

THE CURIOUS CASE OF THE *VERMICULUS*. SOME REMARKS ON SPINOZA'S LETTER 32 AND SPINOZA'S VIEWS ON IMAGINATION AND REASON¹

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Abstract. Moving from an example created by Spinoza in letter 32 to Oldenburg (that of a little worm living in the blood in full unawareness of the constrictive tightness of its environment), the paper aims at formulating some more general remarks about Spinoza's views on imagination and reason. Evidence against the interpretation of the little worm as a metaphorical counterpart of man is drawn from Spinoza's silence about the *vermiculus*'s productive imaginative skills. In deficiency of imagination, the little worm's "reason" (*ratio*) is by no means similar to human reason – if not for mere homonymy. Thus, rather than a metaphor for human knowledge, the case of the little worm proves to be a representation *per absurdum* of the consequences arising from a lack of imaginative power.

Keywords: Imagination, productive imagination, letter 32, Spinoza, Oldenburg

“Mentem humanam hanc eandem potentiam statuo,
non quatenus infinitam, et totam
Naturam percipientem;
sed finitam, nempe quatenus tantum
humanum Corpus percipit,
et hac ratione Mentem humanam partem
cujusdam infiniti intellectus statuo”.

B. SPINOZA, Letter 37.

Introduction

In letter 32 to Henry Oldenburg (written in November 1665) in order to explain the part-whole composition of nature Spinoza invents a peculiar character. It is a little worm (*vermiculus*) living in the blood, which it considers as a whole universe.

Now let us imagine, if you please, a tiny worm living in the blood, capable of distinguishing by *sight* the particles of the blood – lymph, etc. – and of *intelligently observing* how each particle, on colliding with another, either

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rebounds or communicates some degree of its motion, and so forth. That worm would be living in the blood as we are living in our part of the universe, and *it would regard each individual particle of the blood as a whole, not a part, and it could have no idea as to how all the parts are controlled by the overall nature of the blood and compelled to mutual adaptation as the overall nature of the blood requires, so as to agree with one another in a definite way.*²

Spinoza's letters testify to a lively philosophical dialogue between him and his friends, as the original purpose on which these letters were actually written by Spinoza and then collected and edited by his many friends is to shed some more light on Spinoza's often controversial theoretical views. In such context the clarifications requested by friends and scholars are in fact answered to with surprising clarity, all the more surprising for the striking precision of the images that the philosopher chose; the example of the little worm makes no exception. Henry Oldenburg, the first secretary of the *Royal Society*, is an enduring presence in Spinoza's correspondence. Among Spinoza's many correspondents, he stands out for the clarity and the frequency of his letters, usually centered on scientific topics. He was a close friend of Robert Boyle's, and sometimes, in his letters to Spinoza, his spokesman as well. Oldenburg often asks Spinoza questions arising from his own conversations with Boyle. This is what happens in letter 32: both Oldenburg and Boyle had demanded that Spinoza give a complete account of the notions of part and whole, and that is what he tries to achieve in the letter.

The choice of the example of the little worm is quite peculiar. The shift of perspective places the *vermiculus* in the neo-Stoic tradition of "estrangement"; the microscope, quite recently invented and well known to optical expert Spinoza, offers a brand new point of view. The micro-world it provides allows for a prejudice-free observation of phenomena.

To begin with, it is not an irrelevant detail that the worm is said to live in the blood. The very habitat of the *vermiculus*'s life bears some more information about the choice of such example. In fact, a few lines above the quoted passage, Spinoza had mentioned the same blood components. But this former reference to chylum and lymph sounds quite different from the latter. Whereas such components of the blood in the little worm's perspective appear to be *wholes*, a few lines above Spinoza had referred to them as the *parts* of which blood is composed.³ A contrast between the little worm's and men's cognitive skills is then already implicitly stressed through the choice of placing the *vermiculus* in the very blood, whose part-whole composition, potentially visible to man thanks to the fictive (i.e., shaped by *productive imagination*) notion of part, had just been mentioned.

The little worm is described as endowed with sensibility (*sight*) and reason. Imagination is not mentioned, and the absence is quite remarkable, given that the little worm is not able to situate its *mechanistic* observation of events into a broader cognitive paradigm allowing for the individuation of causal links to the rest of nature. The finiteness of the little worm's world ensues from the finiteness of its cognitive processes.⁴

Scholars such as Wolfgang Bartuschat have read Letter 32 as a proof for Spinoza's assertion of the finiteness of human intellect, retaining the little worm as a metaphorical counterpart of man.⁵

On the other hand, in agreement with Richard Mason,⁶ Aaron V. Garrett has given a convincing account of the letter emphasizing, rather than the possible identification between worm and man, Spinoza's statement of the fictional nature of the concept of part.⁷ In fact Spinoza, in Letter 32, introduces the little worm in order to clarify his claim that notions such as order and disorder, beauty and ugliness, depend on imagination. According to this letter even the consistency existing among parts composing a whole is imaginative, as part and whole are *fictional* notions, i.e., they have their source in imagination.

Fingamus iam...

The verb Spinoza chooses in order to draw attention to the case of the little worm is quite noteworthy. *Fingamus*, he says: let us imagine, let us build up a representation of this insignificant small animal, inside its own micro-world. Spinoza employs the verb *fingere*, intrinsically related with the description of activities performed by imagination. As he introduces the example of the little worm, Spinoza explicitly appeals to his correspondent's imaginative skills; such call makes his silence about the *vermiculus*'s imagination sound all the more striking. It is quite significant that Spinoza does not use any neologism to name the little worm's skills. He just mentions sight (*visus*) and reason (*ratio*). Not a word is said about imagination, which had been indirectly evoked a few lines above through the use of the verb *fingere*. Furthermore, the little worm is said not to be able to build a complete image of the world it lives in, since it cannot clearly see those part-whole relations that, as Spinoza has just explained, depend upon imagination.

The absence of imagination in Spinoza's review of the worm's cognitive skills is then very unlikely to be merely casual. And it stands in stark contrast to the parallel assumption of the importance of such skill in human knowledge, stressed throughout the whole letter. The example is introduced by a precise reference to the evocative ability of imagination (*fingamus*); and it is indeed in Letter 32 that Spinoza proves, just through the little worm's case, that concepts such as part and whole, order and chaos, are *auxilia imaginationis*. Such statements suggest that imagination, being able to provide those tools (*auxilia*), has an intrinsic productive component.

On the other hand, the little worm cannot conceive, nor strive to conceive, the part-whole relationships structuring its own micro-cosmos and linking it to whatever lies outside. It can legitimately be concluded that such inability of the helpless little worm depends on lack of *productive* imaginative power.

In actual fact, readers of Spinoza's letter then differ from the little worm: they can commit to the productive power of their own imagination. Not only can they conceive such notions as those of part and whole, order and chaos, exceeding the little worm's vision of the world; they can even visualize the image of such a little being, completely different from them. The whole letter is filled with references to human imagination and the role it plays within the individuation of relationships among parts;

yet the *vermiculus* is not said to be endowed with it, and it is described as not being able to visualize such relationships.

The *vermiculus*'s vision of the world appears then to be bearing the consequences of the lack of imaginative power exemplified *per absurdum* precisely through the little worm's case. It can be further claimed that the *reason* the little worm is said to be endowed with is not just the same kind as human reason; given that the little worm does not have imagination, Spinoza is forced to refer to reason in a *narrower* sense.

Such reading of letter 32 would not only explain the striking silence about the little worm's imagination in the context of a letter aiming at explaining the role of *auxilia imaginationis*. It would also steer clear of the embarrassing consequences of a full identification of human condition with the *vermiculus*'s peculiar situation and its exclusion from true knowledge. If the little worm was to be understood as a miniature counterpart of man and of the limits of his vision of the world, the cognitive path ascending to intuitive science described by the *Ethics* would simply be a forbidden one. Furthermore, the silence about imagination in the picture of the little worm's cognitive skills could hardly be explained if the *vermiculus* was to be seen as equivalent to man, since the importance of human imagination is, on its side, frequently mentioned throughout the whole letter.

If we focus on the imagination issue as it is dealt with in Letter 32, implications leading to a (pessimistic) metaphorical meaning of the little worm example just fade away. If the letter is read in a wider context, exceeding the mere Spinoza-Oldenburg dialogue and embracing the remarks on imagination drawn in *Theologico-Political Treatise* and, mainly, in *Ethics*, then the positive hint of the *auxilia imaginationis* described in Letter 32 is easily proven. Actually, through the *vermiculus*'s case, the imagination the little worm lacks proves to be necessary to rational knowledge, since it is needed to get familiar with the actual connections in the causal order of things. Imagination, if operating as the actual power (*potentia*) described in EIII17S2, can provide a self-conscious scheme, a point of view through which man is allowed to cast his looks on the infinite, infinitely animated universe. The imaginative tools Spinoza mentions in Letter 32 are in fact proven to be necessary in the important Letter 12 about infinity. As Letter 12 suggests, imaginative tools are useful instruments man can (or, much better, *should*) use in order to get the most difficult (yet necessary to intuitive science) access to reality. In Letter 12 Spinoza claims that time, measure and numbers should be thought of as “*cogitandi, seu potius imaginandi modi*”; they are then fictional notions, *entes rationis* not endowed with extra-mental reality. Although in his letter on infinity Spinoza draws neat distinction between *imagination* and *understanding*, such definition does not involve any negative assessment about *imaginandi modi*. Even in the TIE, Spinoza credits *ideae fictae* with a vital genetic role in the domains of geometry and science, with regard to the representation of geometric figures and the formulation of scientific hypotheses. Letter 12 itself offers compelling pieces of evidence against the assumption that the status of *auxilia imaginationis* attributed to time, number and measure should be read as an overall devaluation of the arithmetic, since it would ascribe it to merely fictional relationships among abstract, finite and discontinuous quantities – which would sound paradoxical

in the perspective of a philosophical system notoriously oriented toward mathematic as a model for a scientifically rigorous knowledge. The so-called *auxilia imaginationis*, despite the fact that they lack ontological consistence *extra intellectum*, still have some practical usefulness that makes them *necessary* in the scientific paradigm. Thanks to them only, we are able to classify things on the basis of homogeneous (yet *not* attaining the actual reality of things themselves) measuring criteria. The pragmatic effectiveness of imagination in science only apparently contradicts its theoretical inadequacy (*imbecillitas* i.e., literally, lack of self-sufficiency), because the efficacy of imagination does not entail any assessment of the truth value of its *auxilia*, since it is implied in a wider cognitive action. In Letter 32, in his attempt to display the *imaginative* nature of concepts indicating the *ratio* on whose account we perceive something actually infinite as measurable and quantifiable and, therefore, potentially object to human judgment (such as part and whole, order and chaos, number and so on), Spinoza *implicitly* states something much more positive about imagination and what we shall call its productive *power*.

Finiteness of the little worm's world

The little worm is said to be *imagined* as if it was 'animated' (i.e., thought of in God's infinite mind) in a way somehow close to that of *human* animation. It is said in fact to be alive, to be able to feel (sensations), and to reason. The *vermiculus* has then life, sensation and reason. This last feature makes it different from other animals, not on any ontological basis though, but only inasmuch as its body structure should be more complex and structured if it had to be able to think. Still, something is wrong with the fictional worm's cognitive skills. Something prevents the poor worm from getting a real understanding of reality. Something keeps him away from any potential access to intuitive science. In fact, the worm is said to have perception and to be able to reason. But it is also said to make a very narrow-minded use of reason it is endowed with. The *vermiculus* is forced to observe nothing but the simple mechanical movements occurring within the borders of its microscopic 'world'. Most importantly, it is described as not being able to enclose its *mechanistic* observation of the events that take place in the surrounding scenery within any broader cognitive paradigm which only would allow the possible individuation of *causal* links to the rest of nature. Thus the finiteness of the little worm's world is the result of the finiteness of the *vermiculus's* cognitive processes, which appear to be radically different from man's. It can be claimed then that the lack of imaginative skills is reflected in the disempowered kind of reason the worm is said to be using. Such reason would then result to be reason *per mere homonymy*, since it would be essentially different from man's. It seems thus all the more reasonable to assume that imagination is what makes human knowledge (and, therefore, human condition in the world) potentially different from the *finiteness* exemplified through the little worm's cognitive skills.

The little worm is a prisoner of finiteness. It would be a misleading simplification to assume its condition as a prompt metaphor for human condition on the whole. The little worm's cognitive skills are intrinsically different from man's, and this would have to do with its fictional mind-body constitution. The worm does not dispose of imaginative tools, since it has no imagination at all. As already stated,

Spinoza does not employ any neologism in order to introduce his own description of the little worm cognitive skills. He mentions sense perception, namely sight (*visus*) and reason (*ratio*); no word is said about imagination, except that it does not recognize the tools provided by imagination itself.

Gilles Deleuze was the first to stress the importance and originality of so-called *notiones communes* within Spinoza's whole theory of knowledge.⁸ His views on the topic help draw a line of continuity between imagination and reason, which appears to be also vital for the access to any higher level of knowledge.⁹ In fact common notions, being the principles of our reasoning (according to EII40S1) and thus of knowledge of the second kind, necessarily adequate and common to all men (EII38 and C), are essential to the founding of any universal science. Without them, science would not be possible; common notions, raising to the comprehension of the causes (which is out of the little worm's reach, as already stated), are vital to enlighten the means of access from knowledge of the second to that of the third kind. Common notions basically are the ideas of something which is common to all (or to at least two) bodies, and which *is common to the whole and to the part*, as stated in EII37. This is not the right place for a more analytic discussion of the quite complex notion of *notiones communes* and their role in Spinoza's epistemology; nevertheless, it stands clearly from what has been stated, that the little worm, not being able to recognize the notions of part and whole, due to its lack of productive imagination, cannot dispose of *notiones communes*; how could it possibly individuate common features between part and whole, as it cannot visualize such relationship? Its reasoning indeed is disempowered by this void. The *ratio* mentioned by Spinoza with reference to the little worm is then only homonymous to human reason; they have nothing more than the name in common. This reading only would give a consistent account of the intrinsic limits of the little worm's vision of the world, safeguarding its difference from man.

The example of the little worm implicitly suggests important hints about Spinoza's account of the productive power of imagination, and also about the nature of human reason, rising *per absurdum* from the example of the *vermiculus*, which depicts the paradoxical image of a cognitive system mutilated of imagination. It is because of the fact that the fictional character of the worm has no imagination, that its mind-body relationship does not grant it a real access to reality through those *imaginative* tools that allow man to get to know nature.

Conclusion

The *conatus imaginandi*, which displays the *active* nature of imagination as a real power (*vis*;¹⁰ *virtus*;¹¹ *potentia*¹²), is drawn from the structure of our body, from its relation to the mind, which is the *idea* of that body; the fictional worm, as it is not endowed with imagination, will never be able to flaunt such mind-body energy.

As it has been satisfyingly proven by recent studies, imagination in Spinoza's philosophy should not be fully identified with the 'first kind of knowledge', that is mandatorily confused and indistinct. Imagination can achieve an empowering operational mode. As stated in EII17S, it has a productive/evocative power worth to be called a 'virtus'; in Spinoza's system, imagination is actually empowering inasmuch as it can help become adequate causes of *affectus*, and thus it can increase joy, i.e.

transition to major perfection.¹³ Imagination should then be thought of as an attitude to outer world, warranting for the mind-body identity. Such attitude is possible, provided that an aspect of imagination preserves its constructive, *productive* nature, preventing it from a full identification with its cognitively inadequate *exits* only. In fact, as Spinoza elucidates in EII18, the chains of affects (*concatenationes affectionum*) constituting the means through which the mind is able to gaze the external world (since, according to Spinoza's epistemology, the mind does not do so *directly*, but through to affection of its body instead) have an imaginative origin. Access to affections, i.e., to the actions of bodies on our own body, is imaginative in nature, as EIV1 clarifies; if the idea of the body is the *primum* constituting the mind, and everything starts from a mainly passive condition (that of the newborn, for instance), the idea of the body constituting the *primum* of mind becomes richer, wider, and more active thanks to imagination, enabling us to gather the actions of other bodies on our body, and to build up our memories and common notions from raw perceptual elements affecting us, as described in EII18.

Imagination provides a point of view through which we are enabled to get familiar with the world. In order to make us read the infinite, imagination determines qualities *inside* it: the *fictional* part-whole relation grants the structure for much more *fictional* oppositions, such as order-chaos, beauty-deformity, etc. Those are not properties properly pertaining to nature itself, they are rather relations between nature and our gaze. If we were not able to embrace an imaginative approach to reality, we could not see part-whole relations, we could not count, nor measure; the subsequent finiteness of our understanding would force us to permanently live in the same conditions as the little worm.

Imagination, as a polysemic concept in Spinoza's work, should be thought of as exceeding the mere first kind of knowledge, which is only a down-to-earth sense the word imagination can assume. As strongly proven by the constructing role of *auxilia imaginationis* stressed in Letter 12, by namely EII17S and all those places where its virtuous power is mentioned,¹⁴ Spinoza's imagination displays a *productive* mode that cannot be reduced to the merely reproductive skills of knowledge of the first kind. Imagination can in fact display a self-conscious condition of access to the knowledge of the world, which requires the awareness of its *not merely receptive* function in order to avoid any risk of remaining prisoner of passive perception, of the narrow parody of a universe just like the blood landscape enclosing the little worm's life.

References

¹ In an older article, I have dealt with the case of the little worm in order to analyze the link between the example chosen by Spinoza and his views on human imagination ("Spinoza and the Vermiculus. A Reading of Letter 32 to Oldenburg and Spinoza's Views on Imagination", *Historia Philosophica* 10 (2012): 41-54). Here, such issues will rather be discussed inasmuch as they are related to Spinoza's overall notion of human knowledge, taking into account his concept of reason as well as that of imagination. I would like to thank Mrs. Syliane Malinowski-Charles who, with her kind suggestions and pieces of advice, has pulled my inquiry towards this direction.

² "Fingamus iam, si placet vermiculum in sanguine vivere, qui visu ad discernendas particulas sanguinis, lymphae, etc. valeret, et ratione ad observandum, quomodo unaquaeque particula ex

alterius occursum, vel resilit, vel partem sui motus communicat, etc. Ille quidem in hoc sanguine, ut nos in hac parte universi, viveret, et unamquamque sanguinis particulam, ut totum, non vero ut partem, consideraret, nec scire posset, quomodo partes omnes ab universali natura sanguinis moderantur, et invicem, prout universalis natura sanguinis exigit, se accommodare coguntur, ut certa ratione inter se consentiant...”. Spinoza, B., *Opera*, ed. by C. Gebhardt (Heidelberg: Winter, 1925), 5 voll.; here Vol. IV: *Epistolae, Stelkonstige reeckening van den Regenboog, Reeckening van Kanssen*, page 171, lines 9-18; my italics. Translation by Garrett given in Garrett, A. V., *Meaning in Spinoza’s Method* (Cambridge: Cambridge University Press, 2003), V.

³ “Ex. gr. cum motus particularum lymphae, chyli, etc. invicem pro ratione magnitudinis, et figurae ita se accommodant, ut plane inter se consentiant, unumque fluidum simul omnes constituent, eatenus tantum chylus, lymphae, etc. ut partes sanguinis considerantur: quatenus vero concipimus particulas lymphaticas ratione figurae, et motus, a particulis chyli discrepare, eatenus eas, ut totum, non ut partem, consideramus.” G IV, 171, 1-8.

⁴ A theme that would be worth examining, though this is not the place for such inquiry, is that of the hypothetical link between this example of the *vermiculus* and the medieval scholars’ (both Islamic, and European) belief that a worm-shaped passage connected the front ventricle of the brain to the middle one. Through this passage, known as the *vermis* [which apparently was first described by Galen, and was originally said to connect the middle and rear ventricles (*On the Usefulness of the Parts of the Body*, VIII, 14)] , was placed a kind of storage place for representations of previously perceived objects – usually called the faculty of “imagination”.

⁵ Bartuschat, W., “The infinite Intellect and Human Knowledge”, in *Spinoza on Knowledge and the Human Mind. Papers Presented at the Second Jerusalem Conference (Ethica II)*, ed. Y. Yovel , G. Segal (Leiden: E. J. Brill, 1994), 187-208.

⁶ See Mason, R., “Spinoza on the Causality of Individuals”, *Journal of the History of Philosophy* 24 (1986): 197-210.

⁷ Garrett, A. V. (2003), 35ff.

⁸ Deleuze, G., *Spinoza et le problème de l’expression* (Paris : Les Éditions de Minuit, 1969), ch. VII-VIII.

⁹ In Deleuze’s words: « Les notions communes se servent des lois de l’imagination pour nous libérer de l’imagination même. Leur nécessité, leur présence, leur fréquence leur permettent de s’insérer dans le mouvement de l’imagination, et d’en détourner le cours à leur profit. Il n’est pas exagéré de parler ici d’une libre harmonie de l’imagination avec la raison » (Deleuze, G., (1969), 275). Deleuze’s intuitions have been further developed by Pierre-François Moreau (Moreau, P.-F., *Spinoza. L’expérience et l’éternité* (Paris: PUF, 1994), 255 ff.). A complete account of the topic can be found in Malinowski-Charles, S., *Affects et conscience chez Spinoza. L’automatisme dans le progrès éthique* (Hildesheim-Zürich-New York: Georg Olms, 2004), 155 ff.

¹⁰ EII40S1.

¹¹ EII17S.

¹² EIII11S.

¹³ As Spinoza remarks in EIII53, “When the mind regards itself and its own power of activity, it feels pleasure: and that pleasure is greater in proportion to the *distinctness* wherewith it *imagines* itself and its own power of activity” [“Cum Mens se ipsam, suamque agendi potentiam contemplatur, laetatur; et eo magis, quo se, suamque agendi potentiam *distinctius imaginatur*”]. My italics. *The Chief Works of Benedict de Spinoza* translated by R.H.M. Elwes, vol. 2 *De Intellectus Emendatione - Ethica*. Revised edition (London: George Bell and Sons, 1901).

¹⁴ See EII40S1; EII17S; EIII11S.