Litutaterre). This function of the name is much closer to the insult and depends on metaphor when this carries us of to be produced in this other place.

Freud discovers in the reflection of his psychic apparatus the necessity of what Lacan will describe as a climatic cycle. This cycle accounts, within the schemas, for the incidence of the structure of repression in the transposition of the elements. A cut's defect in its regularity provokes its fulfillment in reality, the ravishment of the subject that did not know to find the name and remains dispersed. This imagined formulas tackle the two operations 29 that produce the subject. These are alienation and separation in which we can render an account of through the multiplicity of fabrics and problems that are posed for us (alienation) in a non-exclusive appereance (separation). This stage is necessary with regards to the body between mirrors and a knot.

In two of the main essays of his second period, Freud specifies the function of surfaces in his written work (Beyond the Pleasure Principle, chapter IV, and The Ego and the Id, chapter II).

In Beyond the Pleasure Principle [1 e], its functions consist in separating an exterior from an interior; it is about an envelope. The risk which the reader is referred to in an exclusive manner is to the sphere, bilateral fabric of a null type, makes necessary that we indicate from now on that other structures of the fabrics of topology exist, which subvert this too simple function of surfaces.

On this occasion, Freud distinguishes the traumatisms that come from the exterior from those that come from the interior. Without trying to reestablish the old theory of shock, here he offers in saying another essential thing. The first traumatism continues being provoked, in agreement with Lacan, by the misunderstanding of the parents (Oedipus). Suppose that in the couple of the parents, they do not hear themselves shouting. This misunderstanding is a misrecognition of the dimension of the object in the general case, this object that imprints its vocal profile. Very few, besides, take charge of the bid of making of this object an object of set theory, a letter. Nevertheless, it is precisely that we render an account of this that for a child sleeping or firing an arrow is an act of reading, of writing. This misrecognition goes on with the identification that prolongs this gesture enveloping it even more so far as the instrument is converted in metonomy, whether it is about handling a car or of preparing a text on the computer.

Freud thus distinguishes a perceptive surface, tipping out towards the exterior, from a conscious surface, which envelops the interior.

To protect the exterior apparatus, capacities are formed that it endures by means of shallow differentiation, so that a para-excitation would be established. But internal sensations manage to reach the surface. This way it is like the pleasure principle extended to the connection, to the excitation's exit, and the apparatus dreads being seen submerged by the two sides.

In the case of the tensions too strong that come from the interior, a previous condition like anxiety comes to the body, which “prepares” the surface of this side. Freud arrives at discovering how the subject, beyond the pleasure principle, trains itself in advance in such events. But things are complicated, due to this not stopping from provoking some dissatisfaction that are accentuated even more by guilt when the subject tests this 30 exercise and its resolution as a lack of logic. This further away is the place of the repetition of this verbal tension, another name due to the aspect of the verb 24, in which the complement is included. The enjoyment full of tension, as a matter of fact, is resolved by means of the fulfillment of desire that characterizes the dream and goes beyond the
pleasure principle. This fulfillment insists in the apparatus.

In *The Ego and the Id*, through a recourse to surfaces, Freud develops the attempt to resolve the main difficulty, constituted by the consummation (closing), reencountered in the construction of the psychic apparatus. It is necessary to situate the preceding in this context.

So it is about a surface that unfolds through modifications in the course of the psychic apparatus' construction. It is in the first place the perceptive surface of the body proper (p. 230), which here, also, separates an interior from an exterior; perceptions, that come from one or another side, are of the same type and make room for consciousness, on the surface of the psychic apparatus.

Here, one more time, the processes of thought and consciousness will not go one through the other (p. 231): these internal processes introduce a differentiation.

The relation of external perception with the ego is clear (p. 233). Whereas, the relation between internal perception and the ego requires an investigation (p. 233), because this double surface is projected on the ego.

Freud says to us that the ego is not only a surface, to show that he attributes great importance to the fact that there would be a surface projection of a surface. But there continues to be a problem, which consists in knowing in what sense this double surface is one and two distinct surfaces, and how they can be constituted, each only by itself or between both, the surface of the id.

This situations is described in the course of an argumentation in which Freud tries to explain how something unconscious can be returned to consciousness. For this, it makes to seize word representations in the preconscious system, as intermediary terms. And it is for those that it is seen forced to clarify the relations between external and internal perceptions and the Perception-Consciousness surface system (pp. 231-235).

It is in this opportunity when he puts into relief a difficulty of the internal side that introduces this modification of the conscious side, and when he arrives to ask himself if consciousness should be related uniquely with the P-Cs system (p. 233). There are then two types of interior.

It is necessary to deal with the regulation of this modification, the regulation linked to the pleasure principle in which the ego assumes its \{31\} function (p. 233). But Freud introduces “another thing” that conducts itself like a repressed motion, and turns around consciousness in the form of displeasure (p. 234). We have already run into it in the beyond the pleasure principle. And in relation with this tension it determines that pain occupies the middle position between external and internal perception, and it comported like an internal perception when in really it comes from the exterior world (p. 234). Freud concludes that word representations serve to transform the processes of internal thought into perceptions (p. 235). Therefore there is retroaction.

The new description of the psychic apparatus constituted by the id then appears: a subject is an 1cs psychic id (p. 236), of which the P-Cs system constitutes the surface. On the surface of the id, therefore in the P-Cs system, the ego is situated. Here as well this was developed from perceptions, by means of the continuation of the surface differentiation. The ego is modified from the id under the influence of the exterior world (p. 237). The body proper, and first of all its surface, is the place of internal and external perceptions (p. 238). It is at the same time a foreign object and it transmits two types of sensations, of which one can be assimilated to an internal perception. Freud evokes the experience of pain through the second time, to which in this case we could call an experience of double delusion. He deduces from this that the ego is first of all a bodily ego (p. 238), a body-ego (p. 239), and that it is not uniquely a being of surface but the projection of a surface (p. 238). He describes this
way the relation of the ego with perception, its relation with consciousness remaining to be shown.

Freud turns in this case to a reversal between what is below and what is above in reference to moral values.

We will say that in the beginning we find ourselves in the unthinkable situation of the L schema, in which perception and consciousness are identified. It is about a unilateral surface that is converted into bilateral to being unfolded. In this interstice the space of the ego is developed. On the cut plane of the Möbius strip, this space itself is a Möbius strip. What is due to what an homology of the bilateral surface, which constitutes the rest of the moebian cut, is projected on this heterogeneous part. In this chapter of the topology of surfaces, we study the different figures of this solution. It is about the upholstery of a surface constructed as a lining (see chapter VII, pp. 236).

Yet, on the other hand, already in his schema from the letter 52 to Fleiss and in the optical schema of the *Interpretation of Dreams*, the terms Perception and Consciousness are found on the extremities. Therefore, our first problem is, without a doubt, returning to its mode of disjunction and conjunction. This topological problem of the fabrics of the conditions of possibility and impossibility of the practice itself of the unconscious. If this would not be able in any case to be returned to consciousness, one would be unable to accept an investigation that always leaves us on the side of consciousness. This represents a paradox, and in this essay Freud describes this passage thanks to the word representations obeying the logic and topology of the set of the schemas, that manifest the process of translation. What's more, for us, these word representations, situated in the Pcs in this essay, are connected with Freud's perception-signs, or the letters for Lacan, positioned in the schemas, from Freud, from the entrance of the cave between I and A in Ps. This second difficulty is clarified by means of the identification of Pcs with Ps in the moment of the closing of the R and L schemas according to Lacan's indications on the surface of the projective plane, for example upon a Möbius strip. About which we render an account of in our Conclusion.

We separate ourselves notoriously from the sense found in a model inside of the organism, just as it was able to be supposed before the realization of the presentation of the schemas. We pursue the inclination of a process of translation, adapted to the hypotheses of the doctrine to which we refer ourselves. In such a manner, we follow Freud, who saw himself carried away to this in his own practice, and Lacan, who made it in his critical commentary.

In the second period of his teaching, Dr. Lacan presents a construction that refines the treatment of Freudian repetition, no longer in terms of graphs, but of surface.
Here we sketch the presentation of the structure's dynamic in this new version.

In the same period, the recourse to manifolds of dimension two predominates. On the margin of the passing from bilateral fabrics (torus) to unilateral fabrics (Möbius strip), on the surface of the projective plane, the closure of the R and L schemas offers solutions to the knotting of perception and consciousness. This is to say that we return to finding the two moments, (A) and (A'), of Freudian repetition and the composition of P with Cs in a presentation of surface.

(A) The Signifying Involution. To take into account this other modality of dimension, which is played between bilateral surface and unilateral surface, Dr. Lacan proposes that we address the incidence of repetition. Resort to a transformation, through the cut, of the torus (bilateral) into a Möbius strip (unilateral). This is the signifying involution, it is worth saying, the copula between what is identical and what is different, presented in terms of surfaces (lesson of the Seminar of February 15, 1967).
In chapter VII we show the detail of this transformation. Lacan condenses it in two pages when he writes *L’Étourdit*, which ends this period. In the same direction, in logic he constructs an operator; this formalizes the copula to unite the identical with the different, in terms of negations.\(^8\)

\[ \{34\} \]

\((A')\) *The dynamic of the cuts.* The cut that subverts the fabric and the cut that does not change it.

Our concluding chapter treats in detail the identifications of the sides and the vertices of a graph of the R and L schemas on the projective plane's fabric presented on a Møbius strip or an intersection.

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\(^8\) *None*, fascicle #0.
of strips. In the Appendix we tackle this question on the surface of an immersed projective plane, presented on a cross-cap. These identifications empower us to locate weavings in Lacan's R and L schemas. They indicate that the I and S zones are attached to each other like the two faces of a bilateral surface (sphere, sphere with holes, cut torus, torus).

It is in these conditions that the dynamic of the cuts can be shown between the schemas situated on the projective plane. This transformation duplicates the preceding one. A reversal and an elision are produced, with what the components of the copula specify. It is confirmed in addition that the hidden enigma in the center of the cave consists clearly in the mode of its closure in the entrance of the cave.

Dr. Lacan added a note to the R schema during his publication of *Écrits* in 1966, in which he indicates that “for those who know the continuation, as is the case if one intends to base oneself in this”—and it is our case, already that we intend to be supported by the knot—“what the R schema exhibits is a projective plane” (E., p. 553; “o”). In that case it should be pointed out:

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\{35\}
\]

1.) The lower-case letters, a and a’, are situated on the R band of the schema; the place of the subject, S, on one of its corners.

2.) In the note added in 1966, Lacan says that $S$ is the representative of the $R$ field in the formula of the phantasm, the representative of the structure's representation, which bars the totality of the schema. And it puts into correspondence the object $a$ with the $I$ and $S$ zones attached one to another on a spheric disc, as occurs in what he says during this period.

Therefore, there is between those two terms, subject and object, an exchange that is seen on the surface of the projective plane. We show it on the Mőbius strip in chapter VII (p. 242) and in the Conclusion (p. 292); in the case of the cross-cap, in the Appendix (p. 323). This is produced if we orient the line of the extension up to its knotting with that of intension, in a line without points on the horizon of the projective plane. This exchange is developed to a greater extent in the Appendix (p. 304), where it is shown on the condition of taking some precautions.

In the case in which the $R$ zone is retracted (L schema), the $I$ and $S$ zones, or being the object
a, they occupy the totality of the schema. We understand, with this how it is possible that Dr. Lacan, in an equivocation of his note added in 1966, speaks of the \( R \) field, “that bars it.” The construction of the phrase does not allow for knowing if what is barred is the object \( a \) or the \( R \) schema. In fact, they are different and identical since the schema of the subject's structure consists in the object \( a \) in the L state. The connector of the phantasm as equation of the Symbolic with the Imaginary makes these terms oscillate. The task of constructing this connector in logic is still pending; the elements of our fascicle #0 contribute to this, so that its accomplishment in practice can be presented.

We are not going to surprise ourselves already to check that since this inversion between the proposed terms, \( I \) and \( S \) zones, and of the elision that accompanies it, \( R \) zone, other pairs of oppositions would be the place of such exchanges and disappearances, even in the sayings of Lacan as in the unconscious.

The inversion produced by this dynamic of the cuts is even more close to the signifying involution by the fact that it is the occasion of such upsets between the places of the said and the saying, in Lacan's manner.

This continues up to the surface of the same torus, between the trajectories of demand and desire, as we will show in chapter VI.

The elements necessary for the reading of \textit{L'Étourdit}, in which Lacan drags us to this play of the saying to the said, is found in the four drawings of topology of the fabrics layed out before (fig. 4).

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Things turn legible for us when we arrive at the conviction that the Mœbius strip is a projective plane perforated by a hole conceivable as a rupture of surface. In that case, the set of the enunciateds of Lacan are verified by means of drawings. We can add to the preceding figures the four presentations following a trajectory submerged in the cross-cap, extracted from the Appendix of our work. They have their correlative in the articulation of the previous drawings.

Here what's important is the extension of a unique rotation, around a point outside of a line, up to the line without points in which that one is crossed for its inversion. The line without points presents a curiosity of the continuity about what differential geometry could teach us more.
Nevertheless, we are of the opinion that Dr. Lacan turns to the structure of the projective plane because it is not representable. In this play of the saying to the said we would not able to forget the function of half-saying. In our presentation is a conceivable hole that is placed in functions. The existence of the knot, whose study we pursue next, founds the pertinence of the teaching of the halves of this reading thanks to the drawing.

**These perforations of situations of those there are that remain attentive, and of those that we must render an account of, should impede the reader, to the contrary to what succeeds with the vaporousness habitually fomented, aims to establish firm correspondences between the terms of analytic discourse. These correspondences are made, on the other hand, with the risk of discovery invested in the situation and, for this, of what those would seem to be contra-dictions (counter-sayings). In our topology, we can write such circumstances without inconsistency, without being contradictory. It is about a modality of letters proper to this topology, characterized by the elision that surprises.

{37}

3. The passage, optics and ...

In the square of the constituent elements of the Imaginary should now be included the translation of the precedent in the terms of the third chapter of Dr. Lacan's teaching (1972-1980), where he studies the knot. But as we reserve this aspect for the continuation of our series, it is precisely that now we would go back to the point of departure for introducing narcissism. For this we add a supplement to our doctrine of topological dimension with the introduction of extrinsic existence, in opposition to consistency or intrinsic insistence. To base ourselves upon our play of cuts across the fabric, narcissism, defined between intrinsic and extrinsic, is presented in that case in a renovatted manner: to the following of Lacan up to the more extreme consequences of Freud's hypotheses.

a. **Intrinsic/extrinsic**

The classical theory of topological surfaces is a theory of intrinsic surfaces. We reserve chapter II for its exposition of set.

We find ourselves here in the presence of a new pair of oppositions: intrinsic/extrinsic.

The theory of topological surfaces is called intrinsic because it distinguishes or identifies objects in function of characteristics, and includes invariants, whose definition does not depend on the situation of the surface in a space of a greater dimension.

These characteristics would not vary when we deform the surface or the transformation in space in which they are disposed. These are invariants as well through extrinsic transformations.

The edge knot is, to the contrary, an exclusively extrinsic characteristic; it is defined in co-dimension two, supposing that a line (dimension one) can be added in a space of dimension three. The knot does not have intrinsic existence through not being definable for the surface in relation with itself. This is the intrinsic elision of the knot.

To give an intuitive definition of these notions, we reproduce a brief passage of A. Lautman's thesis, who knew to find interest in this very early on:

“The intrinsic attributes of a being are independent from the position of this being in space, as far as independence from the existence of other beings: they remain in attribution to
Etlin's translation of *Fabric* - 8/11/9 – circulation is prohibited without my permission - (pp. 13-49)

the being considered. \{38\}

“The attributes of (extrinsic) relation, to the contrary, cannot be attributed to a mathematical being more than if it is referred to another thing than itself; it is very quickly a system of reference common to the various beings as ambient space whose attributes can be defined independently from all content, and even true number of other beings that sustain with the first relations of vicinity, incidence, orientation, etc.” [26]

This pair of oppositions are already situated in the history of Platonic philosophy, even when this aims to suture the difficulty that presents under the aspect of the elision that is played between its terms. In this opportunity, Albert Lautman differentiates the philosophies of Leibniz and Kant.

Leibniz, who introduces the term of *analysis situs* in the second epoch\(^9\) of topological investigation, supposes that he can reduce the extrinsic to the intrinsic. *Analysis situs*, in Leibniz's sense, responds to questions of a more precise kind. “Is it possible to determined the attributes of a situation by means of the knowledge of the attributes of structure?” This is “the hope of determining what concerns the situation through an analysis of the internal attributes of the figure.” For us, it is astonishing that the knot of the edge invalidades this hope. Whereas, the knot allows for an intrinsic outline on the surface.

Kant, for his part, in his transcendental aesthetic, founds his conception of space on the necessity of a universal reference, the necessity of a standard space. He affirms this way a position that, for those who are not freed from it, generates great difficulties in approaching topology. Suppose that measure, in Euclidian geometry, is truly an invariant, as it is dressed in totally mathematical categories, yet this numerical invariant refers objects to a standard domain, with those who being or are submitted to a hegemony that impedes through its evidence being accounted for the putting into play of the act of translation. Mathematicians maintain a strong adhesion to this notion of standard, supposing that, in topology, where it is already not about measure, group structure (homotopic group, homologic group) as algebraic invariant even is privilege in comparison with numeric invariants.

The history of mathematics and the development of the structures in which we participate invalidate these two positions; it is very easy to see in what sense [they are invalidated].

We retain from Kant his definition of the universal that is established by means of critical commentary: it is the consistency of modern logic. This universal is the absolute condition that founds \{39\} the phantasm. Sade demonstrated with Kant that, if this absolute condition is necessary in the foundation of a good, it can as well serve to found an execrable ill. The inversion of Kant that is precisely to take into account to situate the other solution with Freud.

It truly will be precisely that, someday, this writing of Lacan will be read, “Kant with Sade,” to allow for shaking up the fetish of cruelty that reduces desire in order to avoid castration. We remember that what in the current discourse of today are called phantasms are not that in the sense of analytic discourse, but fetishes, the images that the subject needs to assure his excitation. While the phantasm is a phrase articulated from that in which symptoms derive. Kant and Sade are not beyond the pleasure principle, but regulate its critical economy. And Sade does nothing more than show in what sense Kant's aesthetic turns inside out like a glove.

On first viewing, topology introduces a variation between the intrinsic and the extrinsic standard. This variation is added in accordance with certain rules of structure that are repeated. The subject takes charge of the structure of these invariants.

\(^9\) *Swarm [Essaim]*, pp. 23-24
Against Leibniz, extrinsic attributes cannot be reduced to the intrinsic; they are blurred up to disappearing, and this justifies the creation of algebraic topology on the part of Poincaré.\(^{10}\)

Against Kant, we do not find an other universality than the relative consistency and neither absolute more than a trivialization (erasure in the intrinsic). Which does not constitute a reference.

Nevertheless, next we utilize the fabrics in the study of knots in which a surface of tension is a surface with an edge, because it is constructed from a knot or a chain.

We speak of the edge (in the singular) of the surface; its knot or its chain is demoniated this way according to the number of components of this edge. When there is a component we speak of edge knot, and we employ the expression edge chain when the components are various.

The theory of topological surfaces can be elaborated in terms of surfaces with edge or surfaces without edge. There is a strict correspondence between the two versions of the theory.

We favour the version of topological surface theory with an edge to follow Griffiths [3] and because we aim through this study at the topology of the knot.

There additionally a fundamental reason for this preference: a surface with whatever edge can be submerged in the supposedly intuitive space of dimension three.

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Submerged: it is worth saying that it is arranged without presenting multiple points in this space. In this sense, this presentation is a presentation injected from this surface, in that which each one of the points of this is distinct from the others and the surface lacks singularity.

The pair of pertinent oppositions from extrinsic existence pass to being that of the submersion and the immersion (not about a topological different relative to continuity, but of an underlying difference in set theory, referring to the injective or non-injective character).

We will not go more deeply into this distinction here, since in the Appendix (pp. 303 and following) we reject the presentation of immersed surfaces and in the totality of this work we content ourselves with studying submerged surfaces. This manner of presenting surfaces imposes upon us another singularity than that of minus a conceivable hole.

The distinction between submersion and immersion is essential for grasping the notion that there is no knot in codimension one (a line on a surface). It is true, we can immerse (points of intersection) a circle on the surface of a sphere in various ways but we can only submerge it in one way only, as we show this in chapter IV. We can submerse a circle on the surface of a torus in various ways, as we study this in chapter V, but the reader can already know that in the manner intrinsic to the toric surface these submersions of the circle are not knotted; we will show this in chapter VI by means of equivalences intrinsic of the effect that produces in this fabric.

\(a' – \textbf{Narcissisms and transference}\)

In the third period of his teaching, Dr. Lacan the set of analytic discourse in terms of knots. The two great structural rules that are in the foundation this discourse, whose articulation we present in terms of graphs and surfaces in the preceding pages, are taken up at this point in the space of the knot. The continuation of our series of fascicles of results aims at giving the particulars of this styling incomparable with the others. It is no longer about schemas, it is no longer running the risk of

\(^{10}\) Swarm [Essaim], p. 149
It is to return to the first gesture, and continue with it the logic presented by those schemas, when we show the bet of this ultimate stage in a commentary in the form of drawing of Dr. Lacan's three optical schemas.

The two first ones are constructed and commented upon from Book I of the Seminar; the set of the three are in a writing (E., pp. 647-684; “s”).

The three optical schemas offer a presentation of the two narcissisms and transference.

We would introduce narcissism. To speak of Freud, it is about an attitude through which “an individual treats his own body in the way similar to that in which, as a rule, it is about the body of a sexual object” [11].

Often, psychoanalysts comprehend this definition thanks to the optical model of the mirror that produces an image of the body of the subject as that of another in the space of the mirror. But this allows for escaping the dynamic of the structure, the difficulty that wants that the subject aims himself in language to overcome the (delayed) prematuration and who finds in it, at the same time of its solution, a more radical discontent. We can understand human narcissism in a modified manner in the second optical schema due to the difference introduced in topology of the intrinsic and the extrinsic.

In his teaching, Lacan took as a point of departure these optical constructions. He takes them up again and extends them when in a definitive way he gets rid of all interpretation of the Freudian instances of the structure of the subject in personalist terms (E., p. 683; “s”). That they left on the margin of their field the aporia of castration sufficient for showing their limits.

From personalism we would not keep a thing other than the point of departure for the theory of identification. The etymology of the word person, which the Latin refers to the mask (persona), guides us as far as the frescoes of the Etruscan tombs of the necropolis of Tarquinus, where Phersu, the masked man, is shown various times. In the “tomb of the Auguries,” a fresco stages Phersu's play, in which the Roman combatants of gladiators had their origin. Phersu sustains another character by means of a rope; if he is masked, the other has his head concealed in a hood, and is attacked by a ferocious dog, of which aims to be defended with a hammer of clay; the animal already inflicted various wounds upon him. The same Phersu is present on the “tomb of the Olympic games” and on the “tomb of Punch.” In this last one he is clothed with an attire with “design in checkers, in which black and white cuadrants alternate.” His tunic is made of various pieces of cloth (fabric) sewn one with others, like our intrinsic topological surfaces presented in chapter II.

This etymological encounter gives testimony in an image to the aggression associated with the personage and the fragmentation linked in a necessary manner to personality. There is a link of structure between the ego, our soul, this pseudo-tendency of unity, and erotic, imaginary aggression; in fact, it is about a tendency to disunity. In that which can be perceived that the lowering of psychoanalysis to a technique of adaptation, under the rubric of the ego fortified in its isolation, cannot but add more fuel to the fire that one intends to extinguish.
With a dismayed grin we judge the observation of all sorts of the politically minded, all sorts of journalists, that tell us they consider the aggressive effects of Lacan's teaching irritating. This irony would be additionally a good example of inversion in the structure if it would not have devastating consequences for various kinds of ages honored to look for unity, forgetters of the pacifying effect of disharmony. Yet we cannot aim this reproof but to the specialists, who are those uniquely responsible for this opinion when they confuse act and violence, that feeds a muffled pact; there could not be a “new signifier.” Lacan knew to be opposed to them in his life.

This bond between the ego and tension is established by means of the plays of the circus in Rome, the sacrifices, the Punch suit (phallus). In such a way, the notion of persona, of mask, is this bond. “How fantastic is the way of Phersu, mask appointed to a symbolic sacrifice, grinded through the development of history. Finally it ended up in our dictionary under the subheading of ‘personne,’ and this way it allowed for the spectre of Phersu to continue tormenting the French language forever” [28].

But this second optical construction can be subverted from the knot between intrinsic and extrinsic in Lacan's third schema. In his tribute to Wedekind, it is pointed out to us that the masked man is also one of the names of the father.

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(A) First optical schema

Dr. Lacan inverts Bouasse's optical schema, called the inverted bouquet, and makes the inverted vase schema out of it.

![Fig. 9](image)

The real vase is here underneath, concealed from the mirror, but it can be seen by a subject situated at the end of the habitat, facing the construction. This is formed by a spherical mirror that allows for the adjustment of the real image of this vase around a real bouquet. This little organisation will illustrate the first narcissism for us, what we will qualify as animal narcissism. Its study is ethology's responsibility. This dimension is not absent from the Imaginary of those who speak [17].
Structure is another thing: the structure of language, the absence of metalanguage.

(A ') Second optical schema

We illustrate, after Lacan, the function of language, the necessity of a metalanguage, by recourse to a second mirror—a flat one in this case.

On arranging a flat mirror A in the middle of the habitat facing the previous construction, a subject $, that this time is found on the side of the spherical mirror, can see in a virtual image the bouquet $a'$ and the vase $i'(a)$, how the real image of this $i(a)$ adjusts its collar around the real bouquet $a$. The flat mirror, A, makes sure the modification of our little organization is produced in a machine that presents the structural rules of primary narcissism. Here, the vase is truly [the] thing; the sublime, with the base upwards, is underneath. In that which we return to find the inversion noted by Freud with respect to the unconscious between what is above and what is below. Not for this is the vase less unattainable for the direct gaze.

This construction is not so stereotypical and banal as some think, who do not distinguish between first and primary, and for those of whom the intelligence of narcissism is interrupted by not having access to the topological dimension of the difference between intrinsic and extrinsic. For them the body only is taken as an object in a symmetrical and unattainable image.

The mirror puts a limit, and the mask is Phersu that tempts the person with his symmetrized ruggedness. In fact, as we are going to see, there is no metalanguage: the two mirrors do not have the same function. The first permits the gaze to be intrinsically held to the body; the second generates an extrinsic postion with its particularities of structure. We refer ourselves now to the consequences of this other role achieved by the mirror A.

(A '') Third optical schema

If we make a little example of the jealous and the slanderous, we can capture in the transference another function of the mirror that generates anamorphosis, slanted view, sloped light.
In this third schema, the mirror A gave a quarter turn. The gaze is displaced to return to the base of the habitat, in unthinkable first position. It can then see the real image of the vase \(i(a)\), transmitted by the spherical mirror, being reflected as in a lake. The image is duplicated to be seen in a virtual image \(i'(a)\) as well, symmetrically underneath where the vase is in the Real. This eclipse cannot last; it is the function of the entrance to the cave, returned to its place, instantaneous trivialization, in which the subject sees Narcissus in a flash of light. Because of this, there is no metalanguage, and this optical model that illustrates it offers a presentation of the structure of castration.

We return now to the difference between the first two optical schemas, to comment on their articulation in the topological terms of intrinsic and extrinsic analysis. Dr. Lacan does not ignore this distinction between intrinsic and extrinsic and defines it clearly for us, some time much later, in terms of subject and object. The distinction is discovered when he states that “a torus only has a hole, central or circular, for one who looks at it as an object and not for one who is its subject” (L'Étourdit, p. 42).

The intrinsic torus is a compact, closed fabric, without edge, that does not show any hole. Only the trajectories of the fundamental group allow for qualifying its structure, as we study in chapters III and V.

It turns out that it can be seen from the exterior, in an extrinsic manner, to look at it as an object. The more simply way of presenting a torus is by means of a fabric in the form of a ring that includes a hole of a very special type. This hole will constitute the object of chapter V.

The difference between the two narcissisms can be understood now as a passage from the intrinsic to the extrinsic. In the second, instead of being merely subject of the body, the subject treats his body as an object, in the manner in which he treats the body of the other as a sexual object. This is exactly the definition of narcissism given by Freud, whose reading is renewed in this way.

Let's show the passage from the first to the second aspect of narcissism with its consequences in transference in the third optical schema. In the second, further away from its interpretation thanks to a mirror, the subject can be situated as depending on the extrinsic topology of a fabric. But he cannot put himself in charge of it verifiably through the evanescent passage through the intrinsic in the third optical schema. Dr. Lacan's optical model already entails this possibility, in terms of mirrors themselves.

In an (imaginary) affair of the mirror, the body is projected to another place; in the other
(symbolic) case, from the language of topology, the subject exists from a place other to his body.

The issue will lie between consistency and existence, through the intermediary of the insistence of the holes (drives), of situating the subject in the Symbolic, and in what situates our topology. In this play between intrinsic and extrinsic, one will be able to take possession of one's structure in a redoubling, as it is staged marvellously, in W. Shakespeare's theater with *Hamlet*. It is true that this passage in the transference is instantaneous, that it is not stabilized but it is repeated. As a consequence, the subject should pass through it various times before being able to render an account of it.

This entrance is fictional: barely teared [off the fabric], it continues being existent, being said that “stands out” (S. XXIII), but it is not known where. In the exploration of this *pas-z-où* {?}, between extrinsic existence and the two intrinsic modes of consistency and insistence, the modification entails the fading of the knot that is stretched to a constrained tightening through cuts.

By casting aside personalism and personality, without relation to paranoia given that it is the same thing, in 1958 Lacan marks a rupture of tone in his writings, when he definitively tackles, to abandon his terms, (imaginary) projection that he teaches us to distinguish from (symbolic) introjection.

After his observation about the report of Daniel Lagache, in which he introduces the signification of the phallus, he goes to break with precedent in post-Freudian psychoanalysis and with what is going to follow in neo-Lacanian psychoanalysis. He returns from castration, from its structure of language, and undertakes the mathematization of desire (E., p. 683; “s”). Through a change of style and tone, this rupture is consumated in the same year in “The Youth of Gide.” This is the year to which we mark his reascencion from the introduction of the term enjoyment into the discourse of analysis (see p. 53).

For him, the Freudian discovery presents an essential inversion.

The ego, considered the instance of unification, is revealed to be changing and a principle of disunity.

Desire, always considered to be different, when it is confuses with the caprices linked to dissatisfaction, is converted with Freud into an insistence without changes, always the same.

Desire structures the constructions that we present in our topology. It is the mode of articulation of the set of our schemas. It is firstly translation from the entrance of the cave and governs up to the most minimal details of the surface of its walls. Desire is the kindling that insists in flesh, and which wisdom pretends to ignore. This way it omits and receives its punishment in this sad air that characterizes it, “air of the slave that conserves it across time” (E., p. 757, “p”). From this clandestine vehicle “of the steel that one has under one's clothes,” it will never obtain the subject's conviction.

Now a no longer moral but mathematical rigor is suitable. By not setting aside this instance, an ethics is appropriate, from that which we call since the ditch, a very narrow place, and we propose to return to these masks in which “the secret of desire is offered to us and with it the secret of all nobility” (E., p. 757, “p”).

4. … the cabinet of designs
In this writing in which the relation of the letter and desire is referred to, in opposition to the imaginary projection constituted through the construction of the Gidean person, Lacan situates symbolic introjection, as a result of a lapsus committed in the reading of Gide. In the place left vacant by the destruction of the letters that were written to Madeleine, Gide wrote a gap (E., p. 762, “p”). After the diverse presentations of fabric have been studied, in the passing of those which we polish the definition of what a hole is, we will return to find the mobility of this in our conclusion, before knotting it in the continuation of the series of the fascicles of results.

A – *Traces*

We devote much attention to the invariants of a topological surface. This way of acting, that is evident for a mathematician versed in topology, is not immediate for anyone [who attempts it]. A major part of the stupification produced by topology in the inexperienced reader is a consequence of the absence in them of this method. We regard that it is a little abusive to pigeonhole topological contempt in this register. It is true that we no longer emphasize geometrical forms; this notion is not pertinent, and gives to topology the merit of liberating us from the notion of form. The recognition of an object no longer obeys representation, supposing that with invariants we isolate them in all of their aspects for which presentation is used. This is the first point; the second consists in saying that furthermore it is always surprising that other errors persist. If they are approached with method, they are more attractive and become teachable.

The point is to underline that there are two ways of approaching invariants. They have two names, as they are considered naïvely or, it is worth saying, they would be well defined by a constructed theory.
- The degree of volume corresponds to the topological dimension.
- The fabric corresponds to the intrinsic topological surface.
- The hole conceivable as a rupture of surface corresponds to the edge component of a topological surface, the thing which occupies us in chapter II.
- The face of a fabric corresponds to the orientation of a topological surface.
- The toric hole corresponds to the generators of various groups defined in relation to a topological surface, which occupies up in chapter V.

This double language does not correspond apparently to a simplistic division. The terms are the effect of a translation, to which in mathematics can be called reduction, yet it depends on construction. We can give the example of its practice in the writing and reading of Japanese (see the Presentation to the series, p. II) if a reference is necessary, and translation gradations.

We know the case of the crossing of two threads of string (above-below) makes room for a semi-twist of fabric, that can be presented as a fold (see chapter I, p. 62). This time one must make translations within the topological registers themselves.

But the effective fold of a fabric can be reduced in a different manner up to the extremity in which it no longer corresponds but with the genus of non-orientable intrinsic surfaces (see chapter VIII, p. 264).

This translation is not a lack of precision in method, and requires good constructions. It matters that we made the distinction between the intuitive approach, called naïve, and formalized study. This is
made happen by the trace.

\textbf{a' – Drawings}

Our wager, to construct the object $a$, is gained with “paint and brush” (\textit{Lituraterre}, p. 7). For its approach we advise the reader to provide himself with paper and pencil and no forget to practice some drawings. Not everyone has the gift of drawing depending on their intuition, but we give the principles of drawing in this work to those whom we abide by. There is no doubt that those who realize this course exhibit some facilities to the time for drawing. But according to our intention this intuition can be reduced to some simple and ordered elements, that will not impede talented drawers from also finding in them some interest in a limited domain.

It continues to be significant that the (even rudimentary) drawings of knots presents more difficulties, and we do not aim that there are them reduced here in the same measure as those that can be find in the case of fabrics.

To base oneself upon the drawing of a knot, it is enough to verify that we are occupied mainly with two singularities of the fabrics’ submersion.

In the first place: the fold, in the case of the intersections of edge knots, for pierced fabrics (see chapter I, p. 62).

\{49\}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{fig12}
\caption{Fig. 12}
\end{figure}

In the second place: the toric hole, in the case of non-pierced fabrics, whose layout is joined to a folded assembly (see chapter V, p. 161).

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{fig13}
\caption{Fig. 13}
\end{figure}

A singularity of coincidence and crossing (cutting) of the fabrics remains, whose study we had the foresight to leave for the Appendix (see Appendix, chapter I, p. 305), since this is about another
Etlin's translation of *Fabric* - 8/11/9 – circulation is prohibited without my permission - (pp. 13-49)

mode of extrinsic presentation called immersion, in opposition to submersion.

One must add to this a more sophisticated protocol of interpretation, while its layout is more simple, to the point of being ignored in the drawings of non-edged surfaces.

This reduced set of traces makes room for an infinite composition and a rich imaginary without limits, that allowed us to unfold this work in a sufficiently substantial [étouffée] manner.