Seminar I: Wednesday 15 November 1977

How kind of you to go out of your way like that for what I have to say to you! There you are, I entitled my seminar – can you hear? – I entitled my seminar this year: 'Time to conclude' (*Le moment de conclure*).

What I have to say to you, I am going to say it, is that psychoanalysis is to be taken seriously, even though it is not a science. It is even not a science in any way. Because the problem is, as someone called Karl Popper has superabundantly shown, is that it is not a science because it is irrefutable. It is a practice that will last as long as it will last, it is a practice of chit-chat (*bavardage*). There is no chit-chat without risk. Already the word chit-chat implies something. What it implies is sufficiently said by the word *bavardage*, which means that there are not only sentences, namely, what are called propositions which imply consequences, words also. Chit-chat puts speech at the level of dribbling (*baver*) or of spluttering, it reduces it to the sort of spattering that results from it. There you are.

This does not prevent analysis from having consequences: it says something. What is meant by 'saying' ('*dire'*)? 'To say' has something to do with time. The absence of time – it is something people dream about – is what is called eternity and this dream consists in imagining that one wakes up. One spends one's time dreaming, one does not dream simply when one sleeps. The unconscious, is very precisely the hypothesis that one does not dream only when one is asleep. I would like to point out to you that what is called 'the reasonable' is a phantasy; it is quite manifest at the beginning of science. Euclidian geometry has all the characteristics of phantasy. A phantasy is not a dream, it is an aspiration.

The idea of the line, of the straight line for example is manifestly a phantasy; by luck, we have got out of it. I mean that topology has restored what we should call weaving (*tissage*). The idea of neighbourhood is simply the idea of consistency, if we only allow ourselves to give body to the word 'idea'. It is not easy. It was all the same Greek philosophers who tried to give body to the idea. An idea has a body: it is the word that represents it. And the word has a quite curious property, which is that it makes the thing (*qu'il fait la chose*). I would like to equivocate and to write that as: '*qu'il fêle achose'* (that it splits the thing?), it is not a bad way of equivocating. Using writing to equivocate can be of use, because we need equivocation precisely for analysis. We need equivocation, it is the definition of analysis, because as the word implies, equivocation (*l'équivoque*) is immediately turning towards sex. Sex – I told you, is a saying: that is worth whatever it is worth – sex does not define a relationship. This is what I stated in formulating that there is no sexual relationship; that only means that, in man and no doubt because of the existence of the signifier, the set of what could be sexual relationship is a set – we have managed to cogitate that, we do not know very well moreover how it happened – is an empty set. So then this is something that allows a lot of things. This notion of empty set is what is appropriate for the sexual relationship. The psychoanalyst is a rhetor (*rhêteur*): to continue equivocating I would say that he 'rhetifies' (*rhêtifie*), which implies that he rectifies. The analyst is a rhetor, namely, that '*rectus*', a Latin word, equivocates with '*rhêtification'*. One tries to say the truth. One tries to say the truth, but that is not easy because there are great obstacles to saying the truth, even if only because one makes mistakes in the choice of words. The Truth has to do with the Real and the Real is doubled, as one might say, by the Symbolic. I happened to receive, from someone called Michel Coornaert – I received it through someone who wishes me well and to whom the Coornaert in question had sent it – I received from this Coornaert a yoke which is called *Knots and links* – it's in English – which means, because it is not altogether simple, that one must metalanguage, namely, translate, one never speaks of a tongue except in another tongue. If I said that there is no metalanguage, it was in order to say that language does not exist; there are only multiple supports of language that are called '*lalangue*' and what is very necessary, is that analysis manages by a supposition, manages to undo by speech what has been made by speech. In the order of the dream that the field of using language gives itself, there is an misuse (*bavure*) which is that Freud calls what is at stake '*Wunsch*'. As we know it is a German word, and the *Wunsch* in question has as property that we do not know whether it is a wish (*souhait*), which in any case is very vague, a wish addressed to whom? Once one wants to say it, one is forced to suppose that there is an interlocutor and, from then on, one is into magic. One is forced to know what one is demanding; but precisely what defines the demand is that one never demands except through what one desires – I mean that by passing through what one desires – and one does not know what one desires. That indeed is why I put the emphasis on the desire of the analyst. The subject supposed to know from which I supported, defined transference, supposed to know what? How to operate? But it would be altogether excessive to say that the analyst knows how to operate. What is required, is that he knows how to operate appropriately, namely, that he takes into account the import of words for his analyser, which incontestably he is unaware of.

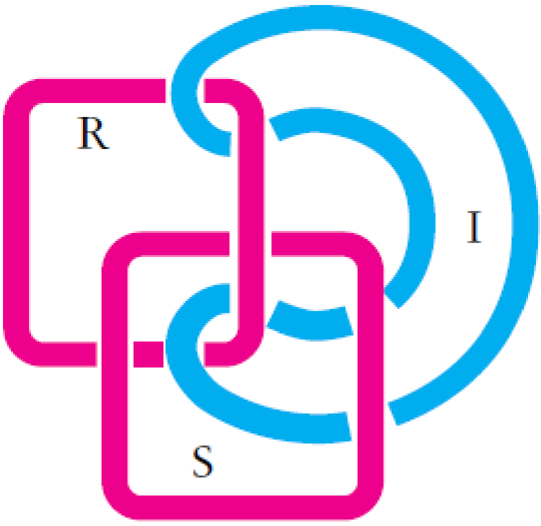


Fig. I-1

So that I must trace out for you what is involved in what I called, I put forward in the form of the Borromean knot. Someone who is none other – I have to name him – than J.B., Jean-Baptiste, Lefebvre-Pontalis granted an interview to *Le Monde*, he would have done better to refrain. He would have done better to refrain, because what he said is not worth much: from the fact that it appears, that my Borromean knot is supposed to be a way of strangling everyone, of suffocating people. Yeah!

Good, here all the same is what I can add to the dossier of this Borromean knot. It is quite obvious that, that is how it is drawn, I mean that one interrupts, because one projects things, one interrupts what is at stake, namely, a cord. A cord makes a knot, and I remember that there was a time when Soury made the reproach, to someone who is here present, made the reproach of having made this knot wrongly. I no longer know very well how he had effectively made it. But let us say that here, (I), we have indeed the right, since the Borromean knot has the property of not naming each of the circles in a way that would be univocal.

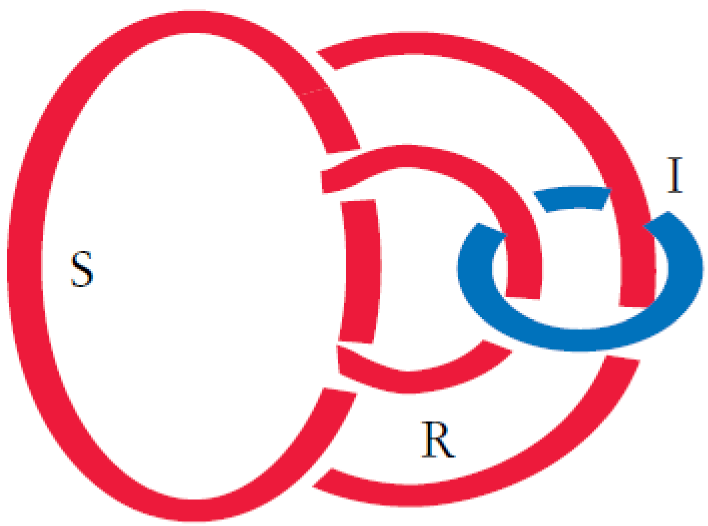


Fig. I-2

In the Borromean knot you have this, which means that you can designate each of these circles by whatever term you wish, I mean that it is not important whether this is called I.R.S. here, on condition of not misusing, I mean to put these 3 letters, you still have a Borromean knot.

Suppose that here we were to designate as distinct the R and the S, namely, the Real and the Symbolic, there remains the third which is the Imaginary. If we knot, as it is here represented [I-3], the Symbolic with the Real, which of course would be the ideal, namely, that since words make the thing, 'the Freudian Thing' ('*la Chose Freudienne'*), the Freudian '*Crachose', I* mean that it is precisely with the inadequation of words to things that we have to deal: what I called 'the Freudian Thing', was that words mould themselves onto things: but it is a fact, the fact is that it does not happen (*ne passe passe pas*) there is neither splutter (*crachat*) nor *crachose* and that the adequation of the Symbolic only makes things phantastically.

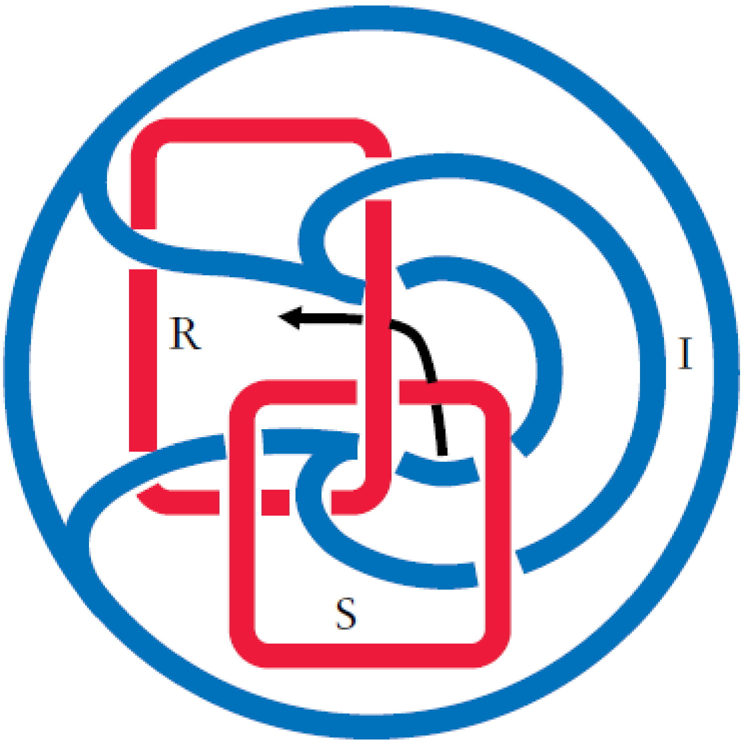


Fig. I-3

So that the bond, the ring which is supposed to be this Symbolic with respect to the Real or this Real with respect to the Symbolic do not hold up, I mean that it is quite simple to see that on condition of making the cord of the Imaginary more supple, what follows is very exactly that by which the Imaginary does not hold up – as you can see in a manifest way – does not hold up, since it is clear that here, passing under the Symbolic, this Imaginary comes here, and it comes here even though, even though it is under the Symbolic. I would ask you to note that here it is free, namely, that the Imaginary suggested by the Symbolic is freed.

This indeed is why the history of writing suggests that there is no sexual relationship. Analysis, on this occasion, consumes itself. I mean that, if we make an abstraction about analysis, we cancel it out. If we notice that we are only talking about alliances or of kinship, the idea comes to us to speak about something else and this is why indeed analysis, on occasion, may fail. But it is a fact that each particular person speaks of nothing but that.

Is neurosis natural? It is only natural inasmuch as in man there is a Symbolic; and the fact that there is a Symbolic implies that a new signifier emerges, a new signifier to which the Ego, namely, consciousness would identify itself; but what is proper to the signifier, which I called by the name of S_1, is that there is only one relationship that defines it, the relationship with S_2: S_1 S_2. It is inasmuch as the subject is divided between this S_1 and this S_2 that it is supported, so that one cannot say that it is a single one of the two signifiers that represents it.

Is neurosis natural? It would be a matter of defining the nature of nature. What can be said about the nature of nature? Nothing but the fact that there is something that we imagine can be accounted for by the organic, I mean by the fact that there are living beings; but that there are living beings, not alone is not self-evident, but it was necessary to speculate about a whole genesis, I mean that what are called genes undoubtedly mean something, but it is only a wish to say something. We have nowhere present this springing forth of a line of descendents, whether evolutionary, or even on occasion creationist – they are equally valid. The creationist speculation is no more valid than the evolutionary speculation, since in any case it is only a hypothesis.

Logic is only supported by very little. If we do not believe in what is in short a gratuitous way that words make things, logic has no *raison d'être*. What I called the rhetor that there is in analysis – what is at stake here is the analyst – the rhetor only operates by suggestion. He suggests, that is what is proper to the rhetor, he does not impose in any way something which would have consistency and that is even why I designated by ex what is supported, what is only supported by ex-sisting. How must the analyst operate to be a proper rhetor? Here indeed is where we reach an ambiguity. The unconscious, it is said, does not know contradiction, this indeed is why the analyst must operate with something which is not founded on contradiction. It is not said that what is at stake is either true or false. What constitutes the true and what constitutes the false, this is what is called the weight of the analyst and that is why I am saying that he is a rhetor.

The hypothesis that the unconscious is an extrapolation is not absurd and this indeed is why Freud had recourse to what is called the drive. The drive is something which is supported only by being named and by being named in a way that is as I might say farfetched (*qui la tire ... par les cheveux*) namely, which presupposes that every drive, in the name of something which is found to exist in the child, that every drive is sexual, but there is nothing to say that something deserves to be called drive with this inflection which reduces it to being sexual. What is important in the sexual, is the comic, it is that, when a man is woman, it is at that moment that he loves, namely, that he aspires to something which is his object. On the contrary, it is *qua* man that he desires, namely, that he is supported by something which is properly called a hard-on (*bander*).

Life is not tragic, it is comic and it is nevertheless rather curious that Freud should have found nothing better than to designate by the Oedipus complex, namely, by a tragedy, what is at stake in the affair. It is hard to see why

Freud designated, when he could have taken a shorter path, designated by something other than by a comedy what he was dealing with, what he was dealing with in this relationship which links the Symbolic, the Imaginary and the Real. For the Imaginary to be exfoliated, it only has to be reduced to phantasy, the important thing is that science itself is only a phantasy and that the idea of an awakening is properly speaking unthinkable.

That’s what I had to say to you today.

Seminar 2: Wednesday 13 December 1977

That is to indicate to you that it is a torus. That is why I wrote hole. In principle, it is a fourfold torus. It is a fourfold torus, such that anyone of the four may be reversed.

Here is the fourfold torus that is at stake [II-1].

It is Soury who noticed that by reversing any one of the four that one obtains what I am showing you, what I am showing you in the figure on the left [II-2].

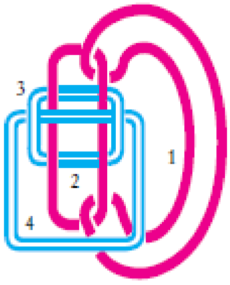


Fig. II-1

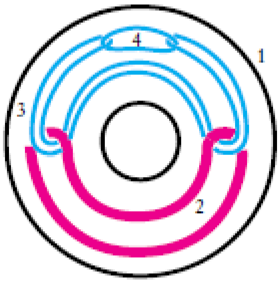


Fig. II-2

By reversing any one of the four, one obtains this figure which consists in a torus except for the fact that inside the torus, we only do what is presented there on the board, namely, rings of string, but each one, each one of what you see there, each one of these rings of string is itself a torus. And this ring of string reversed as torus gives the same result, the same result, namely, that inside the torus which envelopes everything, each of the rings of string which is nevertheless a torus, each of the rings of string, which I repeat is also a torus, each of these rings of string functions in the way that Soury has formulated in the form of this drawing. This implies an asymmetry, I mean that he has chosen a particular torus to make of it the torus such as I have drawn it: it is the torus that he has reversed – I would ask you to be careful – and, in this respect, he has given it a privilege over the other tori which only figure here as rings of string.

Nevertheless [II-1], it is quite obvious that the torus that he has chosen, the torus that he has chosen and which could be designated by 1,2,3,4, starting from the back towards what is in front.

This is the one which is in front (1).

This is the one which is most in front and this one which is a little more in front – that is why I give it no.3 – this one is completely in front.

Moreover, as you see, provided that you have a bit of imagination, as you see, there are four of them and it is by choosing one and reversing it that one obtains the figure that you see on the left [II-2] and this figure is equivalent for any one of the rings, I mean of the tori.

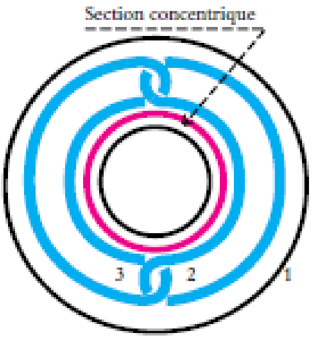


Fig. II-3

Nevertheless I pose the objection to Soury something which is not any less true, which is that by reversing any one whatsoever of what is called the Borromean knot, one obtains the following figure, [II-3]. The 2 and 3 being unimportant, it is by reversing what I designated here as 1, namely, 1 of the elements of the Borromean knot, and you know how it is drawn [II-4].

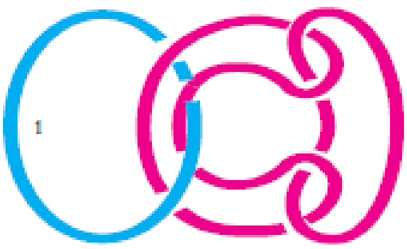


Fig. II-4

In the figure on the left, this one [II-2], it is quite clear that the rings of string which are inside, inside the torus, and which in a way equivalent to what I said just now can be depicted as tori, each one of these reversed tori envelopes the two other tori, just as what is designated in 1 [II-3] here is a torus which has the property of enveloping the two others, on condition that it is reversed. Therefore what is in the figure on the right [II-4} becomes what is in the figure on the left [II-3], on condition that each of these tori is reversed.

It is obvious that the two figures on the left [II-2 and [II-3] are more complex than the two figures on the right [II-1] and [II-4]. Besides, what makes the third figure appear is the following: that once reversed, the torus that I designated by 1 on the figure, by going from left to right on the third figure...

Left	**Right**
II-2	II-1
II-3	II-4
	II-5

Something comes to me, comes to my mind in connection with these tori: suppose that what I called 'privileging a torus' happens at the level of torus 2 for example, can you imagine what torus 2 becomes by privileging it as compared to torus 3, namely, by reversing it inside, inside of the torus that I designated by the name of 1, namely, by privileging the 2 with respect to torus 3?

In one case, the reversal will change nothing to the relationship of torus 2 with respect to torus 3. In the other, it will amount to a rupture of the Borromean knot. This comes from the fact that the Borromean knot behaves differently according as the rupture happens in a different way on the reversed torus. I am going to indicate on the left hand figure [II.3] something which is obvious:

Concentric section 1

Perpendicular section 2

The fact is that by sectioning (2) the reversed torus in the way that I have just done, the Borromean knot is undone. On the contrary by sectioning in this other way (1) which is, I suppose, evident to all of you as being equivalent to what I am drawing here [II-5], that it is equivalent, the Borromean knot is not dissolved, while in the present case the cut (2) that I have just made dissolves the Borromean knot. Therefore the privilege that is at stake is not something univocal.

The reversal of any one at all of what ends up at the first figure, the reversal does not give the same result according as the cut is presented on the torus in such a way that it is, as I might say, concentric to the hole or according to whether it is perpendicular to the hole.

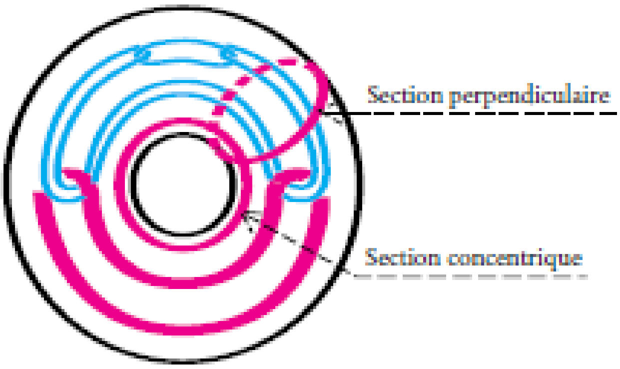


Fig. II-5

It is quite clear – this can be seen on the second figure [II-3] – it is quite clear that it is the same thing, I mean that by breaking according a tracing out which is this one (concentric), the threefold Borromean knot is dissolved; for it is quite clear that even in the state of torus, the two figures that you see there dissolve, I mean are separated if the reversed torus, cut in the sense that I have called longitudinal (2), while I can call the other sense transversal (1). The transversal does not free the threefold torus but on the other hand the longitudinal frees it. There is therefore the same choice to be made on the reversed torus, the same choice to the made according to the case that one wants or does not want to dissolve the Borromean knot.

The figure on the right [II-5], the one that materialises the way in which the surrounding torus must be cut in order – I think that you see this to free the three, the three that remain – it is quite clear that, by drawing things like that, you see that what I designate on occasion as (2), that this is freed from (3) and that secondarily the (3) is freed from the (4), [II-1 and II-2].

I propose the following, the following which is initiated by the fact that in the way of dividing up the figuration of (4), Soury had a preference, I mean that he prefers to mark that the (4) is to be drawn like that.

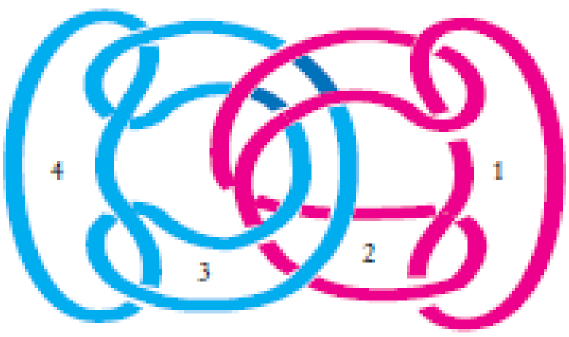
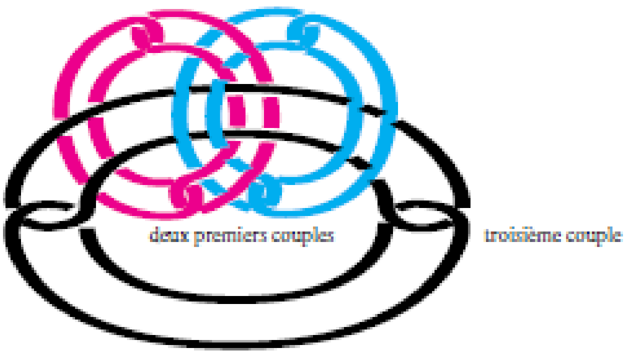


Fig. II-6

This is equally a Borromean knot but I suggest that there is a six-fold Borromean knot, six-fold which is not the same as the Borromean knot which, as I might say, would follow in single file, it is a more complex Borromean knot and I am showing you the way in which it is organised, namely, that, as compared to the 2 that I drew first, these two are equivalent to what happens from the fact that one is on the other; and in this case, the Borromean knot must be inscribed by being over this one which is above and under this one which is below. This is what you see here: it is under the one that is below and over the one that is above.

Fig. II-7



It is not easy to draw. Here is the one that is below... You have in connection with these two couples, of these 2 couples which are depicted here, you have only to notice that this one is above, the third couple therefore comes above and underneath the one that is below.

I pose the question: does reversing one of those which are here, give the same result as what I called the single file figure, namely, thus, the one which is

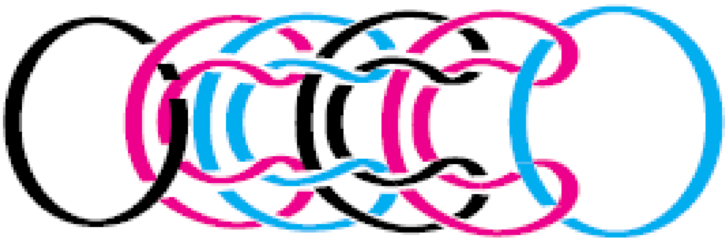


Fig. II-8

presented thus 1,2,3,4,5,6, all ending in the ring here, would reversing the 6 fabricated in this way give the same result as the reversal of any one at all of these three sixes. We already have an indication of response: which is that the result will be different.

It will different because the fact of reversing any one at all of these six that I call single file will give something analogous to what is depicted here [II-2]. On the contrary, the way in which the figure [[II-7] is reversed will give something different.

I apologise for having directly implicated Soury. He is certainly very valuable for having introduced what I am stating today. The distinction between what I called the longitudinal cut and the transversal cut is essential. I think I have given you a sufficient indication of this by this cut here. The way in which the cut is made is quite decisive. What happens by the reversal of one of the six, as I designated it here, this is what is important to know and it is by putting it in your hands that I desire to have the final word on it.

There you are, I will stay with that for today.

Seminar 3: Wednesday 20 December 1977

I am working in the impossible to say.

To say (*dire*) is something different than to speak (*parler*). The analyser speaks. He produces poetry. He produces poetry when he manages to do so – it is not frequent – but it is art (*il est art*). I cut because I do not want to say 'it is late' (*'il est tard'*).

The analyst, for his part, slices (*tranche*). What he says is a cut, namely,, has some of the characteristics of writing, except for the fact that in his case he equivocates in the orthography. He writes differently so that thanks to the orthography, to a different way of writing, he makes ring out something other than what is said, than what is said with the intention of saying, namely,, consciously, inasmuch as consciousness goes very far.

That is why I say that, there is neither in what the analyser says, nor in what the analyst says, anything other than writing. This consciousness does not go very far, one does not know what one is saying when one speaks. This indeed is why the analyser says more than he means to say and the analyst slices by reading what is involved in what he means to say, if in fact the analyst knows what he himself wants. There is a lot of play (*jeu*), in the sense of freedom, in all of that. There is play in the sense that the word ordinarily has.

All of that does not say to me how I slipped into the Borromean knot to find myself, on occasion, with a lump in my throat because of it. It must be said that the Borromean knot is that which, in thought, constitutes matter.

Matter is what one breaks, there also in the sense that this word ordinarily has. What one breaks (*casse*), is what holds together and is supple, on some occasions, like what is called a knot.

How did I slip from the Borromean knot to imagining it composed of tori and, from there, to the thought of reversing each one of these tori? This is what led me to things that constitute metaphor, natural metaphor, namely,, that that it is close to linguistics, insofar as there is one. But metaphor has to be thought of metaphorically.

The stuff of metaphor is that which in thought constitutes matter or, as Descartes says ‘extension’, in other words body.

The gap is filled here as it has always been. The body represented here is a phantasy of the body. The phantasy of the body is the extension imagined by Descartes. There is a distance between extension, Descartes’ extension, and the phantasy. Here there intervenes the analyst who colours the phantasy of sexuality.

There is no sexual relationship, certainly, except between phantasies and the phantasy is to be noted with the accent that I gave it when I remarked that geometry, ‘*l’âge et haut-maître hie*’ [a play on *la géométrie*], that geometry is woven by phantasies and in the same way the whole of science.

I read recently a yoke called – it’s in four volumes – *The world of mathematics*. As you see it’s in English. There is not the slightest world of mathematics. It is enough to hang together the articles in question. That is not enough to make what is called a world, I mean a world that holds up. The mystery of this world remains absolutely intact.

And at the same time what is meant by knowledge? Knowledge is what guides us. It is what means that people were able to translate the knowledge in question by the word ‘instinct’, of which what I articulate as *l’appensée* [thought] forms part, and that I write like that, because it constitutes an equivocation with *appui* [support].

When I said like that, the other day, that science is nothing other than a phantasy, than a phantastical kernel, I follow (*je suis*), certainly, but in the sense of ‘to follow’ (*suivre*) and, contrary to what someone in an article hoped, I think that I will be ‘followed’ onto this terrain. It seems obvious to me.

Science is something futile which has no weight in anyone’s life, even though it has effects: television for example, but its effects depend on nothing but phantasy, which, I will write like that, who *hycroit* [believes in it].

Science is linked to what is especially called the’ death-drive’. It is a fact that life continues thanks to the fact of reproduction linked to phantasy. There you are

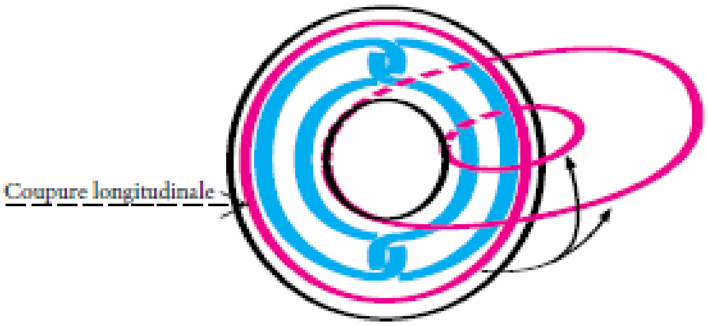


Fig. III-1

The other day I made you a torus while pointing out to you that it is a Borromean knot, namely,, that there are here three elements: the reversed torus and then the two rings of string that you see there, which are also tori; and I pointed out to you, that if one cuts this torus, that if one cuts it like that, namely,, as I expressed myself, longitudinally with respect to the torus, it is not surprising that one obtains the cutting effect which is that of the Borromean knot; it is the contrary that would be surprising.

It is the same thing as to cut ... here I am completing it since I left this Borromean knot unfinished ... it is the same thing to cut it like that: except for the fact that in this case the cut is - contrary to that one - perpendicular to what is called the hole.

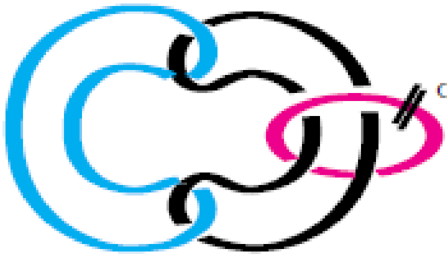


Fig. III-2

But it is quite clear that if things are completed, namely, that this holds together, namely, that something happens here like a junction the circular cut leaves the Borromean knot intact and it is indeed the same cut which is rediscovered there, the same cut as results from what I called the longitudinal cut.

The cut is nothing other than what eliminates the Borromean knot entirely. It is by this very fact something that is repairable provided one sees that the torus that is involved is stuck together again if one deals with it properly in a reversed way.

Namely, that what is seen ... provided one cuts perpendicular to the hole ... what is seen is that the torus at the very moment preserves the Borromean knot.

It is enough for the cut to have some of the characteristics of the cut that I have called perpendicular to the hole in order for it to preserve the knot.

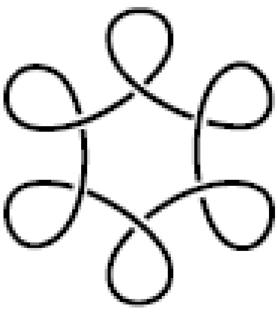


Fig. III-3

Suppose that the longitudinal cut that we have made here shares in the characteristics of the longitudinal cut. Namely, that something is established of this nature here. In other words that it turns around the torus. I mean the cut.

Here is what we obtain: the reversal of the torus wards off the effects of its cut.

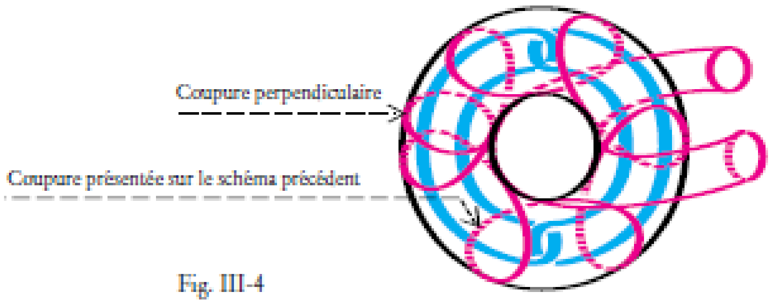


Fig. III-4

The phantasy of the cut is enough to preserve the Borromean knot. For there to be a phantasy there must be a torus.

The identification of the phantasy to the torus is what justifies, as I might say, my imagining of the reversal of the torus.

So that here I am going to draw what is involved in what I called earlier a ‘six-fold torus'.

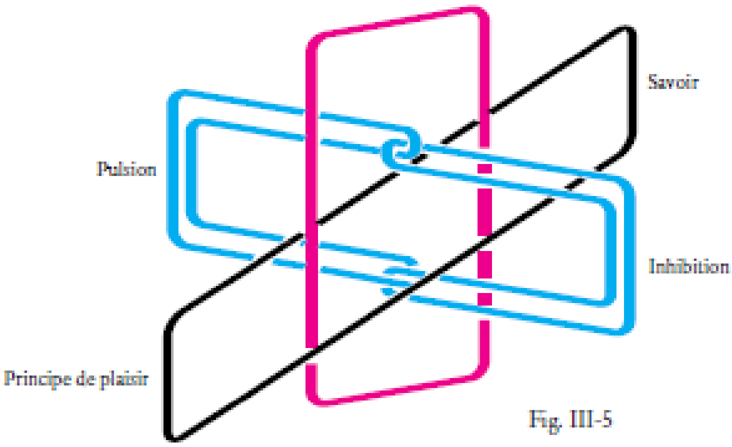


Fig. III-5

And imagine what can be deduced from the depiction I have just made. There is a couple: drive – inhibition.

Let us take for example this one, drive – inhibition.

In the same way for the others let us call the following couple: pleasure principle – unconscious.

We can sufficiently see from this fact that the unconscious is this knowledge which guides us and that I earlier called pleasure principle.

The interesting thing to notice is that the third, I mean that which, because of this is organised in this way – I beg your pardon these knots are always difficult to make – here you have a better way, one that I had to correct there, of representing what I called pleasure principle – unconscious, drive – inhibition, and it is here that the third is presented as the coupling of the Real and phantasy.

This puts a stress on the fact that there is no reality. Reality is constituted only by phantasy, and phantasy is moreover what gives material for poetry.

This means that our whole development of science is something which, we do not know along what path, which emerges, irrupts due to what is called the sexual relationship.

Why is there something that functions as science? It is poetry. The apperception of this world of mathematics convinced me of this. There is something that manages to get through by what is reduced in the human species to the sexual relationship. What is reduced to the sexual relationship in the human species is something that makes it very difficult for us to grasp what is involved for animals. Do animals know how to count? We don't have any proof of it, I mean tangible proofs.

As regards to what is involved in science, everything starts from numeration.

In any case what is involved in this practice is moreover poetry. I am speaking of the practice that is called analysis. Why did someone called Freud succeed in his poetry, I mean, in establishing a psychoanalytic art? This is what remains altogether doubtful.

Why do we remember certain men who have succeeded? It does not mean that what they have succeeded in doing is valid.

What I am doing here as was remarked by someone of common sense, Althusser, is philosophy. But philosophy is the only thing we know how to do.

My Borromean knots, are also philosophy. They are philosophy that I handled as best I could by following the current, as I might say, the current of what results from Freud's philosophy. The fact of having stated the word unconscious is nothing more than poetry with which one makes history. But history - as I sometimes say - history is hysteria.

Freud, if he sensed clearly what is involved in the hysteric, if he fabulated around the hysteric, this is obviously only a fact of history.

Marx also was a poet, a poet who has the advantage in having succeeded in making a political movement. Moreover if he qualified his materialism as historical, it was certainly not unintentionally. Historical materialism is what is incarnated in history. Everything that I have just stated concerning the stuff which constitutes thought is nothing other than to say things exactly in the same way.

What one could say about Freud, is that he situated things in such a way that it was successful. But it is not sure. What is at stake is a composition, the composition such that I was led to render all of that coherent, to give the note of a certain relationship between the drive and inhibition, and then the pleasure principle and knowledge – unconscious knowledge, of course.

Pay careful attention that it is here, and that here is the third element, I mean that this is where phantasy is and where there is found what I designated as the Real.

I really did not find anything better than this way of imaging metaphorically what is involved in Freud's doctrine.

What seems to me to be materially unwarranted, is to have imputed so much material to sex. I know well that there are hormones, that hormones form part of science; but it is quite clear that this is the densest point and that here there is no transparency.

Good, I will stop there.

Seminar 4: Wednesday 10 January 1978

I was a little jaded because Saturday and Sunday there was a congress of my School. Since people preferred that, anyway Simatos preferred that there should only be members of this School, we went a bit far and I only got back with difficulty.

Someone – someone who was speaking to me - was expecting from it, given that the subject was nothing other than what I call the *Passe*, someone was expecting from it some light about the end of analysis.

One can define the end of analysis. The end of analysis is when one has gone round in circles twice, namely, rediscovered that of which one is prisoner. Rebeginning twice the turning round in circles, it is not certain that it is necessary. It is enough for one to see what one is captive of.

And the unconscious, it that: it is the face of the Real – perhaps you have an idea, after having heard me numerous times, perhaps you have an idea of what I call the Real – it is the face of the Real of that in which one is entangled.

There is someone called Soury who is kind enough to pay attention to what I stated about the rings of string and he questioned me, he questioned me about what that means, what was meant by the fact that I was able to write like that the rings of string.

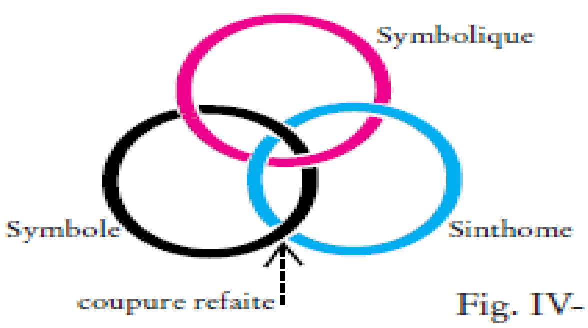


Fig. IV-1

For this is how he writes them.

Analysis does not consist in being freed from one's *sinthomes*, since that is how I write symptom. Analysis consists in knowing why one is entangled by them.

This happens because there is the Symbolic.

The Symbolic is language; one learns to speak and that leaves traces. That leaves traces which are nothing other than the symptom and analysis consists – there is all the same progress in analysis – analysis consists in realising why one has these symptoms, so that analysis is linked to knowledge.

It is very suspect. It is very suspect and it lends itself to every kind of suggestion. That's the word that must be avoided

That's what the unconscious is, the fact that one has learned to speak and by that very fact one has allowed all kinds of things be suggested to one by language.

What I am trying to do is to elucidate something about what analysis really is. About what analysis truly is, one cannot know unless you ask me for an analysis. That is how I conceive of analysis.

This indeed is why I traced out once and for all these rings of string that, of course, I ceaselessly make mistakes in their depiction.

I mean that here (IV-1), I had to make a cut here and that this cut, I had nevertheless prepared, it nevertheless remains that I have to remake it.

Counting is difficult and I am going to tell you why: the fact is that it is impossible to count without two kinds of figures. Everything starts from zero. Everything starts from zero and everyone knows that zero is altogether capital.

Two lines of numbers

The result, is that here it is (O) is 1. This is how this begins at 11, how the 1 here (*), and the 1 there (O) are distinguished. And of course, it is not the same type of figures which function to mark here the 1 which permits 16.

Mathematics makes reference to the written, to the written as such; and mathematical thought is the fact that one can represent for oneself a writing.

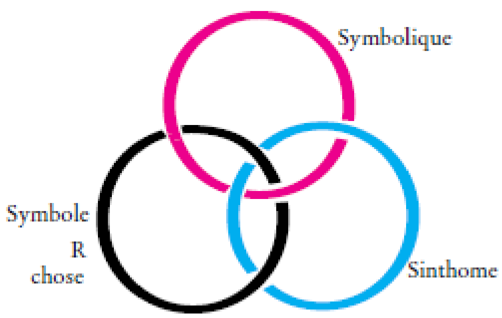


Fig. IV-2

What is the link, if not the locus, of the representation of writing? We have the suggestion that the Real does not cease to be written. It is indeed by writing that forcing is produced. The Real is all the same written; for, it must be said, how would the Real appear if it were not written?

That indeed is how the Real is there. It is there through my way of writing.

Writing is an artifice. Therefore writing only appearsby an artifice, an artifice linked to the fact that there is speech and even saying. And saying concerns what is called the truth. This indeed is why I say that one cannot say the truth.

In this business of the passe¸I am lead, since, as they say, it is I who produced the passé, produced it in my School in the spirit of knowing what might well arise in what is called the mind (*l'esprit*) of an analysand to be constituted, I mean receive people who come to him to ask for an analysis.

That might perhaps be done in writing, I suggested it to someone who moreover was in complete agreement. To proceed by way of writing has a chance of getting a little bit closer to the Real than what is currently done, since I tried to suggest to my School that the passeurs could be named by a few people.

The trouble is that these writings will not be read. Why so? Because people have read too much about writing. So what chance is there that they would be read. They lie there on paper; but paper is also toilet paper.

The Chinese realised that there was toilet paper, the paper with which you wipe your bottom. It is impossible therefore to know who reads. There is surely writing in the unconscious, if only because the dream, the principle of the unconscious – that's what Freud said – the lapses and even the witticism are defined by the readable. One has a dream, one does not know why, and then subsequently it is read; the same with a slip, and everything that Freud says about the witticism is quite notorious as being linked to this economy which is writing, economy as compared to speech. The readable - that is what knowledge consists of. And in short, it is limited. What I say about the transference is that I timidly advanced it as being the subject – a subject always supposed, there is not subject, of course, there is only the supposed – the supposed-to-know. What could that mean? The supposed-to-know-how-to-read-otherwise (*autrement*). The otherwise in question, is indeed what I write, for my part also in the following way: S(Ø). Otherwise, what does that mean? Here it is a matter of the O, namely, the big Other. Does otherwise mean: otherwise than this spluttering called psychology? No, otherwise designates a lack. It is a matter of lacking <u>differently</u> (<u>*autrement*</u>). Differently on this particular occasion, does that mean, differently to anyone else? It is indeed in this way that Freud's speculations are truly problematic. To trace the paths, leave the traces of what one formulates, this is what teaching is, and teaching is also nothing other than going around in circles. It has been stated, like that, we do not know why, there was someone called Cantor who constructed set theory. He distinguished two types of set: the set which is innumerable and – he points out – within writing, namely, that it is within writing that he makes the series of whole numbers, for example, equivalent to the series of even numbers. A set is only numerable starting from the moment when it is demonstrated that it is bi-univocal. But precisely in analysis, it is equivocation that dominates. I mean that it is from the moment that there is a confusion between this Real that we are indeed led to call 'thing', there is an equivocation between this Real and language, since language, of course, is imperfect – this indeed is what is demonstrated about everything which is said to be most certain – language is imperfect. There is someone called Paul Henri who published that in Klincksieck. He calls that, language, 'a bad tool'. One could not say it better. Language is a bad tool and this indeed is why we have no idea of the Real. It is on this that I would like to conclude.

The unconscious, is what I have said, that does not prevent us counting, counting in two ways which are only for their part ways of writing. What is most real, is writing and writing is confused.

There you are, I will stay with that for today, since, as you see, I have reason to be tired.

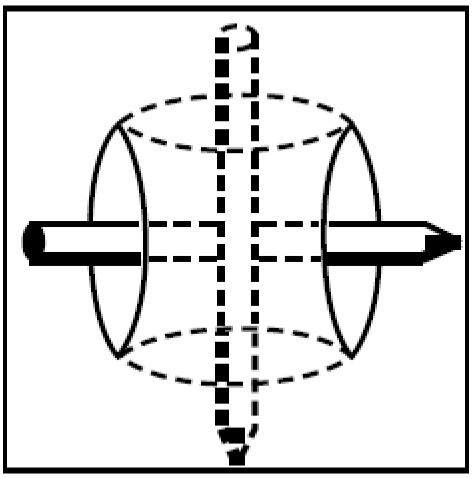
Seminar 5: Wednesday 17 January 1978

There is nothing more asymmetrical than a torus. That leaps to the eyes.

I have just seen Soury – where is he? – I have just seen Soury and I shared this idea with him. He right away illustrated to me what was at stake by marking for me, through a little construction of his own, the cogency of what I cannot say: I was stating. Because in truth...

There you are. So then I am going to show you this. I am going to have it passed around. It is a construction that Soury was good enough to make for me. You are going to see that here there is a passage, that there is, in what is constructed there, a double thickness and that, to mark the whole of the paper, here there is a double thickness, but here there is only one, I mean: at this level here which is continued into the whole of the sheet. Therefore behind what here constitutes a double thickness, there is only a third. There you are. I am going to pass around this piece of paper.

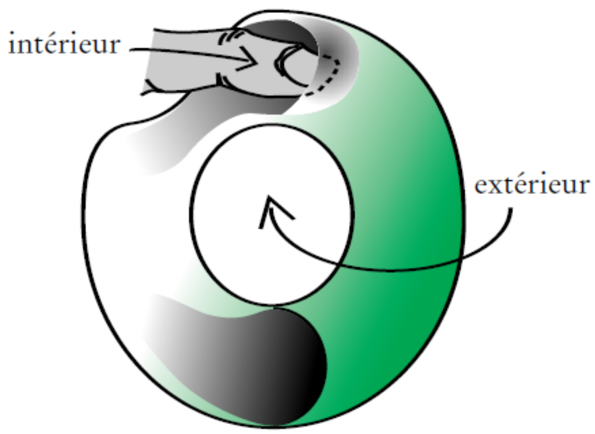
Fig. V-1



There is a passage at the back. We introduce a pencil which goes underneath the pencil introduced in the front. [See the details of this diagram at the end of the session]

I recommend you to take advantage of the double thickness so that you can see that it is a torus. In other words that this, (V-1), is constructed more or less like that, (V-2), namely, that one passes a finger through this, but that here is what one can call the outside of the torus which continues with the rest of the outside - I am giving it to you - this is what I call asymmetry. There you are.

Fig. V-2



This is also what I call 'what makes a hole', for a torus makes a hole.

I succeeded – not right away, after a certain number of approximations – I succeeded in giving you the idea of the hole. A torus is considered, quite rightly, to be holed. There is more than one hole in what is called man; he is even a veritable sieve. Where do I enter?

This question mark has its response for every '*tétrume un'* [perhaps a pun on *être humain*, human being]. I do not see why I would not write it like that on this particular occasion. This question mark, as I have just said has its response for every *tétrume u*'. I would write that: *l'amort* [death\love] what is bizarre in the – because why not also write like that: *les* *trumains* [a play on *trumeau*: a dodderer]; there, I am putting them in the plural – what is bizarre in *les trumains*, why not write it like that also, since moreover using this orthography in French is justified by the fact that *les,* the sign of the plural, is well worthy of being substituted for being which, as they say, is only a copula, namely, is not worth much. Is not worth much by the usage that one *amphest amphigourique*! Yeah!

What is curious, is that man is very keen on being mortal. He hoards death! While all living beings are destined to die, he only wants it to be so for him. Hence the activity deployed around burials. There were even people formerly who took care to perpetuate what I write as *laïque hors la vie*. They took care to perpetuate that by making mummies of them. It must be said that *les néz-y-après* (the later-born?)) afterwards put a proper order on it. Mummies were seriously shaken. I got the information from my daughter, - because, in my French-Greek dictionary, there were no mummies – I got the information from my daughter who was good enough to go out of her way, to wear herself out to find a French-Greek dictionary. I was informed by my daughter and I learned that this mummy, is called like this in Greek: *to skeleton soma,* the skeleton body. Mummies are precisely designed to preserve the appearance of the body *to teretichomenon soma*. This is also what she brought me. I mean that the *to teretichomenon soma* means 'to prevent rotting'. No doubt the Egyptians liked fresh fish and it is obvious that before carrying out a mummification on the dead person – this at least is the remark that was made to me on this occasion – mummies are not especially attractive. Hence the lack of ceremony with which people manipulated all these eminently breakable mummies. This is what those born afterwards devoted themselves to.

That is called in Quetchua, namely, around Cuzco – Cuzco is written like: CUZCO – sometimes people speak Quetchua there. People speak Quetchua there thanks to the fact that the Spaniards, since everyone speaks Spanish, the Spanish are careful to preserve this tongue. Those that I am calling the *les néz-y-après,* are called in Quetchua, 'those who are formed in the belly of the mother', and that is written, since there is a Quetchua writing. This is called: *Runayay*. This is what I learned with, good God what I would call a velar which teaches me to produce Quetchua, namely, to act as if it were my natural tongue, to give birth to it. It should be said that this velar had the opportunity to explain to me that in Quetchua this is produced by the palate. There is a ferocious amount of aspiration in it.

A frightful person by the name of Freud knocked into shape some stammerings that he qualified as analysis, we don't know why, to state the only truth that counts: there is no sexual relationship among human beings (*les trumains*). It is I who concluded that, after had an experience of analysis, I succeeded in formulating that. I succeeded in formulating that, not without difficulty, and this is what led me to notice that I had to make some Borromean knots.

Suppose that we follow the rule, namely, that, as I say, above the one which is above and below the one which is below.

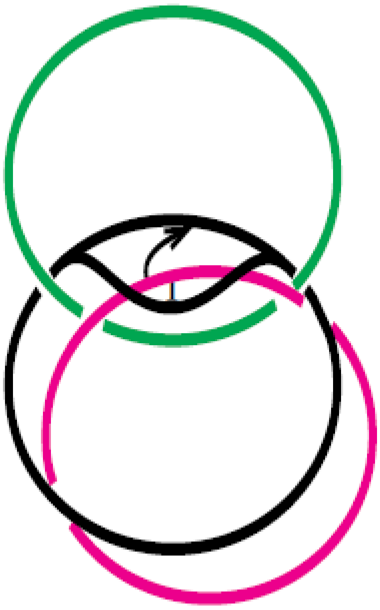


Fig. V-3

Well then, it is manifest that as you see it does not work. Namely, that it is enough for you to lift that (1) [V-3] to notice that there is a one above, one in the middle and one below and that as a consequence the three are freed from one another. This indeed is why this must be asymmetrical. It must be like this to reproduce the way in which I drew it the first time; here it must be below, here above, here below and here above [V-4].

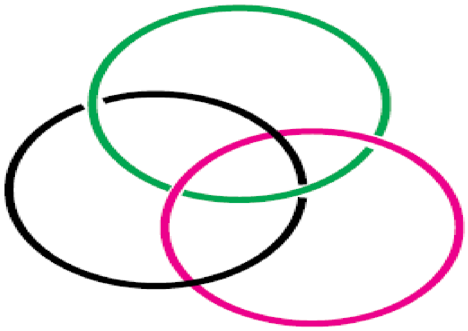
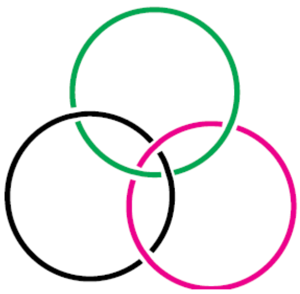


Fig. V-4

It is thanks to this that there is a Borromean knot. In other words, it must alternate [V-5]. It can just as well alternate in the opposite direction [V-6], in which there consists very precisely the asymmetry.

Fig. V-5



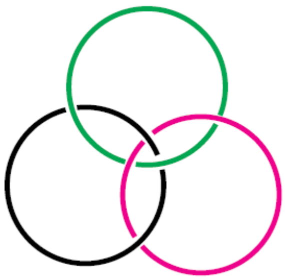


Fig. V-6

I tried to see what was involved in the fact that...it is just as well not to make the black line cross the red line more than twice. One could moreover make them cross one another more than twice. One could make them cross four times, that would change nothing in the veritable nature of the Borromean knot.

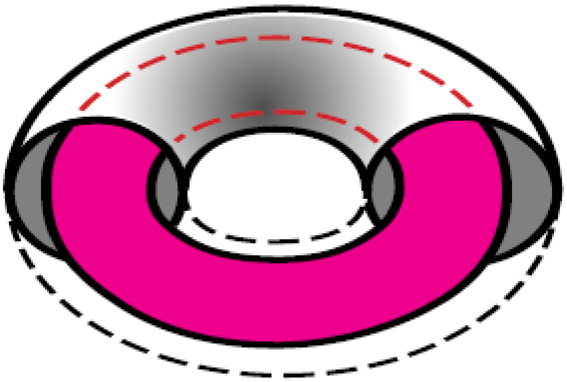


Fig. V-7

There is a sequence to all of that. Soury, who is responsible for some of it, has developed some considerations about the torus. A torus is something like that. Suppose that we make a torus be held inside another one [V-7]. That's where the business of inside and outside begin. Because let us turn over the one which is inside in that way. I mean: let us not only turn over this one, but at the same time let us turn over that one [V-8 & 9]. There results something which is going to make what was first of all inside come to the outside and, since the torus in question has a hole, what is outside of it is going to remain outside of it and is going to end up with this form that I called the rod-like shape, where the other torus is going to come inside.

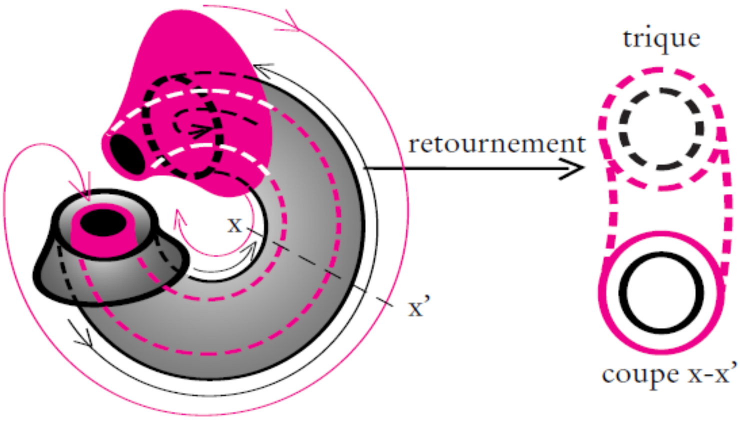


Fig. V-8

Fig. V-9

How should we consider these things? It is very difficult to speak here about inside when there is a hole inside a torus. It is completely different to what is involved in the sphere.

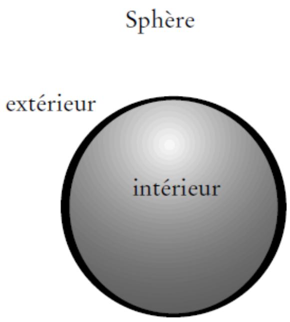


Fig. V-10

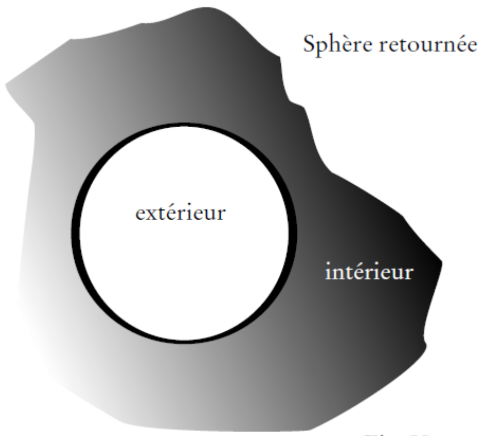
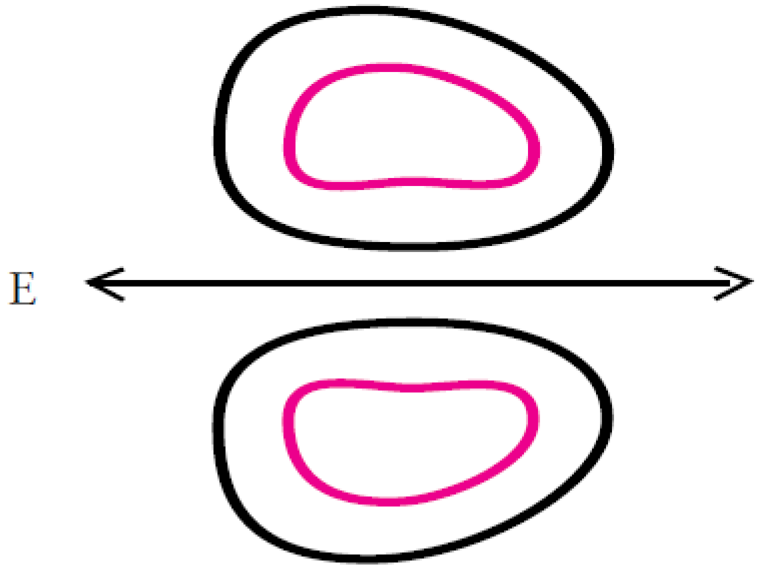


Fig. V-11

A sphere, if you will allow me to draw it now, is something like that. The sphere also can be turned over. One can define the surface as aiming at the inside. There will be another surface which aims at the outside. If we turn it over, the inside will be outside, by definition, the sphere. The outside will be inside; but in the case of the torus, because of the existence of the hole [V-12], of the inside hole, we will have what is called a great disturbance. The hole on the inside, is what is going to disturb everything that is involved in the torus, namely, that there will be in this rod, there will be a necessity that what is inside becomes what? Precisely the hole. And we will have an equivocation concerning this hole which from then on becomes an outside.

Fig V-12



In this rod there will be a necessity that what is inside becomes the hole.

The fact that the living being is defined almost like a rod, namely, that it has a mouth, indeed an anus, and also something which furnishes the inside of his body, is something which has consequences that are not unimportant. It seems to me that this is not unrelated to the existence of the zero and the one. That the zero is essentially this hole, is something that is worth exploring.

I would really like here if Soury took the floor. I mean by that, if he were willing to speak about the one and the zero it would be very agreeable to me. That has the closest relationship with what we are articulating concerning the body. The zero is a hole and perhaps he could tell us more about it, I am speaking about the zero and of the one as consistency.

Are you coming? I am going to give you that. Off we go. In this rod there is a necessity that what is inside becomes the hole.

Soury: There you are. On the zero and the one of arithmetic, there is something which is analogous to the zero and to the one of arithmetic in the chains. Therefore, what makes the zero and the one exist, are preoccupations about systematisation.

In the case of numbers, good, it is operations on numbers that make the zero and the one hold up. For example, with respect to the operation of summation, with respect to addition, the operation of summation, the zero appears as a neutral element – these are terms which are in place – the zero appears as a neutral element and the one appears as a generating element, namely, that by summation, one can obtain all the numbers starting from the one, one cannot obtain any number starting from zero. Therefore what locates the zero and the one, is the role that they play with respect to addition.

Good then, in the chains, there are things analogous to that. But then it is indeed a matter of a systematic point of view about the chains, anyway a point of view on all the chains, all the Borromean chains; and the chains as forming a system.

X: What does systematising mean? [*Laughter]*

Soury: Good already I do not believe in the possibility of presenting these things, namely, that these things depend on writing and I think it's scarcely possible to talk about these sorts of things. So then the possibility of answering..., in short, for those things, I do not think that speech can take these sorts of things in charge. Anyway systematisation depends on ways of writing (*écritures*) and precisely speech cannot practically take charge of anything that is systematic. Anyway what would be systematic and what would not be, I don't know, but it is rather what ways of writing can carry and speech, is not the same thing. And any speech which wants to give an account of writing appears to me to be acrobatic, risky.

So then systematisation, what is typical of systematisation, is the number: it is numbers and arithmetic. Namely, numbers, all we know are operations on numbers, namely, that we only know systems of numbers, we do not know numbers, we only know the system of numbers. Good, there is a bit of systematisation in the chains, anyway there is something in the chains which behaves like summation, like addition. It is a certain operation of interlacing, which means that one chain and one chain gives another chain, just as one and one number gives another number. Anyway, I will not try to define this operation of enlacing I am not going to try to present it, to introduce it.

But then with respect to this operation of enlacing, the Borromean chain, the threefold chain appears as the generating case, the exemplary case, the case which engenders all the rest, namely, that the exemplarity of the threefold chain can be demonstrated. Relying on an article by Milnor which is called *Links groups* in English, the exemplarity of the Borromean chain can be demonstrated, namely, that any Borromean chain can be obtained starting from the threefold chain. In particular the chains of any number of elements whatsoever can be obtained starting from the threefold chain. Anyway, what ensures that the threefold chain is something which engenders everything. It is something which is generative and which is comparable to the one of arithmetic. In the same sense that the one is generative in the numbers system, the threefold Borromean chain is generative. All the Borromean chains can be obtained starting from the threefold chain by certain operations. Therefore the threefold chain plays the same role as the one.

So then there is something which plays the same role as the zero, it is the twofold chain which is a degenerated case, anyway which is a degenerated case of the Borromean chain. So then I'm going to draw the twofold chain. I am going to draw it because it has been less often drawn than the twofold chain.

Twofold chain, the chain of two interlaced circles: **Fig V-13**
The chain two interlaced tori: **Fig V-14**

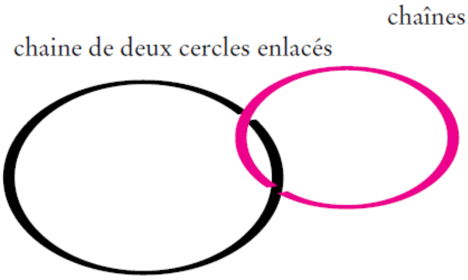


Fig. V-13

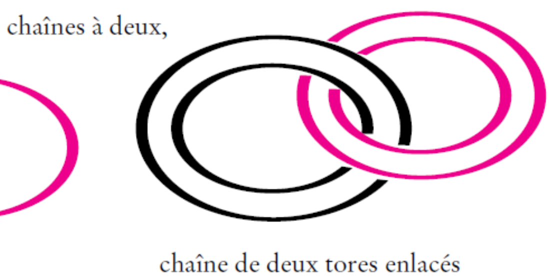


Fig V-14

This is a plane presentation of the twofold chain. It is two circles caught up in one another, you can do it with your fingers.

The twofold chain is a degenerate case. In the preoccupations of systematisation, degenerate cases take on an importance. They are quite analogous to the zero. The zero is a degenerate number, but it is from the moment on that there are preoccupations of systematisation on numbers that the zero takes on its importance, namely, that...anyway that does not allow us to respond to this business of systematisation, it is only a criterion, anyway quite simply a sign of what is systematic or non-systematic. It is according to whether the degenerate cases are excluded or not excluded. So then I could respond that systematisation is when one includes degenerate cases and non-systematisations when one excludes degenerate cases.

Anyway the zero is a degenerate case which takes on importance. While for the chains, the operations of interlacing on the chains or the operation of interlacing on Borromean chains, what plays the role of zero, is the twofold chain, namely, the twofold chain does not generate anything, it only generates itself; the twofold chain function like a zero, namely, zero + zero = zero; interlacing the twofold chain with itself still gives a twofold chain. From the point of view of interlacing, the fourfold chain is obtained starting from two threefold chains, namely, 3 and 3 make 4. The fourfold chain is obtained by interlacing of two threefold chains. Anyway it's analogous to arithmetic; but by locating oneself with respect to the number of circles, that gives 3 and 3 make 4, like that, that could be described as 2 and 2 make 2. Anyway the fact that 2 is neutral, is a degenerate neutral – the terms which exist on this subject, namely, generative element, neutral element anyway terms in mathematical culture.

The one is a generative element, the zero is a neutral element. I reinforce these terms a little by saying, instead of saying generative and neutral, exemplary and degenerate, namely, that the one would be an exemplary number and the zero a degenerative number. The threefold chain is the exemplary Borromean chain and the twofold chain the degenerate Borromean chain.

One can see degenerate in different ways. It is also that, the fact that this chain is degenerate one can see in different ways; in different ways, it is too much. I have several reasons for qualifying the twofold chain as degenerate and several reasons is too much. One reason, is that the neutral element for interlacing, is that interlaced with itself, it only gives itself. It does not generate anything other than itself; it is degenerate in the sense in the sense that to be a neutral element with respect to the operation of interlacing. That’s one meaning. A second meaning of being degenerate, is when the Borromean property degenerates to two; the Borromean property, the fact that each element is indispensible, that, when one removes an element, the others no longer hold together, that one element makes all the others hold together; each one is indispensible, they all hold together, but not without each one. The Borromean property, means something starting from 3, but with 2 everything is Borromean. At 2 everything is Borromean because holding together, anyway holding together in 2’s, anyway ‘each one is indispensible’ at 2 is automatically realised, while starting from 3, the ‘each one is indispensible’ is not automatically realised, namely, that it is a property which can be either true or false, it is yes or no: yes or no the chain is Borromean. In 2’s, all the chains are Borromean, therefore the Borromean property degenerates in 2’s. So then a third reason why this chain is degenerate, is that in this chain a circle is the reversal of another circle. Another way of saying it is that these two circles have the same neighbourhood, anyway this is the business of surface. The fact is, that if these two circles are replaced by their two neighbourhood surfaces, it is the same surface, these two circles are only the redoubling of one another, but it is a pure redoubling, it is a pure complementing, but that can be seen on the surfaces. That can be seen on the surface chains, and not on the circular chains. That can be seen on the surface chains which are associated with

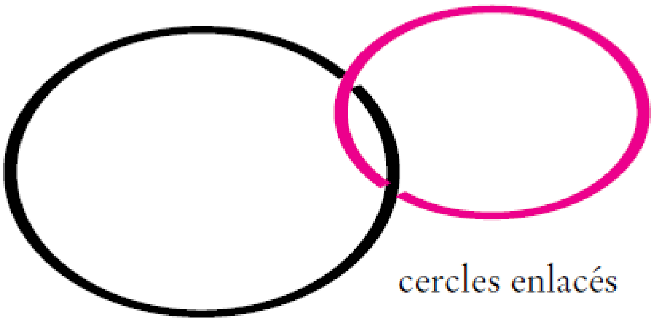


Fig. V-15

this chain of circles, namely, if this chain of two circles [V-15] corresponds to a chain of two tori, this chain of two tori corresponds to the redoubling of the torus.

Now that is not obvious; it is not obvious that two interlaced tori is the same thing as two tori which are the redoubling of one another just as the tyre and the tube. The tyre and the tube, is the redoubling of one torus into two tori, two tori which are only two versions of the same torus it is a

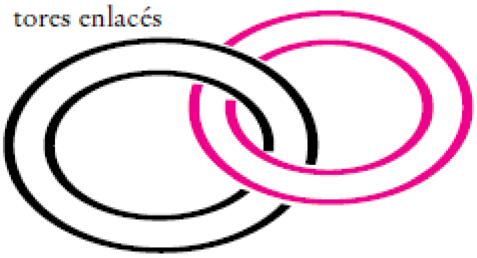


Fig. V-16

redoubled torus. That two tori being the redoubling of the torus, is the same thing as two interlaced tori is not obvious. It is the reversal which will say that and the reversal in not obvious. Which means that the two circles [V-15], is the same thing as these two interlaced tori [V-16]; these two interlaced tori is the same thing as a redoubled torus [V-17] and that, that is a reason for saying that it is a degenerate chain.

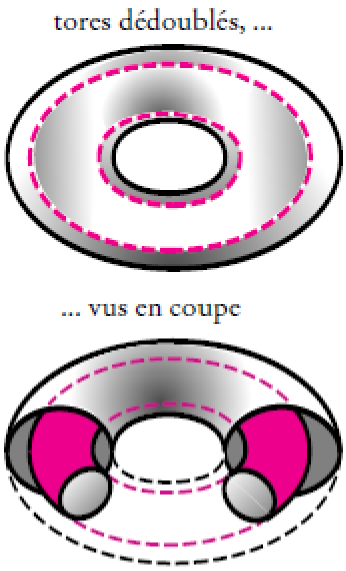


Fig. V-17

A degenerate chain because that only means, these two, the two of these two circles, is not the division of space in two halves. There you are, that is a criterion for saying that a chain is degenerate: it is that the elements of the chain only represent one division of space. These two circles here are valid for the division of space into two halves. It is in this sense that it is degenerate: it is that these two here, are only two halves of space. So then why two circles which only represent two halves of space, why is this degenerate? Well then because in the general case of chains, the several circles of chains only represent a division of space in several parts, but it happens that here these two circles only represent a division, a partition, a separation of space into two parts.

Lacan: I would like all the same to intervene to point out to you that if you reverse this circle there for example, the right-hand circle [V-15], you free at the same time the left hand circle. I mean that what you get, is what I call the rod [V-18], namely, that this rod is free from...and it is all the same very different from the torus inside the torus.

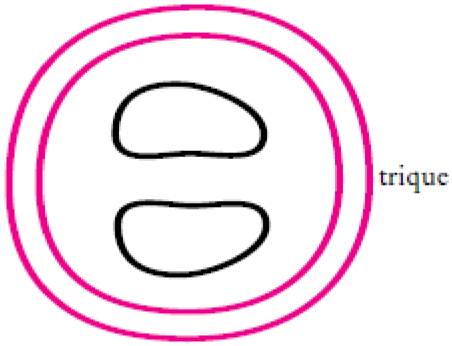


Fig. V-18

Soury: It is different, but it is...Look that one, in order to disimplicate one from the other of these two tori, this can only be done by a cut; it is not simply by reversal; by reversal one cannot one cannot disimplicate the two tori, which will be seen for example, if one makes the reversal with a little hole, anyway by holing. If one makes the reversal of a torus by holing, one cannot, one cannot disimplicate the two tori, they can't be disimplicated, unchained, unlaced. It is only when one makes a cut; but to make a cut is to do far more than a reversal. To make the cut, is to do more than holing, and holing is doing much more than reversal. Namely, that to make a cut is to do much more than a reversal. One can make a reversal by cut, but what is done by cutting is not representative of what is done by reversal. And that, would be precisely, it would be exactly an example of it: the fact is that by a cut one can disimplicate one can unchain the inside and the outside while by reversal, it is not a question of disimplicating the complementarity of the inside and of the outside. The fact is that what is done by a cut is much more than what is done by reversal, even though the cut may appear to be as a way to carry out the reversal. In that the cut, is more than holing and the holing is more than reversal. The reversal can be carried out by holing; the holing, no, I hesitate to say that holing could be done by a cut all the same. But in the cut there is a holing there is a holing implicit in the cut.

Lacan: In other words what you obtain by holing is in effect like that [V-19].

Soury: Yes, yes.

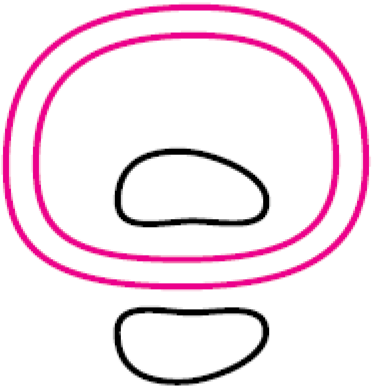


Fig. V-19

effet obtenu par trouage

Lacan: There is something which is all the same not mastered concerning that which...it is all the same a result different to that [V-17]!.

Soury: No! No! It's the same thing.

Lacan: It is precisely on this 'it's the same thing' that I would like to obtain a response from you. This 'it's the same thing'...when we reverse the two tori [V-17], we obtain the following [V-20]. It is all the same something completely different to that [V-19] which is much more like this [V-16]. There is something there which does not appear to me to be mastered, because this [V-17] is exactly the same as that [V-7].

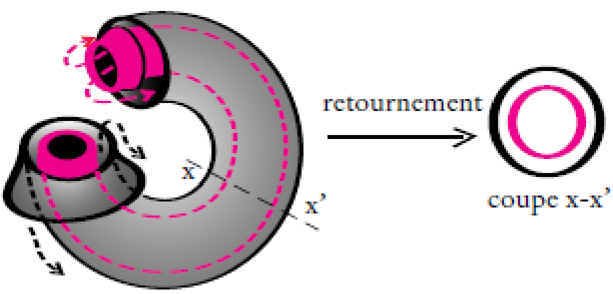


Fig. V-20

Soury: Good! So then we have two interlaced tori [V-19]. Here [V-20] it is two interlocking tori. That is two interlaced tori [V-14]. That [V-18] is two tori freed from one another, independent. So then what is the same thing, is that: two tori, two interlaced tori. And that is two interlaced tori.

Lacan: These [V-19] are not interlaced: one is inside the other.

Soury: Ah good! Good, I thought that it was that. Ah good! It is a matter of two tori, of the black and the red. While there, it is a matter of two interlocked tori, a black and a red interlocked here, here of two interlocked tori [V-20] and here of two interlaced tori [V-14].

Lacan: This is what is not mastered in the categories, in the categories of interlacing and of interlocking. I will try to find the solution which is properly speaking like interlacing. Interlacing is different ... (the end is inaudible).

Schema proposed by Pierre Soury

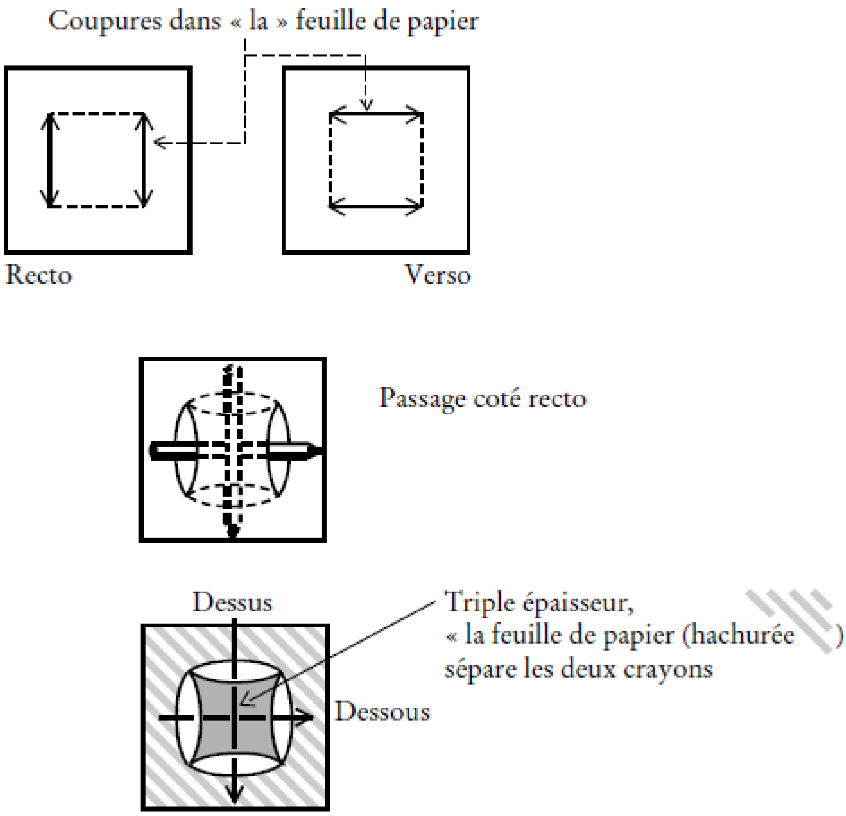


Figure V-1a, détail de la figure V-1, page 39.

Seminar 6: Wednesday 14 February 1978

I'm a little bit bothered because as it happens I do not have the intention of sparing you today.

There you are. There is something that I asked myself and that I made an effort to resolve. It is something which consists in the following: let us suppose something which is presented as follows, in other words which involves a double loop.

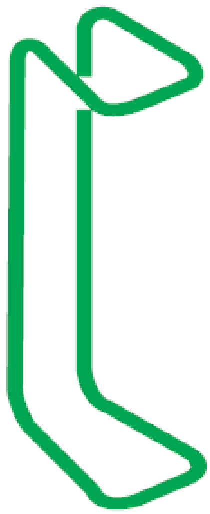


Fig. VI-1

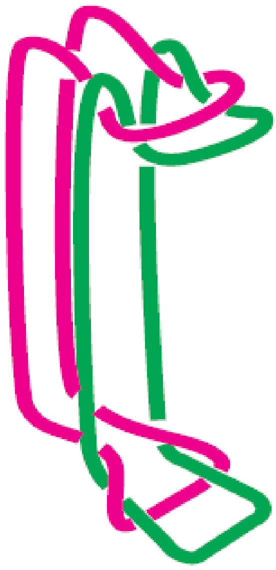


Fig. VI-2

We are capable with this, namely, with this start to make a threefold Borromean knot. You can clearly see that here the two circles that are found to be something like that – they are circles seen in perspective – the two circles are knotted.

This is an idea that came to me; I wasn't sure that this would constitute a Borromean knot. But anyway I wagered and it proved to be right. Here you have to put in a bit of goodwill. Here is how this is pinned down. I put this to the test with Soury whom I am meeting for the moment. I am meeting him because he tells me sensible things on the subject of Borromean knot. Nevertheless I cannot say that he does not worry me. I mean that for this Borromean knot, he wanted at all costs to make a fourfold one. There was already a two, why make a four? This all the more so because the two does not hold up, while the four it appears will not hold up any the more, namely, that it would certainly become unknotted unless by making it circular. I already spoke to you about this circular Borromean chain. It presupposes something which, as they say, joins the beginning, at the start, and this something which can only be the ring which ends it at the same time as it inaugurates it [VI-3].

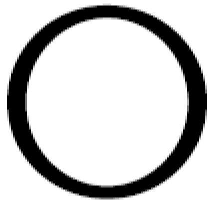


Fig. VI-3

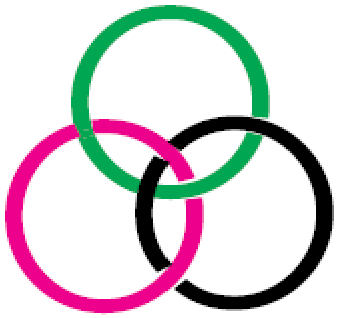


Fig. VI-4

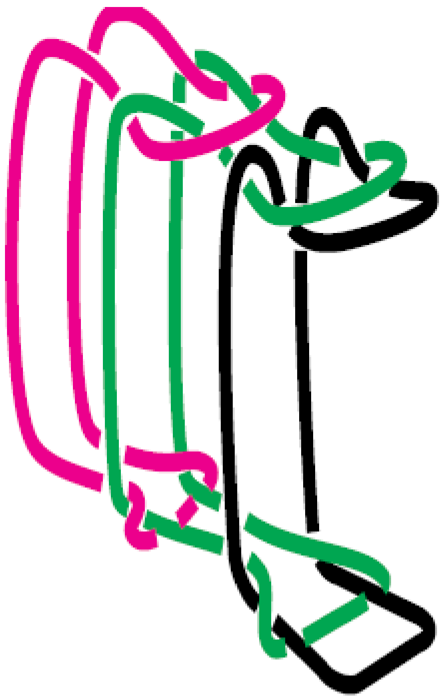


Fig. VI-5

This Borromean knot, the one that is outlined as I have just said [VI-2] is not circular. More exactly it is only circular when it is threefold. When it is threefold on condition of making go underneath the lower one, above the upper one, we obtain a typical Borromean knot namely, this one here [VI-4]. This one [VI-1] and that one VI-6]. They are completed like that [VI-6].

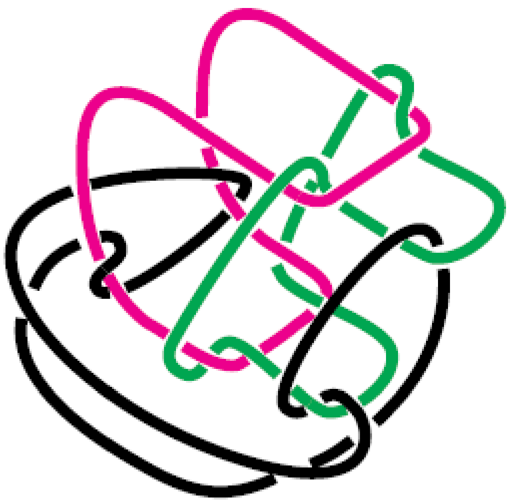


Fig. VI-6

It is quite clear that we still have not got used to this Borromean knot. Why the devil did I introduce it? I introduced it because it seemed to me that it had something to do with the clinic. I mean that the trio of Imaginary, Symbolic and Real seem to me to have a sense. In fact what is certain is something which is pinned down like this, namely, which is the third. Well then, that is knotted. This is not obvious on the figure which is there [VI-6]; but if one puts the thing that I added in black, put in front, I mean here, one would see that these two blacks can be identified. I am going to try to show it to you with the help of a supplementary drawing. It is really very complicated.

It is more or less that. It is more or less that on condition of completing it as follows. It is obvious that I am extremely awkward in these drawings [*Laughter*]. There is another way of doing it which is the one that I owe to Soury and which presents itself more or less like this. The way of doing it is the following [VI-7], which is completed in the following drawing [VI-8] which is obviously not very clear.

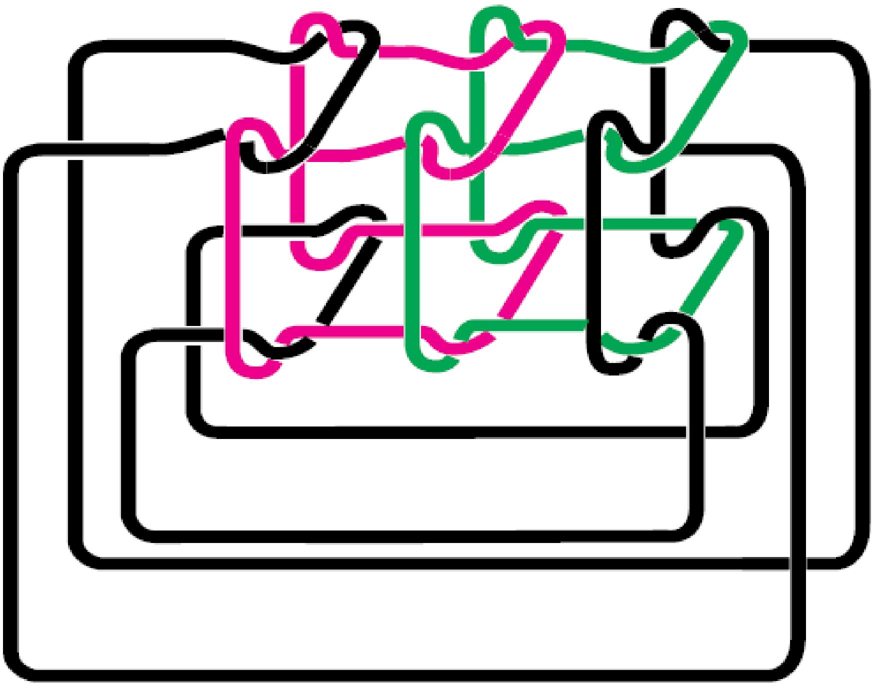


Fig. VI-7

You should realise that it is conceivable to put the third drawing here, I mean the black drawing. Perhaps, what incontestably is unknotted as it is presented here [VI-5], perhaps you will manage to reconstitute the following which is knotted. I mean that here there is a threefold Borromean knot which is constituted by putting end to end, I mean by the fact that it is closed. That it is closed exactly like what I wrongly showed you here, it is closed as in the case of a simple Borromean knot. There you are.

I apologise for not having better prepared this class. I will try the next time to distribute to you some drawings that are a little clearer.

There you are, I am leaving you with that for today.

Fig VI-8 [Presented on the board by Lacan with Fig VI-7]

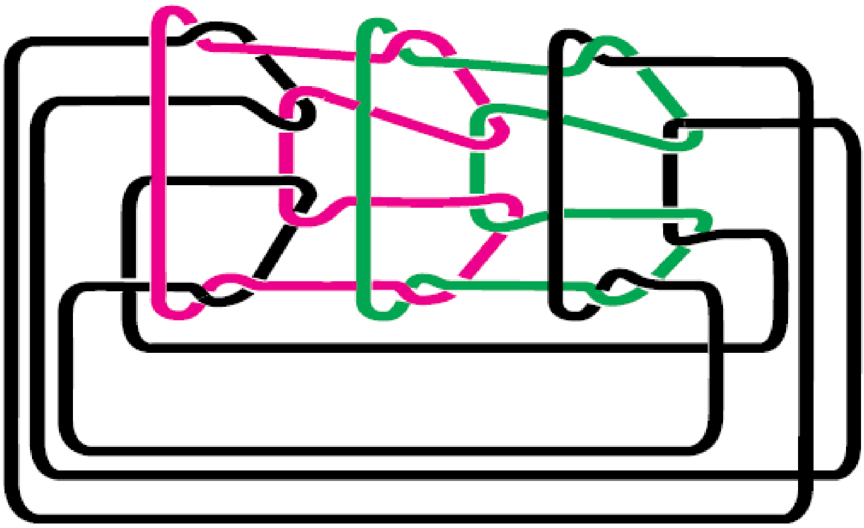


Fig. VI-8 (présentée au tableau, avec la figure VI-7, par Lacan)

Seminar 7: Wednesday 21 February 1978

There is someone called Montcenis, this at least is what I believe I read in the text that he sent me. He's not here? It's you? I thank you very much for having received this text which proves at the very least that there are people who were able to find their bearings, find their bearings in an appropriate way in the rings of string the last time [VI-7].

I repeat that what is at stake is something like this:

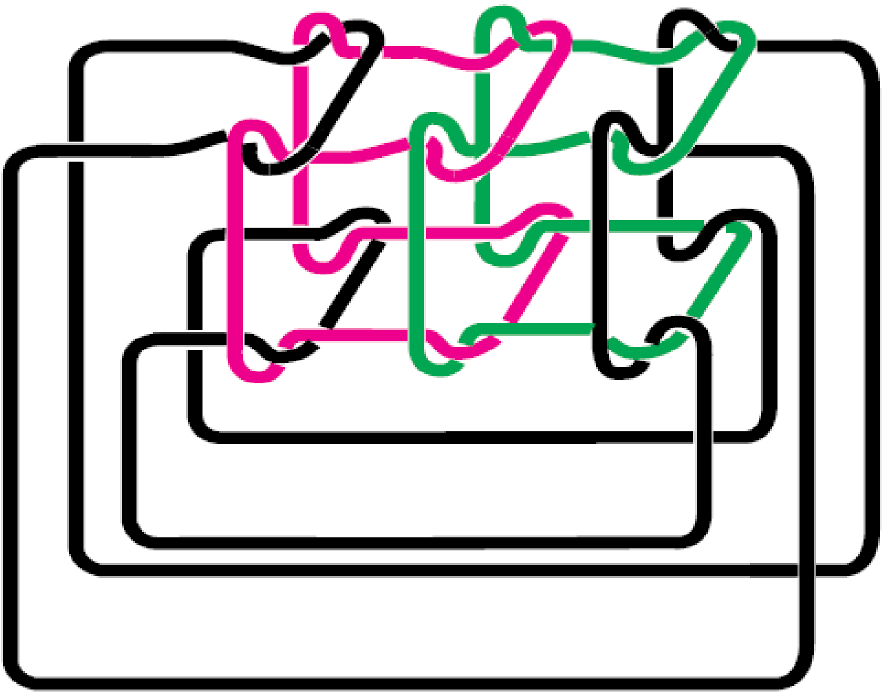


Fig. VII-1 [= Fig. VI-7]

Thanks to Soury, here present, I was able to obtain the transformation of this triple thing that I tried to reproduce there, this thing with three elements, thanks to Soury therefore, by a progressive transformation we have, we have something which has the same three elements. And if you consider what is on top, you can note – what is found at the top of the sheet that I only distributed to you so that you could reproduce it – what is found on top on condition of putting it, of considering it, what is found on top, you can see that this reproduces, reproduces the figure which is present here. It is simply sufficient for you to see that this passes under the three elements that compose the figure. And that this, from the moment that what you see on the right passes under what I called the three elements, this allows to descend what is involved in the black element and that one obtains this figure. What I am now asking Soury, is how the figure at the bottom can be fiddled with in order that it may re-produce, that it may r-produce the figure on top. He tried to depict for me what is at stake, namely, to fold back what is depicted at the bottom under the form of what comes in front and which could therefore be folded according to a movement which could displace forward what seems to be free. I do not see that he has convinced me on this point. I believe that very exactly these two objects are different.

N. Sels: It's the same. It is turned over like a pancake.

Lacan: I cannot see that it is turned over like a pancake. I don't think that's the case. That which is – it has been communicated to me that the figure on top is the image of what one sees in a mirror placed behind the figure at the bottom. It is very precisely this question of the mirror which differentiates the two figures, for a figure placed in a mirror is inverted. And this indeed is why I object to Soury that it is what he calls or what he defines as couple. A figure placed in a mirror is not identical to the figure, to the original figure [VII-2].

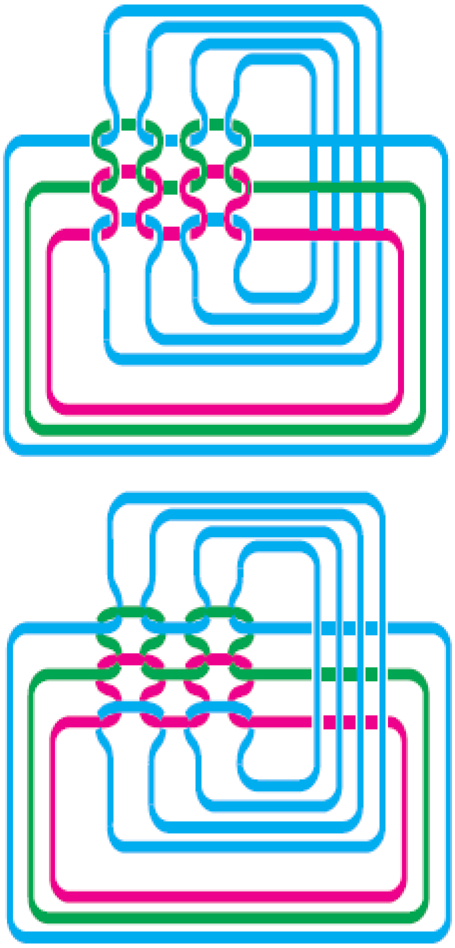


Fig. VII-2

Can Soury intervene here?

Soury: Yes. So then in this there are a lot of inversions, there are different sorts of inversions, there is the 'mirror-image' inversion, there is the inversion of 'reversing the paper as if it were something in wicker-work', there is the inversion 'exchanging the above and below', there is the inversion by which 'the front stitches become the stitches at the back' since it is a kind of stitching, there is the inversion according to which they are ranked – in this there are lines of rows and lines of stitches – wee have to know if the lines of rows pass under or over the lines of stitching, namely, that in the drawing on top the lines of stitches go underneath the lines of rows and, in the bottom drawing it is the contrary. So there is not just one inversion there is a whole quantity of them. So then there is a difficulty in this, which is that there is not just one inversion, there are multiple inversions. Good.

Lacan: And how many of these multiple inversions are there?

Soury: They have a tendency to proliferate (*Laughter*). So then here there is a principal inversion which is an object inversion; the principal inversion which means that there are two objects, they are the two toric stitchings.

Lacan: The two?

Soury: The two toric knittings. There are two toric knittings, they are two different chains. This is the principle inversion because they are two objects.

Good, there are inversions, another inversion is the inversion of plane and purl stitches, namely, the two faces of a jersey fabric. The two faces of a regular knitting – the regular knitting is the jersey knitting that has two faces – that is a very important inversion in the chain. Namely, that in it it is a question of a toric knitting, namely, a torus dressed in knitting, dressed in a regular knitting, in a jersey knitting and one of the faces of the torus is in plane stitches and the other face of the torus is in purl stitches. That's a second inversion.

In this there are still more inversions which are the inversions of the torus, namely, that one can change meridian and longitude or exchange inside and outside. I have already got to four inversions. There's the inversion of the reversal of the torus. That gives five inversions.

Now, on the plane presentation which is there, the principle inversion, is the inversion, it is not...anyway there is rather an apparent inversion: it is the inversion of above-below, namely, that these two drawings are deduced from one another by changing all the above-belows. I don't know how many inversions I have got to.

In this plane presentation, I would like to see there two inversions, namely, that there is the inversion of the knitting, namely, that in the central part of the plane stitches there come purl stitches; on this plane presentation, it is an inversion and another inversion, is that it is this business that the stitches go beneath or above the lines of rows. So then there are several inversions which are combined, already when there is simply one inversion, of the left-right type, one has every reason to take the left for the right and reciprocally.

Already simply a couple, a binary, an inversion, one is very likely to make mistakes, to choose one if one wants to choose the other. When there are several inversions, this is what I call binaries and liaisons of binaries. Finally in short where have I got to? To assure oneself, to have certainty about these things, in my opinion, it is not enough to succeed in imagining a distortion in space, because by imagining a distortion in space one remains too dependent on these inversions of couples and inversions of binaries. That appears to me to be necessary with respect to the proliferation of binaries, the couples of inversions, to make an exhaustive checklist. So then the defect of this sheet, from this point of view, is that it is not an exhaustive checklist, namely, that in order to make an exhaustive checklist which would correspond to this sheet here, four figures would be necessary, namely, that there should be four possible combinations, on the one hand plane stitch, purl stitch and on the other hand to know whether these lines of stitches and of rows pass beneath or above one another. Four drawings would be necessary to have something exhaustive, namely, that, I repeat, with respect to these inversions, one cannot avoid getting lost; there is a need for something exhaustive. Therefore we need a second sheet which means that there would be four drawings. There would be four plane presentations and on these four plane presentations, that would set things up properly to discuss: Are these four presentations the presentation of how many objects?' For it is found that these four presentations are the presentation of two objects, namely, that there are changes of presentation which do not change the object. Now it happens that on this sheet there are two presentations of the same object. So then...

Lacan: It is, it seems to me, clear that if one divides this sheet what one sees on the bottom figure is exactly what is reproduced in a mirror by what is depicted on the image on top.

N. Sels: No, no.

Lacan: What?

N. Sels: If it was in a mirror, what is on the left in one would be on the right in the other. It is the bottom.

Lacan: There are two different objects, because one is the mirror-image of the other. What you hold, is that what happens, since there are four inversions according to what you're saying, is that this would be four inversions and there would be two objects, two distinct objects in these four inversions. Here I only see one inversion, I agree with the person who communicated with me, the two schema represent the same object. If we concretise it by three concrete strings, the schema on top is the schema on the bottom always as seen in a mirror put behind and vice versa. The object considered has only these two schemas and in terms of this the scheme, the relationship of these two schemas is that of a mirror-image. Therefore it does not coincide. A mirror-image does not coincide with the original object, with the first figure. There are not two inversions, there is only one of them. There is only one but it introduces an essential difference namely, that the figure in the mirror is not identical to what is seen in the original figure. There is only a single inversion.

There you are! I am going to dismiss you now, because I believe, in material that is not especially difficult, that I have told you what is involved in these two images once inverted and which are only inverted once.

There you are, I am going to stay with that for today.

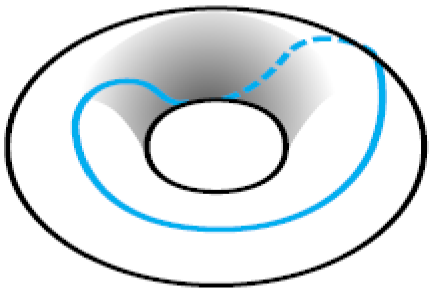
Seminar 8: Wednesday 14 March 1978

Someone put forward, in my regard, the imputation that I made my listeners do research or, or more exactly, that I managed to do so.

On this particular occasion it was Francois Wahl. This indeed is what I should manage to do. I stated formerly that 'I do not seek, I find', these were my words borrowed from someone who had in his own way a certain notoriety, namely, the painter Picasso.

Currently I do not find, I search. I search, and some people even want to accompany me in this research. In other words, I emptied, as one might say, these rings of string with which I formerly made Borromean chains. I transformed these Borromean chains not into tori, but into toric fabrics. In other words, it is tori that now carry my rings of string. It is not convenient because the torus, is a surface and there are two ways of treating a surface. A surface has features and these features which are bound to be on one of the faces of the surfaces, in other words one of the faces of the surface, these features, are actually what incarnate, support my rings of string, my rings of string which are always Borromean.

Fig. VIII-1



In fact the torus is at the centre of these features, it is fabricated more or less like that [VIII-1] and the features are on the surface. This implies that the torus itself is not Borromean.

That is the picture by Soury (see diagram VII-d atthe end of the session]. In it he distinguishes two elements, namely, the fact that a torus can be reversed, can be reversed in two ways. Either the torus is holed, holed from the outside. In that case as can be seen here, it is typical of being reversed, namely, that to draw things like that, it is reversed upside-down (*à l'envers*) and that the results are what one goes into, namely, what I would call the core (*l'âme*) of the torus becomes the axis. Namely, that the result of this reversal is something which is presented like this in cross section [VIII-3]. Namely, that the core of the torus becomes its axis. In other words, this is closed here and what is involved in the torus becomes the axis, namely, that the core is formed from the redeployment of the hole.

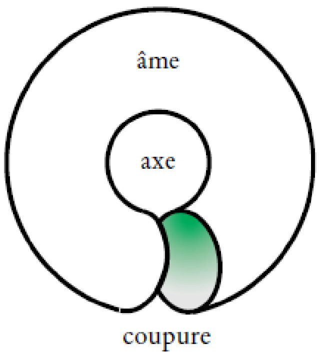


Fig. VIII-2

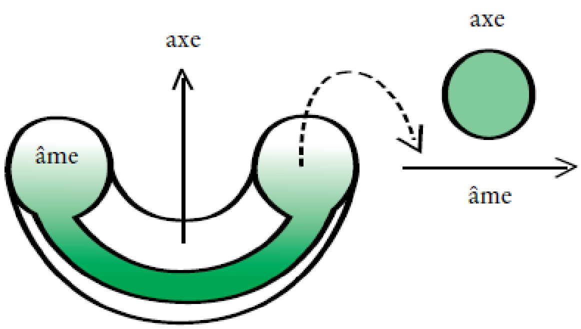


Fig. VIII-3

On the contrary, the reversal by cutting which has also the effect of transforming the torus by allowing – here is the cut – on allowing it to be reversed like this, also substitutes the core and the axis. Here the torus having what is called its core and here, because of the cut, what was first of all the core of the torus – here is the cut [VIII-2] – becoming its axis [VIII-3].

It seems to me, as far as I'm concerned, that the two cases are homogenous. Nevertheless the fact that Soury distinguishes this reversal by cutting from the reversal by hole impresses me. Namely, that I have great confidence in Soury.

(**Note**: The text up between the two '{' seems to be out of place)

{The two trefoils. There are knots. They are exchanged by two automorphisms. The plane presentations are exchanged by four automorphisms.

The two interlacings. These are orientated chains. They are exchanged by four automorphisms. The regular plane presentations are exchanged by eight automorphisms.

The two Borromean chains of two coloured straight lines and an orientated circle.

They are chains of two coloured straight lines by a and b and an orientated circle. They are exchanged by eight automorphisms. The plane presentations are exchanged by 16 automorphisms.

The two Borromean chains of three coloured orientated circles. They are chains of three circles coloured by a and b and c and orientated. They are exchanged by 96 automorphisms. The regular plane presentations are exchanged by 48 of automorphisms.

In other words what is called here crossroads of the strips – one says a crossroad of strips – is referred to a holed torus. Here also the reversal in question is a toric reversal, namely, half a hole.}

I am now going to let Soury take the floor and allow him to defend his position.

Naturally, there is something which impresses me, which is that the torus, if it is drawn like that [VIII-4],in perspective, the torus has the property of admitting the type of cut which is very exactly the following. If, starting from this cut, one reverses the torus, namely, that one makes the cut go behind the torus, the axis remains the axis and the core remains the core. There is a reversal of the torus, but without modifying what is found distributively the axis and the core – this is the axis. Is this sufficient to allow that the reversal by cutting works differently on the torus? It is indeed about this that I am posing the question. And on that I will give the floor to Soury who is willing, in my confusion, to take up the baton about what is at stake. Take your place here.

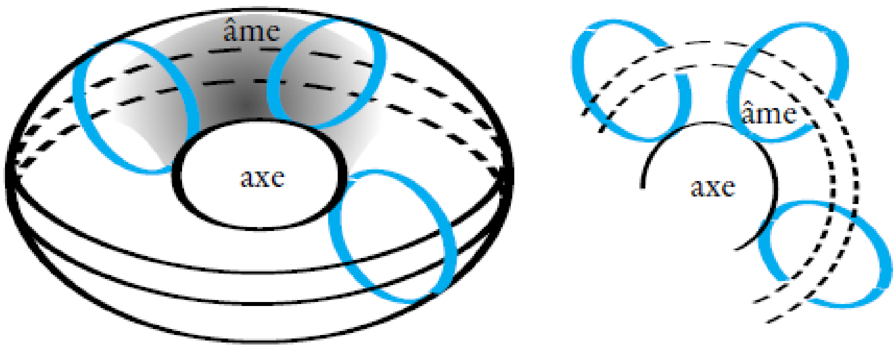


Fig. VIII-4

Soury: I will also need a board. It is a matter of the difference between the holing and the cutting of the torus and it is even a question of the difference between the reversal, the holing and the cutting.

So then I am going to try to present the difference between cutting and holing the torus, anyway first of all not worrying whether that can be used to make a reversal, simply cutting the torus and holing the torus how are they different. I draw a torus. I need different colour chalks. There you are.

So here we have the torus. On the torus, circles can be on the torus, they are reducible circles; reducible circles, are circles which by distortion can be reduced and there are non reducible circles. So that as a non reducible circle, there is the meridian circle, there are the longitudinal circles and there are other circles.

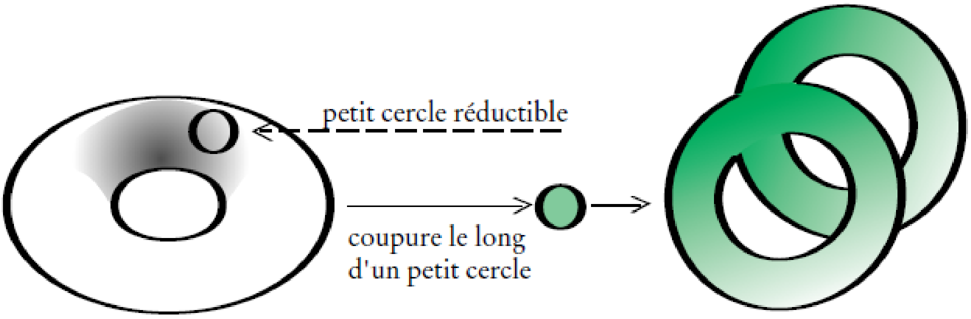


Fig. VIII-5

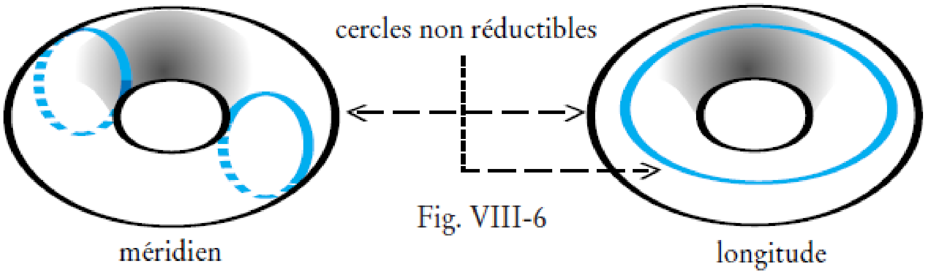


Fig. VIII-6

There you are. I drew a circle on the torus which is neither the meridian circle nor the longitudinal circle [VIII-7]. So then when there is a circle on the torus, it is possible to cut along the length of this circle and the result...

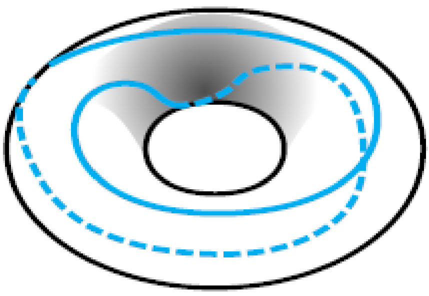


Fig. VIII-7

Good, so then the holing is this case, it is cutting along the reducible circle and the cut, is to cut along a non-reducible circle. If one cuts along a little circle, a reducible circle, a little circle, what remains? There remains on the one hand a piece, a little disc, this little disc, and on the other hand there remains a surface with an edge, a surface with an edge that I am drawing [VIII-8]. There you are. So then this drawing here represents a surface with an edge. Here is the result of the holing. To say holing, is not interesting oneself in the little disc which remains and to say that the holed torus is that. The holed torus is a surface with an edge which is drawn here.

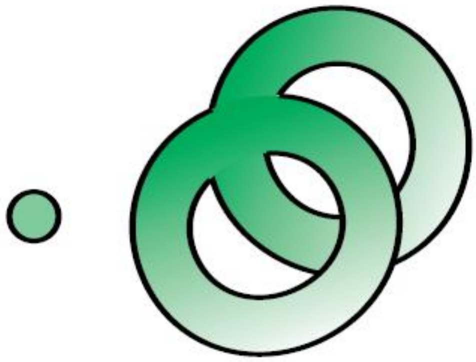


Fig. VIII-8

If the torus is cut along a non reducible circle, then that's the cut, so then what remains? First of all there remains just a single piece and I am going to say what remains there remains a strip more or less knotted and more or less twisted. So then I am going to draw the rest by a meridian cut.

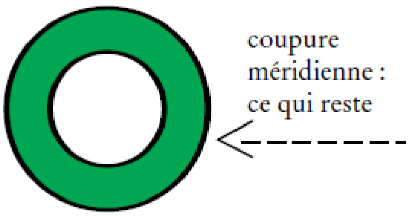


Fig. VIII-9

By a meridian cut, there remains a strip which is neither knotted nor twisted [VIII—9]. By a longitudinal cut also there remains the same thing: the strip which is neither knotted nor twisted [VIII-10]. And these also are surfaces with an edge. But there is all the same a difference: which is that there is a surface with a single edge and here there are surfaces with two edges.

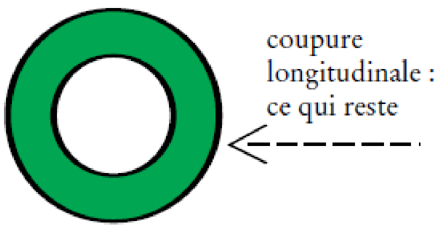


Fig. VIII-10

If the cut is made along a circle that is not so simple - not so simple as the meridian circle or the longitudinal circle - then what remains is a strip, there still remains a strip, but one that is more or less knotted more or less twisted. So that for example, anyway for a certain circle, one obtains a strip [VIII-11], which is knotted in a trefoil [[VIIII-12] and which is twisted. So then the torsion, I don't remember the corresponding torsion.

Therefore I am drawing it, I have every chance of making a mistake here, namely, that it is not just any torsion whatsoever, but I don't remember what torsion there is.

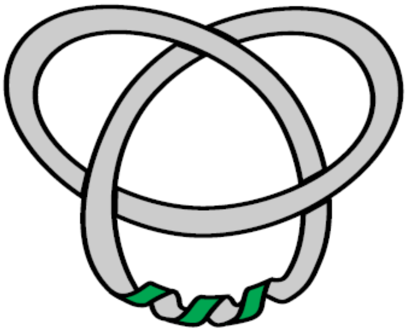


Fig. VIII-11

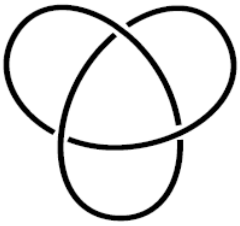
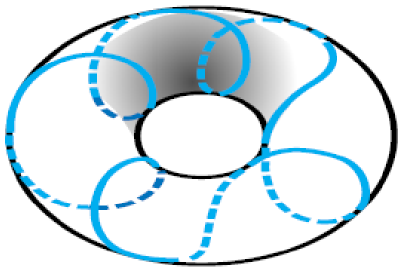


Fig. VIII-12

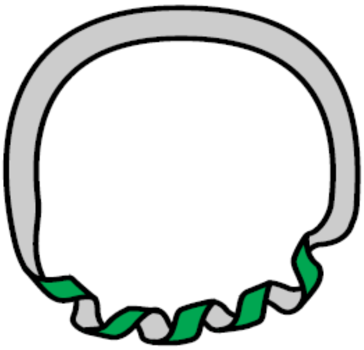
Anyway this is a strip which is knotted and twisted and one could separate its knotted part and its twisted part namely, the knotting of this strip can be represented by a knot, good here is the knot of the trefoil; and the torsion can be counted, it's a certain number of turns. In the case of the trefoil, there is a torsion of, I believe three turns, there are three turns of torsion; anyway if it's not three it's six I may be mistaken. Therefore here, I did not indicate these things in order to clearly show that what is in question are strips. Therefore the cut torus, is a strip that is more or less knotted, more or less twisted, therefore that gives certain knots, not all the knots, and it gives a certain torsion. There are certain circles on the torus that Mr Lacan has mentioned. These are the circles that he put in correspondence with Desire and Demand. Anyway here we are. These circles can be located by the number of times that they turn around the core and the number of times they turn around the axis. There are a lot of these circles but they can be located and this locating can be justified. So then the circles that Monsieur Lacan presented, are circles which turned only once, namely, around the axis or around the core and then several times...Here I am drawing one which turns a single time around the axis and several times around the core [VIII-13].

Fig. VIII-19



There I draw one which turns once around the axis and five times around the core. So then if the torus is cut according to a circles like that, the result is a strip which is twisted but which is not knotted namely, that the result, the torus cut along a circle like that, for this a 5: there are going to be five turns and no knotting, five turns of torsion and no knotting. Now I am making a mistake namely, that I am confusing turns and half turns I didn't draw enough of them [VIII-14].

Fig. VIII-20



There you are. Good! No what I drew there, is a strip which is twisted and which is not knotted. Therefore the circles that Lacan mentioned among the circles on the torus, this was the meridian circle and the longitudinal circle which gives a strip that is neither knotted nor twisted and then these circles here correspond to desire/demand which gives a strip which is twisted and not knotted.

For the moment already that gives a difference between holing and cutting. So then here is the result of holing, there is only one way of holing while there are as many ways of cutting as there are of circles on the torus. So then here is the result of holing, here is the result of cutting. Here the result of holing, is a surface with an edge which is only a single edge. The result of cutting, are surfaces with two edges but it is a specially simple surface, since it is strip. That is already a way of showing the difference between holing and cutting: the fact is that the hole torus and the cut torus are not the same thing.

Now with respect to reversal, I am going to set about saying the differences between holing and cutting with respect to reversal.

First of all something, which is that cutting along a circle – I'm going to rub out a little here – let us say in the cut the holing is implicit namely, that in the cut the holing is implicit, namely, that in the cut there is much more than simply removing a little hole. The cut can be presented as something in addition with respect to holing namely, that one can make a holing first of all and starting from this holing, cut. The cut therefore can be decomposed in two phases: first holing and afterwards cutting starting from the holing. And therefore that can be done here, namely, that this is a holed torus, good, well then, the cut can be obtained...anyway, if it is considered to be in two stages: the first stage is to hole, the second stage to cut starting from the holed torus, the cut can be shown on this, namely, on the holed torus. So then I am going to show, I'm going to indicate, without drawing it, the simplest cuts. Let us make a meridian cut. In the holed torus, the distinction meridian/longitudinal distinction is lost. Anyway, let us make a meridian cut; that can be for example to cut here (1). Good, I am going to draw it all the same.

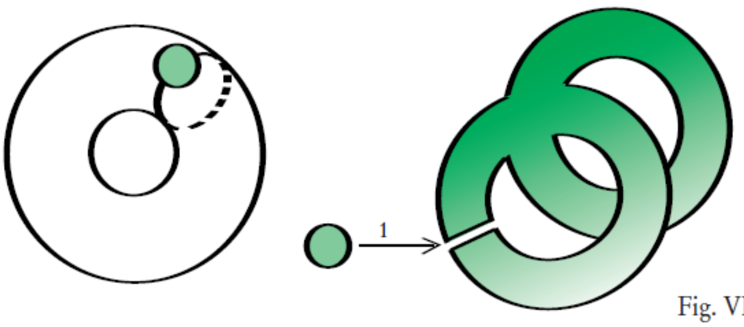


Fig. VIII-15

There you are let us make that, it's a meridian cut. While on this, one can see that there is only a strip remaining, namely, that once cut here, the cut here (1) leaves that. So then one can eventually imagine distortions on this in such a way that this can be reabsorbed and that can be reabsorbed and what remains is indeed a strip [VIII-9]. Therefore one can rediscover starting from the holed torus the meridian cut leaves a strip. Just as if this had been a longitudinal cut, the longitudinal cut would also have left a strip.

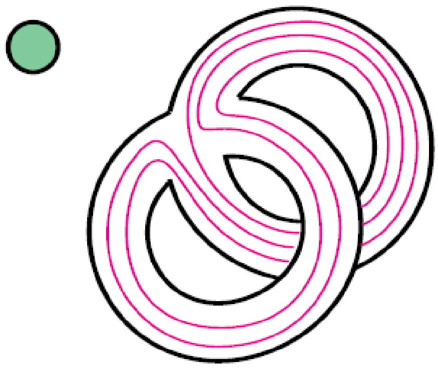


Fig. VIII-16

I am going to rub out this cut that I made there to draw a simpler cut, a cut along a circle which is not the simplest. So I'm going to make the cut, I'm going to draw a certain cut. I'm afraid of making a mistake all the same, so then I made a cut that starts again from the edge of the hole, anyway I made a cut which starts from the edge of the hole of the holing; so then I put this into gear. There you are, a circle [VIII-16]. Anyway, it's a circle which makes two turns around the axis, anyway two turns and three turns since, once the torus has been holed the distinction between the inside and the outside is lost and the distinction between the core and the axis is lost; lost, not completely lost, I will get there, but one cannot distinguish any longer meridian and longitudinal. So then I drew one cut of the holed torus and, starting from this drawing with some patience, it is possible to restore the knotted and twisted strip which will be obtained. By drawing the cut - it is drawn in red - on the holed torus by procedures of drawing one can manage to know the result of the cut. Namely, that here, I chose a circle which turns on the one hand twice and on the other hand three times because the result of this cut will be a trefoil knotting. That is a cut which is not the most simple and the result is a strip which is knotted and which is twisted. In the cut the holing is implicit; the holing is implicit.

One can say this differently; the fact is to cut the torus, is to do much more than hole it. Namely, that the space of the holing which is created is largely created on this occasion by a cut. Therefore everything that can be done by holing can be done by a cut. In particular the reversal that can be made by holing can be done by a cut.

But by cutting, there are other reversals which are possible. There are certain reversals which are not possible by holing and which are possible by cutting.

So then I am going to tell you the difference between the reversals permitted by the cut and permitted by holing. I am going to rub out the right hand part.

In order to distinguish that, some differentiation is needed, namely, that I need to differentiate the core and the axis by colours. So then I am going to use blue and red for this core and the axis; and I still need some differentiation, which is to differentiate the two faces of the torus. The torus is a surface without edges, it is a surface which has two faces and I need that differentiation. Good, so then here is the torus. One only sees a single one of its faces, I am going to use green and yellow for the two faces and here one sees only one face. For the torus, one sees only a single face, we do not see the inner yellow face.

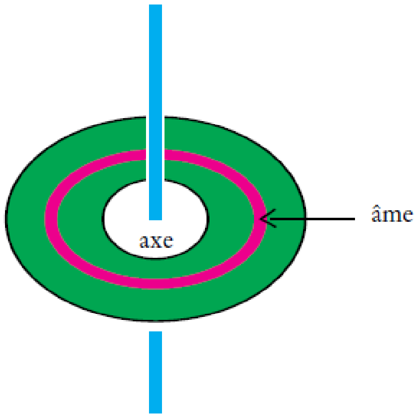


Fig. VIII-17

Therefore it's green and yellow the two faces of the torus and there is a correspondence between the core/axis couple and the couple of the two faces; there is a correspondence, namely, that the green face which is here the outside face is in correspondence with the axis and the yellow face the inner face is in correspondence with the core.

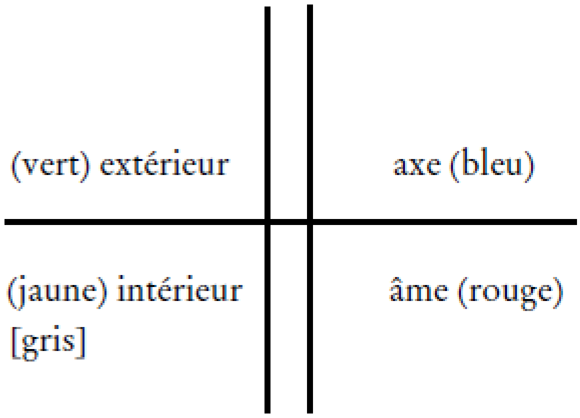


Fig. VIII-18

I am introducing two couples but these two couples are presently – because this is what is going to be lost – presently it is the couple with two faces and the inside/outside couple which are linked. So then the difference between cutting and holing, reversal by cutting /reversal by holing, can make a difference, anyway the difference, one difference, is that the reversal by holing does not touch, anyway does not change this link between the two faces with the inside/outside while the reversal by cutting dissociates this link.

So then the reversal by holing: what remains of it? In this presentation here of the torus that is holed one only sees a single one face, I am still taking the green face, this surface is now coloured these two faces are coloured there is a yellow face and a green face and in this plane presentation there is only a green face visible, the yellow face would appear by reversal, by the reversal of the plane. Pay attention here! I am talking about several reversals at once in this moment which is dangerous: I have just mixed up reversal of the plane and reversal of the torus. So then here is the holed torus. In the state of the holed torus I can represent the core and the axis as two axes. So then I am going to situate the core and the axis with respect to the holed torus. I have one chance in two of making a mistake (*Laughter*). The green face corresponds to the blue axis. I am placing here the axis, it's a straight line, this is the blue axis and now the red axis.

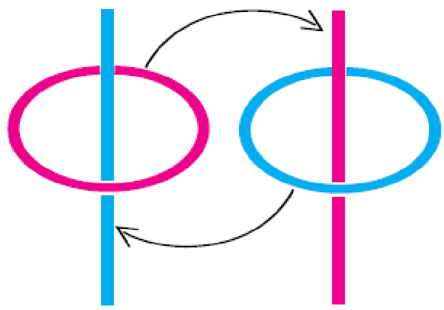


Fig. VIII-19

So why am I drawing two axes? There are reasons for that. I am going to tell you the reason for drawing the two axes for the holed torus. I'm going to rub out the left so that...so then in the original torus I am only preserving its core and its axis which are represented here. Once the torus is reversed it will have as core and as axis this; therefore the reversal of the torus, is the exchange of the core and the axis. It is the passage from that to that [VIII-19].

Well then the holed torus is a state of two axes, I am only affirming it; I am going to redraw it, finally I am only going to redraw what is here below, but I am going to redraw it here in the position of a hinge of an intermediary.

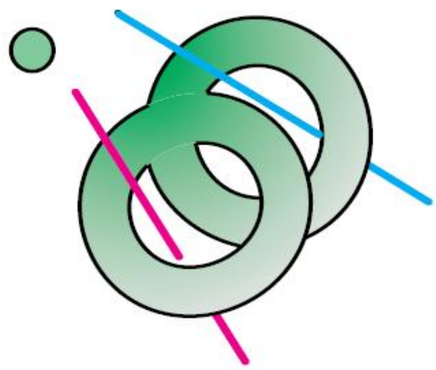


Fig. VIII-20

Here is the holed torus the surface with two axes [VIII-20]. And I will mention another version of it, which is that if one only keeps the circle edge of that namely, that one only keeps the edge, the fact is – I am going to draw it still in the middle – there you are: this is to preserve the two axes of the torus which are here in blue and red and the circle at the edge of the hole [VIII-21].

Here it is to preserve the surface with the edge [VIII-20] and here [VIII-21] it is to preserve only one minus the edge. So then what's in the middle here acts as hinge in the operation of reversal of exchange between the core and the axis.

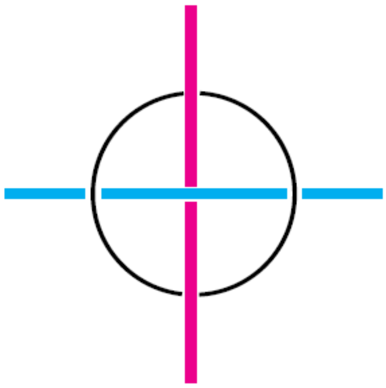
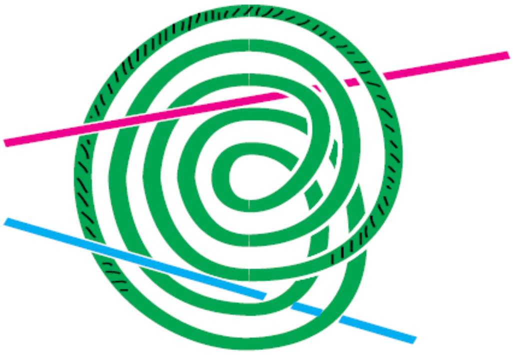


Fig. VIII-21

So then I'm mentioning this figure here because there is a Borromean configuration, namely, that the inside and the outside and the edge of the hole form a Borromean configuration. Finally I only affirmed that in this intermediary state the core and the axis were both able...At the moment of this intermediary state which is the state of indetermination, the hinge between the inside and the outside. Namely, that here the inside and the outside are differentiated and that here the inside and the outside are not differentiated. Here the inside/outside couple is in a state of vacillation or, in the case of the holed torus, the inside/outside distinction is lost.

So then this was dealing with the holed torus. Now I am going to rub out this schema, the schema of correspondence, even though I may have need of the starting schema of correspondence between the couple of two faces and the inside/outside couple. So then there is a green which corresponds to the blue and then yellow which corresponds to the red. So then when the torus is cut, it is going...but there, from memory I don't know how they are arranged...therefore I am going to draw it...Eventually I am wrong. But this won't trouble me at all for what I need. I'm going to draw a cut torus, I'm going to draw it like a knotted and twisted strip. Here I am in the process of redrawing a knotted and twisted strip that is obtained by cutting the torus. There you are. While to indicate that it is a strip, I am putting these little lines but I am not going to put these little lines everywhere.

Fig. VIII-22



There you are that's the drawing of a knotted and twisted strip obtained by cutting the torus. There you are. So I am going stop drawing these little lines. The core and the axis are now here; what was previously the core and the axis – now there are two axes – are found...It's a pity I don't have enough space...so then there you are the two inside and outside axes and now a couple of two faces. So then this strip, as it is drawn, once again has only one face, and this is not by chance, namely, that I am systematically privileging drawings where one sees only one face. Therefore there we have the knotted and twisted strip with a yellow face and a green face here one only sees its green face. There you are. So then I am going all the same to draw the two faces, in the case here, to show the two cases in a different case

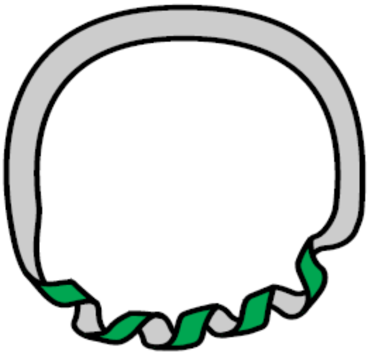


Fig. VIII-14

The fact is that here I had previously drawn a strip that was not knotted and which was twisted, so here one sees the two faces, namely, that in the case of a torsion one sees another face, namely, that in this part here one sees yellow, there is yellow and green. Anyway that's to show that in a drawing of a surface with an edge, the two faces may appear. It is by chance that in certain drawings one only sees the same face. So here therefore here are the two axes that were previously the inside and the outside and the cut torus: this strip. Well then, I don't know whether it is imaginable that inside this the couple of yellow and of green have become independent from the couple of blue and red, namely, that this strip, all of this is only one strip and one can also give it a half twist along its length and it will always be the same object and the yellow face plays the same role as the green face. So then in that situation of the torus cut with its two axes, the couple of two faces green and yellow and the couple inside/outside, blue and red have become independent. This indicates something about the difference of the two reversals, which is that, in the reversal by holing one exchanges the inside and the outside one exchanges the two faces and they interchange together namely, that at the moment when the inside/outside couples exchange, this exchanges the two faces. Namely, if this torus coloured yellow and green when one reverses it, if it were the green outside afterwards it would be the yellow outside.

In the reversal by holing one simultaneously inverts the two faces and the inside/outside. On the contrary the reversal by cutting allows there to be disassociated this liaison, namely, that once the torus is cut, it can be closed, not by...I am going to say this differently: the fact is that instead of seeing the holed torus or the torus cut as an intermediary I'm going to describe it differently, the fact is that the holed torus can be closed in two different ways. The cut torus for its part closed in four different ways. Anyway I hesitate between two fashions of formulating it: one way in which the holed torus or the cut torus appear as an intermediary between the two states of the torus and another way of talking of the two states of the torus being described as two ways of closing this surface with the edge. So then once the torus is cut it is possible to close it in many ways, namely, that it is possible to close it as it was at the beginning, as it was at the beginning, namely, with a blue outside axis and a green outside face, but it is possible to close it in any way whatsoever namely, it is possible to close it with the red outside axis and with the green or yellow outside face. Namely, that there are four ways of closing this torus that has been cut but combining in every possible way the blue red couple to fix the blue red couple as inside/outside, as a core and an axis and to fix the green yellow couple as inside and outside face.

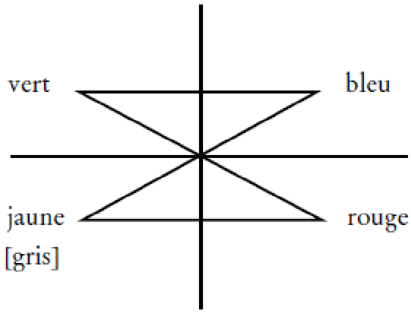


Fig. VIII-23

So then it's a matter of couples, of binaries (*Laughter*). I find it rather difficult to present these considerations with exactness. There I embarked in...anyway it was the holing and the cutting. Anyway this business of couples or of binaries are always linked to the business of inexactitude.

Lacan: The green can be associated to the blue and to the red...

Soury: Yes yes.

Lacan: And on the other hand the yellow can be associated also with the blue and the red.

Soury: Yes, yes.

X: But is what you're saying true also for a simple cut, like a meridian cut and a longitudinal cut?

Soury: Yes, yes.

Y: Namely, the separation between the green and the yellow and the axis and the core is also true for a simple cut.

Soury: Quite.

X: Because there you showed it for a complex cut but you could also have shown it for a simple cut.

Soury: Yes, that's true for it is the same thing for a meridian cut and for a longitudinal cut, that it produces the same thing as the cut in general, namely, the dissociation of the couple of two faces and of the inside/outside couple.

X: Could you not show it on a simple meridian cut?

Soury: Yes yes, it's indeed....

Lacan: Who sent me this paper? It is someone who attended what Soury was doing in practical work.

Second X: It's me.

Lacan: Who is it? It is you two? Listen I am very interested by this object A and the other that you designate by a star, I mean the A object and the object which is drawn like that. I am very interested and I would really like to know what you have understood by what Soury has explained today. If you were to come to tell me I'd be very happy.

X: There what Soury showed is effectively an error that was in the paper.

Lacan: What? In the paper in the paper that you sent me?

X: Namely, that it was not effectively a reversal by a hole but a reversal by a cut.

Lacan: That's it. Good I am very happy to know that because I was racking my brains about that error. Now then I think Soury has fulfilled all our wishes and I will continue the next time.

Lacan to Soury: Come and see me.

Annexe to Session VIII

Pages distributed by Soury probably 21 February or 14 March

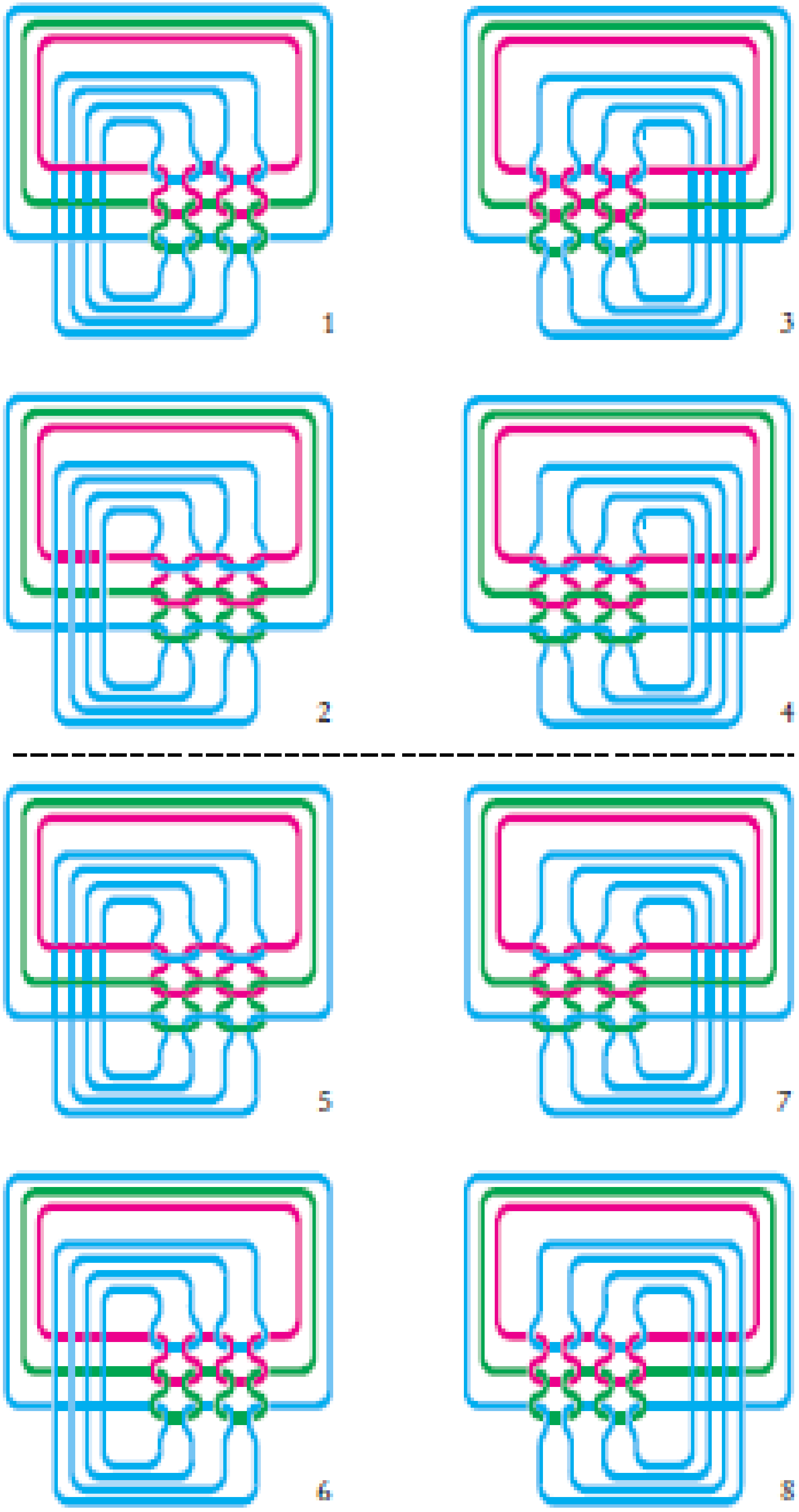


Fig. VIII-a — schémas « carrés » ou « peignes ».

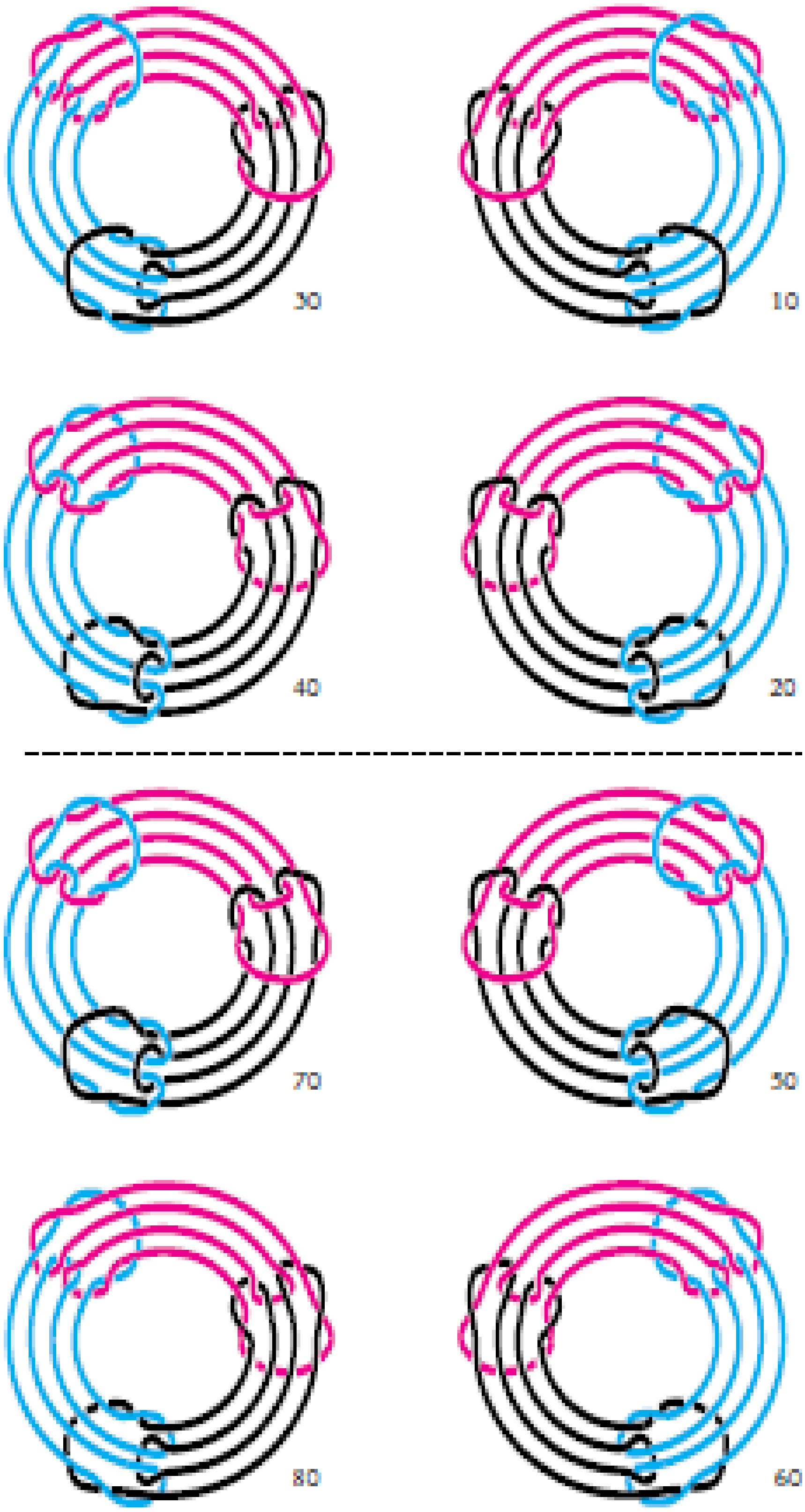


Fig. VIII-b — Schémas « ronds » ou « cercles ».

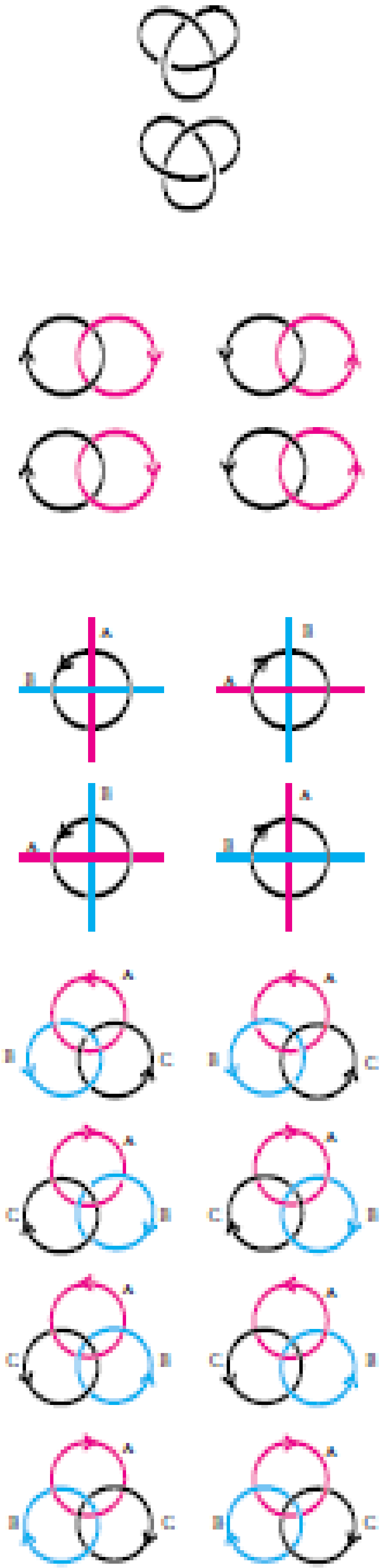


Fig. VIII-c

Les deux trèfles.

Ce sont des nœuds. Ils sont échangés par 2 automorphismes. Les présentations planes sont échangées par 4 automorphismes.

Les deux enlacements.

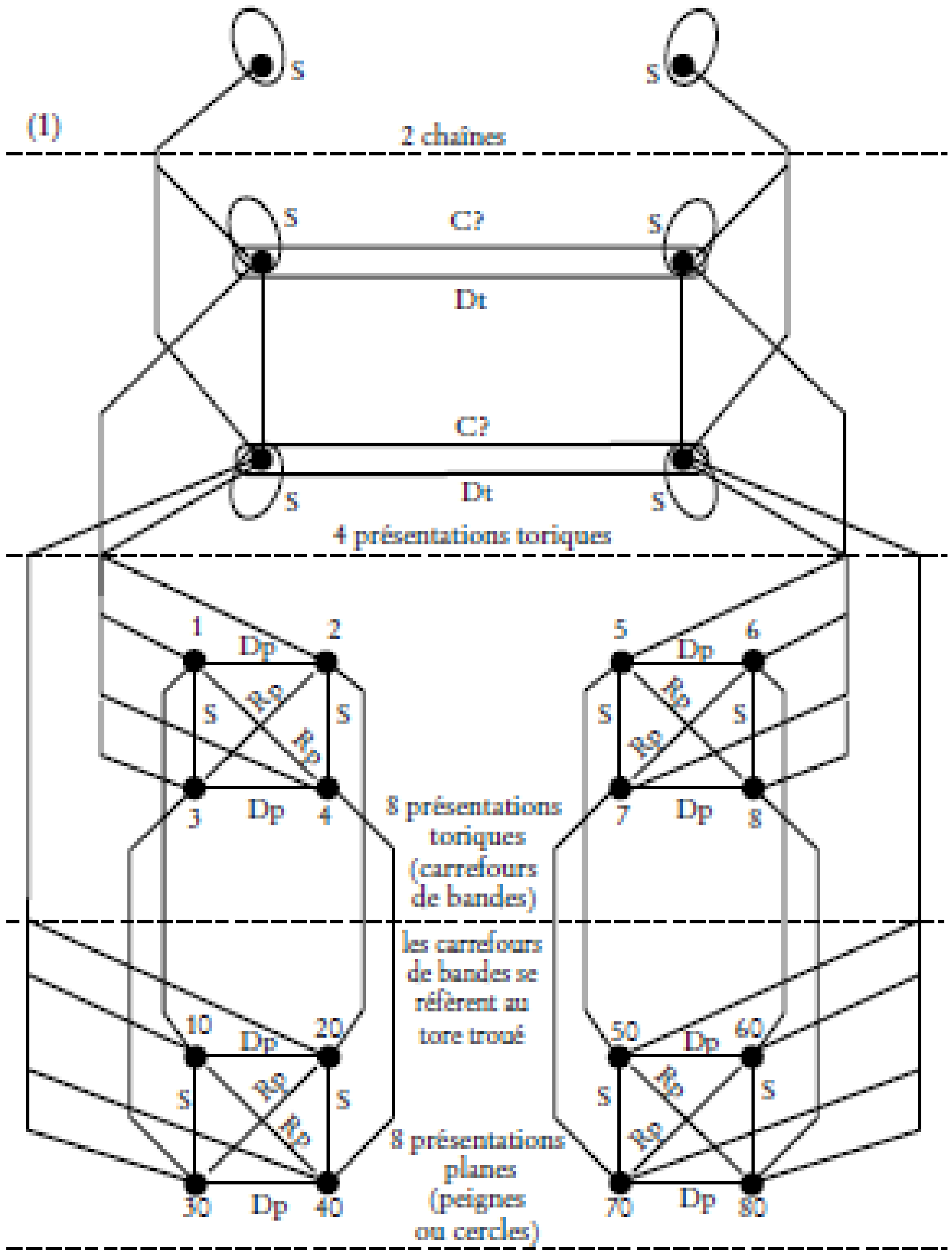
Ce sont des chaînes orientées. Ils sont échangés par 4 automorphismes. Les présentations planes régulières sont échangées par 8 automorphismes.

Les deux chaînes boroméennes de deux droites colorées et un cercle orienté.

Ce sont des chaînes de deux droites colorées par A et B et de un cercle orienté. Ils sont échangés par 8 automorphismes. Les présentations planes sont échangées par 16 automorphismes.

Les deux chaînes boroméennes de trois cercles colorés orientés.

Ce sont des chaînes de trois cercles colorés par A et B et orientés. Les présentations planes régulières sont échangées par 48 automorphismes.



S = symétrie
Rt = retournement de tores
Dt = échanger les dessus/dessous sur le tore
C = retournement du tore par coupure. Quelle est la généralité de cette opération?

Rp = retournement de plan
Dp = échanger les dessus/dessous sur le plan (artifice)
(1) retournement se référant au tore troué

Fig. VIII-d — Diagramme affiché au tableau par Soury

Seminar 9: Tuesday 21 March 1978

I am warning you that Madam Ahrweiler, President of the University of Paris 1, Madam Ahrweiler has taken steps to ensure that I will give my seminar the 11th and 18th of April. This is a vacation period and therefore you will probably just have to enter by the door not on rue St Jacques, but on the place du Pantheon. In fact I was reduced to two seminars since, as regards May, it would be the 2nd Tuesday, but not the 3rd, given that I have been warned that in this very room there will be exams on the 3rd Tuesday.

It nevertheless remains that I am very concerned about what is involved specifically in the torus. Soury is going to pass you tori, tori on which there is something knitted. There is something that particularly worries me, which is the relationship between what can be called toricity and holing. It seems, according to what Soury says, that there is no relationship between holing and toricity. For my part, I cannot say that I do not see relationships, but probably I have a rather confused idea about what can be called a torus.

Last time you had a certain presentation of what one can do with a torus. There is something that Soury is going to pass around later and which involves a holing. It is a holing which is artificial, I mean that it is a torus covered by a knitting which is richer than the simple one, namely the one which is – and that indeed is where the difficulty is – the which is traced out as knitting on the torus. I have not dissimulated from you what this involves: the fact that it is traced out on the torus is of such a nature that one cannot, what I designate as 'a tracing out', cannot be passed as a knitting. It nevertheless remains that by convention, people think, and articulate that it is a knitting. But there should be added to this, this complement that what can be traced out on the other side of the surface has by being inverted and by being inverted by highlighting the inversion of above/ below, which of course frankly complicates what we can say about what is happening inside the torus. This indeed is what manifests itself in the relative complexity of what is drawn at this level. (On Soury's picture, 3rd and 4th levels in the annexe of the previous session). We will agree to say that the inversion of the above/below complicates the affair, because what I called earlier the complexity of this picture has nothing to do with this inversion that one can agree to call, because it is inside the torus instead of being outside, that one can call, by definition its mirror-image. This would mean that there are toric mirrors. It is a simple question of definition. It is a fact that it is what is on the outside that passes for important, outside of the torus, traced outside the torus. There is no trace in these figures (Soury's picture: levels 3 and 4), there is no trace of this inversion, that I called the image in a toric mirror.

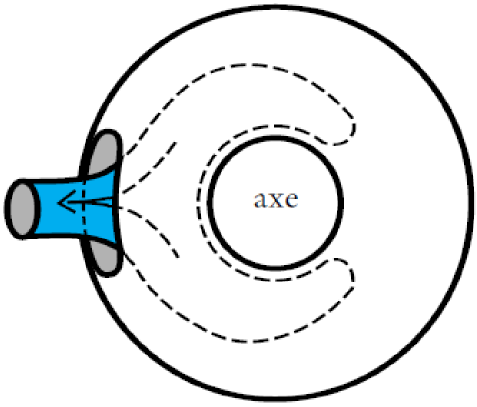


Fig. IX-1

Holing is a means of reversal. By holing it is possible for a hand to be introduced and go on to grasp the axis of the torus and, in that way, reversing it; but there is something else that is possible, which is that through this hole by pushing through the hole the whole of the torus, one obtains a reversal effect. This is what Soury will show you later with the help of a toric knitting that is a little more complicated.

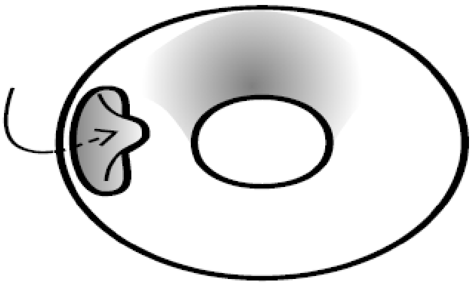
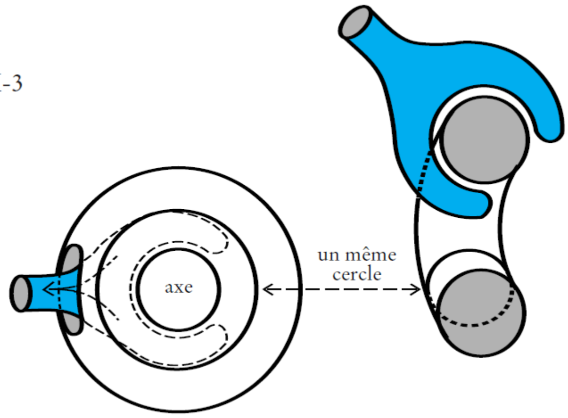


Fig. IX-2

It is striking that one obtains by pushing the outside of the torus, that one obtains exactly the same result, which I justify by saying that this hole by definition does not properly speaking have a dimension, namely that it is thus that it can be presented, namely that what is a hole here can moreover be projected in the following way.

Fig. IX-3



What will present itself therefore as a grasping of the axis here will find itself inverted; the grasping of the axis will ensure that this will be outside the hole but that, since there is an inversion of the torus, the grasping of the axis will ensure that the torus – this is also a simple circle and will be found here after the axis has been grasped - but inversely one can see that here we will obtain the same figure namely that what is here caught by the hole and this pushed back inside, after the inversion of what is here, will also find itself functioning as a torus, what is here becoming the axis.

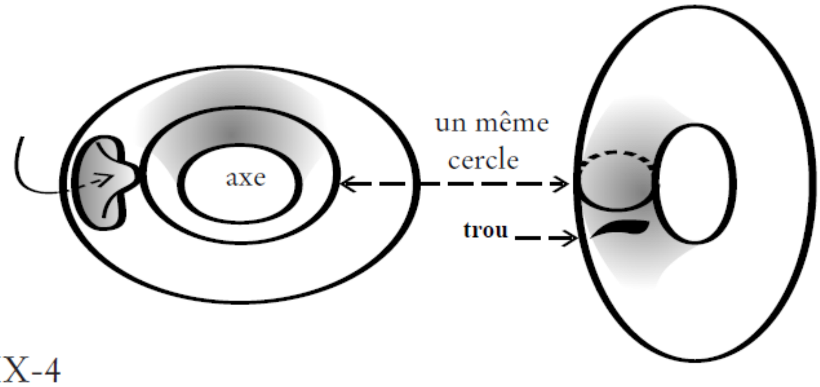


Fig. IX-4

I am now going to ask Soury, since he is good enough to be here, to come and show the difference – a null difference – that there is between these two ways of depicting the toric knitting.

You have the object?

Soury: I passed it around.

Lacan: You have passed it around. One can see on this object the difference there is between grasping the axis and pushing back the whole torus. Off you go.

Soury: Will I go ahead? So then it is a matter of reversing the torus by holing. I am going to present it in the following way namely that it is a torus which is grafted onto an infinite plane. This drawing here indicates that there is a torus which is grafted by a pipe onto an infinite plane. Inside this, what corresponds to holing is this pipe part which carries out at once a holing of the torus and a holing of the infinite plane and for that reason, it is similar.

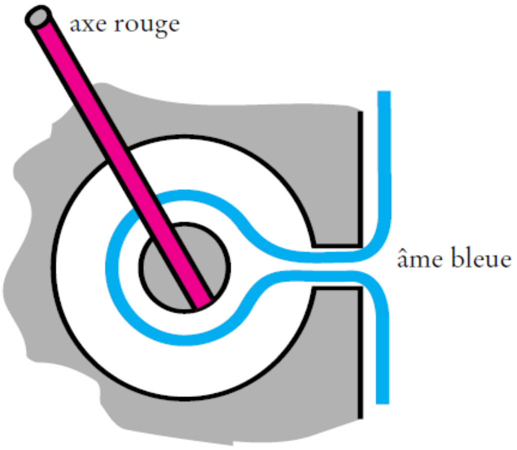


Fig. IX-5

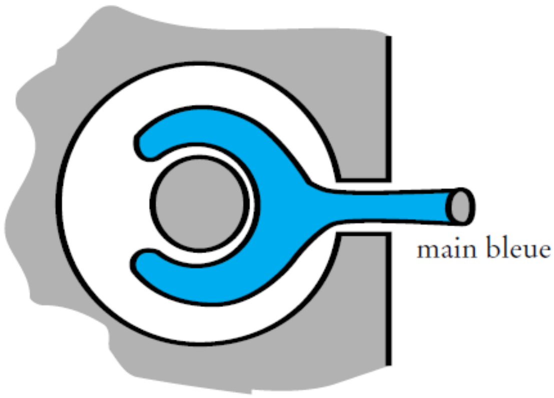


Fig. IX-6

So then inside, space is divided in two halves and this surface has two faces...one face that I draw here by hairs [in grey on the drawing], hairs on the surface, is here; here there is one face and there there is another face. Good! The space is divided into two halves, one half of the space, the half which is here on the left of this infinite plane and which is outside the torus and which acts as an axis for this torus; and in the other half, anyway the other half of this infinite plane is in communication with the inside of the torus and here I am drawing something which constitutes the core. So then this configuration here allows there to be indicated the before and after of the reversal. Here I am in the process of redrawing the same thing and it is what is in front. And after the reversal...then I show the two faces by the same indication.

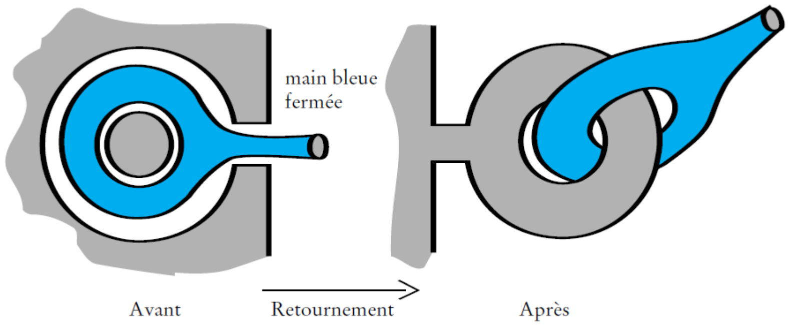


Fig. IX-7

Therefore here is what constituted the outside face, the left face of the plane in front, and now, which after still constitutes the left face of the plane, but which constitutes the inner face of the torus, namely that in the reversal what was an outside face of the torus has become an inside face.

So then that's a kind of glove. Anyway this reversal, is something comparable to the reversal of a glove. It is all the same not quite a glove, it is a toric glove, it's a glove which grasps, it is a glove which closes and which grasps. Now this glove which closes and which grasps can be reversed and that becomes again a glove which closes and a which grasps. So then a description that was given earlier, I am going to draw a hand in blue like that which comes to grasp here... Good, this blue hand – this couple there of ochre and of blue [in red on IX-5] is an inside outside couple – this blue hand which has just grasped, which uses this glove, namely that this toric glove gloves this blue hand and in that way this blue hand grasps, can grasp the axis which is ochre here (in red), this hand which has just used this glove as a glove and in this way grasped the ochre axis. The reversal can, at that moment, be described in the following way, which is that this blue hand pulls, pulls...and how is it going to find itself? Finally this hand is going to be found like that [IX-7].

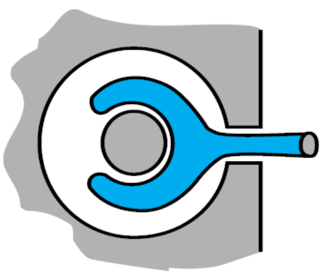


Fig. IX-8

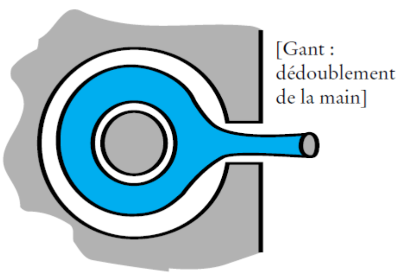


Fig. IX-9

This hand I am going to draw out in full, here's the hand which grasps and the arm of this hand is found here. And already now I have slightly changed the drawing of the hand, namely that I have drawn this hand in the style of a hand which grasps, namely I no longer like there left an indication that the fingers were not closed [IX-6]. I drew the hand in two different ways, I am now going to modify the drawing of the hand here to indicate that it is a hand which grasps, therefore I indicate it as a closed hand [IX-9]. There you are.

I therefore modified the drawing of the hand as a closed hand, a hand which grasps. There you are. Therefore here its relationship with the torus, is that it is gloved by this torus, and here its relation to the torus, is that it is in the situation of a handshake with the torus, namely that from the hand to the torus here it is like handshake, namely that from the hand to the torus is to go here from a situation of reduplication, that the glove is a reduplication of the hand, and here in a situation of complementarity, namely that these two hands which are in a handshake complement one another, anyway they are two complementary tori two interlaced tori, the hand which grasps being itself a torus.

Therefore here is the before and the after of the reversal. While in the reversal, anyway the reversal therefore can be specified by the situation of this hand, whether it is gloved, or whether it gives a handshake. This can specify the reversal, but it is not indispensible for indicating the reversal, namely that the reversal can be indicated...if this hand did not figure, if this hand were absent, the reversal can be depicted all the same, it is to push all of that into the hole.

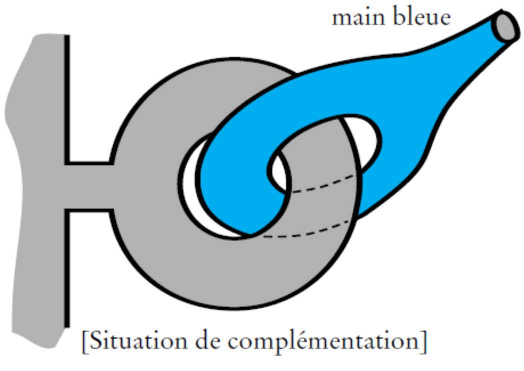


Fig. IX-10

The reversal of this toric glove can be carried out by pushing it into the hole, namely the passage from the before to the after which is here does not need to be defined by a hand which grasps, which pull and which is found like that there. This hand inside first which becomes a complementary hand, is not indispensible, the reversal can be defined as simply pushing this whole part there, the toric part, pushing it into the hole and it is enough to push it into the hole for it to be found on the other side. In other words, the grasping here does indeed contribute to describing the reversal. The passage from the gloving to the handshake, in other words the passage from the reduplication of the torus to the complementarity of the torus, therefore the grasping inside, which serves to indicate, which indicates, the fact is that on the particular location of the reversal, there is a passage from reduplication to interlacing; but that is not indispensible for...The hand, inside, only shows the complementary torus; the hand inside stands for the complementary torus. But the reversal can be carried out even if the complementary torus is not present and by pushing all of that. Indeed by pushing all of that through the hole, gives this, namely that it is not...one can moreover push thewhole, one can push the torus and the hand and that will give this, namely that inside the hand which grasps is only a reduplication of the torus... which then is not indispensible for the reversal, namely that the difference between the description without the hand or with the hand, is the difference between carrying out the reversal of a torus which is white here or of a torus reduplicated by a blue torus.

So then I am drawing the two descriptions of the reversal [IX-11]– except that I have just made an error, here it is in blue – I am redrawing what was previously drawn, namely previously this torus with its outside here. Here is the outside face of the torus which is reversed like that, the outside face becomes the inside. And here it is the same thing, but the torus is reduplicated by the hand. And here then, there you are. Therefore there are two presentations, two neighbouring descriptions of reversal, in one case the isolated torus, in the other case the torus with its double, the double which is, either the double by reduplication, or the double by interlacing, the double by reduplication being able to be imaged as the situation of gloving and the double by interlacing being able to be imaged by the situation of a handshake. Good. There you are.

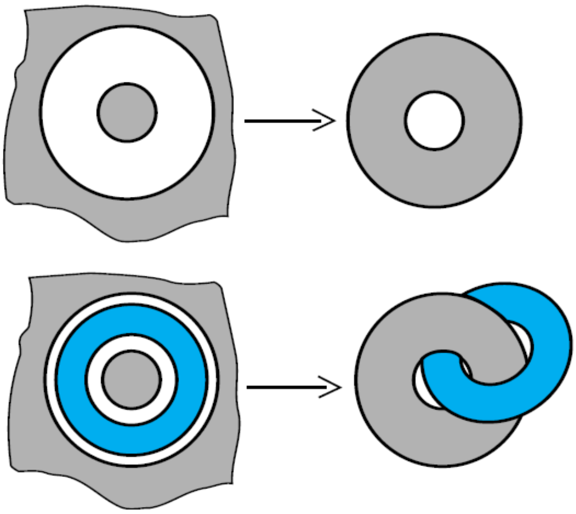


Fig. IX-11

Ribettes: could you situate the position of the axis?

Soury: So then the axis here, I can add it on. Therefore the gloved hand grasps the axis. On the occasion of the reversal, the axis is going to become the core. So then the axis is here. And after the reversal it has become the soul, the axis here is there and after the reversal it has become core, the axis here is there and after reversal it has become core.

X: Why the image of the handshake, it has such a....

Soury: Why the image of the handshake...

X: It seems so...?

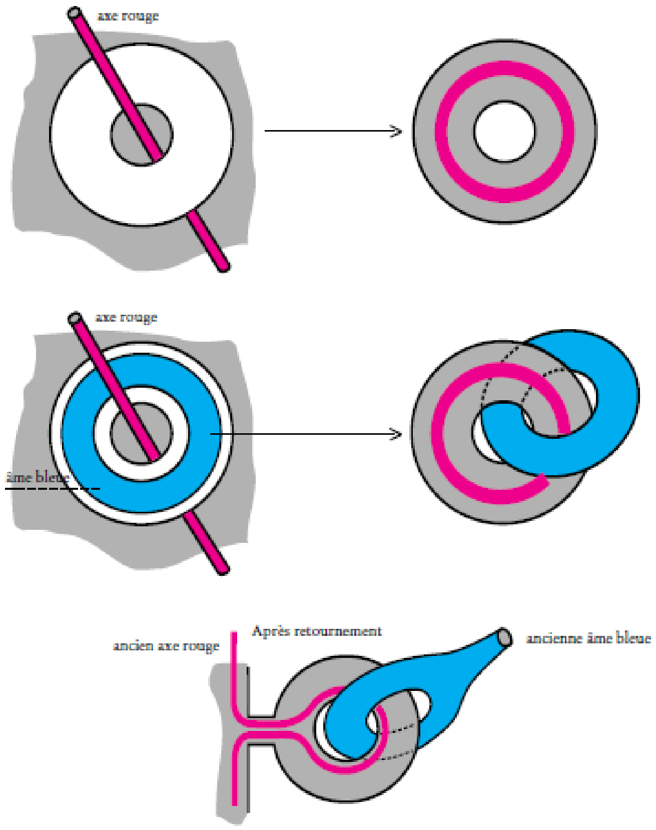


Fig. IX-12

Soury: Why does the image of the handshake seem so....hard? Well, the handshake is completely closed. They are rings which are closed. And the only choice is between the handshake or gloving; anyway in that suppleness only allows going from the handshake to gloving. It does not allow...Anyway, what are hands which open and which close, I know nothing about. There, they are only toric hands, closed hands.

Lacan: You consider that it is a matter of pushing? In this way of doing things, it cannot be simply pushing the whole of the torus. That is why you spoke earlier about the whole of the torus.

Soury: Yes, yes.

Lacan: Good, I'm going to remain there for today. Rendezvous on the 11th April.

Seminar 10: Tuesday 11 April 1978

I stated, putting it in the present, that there is no sexual relationship. It is the foundation of psychoanalysis. At least that is what I have allowed myself to say. There is no sexual relationship, except for neighbouring generations, namely, the parents on the one hand, the children on the other. This is what is warded off – I am talking about sexual relationship – this is what is warded off by the prohibition of incest. Knowledge, is always in relationship with what I write *'l'asexe'*, on condition of following it up with a word which is to be put in parenthesis '*ualité*': *l'asexe (ualité*). One has to know how to deal with this sexuality. To know *comme enfer* [a play on *comment faire*, how to deal with] this at least is how I write it. I began at one time, to symbolise this sexuality, to make a Möbius strip. I would like now to correct this strip, I mean by that to triple it.

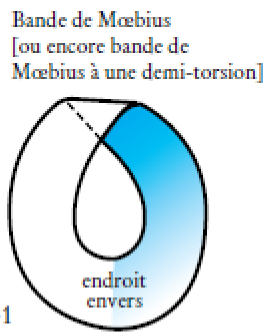


Fig. X-1

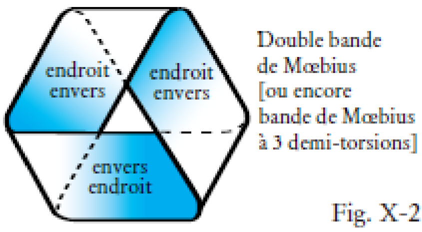


Fig. X-2

This is a strip, just like the other one, namely, that its front coincides with its back, but this time that happens twice. It is easy for you to see, if this is the front, this which turns is the back, following which one comes back to the front; and after that, the back is here, just as here where the back was, is the front; and in the same way here the front is the back. It is therefore a double Möbius strip, I mean that it is on the same face that the front and the back appear.

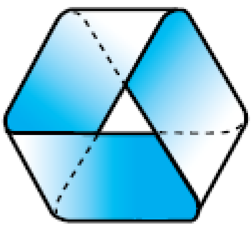


Fig. X-3

Here we can say that it is simpler: if this is the front, it is also the back, as appears from the fact that what was the back here returns there; namely, that the Möbius strip has only one front and one back. But the distinction between this [X-2] and this [X-1] comes from the fact that it is possible to have a Möbius strip which, on its two faces, is at the same time the front and the back. There is a single face on each side: it's a Mobius strip which has the property of being bilateral.

What does one lose in the abstraction? One loses the fabric, one loses the stuff, namely, that one loses what is presented as a metaphor. Moreover, I point out to you, the art, the art by which one weaves, the art is also a metaphor. That is why I strive to make a geometry of fabric, of thread, of stitching. This at least is where the fact of analysis has led me; for analysis is a fact, a social fact at least, which is founded on what is called thought that one expresses as one can with *lalangue* that people have – I recall that I wrote this *lalangue* in a single word in the drawing in order to make something felt in it. In analysis, one does not think just anything whatsoever and nevertheless this indeed is what one tends to in the association described as free: one would like to think anything whatsoever. Is that what we do? Is that what dreaming consists in? In other words: do we dream about the dream? Because that is where the objection lies. The objection is that Freud in *The interpretation of dreams* does no better: about the dream, by free association about the dream, he dreams. How know where to stop in the interpretation of dreams? It is quite impossible to understand what Freud meant in *The interpretation of dreams*. This is what made me rave, it has to be said, when I introduced linguistics into what is called a quite effective paste, at least we suppose it to be so, and which is called analysis. 'From syntax to interpretation', this is what Jean-Claude Milner proposes to us. It is certain that he has all kinds of difficulties in going from syntax to interpretation. What was the state of things in Freud's time? There is obviously a question of atmosphere as one says, of what are called cultural co-ordinates. I mean that one remains with thoughts and acting by means of thought, it is something which is close to mental defectiveness. There must exist an act which is not mentally defective. I try to produce this act in my teaching. But it is all the same only stammering. We are close here to magic. Analysis is a magic which only has as support the fact that, certainly, there is no sexual relationship, but that thoughts are oriented, are crystallised on what Freud imprudently called the Oedipus complex. All that he was able to do, is to find in what was called tragedy, in the sense that this word had a sense, what was called tragedy furnished him, in the form of a myth, something which articulates that one cannot prevent a son from killing his father.

I mean by that that Laïus did everything he could to distance this son about whom a prediction had been made, that did not prevent him for all that, and I would say all the more so, from being killed by his own son.

I believe that by working on psychoanalysis, I made it progress. But in reality, I am breaking it apart. How direct a thought so that analysis works? The thing which is closest to it, is to convince oneself, if this word has a meaning, is to convince oneself that it works. I tried to flatten it out. It is not easy.

In the passage from the signifier, as it is understood, to the signified there is something that is lost, in other words, it is not sufficient to state a thought for it to work. To raise psychoanalysis to the dignity of surgery, for example, would be highly desirable. But it is a fact that the thread of thought in it does not suffice. What does that mean moreover the thread of thought? It is also a metaphor. This indeed is why I was also led to something that is also a metaphor, namely, to materialise this thread of thoughts. I was encouraged by something which basically is what I was saying at the beginning, namely, this triplicity which founds the fact of the succession of generations. There are three of them, three generations between which there is something of a sexual relationship. This brings with it of course a whole series of catastrophes and this is what Freud, when all is said and done, noticed. He noticed it, but this was not seen in his familial life; because he had taken the precaution of being madly in love with what is called a woman, it must be said, it is bizarre, it is strange. Why does desire go on to love? Facts do not allow it to be explained. There are no doubt effects of prestige. What is called social superiority must play a role in it; in any case for Freud it's very likely. The trouble is he knew it. He noticed that this effect of prestige was operating, at least it's very likely that he noticed it. Was Freud – the question must be asked all the same, was Freud religious? It is certain that it is worthwhile posing the question. Do all men fall under the weight (*faix*) of being religious? It is all the same curious that there is something which is called mysticism: mysticism which is a plague as is clearly proved by all of those who fall into mysticism.

I imagine that analysis, I mean inasmuch as I practice it, is something that made me limited. Analysis it must be said is an excellent method for cretinisation. But perhaps I tell myself that I am limited because I dream, I dream of being a little less so.

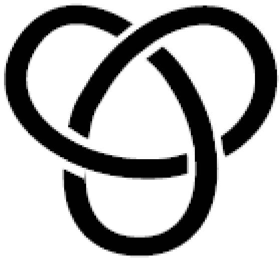


Fig. X-4

Flattening out something, whatever it may be, is always useful. There is something which is striking, which is that flattening out this, one notices that this is nothing other than a threefold thread, I mean that this is exactly identical to this threefold thread.

Flattened out it is the same thing as this threefold thread. It does not seem to be so, but nevertheless this indeed is what is at stake. The threefold thread, I mean what is properly speaking a knot, a knot that is said to have three points of intersection, this is what flattens out our Mobius strip. I would ask you to consider this and allow me to remain with that.

Seminar 11: Tuesday 18 April 1978

Come a little closer, because you have sent me things.

I would like you to comment, like that, one by one, on the things you have sent me, because there is something wrong. I am pointing out to you that what I drew for you the last time, in the form of this strip which I made as best I could, if one cuts it in two, the result – if one cuts it in two like that – the result is what is called a three-fold knot, namely, something which is presented like that.

Coupure par le milieu
d'une bande
à trois demi-torsions

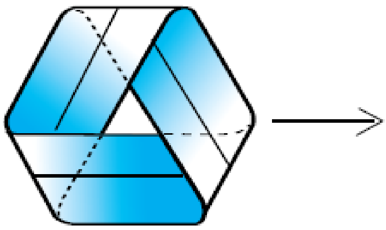


Fig. XI-1

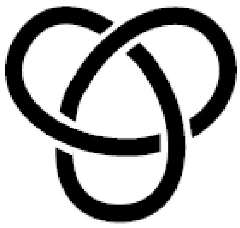
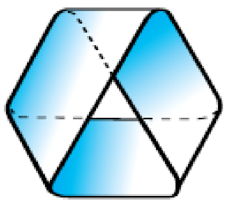


Fig. XI-2

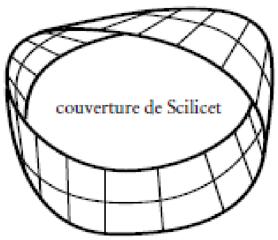
It is of course, quite striking. Here [XI-3], is what is called a Moebius strip. I am drawing it again because it is worthwhile noticing because, thanks to what is called elasticity...the Moebius strip is drawn like that. In other words, one reverses what appears in this form.

Fig. XI-3



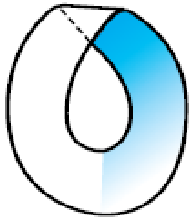
bande de Mœbius
à une demi-torsion

Fig. XI-4



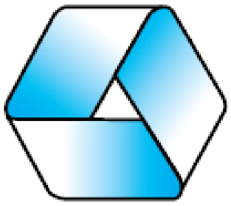
The present form is the one that appears on the cover of *Scilicet*. But the real Moebius strip is that one.

Fig. XI-5



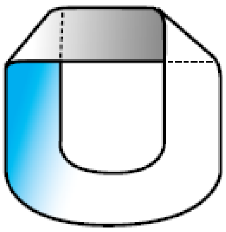
bande de Mœbius
à une demi-torsion

And there is what Jean-Claude Terrasson who is here and who is helping me, it is what Jean-Claude Terrasson very legitimately calls a half-twist and there, in the form that I made function the last time – since this is what I drew for you the last time – there are three half-twists. On the contrary it is possible to make just one twist. This is what is manifested in figure 2 [XI-5], where there is effectively a single twist. Figure 2 can also be depicted thus [XI-3].



bande de Mœbius
à trois demi-torsions

Fig. XI - 6



bande à deux demi-torsions
ou une torsion complète

Fig. XI - 7

This is a figure with a single twist, it is equivalent to the following figure ... it is not easy... namely, that this, if we depict the inside here, this is commonly realised by what is called a torus. If we make a loop here, what comes here comes in the form of something which comes beyond what I called the axis of the torus, this is what comes in the axis of the torus and this is what encircles the torus. I would ask you on this occasion to verify it, and you will see that the twist, the complete twist that is at stake is exactly equivalent to what Jean-Claude Terrasson calls a complete twist.

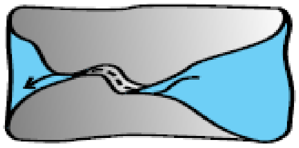


Fig. XI - 8

This is what is realised in the torus of which we obviously only have....The complete twist is everything that one can do on the torus..., which is of course not surprising, because there is no way of operating otherwise on a torus. If on a torus ... you draw something which cuts of course, which cuts by passing what is called ...behind the torus, which reappears in front and which passes behind the torus, what you obtain, is something which is like that and which is completed in the following way..., namely, that it reduplicates the knot which encircles the torus. In other words what comes here is very precisely..., what passes around what I am calling the axis. Therefore this is equivalent to two twists. Here one twist and there two twists.

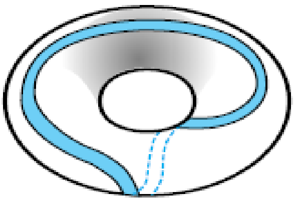


Fig. XI-9

I am now going to ask Jean-Claude Terrasson to take the floor to give a commentary on these figures, these figures which he has made there.

This is a Moebius strip:

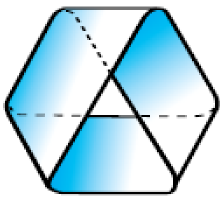


Fig. XI-10

J C Terrasson: So then one can pose the problem of how one can pave space, or pave the plane regularly with flattened Moebius strips, namely, ones that are flattened out. So then the problem is how can I regularly pave the plane by flattening out the Moebius strips,...anyway these strips, namely, one can begin with the zero twist strip

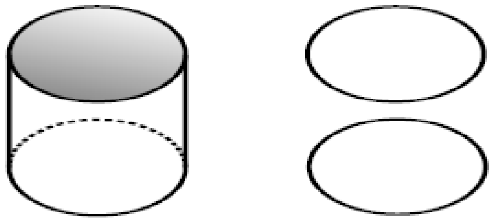


Fig. XI-11

which is...if one draws just the edges, one draws them like that, they are only linked by the fact that the strip has a certain materiality to link these two edges. Good then, in order to flatten this figure, in order to flatten it and obtain something which regularly paves the plane, namely, a regular polygon – there are not a whole lot of them, there is only the hexagon, the square and the equilateral triangle – for this I have a very simple solution which is to stick the two edges together in fact to stick one edge, to stick one edge to itself and to flatten it, namely, if I hatch where the surface comes twice one on the other, good that's it. Therefore I obtain a square, good that is not a square, but it could be, on condition that my strip has twice the length as its width and I obtain a square.

Starting from a half-twist, here the problem is going to be more complicated; but what one can already notice, is that each time, one will obtain, in fact as many as five, one will obtain a regular polygon without a hole namely, what is the hole of the strip finds a means of being reabsorbed to obtain a regular polygon and this will even be the only one that I can get. Good, so then, this figure if I draw its edge, it's that, namely, one sees that this only stays knotted...like the first figure, the edge only holds in its position of twisting with respect to the fact that the strip is also a materiality.

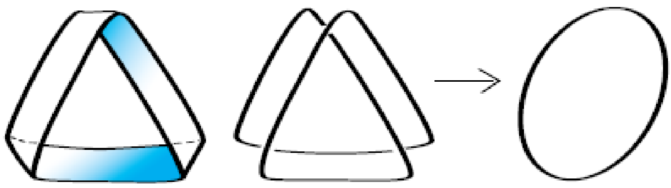
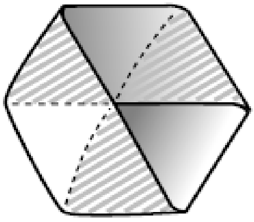


Fig. XI-12

This would no longer be true starting from these strips here where the edges only hold up by themselves outside any materiality of the strip. So then that, is the flattening out of the torus [*sic*] with a half-twist. Here then I am drawing the edge of the strip and in dots obviously, where it passes underneath and in the front hatching where the surface is covered. Good then this strip like these which are hexagons, to obtain a regular hexagon, the proportions of this must be: width, I take 1 as width, the length will be the root of three: 1 = 1;**xxxx** L = √3. Good that's not good to get into it.

Fig. XI-13



So then what happens to the strip with two half-twists, namely, with one twist, namely, one strip with two edges, here's the way in which the edges of the hole, the edges of the strip are knotted to one another, namely, that here they no longer need the materiality of the strip to maintain their knotting, this indeed is why one goes on to the torus, as Lacan said earlier. So then this figure here is flattened out in the square. But to render these figures more readable...here again the edge is stuck to itself, namely, here it is twice, so I would have to draw it with a little separation to make things visible. By drawing, by hatching there where it covers itself, here with a little separation to see how the hole, the edges of the hole are knotted to one another. There is this figure which is therefore covered, where the surface is covered in its totality, this figure is a square and from that moment on, it is no longer this square here, but it is a square which is obtained with a strip whose length is at the same time its width, L=4l.

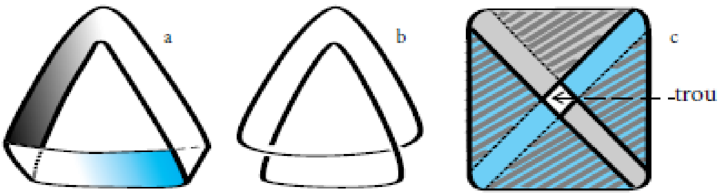


Fig. XI-14

So then when one goes to three half-twists, namely, that here the drawing on the board of the strip is that. I can again flatten out this figure, this strip, here anyway it's similar, I am drawing the visible strip of the hole, and I obtain this figure; namely, that I make it with the strip which has the same, still has the same proportions as that one.

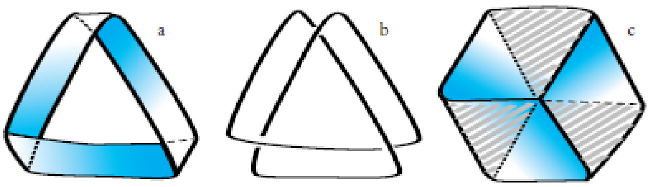


Fig. XI-15

The fourfold strip, it is the strip with four half-twists namely, with two twists, good its edges are knotted in the following fashion, namely, like that, this is the second knot...and one can also say that it is a torus with two holes and this one here, again I can flatten it out. It is similar, I would have to draw the edge of the hole. Here is how it is going to be knotted, and you see that it is the same figure as that one. And this figure here is identical to itself if one reverses it. Here I did not draw the torus with five half-twists, but it is evident that the torus with five half-twists is not going to constitute a regular polygon paving space; there would no longer be a means for that. But if one were to go back to the six-fold one, one could again remake a regular figure paving space.

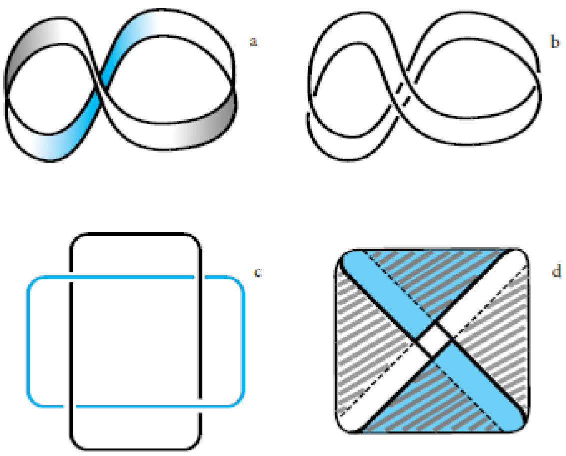


Fig. XI-16

J. Lagarrigue: With a half-twist and with three half-twists, you still have a virtual point, a virtual hole which is a point here and which is just like a little triangle, but it is not obligatory for a single twist and you can reduce it through the dimension of a triangle...

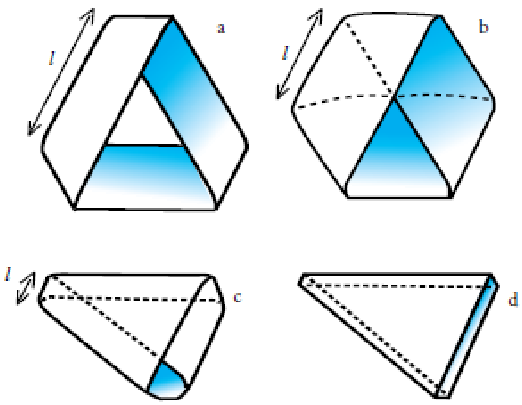


Fig. XI-17

you have this representation here now and you have the edge which describes this schema here, like that, with an edge which is here, which goes behind and you have the edge which goes in front, and which constitutes this schema. But anyway one can reduce these edges to being nothing. So then if you reduce these three edges to being nothing, you obtain a shape which is triangular and which I do not make at all triangular in order for it to be more easily representable and where you have this edge in fact which is going...it is not easy to represent and where you have in fact this edge here, it will come here like that, then it's going to go behind, here like that and then it's going to come in front again, this edge here, there, it is going to go there this little side which is going to be reduced to nothing, it is here, this goes behind and rejoins this edge here, this one therefore is going to be found above and then this one is going to return here to go behind again and it is going to rejoin...here...the third. And then here there is a Moebius strip reduced to its simplest expression and which is no longer reducible and which has the form of a triangle with three successive sections with the first which is represented by this strip which goes like that, then the second – here it's going to go behind and then the second which comes again and which is folded back a third time in order to pass again behind. And in fact this paving which you are making here with the hexagon you can make with the triangle, but it is another much simpler way of doing the paving. And you have here the disappearance that you thought was almost obligatory of this virtual hole which disappears with this representation here. There you are that's what I wanted to say. It's another interpretation.

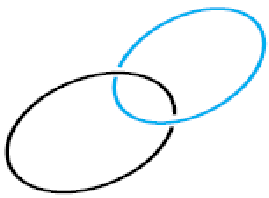
Terrasson: Why did I make this representation here and not that one? It is because here I have at most a second thickness and a simple thickness and that

that, I can obviously represent it, come here moreover by these pavings with which I can pave the plane. And so that allows me...

J. Lagarrigue: Here you do not have a virtual hole which cuts the plane, given that the only hole is a hole which is vertical like that, like a sleeve and here at this representation like this you still have a hole which is virtual, which is here a point through which you can pass a needle, a pin, and which disappears in this representation that you have of the three which absolutely overlap and which is in fact the most reduced form possible of a Moebius strip with the single half-twist and which is a representation which is much more reduced than that one because you have eliminated this hexagon effect, which is in effect artificial as one might say, which is no reason to be particular. It's only raison d'être in the form of the Moebius strip has a single half-twist; it is in fact the triangular form and it is here. And this form there, you cannot obtain with the second Moebius strip which is the Moebius strip with three twists where there the existence of this virtual central hole is absolutely obligatory. This can be made very well moreover with a strip of paper.

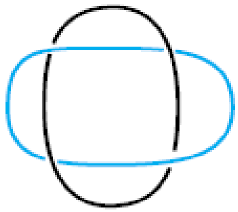
Lacan: What is interesting in this reflection is that, just as for the Moebius strip that I drew the last time, the thinning out of what is at stake, allows a form to be maintained which ends up with a threefold knot and this, I mean the Moebius strip, as is well known the Moebius strip divided on two makes an eight; if I remember properly this eight cut in two gives a shape like the following, namely, something interlaces, if I remember correctly. I believe that I do not remember correctly.

Fig. XI-18



J. Lagarrigue: I believe that that gives a formation which has characteristics like that. When one divides a Moebius strip twice one obtains a strip which is like that, which is of this kind, with a strip like that and which is knotted by a sort of weaving and which is not a simple...there is something which appears to me not to be clear it is your double twist, how do you obtain that figure there?

Fig. XI-19



Terrasson: By flattening out the Moebius strip, a Moebius strip with one twist by flattening it out namely, by making a half-twist each time it takes this form there (inaudible discussion)

Lacan: How is it two edges here interlace? Because in fact it is a fact that they are interlaced, they make an interlacing.

Terrasson: It is the first strip whose edges are obtained by themselves outside the fate of the strip....

Lacan: The two edges are interlaced?

Terrasson: It is the first interlacing of the edges. One can continue. There is a whole series of interlacings.

Lacan: Huh?

Terrasson: There is a whole series of interlacings of the edges.

Lacan: I apologise to you. There is a way of making a Borromean knot with a threefold knot. Nevertheless the question is whether there is another way of making a Borromean knot with the threefold knot. If one groups the three, it is quite obvious that what one obtains will be the same thing, as what one obtains with a Moebius strip. Is there a way, by separating out this threefold knot – this is what I was thinking about this morning – by separating out this threefold knot is there a way by displacing this threefold knot of ensuring that one can go under the second threefold knot which is slightly displaced, that one can pass underneath it, since it is by definition the Borromean knot, that one can go underneath this one which is here below and over this one which is above. This is what I am proposing that you should put to the test, because I wasn't able to put to the test myself this morning. It must on the other hand be clearly said that this threefold knot itself is divided in two, I mean that it is liable to be cut, cut in the middle and that this gives a certain effect that I would also propose you to put to the test.

This promises us for the session of 9 May some results to which I myself will try to give a solution.

Seminar 12: Tuesday 9 May 1978

Things can legitimately be said to know how to behave. It is we who discover how they work. The turning point is that we have to imagine them. It is not always easy because some oratorical, that is to say spoken, precautions are needed.

Thus it is the cut which realises the threefold knot on a torus. To complete this cut, it is necessary, as I might say, to spread it out, namely, redouble it in such a way as to make a strip. This is what you see here on the right – the cut is there on the left – this is what you see here on the right of this drawing which it has to be said is not without a certain awkwardness.

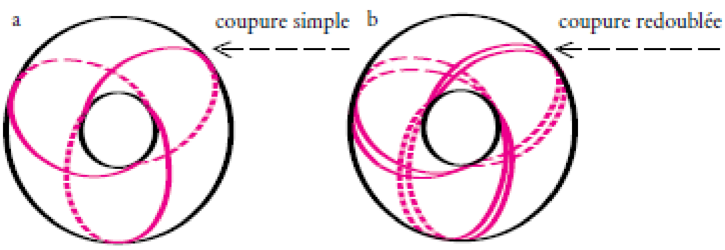


Fig. XII - 1

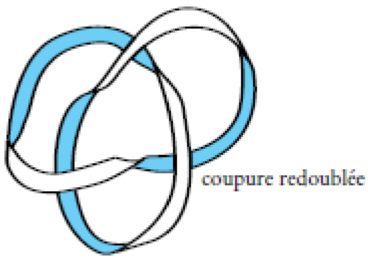


Fig. XII- 2

It has to be redoubled, thanks to which the figure of this strip appears, which for its part gives support, namely, the stuff of the threefold knot.

That is certainly why I stated this absurdity that it was impossible to establish a knot on a torus, which Lagarrigue legitimately took up, for the cut is not enough to make the knot: the strip must be there and you know how it is produced: by redoubling the cut a little to the right, a little to the left, in short by redoubling it. For a cut is not enough to make a knot, there must also be stuff, the stuff of a tube on this occasion which is sufficient. But it must not be believed that the cut suffices to make from the tube a Möbius strip even for example with a triple half-twist. It is the figure that I indicated there, this one which redoubles the cut, this is the figure that I indicated here which provides the stuff for this threefold knot. I am pointing out to you that this threefold knot, is something that is only produced by a cut down the middle of what I called the triple Möbius strip: it is by cutting down the middle this triple Möbius strip that the threefold knot appears, so that after all this is what excuses me for having stated this fact, this absurd fact.

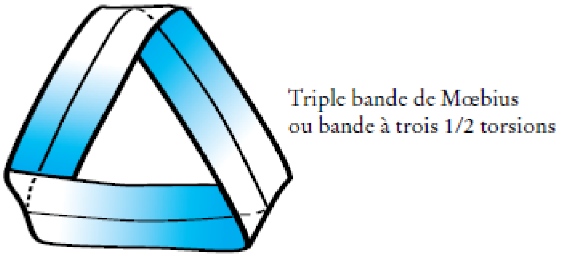
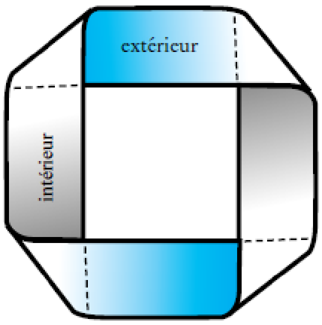


Fig. XII- 3

The triple Möbius strip is not capable of lying on a torus; hence it results that, if one cuts out this as it was originally, namely, the cut, the simple cut, this does not make a threefold knot and if one cuts the tube in the way that is represented here (redoubled cut), well then, what one obtains is something which is quite different from what one was expecting, namely, that it is a thing folded over four times: on this occasion, for example, this is the inside of the tube, this is the inside also and this is the outside.

Fig. XII-4



This indeed is why it is not possible to obtain this directly, namely, it is not possible to obtain directly what results for the strip inside the cut, , because this is something that only results by the section along the middle of the triple Möbius strip. This is perhaps what excuses me for having formulated this absurdity that I admitted earlier.

Nevertheless it is a fact that the cut in question realises on the torus something equivalent to the knot and which Lagarrigue was right to reproach me about.

What I said about the things that can be legitimately described as to know how one should behave, is something which supposes the use of what I called the Imaginary. What I said earlier, that one must imagine this stuff, suggests to us that there is something primary in the fact that there are fabrics (*tissus*). Fabric is particularly linked to imagination, to the point that I would put forward that the support of a fabric, is properly speaking what I called just now the Imaginary. And what is striking, is precisely that, namely, that fabric is only imagined. Therefore we find here something which means that what passes for being the least imagined depends all the same on the Imaginary. It must be said that fabric is not easy to imagine, because it is encountered only in the cut.

If I spoke about the Symbolic the Imaginary and the Real, it is indeed because the Real is the fabric. So then how imagine this fabric? Well then, here precisely is the gap between the Imaginary and the Real, and what is between them, is the inhibition...precisely to imagine. But what is this inhibition, since moreover, we have here an example of it, there is nothing more difficult than to imagine the Real and here it seems that we are going around in circles and that in this affair of fabric, the Real, it is indeed what escapes us and it is indeed the reason why we have the inhibition. It is the gap between the Imaginary and the Real, if indeed it is the case that we can still support it, it is the gap between the Imaginary and the Real which constitutes our inhibition.

The Imaginary the Real and the Symbolic, is what I advanced as three functions which are situated in what is called a plait. It is clear that if one starts from here, this is a plait and what is curious, is that this plait is very particular.

Fig. XII-5

There is something that I would like to produce before you today. This is what it is: it is something that is presented like a strip. 2 covers 1; here it is 1 covers 3; here it is 2 which passes under 3, here it is 1, here it is 3, here it is 2, here it is 3.

And, in a word, at the end, we will find ourselves after 6 exchanges 1-2-3. Well then, this, namely, the equivalent of what is called the Slade strip, with what I depicted here as 1, 2, 3; this equivalence is shown in the fact that it is possible to reduce to this Slade band, by an appropriate manipulation of that in which consists the level where I wrote 1-2-3 [XII-7], it is possible to reduce this to this by inappropriate manipulation.

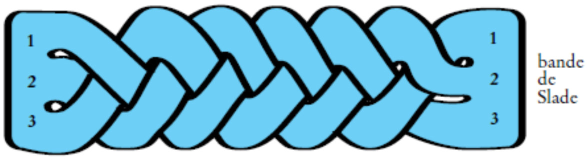


Fig. XII-6

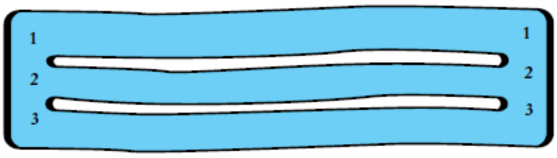
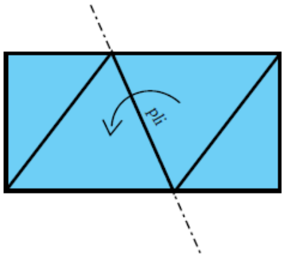


Fig. XII-7

In other words: a plaited belt which terminates by something which is the equivalent of this 1-2-3, namely, on this occasion a waist belt and I mean what is detached in this way (*Laughter: Lacan takes off his belt*), it is, not simply possible, but easy to demonstrate that this belt if it goes inside this plait, that this belt...It is more than possible in a plaited belt to obtain, with the help of the end of the strap and of the waist belt, to obtain the unknotting of the plait, I am talking about the Borromean plait. Therefore the equivalent of the Borromean plait, is exactly what is posed as unplaitted and this in order to signal for you this equivalence that I assure you you can effectively confirm in the most precise way.
It is no doubt difficult to imagine this fact, but it is a fact.

I would like to suggest to you something that has all its importance, which is the following: it is how can one make the shortest Möbius strip? By folding this triangle here onto that one. There results the following, namely, that something folds back which is this piece here. Well then, it is a matter of seeing that a Möbius strip will be produced by the fact of the folding of this here and of that there. It's an ordinary Möbius strip. Find the equivalent for what is involved in the triple Möbius strip. This Möbius strip is more or less like this:

Fig. XII- 8



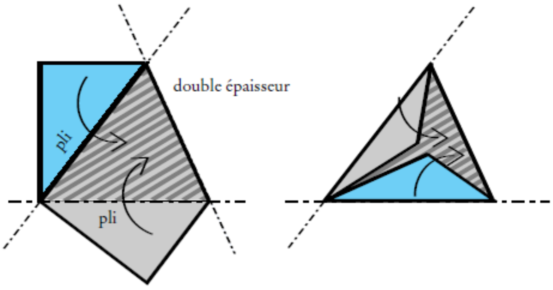


Fig. XII- 9

A curious thing, attack this business of the shortest Möbius strip and you will see that there is another solution, I mean that there is a way to make it still shorter, by still starting from the same equilateral triangle.

What is the relationship between that and psychoanalysis? I would highlight several things, namely, that the things that are at stake have the closest relationship with psychoanalysis. The relationship of the Imaginary of the Symbolic and of the Real, is something which belongs by essence to psychoanalysis. I did not adventure into them for nothing, if only because of the fact that the primacy of the fabric, namely, of what I call on this occasion things, the primacy of fabric is essentially what is necessitated by the highlighting of what is involved in the stuff of a psychoanalysis. If we do not go straight to this distance between the Imaginary and the Real, we are without recourse for what is involved in distinguishing in a psychoanalysis the gap between the Imaginary and the Real. It is not for nothing that I took this path. The thing is what we must stick to and the thing *qua* imagined, namely, the fabric *qua* represented. The difference between the representation and the object is something capital. It is at the point that the object at stake is something which can have several representations.

I am going to leave you there for today and perhaps do my seminar again next year at an appropriate date.