

Lacanian Morning Session, March 25, 2017: Fifth meeting of discussions on Marc Darmon's book *Essays on Lacanian Topology* with Marc Darmon and Charles Melman.

"The α , β , γ , δ sequence"

Marc Darmon – Today I would like to discuss the richness of this sequence α , β , γ , δ , which had several consequences in Lacan's elaborations. First, I would like to return to this sequence α , β , γ , δ . I don't know if it is necessary to put the different layers, strata, of the construction of α , β , γ , δ on the board. Do you remember how it is done?

Lacan speaks of a random sequence of (+) and (–) that connotes presence or absence, the two being linked since there is only presence against a background of absence and absence in the form of a possible presence. So what matters is the constancy of (+) or (–), or the alternation of (+) and (–), or the asymmetry that Lacan describes as *odd*. So, as Charles Melman pointed out last time, these are properties that belong to the Imaginary. So it is interesting to note that if you reverse the (+) and (–) in the first sequence, it does not change the translation into (α), (β), (γ), (δ), that is to say *[that]* the transition to (α), (β), (γ), (δ) retains the constancy, the alternation, the asymmetry, but is insensitive to the fact of transforming the (+) into (–) and the (–) into (+). So, I wanted to focus on what is of the order of the random, on this sequence of (+) and (–) described as random.

Lacan, in his seminar on *The Purloined Letter*, builds up the Real. He distinguishes the different stages of construction of α , β , γ , δ as three layers:

the first of (+) and (–) as belonging to the Real,

the second of (1), (2), (3) as belonging to the Imaginary,

and the third layer, which focuses on triads of 1, 2, 3, considering the extreme terms of these triads (i.e., the binary at the beginning and end of each triad) as the level of α , β , γ , δ representing the Symbolic.

So when Lacan produced this mathematical construction, this Markov chain, there were, it seems, some criticisms. He was asked: "But how is the sequence of (+) and (–) random, is it of the order of the Real?" And on the other hand, didn't he want to show that there was no chance and that this level of (+) and (–) was itself determined by a symbolic law? So there is a little confusion at this level, that is to say, is there—as Lacan emphasizes in *The Purloined Letter*—is there chance for the speaking being?

It seems that the lesson we can learn from Freud, from *The Psychopathology of Everyday Life*, from Freud's early writings, from this discovery, is that there is no such thing as chance for those who claim to say things, including a sequence of numbers, at random. In other words, the desire to say or produce something random, given that human beings are speaking beings, demonstrates that there is a law that governs and organizes what supposedly appears to be random. It's astonishing! And Freud gives examples of this phenomenon, including randomly chosen numbers. Even more remarkable is that if we choose this number at random, for example by opening a book and landing on a page number, and if we associate this page number, we will come across determinations; this number will be overdetermined. So what does this strange phenomenon mean?

Well, it overlaps with recent reflections and theories in theoretical computer science on the definition of a random sequence. That is to say, after much difficulty, we have defined it—I am thinking of the work of Borel, whom Lacan knew; Borel had invited him to come and see him

but to his regret, Lacan did not follow up—so there were many difficulties in defining what chance was, because if we define what a random sequence is, you can see that this sequence will be determined by its definition. And so: difficulty!

So, what we currently define as a random sequence of numbers is based on computer science: a large sequence of numbers will be considered random if it is not produced by a program containing a number of signs, *bits* comparable to the length of the number in question. Do you see?

In other words, if we can produce a large number with a small program, then that number is not random. But if the program that produces the number is comparable in size to the length of the number in question, then that number is random. This greatly restricts the problem because it is random in an axiomatic system, in a given syntactic system, meaning that we can only define the random number in relation to an axiomatic system capable of building a machine that produces this random number. This is where a paradox discovered by Gregory Chaitin comes in: imagine a program capable of telling whether a given large integer—that is, a very large number of (+) and (–), or (0) and (1)—is random or not. If such a program exists, it is smaller, significantly smaller in length than the number in question, but if this program exists, we could use it to generate the random number in question. If a small program is capable of detecting whether the number is random, conversely, we can create a program from it that is capable of outputting the sequence in question, so it is not random, since you can see that it is a circular argument! It is therefore interesting to note that this reflection on random numbers echoes Gödel's paradox, the famous theorem: in a given system, there is an impossibility, something that is undecidable. And what is remarkable is that most numbers are random. All real numbers—i.e., with an infinite sequence of decimal places—are *a priori* random, but it is impossible to prove this. That's the paradox: although most numbers are random, it is impossible to prove it. You can't know; maybe the sequence in question that looks completely random—which are decimals of real numbers, for example—this sequence that appears to be random, maybe it is made up of the decimals of the number π . The decimals of the number π appear to be random but are not random at all, since they can be produced by a small program that outputs the number π ... at the output, that is!

I once talked here about the number π and its interesting effects, since it is a universal number. In other words, any finite or infinite sequence of *bits*, decimal numbers, or any infinite or finite sequence of numbers can be found in the decimals of π ; it can be found in a given place. For example, at the millionth place, we find Marc Darmon's social security number! But it goes further: Cervantes' Don Quixote is written in the decimals of π , at a certain place, and not only in Spanish but in all languages. There is therefore something fascinating about this real number, which appears *to be* random and lawless, but which contains every finite and infinite sequence. I find it interesting to reflect on what we mean by Real. Under these conditions, in this context, isn't the Real that point of impossibility in finding a law that would account for a random series?

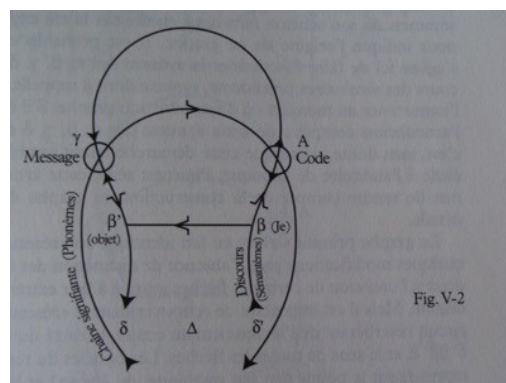
That's it for a first reflection on these α , β , γ , δ where the Real is identified differently.

In the text, you have: *Introduction to the seminar on The Purloined Letter*, which follows on from the seminar on *The Purloined Letter* itself, that is to say, where the story of the purloined letter is discussed. Curiously, *the Introduction* follows on from this seminar and, in my opinion, it is also based on a play on words because it is an "*Introduction to the sequel*"... the sequel is the sequel to α , β , γ , δ and comes after the seminar!

In this text, there is another play on words: *Parenthèse des parenthèses* (*Parenthesis of parentheses*). So, in this *Introduction to the seminar La Lettre volée*, which presents α , β , γ , δ , Lacan wrote a short text in parentheses where he introduces, instead of α , β , γ , δ , 0s and 1s and parentheses that open and close. Do you remember that? So it's a text that is in parentheses!

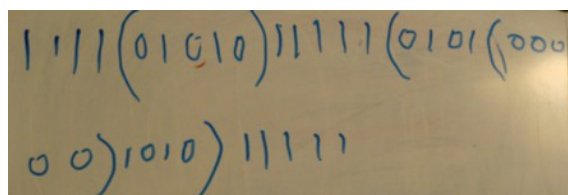
Another typographical curiosity is that he calls double parentheses quotation marks. This is interesting because Lacan makes the connection between the sequence α , β , γ , δ translated into 1, 0 and parentheses. So in this new transcription, he tells us that a sequence of 1s will account for the big Other—at least, that's how we should imagine this new construction—the big Other as containing sequences of 1s... then (()) [pronounced: quotation marks], that is, double parentheses, which will introduce sequences of 0... where Lacan sees the Subject. He also talks about the silence of drives, so quotation marks that open up spaces of silence, we might say. The silence of the drives is the place of the Subject of the Unconscious. And between the quotation marks, between the parentheses, the possibility of alternating (0) and (1) represents the imaginary dimension, the dual dimension. So, we find all the elements of the L schema in this sequence of α , β , γ , δ , translated into 1, 0 (). This sequence, one might say, covers the L schema by imagining the sequence of (1) at the level of the big A, and the sequences of (0) at the level of the S, with the imaginary line supporting the alternation of (0) and (1). Here, Lacan, as we can see, tries to make the connection between these different topological or mathematical supports. He makes the connection.

At the time, I was struck by certain clues in the construction of the graph, the completed form of which can be seen in *Subversion of the Subject and Dialectic of Desire*... I was struck in the seminar on *The Formations of the Unconscious* when Lacan describes the construction of the grand graph, to see on certain points the α , β , γ , δ . That is to say, in the reproductions of the graph as they could be found in the typescripts of the time—Lacan had taken care (I think it was he who drew it) to draw the primitive form of the graph on one level where he studies the word *famillionnaire*. Do you remember that? Between message and code.

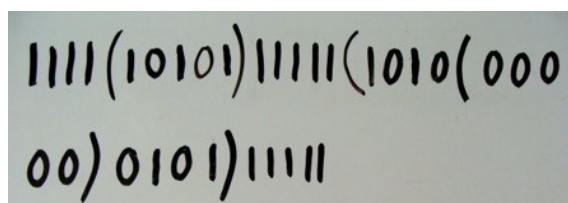


He indicates possible circuits on this graph and he indicates the letters $\beta\beta'$, $\delta\delta'$ and A [α written in capital form: A (read: capital Alpha)]. So I thought to myself that this was a clue, just as in analysis we have clues. Here, he had arranged things so as not to give us the recipe, but to give us clues. So the clue was: this is where this graph comes from. It comes from my formalization of α , β , γ , δ . And I had fun trying to connect the two things, and to my great surprise, they correspond completely. That's the subject of part of my book, to show the link between this graph of α , β , γ , δ and what Lacan calls the graph, so that explains a little bit about the genesis of this graph and the fact that it's based on a desire to derive certain instances, as with the "L schema," but in a more mathematically rigorous and justified way. So the graph of *Subversion of the Subject* or *Formations of the Unconscious* is Lacan's attempt to construct a network based on α , β , γ , δ . So I thought to myself: maybe he didn't stop there, maybe he did something else with α , β , γ , δ ? And I was struck by certain properties of this sequence. And I thought to myself: why not the Borromean knot?

So, I quickly distanced myself from this possibility, but I was wrong because I asked myself: am I delusional or not? But I believe that Lacan had no intention of constructing the Borromean knot from α , β , γ , δ , but it just happens to work! That is to say, the sequence as defined in *Parenthesis of Parentheses*, that is, sequences of 1..., open parentheses, sequences of 01..., let's put a second parenthesis, sequences of 0, close the parenthesis, sequences of 01..., let's double the closing of the parentheses of the sequences of 1... Okay, I'll write it on the board: so there are the sequences of 1... there are also sequences with 01... in parentheses...



There you go, that's roughly the general form of these sequences of 01... unless I'm mistaken, I don't know if I've made a mistake by reversing the 0s and 1s somewhere. I'll leave it to you to discover if it was a mistake! – Yes: →

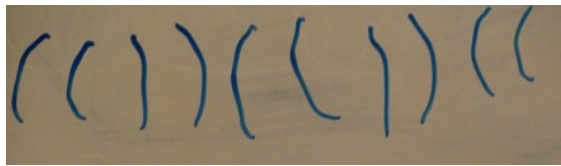


→ = Corrected Fig.

1111 (10101) 11111 (1010 (00000) 0101) 11111

Then I realized that when you empty this sequence of all 0s and all 1s, the parentheses remain. So when you empty these particular sequences where there are 01s... but in

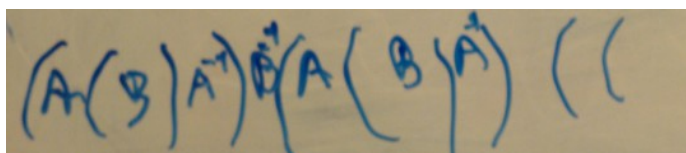
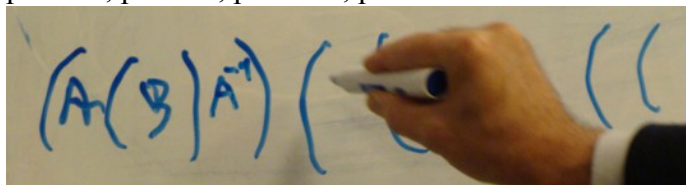
an odd number, the parentheses also collapse. So the simplest sequence we can get is a sequence of open or closed parentheses:



(()) (()) ((

Do you understand? [inaudible]

Mr. Darmon – Yes. It's the Borromean knot, yes. That is to say, there are four different places defined by this punctuation, which consists of parentheses that we will call: place A, place B, place A^{-1} , place B^{-1} .

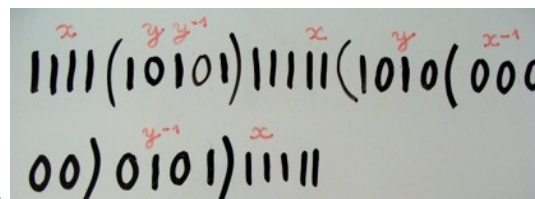
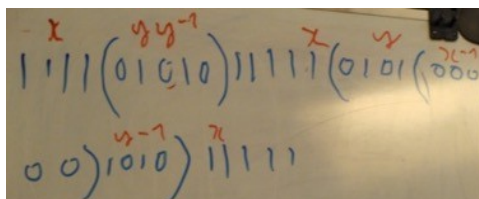


$(A(B)A^{-1})^{B+1}(A(B)A^{-1})$ (

A^{-1} is the inverse, meaning that we must imagine sequences that can be formalized by generators.

So we will call the sequences of 1... or the space outside the parentheses x , and the spaces that will collapse y y^{-1} . So you see, it will collapse.

Again: $x y x^{-1} y^{-1} x$.



Corrected figure

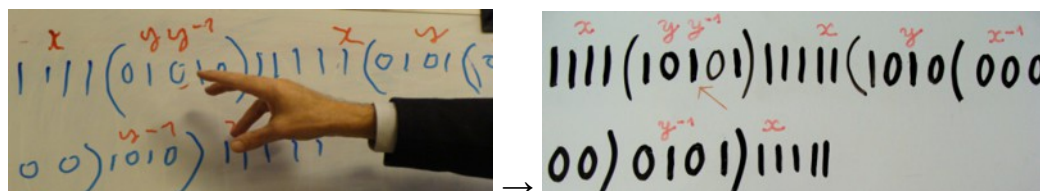
Are you following me? If you have any questions, let me know! I don't want to leave on my own. So, to summarize: the parentheses and the 1...0... define different places, the places

are reversed in pairs, meaning there are two generators, either taken in a positive sense or taken in a negative sense.

So what could that mean?

Henri Cesbron Lavau – I have a question. In the first parenthesis at the top, you wrote: " y^{-1} " so do you read that as: y is 0101 and y^{-1} is 1010?

Mr. Darmon – No, it's this place:



This place is y^{-1} . That is, it is both y and y^{-1} , so it cancels out.

H. Cesbron Lavau – It's written like that, okay.

Mr. Darmon – It's the sequences that bothered me a little because they're sequences that are in the middle of the chain, but it's going to have to do with a topological interpretation. You'll see.

H. Cesbron Lavau – If we had 10101, it would also cancel out, but you would have written $y^{-1}y$.

M. Darmon – Exactly, well, I don't know if that's right, we'd have to check, but that's *roughly* it. I'm not sure if there's an inversion of the 0s and 1s in what I wrote, but it doesn't matter. It still works.

Julien Maucade – Just one question: does it have to start with an even number outside the parentheses?

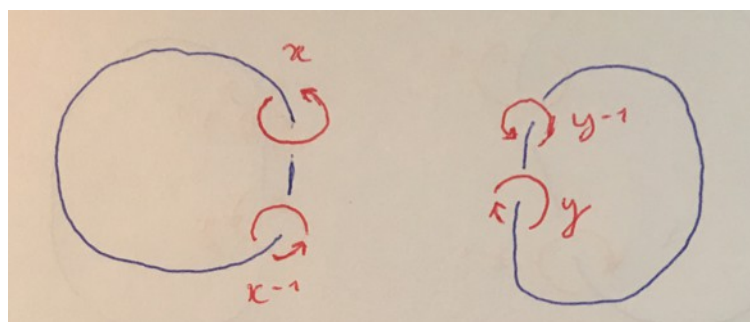
Mr. Darmon – No, you can start with whatever you want.

J. Maucade – We can start with whatever we want, okay.

Mr. Darmon – So these generators... we take two circles, two circles, and we're going to define the generators on these two circles. On the first circle, the generator will consist of rotating around the circle of consistency in a certain direction that is defined by the generator. That will be x . If it rotates in the other direction, it's...

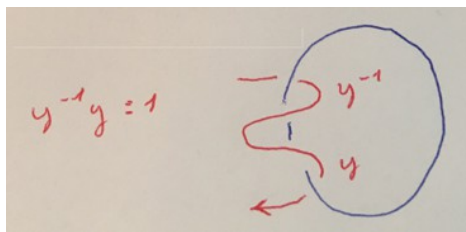
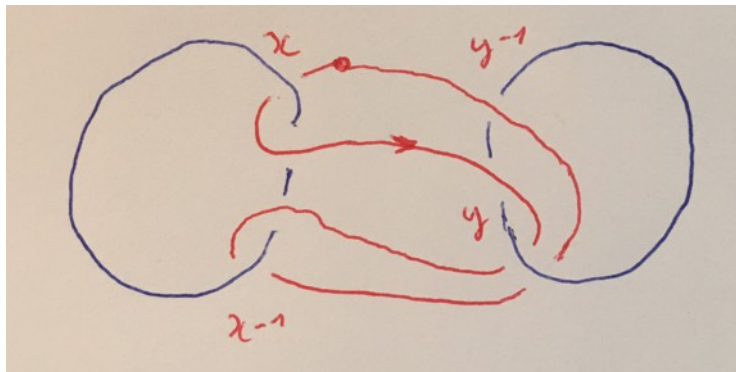
Brigitte Le Pivert – It's x^{-1} .

Mr. Darmon – Who said x^{-1} ? Well done! In the other circle... There you go!



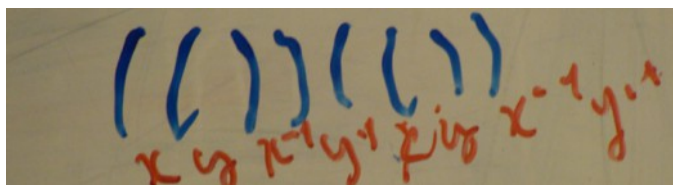
So I'll start from here. x ... I turn in this direction, y^{-1} ...

You see, I started from some random point outside, I follow what the sequence tells me to do, so I turn, I do x , then I go to the other circle, I do a turn y , followed by a y^{-1} . You see how it eliminates itself...

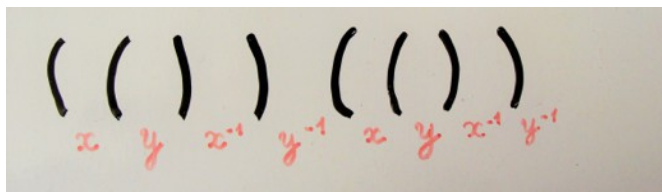


Virginia Hasenbalg-Corabianu – Isn't that upside down?

Mr. Darmon – ... That is to say, it can be distorted into... we can eliminate it immediately. That is to say, this operation on the letters is strictly equivalent to a topological operation. There you go! So I've eliminated this. I'm doing a... unfortunately I deleted my single parentheses, so I'll put them back here if you don't mind. So unless I'm mistaken. So there you have it... you see? No, it's very small...



That is, the sequence of parentheses defines four places that are noted by two generators and their inverses. This sequence of generators will be: x, y, x^{-1}, y^{-1} , and again x, y, x^{-1}, y^{-1} , etc.



→ Corrected fig.

So I do x , I do y , I do x^{-1} , and I do y^{-1} :
... I did the same thing for y, y^{-1} . There you go!

So this formula x, y, x^{-1}, y^{-1} is what we call a commutator, and this formula therefore names the middle circle that revolves around the Symbolic and Imaginary circles and connects these two components in a Borromean way. So the sequence of x, y, x^{-1}, y^{-1} can be as long as we want. That is to say, when we describe, when we translate this sequence of generators onto the node in a topological way, it describes a Borromean knot.

So that was the day I thought I was going crazy!...

[Loud applause].

Charles Melman – We are very fortunate to have Marc Darmon with us, since what he has agreed to work on and address on this occasion is Lacan's flamboyant departure, so to speak, in his attempt to make psychoanalysis scientific. And I would say, an extremely ambitious one, since the sequence of $\alpha, \beta, \gamma, \delta$ would, if we follow the organization of the graph, be no less organizing of speech itself, since that is precisely what the graph attempts to account for. This is quite unprecedented, to say the least. I don't think there has ever been a similar attempt, and we could, if you agree, Marc, even see in this sequence that you wrote on the board a formalization of what is called free association. Which is even more incredible. I mean, the assertion that one might suspect but that one hardly hears—well, one needs quite subtle ears to perceive the strict logical order that animates so-called free association. Which, if I may say so, is quite repugnant. Quite repugnant because the principle is, after all, the perfectly determined nature of what could be called free will, in other words: the Subject. And also the predictability of any opposition. I mean that the opposition would already be inscribed in the assertion itself. This means that if one is somewhat sensitive to this type of situation for reasons unknown, one risks approaching this massive and flamboyant departure with a manifestation of opposition that would ultimately be "well, no, come on!" or else "I have nothing to say!" Which, in my case, for example here, is obviously quite troublesome... Nothing to say. Marc, well done, because everything I could say has already been written. So, we come back to your initial question: is it "possible," a term I haven't chosen entirely at random? Is it possible?

So, the question of chance. Chance, I can't help it, it exists. It exists as manifestation of what has not been pre-programmed by the automatism of repetition, that is to say, the collision with a reality that was not anticipated, that is not part of the chain. And... Finally, *tuché* does exist.

M. Darmon – Isn't that the definition of trauma?

Ch. Melman – Yes, it is! That's it! That is to say, we have major clinical experience with trauma, as Marc just pointed out. That's what trauma is! It's the Real that falls upon you when it has nothing to do with what is, how shall I put it... what is warmly prepared for you to enjoy. Okay. So it exists, and as we know, when it happens, we always look for the causes. We try to provide parameters that ultimately show that it was predictable after all. Well, no, it's not necessarily so.

So, first of all, I would obviously say the multitude of fundamental questions.

The first being, why did Lacan, after such a start, say that psychoanalysis was not scientific? Because there really, one cannot be more, if I may use the word, fundamentalist. Ah! In other words, there is not the slightest freedom. What we call freedom is nothing more than that, that is to say,

word. Ah! In other words, there is not the slightest freedom. What we call freedom is nothing more than that, that is, the possibility of escaping the automatism of repetition, even though we know... Well, I won't get into that, no unnecessary digression. Except that we all have the feeling, based on a certain number of experiences or from a certain age, that oppositions are all, as we see during therapy, agreed upon, we could have guessed what, well, it was already there from the start. So that's the first point.

The second point, which seems very strange to me, is what you have brought us concerning the number π . That is to say, as if the incommensurability of the diameter and the circumference were the generator of a real, of the real, which would henceforth be that of numbers—the real proper to all numeration. Which may seem very strange. We all know the torment it caused from the outset among the first mathematicians. With the following question arising: if this Real in the manipulation of numbers is therefore always the same, a well-defined incommensurability, in analysis, in a cure, this real turns out to be singular. We could say that, in a way, it is never quite the same. So I raise the question: is it precisely this singularity of what is real for each person, their reality, what makes it real for them, that makes psychoanalysis unscientific? I don't think so. I don't think we can say such a thing. After all, why should the same rules apply? Or else we would have to think that this singular reality changes the rules each time. Which, of course, in that case, would reintroduce not what we might call freedom of choice, but in any case a creative fantasy. Which does not seem clinically obvious either. So finally, Marc, I submit this question to you, if you think it is indeed a question.

Finally, one last remark I could make to Marc, which personally annoys me. It is that, in a way, starting with this chain of (+) and (-), it is not a naive chain, it is not a chain that exists in nature. So this succession of (+) and (-) is already a chain that is a by-product of the signifying chain, but it is already very sophisticated; it is already an effect of the signifying chain. And so it seems to me that its raw material is material that, I would say at a pinch, already presupposes what it is going to demonstrate. Which is a little annoying.

And the other thing I would like to ask you about is the moment when, in order to move from α at 0 1, it will remove the median element.

Mr. Darmon – It doesn't take it into account.

Ch. Melman – Oh yes, it doesn't take it into account... Hey! But aren't we going to end up with what we have, that is, the reality that we ourselves have in the chain that has been set up? I don't know! That's a question I'm asking you. But we can't estimate, any more than we can estimate the initial choice of (+) and (-), we can't legitimately think that it's a neutral operation that doesn't change anything. I don't know. Or else, indeed, I would ask for nothing better than to be able to establish that yes, it has no impact, but it is still not a new "innocent" formalization, if I may say so. Well...

So... Regarding more or less, Freud's famous article on *Verneinung* clearly establishes that what speaks the truth, that is, the Real, is negation. And that the first moment of *Bejahung*, when I say yes, I say yes to the elements, I incorporate the elements to which I say yes, in parentheses, that is, which bear a phallic mark, there too there is no...

M. Darmon – Yes, from the outset.

Ch. Melman – What I say yes to is good because it is phallically marked, and therefore incorporable. But, and this is where Freud's genius lies, all these (+) signs, well, it is only in their negated expression that they will account for what grounds them. In other words, it is when I say "it's not that" that I am telling the truth. Why am I telling you this? I'm telling you this because we can see that this question of + or –, without being formalized by Freud, of course, is very much present clinically. It is very much present, but I am only mentioning this to say that writing a chain made up of + and – is already an operation that presupposes what we are going to try to generate next, that presupposes this generation already being there. Which, after all, might also seem normal; we're not going to discuss whether the chicken came first or the egg, etc., that's the eternal debate, but it's not stated as such in Lacan. That's all for now.

So, I must say that I love and admire your boldness here, senior. I don't know what he would have said. I think he would have said, "Yes, yes, people are always quick to accuse me of believing that all this was already there, and that I just developed it. " I think he would say something like that. That being said, one might think that there is no major reason why there shouldn't be correspondences; there's a name for that in mathematics... And that ultimately he was immediately comfortable with the Borromean knot, because in a way, not that it was already written down, of course, but in any case there are correspondences. Marc, do you have any comments?

Mr. Darmon – Yes, you've raised several questions. The first is, what about the Real, in relation to the number Pi ? That is to say, we are dealing with, let's start with the cure, an apparently random sequence for which we will more or less find the law. It's a bit like what happens in the game of odd or even. So, a law of alternation that may be specific to each individual, which refers back to the laws of language... But Freud spoke of the navel of the dream or the primordial repressed, so there does seem to be something that escapes the program, if we return to this computer science metaphor. Something that resists being reduced to a law.

Ch. Melman – If it's the navel, forgive me, it's the generator... so, and what's more, with this ambiguity, forgive me for this very free association, but in this case, with this image of the navel, it's even the maternal generator, isn't it? So...

M. Darmon – Yes. But we find certain formulations by Lacan on the Real as lawless. It is what escapes...

Ch. Melman – Ah yes... so it's *tuché*.

M. Darmon – *Tuché*, yes. So we mentioned trauma or *troumatism*, which is effectively what escapes the law of the Unconscious.

Ch. Melman – To the automatism of repetition.

Mr. Darmon – To the automatism of repetition, which induces another automatism.

Ch. Melman – Ah, now you're taking us into the realm of trauma therapy. But I would say that the problem with traumatic neurosis is that it's not an automatism, it's a stasis.

Mr. Darmon – It is a stasis, yes.

Ch. Melman – It's not the same thing.

M. Darmon – Yes, that is to say, it is not the same repetition.

Ch. Melman – No! If it induced another repetition, basically, well, that would show that we can change channels, so to speak, we can zap. Okay. But, even though the second one, and this would be and is a problem, is that it is not sexual.

M. Darmon – No.

Ch. Melman – And that is, of course, a problem. And precisely the traumatized person, the traumatic neurotic, cannot change channels, the first one no longer works and the second one is not automatic.

M. Darmon – So when you talk about therapy, can we talk about therapy?

Ch. Melman – Yes.

Mr. Darmon – ... either get them to talk immediately, [**Ch. Melman** – Absolutely] or, if it's remote, go back to childhood. We can understand either getting them to talk immediately, which is to follow up...

Ch. Melman – Getting them to talk immediately, precisely to bring this event into...

Mr. Darmon – ... in a symbolic chain.

Ch. Melman – In a symbolic chain, yes.

Mr. Darmon – And returning to the chain of childhood...

Ch. Melman – Returning to childhood, precisely to try to restart the chain that caused the automatic repetition. In other words, trying to bring back memories, emotions, difficulties, childhood traumas, etc. In other words, trying to resurrect it in a way.

M. Darmon – So there's another point, which is the already symbolic nature of the (+) and (–). [**Ch. M.** – Well, yes!]. Indeed, it's obvious since Lacan himself talks about *Fort-Da* to introduce it.

Ch. Melman – Yes, indeed! So there you have it. But the fact that it goes round in circles... that's it, it's noon! **Martine Bercovici** – Actually, I don't really see the equivalences you make between the three chains and R, S, I. Nor do I see where the references are in Lacan's text that allow you to make this association. Personally, I have always read these three chains as belonging to the symbolic, the task here being to demonstrate the inertia of the symbolic as much as the unconscious is structured like a language. We are entirely within Lacan's development, within the symbolic...

Mr. Darmon – Lacan refers to the real, imaginary, and symbolic nature of things.

Mr. Bercovici – Where do you find that?

Mr. Darmon – I can find it for you.

H. Cesbron Lavau – Thank you very much.

Ch. Melman – Thank you very much, Marc.

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