

VIII. THE WORM IN THE BLOOD⁵¹

Spinoza to Henry Oldenburg

170 . . . When you ask me what I think about the question which concerns how we know how each part of Nature agrees with the whole to which it belongs and how it coheres with the others, I think you are asking for the reasons by which we are persuaded that each part of Nature agrees with the whole to which it belongs and coheres with the others. For I said in my preceding letter that I do not know absolutely how they really cohere and how each part agrees with its whole. To know this would require knowing the whole of Nature and all its parts. So I shall try to show as briefly as I can the reason which forces me to affirm this. But first I should like to warn that I attribute to Nature neither beauty nor ugliness, neither order nor confusion. For things can only be called beautiful or ugly, orderly or confused, in relation to our imagination.

By the coherence of parts, then, I understand nothing but that the laws or nature of the one part so adapt themselves to the laws or nature of the other part that they are opposed to each other as little as possible. Concerning whole and parts, I consider things as parts of some whole insofar as the nature of the one so adapts itself to the nature of the other

that so far as possible they are all in harmony with one another. But insofar as they are out of harmony with one another, to that extent each forms an idea distinct from the others in our mind, and therefore it is considered as a whole and not as a part.

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For example, when the motions of the particles of lymph, chyle, and the like, so adapt themselves to one another, in relation to their size and shape, that they are completely in harmony with one another, and they all constitute one fluid together, to that extent only the chyle, lymph, and the like, are considered as parts of the blood. But insofar as we conceive the particles of lymph, by reason of their shape and motion, to differ from the particles of chyle, to that extent we consider them as a whole and not as a part.

Let us conceive now, if you please, that there is a little worm living in the blood which is capable of distinguishing by sight the particles of the blood, of lymph, of chyle, and the like, and capable of observing by reason how each particle, when it encounters another, either bounces back, or communicates a part of its motion, and so on. Indeed, it would live in this blood as we do in this part of the universe, and would consider each particle of the blood as a whole, not as a part. Nor could it know how all the parts of the blood are restrained by the universal nature of the blood, and compelled to adapt themselves to one another, as the universal nature of the blood requires, so that they harmonize with one another in a certain way.

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For if we should suppose that there are no causes outside the blood which would communicate new motions to the blood, and no space outside the blood, nor any other bodies to which the particles of blood could transfer their motion, it is certain that the blood would always remain in the same state, and its particles would undergo no other variations than those which can be conceived from the given relation of the motion of the blood to those of the lymph, chyle, and the like. Thus the blood would always have to be considered as a whole and not as a part. But because there are a great many other causes which restrain the laws of the nature of the blood in a certain way, and which in turn are restrained by the blood, it happens that other motions and other variations arise in the particles of the blood which follow not simply from the relation of the motion of its parts to one another, but from the relation of the motion of the blood as a whole and of the external causes to one another. In this way the blood has the nature of a part and not of a whole. This is what I say concerning whole and part.

Now all bodies in Nature can and must be conceived as we have here conceived the blood, for all bodies are surrounded by others, and are determined by one another to existing and producing an effect in a cer-

⁵¹ Letter 32.

A Spinoza Reader: The Ethics and Other Works

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Ed. & trans. Edmund Curley

Cambridge, Mass.: Harvard Univ. Press, 1963.

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tain and determinate way, the same ratio of motion to rest always being preserved in all of them at once, that is, in the whole universe. From this it follows that every body, insofar as it exists modified in a certain way, must be considered as a part of the whole universe, must agree with the whole to which it belongs, and must cohere with the remaining bodies. And since the nature of the universe is not limited, as the nature of the blood is, but is absolutely infinite, its parts are restrained in infinite ways by this nature of the infinite power, and compelled to undergo infinitely many variations.

But in relation to substance I conceive each part to have a closer union with its whole. For as I previously strove to demonstrate in my first letter, which I wrote to you while I was still living in Rijnsburg, since it is of the nature of substance to be infinite, it follows that each part pertains to the nature of corporeal substance, and can neither be nor be conceived without it.

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You see, therefore, how and why I think that the human body is a part of Nature. But as far as the human mind is concerned, I think it is a part of Nature too. For I maintain that there is also in Nature an infinite power of thinking, which, insofar as it is infinite, contains in itself objectively the whole of Nature, and whose thoughts proceed in the same way as Nature itself, its object, does.

Next, I maintain that the human mind is this same power, not insofar as it is infinite and perceives the whole of Nature, but insofar as it is finite and perceives only the human body. For this reason I maintain that the human mind is a part of a certain infinite intellect.

But it would take too long here to explain accurately and demonstrate all these things, along with the things which are connected with them. And I do not think you expect this of me at present. Indeed, I wonder whether I have sufficiently grasped your intention, and have not answered a different question than the one you were asking. Please let me know.

Yours with all affection,
B. de Spinoza

Voorburg, 20 November 1665