

The infinite, madness, and the feminine in Lacan

seminar organized by Virginia Hasenbalg, Perle Israël, and Henri Cesbron Lavau at the International Lacanian Association.

Phallic jouissance and the jouissance of the Other

The inaccessibility of the two, a symptom of Badiou

Lecture by Marc Darmon on November 27, 2007

In memory of Perle Israël

Henri Cesbron Lavau: ...Marc Darmon is a psychiatrist, a member of the A.L.I. since its foundation, and he has been interested in topology for a very long time, since I remember seeing him, I believe it was in 1979, already presenting Seifert surfaces to us. Marc has also written this book, which is a working tool, as he defines it, and which I already mentioned last time. It is truly a tool with which one can work on topology and Lacan's texts. Marc has extensive knowledge of both topology and Lacan's texts, and what he is going to tell us is very relevant to the question of jouissance. I will conclude by saying that Marc also runs a workshop that takes place on the third Tuesday ("Topology Workshop": 3 Tuesday of each month from 9:15 p.m. to 10:30 p.m.; for the month of December: Tuesday, December 18, from 9:15 p.m. at the A.L.I.) and on the question of femininity, Marie-Charlotte (Cadeau), who is here, is also giving a seminar that will take place on December 20 (Thursday of each month from 9:00 p.m. to 10:30 p.m. at the A.L.I.: "Logic and Clinic of the Not-All")... Okay, Marc, it's your turn!

Marc Darmon: Thank you, Henri, for this work on the Borel-Lebesgue theorem and on this overlap, which you have explained to us very clearly. So, I'll start with a comment from Virginia on translation. We had the opportunity to talk about the translation of certain Lacanian terms...

Virginia Hasenbalg: Let me interrupt him, it's the Spanish translation of his book that's going to be published in Argentina, because he'll never say it...!

Marc Darmon: ... And so during this discussion, you highlighted the difficulty of translating certain terms, such as the term found in Lacan, the term sexual intercourse, absence, the impossibility of sexual intercourse. Someone who attends my seminar, Carlos Herrera, has done a little work on this translation(1), I don't know if you're aware of it...

Virginia Hasenbalg: No...

Marc Darmon: ...I'll show it to you. And indeed, one of the difficulties we encounter with Lacan, not only in translating him but also in reading him, is that Lacan is an inventor in the sense that he not only constructs neologisms, but also takes signifiers that had previously been understood in a certain way and uses them to take a step, a step of meaning. And here we are dealing with a signifier that is extremely important in what he has brought us, the signifier "sexual intercourse" and "absence of sexual intercourse." So obviously when Lacan says for the first time "there is no sexual intercourse," you can see the effect that can have! It is something that goes against the very obvious, since everyone knows that there is intercourse, and all the more so since the term "sexual intercourse" is precisely the term with a medical connotation to designate intercourse and, more strictly speaking, genital intercourse. So, "there is no sexual intercourse" is something that shocks, that scandalizes, almost

as much as: "Woman does not exist," which serves precisely to convey something, as I said earlier, a non-meaning, by creating a new signifier, and that is the question we asked ourselves in translation, because when "there is no sexual relationship" entered our Lacanian vocabulary, in our milieu, it became possible to say "there is no sexual relationship, but there are sexual relations." The term "sexual relations" gradually replaced the term "sexual intercourse," meaning that the introduction of a new signifier creates a gap between signifiers that has

a meaning effect, and so we encountered this difficulty in Spanish, since the term "relation," "relación," does not have the same connotation at all, and it is the only term that can be used.

So let's get to the heart of the matter: what is this business of "there is no sexual relationship"? Since there is indeed intercourse, we are here because there has been intercourse! So that's not what it's about... So, we can approach it from several angles, and I'll go straight to one of the possible paths: it's "there is no enjoyment of the Other," which is one of the phrases found at the beginning of the seminar "Encore." there is no jouissance of the Other in the sense of the objective genitive, there is no jouissance of the body of the Other, that is to say that the body of the Other, it is impossible to encompass it totally, to phagocytize it, we catch little bits, don't we? And there is an obstacle to this jouissance of the body of the Other, this jouissance of the Other in the objective sense, and Lacan tells us that this obstacle is precisely phallic jouissance, that is to say, it is phallic jouissance itself that stands in the way of jouissance of the Other... Ah! What is this all about? How can we understand this obstacle that phallic jouissance introduces to the jouissance of the Other? Well, this is where topology comes into play! Finally, I choose to bring topology into play at this point, but we could talk about it in a completely different way, leaving topology in the background. I would therefore like to draw your attention to Roland Chemama's book(2) on jouissance, which has just been published and is formidable from this point of view, as it addresses these questions the same questions, feeding them with clinical examples and even a clinical example he found in Lacan. It is very rare to have clinical examples from Lacan's practice, but you will find an example concerning the jouissance of the Other, but in the subjective sense, that is, in the sense of the subjective genitive, the jouissance proper to the Other, so feminine jouissance, although some men may experience it, the jouissance of the Other in a clinical example he found in the seminar on anxiety, I believe it is in the lesson of March 20, 1963... So a clinical example that I may have the opportunity to talk about... Whoa! Time is running out, we have until noon, right?

Virginia Hasenbalg: We can go over, we can go over, take your time...

Marc Darmon: ...So, how can we understand this obstacle that is phallic jouissance? Well, phallic jouissance is that which language organizes, the fact that the signifier fails to grasp the object in this structure of language, leading to a repetition of the blows of the signifying stroke, a repetition that is found in the very physiology of language, in the very nature of the signifier, a repetition that is infinite, so phallic jouissance is doomed to infinity; Lacan discusses this, for example, in "Subversion of the Subject and Dialectic of Desire" (3), where he speaks of the infinity of phallic jouissance. At the beginning of "Encore" (4), Lacan gives a very telling example, that of "Achilles and the Tortoise," one of Zeno's paradoxes, whose metaphorical significance he interprets, since it obviously refers to sexual intercourse! So, "Achilles and the Tortoise": remember, Achilles lets the Tortoise go first; he has to catch up with the Tortoise, but he lets it go because he is so strong, so powerful, so fast! He lets it go and the Tortoise gains a certain lead, and this lead can be measured, it is a certain distance, it is a certain segment on the real number line that Henry drew for you earlier. And then, Achilles starts running

to catch up with the Tortoise, and when Achilles reaches the point where the Tortoise was when it had covered that small distance ahead... Well, will he catch up with the Tortoise? No! He won't catch up with it at that moment, because the tortoise will have moved a little further, covering a new distance. So... Achilles says to himself: "Never mind! I'll repeat my operation, I'll cover this new distance very quickly, no problem!" Achilles covers the new distance and... disaster! The tortoise has moved forward a little, and it will always have this lead in Zeno's paradox, meaning that Achilles will never achieve the ratio, will never achieve this encounter with the tortoise. Anyway, that's the classic Zeno's paradox. Well, it's a completely ridiculous sophism; we know full well that Achilles will catch up with the tortoise.

So if we take this paradox a little further in our analysis, as Lacan does, Achilles does not catch up with the Tortoise; either he arrives before the meeting point, or he goes beyond it, meaning that there is no meeting point in this sequence of ratios, in the mathematical sense; either one is before or one is after. There is only a ratio in infinity, and that is how we define a number, he says, a real number, that is, as a limit in an infinite series. So if you remember your high school studies, you learned, for example, how to extract a square root. Did you learn that? It's a somewhat complicated operation involving multiplication and division, and when we extract a square root, we relate integers, we divide integers, and we try to frame the square root. So often the square root, for example the root of 2, is not a rational number, it is not a number that you can reach with divisions by comparing, again using the term "ratio" of integers. So, for example, the square root of 2 is a real number that is definitely there, you can even draw it, it's the diagonal of a square with sides of length 1, but you can't reach it with ratios, because when you do divisions, ratios, you'll get a number that's either a little below or a little above. That's a bit what Lacan means when he tells us that this real number can only be reached in infinity, that is, it cannot be reached, it is not accessible, with rational ratios. On this occasion, Lacan brings out the famous Borel-Lebesgue theorem... (I seem to remember there was an anecdote about this: Lacan almost met Borel, who wrote to him saying, "Yes, come and see me!" but out of shyness(5), Lacan didn't go... "And that's the kind of stupid things you do when you're young," he says... well, I think it's Borel, no guarantees...)... So he brings up the famous Borel-Lebesgue theorem on this occasion, on the occasion of Achilles and the Tortoise, telling us that: Achilles' bounded and closed space, that is, the space of phallic jouissance, a bounded and closed space, with this infinity of closed spaces, is all the gaps between Achilles and the Tortoise, it is an infinity of closed spaces, and he speaks, on the other hand, of the spaces of overflow of the Tortoise as open spaces, so I think Henri gave you the definitions of open spaces and closed spaces, that is to say: the closed set is a set that reaches its boundary, if you like, intuitively, and the open set is a set that does not reach its boundary. We'll see if we have time to talk about certain distinctions...

So if we cover this infinity of closed spaces of Achilles with open spaces, well, from an infinite covering by open spaces of this closed space, we can extract a finite subcovering of open spaces, of open sets. Henri showed us this very clearly on the closed segment earlier, on the segment $[A, B]$, remember? We could add that, conversely, if we are dealing with an open space, or an unbounded space, then you can cover this open space with an infinity of open spaces, but from this infinity of open spaces you cannot extract a finite subcover of open spaces. Similarly, if the space is unbounded, what does it mean to be bounded? For example, take the set of natural numbers: you have $N = \{1, 2, 3, 4, 5, \dots\}$,

for each subset, you can say that you have a closed set, like this one that progresses, but it is not bounded, it is endless, we will come back to this later. A bounded space
Bounded space, in the more spatial, more geometric sense, you take a ball, you can always enclose that ball in a ball of higher dimension, in a larger ball: that is a bounded space.

So, what this means, and this is an interesting point, is that an open space can be bounded or unbounded! In other words, an open space can be considered, for example, as the interior of a disk not including the boundary circle. This is an open space with a boundary that bounds it. and you can have, for example, the Euclidean plane, which is an unbounded open space, a big difference, but these two spaces behave in the same way: if we try to cover them with open sets, with an infinite covering, we cannot extract a finite subcovering from this infinite covering. On the other hand, if the space is closed and bounded, then from a covering by open sets, we can always extract a finite subcovering, that is, a finite number of open spaces, which means we can count them, as Lacan said...

And, after dazzling the seminar audience with this Borel-Lebesgue theorem, which he follows step by step, I think that if you take up this theorem as it is presented in Bourbaki(6), you will see that Lacan follows the articulations step by step, he simply retranslates it in his own way, almost without changing anything in the articulations of this theorem... And what does he tell us? Well, he tells us that if, on the one hand, on the masculine side, we have this phallic jouissance and this impossibility of the rapport that is specific to this phallic jouissance, which is specific to language and which translates in a certain way into castration, that is to say, which introduces this limit, this impossibility, on the other hand, on the feminine side, he will talk about open sets. In this articulation between the space of phallic jouissance and these open sets, you have this remarkable result, which is "one by one," that is, the finite number of sub-covering, and "one by one," this requirement of "one by one," and Lacan evokes the myth of Don Juan, which he tells us is a feminine myth. In fact, I owe this to Roland Chemama, who *reiterates* that the myth of Don Juan is a feminine myth, since he had already said so in the seminar on anxiety, right next to the clinical case I mentioned earlier. But he talks about it differently. In "Anxiety," he tells us that Don Juan is the absolute object, ultimately the uncastrated man, which strangely brings him closer to women, so he is the object that is always available. And in "Encore," he insists on "one by one," so the requirement of "one by one" comes from the Other, the requirement of "one by one" comes from the feminine side... He has "a thousand and one," but "one by one"!

Virginia Hasenbalg: He has put the traits... (laughter)

Marc Darmon: Right, so that's initially on the side of the objective genitive, where there is no enjoyment of the Other insofar as the phallus put in place by castration acts as an obstacle and induces this infinite repetition...

Question from a listener: Isn't this about foreclosure?

Marc Darmon: No, it's not about foreclosure, but it is about the establishment of this limit, this phallic boundary...

But what about the jouissance of the Other, in the subjective sense, the jouissance specific to the Other, which we have also come to call "Other jouissance"? And what illustrations can our topological instruments provide us with? Well, you know that Lacan spoke of it in "Encore," as mystical jouissance, for example, which is why some men are not indifferent to this Other jouissance; there are male mystics. It is therefore a jouissance that is not limited to this phallic closure, that goes beyond it and about which, he says, women say nothing, cannot

say anything about it. But why can't they say anything about it? We could still put forward the following argument: they can't say anything about it for structural reasons, because if phallic jouissance is that which is organized by language, by the signifier, the jouissance of the Other is nonetheless organized by the symbolic, but it aims at something beyond language. In a way, it escapes discourse while being experienced in the body. So if you read the writings of the mystics, it is a tireless attempt to describe this jouissance of the Other, but to describe the unspeakable, that which cannot be grasped by language. This is the other side of the impossible relationship between signifier and Real, because on the phallic side, this impossibility is experienced as a failure, while on the side of the jouissance of the Other, this impossibility is experienced as a beyond, which is felt as a beyond.

So, "there is no sexual relationship" because this arrangement of the two types of pleasure does not involve what would correspond to the man on one side and the woman on the other, but rather a subjective position within a logical structure that Lacan organizes around the phallic function: the quantifiers of sexuation, that's what it is, that is to say, it is a logic that is a little far-fetched compared to Aristotle's logic, but which revolves around a single function, the phallic function, meaning that there is no function specific to men and no function specific to women, there is only one function with different ways of functioning. On the male side, it functions universally, that is to say, and this is true, that every speaking being is subject to castration, it is one of the laws of language, because of being a speaking being, and this results in this universal, that is to say, it is a whole that can be grasped as a whole, a whole with a boundary, and this whole with this boundary, universal, graspable as a whole, implies an exception, at least one exception. So, here I recite the formula: "for all x phi of x," universal of the phallic function, this universal of the phallic function goes hand in hand with the exception: "there exists x not phi of x," there is one that is not castrated:

$$\overline{\exists x \Phi x}, \quad \overline{\forall x \Phi x}$$

So, I believe it is in "L'Etourdit"(7), Lacan talks about "confinement" in the singular, "confinement," whereas you know that confines is a term that is used in the plural, confine means with a limit, with a boundary, so he talks about "confinement," of course in an ambiguous way, but it is the place of the mythical father, father of the horde, it is therefore a necessary place, so that there can be closure, so that there can be the universal. On the feminine side, it is the "not-all," so this "not-all" is not nothing, the Aristotelian zero. Lacan proposed that this "not-all" be understood in different ways, but it can be understood as an open set, that is, a set that does not reach the phallic boundary, and we find our Turtle from earlier. So this open set is the one in which the other two formulas of sexuation are established: "for not all x phi of x," and since there is no closure, we cannot speak of everything, so we are in a set outside the universe, and since there is no boundary, there is no exception, that is to say: "there is no x not phi of x":

$$\overline{\exists x \Phi x}, \quad \overline{\forall x \Phi x}$$

And somewhere in "L'Etourdit," Lacan evokes President Schreber, for "there is no x not phi of x," he tells us that this refers to the hyperbolic, in this movement of opening, this movement that we find in President Schreber's delirium, Hyperbolic is precisely when, as we asked earlier, when there is foreclosure of this point of "confinement," if the Name of the Father is foreclosed at that level, there is indeed openness... So, but you will say to me: "But then, women are crazy"?...

Virginia Hasenbalg: There is no foreclosure...

Marc Darmon:... Well, this is where I would emphasize the distinction I made earlier between boundary and limit: that is to say, we can have an open space with a boundary, with a boundary that is not understood, but we can also have an open space without limits. In other words, the jouissance of the Other, if it is beyond phallic jouissance, nonetheless requires the existence of this phallic boundary, this jouissance of the Other understood as feminine jouissance. So it functions in relation to this phallic jouissance, in relation to what the quantifiers on the other side are. President Schreber's infinite transsexual jouissance is an unbounded jouissance, and in my opinion, this is a distinction that can be applied in current clinical practice, clinical practice, one might say clinical practice of limits, not clinical practice of borderline cases, but clinical practice of limits...

So there is another way of approaching the absence of sexual relations. Lacan alludes to this in the seminar "Or Worse" (8), that is, in the seminar preceding "Encore," and he discusses it in the text "L'Etourdit." It is what he calls inaccessibility, the concept of inaccessibility, and he tells us that Cantor's infinity is inaccessible, but that this inaccessibility begins at 2! I would liken this to a remark Lacan makes in "L'Etourdit" where he tells us: "The second sex is nonsense!" You know how he argued with Simone de Beauvoir because Simone de Beauvoir asked him to explain femininity from a psychoanalyst's point of view in a few lessons, and he said to her: "But it would take two years to explain it to you!" So she replied: "Oh no! Two years is too long!"... And it's nonsense, in what sense is "The Second Sex" nonsense? It's nonsense insofar as it can't be counted in the same way, the first, the second, you can't count them like that... because with what would be the second, we would rather be dealing with the Other. But what is this story of inaccessibility?

There is someone I mentioned in my short introductory text, a notable philosopher named Alain Badiou. He is a very interesting person, but I will not discuss anything other than his reliance on mathematics to develop his philosophical system. He wrote an article that appeared in *Condition*(9) called "Subject and Infinity," which addresses what I just told you about, the quantifiers of sexuation. So he takes a little jab at Lacan, because Lacan relies on the Other to talk about the Other in *Encore*, he relies on the infinite space of intuitionists, that is, he explains to us that the logic where the exception contradicts the universal is specific to finite sets, that is, if you have a certain number of points and you have one point that does not meet a property, you cannot say that all points meet the property. If there is one exception, it means that we cannot talk about everything; this is "normal" logic. On the other hand, you can no longer say this in the infinite space of intuitionists; you cannot say "everything" in a sense, you would have to check it for each point, you would have to check the property for each point. That is to say, "there exists or there does not exist an x not ϕ of x " remains indeterminate in an infinite intuitionist set. In this passage, he talks about the infinite jouissance of the Other, the jouissance of the Other to infinity, which is the only passage, by the way. Badiou therefore rebels against this reference to intuitionist logic, which for him is, and I think he is right, a resistance to what Cantor brought, that is, the actual infinite. The \aleph_0 (aleph 0) is the cardinal number of the actual infinite and is inaccessible. In what sense is it inaccessible? If you consider finite numbers, for example the sequence of natural numbers, by adding or multiplying a finite number of natural numbers you will never reach infinity, it's as simple as that. There is an inaccessible, which means that by performing operations, with regard to sets, of union of the elements of all the elements of a set or set of parts of a set, you will not be able to construct or reach this so-called countable infinity. But there is a more powerful infinity. You can get an idea of this infinity from the set of parts of the set of whole numbers, which is something that has

a cardinality greater than the integers, and is the subject of a well-known proof that uses the diagonal that Henri mentioned earlier. So, there is this inaccessible infinity. current, \aleph_0 , and from there Cantor constructed transfinite, i.e., infinities that have powers greater than \aleph_0 , the infinite cardinality of integers, and which are obtained, which have as cardinality, for example for $\aleph_1 = 2^{\aleph_0}$ and there is \aleph_2, \aleph_3 , etc. So infinite cardinals or infinite ordinals that have properties comparable to those of finite numbers, which we use in arithmetic, are comparable, but they are not identical! In other words, Cantor discovered, constructed... constructed or discovered? ... a whole domain, a whole absolutely colossal field of transfinite, and that's where he said in a letter: "I see it, but I don't believe it!" and it bothered him so much that he wrote to the Pope... Well... And so, these infinite, transfinite cardinals are constructed by moving to the set of parts. Each time you have a cardinal, you move to the set of parts and you move, therefore, to the higher power. So, note that these cardinals are, starting from \aleph_0 , the first transfinite, accessible by passing through the set of parts, so you have an inaccessible first, the set of integers, from the integers you cannot reach \aleph_0 , but from \aleph_0 you can reach the higher transfinite powers...

Virginia Hasenbalg: Are they accessible?

Marc Darmon: They are accessible... But we cannot prove it, that is to say, we can imagine an inaccessible transfinite set, based on the model we saw with the finite and infinite, so we can postulate that "there exists an inaccessible infinite set" in the sequence of infinite cardinals, but you cannot prove the existence of this inaccessible infinity unless you question the consistency of the entire theory, so it is undecidable...

Virginia Hasenbalg: Okay...

Marc Darmon: There is another problem that arises, which is that Cantor made the continuum hypothesis, i.e., once we have \aleph_0 , the actual infinity, the first transfinite, we can construct \aleph_1 by moving on to the set of parts, and Cantor's continuum hypothesis is to say that the transfinite that comes just after \aleph_0 is the one obtained by the operation of the set of parts and which has the power of the continuum. That is, if we return to the diagrams from earlier, \aleph_0 would be the actual infinity, for example, of discrete points on the line; \aleph_1 would be the power, the number, if you will, of points on the completely filled line, that is, of all real numbers... But it is a somewhat bold hypothesis to say that there are no transfinite numbers between the two. Why couldn't we say, for example, $\aleph_2 = 2^{\aleph_0}$? The continuum hypothesis assumes that the only infinite subsets of a set that has the power of the continuum have either the power of the countable or that of the continuum; we jump directly from one to the other.

It was this problem that prompted Gödel to write a paper entitled "What is Cantor's continuum problem?"(10) in 1964. The first version of the paper dates from 1947, but it was revised in 1964. And to think that Gödel did not believe in this continuum hypothesis. Gödel thought that among all the axioms, all the theories that could be established, some were real and others were not. He thought that the continuum hypothesis was false, and shortly afterwards Cohen showed that it was undecidable. He showed that we could have classical set theory with the continuum hypothesis and the axiom of choice, and that we could also have the opposite. Cohen didn't believe in it either, for that matter! ...

So, it is in this discussion that Gödel talks about inaccessibility, focusing on inaccessibility in the finite and the infinite, and a large part of Gödel's proof is to show that in the infinite it does not work the same way if we take the continuum hypothesis, so there is something strange, there is

something that doesn't work. In this text, Gödel talks about the inaccessibility of 2! So what is the inaccessibility of 2? I remind you that the current infinity is inaccessible regardless of the operations you perform on a finite number of numbers less than this infinity, whether they are addition, multiplication, exponentiation, etc. He compares this to what happens in the finite, where certain numbers

are accessible by performing operations on smaller numbers. For example, 3: you can add 2 and 1 to get 3; 4: you add 2, 1, and 1, etc. But you cannot obtain 2! So how can that be...? And Badiou jumps on this, everyone knows that $1+1$ equals 2, so what is this story about the inaccessibility of 2? And he has some rather harsh words for Lacan, saying: "Come on! It's a symptom! It's unimaginable! How could he have let himself say such things and invoke Gödel(11) on this occasion?"... So I claim that it's a symptom of Badiou, because Badiou is absolutely familiar with this text by Gödel, he talks about it in a book called "Le Nombre et les nombres" (12).

In fact, it's about obtaining a number without possessing it. When you get 3 by adding 2 and 1, you have 2, you have 1, and you have two numbers to add together. You can have two numbers since 2 is already known, so you get 3. When you want to get 2, it's about getting 2 with less than two numbers, meaning you can't get 2 by adding 1 to nothing or 0 to nothing! You cannot get 2 by exponentiation or multiplication, so 2 is inaccessible from 0 and 1, whereas 3 is accessible from 0, 1, and 2, and so on to infinity. From 2 onwards, all numbers are accessible to infinity (not including infinity itself). Gödel talks about inaccessibility in the strong sense and in the weak sense, and it is this distinction that he uses in his demonstration concerning the continuum hypothesis. I won't go into detail, but what is interesting is that, in the strong sense, only 2, he says, is inaccessible in the finite... only 0 and 2 are inaccessible, because 0, if you don't put it there, it's not going to just appear! Only 0 and 2 are inaccessible in the finite... So how is this possible? In the strict sense, would 1 be accessible? If you have 0, how can we say that 1 is accessible? So if you add 0 to nothing at all, because you need less than one term and less than 1, you can't get 1! But if you consider products, exponentiations, or, for example, the factorial operation, then things change(13), the product of less than one factor less than 1 exists, that is, 0 to the power of 0 is 1, $(0^0=1)$, and factorial 0 is 1 ($0! = 1$). If you're interested, we can expand on this, but it's a bit late!

But what is interesting, and this is what Lacan takes up in his own way in "Ou pire" (Or Worse), is that 1 is accessible from 0, but 2 is not. Like infinity, that is to say, we have here, in the finite, something that has the same structure as the inaccessibility of infinity. We can say that the absence of sexual relations can refer to this structure of inaccessibility, just as infinity is inaccessible in this repetition, so too is 2 from 0 and

1. And so, provided these clarifications are made, Lacan was quite right to rely on Gödel to advance his arguments. So, we can understand why Badiou is revolted by this interpretation, why he symptomatically criticizes Lacan without even asking himself the question that if Lacan was able to say that, it must have been for a small reason. If he doesn't even ask himself this question when Gödel's book was in his library within easy reach... it's because he cares about the 2! So if you read another text in "Conditions" (14), you will see that he sets up a whole logic, not of the phallic function, of the castration function, but a function he calls $H(x)$, which is the function he calls humanity, and he really needs the number 2 to establish this function. It is a text that talks about love...

Virginia Hasenbalg: ... With H!...

Marc Darmon: Well, I don't know, I've strayed a little from the subject, but not too much... there you go...

Virginia Hasenbalg: ...With this demonstration you gave about the inaccessibility of 2 and infinity, we can relate that to the question of the infinity of the Big Other or the place of the Other, or the jouissance of the Other, I don't know, I think there's a connection between the 2 and infinity in what you're developing, what properties would that confer on the big Other?

Marc Darmon: Yes, that is to say that on the phallic side we would be on the side of the inaccessible, and on the Other side we would be on the side of the beyond, that is to say on the side of the 2 or the infinite, but the infinite in the sense of the first infinite \aleph_0 . There have been discussions, we could go into detail, see what Christian Fierens said, for example in his commentary on "l'Étourdit," to get into these discussions, but if you like, we find this side of Other jouissance outside of language, insofar as it cannot be expressed in finite language, it cannot be said on the finite side. Or else, you find this with the number 2; you cannot make the number 2, you cannot talk about 2 starting from 0 and 1. If you only have 0 and 1, you will never get to 2, you have to put it down... well!

Virginia Hasenbalg: Are there any comments, remarks, questions, objections? ... Yes?

An audience member: Do you have one or two bibliographical references on Cantor?

Marc Darmon: On Cantor... I'll let Virginia tell you about that, but Alain Badiou's work, despite everything I've just said, offers powerful insights into Cantor, as well as Gödel and Cohen. On the problem I just mentioned, it's in Gödel's complete works, there are also some very interesting articles in a book published by Vrin by Jean Largeault, "Intuitionnisme et théorie de la démonstration" (16), where you have Gödel's text, where you have texts by Brouwer, by all these mathematicians who debated these issues at the time... And you have Gödel's text on Cantor's continuum hypothesis, unfortunately with a small error, a small typo in the explanation of inaccessibility, which makes it impossible to read!... (laughter in the room)

Henri Cesbron-Lavau: Inaccessible! (Laughter...)

Virginia Hasenbalg: It's inaccessible by mistake! (Laughter)... On our website (<http://drame-subjectif-de-cantor.net/>), there is Perle Israël's lecture on the diagonal, and another lecture by Perle on Gödel's incompleteness theorem. There is a book by Eric Porge(17) dedicated to Cantor, and Nathalie Charraud(18) has published a book on Cantor. And then, as far as mathematics is concerned, there is a wonderful tool called "Google." When you type in "Cantor" or "mathematics," well, you get everything, it's the trash can of the web, but you come across mathematics sites, explanations, introductions... you find things to enjoy.

Henri Cesbron-Lavau: In fact, the name Google comes from the mathematician Gogle, who needed a very large number for his calculations, but one that was not infinite. It is a number written with a 1 followed by a hundred zeros. In mathematics, this is called the Gogol number, and they added an o to give it a brand dimension, but it's precisely to refer to those billions of pages...

Virginia Hasenbalg: But maybe we need to map out how Google works!

Henri Cesbron-Lavau: But it's already been done. The topology of the internet exists, and it's even accessible online. In other words, the links and connections between websites have been thoroughly explored and even exploited...

Virginia Hasenbalg: But we enter a series of characters into Google, we enter any series of characters and we find the set where that series of characters exists!

Marc Darmon: There's something fun and interesting when you search on Google, it's the number π (pi), so you have millions of decimal places of the number π , which is a real number, so it's not a rational number, and it's very fun: you type in any series of digits, your date of birth, your social security number... and it's in π !

Virginia Hasenbalg: That's not true!

Marc Darmon: The software will tell you, well there you go, it exists, it's a sequence that exists in the decimals of π at the hundred thousandth place, for example...

Virginia Hasenbalg: But wait, a sequence of how many digits, a ten-digit phone number, for example?

Listener: But that's normal, it's logical... (Inaudible) Marc Darmon:

...even a series of 10 zeros, for example... Virginia Hasenbalg: Yes,

that's fine! (Laughter)

Marc Darmon: The person who calculated π came across a series of 10 zeros and thought, "That's it, it's over!"... but not at all! It starts again! (...), it's different from a decimal number with an infinite series of decimals, but with a repetition...

Virginia Hasenbalg: But the fact that it's infinite means that everything is

there! Marc Darmon: But here, it's a very, very powerful number...

Henri Cesbron-Lavau: We even call it transcendental! I would like to thank Marc for... (Applause)... for everything he has opened up for us this morning in our limited spaces!

Virginia Hasenbalg: The next conference will take place...

Henri Cesbron-Lavau: ...On December 15, and we will be lucky enough to have a mathematician, Norbert A'Campo, who will talk to us about the geometry of rational numbers.

Virginia Hasenbalg: So, we'll meet with him beforehand to explain our ambitions and our inaccessibility!

Henri Cesbron-Lavau: And we'll meet before that, at 10:00 a.m. on December 15...

Notes

1. Carlos Herrera, Letter to Marc Darmon, www.freud-lacan.com
2. Roland Chemama, *La jouissance, enjeux et paradoxes*, ed. Eres, 2007.
3. Jacques Lacan, "Subversion of the Subject and Dialectic of Desire," p. 822, *Écrits*, Seuil, Paris, 1966.
4. Jacques Lacan, *Encore*, 11/21/1972.
5. It wasn't out of shyness, of course, I turned the anecdote around by talking about my own youthful flaw! Lacan recounts his missed appointment with Émile Borel in a lecture at the EFP Congress in November 1973 (Lettres de l'École, no. XV). Borel had written him a note after reading his text on logical time. Lacan mentions Borel precisely (and this was the pleasant surprise I had when I found this reference!) when talking about inaccessible numbers. There is indeed a book by Borel on inaccessible numbers that our friend Jean Brini found and sent me: *Les Nombres inaccessibles*, Gauthier-Villars, Paris, 1952.
6. N. Bourbaki, *General Topology*, T.G.I, 59, Elements of Mathematics, Hermann, 1971.
Marc Darmon, *Essays on Lacanian Topology*, pp. 320-321, pp. 428-431, ed. by ALI, 2004.
7. Jacques Lacan, L'Étourdit, *Scilicet 4*, Seuil, 1973.
8. Jacques Lacan, ... *Ou pire*, May 10, 1972,
L'Étourdit, Scilicet 4, p. 24, p. 34, p. 50

"The support of two to make them what this pastout seems to offer us is an illusion, but repetition, which is in short the transfinite, shows that it is inaccessible, from which point, the enumerable being certain, reduction also becomes so." p. 24.

"For what Cantor is saying is that the sequence of numbers represents nothing else in the transfinite than the inaccessibility that begins at two, whereby they constitute the infinitely enumerable." p. 34

"And as for the transfinite nature of demand, or repetition, shall I return to the fact that its sole purpose is to give substance to the idea that the two is no less than it is inaccessible, starting only from the one that is not that of the empty set? p. 50.

9. A. Badiou, *Conditions*, Seuil, Paris 1992.

10. R. Gödel, "What is Cantor's continuum problem?" *Collected Works, volume II*, Oxford University Press, New York, 1990, p. 170, p. 254.
11. A. Badiou, *Conditions*, pp. 299-301. After quoting the passage "from ... *Or worse*," Badiou comments: "What is fascinating about this text is the enthusiasm with which error becomes a principle for organizing the thinkable." "And further on: "It is obviously not a question of playing Lacan's pawn, but of taking stock of the symptom that provocation by error constitutes, and proposing an interpretation of it."
12. A. Badiou, *Le Nombre et les nombres*, Des travaux, Seuil 1990. P. 276, Badiou describes this text by Gödel as "particularly lucid."
13. N. Bourbaki, *Théorie des ensembles*, Éléments de mathématiques, E 111, 29, Hermann, 1970.
14. A. Badiou, "What is Love?", *Conditions*, p. 253.
15. Christian Fierens, *Reading Étourdit*, L'Harmattan, 2002.
16. Jean Largeaut, *Intuitionnisme et théorie de la démonstration* (Intuitionism and the Theory of Demonstration), Vrin, Mathesis, Paris, 1992.
17. Éric Porge, *The Bacon-Shakespeare Theory*, by Georg Cantor, Grec, 1996.
18. Nathalie Charraud, *Infini et inconscient*, essay on Georg Cantor, Economica, 1994.