

Conversation between D'Alembert and Diderot

Source: *Conversation between D'Alembert and Diderot* (1769). from *Diderot, Interpreter of Nature*, translated by Jean Stewart and Jonathan Kemp, International Publishers, 1943; Complete dialogue.

d'Alembert: I confess that a Being who exists somewhere and yet corresponds to no point in space, a Being who, lacking extension, yet occupies-space; who is present in his entirety in every part of that space, who is essentially different from matter and yet is one with matter, who follows its motion, and moves it, without himself being in motion, who acts on matter and yet is subject to all its vicissitudes, a Being about whom I can form no idea; a Being of so contradictory a nature, is an hypothesis difficult to accept. But other problems arise if we reject it; for if this faculty upon, which you propose as substitute, is a general and essential quality of matter, then stone must be sensitive.

Diderot: Why not?

d'Alembert: It's hard to believe.

Diderot: Yes, for him who cuts, chisels, and crushes it, and does not hear it cry out.

d'Alembert: I'd like you to tell me what difference there is, according to you, between a man and a statue, between marble and flesh.

Diderot: Not much. Flesh can be made from marble, and marble from flesh.

d'Alembert: But one is not the other.

Diderot: In the same way that what you call animate force is not the same as inanimate force.

d'Alembert: I don't follow you.

Diderot: I'll explain. The transference of a body from one place to another is not itself motion, it is the consequence of motion. Motion exists equally in the body displaced and in the body that remains stationary.

d'Alembert: That's a new way of looking at things.

Diderot: True none the less. Take away the obstacle that prevents the displacement of a stationary body, and it will be transferred. Suddenly rarefy the air that surrounds the trunk of this huge oak, and the water contained in it, suddenly expanding, will burst it into a hundred thousand fragments. I say the same of your own body.

d'Alembert: That may be so. But what relation is there between motion and the faculty of sensation? Do you, by any chance, distinguish between an active and an inactive sensitiveness, as between animate and inanimate force? An animate force which is revealed by displacement, an inanimate force which manifests

itself by pressure; an active sensitiveness which would be characterised by a certain recognisable behaviour in the animal and perhaps in the plant, while your inactive sensitiveness only makes itself known when it changes over to the active state?

Diderot: Precisely; just as you say.

d'Alembert: So, then, the statue merely has inactive sensitiveness; and man, animals, perhaps even plants, are endowed with active sensitiveness.

Diderot: There is undoubtedly that difference between the marble block and living tissue; but you can well imagine that's not the only one.

d'Alembert: Of course. Whatever likeness there may be in outward form between a man and a statue, there is no similarity in their internal organisation. The chisel of the cleverest sculptor cannot make even an epidermis. But there is a very simple way of transforming an inanimate force into an animate one the experiment is repeated a hundred times a day before our eyes; whereas I don't quite see how a body can be made to pass from the state of inactive to that of active sensitiveness.

Diderot: Because you don't want to see it. It is just as common a phenomenon.

d'Alembert: And what is this common phenomenon, if you please?

Diderot: I'll tell you, since you want to be put to shame; it occurs every time you eat.

d'Alembert: Every time I eat!

Diderot: Yes, for what do you do when you eat? You remove obstacles that prevented the food from possessing active sensitiveness. You assimilate it, you turn it into flesh, you make it animal, you give it the faculty of sensation; and, what you do to this foodstuff, I can do, when I please, to marble.

d'Alembert: And how?

Diderot: How? I shall make it edible.

d'Alembert: Make marble edible? That doesn't seem easy to me.

Diderot: It's my business to show you the process. I take the statue you see there, I put it in a mortar, then with great blows from a pestle . . .

d'Alembert: Careful, please; that's Falconet's masterpiece ! If it were only by Huez or some one like that...

Diderot: Falconet won't mind; the statue is paid for, and Falconet cares little for present respect and not at all for that of posterity.

d'Alembert: Go on then, crush it to powder.

Diderot: When the block of marble is reduced to impalpable powder, I mix it with humus or leafmould; I knead them well together; I water the mixture, I let it decompose for a year or two or a hundred, time doesn't matter to me. When the whole has turned into a more or less homogeneous substance, into humus, do you know what I do?

d'Alembert: I'm sure you don't eat humus.

Diderot: No; but there is a means of connection, of assimilation, a link, between the humus and myself, a *latus* as the chemist would say.

d'Alembert: Ant that is plant life?

Diderot: Quite right, I sow peas, beans, cabbages, and other vegetables; these plants feed on the soil and I feed on the plants.

d'Alembert: Whether it's true or false, I like this passage from marble into humus, from humus to the vegetable kingdom, from the vegetable to the animal kingdom, to flesh.

Diderot: So, then, I make flesh, or soul as my daughter said, an actively sensitive substance and if I do not thus solve the problem you set me, at any rate I get pretty near solving it; for you will admit that a piece of marble is much further removed from a being that can feel, than a being that can feel is from a being that can think.

d'Alembert: I agree. But nevertheless the feeling being is not yet the thinking being.

Diderot: Before going one step further let me tell you the history of one of the greatest geometricians in Europe. What was this wonderful creature to begin with? - Nothing.

d'Alembert: What, nothing? Nothing comes from nothing.

Diderot: You take my words too literally. I mean to say that, before his mother, the beautiful and wicked Madame de Tencin, had reached the age of puberty, and before the adolescence of the soldier La Touche, the molecules which use to form the first rudiments of our geometrician were scattered throughout the frail young bodies of these two, filtering through with the lymph, circulating with the blood, till at last they reached the vessels whence they were destined to unite, the germ cells of his father and mother. The precious germ, then, is formed; now according to the common belief, it is brought through the Fallopian tubes to the womb, it is attached to the womb by a long cord; it grows gradually and develops into a foetus; now comes the moment for it to leave the dark prison; it is born, abandoned on the steps of Saint-Jean-le-Rond, whence it receives its name; now, taken from the foundlings' home, it is put to the breast of good Madame Rousseau, the glazier's wife; It is given suck, it grows in body and mind, becomes a man of letters, an engineer, a geometrician. How was all this done? Just through eating and other purely mechanical operations. Here, in four words you have the general formula: Eat, digest, *distil in vasi licito, et fiat homo secundum artem*. And to expound before the Academy the process of the formation of a man or an animal, one need employ only material agents, the successive results of which would be an inert being, a feeling being, a thinking being, a being solving the problem of the precession of the equinoxes, a sublime being, a marvellous being, a being growing old, fading away, dying, dissolved and given back to the soil.

d'Alembert: You don't believe, then, in pre-existent germs?

Diderot: No.

d'Alembert: Ah, how glad I am of that!

Diderot: Such a theory is against reason and experiment; against experiment, since you would seek in vain for these germs in the egg or in most animals before a certain age; against reason, since, although the mind may conceive of matter as infinitely divisible, it is not so in nature, and it is unreasonable to imagine an elephant wholly formed within an atom, and within that elephant another wholly formed, and so on to infinity.

d'Alembert: But without these pre-existent germs, how can we account for the original generation of animals?

Diderot: If you're worried by the question "which came first, the hen or the egg", it's because you suppose that animals were originally the same as they are now. What madness! We can no more tell what they were originally than what they will become. The tiny worm, wriggling in the mud, may be in process of developing into a large animal; the huge animal, that terrifies us by its size, is perhaps on the way to becoming a worm, is perhaps a particular and transient production of this planet.

d'Alembert: What's that you are saying?

Diderot: I was saying to you . . . But it'll take us away from our original discussion.

d'Alembert: What does that matter? We can get back to it or not, as we please.

Diderot: Will you allow me to skip ahead a few million years in time?

d'Alembert: Why not? Time is nothing for nature.

Diderot: Will you consent to my extinguishing our sun?

d'Alembert: The more readily, since it will not be the first to have gone out.

Diderot: Once the sun has been extinguished what will be the result? Plants will perish, animals will perish, the earth will become desolate and silent. Light up that star once more, and you immediately restore the necessary cause whereby an infinite number of new species will be generated, among which I cannot swear whether, in the course of centuries, the plants and animals we know to-day will or will not be reproduced.

d'Alembert: And why should the same scattered elements coming together again not give the same results?

Diderot: Because everything is connected in nature, and if you imagine a new phenomenon or bring back a moment of the past, you are creating a new world.

d'Alembert: Anyone who thinks deeply cannot deny that. But, to come back to man, since the general order of things required his existence; remember, you left me where the feeling being is about to become the thinking being.

Diderot: I remember.

d'Alembert: Frankly, I'd be very grateful if you would get me over that transition; I'm eager to begin thinking.

Diderot: Even if I should not accomplish it, what effect could that have against a sequence of Incontrovertible facts?

d'Alembert: None, unless we stopped short there.

Diderot: And in order to go further, would it be permissible for us to invent an agent whose attributes should be self-contradictory, a meaningless and unintelligible word?

d'Alembert: No.

Diderot: Can you tell me what constitutes the existence of a perceiving being, for that being itself?

d'Alembert: The consciousness of continued identity from the first moment of reflection to the present.

Diderot: And on what is this consciousness based?

d'Alembert: On the memory of its actions.

Diderot: And without this memory?

d'Alembert: Without this memory it would have no identity, since, realising its existence only at the instant of receiving an impression, it would have no life-story. Its life would be an interrupted series of sensations with nothing to connect them.

Diderot: Very good. And what is this memory? Whence does it spring?

d'Alembert: From a certain organisation, which develops, grows weaker, and is sometimes lost entirely.

Diderot: Then, if a being that can feel, and that possesses that organisation that gives rise to memory, connects up the impressions it receives, forms through this connection a story which is that of its life, and so acquires consciousness of its identity, it can then deny, affirm, conclude and think.

d'Alembert: So it appears to me, there is only one more difficulty.

Diderot: You are wrong; there are many more

d'Alembert: But one chief one; that is, it seems to me that we can only think of one thing at a time, and that to form even a simple proposition, let alone those vast chains of reasoning that embrace in their course thousands of ideas, one would need to have at least two things present - the object, which seems to remain in the mind's eye while that mind considers the quality which it is to attribute or to deny to that object.

Diderot: I think that is so; that has made me sometimes compare the fibres of our organs to sensitive vibrating strings which vibrate and resound long after they have been plucked. It is this vibration, this kind of inevitable resonance, which holds the object -present, while the mind is busied about the quality that belongs to that object. But vibrating strings have yet another property, that of making other strings vibrate; and that is how the first idea recalls a second, the two of them a third, these three a fourth and so on, so that there is no limit to the ideas awakened and interconnected in the mind of the philosopher, as he meditates and hearkens to himself amid silence and darkness. This instrument makes surprising leaps, and an idea once aroused may sometimes set vibrating an harmonic at an inconceivable distance. If this phenomenon may be observed between resonant strings that are lifeless and separate, why should it not occur between points that are alive and connected, between fibres that are continuous and sensitive?

d'Alembert: Even if it's not true, that is at least very ingenious. But I am inclined to think that you are, without realising it, slipping into a difficulty that you wished to avoid.

Diderot: What is that?

d'Alembert: You are opposed to making a distinction between the two substances.

Diderot: I don't deny it.

d'Alembert: And if you look closer, you'll see that you are making of the philosopher's mind a being distinct from the instrument, a musician, as it were, who listens to the vibrating strings and decides as to their harmony or dissonance.

Diderot: I may have laid myself open to this objection, but you might not have made it if you had considered the difference between the instrument philosopher and the instrument harpsichord. The philosopher is an instrument that has the faculty of sensation; he is, at the same time, both the musician and the instrument. As he can feel, he is immediately conscious of the sound he gives forth; as he is an animal, he retains the memory of it. This faculty of the organism, connecting up the sounds within him, produces and preserves the melody there. Just suppose that your harpsichord has the power to feel and to remember, and tell me if it will not know and repeat of its own accord the airs that you have played on its keys. We are instruments endowed with feeling and memory; our senses are so many keys that are struck by surrounding nature, and that often strike themselves. This is all, in my opinion, that happens in a harpsichord which is organised like you or me. An impression is created by some cause either within or outside the instrument, a sensation is aroused by this impression, a sensation that persists, since you cannot imagine it arising and dying instantaneously; another impression follows, which equally has its cause either within or outside the animal, a second sensation, and voices to indicate them by natural or conventional sounds.

d'Alembert: I understand. So then, if this harpsichord were not only sensitive and animate but were further endowed with the faculty of feeding and reproducing itself, it would live and breed of itself, or with its female, little harpsichords, also living and vibrating.

Diderot: Undoubtedly. In your opinion, what, other than this, is a chaffinch, a nightingale, a musician or a man? And what other difference do you find between a bird and a bird-organ? Do you see this egg? With this you can overthrow all the schools of theology, all the churches of the earth. What is this egg? An unperceiving mass, before the germ is introduced into it; and after the germ is introduced, what is it then? still only an unperceiving mass, for this germ itself is only a crude inert fluid. How will this mass develop into a different organisation, to sensitiveness, to life? By means of heat. And what will produce the heat? Motion. What will be the successive effects of this motion? Instead of answering me, sit down and let's watch them from moment to moment. First there's a dot that quivers, a little thread that grows longer and takes on colour; tissue is formed; a beak, tiny wings, eyes, feet appear; a yellowish material unwinds and produces intestines; it is an animal. This animal moves, struggles, cries out; I hear its cries through the shell; it becomes covered with down; it sees. The weight of its head, shaking about, brings its beak constantly up against the inner wall of its prison; now the wall is broken; it comes out, it walks about, flies, grows angry, runs away, -comes near again, complains, suffers, loves, desires, enjoys; it has the same affections as yourself, it performs the same actions. Are you going to assert with Descartes that it is a purely imitative machine? Little children will laugh at you, and philosophers will retort that if this be a machine then you, too, are a machine. If you admit that between the animal and yourself the difference is merely one of organisation, you will be showing good sense and reason, you will be honest; but from this there will be drawn the conclusion that refutes you; namely that, from inert matter, organised in a certain way, and impregnated with other inert matter, and given heat and motion, there results the faculty of sensation, life, memory, consciousness, passion and thought. You have only two courses left to take: either to imagine within the inert mass of the egg a hidden element that awaited the egg's development before revealing its presence, or to assume that this invisible element crept in through the shell at a definite moment in the development. But what is this element? Did it occupy space or did it not? How did it come, or did it escape without moving? What was it doing there or elsewhere? Was it created at the instant it was needed? Was it already in existence? Was it waiting for a home? If it was homogeneous it was material; if heterogeneous, one cannot account for its -previous inertia nor its activity in the developed animal. Just listen to yourself, and you will be sorry for yourself; if you will perceive that, in order to avoid making a simple supposition that explains everything, namely the faculty of sensation as a general property of matter or a product of its organisation, you are giving up common sense and plunging headlong into an abyss of mysteries, contradictions and absurdities.

d'Alembert: A supposition! It pleases you to say so. But suppose this quality is in its essence incompatible with matter?

Diderot: And how do you know that the faculty of sensation is essentially incompatible with matter, you who do not know the essence of anything, either of matter or of sensation? Do you understand the nature of motion any better, how it comes to exist in a body, and its transmission from one to another?

d'Alembert: Without understanding the nature of sensation or that of matter, I can see that the faculty of sensation is a simple quality, entire, indivisible, and incompatible with a subject or substratum which is divisible.

Diderot: Metaphysico-theological nonsense! What! don't you see that all the qualities, all the forms by which nature becomes perceptible to our senses, are essentially indivisible? You cannot have more or less impenetrability. There is half a round body, but there is not a half of roundness: you can have motion to a greater or less degree, but either there is motion or there is not. You cannot have half, or a third, or a quarter of a head, an ear, a finger, any more than half, a third, or a quarter of a thought. If in the universe no one particle is like another, in a particle no one point like another, acknowledge that the atom itself possesses an indivisible quality or form; acknowledge that division is incompatible with the essence of forms, since it destroys them. Be a physicist, and acknowledge the produced character of an effect when you see it produced, even if you cannot explain all the steps that led from the cause to the effect. Be logical, and do not substitute for a cause which exists and which explains everything, another cause which cannot be comprehended, whose connection with the effect is even more difficult to grasp, which engenders an infinite number of difficulties and solves not one of them.

d'Alembert: But what if I give up this cause?

Diderot: There is only one substance in the universe, in man and in the animal. The bird-organ is made of wood, man of flesh. The bird is of flesh, the musician of flesh differently organised; but both of them have the same origin, the same formation, the same functions and the same end.

d'Alembert: And how is the convention of sounds established between your two harpsichords >

Diderot: Since an animal is a perceiving instrument, resembling any other in all respects, having the same structure, being strung with the same chords, stimulated in the same way by joy, pain, hunger, thirst, colic, wonder, terror, it is impossible that at the Pole and at the Equator it should utter different sounds. And so you will find that interjections are about the same in all languages, living and dead. The origin of conventional sounds must be ascribed to need and to proximity. The instrument endowed with the faculty of sensation, or the animal, has discovered by experience that when it uttered a certain sound a certain result followed outside it, feeling instruments like itself or other animals drew nearer, went away, asked or offered things, hurt or caressed it. All these consequences became connected in its memory and in that of others with the utterance of these sounds; and note that human intercourse consists only of sounds and actions. And, to appreciate the power of my system, notice further that it is subject to the same insurmountable difficulty that Berkeley brought against the existence of bodies. There came a moment of madness when the feeling harpsichord thought that it was the only harpsichord in the world, and that the whole harmony of the universe resided in it.

d'Alembert: There's a lot to be said on all that.

Diderot: True.

d'Alembert: For instance, your system doesn't make it clear how we form syllogisms or draw inferences.

Diderot: We don't draw them; they are all drawn by nature. We only state the existence of connected phenomena, which are known to us practically, by experience, whose existence may be either necessary or contingent; necessary in the case of mathematics, physics, and other exact sciences; contingent in ethics, politics and other conjectural sciences.

d'Alembert: Is the connection between phenomena less necessary in one case than in another?

Diderot: No, but the cause undergoes too many particular vicissitudes which escape our observation, for us to be able to count with certainty upon the result that will ensue. Our certainty that a violent-tempered man will grow angry at an insult is not the same as our certainty that one body striking a smaller body will set it in motion.

d'Alembert: What about analogy?

Diderot: Analogy, in the most complex cases, is only a rule of three working out in the feeling instrument. If a familiar natural phenomenon is followed by another familiar natural phenomenon, what will be the fourth phenomenon that will follow a third, either provided by nature or imagined in imitation of nature? If the lance of an ordinary warrior is ten feet long, how long will the lance of Ajax be? If I can throw a stone weighing four pounds, Diomedes must be able to shift a large block of rock. The strides of gods and the leaps of their horses will correspond to the imagined proportion between gods and men. You have here a fourth chord in harmony with and proportional to three others; and the animal awaits its resonance, which always occurs within itself, though not always in nature. The poet doesn't mind about that, it doesn't affect his kind of truth. But it is otherwise with the philosopher; he must proceed to examine nature which often shows him a phenomenon quite different from what he had supposed, and then he perceives that he had been seduced by an analogy.

d'Alembert: Farewell, my friend, good evening and good night to you.

Diderot: You're joking: but you will dream on your pillow about this conversation, and if it doesn't take on substance there, so much the worse for you; for you will be obliged to adopt far more absurd hypotheses.

d'Alembert: You're wrong there; I shall go to bed a sceptic, and a sceptic I shall arise.

Diderot: Sceptic! Is there such a thing as a sceptic?

d'Alembert: That's a good one! Are you going to tell me, now, that I'm no sceptic? Who should know about that better than I?

Diderot: Wait a moment.

d'Alembert: Hurry up, for I'm anxious to get to sleep.

Diderot: I'll be brief. Do you believe there is a single debated question, on which a man can halt with a strictly equal measure of reason *for* and *against*?

d'Alembert: No, that would be like Buridan's ass.

Diderot: In that case, there's no such being as the sceptic, since, apart from mathematical questions which admit of no uncertainty, there is *for* and *against* in all questions. The scales, then, are never even, and it is impossible that they should not hang more heavily on the side that seems to us to have most probability.

d'Alembert: But probability appears to me on the right hand in the morning, on the left in the afternoon.

Diderot: That is to say, you are dogmatic *for* in the morning and dogmatic *against* in the afternoon.

d'Alembert: And in the evening, when I recall this rapid change in my judgments, I believe neither the morning's nor the afternoon's.

Diderot: That is to say, you don't remember which preponderated of the two opinions between which you wavered; that this preponderance appears to you too slight to settle your feelings definitely, and that you decide to cease worrying over such problematic subjects, to leave the discussion of them to others and to contest them no further.

d'Alembert: That may be so.

Diderot: But if someone drew you aside, and asked you in a friendly way to tell him honestly, which of the two alternatives seemed to you to present fewer difficulties, would you really be at a loss to answer, and would you realize Buridan's ass in your own person?

d'Alembert: I think not.

Diderot: Come, my friend, if you think over it well, you will find that, in everything, our true feeling is not that about which we have never vacillated, but that to which we have most constantly returned.

d'Alembert: I believe you're right.

Diderot: And so do I. Good night, my friend, and remember that "dust thou art, to dust thou shalt return."

d'Alembert: That is sad.

Diderot: And yet necessary. Grant man, I don't say immortality, but merely a double span of life, and you'll see what will happen.

d'Alembert: And what do you expect to happen? . . . But what do I care? Let happen what may. I want to sleep, so good night to you.