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Seminar on Spinoza: The Velocities of Thought

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Transcription (for Paris 8): Part 1, Laurence Ponsard (duration = 31:11); Part 2 (duration 46:46), 3 (duration 46:53), 4 (15:16), Fatemeh Malekahmadi; Augmented Transcription by Charles J. Stivale (duration: 118:18)

Translated by Charles J. Stivale

Part 1

This week and next week, I'll be still be speaking about Spinoza, and then it's done… Unless you have questions to ask, which I would greatly appreciate.[1]

So, here we are. My dream would be that this conception of individuality might be very clear to you, such as we have been attempting to distinguish it in Spinoza's philosophy. Because, in the end, it seems to me that this is one of the most novel elements of Spinozism. This is the way in which the individual as such is going to be brought, related, linked within Being. And, in order to try to render comprehensible this conception of individuality that seems to me so innovative in Spinoza, I always return to the theme: it's as if an individual, any individual at all, has three strata, as if it is composed of three strata. And I am saying that we've reached a point at least within the first dimension, within the individual's first stratum: we say, well yes, every individual has an infinity of extensible parts. That's the first point. An infinity of extensible parts, in other words, there is no individual other than composed.

A simple individual, I believe that for Spinoza, this is a meaningless notion. Each individual as such is made up of an infinity of parts. So, if I try to summarize very quickly, because this is, once again, where we had made a bit of progress, if I try to summarize very quickly: what does that mean, this idea that the individual is composed of an infinity of parts? What are these parts? Once again, this is what Spinoza calls the simplest bodies. Each body is composed of an infinity of very simple bodies. But what are very simple bodies? We had arrived at a fairly precise status: they are not atoms, that is, finite bodies, and they are not indefinites either. Then what is it? And here Spinoza belongs to the 17th century.

Once again, what seems really striking to me, in any case, what really strikes me about 17th century thought, is the impossibility of grasping this thought if one does not take into account of one of the richest notions at that time, which is a concept that's at once metaphysical, physical, mathematical etc., the notion of the actual infinite. However, the actual infinite is neither finite nor indefinite. The finite means, above all, if you will, it refers to, if I look for the formulation of the finite, it's this: there is a moment when you have to stop. That is, when you are analyzing something, there will always be a moment when you will have to stop, but about which and for a

long time, this moment of the finite, this fundamental moment of the finite which marks the need to stop at finite terms, that's all that inspired atomism ever since Epicurus, since Lucretius. Analysis encounters a limit; this limit is the atom. And the atom is subject to a finite analysis. The indefinite is as far as you go, you will not be able to stop. That is, no matter how far you carry the analysis, the term you arrive at can always be in turn divided and analyzed. So, there will never be a final term, the point of view of the actual infinite, it seems to me, for which we have completely lost the meaning.

And we lost the meaning, we lost that meaning, for a thousand reasons, I suppose, among others for scientific reasons, all that. But what matters to me is not why we lost this meaning; it's as if I were able to restore some of it in front of you so that you might understand the manner in which these thinkers were thinking. Because really, this is fundamental in their thinking. Once again, if I consider that Pascal writes some very representative texts of the 17th century, these are essentially the texts on man in relation to the infinite. These people are ones who really think naturally, philosophically, in terms of the actual infinite.

And this idea of an actual infinite, that is, neither finite nor indefinite, what does that come down to saying? It comes down to telling us: there are final terms, there are ultimate terms – see, that's counter to the indefinite – this isn't indefinite since there are ultimate terms, only these ultimate terms are endless (*à l'infini*). So, this is not an atom. It is neither the finite nor the indefinite. The infinite is actual; the infinite is in action (*en actes*). In fact, if you will, the indefinite is infinite but virtual, specifically you can always go further. Here, that's not it. They are telling us, there are final terms, the simplest bodies for Spinoza. These are indeed ultimate terms; these are indeed terms final, that you can no longer divide. Only these terms are infinitely minute. They are infinitely minute. That's what the actual infinite is.

Notice that this is a struggle against two fronts, both against finitism and against the indefinite. What does that mean? There are ultimate terms, but they are not atoms since they are infinitely minute, or as was said, or as Newton will say, they are vanishing (*évanouissants*), vanishing terms, in other words, smaller than any given quantity. What does that imply? But infinitely minute terms, you can't deal with them one by one. Here as well, this is nonsense. To speak of an infinitely minute term that I would consider singularly makes no sense. The infinitely minute can only be managed through infinite collection. So, there are infinite collections of the infinitely minute. Spinoza's simple bodies do not exist one by one. They exist collectively, not in distributed fashion. They exist by infinite sets, and I cannot speak of a simple body; I can only speak of an infinite set of simple bodies. As a result, an individual is not a simple body; an individual, whatever it is and however small it is, has an infinity of simple bodies. An individual has an infinite collection of infinitely minute [parts].

Fine, despite all the strength of [Martial] Gueroult's comment on Spinoza, that's why I cannot understand how Gueroult poses the question of whether simple bodies in Spinoza would not have a shape (*figure*) and a magnitude (*grandeur*). It is obvious that if the simple bodies are infinitely minute, that is, so-called vanishing quantities, they have neither shape nor magnitude for a simple reason: it's because that has no meaning. Something infinitely minute has neither shape

nor magnitude; an atom, yes, has a shape and a magnitude. But an infinitely minute term by definition cannot have either shape or magnitude. It's smaller than any given magnitude.

So, what are shape and magnitude? What has shape and magnitude, and there, the answer becomes very simple. What has shape and magnitude is a collection; it's a collection, itself infinite, of things infinitely minute, yes indeed. The infinite collection of infinitely minute things has shape and magnitude. As a result, we come up against this problem: yes, but where does this shape and this magnitude come from? I mean, if the simple bodies are all infinitely minute, what makes it possible to distinguish certain infinite collections of infinitely minute things and certain other infinite collections of infinitely minute things? From the point of view of the actual infinite, how can we make distinctions through actual infinities? Or else, is there only one collection, a single collection of all possible infinities? Spinoza is very firm here; he tells us: to each individual corresponds an infinite collection of very simple bodies. Each individual is composed of an infinity of very simple bodies. So, I must have the means to recognize the collection of the infinitely minute things that corresponds to this particular individual and the one corresponding to that different individual. How will it occur?

Before we get to that question, let's try to see what these infinitely minute things are. They therefore enter into infinite collections, and I believe that, in this, the 17th century grasped something that mathematics, by entirely different means, different processes -- and I don't want to make arbitrary comparisons -- that modern mathematics will rediscover with quite different methods, namely a theory of infinite sets. The infinitely minute enter into infinite sets, and these infinite sets are not equal, that is, there are distinctions between infinite sets. And whether it's Leibniz, whether it's Spinoza, the whole second half of the 17th century is imbued with this idea of the actual infinite, the actual infinite that consists of these infinite sets of infinitely minute things. But then, these vanishing terms, these infinitely minute terms, what are their proofs? What are they like? What… let's try, I don't know, I would like for all this to acquire a somewhat concrete form.

Obviously, they have no interiority. Infinitely minute terms, so fine... I am trying to state first what they are not before I state what they are. I mean, they have no interiority. They enter into infinite sets; the infinite set can have an interiority, but these extreme terms, infinitely minute terms, vanishing terms, have no interiority. What are they going to constitute? They will constitute a real matter (*matière*) of exteriority. They have with each other, simple bodies have with each other only strictly extrinsic relations, relations of exteriority. They form a kind of matter that will be called, following Spinoza's terminology, a modal matter, a modal matter of pure exteriority, that is, they react on each other; they have no interiority, they have only external relations with one another. [*Pause*]

But then, I always come back to my question: fine, but if they only show relations of exteriority, what makes it possible to distinguish an infinite set from another? Once again, all individuals, each individual -- I can say each individual since the individual is not the very simple body -- each individual in distributed manner has an infinite set of infinitely minute parts. Fine, these parts are actually given. But what distinguishes the set, my infinite set, the infinite set that returns to me and the infinite set that returns to my neighbor?

Hence -- and already we are then considering the second layer of individuality -- that amounts to asking: based on what aspect does an infinite set of very simple bodies belong to one individual or another? Based on what aspect? Obviously, I have an infinite set of infinitely minute parts there. But based on what aspect does this infinite set belong to me? Notice that I just barely changed the question because when I ask, "based on what aspect does the infinite whole belong to me?", this is another way of asking: "what will allow me to distinguish a particular infinite set from another infinite set?" Once again, at first glance, in the infinite everything should merge; it should be dark night or white light. How is it that I can distinguish infinities from each other? So, based on what aspect is an infinite set said to belong to me or to someone else?

The answer, Spinoza's answer, seems to me to be [that] an infinite set of infinitely minute parts belongs to me and not to the other insofar as this infinite set realizes a certain relation (*rapport*).[2] It is always based on a relation that the parts belong to me, to the point that if the parts that compose me take on a different relation, at that point, they no longer belong to me. They belong to another individuality; they belong to another body.

Hence the question: what is this relation? According to what relation of infinitely minute elements can they be said to belong to something? And if I answer the question, here I truly have, I truly have the answer I was looking for. I mean, I will have shown how, under what condition, an infinite set can be said to belong to a finite individuality. According to what relation can infinitely minute things belong to a finite individuality?

Well, if I respect the letter of Spinoza's texts, Spinoza's response is that this occurs according to a certain relation of movement and rest. But we were already there: a relation of movement and rest, we know that this does not at all mean -- and so here, it would be wrong to read the text too quickly -- that does not at mean a sum, as with Descartes. We've already seen that. The relation of movement and rest cannot be the Cartesian formula mv, mass-speed. Otherwise it wouldn't constitute a "relation." So, what defines the individual is a relation of movement of and rest because it is based on this relation that an infinity of infinitely minute parts belong to the individual. As a result, what is this relation of movement and rest that Spinoza invokes so much?

And here, I reintroduce a confrontation with Gueroult's commentary.[3] Gueroult offers an extremely interesting hypothesis. But there too, I don't understand why, I don't understand why he creates this hypothesis, but it's very interesting. He says, in the end, the relation of movement and rest is a vibration. It must be said that this is an answer that at once seems very odd to me because obviously the answer must be very precise. It's a vibration. What does this mean? That would mean, what defines the individual, at the level of his second layer, namely the relation based on which the parts belong to him, that infinitely minute parts belong to him, is a way of vibrating. Each individual – hey, that would be good; we can say that here, it's becoming concrete -- what would define you, me, is that we would have a manner of vibrating. Why not? Why not? What does that mean? Either it's a metaphor, or it means something. What is a vibration? What does a vibration refer to in physics? It refers to the simplest, to the well-known phenomenon of pendulums.

Here, it seems, Gueroult's hypothesis takes on a rather interesting meaning because, in the 17th century, physics greatly advanced the study of rotating bodies and pendulums, and in particular, founded a distinction between simple pendulums and the compound pendulums. So fine, at that point, you see that Gueroult's hypothesis would become this: each simple body is a simple pendulum, and the individual who has an infinity of simple bodies, it is a compound pendulum. We would all be compound pendulums -- that's fine -- or spinning discs. It's an interesting conception from each of us. What does that mean?

Well, indeed, how is a simple pendulum defined? It is defined -- if you vaguely remember memories of physics, but of very simple physics -- it is defined in a certain way by a time, a vibration time, an oscillation time. There is the famous formula, for those who remember it, there is the formula small t = pi root of l over g; little t is the duration of the oscillation; l, this is the length of the wire on which the pendulum is suspended; g, this is what in the 17th century is called the intensity of gravity; no matter. Fine.

And what is important is that in the formula, you see that a pendulum, a simple pendulum, has an oscillation time which is independent of the amplitude of the oscillation, that is, the distance between the point of equilibrium and the point where you move the rod from the pendulum. So, completely independent of the amplitude of the oscillation, independent of the mass of the pendulum, this responds well to the situation of an infinitely minute body, and independent of the weight of the wire. Weight of the wire, mass of the pendulum will only come into play from the point of view of the compound pendulum.

So, it seems that in a thousand respects, Gueroult's hypothesis works. So fine, it should be said that we have an answer. That's fine, a very good answer. Individuals for Spinoza would be kinds of compound pendulums, that is, each composed of an infinity of simple pendulums. And what would define an individual is a vibration. Good. So, at the same time -- I am saying with great freedom, loosely; I am developing this for those who would be technically interested in Spinoza; the others, you can retain what you want – at the same time, this is odd because this hypothesis attracts me, yet I don't know why, I don't see why, there is one thing that bothers me. It is true that the whole history of pendulums and rotating discs in the 17th century is very advanced. But precisely, if that's what Spinoza had meant, why wouldn't he make any reference to these problems of vibrations, even in his letters? And above all, above all, the pendulum model does not at all account in the end for what seems to me the essential matter, namely this presence of the actual infinite and infinitely minute terms.

You see, Gueroult's answer, as he is commenting on Spinoza, is [that] the relation of movement and rest must be understood as the vibration of the simple pendulum. There we are. I'm not at all saying that I'm right, truly I'm not. I'm saying: if it is true that very simple bodies, that's why Gueroult needs, to affirm, that very simple bodies nevertheless have in Spinoza a shape and a magnitude. Suppose on the contrary -- and I am not saying, I am not at all saying with this that I am right -- suppose that very simple bodies are really infinitely minute, that is, that they have no neither shape nor magnitude. At this point, the simple pendulum model cannot work, and it cannot be a vibration, which defines the relation of movement and rest.

On the other hand, we have another path. And then maybe you can find others, surely you can find others. The other path would be this – once again, I come back to my question --: between supposedly infinitely minute terms, what types of relations can there be? The answer is very simple: between infinitely minute terms, if we understand what infinitely minute meant in the 17th century, that is, which has no distributive existence, but which necessarily enters into an infinite collection, between infinitely minute terms, there can only be one type of relation, differential relations. Why? Infinitely minute terms are vanishing terms, that is, the only relations that infinitely minute terms can have with each other are relations that endure when the terms are vanish.

A very simple question: what are relations like those that exist when their terms vanish? Let's do very, very simple math here. If I stay with the 17th century, I see a certain state of mathematics and what I am saying is very rudimentary. I see that what is well known in the 17th century is three types of relations: I would say, there are fractional relations, which have been known for a very long time; there are algebraic relations which are known, finally, which were anticipated well before, it goes without saying, but which received a very firm status in the 16th and 17th centuries, in the 17th [century] with Descartes, that is, in the first half of the 17th century, algebraic relations; and finally differential relations which, at the time of Spinoza and Leibniz, are the great question of mathematics of this era.

I'll give some examples here; I really would like this to be clear for you. This is not even mathematics that I am doing here, not at all: an example of a fractional relation: two thirds; [*Pause*] an example of an algebraic relation: ax + by =, from which you can derive x over y =, x over y =; an example of a differential relation, we've seen this: dy over dx = say, z.[4] Good. What is the difference between these three types of relations?

I would say the fractional relation is already very interesting because, otherwise, we could proceed as if up a ladder. The fractional relation is irreducibly a relation. Why? If I say two thirds, two thirds once again is not a number. Why is two thirds not a number? That's because there is no assignable number which, multiplied by three, yields two, so it is not a number. A fraction is not a number; it is a complex of numbers that I decide by convention to treat as a number, that is, that I decide by convention to submit to the rules of addition, subtraction, multiplication, but a fraction is obviously not a number. Once I find the fractions, I can treat them like numbers -- no, wait, no, I speaking nonsense -- once I find the fraction, I can treat numbers like fractions, that is, once I have the fractional symbolism, I can treat a number, for example two, like a fraction, I can still write: 4 over 2; it's true, 4 over 2 = 2. [*Interruption of the recording*] [31:13]

Part 2

[But fractions, in their irreducibility to whole numbers, are not numbers; they are whole number complexes. These are whole number complexes. Fine.

So, already, the fraction brings out a kind of independence of the relation compared to its terms. In this very important question of a logic of relations, the whole point of][5] departure of a logic of relations is obviously: in what sense is there a consistency of the relation regardless of its terms?

The fractional number would already give me a kind of first approximation, but that does not prevent that in the fractional report, the terms must be still specified. The terms must be specified, that is, that you can still write, for example, 2 over 3, but the ratio is between two terms: 2 and 3. It is irreducible to these terms since it's not a number but a complex of numbers; but the terms must be specified, the terms must be given. In a fraction, the relation is independent of its terms, yes! But the terms must be given. [*Pause*]

Let's take another step. When I consider an algebraic relation of type x / y, this time I have no terms given, I have two variables. I have variables. You can see that everything happens as if the relation had acquired a higher degree of independence from its terms. I no longer need to assign a determined value. In a fractional relation, I cannot escape this: I must assign a determined value to the terms of the relation. In an algebraic relation, I no longer even need to assign a determined value to the terms of the relation. The terms of the relation are variables. But that does not prevent my variables from still having a determinable value. In other words, x and y can have all kinds of singular values, but they must have one.

You see, in the fractional relation, I can only have one singular value or equivalent singular values. In an algebraic relation, I no longer need a singular value; that does not prevent my terms from continuing to have a -- how would I say it --, specifiable value, and the relation is quite independent of any particular value of the variable, but it is not independent of a determinable value of the variable.

What is very new with the differential relation is that we are taking it as a third step. When I say dy / dx, you remember what we saw: dy with respect to y equals zero; it's an infinitely minute amount. Dx with respect to x equals zero; so, I can write, and they write constantly in the 17th century, in this form: dy / dx = 0 / 0. Now, the ratio 0 over 0 is not equal to 0. In other words, when the terms vanish, the relation remains. This time, the terms between which the relation is established are neither determined nor even determinable. Only the relation between its terms is determined.

This is where logic will take a leap, but a fundamental leap. A domain is discovered, under this form of differential calculus, a domain is discovered in which relations no longer depend on their terms: the terms are reduced to vanishing terms, to vanishing quantities, and the relation between these vanishing quantities is not equal to 0, to the point that I would write -- here, I am summing up everything --: dy / dx = z. What does "= z" mean? That means, of course, that the differential relation dy / dx that occurs between vanishing quantities of y and vanishing quantities of x tells us absolutely nothing about x and y, but tells us something about z. For example, applied to the circle, the differential relation dy / dx tells us something about a tangent called "trigonometric tangent".

So, I can write, keeping things simple -- there is no need to understand anything -- dy / dx = z. What does that mean? You see that the relation, as it exists when its terms vanish, will refer to a third term, z. This is very interesting; anyway, it should be very interesting: it's starting from here that a logic of relations is possible. What does that mean? What will we say? What will we say about z? That it's the limit of the differential relation. In other words, the differential relation tends toward a limit. When the terms of the relation vanish, x and y, yes, when the terms of the

relation vanish, and become dy and dx, when the terms of the relation vanish, the relation subsists because it tends toward a limit : z. [*Pause*] When the relation is established between infinitely minute terms, it does not cancel itself at the same time as its terms; it tends towards a limit. This is the basis of differential calculus as it was understood or interpreted in the 17th century. Henceforth, you understand, of course, why this interpretation of differential calculus becomes unified with the understanding of an actual infinite, that is, with the idea of infinitely minute quantities of vanishing terms.

Henceforth, my answer to the question: what is it, exactly, that Spinoza is talking about when he talks about relations of movement and rest, proportions of movement and rest, and says: infinitely minute things, an infinite collection of infinitely minute things belongs to a particular individual under a particular relation of movement and rest; what is this relation? I could not say, like Gueroult, that this is a vibration which assimilates the individual to a pendulum; it's a differential relation. It is a differential relation as it's revealed in infinite sets, in infinite sets of infinitely minute things.

And in fact, if you consider Spinoza's letter that I've used a lot about blood and the two components of the blood, chyle and lymph, that amounts to telling us what?[6] It comes down to telling us that there are corpuscles of chyle, or moreover, chyle is an infinite set of very simple bodies. Another infinite set of very simple bodies is lymph. What distinguishes the two infinite sets? This is the differential relation. This time, you have a dy / dx which is: the infinitely minute parts of chyle on the infinitely minute parts of lymph, and this differential relation tends towards a limit, namely, blood, namely, chyle and lymph compose the blood.

Good; if that was it, we could ask why the infinite sets are distinguished. It's because the infinite sets of very simple bodies do not exist independently of the differential relations which they realize. So, it's through abstraction that I started by talking about them. But they necessarily exist, they exist, necessarily, in one a variable relation or another. They cannot exist independently of a relation, since the very notion of infinitely minute terms or vanishing quantities cannot be defined independently of a differential relation. Once again, dx has no meaning, with respect to x, and dy has no meaning with respect to y; only the relation dx / dy has meaning. In other words, the infinitely minute do not exist independently of the differential relation.

Fine. Henceforth, what allows me to distinguish an infinite set from another infinite set? I would say that infinite sets have different powers (*puissances*), and what appears to be evident, it seems to me, in this thought of the actual infinite, is the idea of the power of a set. So, I don't at all mean... Understand me, I don't mean at all, it would be abominable to want make me say that they anticipated things that very closely relate to set theory in early 20th century mathematics; I don't mean that at all.

I mean that in their conception -- which is absolutely opposed to modern mathematics, which is completely different, which has nothing to do with modern mathematics -- in their conception of the infinitely minute and of differential calculus interpreted within the perspective from the infinitely minute, they necessarily identify -- and this is not limited to Leibniz, it's also true of Spinoza, it's also true of Malebranche -- all of these philosophers of the second half of the 17th

century identify the idea of infinite sets which are distinguished, not by their numbers -- an infinite set by definition cannot be distinguished from another infinite set by the number of its parts, since any infinite set exceeds any assignable number of parts -- so, from the point of view of the number of parts, there cannot be one which has a greater number of parts than another. All these sets are not infinite.

So, under what aspect are they distinguished? Why can I say one particular infinite set and not this other one? I can say it; it's very simple: because infinite sets are defined as infinite in one differential relation or another. In other words, differential relations can be considered as the power of an infinite set. Henceforth, an infinite set can be at a higher power than another infinite set. It is not that there will be more parts, obviously not, [*Pause*] but it is that the differential relation under which infinity, the infinite set of parts belongs to it, will be of a higher power than the relation in which an infinite set belongs to another individual.

So, it seems to me that it's from the very point of view of a theory of infinity that this idea of the distinct power of infinite powers is fundamental. There is more: any idea of an actual infinite would make no sense if we removed that. This is why, with the reservations I said earlier, in my own view, the answer that I would give to "what is this relation of movement and rest that Spinoza invokes as a characteristic of the individual?", that is, as a definition of the second layer of the individual, I would say, no, it is not exactly a manner of vibrating -- although perhaps we could conjoin the two points of view, I don't know -- but, it's a differential relation, and it's the differential relation that defines the power (*puissance*).

Henceforth, you understand the situation, if ... You remember that the infinitely minute things constantly receive influences from outside; they spend their time being in relation with the other collections of infinitely minute things. Suppose that a collection of infinitely minute things is determined to take on another relation or is determined from the outside to take on another relation than the one in which it belongs. What does this mean? It means: I'm dying. It means: I'm dying. In fact, the infinite set which belonged to me in a particular relation which characterizes me, in my characteristic relation, this infinite set will take on another relation under external causes, under the influence of external causes. Return again to the example of poison that decomposes blood:[7] under the action of arsenic, the infinitely minute particles that compose my blood, that compose my blood in this way, are going to be determined to enter into another relation. Henceforth, this infinite set will enter into the composition of another body; it will no longer be mine: I die. You understand? Good.

So, if all that was true, if it was true? We are still missing something because where does this relation come from, this relation? So, I'm saying... You see I've made progress, but I need my three layers. There's no way to proceed otherwise. I need my three layers because I start by saying: I am composed of an infinity of vanishing and infinitely minute parts. Fine. But careful, these parts belong to me; they compose me in a certain relation that characterizes me. But, this relation which characterizes me, this differential relation or even more, this summation, not an addition, but this kind of integration of differential relations, since in fact, there is an infinity of differential relations that compose me: my blood, my bones, my flesh, etc., all of that refers to all kinds of systems of differential relations. These differential relations that compose me, that is, that create the infinite collections that compose me, effectively belong to me and not to another,

for as long as it lasts, since it always risks not lasting. If my parts are determined to enter into other relations, they desert my relation. Ah, they desert my relation. Once again: I die! But this will involve a lot of things. What does it mean to die? At that point, it means that I no longer have any parts. It's annoying, no more parts. Fine.

But this relation that characterizes me and that results in the parts, which realize the relation, belonging to me as soon as they realize the relation. As long as they realize the differential relation, they belong to me. Is this differential relationship the final word of the individual? Obviously not, it must be accounted for in its turn. What is it going to express, what does it depend on? What makes that... It doesn't have its own reason, this differential relationship. What will explain that I am characterized by this relation or that set of relations?

The final layer of the individual, Spinoza's answer: it is that the characteristic relations which constitute me, that is, which result in the infinite sets verifying these relations, realizing these relations which belong to me, the characteristic relations express something. They express something which is my singular essence. There, Spinoza says it very firmly: the relations of movement and rest only express a singular essence. That means that none of us have the same relations, of course, but it is not the relation that has the final word. What is it that does?

So there, can we not come back to something from Gueroult's hypothesis? Last question: there is therefore a final layer of the individual, namely, the individual is a singular essence. You see henceforth what formulation I can give of the individual: each individual is a singular essence, this singular essence being expressed in characteristic relations of differential relations types, and under these differential relations, infinite collections of infinitely minute things belong to the individual.

Hence a final question: what is this singular essence? I mean, will we not be able to find, at this level -- such that we should just say that Gueroult, at the very least, got the level wrong -- at this level something equivalent to the idea of vibration? What is a singular essence? Careful, for you to understand the question, you almost have to agree to force the conditions of such a question. I am no longer within the realm of existence. What is existence? What does it mean for me to exist? We will see that it is quite complicated for Spinoza, because he gives a very rigorous determination of what he calls existence.

But if we start with the simplest, I would say: to exist is to have an infinity of extensive parts, of extrinsic parts, to have an infinity of infinitely minute extrinsic parts, which belong to me according to a certain relation. As long as I have, in fact, extensive parts which belong to me according to a certain relation, infinitely minute parts which belong to me, I can say: I exist. [*Pause*]

When I die -- once again, you have to situate the Spinozist concepts well -- when I die, what happens? Dying means that, exactly this, it means: the parts that belong to me cease to belong to me. Why? We have seen that they only belong to me insofar as they realize a relation, a relation that characterizes me. I die when the parts which belong to me or which belonged to me are determined to return under another relation which characterizes another body: I would feed the worms! "I would feed the worms", that means: the parts which compose me enter in another

relation: I am eaten by worms. My own corpuscles, which pass into the worms' relation, well, it can happen. Or else the corpuscles which compose me, precisely, they realize another relation conforming to the arsenic relation: I got poisoned! Ah? Fine.

Notice that in one way, this is very serious for Spinoza, but it is not very serious for Spinoza. Because, in the end, I can say that death concerns what? We can say in advance, before knowing what it is that he calls an essence: death essentially concerns a fundamental dimension of the individual, but only one dimension, namely the belonging of my parts to an essence. But it does not concern the relationship under which the parts belong to me, nor the essence. Why? You have seen that the characteristic relation, the differential relation, or the differential relations that characterize me, are independent in themselves. They are independent of the terms since the terms are infinitely minute, and the relation, on the contrary, has a finite value: dy / dx = z.

Okay, so, it's indeed true that my relation or my relations stop being realized when I die; there are no more parts that realize. Why? Because the parts have started realizing other relations. Fine. But, first, there is an eternal truth of the relation; in other words, there is consistency in the relation even when it is not realized by actual parts. There is an actuality of the relation, even when it ceases being realized. What disappears with death is the relation's realization, not the relation itself.

You will ask me: what is a non-realized relation? I am calling for this logic of the relation as it seems to me to be born in the seventeenth century, namely, it effectively showed the conditions in which a relation had a consistency whereas its terms were vanishing. There is a truth of the relation regardless of the reality of the terms that realize the relation, and on the other hand, there is a reality of essence that is expressed in this relation; there is a reality of essence regardless of knowing whether any actually given parts realize the relation in conformity with essence.

In other words, both the relation and essence will be said to be "eternal", or at least to have a kind of eternity -- but we will see, maybe we will see -- "kind of eternity" does not at all mean a metaphorical eternity. It's a very specific type of eternity, namely: a kind of eternity in Spinoza has always meant what is eternal by virtue of its cause and not by virtue of itself.

So singular essence and the characteristic relations in which this essence is expressed are eternal, whereas what is transitory and what defines my existence, is only the time during which infinitely minute extensive parts belong to me, that is, realize the relation. But, then, here we are, it must be said that my essence exists when I either do not exist yet or when I no longer exist. In other words, there is an existence of essence which is not to be confused with the existence of the individual whose essence is essence. There is an existence of the singular essence which is not to be confused with the existence of the individual whose essence is essence. [*Pause*]

This is very important because you see where Spinoza is going, and his whole system is based, above all, on this: it's a system in which everything that exists, is real. I mean, never, never has such a negation of the category of possibility been carried so far. Essences are not possible things (*des possibles*). There is nothing possible; everything that exists, is real. In other words, essences do not define possibilities of existence; essences are themselves existences.

There, he goes much further than the others in the 17th century because I think of Leibniz. For Leibniz, you have an idea according to which essences are logical possibilities. For example, there is an essence of Adam, there is an essence of Peter, there is an essence of Paul, and these are possible things (*des possibles*). As long as Peter, Paul, etc., do not exist, you can only define essence as a possible, only as something possible. Simply, Leibniz will be forced, from then on, to account for this: how can the possible account for, integrate into itself the possibility of existing, as if the category of possible had to be encumbered with a kind of tendency toward existence?

And, in fact, Leibniz develops a very, very curious theory with a word which is common to Leibniz and to Spinoza, the word *conatus*, tendency, but which, precisely, will acquire two absolutely different meanings in Spinoza and in Leibniz. In Leibniz, singular essences are possibles, simply they are special possibles because they tend toward existence with all their strength. One must introduce a tendency toward existence into the logical category of possibility. Spinoza, it's your choice, I'm not saying it's better, it's your choice, it's really a hallmark of Spinoza's thinking. For him, it is the very notion of possible: he does not want to enrich the notion of possible by encumbering it with a tendency toward existence. What he wants is the radical destruction of the category of possible. The real is all there is.

In other words, essence is not a logical possibility; essence is a physical reality. It's a physical reality: what can it mean? In other words, the essence of Paul, once Paul is dead, well, it remains a physical reality. He is a real being. So, we would have to distinguish as two real beings the being of existence and the being of the essence of Paul. Moreover, one would have to distinguish as two existences Paul's existence and Paul's existence of essence. Paul's existence of essence is eternal while Paul's existence is transitory, mortal, etc. You see, at the point we've reached, if this is right, a very important theme from Spinoza, is: so, what is this physical reality of essence going to be?

Essences cannot be logical possibilities. If these were logical possibilities, they would be nothing. They must be physical realities. But beware, these physical realities are not to be confused with the physical reality of existence. What is the physical reality of essence? And Spinoza finds himself caught in a problem that seems very, very complicated, but so good there. I want this to be crystal clear; I don't know how to do it... What time is it? [*A student answers*: 11.35 am] 11.35; at noon, you signal me.

There we are, Spinoza tells us, imagine… Well, he gives us an example. He tells us -- I will say it later, when and where he tells us that -- he tells us, in a very lovely text he tells us: imagine a white wall, an entirely white wall. There's nothing on it. Then you arrive with a pencil, you draw a man, and then next to it, you draw another man. Now your two guys exist. They exist as what? As you drew them. Two shapes exist on the white wall. These two shapes, you can call them Peter and Paul. As long as nothing is traced on the white wall, is there something that is distinct from the white wall? Response from Spinoza, one that's very odd: No, strictly speaking, nothing exists! Nothing exists on the white wall as long as you haven't traced the shapes.

You will tell me that this isn't complicated, that. It's not complicated. It's a great example because I'll need it all next time. From now on, I just have to comment on this text by Spinoza. And where is this text? This text is found in Spinoza's early work, the work he did not write himself; these are auditor's notes, known as the *Short Treatise*, the *Short Treatise*.

You see why this example is important. The white wall is something equivalent to what Spinoza calls the attribute, the attribute, extension. The question amounts to saying: but what is there in extension? In the extension, there's extension; the white wall equals the white wall, extension equals extension! But you can say: bodies exist within extension. Yes, bodies exist within extension. Okay. What is the existence of bodies within extension? The existence of bodies within extension is when these bodies are effectively drawn. What does it mean, effectively drawn? We saw his answer, Spinoza's very strict answer: it's when an infinity of infinitely minute parts [is] determined to belong to the body. The body is drawn. There is a shape. What Spinoza will call mode of attribute is such a shape.

So, bodies are in extension exactly like the shapes drawn on the white wall, and I can distinguish a shape from another shape by saying precisely: particular parts belong to a particular shape. Be careful, with another particular part, there can be common areas, but what does this matter? It means that there will be a common relation between the two bodies; yes, that is possible, but I would distinguish the existent bodies. Other than that, can I distinguish something? It turns out that the text of the *Short Treatise*, from Spinoza's youth, seems to say: in the end, it is impossible to distinguish something outside of existent modes, outside of shapes. If you have not drawn a shape, you cannot distinguish something on the white wall. The white wall is uniformly white.

Pardon me for weighing this down; it's because, really, this is an essential moment in Spinoza's thought. And yet, already in the *Short Treatise*, he tells us: "The essences are singular," that is, there is an essence of Peter and of Paul which is not to be confused with existent Peter and existent Paul. And if the essences are singular, it is necessary to distinguish something on the white wall without shapes necessarily being drawn. Moreover, if I jump to his final work, the *Ethics*, I see that in book II, proposition 7, 8, etc., Spinoza raises this problem again. He says, very oddly: "modes exist in the attribute in two ways; they exist, on the one hand, insofar as they are understood or contained within the attribute and, on the other hand, insofar as they are said to endure." Two existences: lasting existence, immanent existence. There I consider the letter of the text. Modes exist in two ways, namely: existent modes exist insofar they are said to last, and the essences of modes exist insofar as they are contained within the attribute.

Fine. This gets complicated because essences of mode are -- once again, and here, it's confirmed by all the texts of the *Ethics* -- are singular essences, that is, that one is not to be confused with the essence of the other, one is not to be confused with the other, good, very good. But then, how are they distinguished from each other within the attribute? Spinoza says they are distinguished, and then he abandons us. Does he really abandon us? This is not possible! Something like that is unimaginable. He doesn't tell it to us, he doesn't tell it to us, okay. He gives us an example, he gives us a geometric example, precisely, which amounts to saying: does a shape have a certain mode of existence when it is not drawn? Does a shape exist in extension when it is not drawn in extension? The entire text seems to say: well yes, and the entire text seems to say: complete it yourself. And that's normal; maybe he gives us all the elements for an answer, to be completed

by ourselves. So, then, you have to! We don't have a choice! Or else you give up being a Spinozist. That's not bad either. Or else, you have to complete it yourself. How can we complete it ourselves? That's why I'm arguing as I've been saying since the start of the year, you complete it yourself, on the one hand, with your heart, and on the other hand, with what you know. Good.

The white wall, the white wall, why does he... Why is he talking about the white wall? What is this white wall story? And after all, examples in philosophy are a bit like winks. You will ask me: but then, what if we don't understand the wink? It's not serious, not serious at all! We miss a thousand things. We make do with what we have, we make do with what we know. White wall. But after all, I am trying to complete with my heart before completing with knowledge.

Let us appeal to our hearts. I have my white wall on one side and my drawings on the white wall on the other. I drew on the wall. And my question is this: can I distinguish things on the white wall apart from drawn shapes? Can I make distinctions that are not distinctions between shapes? There, it's like a practical exercise; there is no need to know anything.

I am simply saying: you will indeed read Spinoza; if you get to this problem or an equivalent problem, you have to read it sufficiently and literally in order to tell yourself: well, yes, that's the problem he poses for us, and his own task -- that's why he doesn't go any further -- is to pose the problem so precisely that -- it's even a gift that he gives us in a way from his infinite generosity – it's to pose the problem so well, it makes us pose it so precisely that we say to ourselves, obviously the answer is this, and we will have the impression of having found the answer. Only great writers give you that impression, you know. They stop just when it's all over; but no, there is a tiny bit that they did not say. We are forced to find it and we say to ourselves: I am so good, I am so strong, I found it! [*Laughter*] Because at the moment when I just asked the question like this, "can anything be distinguished on the white wall, independently of the drawn shapes?", obviously I have the answer already. And that we all answer in chorus, what do we all answer in chorus? We answer, well, yes, there is another mode of distinction. There is another mode of distinction, which is what? It's that white has degrees, white has degrees, and I can vary the degrees of white. And a degree of white is distinguished from another degree of white in a very different way than a shape on the white wall is distinguished from another shape on the white wall.

In other words, white has, one would say in Latin -- we are using all languages to try to understand better, even languages that we do not know! [*Laughter*] -- white has distinctions of *gradus*, there are degrees, and degrees are not to be confused with shapes. You will say: such a degree of white, in the sense of such a degree of light. A degree of light, a degree of white, is not a shape. And yet, two degrees are distinguished, two degrees are not distinguished as two shapes in space. I would say of shapes that they are distinguished extrinsically, given their common parts. I would say of degrees that it's an entirely different kind of distinction, that there's an intrinsic distinction. What is that? Suddenly, then… [*Interruption of the recording*] [1:18:03]

[I don't even need it anymore. It's a coincidence. Everyone operates with what they know. I say to myself: ha, it's not so surprising that Spinoza, what is it, the wink from the point of view of knowledge?

We started with our course saying: yes, it can only be that. There is a distinction of degrees which is not to be confused with the distinction of shapes. Light has degrees],[8]

Part 3

… and the distinction of degrees of light is not to be confused with the distinction of shapes in light. You will tell me that all this is childish; but it's not childish when you try to make philosophical concepts of it. Yes, it's childish, and it isn't. It's good. So, what is this story, there are intrinsic distinctions?

Okay, let's try to move forward, from a terminological point of view. We must organize our terminology. My white wall, the white of the white wall, I will call it: quality. [*Pause*] The determination of shapes on the white wall, I will call it: magnitude or -- no, yes -- or length. I will say why I am using this seemingly bizarre word "length", magnitude or length or extensive quantity. Extensive quantity is, in fact, the quantity that is composed of parts. You remember the existent mode. Existent me is precisely defined by the infinity of parts that belong to me.

What is there other than quality, white, and extensive quantity, magnitude or length? There are degrees. What are degrees? They're generally what's called "intensive" quantities, but which, in fact, are as different from quality as from intensive quantity. These are degrees or intensities. [*Pause*]

And there is a philosopher of the Middle Ages who was quite brilliant – as I was saying, here's where I call on just a little bit of knowledge -- his name was Duns Scotus; as I was saying, he uses the white wall – it's the same example. Did Spinoza read Duns Scotus? [It's] of no interest because I'm not at all sure that it was Duns Scotus who invented this example. It's an example that recurs throughout the Middle Ages, in a whole group of theories during the Middle Ages. The white wall, yeah, he said: quality, white, has an infinity of intrinsic modes. He wrote in Latin: *modus intrinsecus*. And Duns Scotus innovates, invents a theory of intrinsic modes. A quality has an infinity of intrinsic modes. *Modus intrinsecus*, what is this?

And he said: white has an infinity of intrinsic modes; these are intensities of white. Understand: white equals light in the example, an infinity of luminous intensities. He added this, and notice that he was taking responsibility, because here it becomes new. You will say to me: "to say there is an intensity, there is an infinity of intensities of light, well, there is nothing." But what does he get out of it, and why does he say that? What accounts is he settling, and with whom? This becomes important. Understand that the example is typical because when he says white or quality, it also means shape. In other words, we are in the middle of a discussion of Aristotle's philosophy, and he tells us: a shape has intrinsic modes.

Ha! If he means: a shape has intrinsic modes, immediately, this is not obvious. Why? Because it goes without saying that all kinds of authors, all kinds of theologians, considered that a shape was invariable in itself, and that only existent ones varied in which the shape was realized. Here Duns Scotus tells us, where the others distinguished two terms, three must be distinguished.

Where shape gets realized are extrinsic modes. So, you have to distinguish shape, extrinsic modes, but there is something else. A shape also has a kind of, as they say at that time in the Middle Ages, has a kind of latitude – it's not invariable -- a latitude of the shape, it has degrees, intrinsic degrees of shape. Good. These are the intensities, therefore, intensive quantities. What sets them apart? -- What time is it? … Noon? [*A student answers*: No, no, you have four minutes] Four minutes? So, I just have time to ... –

What sets them apart? How does one degree differ from another degree? Here, I am insisting on this because the theory of intensive quantities is like the concept of differential calculus I am talking about; it was decisive throughout the Middle Ages. Moreover, it is linked to problems of theology; there is a whole theory of intensities on the theological level. If there is a unity of physics, metaphysics and theology in the Middle Ages, it is very centered, a whole problem -- understand, that makes theology in the Middle Ages much more interesting -- a whole problem, like the trinity, namely, three people as a one and same substance, which encumbers the mystery of the trinity. We always say: that's how they fought; these are theological questions. It wasn't that way at all. These are not theological questions. They involve everything because at the same time as they are creating a physics of intensities, in the Middle Ages, they are developing an elucidation of theological mysteries, the holy trinity, and they are creating a metaphysics of shapes. All this goes far beyond the specificity of theology.

In what form are three entities distinguished in the Holy Trinity?[9] It is obvious that here there's a sort of problem of individuation which is very, very important. The three entities must be, in a way, not at all different substances; they have to be intrinsic modes. So how will they be distinguished? Aren't we thrust into a kind of theology of the intensity? When [Pierre] Klossowski, today, in his literature discovers a kind of very, very strange link between theological themes -- which makes us wonder where all this comes from -- and a very Nietzschean conception of intensities, I think we have to see, given that Klossowski is an extremely informed and erudite man, you have to see what connection he makes between these problems of the Middle Ages and current questions or Nietzschean questions. It's obvious that in the Middle Ages, the whole theory of intensities was simultaneously about physics, theology and metaphysics. In what form? Here again, there are distinctions of degrees which are intrinsic distinctions, internal to quality. [*Pause*] Do you understand?

So, what distinguishes intensive quantity and shape or extensive quantity? It's that an extensive quantity is composed of parts; it's composed of homogeneous parts. It responds fairly well to the formulation of the actual infinite, the first layer of individuality: to have an infinity, to have an infinite set, extensive parts. Whereas an intensity, what defines it? At that point, notice that for an extensive quantity -- here we already have an important point -- you can only think of it, in what form? You can only think of it, in extension, as according to a kind of duration. You can only think of an extensive quantity within space according to a kind of duration.

What does that mean? It means that extensive quantity is the result of a synthesis, and this synthesis is a synthesis of time. In fact, when I say a line, I locate according to duration a synthesis of the parts of the segments within which I constitute the line, if only within

perception. I look at the length of the table; I begin at one end, I move forward, and there is a moment when I stop. Extensive quantity is constituted by a synthesis of parts within time, of homogeneous parts within time. And it's because of and by virtue of this synthesis of time, of this synthesis within time that I can measure the extensive magnitude -- What? It's noon? - and say that it's so many meters long. [*Laughter*]

Whereas what is an intensive quantity? What can you say about an intensive quantity? You can say something about an intensive quantity and, there, it becomes very fascinating. It's not that it's missing something; we tend to interpret it as if it's missing something. Well, that's not at all right! Nothing is missing. You can say one intensive amount is greater than another, but you cannot say how much, you cannot say how much. You can say of heat that it's greater than another heat; you can say of heat that it's greater than something lukewarm, but by how much, you can't do so. Well of course, you can, with a special instrument which, in fact, is quite complex, a thermometer. As has been said a thousand times, a thermometer is for measuring an extensive quantity. And you can only say how much one heat element is greater than another if you have a system of extensive quantities corresponding to the intensive quantities. Otherwise, if you stick to intensive quantities, as Diderot said cleverly, by adding two segments, you make a line, but by adding two snowballs, you don't make any heat.

So, fine, in other words, these are non-additive magnitudes. What does non-additive magnitudes mean? It means that these are not composed of homogeneous parts. However, they are multiple. A heat is a multiplicity. Okay, it's a multiplicity. What type of multiplicity? It is a non-extensive multiplicity. What does that mean, a non-extensive multiplicity? That is, it's a multiplicity whose multiplicity is understood within the moment. It's within the moment that you grasp heat as heat. It's weird! [It's] a multiplicity about which you grasp the multiplicity within the moment. In other words, it's not a synthesis of time; it's a synthesis of the instant, it's a synthesis of the instant. Ah, this is a summary of the instant; what does that mean? That means intensive quantities are lengths, but they are not magnitudes, or if you prefer, they are quantities, but they are not lengths -- whatever the terminology may be.

At the beginning of the 20th century, the great logician of relations, as if by chance, [Bertrand] Russell, in a book which will remain a definitive book called *The Principles of Mathematics*, will create a whole theory to distinguish what he calls distances and lengths. Lengths are the status of extensive quantities, and distances are among other things, and not only, the status of intensive quantities. Distance is defined by what? By precisely its proximity or its distance from zero within the instant. See, this is no longer the synthesis of successions over time. It's a synthesis of instantaneity. For the moment, a synthesis is necessary, precisely, which is an intensive synthesis. Within the instant, you grasp heat as hot or heat as hotter than some other heat. Some heat can be hotter than another heat. You say, ah, that's even hotter, that's really hot. It is not that the lesser heat is part of a greater heat. You have two distances of which you can say one is larger than the other, but you cannot say by how much. Are you missing something? No, you are missing nothing, however. It will also be said, terminologically, that these are ordered magnitudes, but not measured. They are orderable magnitudes in the form of more and less, and not measurable, in measurable form, meaning constituted by extensive parts.

Well, what is a singular essence? So, can we not derive something from Gueroult's idea about vibration? What is a singular essence? A singular essence, in our answer in Spinoza, would be a degree, it would be a degree. It would be a degree of the attribute. The attribute is quality. Singular essence would be such a degree. So, there would be intensities. As the attribute is extension, there would be intensities of extension. What would that be? Degrees are powers (*puissances*). Extension under this particular power, extension under that other particular power, there would be a distinction of degrees, of intrinsic modes, distinctions internal to the attribute which is not reduced and which must be fully distinguished from the other distinction, the distinction between modes of existence.

So, the essence of Peter and the essence of Paul would be distinguished as two degrees, as two intensive quantities, as two powers (*puissances*), while the existence of Peter and the existence of Paul are distinguished, on the contrary, in an entirely different way, in the form of the extrinsic distinction between the parts which belong to one in a particular relation and the parts which belong to the other in a particular relation. Henceforth, everything becomes luminous because intensive quantities, indivisible distances, distances about which I can say one is greater, but I cannot say by how much, I can say one is more powerful than the other. These are relations of power. [*Pause*]

These intensive quantities are expressed, which are defined only by their distance from zero, you see? Instead of being in connection with extensive parts which form a synthesis of time, they are in instantaneous relation with the zero degree according to which one says this distance is greater than that other. And each is in relation with zero. It is in relation to acts. And its multiplicity is its indivisible relation at zero. If it were so, if there are distances in this way, I can say each essence is a distance, that is, a power (*puissance*). And henceforth, it is completely normal that if the essences are intensive quantities, they are expressed in differential relations, since the intensive quantity is inseparable from a definition in relation to zero, and that the differential relation is precisely that. Everything becomes luminous, eh? -- I'm going to the main office. You think about all that; I would like you to read a little, that you take a look, think a bit, and then I'll return. [97: 40] [*Course interruption*]

Richard Pinhas: [*Partially recorded*]: ... and the pole or the eternal side of essence.

Deleuze: Yes, that's right, I haven't spoken about it yet. Yes, yes, that's the question of eternity. In what sense are we eternal? Yes, that, I would have to discuss it. Yes ... Ah, that's right, that -- All of a sudden, this point is fatiguing me! Eternity... Well, I'll discuss it.[10]

Okay, are there any comments? I'm sure there are some. I am certain. Yes?... Speak loudly! [*Inaudible comments; the students near Deleuze say*: We can't hear you!] … Or if you stand up, it's better because… If it bothers you, we will ... I would translate if I managed to hear, because in here, I don't know if you noticed, but the acoustics of this room are deplorable. They did it on purpose! [*Laughter*] Go ahead, yes [*Deleuze groans*: Ah, the door ... the door ...] …

A student: [*Inaudible*]

Deleuze: ... like a pulse, yes, ... absolutely, yes, compared to ...? Yes, it's true. Yes, Yes…

The student: [*Inaudible*]

Deleuze: Yes, that is, what he is saying, in fact, which may be of interest to those interested in all these problems, is that, on the state of equivalent questions, if you will, to what we talked about in Leibniz, in fact, the same Gueroult wrote a very, very precise book called *Dynamics and metaphysics in Leibniz* (1939), where you find a whole overview of these theories of force in the 17th century, in the second half of the 17th century.[11] Yes, absolutely, yes.

The student: [*Inaudible*] ...

Deleuze: ... like not being? As being reality ...

The student: [*Inaudible*]

Deleuze: Yes, but thermodynamics, that, I don't know if we can introduce anything at all. What interests me, I'll say it like that, is that, in everything I all the allusions I've made either to physics, or geometry, or mathematics, I'm interested strictly in the state of physics and mathematics in the second half of the 17th century. [It's] impossible to introduce notions of thermodynamics here, even if they might be useful, because these are paths of science that have no correspondences, it seems to me, in the 17th century. But, in any case, the comparison with Leibniz, at the level of and thanks to Gueroult's book, yes, that is essential. Yes.

But, what I would like to know is if, roughly speaking, since I have almost finished, is this Spinozist conception of individuality -- you understand, we are reaching ..., in fact, I would have finished with that on ..., -- well, taking into account this conception of individuality, what is the relationship of the individual with unique substance in Spinoza? That's what's left for us to see. But I would like this conception of individuality to be for you, in the end, for those who are interested in all that, to be very concrete, that is ... In other words, that you might live like that, ok! [*Pause*] Because you are, we are all minute intensive quantities, intrinsic modes, small signals (*clignotements*), ok! Yes, are there any comments on this? Are there any comments?

A student: In regards to, in regards to the state of thinking in the second half of the 17th century, I would like you to tell us something about the relationship between the state of thinking about generation and especially the requirement for the singularity of the essences. And I would like to put the problem in this context: the second half of the 17th century was the time when preformationist theories took off considerably in relation to biogenesis, compared to biogenetist theories. So, in these biogenetist theories, they imagined that man was constituted by attention of the parts and, in preformationism, that man preexisted. So, in this, there were several ways to present preformation, and one of these types of preformation was the theory of the nesting (*emboîtement*) which claimed, which was supported until quite late, particularly by Malebranche, which claimed that the man, that is, whether in the egg or in the sperm of man, all men, until the end of time, were present since Adam. Have I been clear?

Deleuze: Very clear! Yes, very clear! [*Laughter, including Deleuze who coughs laughing*]

The student: I want to state my question and be very frank, ok? [*Pause*]

Deleuze: Yes, and what are you seeking? [*Laughter*]

The student: I would like to see the relation between this vision which was part of the sensibilities of the era and the requirement for the singularity of essence that you mentioned.

Deleuze: Yeah, yeah, yeah! [*Pause*] I'm looking for a linkage (*joint*), ok! [*Laughter*] [*Pause*] I'll tell you very quickly, well, this. It seems to me, in what is called pre ..., pre ..., [*The student helps him complete the word*] preformationism, there is a certain idea, as he just said, there is a certain idea of nesting, namely, that the living being is nested in the seed, right? Nested in what sense? It is like being enveloped in the seed, so that the seed gets developed. In other words, the living being is already there, and creates for itself a mechanism which is, literally, a mechanism of development or explication, the enveloped parts being unfolded. No, that's true, first, in that this formulation, this genesis, if you will, is unified with development. Genesis or evolution of a living being is unified with the development of something that is enveloped in the seed.

This can be imagined, first, on the level of the adult organism and that of the seed. The adult organism is enveloped in the seed, and evolution consists in the enveloped parts being developed. This implies something like a kind of development through placing into exteriority, namely parts which are enveloped within one another, developing somewhat, you see, like Japanese papers there, like the small gardens that one plunges into water and which expand. They unfold, evolution like unfolding, and when you hold onto one, it is not a question of knowing whether it is true or false. Once again, this has no interest. It's a question of evaluating this concept of envelopment, the envelopment of the living being.

So, when you grasp such a concept, you must, obviously, you cannot maintain it at the level of the adult-seed organism. It must also be established at the species level. You can't stop it at the individual level. It must be valid at the level of the species. That is, the first is not only the fly's seed which contains all the parts of the fly that will develop from the seed, but it's the first fly which contains all flies. Ah? This is getting more interesting already. Here there is a vision of the evolution of the species such as the primitive fly which contains all the flies to come. So, all evolution is conceived under the mode of envelopment-development or, in logical term, implication-explication, because explication is to develop, and implication, it is to envelop.[12]

So, at first glance, it seems very simple as an idea; it sounds weird. In fact, as he just said, there are texts by Malebranche, very beautiful, very... even very comical, very powerful, on this first fly which contains an infinity of flies. If I am insisting on this, it's to what extent this is not a question of considering this theory in the light of current biology and of saying, "ah! well, no, this isn't right!" It's like in the textbooks, you see, they say, "back then, they believed in preformation. That's what preformation is." But, later, in the 18th century and then in the 19th century, a whole other concept was substituted for it: epigenesis. And epigenesis is, on the contrary, the idea that development operates by new formations, that development goes from an undifferentiated to differentiations, and that differentiations are not predetermined. Broadly speaking, this is the point of view of epigenesis, as opposed to the point of view of preformation.[13]

When we are limited to a kind of textbook that moves fast, we get the impression, really, that the people of the 17th century who believed in preformation were stupid. What is this story of the primitive fly that contains all the flies to come? What does that mean? To the point that this [view] is so stupid, the way it's presented to us, means that we have to trust them, that nonetheless, [preformation] had to mean something different for them. And maybe you might have the elements here. I wouldn't want and I haven't prepared this, it would require some very specific texts, so I'm sticking to some very simple things. But based on what we've said today, you might nonetheless possibly anticipate the seriousness, the true meaning of a preformationist point of view. Because it is obvious that it is inseparable from a conception of the actual infinite, here as well. When they say, when they speak about these infinities of flies that are contained in the original fly, it is obvious that this is understandable only based on an actual infinite applied to the living being.

Whereas obviously a theory like that of epigenesis cannot appear, if you will -- that's what interests me -- in science as well as in philosophy, one must not believe that a theory can appear at just any time. A theory can only appear, I would say almost as a general rule, a theory can only appear when there is already the symbolic system which makes it possible. If you ask me why differential calculus did not appear as such in Greek Antiquity, it is not because they lacked geniuses, obviously. It's not the lack of necessary brilliance. It was because mathematics did not have the symbolic systems that made possible the appearance and the exercise of differential calculus. And this is obvious for all sciences and for all discoveries in science that they only occur when they are possible, and it is not so difficult to determine within a discovery what makes it possible at such and such a moment. That doesn't mean it will emerge necessarily, but it's necessary for it to be possible. And I believe that if it's necessary, precisely, to call a symbolic system in the field of science or in the field of philosophy, it is this set of conditions of linguistic possibilities, these are forms of expression which make possible the statement, this or that type of statement.

So, it goes without saying that epigenesis, I would say, namely, the idea that the evolution of the living being is not an explication, is not a development, but occurs through stages not encompassed in the previous step, that is, occurs through differentiation and not through development. I mean, with epigenesis, it is, literally, a negation of the concept of development; we substitute the concept, if you will, of formation, of differentiation for the concept of development. And to substitute a concept of differentiation for a concept of development on the level of the organism, the actual infinite had to collapse. The actual infinite was a symbolic system in the 17th century which made necessary and imposed the theory of preformation.

As a result, asking yourself, "Is preformation true or is it false?" seems to me to be a problem that makes absolutely no sense. A theory is true or false depending on this or that symbolic system. So, the question resounds: Is the symbolic system of the actual infinite true or false? The question makes no sense. What makes sense is: what led to that system being abandoned? What led to abandoning ...? And what led to giving this up was never negative reasons. It's never for reasons, for reasons specific to the system that you abandon a system! It's always for positive reasons, that is, through pressure, precipitation exerted by the nascent system, by the other system. The question cannot be asked at the level of the facts. The evolution of the living being was comparable to development of something enveloped or to a differentiation. It is not at the

level of facts. It's obvious! It's at the level of the symbolic system, and there is a system for the living being, just as there are symbolic systems in mathematics, namely, if you think of the living being in a context of the actual infinite -- which was absolutely the case, for both natural history and theology which made common cause in the 17th century -- at that time, the evolution of the living being is of the development-explication type, and the notions of epigenesis and of differentiation are strictly meaningless.

In order for a concept equivalent to that of differentiation to come to light, we need not only the work of the 17th century, which will not succeed, we need very precisely the Romantic revolution, we need the Romantic revolution, namely, the emphasis on the synthesis of time and a synthesis of creative time. Then, a symbolic system in which time is creative, at that point, a concept like epigenesis, of ... the appearance of something new through differentiation becomes possible. You need a completely different conception, a new conception of time.

Conversely, when you think in terms of the actual infinite and you are in a preformationist point of view, that does not consist in simply telling us, there's a big primitive fly which contains all the flies to come, for a very reason simple, which is, as I just said, the enveloped parts are infinitely minute parts. For them, the seed is, if you will, the summation of the organic parts of an animal, but in the state of vanishing quantities. You find exactly the theme of the actual infinite and of the infinitely minute.

As a result, they don't at all mean, even when they express themselves like that -- it's a joke that they express themselves like that -- they don't mean there's a primitive fly, a big fly that contains all the flies to come. They even say exactly the opposite. They say: there is an infinitely minute fly. The infinitely minute fly is simply the set of differential relations between the vanishing parts. The infinitely minute parts of the fly and the real flies are just the realization of these relations, obviously. It is no longer at all a metaphor for resemblance. You can't say there is a fly that contains all the flies. This is a theory of the actual infinite applied to living matter.

So, there it becomes very, very interesting! To the point that ... there has never been a two-by-two opposition to a theory. The so-called phenomena of differentiation will realize this quite well. They would say, but animal differentiation is very simple: it means that a same relation, a biological relation can be realized in different sets while remaining the same; there will be a differentiation from that point onward. So when scientific theories – this is what strikes me -- when scientific theories seem completely out of date, they only seem out of date insofar as we do not take into account the symbolic systems to which they refer, and if you don't take the symbolic systems into account, in fact, they become completely childish.

Once again, preformationism, if I present it as they do in the textbooks of the history of biology, in the form of people who believed that the living adult was contained in the seed, well that does not make any sense, that doesn't say anything! This is not what they mean. They are saying something else entirely. They are saying, exactly, if you will, if you arrive, if you reach the last corpuscles, well, these corpuscles, which you treated as infinitely minute quantities, that is, infinitely minute organic parts, these corpuscles have relations, relations of the differential type, and the living beings that you see are only the realization of these relations. This is

preformationism. At that point, it is irrefutable. It is irrefutable according to the symbolic system that it has available. Good, there we are, good… Yes?

Georges Comtesse: I have a question related to Spinoza's text... because Spinoza does not simply speak of an actual infinite, of a set of actual infinity of minute elements with relations. He poses a very curious identity. He poses the question, precisely, of the relationship between physics and metaphysics because he poses the identity of the infinitely minute element with the part. And, to pose such an identity is necessarily to pass from the notion of the set of infinite elements, to pass from the circle of the set of actual infinite elements to another circle which is the part, totality, unity. So, in what, precisely, is an element different or identical to the part, to the totality, to a unity? Likewise, Spinoza speaks of a singular essence insofar as being power (*puissance*) and why essence precedes existence. Why does he admit that this essence as a singular power is in another identity with the real being? Can we say that the real being composes, or even if we admit these words of part, of unity, of totality, of being, is it not already in a metaphysical language which prevents, precisely, affirming that the pure real, the pure physical or the complete absence of ideal is possible?

Deleuze: I understand the question. So, I would answer, obviously, if you are asking it, it's because you have an answer for yourself. So, let's see if it's the same one we're talking about. I would say this: there is one thing that does not work for me in the way you ask your question because it seems to me that you are asking it as you are from the 19th century, and much more, from the 20th. For men like Descartes, Spinoza, Leibniz, and particularly, I would say for Spinoza, there are surely distinctions between sciences, metaphysics and much more, all kinds of fields: physics, biology, mathematics etc., there are distinctions. But once again, there is never a conflict. There are never any conflicts. These are like areas of being that relate to each other. The idea that there could be a conflict, for example, between science and metaphysics, all that, is an idea that seems to me to find, precisely, its intelligibility only in the undermining work of 18th century. And in the 17th, these are guys who are living, that's what I was trying to say, who are living in a balanced system. It's not even that they are mathematicians, metaphysicians, physicists at the same time, it's that ... Nor is it even that this is all the same thing. It's because this complements itself so much, by virtue, precisely, of their symbolic system.

So, if I take your terms in what sense I am trying to answer your question more directly, I would say unity, totality, part, everything for Spinoza, what is it that this ... [*Interruption of the recording*] [2:04:53]

Part 4

... I have a first field: part, part equals the simplest bodies, extrinsic elements, that is, elements which receive their determination from outside, elements without interiority. A part will be an element without interiority, which receives its movement from the outside. So, there we have a complete sense of "part".

"Totality", what does that mean, on this same level? Totality will mean any infinite set composed of its parts. And, once again, these parts only exist through an infinite set. The word "totality" will itself have a precise meaning.

Unity, well then, will be the unity of an infinite set which, according to a certain relation, contains, encompasses all its parts. So, I would have a first sense of all these notions.

Now I move on to the essences, no longer to the extensive parts that compose my existence, but to the singular essences, you, me, etc. beyond existence, the pure essences. I see that the totality, the part, unit, etc., will take on a different meaning. What different meaning? And here, I'm not inventing. I mean that I'm referring to two texts by Spinoza. He tells us: "the simplest bodies are the parts of a composed body". And he tells us, on the other hand, second text, "each essence is a part of divine power (*puissance*)". Well, this is obvious! Before I even understand why, I realize that in the two texts, the word "part" does not at all have the same meaning. When Spinoza tells us "the simplest bodies are the parts of composed bodies," [*Pause*] when he tells us that, "part" means extensive part determined from outside, determined from outside what? Determined from the outside to enter under one relation or another corresponding to a particular essence.

These are extensive parts, and we saw their status. When he tells us, each essence is part of the power -- I have no need and I'm not forcing the text in any way -- what is power (*puissance*)? It's not an extensive quantity; it's an intensive quantity. "Part" will mean "intensive part"; an intensive part, that is, part will mean, here, a degree, degree of power. And the sentence becomes intelligible: each singular essence is a degree of power. It couldn't be stated more simply. Each singular essence is a degree of power. But the simple bodies, which are parts of the composed bodies, are not, at all, degrees of the composed body, these are the ultimate parts, that is, the infinitely minute elements which compose, in extension, a composed body.

So, I would not say that there is a sense, for example, if I take the terms part-totality, I would not say that there is a physical or scientific sense of part-totality and a metaphysical sense of part-totality. I believe that, in fact, there is much more to be said here, placing concepts in series which are, each of which being irreducibly, physico-mathematical-metaphysical. Simply, there is the part in the sense of extensive part, and there is, at the same time, a physics, a mathematics and a metaphysics of extensive parts. And then, there is quite another meaning of the word "part", intensive part, which itself has a physics and a metaphysics of intensive parts. That is the direction in which I would answer your question, if I've answered it. And you?

Comtesse: [*Inaudible*]

Deleuze: But, there, there, you are becoming dramatic! [*Laughter*] Because it's not to me that you're opposed, it's to Spinoza. It's to Spinoza. It's Spinoza that you reject!... It's not my fault there!

Comtesse: [*Inaudible*]… So, there is in this sentence, there is this language there, again! There are necessarily intensities, there is a certain intensity of the real which must necessarily be [*inaudible word*]. You can find out which ones.

Deleuze: Yes, oh! I'm anticipating you. I'm anticipating you. Yes, but here, we indeed agree on this. You're telling me, this is why Spinoza doesn't suit me because, despite everything, he subordinates the whole field of intensities to a certain point of view of being and unity. And in this way, he loses intensities, I'm not sure which ones these are, but I'm sure he loses them. So, that, that is beyond me. I'm not serving as a representative for Spinoza! So...

Comtesse: For example, in ... There were two books by, two books at least, by someone, a French philosopher who posed the problem directly and, of course, in a very unexpected way in France, the relation, the relationships, the relation between terms and relationships, it's Jean Wahl, *Traité de métaphysique* [1957] and another book called *Vers la fin de l'ontologie* [1956]. Well, it seemed quite remarkable that in these two books, he sought through a whole analysis not only of Spinoza, but of the whole history of philosophy, to discover or affirm a reality that is, precisely, unburdened by all this language ...

Deleuze: I wouldn't say that!

Comtesse: … all this metaphysical language. He affirmed, each time, whatever the point where he was taking his thought or the limit of his thought, there was something that preceded and went beyond the terms, relations and parts, and that, precisely,

Deleuze: yeah! yeah ...! yeah ..!

Comtesse: … You cannot, finally, affirm here, which is a remainder or a real, a real singular power (*puissance*) which is still captive to metaphysics, be it only with this language. Necessarily ... [*Inaudible*]

Deleuze: But, there, at the same time, you are ...

Comtesse: So, the problem of the relations between the fragments, the elements and the parts.

Deleuze: To that, I would like to say two things: it's that, obviously, you are sticking a dagger in my heart because everything comes down to saying: well, well, okay, but, Spinoza is not the last word on everything! Here, I agree with that. But to the extent that I was undertaking, with everyone's full agreement, a course on Spinoza rather than on something else, I was not dealing with other things! So, if, at the end, you arrive and you tell me: "Yes, but, come on! Spinoza isn't as great as all that; there are some better ones", I wouldn't ask questions like that. I wouldn't wonder if there's anything better.

And on the other hand, that's why I am correcting, I'm still correcting something in relation to what you said. It is very true what you just said about Jean Wahl, but, precisely, if my wish is to have brought you something this semester, it is -- I am not sure I am right -- it is, first, to have straightened out a ready-made idea about the 17th century, because, including Wahl, thinking that a theory of relations independent of their terms is a rather belated achievement of philosophy, and in particular, he reproaches -- and I remember Wahl's texts being very, very formal -- all the philosophies of the 17th century for having remained at a so-called

"substantialist" point of view in which relations are understood starting from their terms. As a result, for Wahl, and we understand this better, henceforth a logic of relations, as Wahl wishes it, a logic which he borrows from the English and the Americans, a logic of relations can only be created based on the destruction of the 17th century type of ontology.

What I tried myself to show was that surely, he was right; that's his point of view; that's very good, but that it was a little more complicated than that. Because if there is a first stage of a theory of relations independent of their terms, it is indeed in this second half of the 17th century, and that oddly, ontology for them, far from preventing them from identifying this field of relations, on the contrary, this is a very powerful lever and focus for arriving at a deeper conception of relations, and that it's not by chance that within the perspective of this ontology, we have arrived at an entire conception of the infinitely minute or the actual infinite.

So if I had to take issue with a uniquely historical point from Wahl, it is that I do not believe that the theory of relations, in the sense that you demand it, has its starting point, if you will, with the criticism of ontology. I myself have the feeling that, for example in Spinoza, once again, for whom there is a conception of being which is irreducible, but really irreducible to all "be-ing", at once to substance and to mode, this kind of unfolding of being allows him precisely to do something very, really here, very, very fantastic which is the deployment of a system of relations that cannot at all be reduced to their terms.

But then, yes, but there, it's a little, if you will, about that, your requirement consists in saying, if I translate it as firmly and as modestly as I can, it's this: Fine, okay, but we would have to manage to create both a theory of relations and a theory of intensities which would not imply an ontology. Yes, so, you ask, what would it be, these liberated intensities, these intensities freed from any point of view of being? Yes, it almost amounts to saying that you want to go in that direction, but I mean, there, fine, fine, but there I see no reason to denounce any insufficiency whatsoever in Spinoza.

What would interest me more is -- regardless of the question: Do you feel yourself to be Spinozist or not? -- what effect does it have on you, a thought that has this mode in which... I mean ... I am seeking more your emotion than your relations with this thought.

In the end, I hope, what Comtesse has just said is that, thank God, Spinoza has certainly not said everything. Otherwise, this would just stop. There is only Hegel to believe to have said everything. [*Laughter*]. But, you understand, we know that one doesn't say everything when one's not, yes, well ... [*Laughter*]

So, Spinoza didn't say everything. Yes, but treat him like a work of art as long as you treat works of art as something vital. What is it, in fact? Well, how is this really a kind of thinking that, in my opinion ... I juxtaposed him closely to the others of the 17th century, but at the same time, what I have left to say next time, what I have left to say next time is two things. It's to answer Richard's question about, well, eternity, how, already, Spinoza claims that it is experienced, and what is this point of view of being, that is, also to respond a bit to Comtesse, what is this point of view of being which Spinoza considers himself absolutely to need from one end to the other of his theory. Yes, that's it, and well, we'll see that next time. [*End of the session*] [2: 19: 04]

Notes

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[1] In fact, Deleuze will continue with Spinoza into the 31 March session in which the first half is devoted to questions related to the Spinoza seminar and the second half devoted to introducing the seminar on painting.

[2] In concert with the translation in *Spinoza: Practical Philosophy* by Robert Hurley, I have chosen to translate Deleuze's "rapport" as *relation*, since Deleuze is gradually developing an argument, from one lecture to the next, of the importance of differential relations in both philosophical and mathematical terms.

[3] Deleuze discusses Gueroult's commentary in previous Spinoza sessions, notably on 3 and 10 February 1981.

[4] See the discussion of the differential relation in the Spinoza session on 17 February 1981.

[5] The segment in brackets is not in the BNF recording to which I had access, but apparently this segment existed in the recording used by the Paris 8 team.

[6] See the discussion of these components in the Spinoza sessions on 6 January and 3 and 10 February 1981.

[7] See the discussion of arsenic and poison in the Spinoza sessions on 6, 13, and 20 January 1981.

[8] The segment in brackets, while not in the BNF recording to which I had access, apparently existed at some point on the recording used by the Paris 8 team as well as by WebDeleuze, despite the existence of a gap in all extant recordings.

[9] For discussion of the Holy Trinity within a cinema context, see the seminar session on 1 June 1982, and within the Leibnizian context, see the session on 20 January 1987.

[10] In fact, the next session, on 17 March 1981, will be devoted to this theme, as was also produced by Claire Parnet and Richard Pinhas as a 2-disc cd titled *Gilles Deleuze, Spinoza: Immortality and Eternity,* published by Gallimard.

[11] Deleuze's reference is to the 5-part Leibniz seminar in spring 1980, from 15 April to 20 May.

[12] See above all the opening sessions in the Leibniz seminar, notably on 28 October and 4 November 1986, where Deleuze presents the Baroque precisely in terms of explication-development and implication-envelopment, a definition that constitutes the true basis for the entire seminar and for Deleuze's book, *The Fold: Leibniz and the Baroque*.

[13] See the session on Leibniz of 6 January 1987 for a discussion of the opposition between preformation and epigenesis.