Rameau's Nephew
and Other Works

Denis Diderot

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D’ALEMBERT’S DREAM

A Conversation Between
Diderot and D’Alembert

D’ALEMBERT. I’m willing to agree with you that it’s very hard to believe in the reality of a Being that is said to exist somewhere, yet occupies no single point in space; a Being that has no extension, yet occupies space; that exists in its entirety in every separate part of the universe; that is essentially different from matter, yet is one with it; that moves matter and follows the movements of matter, yet does not move; that acts upon matter, but at the same time suffers all its vicissitudes. I do not have the least idea what such a Being can be like, for its nature seems utterly contradictory. Still, there are also difficulties for the man who rejects such a Being. For if you put some principle of sensitivity or consciousness in its place, if you say that consciousness* is a universal and essential attribute of matter, then you will have to admit that stones can think.

* Diderot’s term is “sensibilité,” a word that can convey many meanings depending on the context. Its most elementary, literal meaning is doubtless “sensitivity,” or “the ability to receive sense impressions.” The exact scope of the term was, however, much disputed during the eighteenth century, and some English physiologists insisted that it should be used interchangeably with “irritability.” Diderot sometimes uses the word in this way, and when he does the term “irritability” is given here as the English equivalent. For the most part, however, he gives “sensibilité” and its derivatives a much more extended meaning that seems to be best expressed in English as “consciousness.” As the text of the Dialogue will make clear, there is still another important meaning attached to the word “sensibilité” in eighteenth-century usage—as applied to human temperaments the adjective “sensible” signifies the opposite of “phlegmatic,” and the parent noun is perhaps best rendered by the English “sensibility.”

DIDEROIT. And why not?
D’ALEMBERT. That’s pretty hard to swallow.
DIDEROIT. Yes, for someone who cuts and shapes them, or who grinds them into powder without hearing them cry out.
D’ALEMBERT. Then I wish you’d tell me what difference you think there is between a man and a statue, between marble and flesh.
DIDEROIT. Not very much. You can make marble out of flesh, or flesh out of marble.
D’ALEMBERT. But the two things are still not identical.
DIDEROIT. No, just as kinetic energy is not potential energy.
D’ALEMBERT. I don’t follow you.
DIDEROIT. Then I’ll explain. When you carry something from one place to another, that isn’t motion—it is only the effect produced by motion. Motion is inherent in the thing itself, whether you carry it or whether it remains at rest.
D’ALEMBERT. Well, that’s a novel way of looking at it.
DIDEROIT. It’s true just the same. Take away an obstacle that has been preventing the local motion of an immobile object and that object will move from one place to another. Remove, or suddenly rarely, the air that surrounds the trunk of this enormous oak tree, and all of a sudden the water it contains will start to expand, splintering the wood into a hundred thousand pieces. The same could be said of your own body.
D’ALEMBERT. Of course. But what connection is there between motion and consciousness? Are you perhaps trying to make a distinction between actual and latent consciousness? Are you suggesting an analogy with kinetic and potential energy—between kinetic energy, which shows itself in the form of local motion, and potential energy, which takes the form of pressure? Is there an active consciousness characterized by certain actions that we can observe in animals and perhaps also in plants, and a latent consciousness which we detect only when it changes its state and becomes active?
DIDEROIT. Exactly! You’ve said it better than I could have.
D’ALEMBERT. So a statue has only latent consciousness, while man, animals, and perhaps even plants, are endowed with active consciousness.
Diderot. There is certainly that particular difference between a block of marble and the fibers of living flesh, but, as you may well imagine, that isn't the only difference.

d'Alembert. I should say not. Whatever resemblance there may be between the external shape of a man and that of a statue, there is surely no similarity in their internal organization. There could hardly be a sculptor skillful enough to make even so much as a real skin with his chisel. But there is a very simple method of causing potential energy to pass into the kinetic state. This phenomenon takes place before our eyes a hundred times every day. Yet I don't see very well how one can make a physical object change from a state of latent consciousness to a state of active consciousness.

Diderot. That can only be because you don't want to see it. It is actually rather common.

d'Alembert. Well, if it is such a common phenomenon, tell me, if you please, how it takes place.

Diderot. I'm about to explain it to you, since you're apparently not ashamed to admit that you can't guess what it is. It is something that happens every time you eat a meal.

d'Alembert. Every time I eat?

Diderot. Yes. What do you do when you eat? You remove the obstacles that were preventing the emergence of active consciousness in the food. You assimilate the food and make it part of yourself. You make flesh out of it. You make it become animal and you make it conscious. Furthermore, whatever you do with your food, I can do whenever I please with marble.

d'Alembert. And just how will you manage that?


d'Alembert. Making marble edible doesn't strike me as a very easy thing to do.

Diderot. I see that it's up to me to explain the method to you. I will take that statue you see there, put it in a mortar, and after a few good blows with my pestle . . .

d'Alembert. Not so fast, please. This statue is one of Falconnet's masterpieces. Of course, if it were by Huez or one of the others . . .

Diderot. Falconnet wouldn't mind; the statue has been paid for, and Falconnet gives little enough thought to his present-day reputation, let alone his future glory.

d'Alembert. Go ahead, then. Grind it up.

Diderot. As soon as the block of marble has been reduced to an impalpable powder I will mix that dust with some humus or dirt containing vegetable matter. I will knead the powder into the humus, sprinkle water on the mixture, and then I will let it rot for a year, two years, a hundred years. Time means nothing to me. When the whole mass has changed into a more or less homogeneous substance—into humus—do you know what I will do?

d'Alembert. I am sure you are not going to eat the humus.

Diderot. No, but there is a process by which I can unite the humus with myself, by which I can appropriate it—a latus, as the chemists would call it.

d'Alembert. And I suppose the plant is this latus.

Diderot. You've hit the nail on the head. I'll plant seeds in the humus—peas, beans, cabbages and other garden vegetables. The plants will get their food from the earth and I will get mine from the plants.

d'Alembert. Your notion may or may not be true, but I like the idea of this transition from marble to humus, from humus to vegetables, and from vegetables to animals—in the end to flesh.

Diderot. Well, that's how I make flesh, or, as my daughter says, a soul—that is, matter that possesses active consciousness—and if I have not completely solved the problem you set me, at least I am not far from a solution. You ought to be willing to admit that there is much more difference between a piece of marble and a conscious being than there is between a conscious being and one that thinks.

d'Alembert. I admit it. But all the same, a creature that has feelings is not quite the same as one that can think.

Diderot. Before pushing ahead along that line, I would like to tell you the life story of one of the greatest mathematicians of Europe. Do you know what that marvelous being was in the beginning? Nothing.
D'ALEMBERT. How do you mean, nothing? You can't make something out of nothing.

DIDEROT. You are using the word too literally. I mean only that before his mother, the beautiful and naughtiness, canoness Tencin,* had reached the age of Puberty, and before the soldier La Touche had reached adolescence, the molecules that were to make up the first rudimentary beginnings of my mathematician were dispersed throughout the delicate young bodies of his future parents, being filtered with the lymph through their organs, were circulating in their blood streams, until the moment when the molecules were finally collected in certain reservoirs in preparation for their final meeting—I mean the sex glands of his mother and father. Now we can observe the germination of this rare seed. See how it is carried, as most authorities believe, through the Fallopian tubes into the womb; see how it attaches itself by a long stem to the womb; see how it grows and develops by stages into a foetus. At last the moment arrives when it is to leave its dark prison. Behold the newborn child, abandoned on the steps of the church of St.-Jean-le-Rond from which he will take his baptismal name; now he is placed in the orphanage and afterwards taken out of it again; now he is put to nurse at the breast of the good glazier's wife, Madame Rousseau. On her milk he grows strong in body and in mind and becomes a man of letters, a physicist and a mathematician. And how did this all come about? As the result of eating and of other purely mechanical operations. I will give you the general recipe in a few words—eat, digest, distill in a closed vessel, and you have the whole art of making a man. If anyone wants to describe
to the Academy the steps in the production of a man or animal, he will need to make use of nothing but physical agencies, for these can produce the successive effects required—an inert object, a conscious being, a thinking creature, a being who can solve the problem of the precession of the equinoxes—a sublime and marvelous being, but one that is still going to grow old, fall sick, die and finally return to humus.

D'ALEMBERT. Then you don't believe that the sex glands of Adam and Eve contained the seeds of the whole human race?

DIDEROT. No.

D'ALEMBERT. Bravo! I'm glad to hear you say that.

DIDEROT. The whole idea flies in the face of both experience and logic. It goes against experience because we have never been able to find sex cells in eggs or in the majority of animals before they have reached a certain age. It is illogical because logic teaches us that in nature there is a limit to the divisibility of matter—though there may be no such limit in pure theory—for reason refuses to conceive of a fully formed elephant contained in an atom, and in one atom [of this elephant] another complete elephant, and so on ad infinitum.

D'ALEMBERT. But if you rule out the theory of pre-existing germ cells, how can you account for the original production of animal life?

DIDEROT. If you are worrying about the question of which came first, the chicken or the egg, your difficulty is simply that you are assuming that all animals were originally just what they are now. What nonsense! We have no idea what they have been like in the past, any more than we know what they will be like in the future. Some earthworm squirming about in a dung heap is perhaps on his way to becoming a large animal, while some huge beast, who now amazes us by his size, is perhaps on his way to becoming a worm. In other words, he may be only a momentary and unique product of this earth.

D'ALEMBERT. Would you mind repeating that remark?

DIDEROT. I was only saying that . . . But we are losing the thread of our original discussion . . .
D'Alembert. What of it? We can decide later whether we want to go back and pick up the thread again.
Diderot. Do I have your permission to look forward a few thousand years into the future?
Diderot. Will you let me sniff out our sun?
D'Alembert. Go ahead, by all means. It won't be the first time a sun was extinguished.
Diderot. All right, the sun is extinct. What will happen next? The plants will all die, and so will the animals; the earth will be left silent and lifeless. Now light up the sun again. Instantly you have restored the necessary cause of an infinite number of new manifestations of life. I am not bold enough to assert that, after the lapse of centuries, our plants and animals of today would or would not reappear.
D'Alembert. Why should they not reappear, once the same scattered elements had come together again?
Diderot. Why not? Because in nature everything is bound up with everything else, and whenever you introduce a new phenomenon, or try to recreate an instant that has gone by, you end up by conceiving a whole new world.
D'Alembert. No one who thinks profoundly about the matter can deny what you say. But let's get back to the human race, since the universal order requires that men should exist. Remember that you left me in suspense just at the moment when a being endowed with sensations was about to be transformed into a thinking being.
Diderot. I haven't forgotten.
D'Alembert. Frankly, I should be much obliged to you if you would get me out of that limbo. I am in somewhat of a hurry to have the thinking process begin.
Diderot. Even if I should not solve the riddle once and for all, what harm would be done? There would still remain a whole chain of incontestable facts.
D'Alembert. No harm at all. Except that we would still be stopped short in the middle of our inquiry.

Diderot. And in order to get in motion again, would it be allowable to invent some agency whose attributes are mutually contradictory, some word that has no meaning, that is unintelligible?
D'Alembert. Of course not.
Diderot. Can you tell me what the existence of a being endowed with sensation means to that being itself?
D'Alembert. It must mean the awareness of having been itself, from the first instant of consciousness down to the present moment.
Diderot. And in what is this awareness grounded?
D'Alembert. In the memory of its own actions.
Diderot. What if that memory were lacking?
D'Alembert. If there were no memory, there would be no awareness of self, because if a creature were aware of its existence only during the instant of that awareness, it would have no history of its life. Its life would be only an interrupted series of sensations without anything to bind them together.
Diderot. Very good. Now tell me what memory is, and explain where it comes from.
D'Alembert. It comes from a certain organization of matter—an organization that grows or disintegrates, and sometimes disappears altogether.
Diderot. Then if a being that has sensations, and that possesses the organization necessary for memory, binds together the impressions it receives and constructs by this process a history—the history of its own life—and so acquires an awareness of itself, then it affirms and denies; it thinks and draws conclusions.
D'Alembert. Apparently. So I am left with only one difficulty.
Diderot. You're mistaken. There are actually many more.
D'Alembert. But there is one principal difficulty. It is that we are able to think of only one thing at a time, and in order to grasp just one simple proposition—not to speak of those stupendous chains of reasoning that are made up of thousands of separate ideas—it seems that at least two things are required: the object which remains as it were under the mind's
eye, while the mind concerns itself with those qualities of the object which it will either affirm or deny.

DIDEROT. I believe so, and for that reason I have sometimes been led to compare the fibers that make up our sense organs with sensitive, vibrating strings. The string vibrates and makes a sound for a long time after it has been plucked. It is a vibration of this sort, it is this kind of necessary resonance, that keeps an object present to our minds while our understandings deal with whichever of its qualities we please to study. Besides, these vibrating strings have still another property—they can make other strings hum—so that in this way one idea can call forth another, the second can call forth a third, and so on. Hence no one can set a limit to the ideas that will occur to a philosopher, for his ideas arise out of their own necessary connections while he meditates in darkness and in silence. The instrument has an astonishing range, for a newly awakened idea can sometimes provoke a sympathetic response in a harmonic that is almost inconceivably remote. If this phenomenon can be observed in musical strings that are separate and inert, why should we not expect to find it wherever living points are connected with each other—why not in sensitive fibers that are continuous?

D’ALEMBERT. If what you are saying isn’t true, it is at least most ingenious. But I am tempted to believe that you may be slipping unawares into the very difficulty that you are trying to avoid.

DIDEROT. Which one?

D’ALEMBERT. You are trying to eliminate the distinction between mind and matter.

DIDEROT. I realize that.

D’ALEMBERT. But if you don’t watch out, you will end up saying that the philosopher’s mind is an entity distinct from the stringed instrument, a sort of musician that listens to the vibrating strings and draws conclusions about their harmony or dissonance.

DIDEROT. I may have let myself in for that objection. But you might not even have raised it if you had sufficiently considered the difference between the two instruments—the philosopher and the clavichord. The philosopher-instrument has sensations, so he is simultaneously the performer and the instrument. Because he is conscious, he has a momentary awareness of the sound he produces; because he is an animal, he remembers the sound. This organic faculty, by linking together the sounds inside his mind, both produces and preserves the melody. Imagine a clavichord endowed with sensation and memory, and then tell me whether it will not learn and be able to repeat by itself the tunes you play on its keyboard. We humans are instruments gifted with sensation and memory. Our senses are merely keys that are struck by the natural world around us, keys that often strike themselves—and this, according to my way of thinking, is all that would take place in a clavichord organized as you and I are organized. There is an impression that has its cause either inside or outside the instrument; from this impression a sensation is born, a sensation that persists, for it is impossible to suppose that a sensation can both arise and be extinguished in a single indivisible instant of time. Then a second impression follows the first, arising similarly out of an external or internal cause; then there occurs a second sensation. And these sensations all have tones—either natural or conventional sounds—that serve to identify them.

D’ALEMBERT. I follow your line of thought. So, then, if this animated and sensitive clavichord were also endowed with the ability to eat and to reproduce itself, it would be alive and could beget—either by itself or with the help of its female—little clavichords that would be alive and resonant.

DIDEROT. Don’t you doubt it for a moment! What else do you think a bluefinch is, or a nightingale, or a musician, or any human being? What other difference do you think there is between a canary and the little wooden whistle used to teach canaries to sing? Imagine that you have an egg in your hand. With it all the schools of theology can be overthrown, as well as all the temples of religion on earth. What exactly is an egg? Nothing but an insensitive mass—that is, before the germ is put into it. Introduce a germ, and then what is it? Still an insensitive mass, for the germ itself is nothing but
a thick, lifeless fluid. How does this substance pass over into another form of organization, into sensitivity—into life? By means of heat. What generates the heat? Motion. What stages does this development follow? Instead of answering my question, sit down and let us watch carefully what happens from one moment to the next. At first there is a little dot that bobs about, then there is a thread that takes on color and grows larger, then there is flesh starting to form, then there is a beak, there are wing-tips, eyes and feet beginning to appear, a yellowish substance that divides to make the intestines—at last there is a living thing. This creature moves, it stirs about, it makes a noise—I can hear it peeping inside the shell. Its body begins to be covered with fuzz. It can see. The weight of its head, which wobbles back and forth, constantly forces its beak against the interior wall of its prison. At last the wall is broken, and the chick comes out. It walks, it flutters its wings, it feels irritations, it runs away, it comes back again, it makes a complaining sound, it feels pain, it shows affection, it has desires, it gets pleasure from this or that. It shows all the emotions that you show and does everything that you can do. Can you maintain with Descartes that this is nothing but an imitative machine? If so, even the smallest children will make fun of you, and philosophers will tell you that if this is a machine, you’re another.

On the other hand, if you admit that there is no difference between you and the animals except in degree of organization, you will show reason and common sense as well as good faith. But then we shall have to conclude that you were wrong in your earlier opinion, and that an inert substance arranged in a certain way and impregnated with another inert substance, when subjected to heat and motion, can give rise to sensation, life, memory, conscience, passion and thought. You have left only a choice between two other positions—you must either imagine that within the lifeless substance of the egg there is some hidden element that waited until the egg had developed before it revealed its presence, or you must argue that this undetectable element made its way in through the shell at some particular moment of the egg’s development.

But what could such an element be? Did it occupy space, or did it not? How did it get in, or out, without moving? Where was it? What was it doing, either in that place or somewhere else? Was it created at precisely the moment when it was needed? Did it exist earlier? Was it looking for a home? Was it, or wasn’t it, of the same substance as the home it sought? If of the same substance, then it must have been matter; otherwise how can you account for its inertia before the egg began to develop, or its energy in the fully formed chick? Just listen to yourself talk and you will feel sorry for yourself. You will recognize that the price you have to pay for not accepting a simple hypothesis that explains everything—I mean irritability, a universal attribute of matter or the result of the organization of matter—will be a renunciation of common sense and a headlong plunge into an abyss of mysteries, contradictions and absurdities.

D’ALEMBERT. A hypothesis! You may be pleased to call it that. But what if this irritability of yours should prove to be essentially incompatible with matter?

DIDEROT. And who told you that irritability is essentially incompatible with matter—you, who know nothing whatsoever about the essence of anything under the sun—including both matter and irritability? Do you understand any better the nature of motion, or the mode of its existence in bodies, or the manner of its transmission from one body to another?

D’ALEMBERT. Although I can’t clearly conceive the nature of irritability nor the nature of matter, I can see that irritability is one single, indivisible property, so it is incompatible with a divisible object or substance.

DIDEROT. Theologico-metaphysical fiddle-faddle! Listen! Don’t you see that all the properties and all the tangible forms of matter are essentially indivisible? There’s no question of more or less impenetrability. You can have half of a round body, but there’s no such thing as half of roundness. There can be more or less motion, but you either have motion or you don’t. It is as silly to talk of a half or a third or a quarter of a head, or of an ear or of a finger, as it is to speak of a half or a third or a quarter of a thought. Since in the whole universe there
is not a single molecule that is just like another, and in every molecule not a single atom that is just like another atom, why won’t you admit that the atom itself possesses an indivisible form and quality? Why don’t you admit that division is incompatible with the essence of all forms whatsoever because it destroys them? Be a good physicist and acknowledge the reality of a result when you have seen it occur, even if you can’t explain the connection between cause and effect. Be a good logician and do not throw overboard a cause that is real and that explains everything just for the sake of retaining another cause that is incomprehensible and that has even less logical connection with the observed effect, a cause that gives rise to innumerable difficulties without removing a single one of them.

D’ALEMBERT. Well, what if I give up this second cause?

DIDEROT. Then there will be only one single substance in the universe, in man and in the animals. The little whistle is made of wood; man is made of flesh. The canary is made of flesh, the musician is made of flesh that is differently organized, but both have a single origin, were formed in the same way, have the same functions, and serve the same end.

D’ALEMBERT. But how do your two clavichords manage to establish a conventional system of sounds?

DIDEROT. If we think of animals as sensitive instruments, then one of them is perfectly comparable with another that has been put together on the same plan—all will have the same strings and their keys will respond in the same way to joy and sorrow, hunger and thirst, anger, admiration and fright. Whether you play the instrument at the North Pole or at the Equator, it will necessarily make the same sounds. This is why it happens that the common interjections—oh!, ah!, eh!—are just about the same in all languages living or dead. To explain the origin of conventional sounds you need only the principles of need and proximity. The sensitive instrument, or animal, discovered that when he made a certain noise there followed a certain result outside himself; he noticed that other sensitive instruments like himself—other animals with sensations—came closer, went away, asked something of him or offered him something, hurt him or fondled him. All these results were connected in his memory and in the memories of others with the occurrence of the sounds in question. Please note that all human intercourse consists merely of making noises and doing things. If you want a clinching demonstration of my theory, just reflect that it is open to the same insurmountable objection that Berkeley raised against the real existence of physical bodies. This merely shows that there is sometimes an instant of delirium when a sensitive clavi-chord imagines that it is the only clavichord that exists and that it alone produces all the harmonies of the universe.

D’ALEMBERT. There would be a great deal to say on that topic.

DIDEROT. Very true.

D’ALEMBERT. For instance, according to your theory, it isn’t very easy to understand how we make syllogisms and draw logical conclusions about this or that.

DIDEROT. But it’s perfectly obvious that we don’t draw any conclusions at all—they are always drawn by nature itself. We do nothing but describe the connections among phenomena, connections that are either necessary or contingent. These phenomena are known through experience. In mathematics and physics the connections are necessary; in morality and politics they are contingent or probable, as they are in the other branches of speculative knowledge.

D’ALEMBERT. But are the connections between the phenomena themselves any more necessary in the first group than in the rest?

DIDEROT. No. But in morality and politics the causes are subject to so many particular influences which we fail to note that we cannot be sure of the result that will follow. We cannot be as certain that a man of violent disposition will be provoked by an insult as we are that if two bodies collide, the larger will move the smaller.

D’ALEMBERT. What analogy do you see there?

DIDEROT. In the most complex situations the analogy is simply a one-two-three sequence that works itself out within the sensitive machine. If a given phenomenon observed in
the natural world is followed by a second natural phenomenon, what fourth phenomenon will be the consequence of a third one that is either found in nature or conceived in imitation of nature? If the average warrior wields a lance ten feet long, how long is Ajax's lance? If I can throw a stone weighing four pounds, Diomede should be able to move a whole cliff. The strides of the gods and the distance their horses can leap will be in the same ratio that the gods are supposed to bear to men. We have to do with a fourth harmonious string that is proportional to the other three and from which the animal always hears a sympathetic vibration set up inside itself, though this vibration does not always occur in the outside world. All this makes little difference to the poet, but it is true just the same. For the philosopher the problem is different—he must immediately start asking questions of nature because nature often confronts us with phenomena that differ from the ones we had expected to find. Then we realize that we have been led astray by a false analogy.

D'Alembert. Well, my friend, I shall have to bid you good night and be off to bed.

Diderot. You can make jokes about all this if you like, but you are going to start dreaming about this conversation of ours as soon as your head touches your pillow, and if your dreams are incoherent, so much the worse for you, because in that case you'll end up by embracing some hypothesis far more ridiculous than anything I've suggested.

D'Alembert. Don't get your hopes up. I shall lie down a skeptic and get up in the morning still a skeptic.

Diderot. Skeptic indeed! How can anyone be a skeptic?

D'Alembert. Do you mean that when it comes to a question of whether skeptics exist, you are one yourself? Or are you going to maintain that I am not a skeptic? Who knows better than I do?

Diderot. Just listen to me for a moment.

D'Alembert. Make it short or I shall fall asleep.

Diderot. It won't take me long. Do you think that there is a single debatable question on which a man can support both sides with an exactly equal measure of reason?

D'Alembert. Why, no. That would be like Buridan's ass. *

Diderot. In that case there can be no such thing as a skeptic, because—if we leave aside mathematics, where there is never the slightest uncertainty—you can find arguments for and against every proposition. But since the scales are never equal, it is impossible that they should not tip toward the side where we think the greater probability lies.

D'Alembert. Still, in the morning I find the greater probability on my right, and in the afternoon I find it on my left.

Diderot. You really mean that you are dogmatically pro in the morning and dogmatically con in the afternoon.

D'Alembert. And in the evening, when I recall how rapidly my judgments were made and unmade, I disbelieve both my morning's opinion and the one I had in the afternoon.

Diderot. No, what you mean is that you no longer recall your reasons for giving the edge to one opinion or the other; hence the reasons for an earlier decision now appear to have been too frivolous to justify a definite conclusion. So you decide to stop tormenting yourself with such doubtful questions and to leave their exploration to other people, making up your mind not to argue about them anymore.

D'Alembert. Perhaps.

Diderot. But if someone should take you aside and question you in a friendly way, asking you to say in all honesty which of the two possible viewpoints seemed to you to involve the fewest difficulties—would you in good faith be embarrassed to give a reply? Would you play the part of Buridan's ass?

D'Alembert. No, I think not.

Diderot. All right, my friend, and if you think carefully about it, you will agree that in the end our truest opinions are not the ones we have never changed, but those to which we have most often returned.

D'Alembert. You may very well be right.

Diderot. I think I am. So good night, my friend, and remember: Dust thou art and to dust thou shalt return.

D'Alembert. That's a gloomy thought.

* Who starved to death because he could not choose between two identical piles of hay.
DIDERO. An inescapable one, though. I don't ask for immortality—but just give man twice the length of his present life, and you can never tell what might happen!

D'ALEMBERT. What the devil do you want to happen? Besides, what difference would it make to me? Whatever is going to happen, I say, let it happen if it can. I'm going to bed. Good night.

D'Alembert's Dream

SPEAKERS: D'ALEMBERT, MADEMOISELLE DE L'ESPINASSA, DOCTOR BORDEU

BORDEU. Well, well, what's the trouble here? Is he sick?

MLLE. DE L'ESPINASSA. I'm afraid so. He had a very restless night.

BORDEU. Is he awake yet?

MLLE. DE L'ESPINASSA. No, not yet.

BORDEU (bending over D'Alembert's bed to feel his forehead and pulse). It won't amount to anything.

MLLE. DE L'ESPINASSA. Do you really think so?

BORDEU. No doubt about it. His pulse is good—just a little bit on the weak side. . . . His skin is moist . . . respiration is normal.

MLLE. DE L'ESPINASSA. Isn't there anything we ought to do for him?

BORDEU. No.

MLLE. DE L'ESPINASSA. That's good. He hates taking medicine.

BORDEU. And I dislike giving it. What did he eat at supper-time?

*Julie de L'Espinasse conducted a salon of which D'Alembert was the chief ornament. He was passionately devoted to her and shared her lodgings for many years. Their relations apparently remained platonic, however, because Julie was in love with Guibert, the military theorist, among others.

MLLE. DE L'ESPINASSA. He didn't seem to want anything to eat. I don't know where he spent the evening, but he came home looking worried.

BORDEU. Well, this is just a little touch of fever that shouldn't have any serious consequences.

MLLE. DE L'ESPINASSA. When he came in, he put on his dressing gown and his nightcap and flung himself into his armchair where he soon dropped off to sleep.

BORDEU. Sleep is a good thing no matter where, but he would have done better to go to bed.

MLLE. DE L'ESPINASSA. He got angry with Antoine for telling him the same thing. I had to nag him for half an hour to make him go to bed.

BORDEU. That's just the way it always is with me, even when I'm feeling perfectly well.

MLLE. DE L'ESPINASSA. When he finally went to bed, instead of resting quietly as he usually does—he generally sleeps like a baby—he began to toss and turn, thrashing about with his arms, throwing the covers off and talking in his sleep.

BORDEU. Well, what did he talk about? Mathematics?

MLLE. DE L'ESPINASSA. No, it all sounded like the talk of a crazy person—a lot of nonsense about vibrating strings and sensitive fibers. It seemed so strange that—not wanting to leave him alone in the dark, and not really knowing just what to do—I brought a little table here to the foot of his bed and started to write down all that I could catch of his muttering.

BORDEU. That was a clever thought—and just like you too. Do you mind if I read it?

MLLE. DE L'ESPINASSA. I have no objection. But I'd stake my life that you won't be able to make head or tail of any of it.

BORDEU. Perhaps not.

MLLE. DE L'ESPINASSA. All right, Doctor. Are you ready?

BORDEU. Yes, begin.

MLLE. DE L'ESPINASSA. Well, listen then: "A living point . . . No, that's wrong. Nothing at first, then a living point . . . Another living point joins itself on to the first one, then another. From a series of such additions there results a living being, for I myself am just such a being—how can I doubt
just the same, and hence there will be continuity and identity. . . . And then the usual actions and reactions. . . .

"Yet it is certain that contact between two living molecules is quite different from the contiguity of two inert particles. . . . Well, never mind, never mind; perhaps I could quibble with you about that, but what's the use? I'm not one of those people that always have to have the last word in an argument. . . . But let's get back to the question. I remember now. . . . A thin wire of very pure gold, that was the comparison he used—a homogeneous network in the meshes of which other molecules can be fitted in, forming perhaps a second homogeneous network, a fabric of sensitive matter assimilated to the other one by the contact between them—so you have active sensitivity here, inert matter there, and the sensitivity communicates itself just as motion does. Not to mention, as he very acutely remarked, that there must be a difference between the contact of one sensitive molecule with another and the contact between two molecules that are not sensitive—but what can be the nature of this difference? . . . The usual actions and reactions . . . And these actions and reactions must be of a very special kind. . . . Then everything conspires to produce the kind of unity that exists only in a living animal. . . . Upon my word, if that isn't the truth of the matter, it can't be far from it. . . ." You are laughing, Doctor; do you mean to say that you can find a grain of sense in all that?

BORDEU. Oh yes, a great deal.

Mlle. de L'espinaise. Then he isn't out of his mind?

BORDEU. Not at all.

Mlle. de L'espinaise. After this preamble he began to shout: "Mademoiselle de L'Espinaise! Mademoiselle de L'Espinaise"—"What is it?"—"Have you ever seen a swarm of bees escaping from their hive? . . . Well, the world, or rather the general supply of matter in the universe, is nothing but a great swarm of bees. . . . Have you ever seen how they fly off and form a long cluster of tiny winged creatures that hang from the branch of a tree, each one clinging to the others with his feet? Well, that cluster is a single being, an individual, some sort of animal.—But one of these clusters must be just like any other

that?" As he said this, he touched various parts of himself. "But how did such a unified being come into existence?" Then I said to him: "Come, come, my dear—what can it matter to you? Go to sleep!" Then he stopped speaking. After a moment of silence he began again as though he were arguing with someone. "Look here, my philosophic friend, I can see very well that there is an aggregation, a fabric of tiny sensitive beings, but where is the animal? . . . What about the whole? A system or self that is aware of forming a unity? I can't see it. No, I can't see it . . . ." Doctor, can you make any sense out of all that?

BORDEU. It makes perfect sense.

Mlle. de L'espinaise. Then I envy you your good fortune.

. . . "Perhaps my difficulty is that I am starting from a false premise."

BORDEU. Is that you speaking or him?

Mlle. de L'espinaise. That's what he said in his dream.

BORDEU. All right, continue.

Mlle. de L'espinaise. I'll go on. . . . Then he seemed to be talking to himself and he said: "D'Alembert, my friend, watch your step—you are assuming that there is only contiguity, but, actually, there is continuity. . . . Yes, he is really cunning enough to tell me that. . . . And how does this continuity arise? I suppose that will give him no trouble. Just the way a drop of mercury melts into another drop of mercury, one living, sensitive molecule can melt into another one. . . . At first, there were two drops, but after they touched there was only one. . . . Before assimilation, there were two molecules; afterward there was only one. . . . Sensitivity, then, exists throughout the whole mass. . . . Well, actually, why not? . . . In a given length of animal fiber I need distinguish only as many separate points as I please, but the fiber is continuous just the same—one fiber—yes, only one. . . . Continuity arises from the contact of two molecules of the same substance, of exactly the same substance. . . . And this is all that happens in the most perfect case of union, cohesion, combination or identity that can be imagined. . . . Yes, Philosopher, if only the molecules are simple, elementary substances—but what if they are compound or composite? . . . Combination will take place
cluster.—Yes, if there were only one homogeneous substance.—
But have you ever seen them?—Oh yes, I’ve seen them.—You
have actually seen them?—Of course, I tell you.—Well, if one
of the bees takes a notion to pinch in some way or other the
bee to which it is attached, what do you think will happen?
Just tell me that.—I have no idea.—Well, say what you think
anyway. You may not know, but the Philosopher—he’s sure to
know. The next time you see him—and you’re bound to see
him sooner or later because he promised that you would—he
will tell you that when one bee pinches the next one, setting
off a chain of sensations that will run from one little creature
to the next one, and so on throughout the cluster, the whole
cluster will stir, quiver, change its shape and location, the
cluster will make a noise composed of many tiny cries, so that
anyone who had never seen such a cluster formed would most
likely mistake it for an animal with five or six hundred heads
and ten or twelve hundred wings. . . .” Well, what do you
say to that, Doctor?

BORDEU. I declare, you know, this dream is a splendid per-
formance—you did very well to write it all down.

MLLE. DE L’ESPINAISE. I’m beginning to wonder if you aren’t
dreaming yourself.

BORDEU. Far from it. So little, in fact, that I could almost
undertake to tell you how the rest of it goes.

MLLE. DE L’ESPINAISE. I’ll bet you couldn’t.

BORDEU. You want to bet?

MLLE. DE L’ESPINAISE. Yes.

BORDEU. And if I guess right?

MLLE. DE L’ESPINAISE. If you guess right, I’ll promise you
that . . . I’ll promise to think that you’re the craziest man in
the world.

BORDEU. Look at your notes and listen to me: “The man
who took that bunch of bees for an animal would be making
a mistake.” But, Mademoiselle, I assume he went on as though
he were speaking to you: “Do you want to know what his con-
sidered opinion would be? Do you want to see how the bunch
of bees could be transformed into a single, unique animal?
Then soften the material in the feet by which they cling to
one another, make them continuous instead of contiguous.

Between this new condition of the bunch and its former con-
dition there is surely a striking difference. And what can be
the nature of this difference unless it lies in the fact that the
bunch now forms a whole, a single animal, one and the same,
whereas formerly it was only a collection of animals? . . . All
our organs——”

MLLE. DE L’ESPINAISE. Did you say, “all our organs”?

BORDEU. Yes. For anyone who has practiced medicine and
made a few observations——

MLLE. DE L’ESPINAISE. Why, that’s just the language he used! Now
tell me what comes after that.

BORDEU. After that “. . . are only distinct animals held to-
gether by the law of continuity in a general bond of sympathy,
unity, or identity.”

MLLE. DE L’ESPINAISE. It’s astounding—that’s just what he
said, almost word for word. Now I can proclaim to the whole
world that there is not the slightest difference between a wide-
awake physician and a dreaming philosopher.

BORDEU. People have had their suspicions before now. But
is that all he said?

MLLE. DE L’ESPINAISE. Not by any means—you have no idea!
After that babbling of yours, or of his, if you prefer, he spoke
to me and said: “Mademoiselle?”—“Yes, my dear.”—“Come
closer . . . closer . . . still closer . . . I want you to do some-
thing for me.”—“What is it?”—“Hold this bunch of bees—
there, are you sure you’ve got it? Good. Let’s make an exper-
iment.”—“How?”—“Take your scissors—are they good and
sharp?”—“They cut beautifully.”—“Then reach gently over
with them—very gently—and cut these bees apart for me. Only
take care not to snap through their bodies. Cut just at the
point where they have grown together by their feet. Don’t
be afraid. You may hurt them a little, but it won’t kill them.
. . . Excellent! You have a touch as light as a fairy’s. . . . Now
do you see how they fly away, each in a different direction?
They fly away one by one, two by two, three by three. What
a lot there are! Well, now, if you have really understood what
I’ve been up to——Did you understand it all?”—“Oh yes, very
well indeed.”—“Well, now we will suppose . . . we will sup-
pose——” Really, Doctor, I took in so little of what I was
writing down, and he spoke in such a faint voice—this next part of my notes is so scribbled that I'm afraid I can't read it.

BORDEU. I'll fill it in if you wish.

MLLE. DE L’ESPINASSE. If you can.

BORDEU. Nothing could be simpler. "Suppose that these bees are very small, so small that their vital parts would always be missed by the thick blade of your scissors; then you could keep on dividing and subdividing as long as you pleased without killing a single bee. In that case the whole bunch, made up of imperceptibly small bees, would be a genuine polyp which you could destroy only by crushing it. The difference between a bunch of continuous bees and a bunch of bees that are merely contiguous is precisely the same as the difference between ordinary animals like ourselves, or like fish or worms, and the little nankinlike creatures of the polyp family. We need make only a few slight modifications in this same theory—"

(Here Mlle. de L’Esprinasse gets up suddenly and goes to pull the bell cord to summon a servant.) Be quiet and walk softly, Mademoiselle, or you will wake him up, and he needs rest.

MLLE. DE L’ESPINASSE. I forgot all about that, I was so astonished at what you said. (To the servant, who comes into the room.) Which one of you went to fetch the doctor?

SERVANT. I did, Mademoiselle.

MLLE. DE L’ESPINASSE. How long ago was that?

SERVANT. I got back less than an hour ago.

MLLE. DE L’ESPINASSE. Did you take anything with you to give to him?

SERVANT. No, nothing at all.

MLLE. DE L’ESPINASSE. No papers?

SERVANT. Not a single one.

MLLE. DE L’ESPINASSE. Well, then, that's that. You may go. ... I can't get over it. You see, Doctor, I was suspicious that one of them had shown you my scribbling.

BORDEU. I assure you that no one did any such thing.

MLLE. DE L’ESPINASSE. Well, Doctor, now that I have taken the measure of your abilities I can see that you would be a great help to me in polite society. In any event, his dream didn't stop at that point.

BORDEU. So much the better.

MLLE. DE L’ESPINASSE. You don't see anything alarming in it so far?

BORDEU. Not in the least.

MLLE. DE L’ESPINASSE. Well, then, he went on: "Come, now, Philosopher, your idea is that there are polyps of all sorts, even human polyps. ... Only we do not find any such thing in nature."

BORDEU. He didn't know about those two girls who were attached to each other by the head, shoulders, back, buttocks and thighs, who lived stuck together that way up to the age of twenty-two, and who both died within a few minutes of each other. What did he say after that?

MLLE. DE L’ESPINASSE. Just some senseless talk of the sort you might hear in any insane asylum. He said: "Either that has already happened, or it will happen. And besides, who knows how things may be on some of the other planets?"

BORDEU. Perhaps there is no need to look so far afield.

MLLE. DE L’ESPINASSE. "Perhaps on Jupiter or Saturn there are human polyps! The males split up to make a new batch of males, and similarly with the females—what a joke that would be. ..." Here he let out such bursts of laughter that I was frightened. "To think of men splitting up into an infinite number of little men the size of atoms, small enough to fold up in a sheet of paper like insects’ eggs. They would spin their cocoons, which would take a certain time to pass through the chrysalis stage, then break out of the cocoon and escape as butterflies. Why, you could make a whole human society or at least populate a whole province with the pieces of one individual. I find this idea wholly fascinating to contemplate. ..." The outbursts of laughter began again. "If somewhere a man could change himself into a million little men of microscopic size, then the people there ought to be less reluctant to die. The loss of a man would be so easy to make good that it would probably be accepted with little regret."

BORDEU. That may seem like an extravagant notion, but it is what actually takes place with all the existing species of lower animals, and it will doubtless be true of future species too. Even if man does not change into an infinite number of men, at least he changes into an infinite number of tiny
animals whose future changes in shape or structure it is impossible to foresee. Who knows whether our species is not simply a hatchery for another generation of beings who will supplant our species after the lapse of countless centuries, during which successive modifications will occur?

**Mlle. de L’Espinaise.** What is that you’re muttering about, Doctor?

**Bordeau.** Nothing at all. I was only having a dream of my own. Go on reading, Mademoiselle.

**Mlle. de L’Espinaise.** “Taking everything into consideration, though, I prefer our own method of replenishing the population,” he added. “Philosopher, you who invariably know what’s going on, here or elsewhere, tell me this—when the different parts of a man are split up, won’t each of them yield men of as many different kinds? The brain, the heart, the lungs, the feet, the hands, the testicles . . . Just think how that would simplify morality! . . . You would have a man who was born a . . . A woman who came from . . .” Doctor, will you excuse me if I pass over some of this? . . . “You would have a warm room lined with little vials, and on each of these vials there would be a label: warriors, magistrates, philosophers, poets—this vial for courtiers, that one for whores, that one for kings.”

**Bordeau.** Crazy as it sounds, it’s an amusing idea. All this is only a man talking in a dream, yet it puts me in mind of some actual phenomena that are rather interesting.

**Mlle. de L’Espinaise.** At this point he began to mumble something I couldn’t quite make out—all about seeds, shreds of meat ground up in water, different races of animals that he saw being born or dying out. With his right hand he seemed to be imitating the tube of a microscope while with his left hand he tried to show, I think, the aperture of a vessel. He looked through the tube into the vessel and said: “Our Voltaire may make as many jokes about it as he likes, but Needham* is right about his little eels; I have to believe the evidence of my own eyes and I can actually see them. My, what a swarm! Look how they dart back and forth! See them squirm!” Then he began comparing the vessel, in which he saw so many instantaneous births, with the whole universe, pretending to see in a single drop of water the history of the entire world. This idea struck him as a great one, he thought it altogether in the spirit of sound scientific procedure, which learns about large bodies by studying small ones, and he said: “In Needham’s drop of water everything is over and done with in an instant. In the world at large the same phenomena occupy a little more time; but what is our human lifetime in comparison with the infinite duration of the universe? Less, surely, than this drop, which I take on the point of a needle, is in comparison with the boundless space that surrounds us. You have an infinite succession of little animals inside the fermenting atom, and the same infinite succession of tiny animals inside the other atom that is called the Earth. Who knows how many races of animals have preceded us? Who knows how many will follow the races that now exist? Everything changes, everything passes away—only the Whole endures. The world is perpetually beginning and ending; every moment is its beginning and its end; there has never been any other kind of world, and there never will be any other.

“In this immense ocean of matter there is not one molecule that is just like another, not one that is exactly like itself from one instant to the next. *Rerum novus nascitur ordo—* A new order of things is born*—this is the unchanging device of all that is . . .” Then, with a sigh, he added: “Ah, how vain is all human thought! How poor are all our glories, all our labors! How wretched we are! How petty our ideas! There is nothing substantial except eating, drinking, living, making love and sleeping. . . . Mademoiselle de L’Espinaise, where are you?”—“Here I am.” Then his face became flushed. I thought I should feel his pulse, but I couldn’t find where he had put his hand. He seemed to be having some sort of convulsion. His mouth fell open; his breathing was labored; finally he gave a deep sigh, then a weaker and still deeper

* John Turberville Needham, English microscopist and physiologist who collaborated with Buffon. In his Microscopic Observations (1751) he put forward the theory of spontaneous generation to account for the existence of tiny eel-like creatures he had observed in flour that had been allowed to spoil in a jar that was closed to everything—unfortunately—but air.

one; then he turned his head on his pillow and fell sound asleep. I was watching him very attentively and I felt a peculiar kind of excitement that I could not account for; my heart began to pound violently, though not from fear. After a few moments more I noticed a gentle smile playing on his lips, and he said very softly: "If there is a planet where men multiply the way fish do, where a man's spawn is merely deposited on that of a woman ... At least my own frustration would be easier to bear in that case. ... It's a shame to waste anything that could serve some useful purpose. Mademoiselle, if only this stuff could be gathered up and sent in a closed flask the first thing tomorrow morning to Needham ... " Doctor, how can you say that he isn't out of his mind?

BORDEU. In your presence, what can I say?

Mlle. de L'Esprasse. In my presence or not, it all comes to the same thing. You don't know what you're talking about. Well, after that I had hopes that the rest of the night would be peaceful.

BORDEU. That would ordinarily be the case after what you have described.

Mlle. de L'Esprasse. But not in this case. About two o'clock in the morning, he began to worry again about his drop of water, which he called a mi-cro ...

BORDEU. A microcosm.

Mlle. de L'Esprasse. That's the word. He was struck with admiration for the acuteness of the ancient philosophers. Either he said, or his Philosopher said—I don't really know which one it was—"When Epicurus maintained that the earth contained the seeds of all living things, and that all animals were the products of fermentation, what if he had proposed to show on a small scale the same picture that he draws to represent the beginning of the world on a large scale—what kind of answer could one make? ... But you have that very same picture in front of your eyes, and yet it teaches you nothing. ... Who knows—perhaps the fermentation is complete and its products have all been used up. Who can tell what place we humans occupy in the chain of animal species? Who knows whether those deformed bipeds who are only four feet tall, and who are called men by those who visit the polar regions—who knows whether these creatures might not soon cease to be called men if they were only slightly more misshapen? Perhaps they are just the remnant of a race that is passing away. Who can say that the same thing is not true of any other species of animals? Who can be sure that the universe is not tending to degenerate into an inert and motionless deposit of sediment? Who can tell how long such a state of inertia might last? Who knows what new species might once again arise from such a vast heap of sensitive, living particles? Why not just one kind of animal? How did the elephant originate? Perhaps this huge beast, as he appears to us now, was once only a single atom—we know that both elephants and atoms exist, and we need appeal only to motion and to the other various properties of matter. ... But was the elephant, with all his vast bulk, a product of sudden fermentation? Well, why not? The ratio between this great quadruped and the womb he was formed in is less than the ratio a worm bears to the grain of flour that produced it. Still, a worm is only a worm ... That only means, though, that the marvelous complexity of his organization is hidden from us by his extreme smallness. ... The real miracle is life itself—sensitivity—and this miracle can be accounted for. ... Once I have seen inert matter change into something sensitive I should no longer marvel at anything. ... Can I not compare the small number of elements fermenting in the hollow of my hand with the immense reservoir of elements that are to be found everywhere—inside the bowels of the earth, all over its surface, in the depths of the sea, and even in the currents of the air! ... However, since the same causes go on operating, why shouldn't the same effects follow? Why should we no longer see [Lucretius'] bull pushing his horns up through the crust of the earth, straining, with his feet pressed against the underlying rocks, as he struggles to free his heavy body from the soil? ... Let's suppose that all the existing species of animals should die out; let us wait several million centuries while the great inert sediment goes on working. Perhaps to renew the various species it requires a period ten times as long as
that of their actual duration. Consider carefully, and do not make hasty judgments about what nature can or cannot do. You have proof of two fundamental processes—the passage of matter from the inert to the sensitive state, and spontaneous generation—that should be enough for you. Draw the right conclusions from them, and in the midst of a natural order where there is neither absolute bigness nor absolute smallness, neither absolute permanence nor absolute change, beware of falling into the fallacy of the ephemeral..." Doctor, what does he mean by the fallacy of the ephemeral?

BORDEU. He means the mistake made by a transitory being who believes in the immutability of things.

Mlle. de l'Espingasse. Like Fontenelle's rose who said that so far as any rose could remember, no gardener had ever died?

BORDEU. Precisely. The illustration is both striking and profound.

Mlle. de l'Espingasse. Why don't your present-day philosophers express themselves as gracefully as Fontenelle did? Then we could understand them.

BORDEU. Frankly, I'm not sure that his frivolous manner is well suited to serious subjects.

Mlle. de l'Espingasse. Well, just what do you mean by a serious subject?

BORDEU. Why, for example, the various forms of sensitivity, the formation of a conscious being, the unity of such a being, the origins of animal life, its duration, and all the different problems connected with these matters.

Mlle. de l'Espingasse. As for myself, I'd call that a nonsensical hodgepodge, something that may be all right to dream about when you are asleep; but I can't see why a wide-awake person should bother his head about it, assuming that he has any common sense.

BORDEU. And why do you take that point of view, if I may ask?

Mlle. de l'Espingasse. It's just that some of those questions are so obvious that it is useless to go into their explanations, while the rest are so obscure that no one can ever make head or tail out of them, and none of them has the slightest practical utility.

BORDEU. Is it your opinion, Mademoiselle, that it makes no difference whether one affirms or denies the existence of a Supreme Intelligence?

Mlle. de l'Espingasse. It makes a great deal of difference.

BORDEU. Do you believe that one can decide for or against the Supreme Intelligence without knowing what basis there is for one's ideas about the eternity of matter and about its properties, about the distinction between mind and matter, about the nature of man and about the way animals come into existence?

Mlle. de l'Espingasse. Well, no.

BORDEU. Then these questions are not so fruitless as you just said they were.

Mlle. de l'Espingasse. I see your point. But what good will it do me to acknowledge their importance if I have no way of getting to the bottom of them?

BORDEU. How can you get to the bottom of them if you never even examine them? But will you allow me to ask you which ones seem so obvious to you that there is no need to examine them?

Mlle. de l'Espingasse. Well, take for instance the question of my unity—my identity. Mercy on us! It seems to me that there is no need for so many words to arrive at the conclusion that I am myself, that I have always been myself, and that I shall never be anyone else.

BORDEU. No, of course not. The fact is obvious enough, but it isn't at all clear how the fact can be accounted for, especially if we adopt the hypothesis of those who hold that the real world is all of one substance and who account for the production of men and animals by supposing that sensitive molecules have simply been juxtaposed to one another. Each sensitive molecule had its own identity before the contact occurred. So how did it lose that identity, and how did the consciousness of the whole come into existence as the result of all these losses of identity?

Mlle. de l'Espingasse. I should think that contact alone would be sufficient. There is an experiment that I have performed a hundred times... But, wait just a moment—I must look and see what is going on behind those bed curtains....
Good, he's asleep... When I put my hand on my thigh, I am very much aware at first that my hand is separate and distinct from my thigh, but after a little time has passed, and the temperature of the two parts has become equal, I can no longer tell which is which. I can't tell where one begins and the other leaves off, and it is the same as if the two parts were one.

Bordeu. Yes, unless someone comes along and pricks one or the other of them; then you know soon enough which is which. Therefore there must be something in you that knows very well whether your hand or your thigh has been pricked, and this something cannot be your foot—it cannot even be the hand that has been pricked. The hand felt the pain, but it is something else that knows what happens without feeling the pain.

Mlle. de l’Espinasse. Why, I should think it’s my head.

Bordeu. Your whole head?

Mlle. de l’Espinasse. No, but look here, Doctor—I'll have to give you an example if I am to make myself clear. Women and poets seem to reason mostly by examples. So imagine a spider... 

D’Alembert. Who’s that? Is that you, Mademoiselle de l’Espinasse?

Mlle. de l’Espinasse. It’s all right, go to sleep. (Mlle. de L’Espinasse and the Doctor remain silent for a time; then Mlle. de L’Espinasse says in a low voice:) I think he’s gone back to sleep.

Bordeu. I think not. I hear him making some kind of noise.

Mlle. de l’Espinasse. You’re right. Do you suppose he is starting to dream again?

Bordeu. Shhhh! Let’s listen.

D’Alembert. Why am I as I am? Obviously, because I had to be such. Here on this earth, to be sure. But what if I had been somewhere else? At the North Pole? Or at the Equator? Or on Saturn?... If a distance of several thousand leagues could alter my species, what would happen if I had been born several thousand terrestrial diameters from here?... And if the whole universe is in a state of flux, as the spectacle of nature everywhere plainly shows, what might not be the results, here or elsewhere, of the passage of millions of centuries with their attendant changes? Who knows what it would be like to be a conscious, thinking being on Saturn?... But do thought and consciousness exist on Saturn?... Why not?... Would a conscious, thinking being on Saturn possess more senses than I do?... Ah well, if he does, how unhappy that poor Saturnian must be!... Without senses we should have no wants.

Bordeu. He is right. Our organs produce our wants, and the other way around—wants produce organs.

Mlle. de l’Espinasse. Doctor, are you out of your mind too?

Bordeu. What’s unreasonable about that? I have seen a pair of stumps grow slowly into a pair of arms.

Mlle. de l’Espinasse. I don’t believe it!

Bordeu. Well, what I said isn’t strictly true. But to be precise, what I have seen is two shoulder blades gradually get longer, taking the place of two arms that were missing. They move like a pair of tweezers and finally become two stumps.

Mlle. de l’Espinasse. But that’s absurd!

Bordeu. It is a fact just the same. What if you had a long series of armless generations? Imagine that these same efforts go on. Eventually you might see the two parts of the pincer stretch out, grow longer and longer, cross over each other, reach around to the rear and back to the front again, sprout fingers at their extremities, and so reconstitute the missing arms and hands. The original shape of a creature changes and develops in response to necessity and habitual use. People nowadays walk so little and work so little, and they think so much, that I wouldn’t be surprised if man should wind up by becoming all head.

Mlle. de l’Espinasse. All head? Nothing but head! That’s not good for very much. As for me, I look forward to the time when our unrestrained amorousness... what silly ideas you put into my mind!

Bordeu. Shhhh!

D’Alembert. So, then, I am what I am because it was necessary that I should be what I am. Change the entire universe,
and it necessarily follows that I will be different; but the universe is always changing. . . . Man is merely a common phenomenon, while a monster is only a rare phenomenon, but both are equally natural, equally necessary, equally subject to the general order of the universe. . . . And what is there in that to cause astonishment? . . . All beings participate in the existence of all other beings; consequently every species— all nature is perpetually in flux. . . . Every animal is more or less human; every mineral is more or less vegetable; every plant is more or less animal. There is nothing precise in nature. . . . Father Castel's colored ribbon* . . . Yes, Father Castel, nature resembles nothing so much as your colored ribbon. Every particular thing is only more or less something—more or less earth, more or less water, more or less air, more or less fire; more or less a member of one class or another. . . . Hence we can't speak of the essence of a particular being. . . . No, beyond a doubt, because there is no single property which the being in question does not share with some other being . . . and because it is only the greater or less proportion of such a property that makes us attribute it to one being to the exclusion of another. . . . And you still speak of individuals, you poor philosophers! Stop worrying about your supposed individuals and answer me this question: Is there in all nature one single atom that is absolutely like another atom? . . . No. . . . Then will you not agree that in nature everything is bound up with everything else, and that it is impossible that there should be any gap in the chain of beings? What, then, do you mean when you talk about individuals? There isn't any such thing; no, there isn't any such thing. . . . There is only a single great individual—the whole universe. Within this whole, as in a machine or in any animal, there is a part which you may label such and such; but when you give the name of individual to this part of the whole you are making use of a false concept—just as much as if you were to give the name of individual to a bird's wing or to a feather on its wing. . . . Again, poor philosophers, you speak

* An attempt to produce "visual music" by means of ribbons of various colors, the unwinding of each color being regulated by pressing a key.

of essences! You had better give up your essences. Examine instead the general mass, or if your imaginations are too petty to take that idea in, examine only your own ultimate origins and your ultimate dissolutions. . . . Oh, Archytes!—you who were able to measure the globe—what are you now? A pinch of dust! . . . What is a living creature? . . . The sum of a certain number of tendencies. . . . Can it be that I myself am anything more than a tendency? . . . No, I am tending toward a limit. . . . And what about a species? . . . A species is only a tendency toward a common end that is peculiar to it. . . . And life itself? . . . Life is a series of actions and reactions. . . . As long as I am alive, I act and react as a mass; when I am dead I shall act and react in the form of disparate molecules. . . . Does this mean that I shall never die? . . . Well, of course, in that sense I shall never die, neither I nor anything else for that matter. . . . Being born, living, dying—these are only changes of form. . . . And what difference is there between one form and another? Each form experiences the happiness and unhappiness that belong to it. So it is with the elephant and the flea and all the intermediate beings. . . . So also with all those between the flea and the living, sensitive molecule, the origin of all the others—there is not an entity in all the natural world that does not know suffering and enjoyment.

Mlle. de l'Espinasse. He seems to have stopped speaking.

Bordeau. Yes. And what he said was a rather fine soliloquy. It was full of philosophical insights, too. Although for the moment these ideas have to be purely speculative, I am confident that the more our knowledge of man increases, the more they will be verified.

Mlle. de l'Espinasse. What had we been talking about?

Bordeau. Bless my stars, I don't remember any more—I got to thinking about so many things while I was listening to him!

Mlle. de l'Espinasse. Wait, I've got it. . . . I was starting to explain about my spider.

Bordeau. Oh yes, of course.

Mlle. de l'Espinasse. Doctor, please pull your chair closer to me. Now, imagine that you see a spider sitting in the center
of her web. If you disturb a single thread, you will see how the alert little creature comes running. Well, then, what if the threads which this insect spins out from her body—and can swallow up again whenever she pleases—what if those threads were a sensitive part of her body?

BORDEU. I follow your thought. You mean to suggest that inside your own body, in some region of your brain—perhaps in the part known as the meninges—there may be one or more points to which are conveyed all the sensations that are produced anywhere along the threads.

MLLE. DE L’ESPINASSE. Yes, that’s my idea exactly.

BORDEU. Your idea is as sound as anything can be. And don’t you see that approximately the same thing takes place in the cluster of bees that we were talking about?

MLLE. DE L’ESPINASSE. Oh, I’m so glad my idea is sound! I must have been speaking prose without knowing it.*

BORDEU. You were speaking very good prose, as I hope to be able to show you. Those who know man only in the form that he presents to us at birth do not have the least idea of what man is. His head, his feet, his hands, all his limbs, all his bowels, all his organs of sense, his nose, eyes, ears, heart, lungs, intestines, muscles, bones, nerves, membranes—all these, strictly speaking, are nothing but gross extensions of a network which takes form, grows, extends, and throws out a multitude of imperceptibly fine threads.

MLLE. DE L’ESPINASSE. That’s what I mean by my web, and my spider is the point from which all those threads start.

BORDEU. Perfect!

MLLE. DE L’ESPINASSE. But where in the human body do you find the threads, and where does the spider sit?

BORDEU. The threads run everywhere. There is scarcely a point on the surface of your body that is not connected to the end of one of those threads. And the spider has her nest in that part of your brain that I just mentioned—the meninges—and if you were so much as to tap lightly on that part

* Monsieur Jourdain, the protagonist of Molière’s Le Bourgeois Gentilhomme, marveled that he had, without knowing it, been speaking prose all his life.

of the brain, you would induce unconsciousness in the whole organism.

MLLE. DE L’ESPINASSE. Well, if the smallest particle should set up a vibration in one of the filaments of the spider’s web, she would immediately take alarm, she would run hither and yon. She sits in the center and learns everything that goes on in every single part of the wide dwelling that she has woven. Why is it that I don’t know instantly all that happens in my own room—I mean the whole world—inasmuch as I am a mass of sensitive particles, and inasmuch as I am in contact with all the other particles and they with me?

BORDEU. The reason is that impulses get weaker in proportion to the distance from their point of origin.

MLLE. DE L’ESPINASSE. But if you tap ever so lightly on the end of a long rod, I will be able to hear the tap, provided I press my ear against the other end. The same result would occur if one end of the rod were touching Sirius and the other end touching the earth. If everything is continuous or contiguous with everything else, just as in the rod, if it really existed, why would I not hear everything that goes on in the vast spaces that surround me, especially if I put my ear close?

BORDEU. How do you know that you don’t perhaps hear more or less of what goes on? But the distances are so great, the impulses are so weak and they jostle one another so much along the way—and besides, you are in the midst of so many assorted loud noises that dull your hearing. Finally, there are only contiguous bodies between you and Saturn, whereas what we require is continuity.

MLLE. DE L’ESPINASSE. What a pity!

BORDEU. Yes. Otherwise you would be God. Thanks to your identity with all the beings of the natural world you would know absolutely everything that takes place, and thanks to your memory you would know everything that has happened in the past.

MLLE. DE L’ESPINASSE. What about the future?

BORDEU. So far as the future is concerned, you would be able to make some highly probable guesses, but you would make some mistakes. It’s exactly the same as though you were to
try to guess what is going on inside your own body or at the
tips of your toes or fingers.

_Mlle. de l'Espinasse._ How do you know that the entire
world does not have a brain, or that there is not in some corner
of the universe a big or a little spider whose threads reach
everywhere?

_Bordeu._ I don't know at all. Still less do I know that there
never was one or that there will not be one sometime in the
future.

_Mlle. de l'Espinasse._ But how could a God of that sort—

_Bordeu._ Which is the only kind that makes sense—

_Mlle. de l'Espinasse._ —have existed only at some time in
the past? How could it first exist and then not exist?

_Bordeu._ Exactly. But since it would be a material God—
part of the universe and subject to its processes—it might grow
old and even die eventually.

_Mlle. de l'Espinasse._ I have just had an even more fantastic
idea.

_Bordeu._ You needn't bother to tell me—I know what you
are thinking.

_Mlle. de l'Espinasse._ All right, tell me what it is.

_Bordeu._ You see the possibility that intelligence may be
implanted in bits of especially energetic matter, and you are
wondering why that should not lead to the most prodigious
effects imaginable. You aren't the first person to have that
notion.

_Mlle. de l'Espinasse._ I must say that I don't think any the
more highly of you because you were able to guess my idea—
it only proves that you have a splendid talent for nonsense!

_Bordeu._ I don't deny it. But is there anything in such an
idea to upset anybody? You would have an epidemic of good
and evil geniuses; nature's most constant laws would be turned
upside down by the action of natural forces; the physical
scientists would have a much harder time of it—but there still
wouldn't be anything miraculous.

_Mlle. de l'Espinasse._ Certainly it would be very rash to
assert dogmatically what might happen—or to deny it either.

_D'Alembert's Dream_
like eyes than the tip of a sea anemone's claw is like the sea
anemone. But then each of the strands in the bundle of threads
started to change—solely as the result of nutrition and in con-
formity with the special structure of each—into a particular
organ: except, that is, for those organs that are produced by
a complete change of form on the part of certain threads in
the bundle. The bundle now comes to form a system capable
of nothing but sensation; if it persisted in this form it would
be capable of receiving all impressions that are nothing but
pure sensations—cold, warmth, softness, hardness and the like.
Perhaps memory would also be generated out of these sensa-
tions, coming, as they do, one after the other, and varying in
kind and intensity; perhaps they would even produce self-
consciousness and a very limited sort of reason. At any rate,
this pure sensitivity, this simple sense of touch, undergoes
diversification as the other sense organs develop from other
threads—one forms an ear and gives rise to a sense of touch
that detects noise or musical sounds, another becomes the
palate and gives rise to a second sense of touch that detects
flavors; a third develops into a nose and gives rise to a kind
of touch that distinguishes odors; a fourth grows into an eye
and provides a sense of touch that is sensitive to colors.

**Mlle. de l'Espernasse.** If I understand your explanation, any-
one would have to be a fool to deny the possibility of a sixth
sense, or of a true hermaphrodite. How do we know that
nature is unable to construct a bundle containing a special
thread which could give rise to some sense organ of which we
have no knowledge?

**Bordeau.** Or a bundle containing the threads to produce both
sexes? I think you are quite right—it's a pleasure to discuss
things with you because you not only grasp what is said to
you; you go on to draw further conclusions that are astonish-
ingly acute.

**Mlle. de l'Espernasse.** You're just trying to encourage me,
Doctor.

**Bordeau.** No, really, I'm only saying what I think.

**Mlle. de l'Espernasse.** All right, I see what some of the threads
in the bundle are for, but what happens to the others?
BORDEU. Precisely. Come here and let me give you a kiss.
MLLE. DE L'ESPINASSE. With pleasure.
D'ALEMBERT. Doctor, I heard you kissing Mademoiselle. You
show good judgment.
BORDEU. Now, to get back to the spider web—I have been
giving the problem a good deal of thought, and it strikes me
that the creature at the center needs to know more than just
the location and direction of an impact on the web in order
to make its instantaneous decisions.
MLLE. DE L'ESPINASSE. How should I know?
BORDEU. I'm glad you don't jump to a conclusion. Most peo-
ple are apt to mistake acquired habits of long standing for
natural qualities.
MLLE. DE L'ESPINASSE. And vice versa.
BORDEU. However that may be, you can see that it would
be putting the cart before the horse, in speaking of the earliest
stages of an animal's development, to limit one's attention
and consideration solely to the mature creature. Instead, we
must go back to its rudimentary beginnings. That's why it was
essential to strip away all the complexity of your present
physical constitution in order to get back momentarily to the
time when you were nothing but a soft, fibrous, shapeless,
wormlike substance, more comparable to the bulb or root of
a plant than to an animal.
MLLE. DE L'ESPINASSE. If it should get to be the fashion to
walk stark naked in the streets, I would be neither the first
nor the last to conform. Therefore you are at liberty to do
anything you like with me so long as I learn something. Now
you say that each thread in the bundle develops into a special
organ—what proof do you have that it works that way?
BORDEU. You have only to perform in thought an operation
that nature often performs. Mutilate one of the threads in the
bundle, the thread, for example, that is destined to form the
eyes. What do you think would happen?
MLLE. DE L'ESPINASSE. Perhaps the animal would have no eyes.
BORDEU. Or perhaps it would have only a single eye in the
middle of its forehead.
MLLE. DE L'ESPINASSE. A Cyclops, in other words.

BORDEU. A Cyclops.
MLLE. DE L'ESPINASSE. So perhaps Cyclops wasn't a legendary
creature after all.
BORDEU. Very likely not. In fact, I can show you one any
time you like.
MLLE. DE L'ESPINASSE. Does anyone know the cause of this
abnormality?
BORDEU. Yes, the man who has dissected the monstrosity
and found in it only a single optic thread. Now perform again
in your mind one of nature's occasional experiments. Eliminate
a second thread from the bundle—the one that's supposed to
form the nose—and the animal will have no nose. Eliminate
the thread for the ear and the animal will have no ears, or will
have only one, and the anatomist who dissects it will find
neither olfactory nor auditory threads, or will find only one
instead of two. Keep on eliminating threads, and the animal
will be deprived of its head, feet and hands; it won't live long,
but it will have lived.
MLLE. DE L'ESPINASSE. Are there any cases where that has
happened?
BORDEU. Yes indeed. And that's not all. If you double some
of the threads in the bundle, the animal will have two heads,
four eyes, four ears, three testicles, three feet, four arms,
or six fingers on each hand. If you jumble the arrangement
of threads in the bundle, the various organs will be out of place:
the head will appear in the middle of the chest, the lungs will
be on the left and the heart on the right. If you fuse two
threads together, two organs will be merged: the arms will
adhere to the body; the thighs, legs and feet will be all lumped
into a single piece, and you will have every imaginable kind
of monstrosity.
MLLE. DE L'ESPINASSE. Still, it seems to me that so complex
a machine as an animal, a machine that develops from a single
particle, from a turbulent fluid or perhaps from the chance
mixture of two fluids—no one is any too clear about what he is
doing on such an occasion, after all—a machine that builds
itself little by little through a multitude of successive stages;
a machine whose regularity or irregularity is determined by a
packet of fine, loose, flexible threads and by a kind of embroidery frame where the smallest thread cannot be crushed, broken, displaced or removed without the most disastrous consequences for the whole organism—I should think these threads would be even more likely to get knotted or snarled in the place where the machine is constructed than would the skeins of silk in my embroidery basket.

Bordeu. The fact is that they are more frequently damaged than we generally assume. We don’t perform enough dissections, so our ideas about foetal development are still very far from exact.

Mlle. de L’Espinasse. But aren’t there some striking cases of original deformity, aside from hunchbacks and clubfeet—misshapen babies whose malfunction might be attributed to some hereditary defect?

Bordeu. Innumerable cases. Just recently, at the Charity Hospital in Paris, there died at the age of twenty-five a carpenter, a native of Troyes, by the name of Jean-Baptiste Mace, who was a victim of complications resulting from a chest fluxion. His internal organs, both in the chest and in the abdomen, were transposed—the heart was on the right instead of in its normal position on the left; the liver too was on the right; the stomach, the appendix, and the pancreas were near the right hypochondrium; the major artery bore to the liver on the left side the same relation as it would have if the liver had been on the right; in the long intestinal canal there is the identical transposition; the bowels are placed back to back against the lumbar vertebrae and form a horseshoe. And, after all that, they still want us to believe in final causes!

Mlle. de L’Espinasse. Very strange!

Bordeu. Now if Jean-Baptiste Mace had been married and had had any children . . .


Bordeu. They would have had normal bodies, but some day the grandchild of one of those children—a century later, perhaps, for these deformities leap over several generations—would turn up with the same odd anatomy as his ancestor.

Mlle. de L’Espinasse. But why do these leaps occur?

Bordeu. Who knows? It takes two to make a baby, as you are well aware. Perhaps one partner repairs the defects of the other, so that the defective network only reappears when the descendant of the freakish strain is predominant and so is able to determine the pattern of the network. In any event, the original and primary differences between animal species must be sought in the bundle of threads. And variations within the bundles of a single species account for all the individual freaks produced by that species.

(After a long interval of silence, Mlle. de L’Espinasse awakes from her reverie and arouses the doctor from his musings by making the following remark:) The silliest notion has just crossed my mind.

Bordeu. What is your notion?

Mlle. de L’Espinasse. Perhaps men are nothing but a freakish variety of women, or women only a freakish variety of men.

Bordeu. That notion would probably have occurred to you a good deal sooner if you had known that a woman possesses all the anatomical parts that a man has. The only discoverable difference is this—one has a pouch that hangs outside and the other has a pouch that is reversed so as to go inside the body. A female foetus is virtually indistinguishable from a male foetus, and the part that gives rise to mistakes becomes less important in the female in proportion as the internal pouch develops. Nor does this part ever change so much that it entirely loses its original shape, for it retains this same shape in miniature, and is capable of behaving similarly. It, too, is the center of voluptuous sensations; it, too, has its glans and its foreskin; and you can see at its tip a dot that looks like the orifice of a urinary canal that has been blocked. In the man, there is a space between the anus and the scrotum that is called the perineum, and a seam extending from the base of the scrotum to the tip of the penis which seems to be the stitched-together opening of an original vulva. Furthermore, a woman whose clitoris is exceptionally large generally also has a beard, while eunuchs, who have none, exhibit well-padded thighs, hips that tend to assume the shape of a vase, and round kneecaps—in other words, after losing the char-
acteristic organization of one sex they seem to revert to the characteristic organization of the other. Certain Arabs, who have been castrated by continual riding on horseback, have been known to lose their beards, start speaking in a treble voice, take to wearing women's clothes and to sitting with them in the wagons, crouch down to make water, and in general assume all the habits and mannerisms of women... But all that is rather far afield from our discussion. Let's get back to our bundle of living, animated threads.

D'ALEMBERT. I think you are talking smut to Mademoiselle de L'Espinasse.

BORDEU. When you talk science you have to use technical words.

D'ALEMBERT. Of course, you're absolutely right. In that context they lose all the associations that would make them objectionable. Please go on, Doctor. You were just telling Mademoiselle that the womb is nothing but a scrotum that has been turned inside out and tucked inside the body. In the process, the testicles were spilled out of the pouch in which they had been contained and were tossed, one to the right and the other to the left, to the sides of the abdominal cavity. You were explaining, too, that the clitoris is a male member in miniature, and that in the female this male member gets smaller and smaller in proportion as the womb, or reversed scrotum, gets larger. Also...

MLLE. DE L'ESPINASSE. Yes, yes; but be quiet and keep your nose out of our business.

BORDEU. So you see, Mademoiselle, that in discussing the question of our sensations in general—which are all merely diversifications of the sense of touch—we must leave aside the various subsequent modifications of the network and bring all our attention to bear upon the network itself.

MLLE. DE L'ESPINASSE. All right. Now, I see that each thread of the sensitive network can be hurt or tickled at any point along its entire length. Pleasure or pain arises at this point or that, in one place or another, along one of the long "legs" of my spider—I keep getting back to my spider. Well, the spider is the central meeting place of all the "legs," and these only transmit the pleasure or pain to such and such a place, but without themselves feeling either pleasure or pain.

BORDEU. And that is the unvarying, uniform relation between all such impressions and the common center which constitutes the unity of the animal.

MLLE. DE L'ESPINASSE. And it is the memory of all these successive impressions that makes for every animal the history of its life and of itself.

BORDEU. And it is the memory and the comparisons following inevitably from all these impressions that produce thought and reasoning.

MLLE. DE L'ESPINASSE. But where are these comparisons made?

BORDEU. Why, at the center of the web.

MLLE. DE L'ESPINASSE. What about the rest of the network?

BORDEU. The center is all that matters, and at the center there is no specific or particular kind of sensitivity—the center does not see nor hear; nor does it feel pain. It is generated and then nourished; it grows out of a soft, inert, insensitive material, on which it rests just as if it were on a cushion—there it sits, listens, makes judgments and promulgates its decisions.

MLLE. DE L'ESPINASSE. But you say that it feels no pain?

BORDEU. None whatsoever. Though it is true that the slightest pressure on the right spot will make the judge suspend his sitting. Then the animal falls into a moribund condition. Remove the pressure and it resumes its vital functions; the animal is reborn.

MLLE. DE L'ESPINASSE. And how do you know all that? Has anyone ever been able to kill and then revive a man at will?

BORDEU. Yes.

MLLE. DE L'ESPINASSE. How, for goodness' sake?

BORDEU. It's a very interesting operation; I'll tell you all about it. Dr. La Peyronie, the surgeon, whom you may know, was called to attend a sick man who had received a violent blow on the head. The patient felt a pulsation inside his skull at that point. The surgeon was certain that an abscess had formed on the brain, and that there was not a moment to lose. He shaved the man's head and made an opening in the
skull. The point of his instrument fell exactly on the center of the abscess, which was full of pus. The surgeon drained off the pus and was washing out the abscess with a syringe. Each time he squeezed out some liquid into the hollow of the abscess the patient would close his eyes, his limbs became rigid and still, all signs of life ceased. Then, as soon as the doctor took up the liquid again and thus relieved the center of the burden of the weight and pressure of the injected fluid, the patient would open his eyes, move his limbs, speak, feel sensations— in short, would come to life again.

Mlle. de l’Espinasse. That’s very odd. Did the patient get well?

Bordeau. Yes, he recovered, and when he was back on his feet again, he was able to think, to deliberate, to reason. He had as much wit, as much common sense and as much shrewdness as before—even though a very sizable part of his brain had been removed.

Mlle. de l’Espinasse. I can see that this judge we are dealing with is a really remarkable fellow.

Bordeau. Yet he sometimes plays tricks on himself. He can be misled by bias arising from force of habit—for example, people sometimes feel pain in some part of their body that has been amputated. You can fool the judge whenever you please—just cross one finger over another and touch their two tips with a marble. The judge will decide that there are two marbles.

Mlle. de l’Espinasse. That only means that he is like all the other judges in the world—he needs a great deal of experience; otherwise he will touch a piece of ice and cry that he has been burned.

Bordeau. There’s still another aspect to the matter. The center of the web can enlarge the individual to an almost infinite size, or it can compress him practically to a pinpoint.

Mlle. de l’Espinasse. I’m afraid I don’t follow.

Bordeau. What is it that really limits the volume of space that your body seems to fill, that is, the sphere that really contains all your sensations?

Mlle. de l’Espinasse. It seems to be limited by what I can see or touch.

Bordeau. That’s all very well in the daytime, but at night how does it seem when you lie half awake in the dark, especially if you let your thoughts dwell on some abstract problem—how does it seem even in the daytime when your mind is taken up with some absorbing idea?

Mlle. de l’Espinasse. There’s no limit at all. I seem to be reduced to a single point in space; my body almost seems insubstantial, and I am aware only of my thoughts. I am unconscious of location, movement, solidity, distance and space. The universe is annihilated as far as I am concerned, and I am nothing in relation to it.

Bordeau. Well, then, under those conditions your being is concentrated as much as it possibly can be. On the other hand, there are perhaps no limits to its expansion, at least in theory. Once you have passed the threshold of sensory perception, whether by drawing into yourself—by condensing your being into itself—or by the opposite process of expansion, we have no longer any certainty about what will happen.

Mlle. de l’Espinasse. I agree, Doctor. Often it seems to me, when I start to dream—

Bordeau. Just as with those who are suffering from dropsy—

Mlle. de l’Espinasse. That I am swelling and swelling—

Bordeau. When they think their feet are big enough to touch the canopy over the bed.

Mlle. de l’Espinasse. That my arms and legs are stretching out toward infinity, and that the rest of my body is growing at the same rate. I feel that by comparison the giant Enceladus in the fable was only a pigmy, that Ovid’s Amphitritus was just a dwarf, even though he could put his arms around the earth. I seem to tower up into the heavens, and I could easily embrace the earth.

Bordeau. Very well put. As for myself, I once knew a woman who had much the same experience, but in reverse.

Mlle. de l’Espinasse. How was that? Do you mean that she thought she was getting smaller and smaller, shrinking by degrees into herself?

Bordeau. Exactly. She thought she was no bigger than a needle. She could see, hear, speak reasonably and make judgments, only she had a terrible fear of getting mislaid. She
Mlle. de L’espinaise. I’d call that a very odd sort of dream—and very uncomfortable. Most disagreeable.

Bordeau. It had nothing to do with dreaming. It was just a symptom of the menopause.

Mlle. de L’espinaise. And did this delusion that she was an imperceptibly tiny woman persist very long?

Bordeau. Only an hour or two. Then she felt herself grow gradually back to her normal size.

Mlle. de L’espinaise. What in the world could have caused such extraordinary sensations?

Bordeau. In their natural, quiet state the threads that make up the bundle are under a certain tension; they have an elasticity, an habitual force that defines for us the real or imaginary size of our bodies. I say “real” or “imaginary” because the tension, or elasticity, or force is variable. Hence our bodies do not always seem the same size.

Mlle. de L’espinaise. Which goes to show that in the physical world as well as in the moral world we are inclined to think we are bigger than we actually are!

Bordeau. Cold makes us smaller, heat makes us larger, and a given individual may believe all his life that he is bigger or smaller than he actually is. If it should happen that the bulk of the bundle should be thrown into a state of excitation, if the fibers should swell up so that their incredibly numerous extremities pushed rapidly out beyond their usual limits—then the head, feet, arms and legs, and all the separate points on the surface of the body would seem to be flung out to a vast distance and the individual would feel like a giant. You will have the opposite phenomenon if the ends of the fibers are overcome by torpor, inertia or apathy.

Mlle. de L’espinaise. I can imagine that there would be no way to measure that sort of expansion. And isn’t it conceivable that this torpor, apathy, or inertia that affects the ends of the fibers—this heavy feeling—might become permanently fixed after it had reached a certain degree of intensity, that it might be arrested...
them upright was to turn the other upside down. When they were put in a prone position they could look each other in the face, for their thighs were bent upward between their two bodies and their lower legs stuck still further up in the air between them. Halfway around the circle where their bodies joined in the lower gastric region you could distinguish their sex. In a hollow in between the right buttock of one and the corresponding left buttock of her sister there was a little anus out of which excrement came.

**Mlle. de l’Espinasse.** What an odd sort of creature!

**Bordeu.** They drank milk when it was given them from a spoon, and they lived twelve hours each, as I told you, one falling into unconsciousness as soon as the other revived, one dead as long as the other was alive. The first interval, during which one was in a coma and the other awake, lasted four hours. After that the periods of alternating life and death grew shorter, and finally they both died at the same instant. It was also observed that their navel followed the same rhythm of expansion and contraction, becoming smaller when the baby was unconscious and larger when she came back to life.

**Mlle. de l’Espinasse.** Well, what is your explanation for this alternation between death and life?

**Bordeu.** It may be valid or it may not. But inasmuch as everyone looks at things from the point of view of his own theories, and inasmuch as I don’t want to be an exception to the rule, I should say that in the case of these twins we have the same phenomenon as in the case of the man who was trepanned by La Peyronie, only duplicated because of the fact that two individuals were joined together. The fibrous networks of the two babies were so completely intermingled that they acted and reacted upon one another. When the center of one’s network became dominant, it absorbed all the sensations from the network of the other, so that the other one lost consciousness at that moment; the contrary effect occurred when the second baby’s network got control of the whole system. In the case of La Peyronie’s patient the pressure was exerted from above downward by the weight of a liquid, while in the twins of Rabastens the pressure was exerted from the bottom upward in the form of tension on some of the fibers of the network. This theory is supported by the alternating movement of the navel, which seemed to bulge out when one of the babies revived and to retract when it lost consciousness.

**Mlle. de l’Espinasse.** At any rate, it sounds like a case of two souls joined together.

**Bordeu.** A single animal with two sets of sensory organs and two centers of consciousness.

**Mlle. de l’Espinasse.** Yet it only had the use of one of them at any given moment. Still, who can tell what might have happened if the animal had survived?

**Bordeu.** Do you mean, what sort of pattern of experience would have been gained from all their successive periods of consciousness—the source of all the strongest habits that one can imagine—what sort of reciprocal relations might have been developed between the two brains?

**Mlle. de l’Espinasse.** I mean their double set of senses, their double memory, their double capacity for paying attention. Half the creature observes, reads or meditates, while the other half rests; then the other half starts to perform the identical functions when its partner is tired. It would be a double creature leading a double life.

**Bordeu.** It seems entirely possible, and since nature, if given enough time, must bring about everything that is possible, some such being is bound to occur.

**Mlle. de l’Espinasse.** How poorly endowed we ordinary human beings would seem in comparison with a creature like that!

**Bordeu.** Not necessarily. There are already quite enough uncertainties, contradictions and stupidities now that we have only one mind to a person—I can’t imagine what might become of us if we each had two. . . . But it is half-past ten, and I have a patient to visit out on the edge of town.

**Mlle. de l’Espinasse.** Do you suppose it would be a great loss to him if you didn’t go see him tonight?

**Bordeu.** Perhaps it would be a gain. If nature can’t do the job without me, there’s not much chance that she and I can
do it together, and there's no chance at all that I can do it without her help.

Mlle. de L'Espinasse. Well, then, why not stay here?

D'Alembert. Doctor, just one more question, and you're free to go visit your patient. In view of all the alterations I have undergone in the course of my existence—considering that I perhaps do not possess now a single one of the molecules that were in my body when I was born—tell me this: How does it happen that I have continued to be the same person both in my own eyes and from the viewpoint of other people?

Bordeu. You told us that while you were dreaming.

D'Alembert. Have I been talking in my sleep?

Mlle. de L'Espinasse. All night long. And what you were saying sounded so much like raving that I sent for the doctor early this morning.

D'Alembert. How about your own remarks about the spider's legs that begin to vibrate all of their own accord, keeping the spider on the alert and causing the creature at the center of the web to speak? By the way, what does the creature say?

Bordeu. That he was able, thanks to his memory, to remain the same person both for himself and for others, and I would add that the slow rate of change in his molecular make-up also had something to do with it. If you had been whisked in an instant from infancy to old age, you would find yourself adrift in the world with the mind of a newborn baby. You would no longer be able to look back and say that you had been yourself either in your own eyes or in those of others, and, as far as you were concerned, the others would not have been themselves either. All sorts of relationships would have been annihilated; the whole history of your life would have been rendered meaningless so far as I'm concerned, and vice versa.

How could you know that this same fellow had not so long ago walked with a spring in his step, shifted heavy objects around with the greatest of ease, possessed the mental vigor for the most profound cogitation and the physical strength required for the most arduous as well as the most delicate exertions? You would be utterly unable to understand your own books, you would be unable to recognize yourself, you would be unable to recognize anyone else, and no one else would be able to recognize you. The appearance of the whole world would be entirely different so far as you were concerned.

Remember that there was less difference between what you were as a baby and what you were as a young man than there was between your youth and your sudden decrepitude. Remember, too, that while there was a continuous series of sensations between your babyhood and adolescence, the first three years of your existence have never been part of your conscious life's history. Imagine then how much the years of your youth would mean to you if there were no links between them and the moment when you suddenly became an old man. A senile D'Alembert would not retain the slightest recollection of the youthful D'Alembert.

Mlle. de L'Espinasse. It's just as though you were a swarm of bees in which not a single one had had time to acquire any sense of belonging to the hive.

D'Alembert. What do you mean by that?

Mlle. de L'Espinasse. I mean simply that the monastic spirit persists only because the monastery replaces its members a few at a time, so that whenever a new monk enters the community he finds himself surrounded by a hundred old ones who influence him to think and feel as they do. If one bee leaves the swarm, the bee that takes his place very quickly gets into the swing of things.

D'Alembert. Come, now—you're being silly with all this talk about monks, bees, hives and monasteries.

Bordeu. Not so silly as you might think. While there is only one center of consciousness in an animal, there are many, many different impulses. Every organ has impulses peculiar to itself.

D'Alembert. How's that again?

Bordeu. I mean that the stomach may want food while the palate doesn't, and that the only difference between palate or stomach on one hand and the whole animal on the other is that the animal knows it wants something, while the palate and stomach have wants without knowing that they have them. You might say that palate and stomach stand in the same re-
loration to the whole creature as the lower animals occupy in relation to man. As for the bees, they lose their individual identities, but keep their appetites and impulses. In the body each fiber is a simple animal, whereas a man is a compound animal—but let’s save that theme for another occasion. At any rate, it takes much less than the sudden onset of senility to deprive a man of the consciousness of self. I have known a dying man, for example, to receive the last sacraments with deep piety, confess all his faults, ask forgiveness of his wife, embrace his children, call his friends to his bedside, talk with his physician, give instructions to his servants, dictate his last will, put all his affairs in order—all with the most sober judgment and the most complete presence of mind. Then, unexpectedly, he takes a turn for the better, regains his health, and has not the slightest recollection of anything he said or did during his illness—that interval, sometimes a very long period of time, has simply dropped out of his life. There are even cases where people have picked up the thread of the very same action or conversation that had been interrupted by a sudden attack of illness.

D’Alembert. Well, I remember how a certain pedant in one of the colleges of the University, who was taking part in a public debate, and who was, as usual, all puffed up with a sense of his own omniscience, was tied up in knots, as the saying goes, by a Capuchin whom he had always held in contempt. He, tied up in knots! And by whom? By a Capuchin, of all people! And on what subject? On the contingency of future events! The very branch of theology he had been studying all his life! And in what circumstances? Before a large audience! Before a crowd of his own students! He felt utterly discredited and humiliated. His mind busied itself so well with these ideas that he sank into a lethargic condition, forgetting completely the vast fund of learning he had so painfully acquired.

Mlle. de l’Espinasse. I’d call that a stroke of good fortune!

D’Alembert. And you are right. He still had his common sense intact, but he had forgotten everything he had ever learned. It was possible to teach him reading and writing, but he died about the time he had become a tolerably good speller. And this man was not at all stupid; it was even generally agreed that he was rather gifted as an orator.

Mlle. de l’Espinasse. Since you have told the doctor your story, I want to tell him one I know. There was a young man, about eighteen or twenty years old, whose name I don’t recall—

Bordeu. It was Monsieur de Schellemberg of Winterthur, and he was only fifteen or sixteen at the time.

Mlle. de l’Espinasse. Well, this young man took a tumble and had his head rather violently shaken up.

Bordeu. Violently shaken up, indeed! He fell from the roof of a barn. His skull was fractured and he was unconscious for six months.

Mlle. de l’Espinasse. Have it your own way. But do you know what happened to him as a result of that accident? It was the same thing that happened to your pedantic professor—he forgot everything he had ever known; he behaved just like a little boy. He went through a second period of infancy. He was timid and apprehensive. He played with babies’ toys. If he was scolded for doing something naughty, he would go hide in a corner. He would ask to be put on the toilet to do Number One or Number Two. He was taught to read and write, and I forgot to tell you that he had to learn to walk all over again. Eventually he grew up to be a man, and a very able one, too; he wrote a book about natural history.

Bordeu. You mean he made the engravings to illustrate Sulzer’s book on insects, classified according to the Linnaean system. I am familiar with his case. It happened in the canton of Zurich in Switzerland, and there are a great many similar cases. If you disturb the center of the bundle of fibers, you change the whole creature whose entire being seems to be concentrated there, sometimes dominating the rest of the network of threads and sometimes dominated in turn by them.

Mlle. de l’Espinasse. In other words, the creature is either despotically or anarchically governed?
BORDEU. Despotism is a very good term to apply. The center of the bundle gives orders and all the other parts obey. If that is the situation, then the creature is master of itself—compos mentis, of sound mind.

Mlle. de l’Espinasse. Whereas if anarchy prevails, and all the threads of the network rise up in rebellion against their sovereign, then there is no longer any supreme authority.

BORDEU. Precisely. When a person is swept away by passion, when he is delirious, when he is threatened with great danger, if the master directs the whole strength of all his subjects toward a single end, the weakest of beings sometimes gives proof of unbelievable strength.

Mlle. de l’Espinasse. Would you say that when ladies have the vapors they are suffering from a kind of anarchy that is peculiar to them?

BORDEU. It certainly resembles a weak administration in which each subordinate tries to arrogate to himself as much of the master’s authority as possible. I know of only one remedy, and it is an infallible one, though difficult to apply. It can only work if the center of the sensitive web, that part that constitutes the real self, can be induced by some powerful motive to recover its authority.

Mlle. de l’EsPINASSE. Well, what is the outcome, as a rule?

BORDEU. Either that the center successfully reasserts its authority or that the organism dies. If there were time, I would tell you about two odd cases of this sort.

Mlle. de l’Espinasse. Well, Doctor, the hour of your visit in the suburbs is past and your patient no longer expects you.

BORDEU. Some day I will learn not to come here when I have any work to do, because once here I can never break away.

Mlle. de l’Espinasse. Now that you have spoken so frankly and gotten that off your chest, suppose you tell us about those two cases.

BORDEU. This one should satisfy you for today. There was a woman who had just given birth to a child; as a result, she suffered a most alarming attack of the vapors—compulsive tears and laughter, a sense of suffocation, convulsions, swelling of the breasts, melancholy silence, piercing shrieks—all the most serious symptoms—and this went on for several years. Now this woman was passionately in love, and eventually she began to think she saw signs indicating that her lover had grown weary of her illness and complaints and was beginning to break off their affair. That was when she decided that she must either get well or make an end of herself. In this way there began a sort of civil war inside her own consciousness. Sometimes this war would turn to the advantage of the master; sometimes the subjects would get the upper hand. Whenever the two sides were equal, so that the force exerted by the fibers exactly counterbalanced that of the center of the bundle, she would fall to the ground as though dead. Then, when carried to her bed, she would lie for hours on end, entirely motionless and almost lifeless. On other occasions the effect would be only one of general lassitude or exhaustion or loss of consciousness from which it often seemed she would never recover. For six months she kept up the struggle. Whenever the rebellion began in her fibers she was able to feel it coming on. She would stand up, run about, busy herself with the most vigorous forms of physical exercise, climb up and down stairs, saw wood or shovel dirt. She would make the center of her network, the organ of will power, as rigid as possible by saying to herself: You must conquer or die. At the end of a long succession of victories and defeats the head finally won out, and the conquered “subjects” had been so thoroughly reduced to submission that, although this woman has had to contend with all sorts of domestic troubles and has suffered from various sorts of illness, she has never had the least tendency to the vapors since that time.

Mlle. de l’Espinasse. Good for her! But I think that in her place I could have done as well as she did.

BORDEU. Yes, I think so, because you have a firm disposition, and if you were in love, you would not be lukewarm about it.

Mlle. de l’Espinasse. I think I understand. A person will have a firm disposition if the center of the network is able, as
a result of education, habit or organization, to dominate the various threads. If the center is dominated by the threads, the person has a weak disposition.

BORDEU. And from that proposition one could draw a whole series of further conclusions.

MLLE. DE L’ESPINAISSE. First tell us your other case history, and then draw your conclusions.

BORDEU. There was a young woman who had been leading a rather loose life. One day she decided to turn over a new leaf and give up all her accustomed pleasures. No sooner was she alone than she started to have fits of melancholy and to suffer from the vapors. She sent for me. I advised her to go to the country and lead the life of a peasant, to dig with a shovel all day long, to sleep on a straw pallet and eat black bread. But she had no taste for that prescription. Well, then, said I, why not travel? So she set off for a tour of all the countries of Europe, and she regained her health along the way.

MLLE. DE L’ESPINAISSE. That’s not what you should have said, but never mind. Let’s get to your conclusions.

BORDEU. There’s no end to them.

MLLE. DE L’ESPINAISSE. So much the better. Let’s have them.

BORDEU. My courage fails me.

MLLE. DE L’ESPINAISSE. Why should that be?

BORDEU. Because at the pace we are going we shall only be able to skim the surface of a lot of things without getting deeply into any of them.

MLLE. DE L’ESPINAISSE. What’s the harm in that? We are only having a conversation, not writing a treatise on the subject.

BORDEU. Well, for example—if the center of the network absorbs all the forces of the organism into itself, if the whole system functions, as it were, in reverse, as I believe happens in a man who meditates deeply, in a fanatic who sees the heavens open before his eyes, in the savage who sings in the midst of flames, in all cases of ecstatic frenzy or of insanity, whether involuntary or self-induced . . .

MLLE. DE L’ESPINAISSE. D’Alembert’s Dream

BORDEU. Then the creature makes itself impervious to pain, for it exists only at a single point. I have never seen the priest of Calamo, of whom St. Augustine speaks, who carried the process of self-alienation to the point where he was insensitive to live coals. Nor have I seen those savages bound to the rack who laugh at their enemies and insult them by suggesting more exquisite forms of torment than the ones they are being made to undergo. Nor have I seen those dying gladiators in the arena who remember the graceful movements they learned in their gymnastic training. But I believe in the truth of all these things because I have seen with my own eyes a performance just as extraordinary as any of those I have mentioned.

MLLE. DE L’ESPINAISSE. Please tell me about it, Doctor. I am as eager as any young child to hear stories that deal with unusual happenings. And, if these stories are to the credit of the human race, I am almost never inclined to quarrel with their truth.

BORDEU. In Langres, a small city in Champagne, there was a highly respected priest named Le Moni, or De Mony, who was deeply convinced of the truth of his religion—not to say saturated with it. He had a bad attack of gallstones, and had to undergo an operation to remove the stone. The date was arranged, and the surgeon, his assistants and I went to his house. He greeted us in a perfectly serene manner, undressed and stretched out on the bed. They wanted to tie him down, but he refused. “Just put me where you want me,” he said. So they put his body in the right position. Then he asked for a big crucifix that hung at the foot of his bed. It was handed to him, and he clasped it tightly in his arms, holding his lips pressed firmly against it. He never moved a muscle all during the operation. Not once did he cry out, nor even groan, and when the stone was out he didn’t even know it.

MLLE. DE L’ESPINAISSE. Splendid. After that, who can doubt that the martyr who had his ribs broken when he was showered with rocks did not really see the heavens open before his eyes?

BORDEU. Have you had any experience with earache?
MLLE. DE L’ESPINAISE. No.
BORDEU. You’re very fortunate. It is one of the most painful of all illnesses.

MLLE. DE L’ESPINAISE. I am very familiar with toothache, I regret to say. Is earache worse than that?
BORDEU. There’s no comparison. A certain philosopher whom you know was tormented with one for two weeks. Finally one morning he said to his wife: “I don’t think I have courage enough to get through the day.” It seemed to him that the only thing to do was to get the better of the disease by trickery. He was able to immerse himself by degrees in some problem of metaphysics or geometry, and by that means succeeded in forgetting his ear. His dinner was brought to him, and he ate it without being aware of what he was doing. Bedtime arrived, and still he was unconscious to any pain. To be sure, the horrible throbbing began again the moment his mind ceased to be fully occupied, and its fury seemed to have redoubled, whether because the irritation itself was increased by fatigue or whether, because he was tired, he felt it more intensely.

MLLE. DE L’ESPINAISE. Such an agony as that must leave a person exhausted and lethargic. The same thing sometimes happens to that fellow over there in the bed.
BORDEU. He should be more careful. That condition can be dangerous.

MLLE. DE L’ESPINAISE. I tell him so time and time again, but he pays no attention.
BORDEU. He can’t help doing as he does—that is the way he lives, and I suppose it will kill him eventually.

MLLE. DE L’ESPINAISE. Don’t say such things—you terrify me.
BORDEU. Exhaustion and lethargy are indicative of something. They mean that the threads that make up the bundle have not been passive; on the contrary, the whole system has been subjected to powerful tension in the direction of the common center.

MLLE. DE L’ESPINAISE. And what if that tension or powerful striving should persist? What if it should get to be habitual?
BORDEU. Then the center of the bundle would develop a tic.

The creature would go mad, and such insanity is almost always incurable.

MLLE. DE L’ESPINAISE. Why?
BORDEU. Because there is a difference between a tic that affects one of the fibers and a tic that affects the center. The head can issue orders to the feet, but not the other way around. The center can command one of the fibers, but not vice versa.

MLLE. DE L’ESPINAISE. And how, if you please, do you account for the difference? Why, indeed, is it impossible that I should think with my whole body? That’s a question I should have thought of asking you a long time ago.
BORDEU. You can be sure that there is only one center of consciousness.

MLLE. DE L’ESPINAISE. That’s very easy to say.
BORDEU. It is physically impossible that it can be in more than one place, namely, at the center to which all sensations are transmitted, where the memory functions, where comparisons are made. Each thread is capable of detecting only a certain limited number of impressions, of successive, isolated sensations, none of which leaves any memory in the thread. The center can receive all kinds of sensations, can register them, can remember them—that is, retain a continuous impression. Besides, every animal is obliged, from the first moment of his existence, to refer himself to this center, to attach himself entirely to it, and to concentrate his whole existence in it.

MLLE. DE L’ESPINAISE. But what if my finger had a memory?
BORDEU. Then your finger would be able to think.
MLLE. DE L’ESPINAISE. And what, precisely, is memory?
BORDEU. It is a property of the center, the specific sense peculiar to the hub of the network, just as sight is the specific property of the eye. It is no reason for astonishment that the eye has no memory, any more than that the ear has no sense of vision.

MLLE. DE L’ESPINAISE. Doctor, I’m afraid you’re evading my questions instead of really answering them.
BORDEU. No, I’m not trying to dodge anything. I’m only
telling you what I know, and I would know more if I were as well acquainted with the structure of the network's center as I am with the structure of the fibers, or if I had the same facilities for observing it. However, if I have to be vague about specific details, at least I can give a better account of myself when it comes to generalities.

Mlle. de l'Espinasse. What generalities, for example?

Bordeal. Reason, judgment, imagination, insanity, idiocy, ferocity, instinct.

Mlle. de l'Espinasse. All right, I see what you mean. All those things are nothing but consequences of the original or habitually acquired relation between the center of the web and its threads.

Bordeal. Exactly. The stock or trunk may be too vigorous in relation to its branches. In that case you get poets, artists, men of vivid imagination, cowards, fanatics, maniacs. If the trunk is too weak, you will get a thug, a savage brute. If the whole system is soft, loose and lacking in energy, you will have a fool. If the whole system is energetic, harmonious and well-ordered, you will get sound thinkers, philosophers or sages.

Mlle. de l'Espinasse. I suppose one branch tyrannizes over the system. Then depending on which branch predominates you will have various kinds of instincts in the lower animals, special types of genius in men—a keen nose in the dog, acute hearing in fish, sight in eagles; D'Alembert will be a mathematician, Vaucanson a builder of machines, Grétry a musician, Voltaire a poet. All these aptitudes must be consequences of the fact that one thread of the network is more vigorous than the others, and more vigorous than the corresponding thread in other members of their species.

Bordeal. You will find a similar explanation for the traits that work to a person's disadvantage—the infatuation of an old man for a woman, or Voltaire's determination to go on writing tragedies.

(Here the doctor falls into a pensive silence; presently Mlle. de l'Espinasse says to him.)

Mlle. de l'Espinasse. A penny for your thoughts, Doctor.

Bordeal. I was just thinking——
man grasps so as to lead the weak wherever he pleases—the great man will have broken the halter and will thus have liberated himself from all the tyrannies of this world. The fools and the people of excessive sensibility will be on the stage; he will be observing them from the pit, for he is a wise man.

Mlle. de l’Espinasse. May the Lord preserve me from the company of your wise man!

Boréde. The reason you will always be flying back and forth like a shuttlecock between violent pleasures and violent pains is that you have never tried to behave as he does. So you will be condemned to spend your whole life laughing or weeping, and you will never be anything but a child.

Mlle. de l’Espinasse. I accept my fate.

Boréde. Do you think that’s the best way to happiness?

Mlle. de l’Espinasse. I really don’t know.

Boréde. My dear friend, this much-touted sensibility is a quality that never leads to anything great, and it almost never is strongly indulged in without causing distress. Moderately indulged in, it produces boredom. The victim is either yawning or intoxicated. Abandon yourself without restraint to the delicious strains of a choice piece of music, or let the charm of some pathetic scene in a play absorb your attention completely, and what happens? Your diaphragm gets tense all of a sudden, and there’s an end to your pleasure! You are left with a suffocated feeling that bothers you all the rest of the evening.

Mlle. de l’Espinasse. But what if that is the price I have to pay for enjoying the music or being touched by the tragic situation?

Boréde. You’re mistaken. I know how to enjoy myself as well as the next man, and I can admire something if it’s well done, but I never feel distress as a result. Only when I have the colic. I think my pleasure is more pure for that reason, and that I am both a more severe critic and a person whose applause should be more flattering because it is more deliberate. Is there any such thing as a bad play for people who have minds as volatile as yours? How many times have you blushed as you have read a play and remembered how you had been swept off your feet on hearing the same verses recited in the theater? Or the other way around?

Mlle. de l’Espinasse. I admit it has happened to me.

Boréde. That’s why cold, serene people like me—and not sensitive creatures like yourself—are the only ones who have the right to say: This or that is true, good or beautiful. . . . We must strengthen the center of the network—it’s the very best thing we can do for ourselves. Did you know that life itself may depend on it?

Mlle. de l’Espinasse. Life itself! That’s a serious matter.

Boréde. Yes indeed. Almost everyone at some time or other has been in deep depression. It takes only some chance event to make this condition involuntary and habitual. Then, no matter what distractions you go in for, no matter how many types of amusement you try, no matter what friendly advice you try to follow, no matter what efforts you make on your own hook, the fibers stubbornly keep on transmitting harmful messages to the center of the web. The unlucky sufferer may bestir himself as much as he will, but he will continue to look at the world through dark glasses, he is obsessed wherever he goes with a swarm of gloomy thoughts, and in the end he does away with himself.

Mlle. de l’Espinasse. Doctor, you scare me.

D’Alembert. (who has gotten up with his nightcap on and put on his dressing gown). What do you have to say about sleep, Doctor? I say it’s a good thing.

Boréde. Sleep is the condition in which, whether because of fatigue or habit, the whole network relaxes and becomes immobile. It is the condition in which, as in some illnesses, each thread of the web moves, vibrates and so transmits to the center a whole series of sensations that are often ill-assorted, incoherent, or confused; at other times these sensations may be so unified, consistent and well-ordered that the man in question would display no greater rationality, no greater imagination and no greater eloquence if he were wide-
awake. Sometimes, too, the sensations are so lively or even violent that the sleeper can't be wholly sure afterward whether he has been waking or dreaming.

Mlle. de l'Espinasse. So we would say, then, that sleep—

Bordeau. —Is a condition in which the animal ceases to exist as a whole entity. Co-operation and subordination among his various faculties are lacking. The master is thrown on his vassals or, one might also say, is abandoned to the energy of his own uninhibited activity. Perhaps something impinges on the optic thread—the center of the web will see something. If the auditory thread is sending it a message, it will hear something. Nothing else need occur beyond these actions and reactions. All this is merely the result of the specific property of the center and it all follows from the law of continuity and habit. If the process should begin in one of the voluptuary fibers, destined by nature to serve the pleasures of love and the propagation of the race, then the image evoked will be that of the object of one's passion—this will be the reaction at the center of the web. If, on the other hand, the image should appear initially at the center of the bundle of fibers, then the reaction in the voluptuary fibers will take the form of tension, erection and emission of seminal fluid.

D'Alembert. Hence you might say that there are dreams that go upstairs and dreams that go downstairs. I seem to have had one of the kind you mention last night, though I'm not sure whether it started at the top or at the bottom.

Bordeau. When we are wide-awake the network is governed by the impressions made on it by external objects. When we are asleep, it is the activity of our own consciousness that originates all the sensations we are aware of. Because we are free from all distractions when we sleep, our dreams are correspondingly vivid. A dream is almost always the result of sensory stimulation; it is a transitory form of illness. The center of the web is active and passive by turns and in a great variety of ways—hence the sense of disorder that is characteristic of dreams. Or, the ideas may be very logically connected on occasion—fully as distinct as they would be if we were awake and staring at the thing in question. In that case we are merely looking at a picture of that thing as it has been recomposed in the mind—this accounts for the faithfulness of the image and for our difficulty in telling whether we are waking or sleeping. We have no evidence for drawing either conclusion, and no way of correcting our error except through experience.

Mlle. de l'Espinasse. Is it always possible to check with experience?

Bordeau. No, not always.

Mlle. de l'Espinasse. What if I should see in a dream, clearly and vividly, the image of some friend I have lost, just as though he were alive, what if he should speak to me and I should understand, what if I should touch him and have the impression of something solid at my fingers' ends? What if, when I wake up, I am filled with tenderness and sorrow so that tears well up in my eyes? What if my arms are still outstretched toward where I seemed to see him? What can convince me that I did not really see, hear and touch my friend?

Bordeau. His absence should convince you. But if it is impossible to distinguish sleep from wakefulness, how much more difficult it is to estimate the length of time one has been asleep! When we lie perfectly still, it is only on interval sandwiched in between the instant we go to bed and the instant we wake up. If our sleep is troubled, on the other hand, it seems to last for years on end. In the former case, at any rate, one's awareness of himself is completely suspended. Can you tell me what dream it is that no one has ever had or ever will have?

Mlle. de l'Espinasse. Yes. One in which the dreamer thinks he is someone else.

D'Alembert. Don't forget that in troubled sleep one has not only an awareness of being oneself, but in addition one has the sense of free will. What about this free will that a dreamer seems to be conscious of?

Bordeau. What about it? It's no different from the sense of free will in a man who is awake—it is simply the most recent impulse of desire or aversion, the most recent result of all that he has been and done since the moment of his birth. I defy the most captious critic to discover the slightest difference between the two.
D'Alembert's Dream

Mlle. de l'Espinasse. He's right. Since I am the one who does thus and so, anyone who could act otherwise wouldn't be me. To maintain that at the very moment when I do or say a certain thing, I could just as well do or say something else, is the same thing as maintaining that I am both myself and somebody different. But Doctor, how does all this relate to virtue and vice? Virtue! The word that is so holy in all languages! The idea that is so sacred among all nations!

Bordeu. We shall have to transform it into the notion of doing good and change its opposite into the idea of doing ill. A person has either a good or a bad heredity, and once born he is insensibly drawn into the general current that carries one person along to glory and another to a shameful end.

Mlle. de l'Espinasse. And how about self-respect, modesty and guilt?

Bordeu. Childish notions with no foundation but the vanity and ignorance of a creature who takes the credit or the blame for one link in the chain of necessity.

Mlle. de l'Espinasse. And the theory of rewards and punishments?

Bordeu. Useful for correcting a malleable creature whom we call bad and for encouraging one whom we call good.

Mlle. de l'Espinasse. But isn't that a dangerous thing to go around saying?

Bordeu. Is it true or is it not?

Mlle. de l'Espinasse. I think it's true.

Bordeu. Then you mean that you think a lie may have some usefulness and the truth some inconveniences.

Mlle. de l'Espinasse. That's what I believe.

Bordeu. So do I. But the advantages that can arise from a lie are only momentary, and those that spring from the truth are eternal. The troublesome consequences of telling the truth, if there should be any, pass quickly away, while the evils that follow from a lie end only with its destruction. Just consider for a moment what effects a lie produces inside a man's mind and in his conduct. Inside his mind either the lie gets mixed up with the truth in some helter-skelter fashion, so that he
can't think straight, or the lie is logically and consistently linked up with the truth, and the mind is full of error. Tell me, what kind of behavior can you expect from a mind that is either inconsistent in its true reasoning or consistent in its mistakes?

Mlle. de l'Espinasse. The latter of the two vices, although less often condemned, is perhaps more to be feared than the former.

D'Alembert. Hear, hear! Now you have reduced everything to mere sensitivity, memory and organic functions. I don't object to that. But what about imagination? What about abstract ideas?

Mlle. de l'Espinasse. Just a moment, Doctor. Let's go over the ground again briefly, if you don't mind. According to your principles, I gather that by a series of purely mechanical operations I could reduce the greatest genius on earth to a mass of unorganized pulp. This pulp would be deprived of everything except a momentary sensitivity. Now you tell us that this shapeless mass could be brought back from the most abject stupidity imaginable to the condition of a man of genius. The first operation would consist of mutilating a certain number of the threads in the original embroidery frame and thoroughly snarling the rest. The opposite process is one of restoring to the frame the threads that have been detached and leaving the rest to be repaired by the healing powers of nature. For instance, let's suppose that I remove from Newton the two auditory threads—he'd have no more perceptions of sounds. Then I take away the olfactory threads—no more smells. I detach the optical threads—no more sense of color. The taste threads—no more flavors. I eliminate or tangle up the others—and it's good-by to the structure of the brain. No more memory, judgment, desires, aversions, passions, will power, self-awareness. We are left with nothing but a shapeless mass that retains only life and sensitivity.

Bordeau. Two properties that are practically identical. Life is the whole, of which the different kinds of sensitivity form the elementary parts.

Mlle. de l'Espinasse. Now I take the shapeless mass and put back the olfactory threads—now it can smell again; the auditory threads, and it can hear; the optical threads, and it can see; the taste threads, and it can taste. By unsnarling the rest of the embroidery frame I allow the other threads to grow into place again, and under my eyes are reborn memory, the ability to make comparisons, judgment, reason, desires, aversions, the passions, natural aptitudes, talent—and I have recovered my man of genius, all without the intervention of any unintelligible outside agency.

Bordeau. Splendid! Put that under your hat and hang onto it, because anything else they may tell you is poppycock. . . . But you were asking me about imagination and abstract thought. Well, imagination is memory of shapes and colors. The visual impression of a scene or object necessarily winds up the sensitive instrument in a certain way; either it winds itself up, or it is wound up by some external circumstance. Afterwards it either hums inside or buzzes outside. It records silently the impressions it receives; then it gives them out again in the form of conventional sounds.

D'Alembert. But its rendition usually exaggerates, omits details or adds them, disfigures the fact or else embellishes it, so that the nearby instruments receive impressions that are in truth those of the instrument that is speaking, but hardly those corresponding to the thing that actually happened.

Bordeau. All very true. The recital can be either historical or poetic.

D'Alembert. But how did the poetry, that is, the element of untruth, get into the story?

Bordeau. By the process whereby one idea calls up another; and they evoke one another because they have always been connected. Since you have made free to compare animals to clavicords, you must allow me to compare a poet's narrative to a melody.

D'Alembert. Fair enough.

Bordeau. Well, for every melody there is an octave. This octave has its intervals, and each string that corresponds to
these notes has its harmonic strings which, in turn, have harmonic strings of their own. Thanks to this arrangement it is possible to introduce modulated passages into the melody, embellishing and lengthening the song. The actual happening we were talking about is a set theme which every musician interprets in his own style.

Mlle. de l’Espinasse. But why do you becloud the question with your figurative language? I would simply say that because everyone has his own pair of eyes, everyone sees and reports things differently. I would say that every idea awakens others and that each person, depending on the way he has his head screwed on—his character—either sticks to the ideas that represent the happening faithfully, or else mingles these with other ideas that have been evoked. I would say that there is a wide field of choice when it comes to these latter ideas. And I would say... but if one were to treat the subject exhaustively he would have to write a big, fat book.

D’Alembert. You’re right. But I’m not going to let that stop me from asking the doctor whether he really believes that the imagination never gives birth to some shape that has no relation to anything at all, and whether the poet might not put such a shape into his description.

Bordeau. I really believe it never happens. The fevered imagination is no more than on a level with the skill of those charlatans who cut several different animals in pieces and stick them together so as to make a weird creature never seen in nature.

D’Alembert. And how about abstract ideas?

Bordeau. There’s no such thing. There are only habitual omissions of detail, ellipses that make propositions more general and so enable us to speak more rapidly and conveniently. The abstract sciences arose out of the signs of language. The fact that a number of actions have some one thing in common has given rise to words like “vice” and “virtue.” “Ugliness” and “beauty” came into being because several objects were found to have a common property. At first people said one man, one horse, two animals; later they simply said one, two, three, and the whole science of numbers was born. There is no particular mental image that corresponds to an abstract word. People noticed that all solid bodies have three dimensions—length, breadth and thickness—then they set their minds to work on each of the three dimensions, and from that activity all the mathematical sciences have been derived. Every abstraction is only a symbol from which all particular notions have been removed. All the abstract sciences are merely combinations of symbols. The specific notions were excluded when the symbol was detached from the physical object. A scientific procedure can only become a science of particulars when the symbols are joined up once more with the physical objects they represent. This accounts for the necessity of appealing to examples in conversation, and even in serious works. When, after you have waded through a long series of symbols, you ask for an example, what you are doing is to require of the person speaking that he give some body, some shape, some reality, some particular content, to the successive noises he has been making by connecting them up with familiar sensations.

D’Alembert. Is all that clear enough for you to follow, Mademoiselle?

Mlle. de l’Espinasse. Not altogether. But I imagine the doctor will make it clearer as he goes along.

Bordeau. It’s good of you to say so. It’s not that there may not be a number of points that need to be corrected and a great number that need to be added to what I have said. But it’s half-past eleven, and I must make a call in the Marais quarter at noon.

D’Alembert. “To make language more rapid and convenient!” Doctor, do we really understand ourselves? Do we really make ourselves understood?

Bordeau. Nearly all conversations are like reckonings that have been drawn up... Where the devil did I put my cane?... One seldom has an idea clearly in mind... And now, my hat... And for the simple reason that no one man is exactly like any other, we never understand one another exactly; there is always an element of more-or-less; our language always overshoots or falls short of the actual sensation. We are very well aware of how much judgments differ, and there are a thousand
times more differences than we are aware of—which, fortunately, it is impossible to be aware of. . . . Well, I'll be on my way. Good-by.

Mlle. de l'Espinasse. Please, Doctor, just one more question.

Bordeau. All right, let's have it.

Mlle. de l'Espinasse. You remember those leaps you were telling me about?

Bordeau. Yes.

Mlle. de l'Espinasse. Well, do you suppose that idiots and men of genius may have leaps of that sort in their heredity?

Bordeau. Why not?

Mlle. de l'Espinasse. So much the better, then, for our grandchildren! Perhaps one of them will be a second Henry IV.

Bordeau. Perhaps there has already been a second one.

Mlle. de l'Espinasse. Doctor, why don't you come back and have dinner with us?

Bordeau. I will if I can, but I make no promises. You'll have to expect me when you see me coming.

Mlle. de l'Espinasse. We'll wait for you until two o'clock if need be.

Bordeau. It's a bargain.

Sequel to the Conversation

Speakers: Mademoiselle de l'Espinasse and Bordeau.

The doctor returned as two o'clock was striking. D'Alembert had gone to dine elsewhere, and the doctor sat down to table alone with Mlle. de L'Espinasse. Dinner was brought in. They spoke about this and that until the dessert arrived, but the moment the servants were out of the room, Mlle. de L'Espinasse said to the doctor:

Mlle. de l'Espinasse. Now, then, Doctor, let me pour you a glass of this Malaga, and then answer a question that has run through my head a hundred times. It's something I wouldn't think of speaking of to anyone but yourself.

Bordeau. Hmm! This Malaga is really first-class. . . . Now, what was your question?

Mlle. de l'Espinasse. What do you think about the possibility of successful mating between members of different species?

Bordeau. I declare, that's a good question, too. Well, I think that human beings have attached a great deal of importance to the act of procreation, and they are right. But I don't think very much of their laws, both civil and religious, on the subject.

Mlle. de l'Espinasse. How would you rewrite them?

Bordeau. They have been written without regard for equity, for the purpose to be served, for the nature of things, or for the public welfare.

Mlle. de l'Espinasse. I wish you'd explain yourself more at length.

Bordeau. I'll try. . . . But hold on a moment. . . . (He looks at his watch.) Good, I have a whole hour to give you; then I'll have to leave on the run, and that will be that. All right, then. We are alone, and you are no prude, so you won't imagine that I want to seem lacking in the respect I ought to show a lady. Hence, whatever opinion you may have of my theories, I, for my part, hope that at least you won't infer anything to the detriment of my good moral reputation.

Mlle. de l'Espinasse. Most assuredly not. But your preamble rubs me the wrong way.

Bordeau. In that case, let us talk of something else.

Mlle. de l'Espinasse. No, no. Follow your fancy. One of your friends who was looking for husbands for me and my two sisters managed to provide a sylph for the youngest, a strapping Angel of the Annunciation for the eldest, and one of Diogenes' disciples for me—he understood all three of us to perfection. But all the same, Doctor, don't be too specific! Leave a few things under wraps, if you please!

Bordeau. That goes without saying, at least to the extent that my profession and the nature of the subject permit.
MLLE. DE L’ESPINASSE. I am sure it will cost you no great effort. . . . But here’s your coffee. . . . Don’t forget to drink your coffee. . . .

BORDEU. Your question concerns physical science, morality and esthetics.

MLLE. DE L’ESPINASSE. Esthetics?

BORDEU. Undeniably. The art of creating new human beings in imitation of those that already exist is certainly part of esthetics. In this instance, however, allow me to cite Horace rather than Hippocrates. This poet, or maker, says somewhere: Omne tuit punctum, qui miscuit utile dulci—the supreme merit is to have mingled the pleasant with the useful. Perfection consists in reconciling these two requirements. Hence those actions which are both pleasant and useful ought to occupy the apex of the esthetic hierarchy. We would have to grant second place to what is only pleasant, and the third place belongs to what is merely useful. We relegate those things that yield neither pleasure nor profit to the very bottom of the heap.

MLLE. DE L’ESPINASSE. So far, so good. Up to this point, at least, I can share your opinions without having to blush. But where do we go from here?

BORDEU. Be patient and you’ll see. Mademoiselle, can you tell me what pleasure or profit anyone can get out of total chastity and continence—or society either, when it comes to that?

MLLE. DE L’ESPINASSE. None at all, upon my word.

BORDEU. Therefore, despite the magnificent praise that the fanatics have lavished on chastity and continence, and despite the civil laws that encourage them, we shall strike them out of the catalogue of virtues, and we shall agree that nothing could be more childish, ridiculous, absurd, harmful and despicable—nothing worse short of positive evil—than these two rare attributes.

MLLE. DE L’ESPINASSE. I’ll grant you that.

BORDEU. Keep your eyes open, now. I warn you—pretty soon you’re going to find the going too rough!
suffers from. The seminal fluid may just as well be drawn up from its reservoirs and distributed through the whole blood system, then evacuated from the body by the longest, most dangerous and most painful route, but isn't it lost just the same? Nature doesn't put up with anything useless, and why should I not take it upon myself to help her when she cries out to me for aid by the most unmistakable symptoms? To be sure, we should never force her, but let us be ready to lend her a hand on occasion. I can see nothing but laziness and imbecility in the refusal to do so—that, and loss of pleasure. They tell you, live soberly and exhaust yourself by physical exertion. I take this to mean: Deprive yourself of a little pleasure, give yourself a little pain in order to ward off an equal enjoyment.

A fine piece of reasoning!

Mlle. de l'Espinasse. But your doctrine shouldn't be taught to children.

Bordeau. Nor to grownups, for that matter. Still, will you allow me to assume something for the sake of argument? Let's say that you have a well-behaved daughter—a little too proper; innocent—a little too innocent. She has just reached the age at which the character starts to form. Well, she develops a case of the vapors, and it fails to clear up in the normal course of events, so you call me. I see at once that all the symptoms that worry you are traceable to a superabundance of repressed sexual desire. I warn you that she may be threatened with the loss of her sanity, perhaps without hope of recovery, but that this tragedy would be easy to prevent. I explain the remedy to you. What would you do?

Mlle. de l'Espinasse. Well, to tell you the truth, I think . . . But such a thing could never happen . . .

Bordeau. Don't you believe it. It isn't at all uncommon, and it would happen a lot more often than it does if the laxity of our morals didn't help to prevent it . . . Still, whatever the truth of the matter may be, anyone who taught my doctrine to young people would be trampling all decency under foot, would draw down on himself the most odious suspicions, and would commit a crime against society. What are you dreaming about?

Mlle. de l'Espinasse. Oh. I was making up my mind whether or not to ask you if an occasion had ever arisen when you had to divulge this secret of yours to a young girl's mother.

Bordeau. Certainly.

Mlle. de l'Espinasse. And what reply did you get?

Bordeau. I have always met with a sensible attitude. . . . I admit that I wouldn't take my hat off in the street to a man suspected of practicing my theory; I would even be pleased to hear him called infamous. But we are speaking between ourselves and with no practical implications, and I would say of my philosophy what Diogenes, stark naked, said to the modest Athenian youth with whom he was about to wrestle.

"Don't be afraid, my boy, I'm not such a scum as that fellow over there."

Mlle. de l'Espinasse (putting her hands over her eyes).

Doctor, I see what you are leading up to, and I'll wager—

Bordeau. I won't bet with you because you'd win. Well, you asked for my opinion, Mademoiselle, and there you have it.

Mlle. de l'Espinasse. But can you really believe that it makes no difference whether one limits oneself to the members of one's own species or whether one doesn't?

Bordeau. No difference at all.

Mlle. de l'Espinasse. You're a monster!

Bordeau. It's not I that's monstrous. It's either nature or society. Listen, Mademoiselle. I don't judge things according to the words by which they are called, and I let my tongue run all the more freely because I can call a spade a spade and because the well-known purity of my morals makes me secure against malicious attacks. I ask you, therefore, what will be the verdict of common sense as between two acts, both equally limited to the satisfaction of lust, both capable only of giving a wholly non-utilitarian pleasure, but of which one gives pleasure only to the one that does it and the other gives pleasure both to him and to a being of the same or of the opposite sex? In this matter, you see, it makes no difference which sex does what, with which, and to whom.

Mlle. de l'Espinasse. These questions are too abstruse for me.
BORDEU. That's giving me orders to put the cart before the horse, but since that's the way you want it, I shall simply say that because of our chicken-heartedness, our skittishness, our laws and our prejudices, precious few experiments have ever been made. Hence we do not know what copulations might be totally unfruitful or what different ways there may be of combining the pleasant with the useful. We don't know what sort of species we might expect to produce as the result of varied and sustained experimentation. We don't know whether the fauns were real or legendary. For all we know, there may be a hundred ways of producing hybrids like the mule, and we aren't sure that the known hybrids are really barren. Still, there is a striking instance of hybridization, which any number of well-educated people will vouch for, but which is false nonetheless, and that is that they have seen in the barnyard of His Highness the Archduke an infamous rabbit who did the rooster's duty for a score of shameless hens who seemed to be enjoying it; these people add that they have had shown to them a number of chucks covered with fur who were the fruit of this bestiality. You may well believe that they have let themselves in for a lot of ribbing.

Mlle. de l'Espinasse. But what do you mean by sustained experimentation?

BORDEU. I mean that there are many gradations that separate each animal species from the one next to it. Therefore you would have to make careful preparations for assimilating one to another. In order to succeed in this sort of experiment you would have to go about it over a long period of time, working at first to bring the two animals close to each other by making them follow a similar diet.

Mlle. de l'Espinasse. You'll have quite a job on your hands if you try to get a man to browse in a pasture.

BORDEU. But no difficulty in getting him to drink a lot of goat's milk, and it's easy to get the nanny goat used to eating bread. I have picked a nanny goat for good and sufficient reasons of my own.

Mlle. de l'Espinasse. And what might those reasons be?

BORDEU. You're really getting your courage up now! The reason is—well, the reason is that the mixture would give us a
vigorous, intelligent, tireless and swift-footed race of animals of which we could make excellent domestic servants.

**Mlle. de L'espinasse.** Bravo, Doctor! I can see in my mind's eye already a picture of five or six great, insolent satyrs riding out behind the carriage of one of our duchesses, and the notion pleases my fancy enormously.

**Bordeu.** If my idea should work out, we would no longer have to degrade our fellow men by making them perform functions that are unworthy of them and of ourselves.

**Mlle. de L'espinasse.** This gets better every minute.

**Bordeu.** And in the colonies we would no longer have to reduce the natives to the condition of beasts of burden.

**Mlle. de L'espinasse.** Hurry, hurry, Doctor. Get to work and produce a lot of satyrs for us.

**Bordeu.** But wouldn't you have any moral scruples about allowing the experiment?

**Mlle. de L'espinasse.** Wait a moment! I've just thought of one—your satyrs would be dissolute rascals.

**Bordeu.** I couldn't promise you anything about their morals.

**Mlle. de L'espinasse.** Then honest women wouldn't feel safe for a single instant with them around. The satyrs would multiply endlessly, and in the long run we would either have to do away with them or knuckle under to them. No, I don't like your idea, I don't want them any more. Spare yourself the trouble.

**Bordeu (getting ready to take his leave).** And then there would be the question of whether to baptize them.

**Mlle. de L'espinasse.** It would throw the whole Sorbonne into a furore.

**Bordeu.** Have you ever seen in the Jardin du Roi, under a glass cage, that orangutan who looks so much like St. John preaching in the wilderness?

**Mlle. de L'espinasse.** Oh yes, I've seen him.

**Bordeu.** Well, Cardinal de Polignac said to him one day, "Just speak to me, my lad, and I'll baptize you."

**Mlle. de L'espinasse.** Well, good-by for now, Doctor. Don't desert us again for ages at a time, as you have been doing, and remember occasionally that I am madly in love with you. If people only knew what horrible things you have been telling me about!

**Bordeu.** I have no fear that you will let them in on it.

**Mlle. de L'espinasse.** Don't you be too sure of that. I only listen so as to have the pleasure of passing on what I hear. But tell me one thing more, and I promise I won't ever bring the subject up again as long as I live.

**Bordeu.** What do you want to know?

**Mlle. de L'espinasse.** What's at the bottom of these sexual perversions?

**Bordeu.** Invariably they are traceable to a weakness in the nervous organization of young persons or to the rotting of the brain in old people. In Athens they were brought about by the seductive power of beauty, in Rome by the scarcity of women, and in Paris they are caused by fear of the pox. Good-by, good-by.