



Theory of Knowledge

Kant, the Body, and Knowledge

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ABSTRACT: I discuss the philosophical significance of Kant's great cosmological work of 1755, the *Universal Natural History*. I discuss how Kant's interest in Newtonian universal forces led him to affirm a peculiar version of the physical influx theory. I argue that Kant's speculations about life on other planets are highly significant because they point to a key feature of Kant's theory of physical influx, namely that "the nimble motions of the body" stand as necessary conditions of the possibility of knowledge. This work directs us to an important topic that has received little scholarly interest: the relation between the body and knowledge in Kant's philosophical writings.

For nearly all of his career, Kant believed that the body stands as a condition of knowledge. One could trace the relation between the body and knowledge all the way from Kant's first published writing in 1747 to his monumental final work, the *Opus postumum*. One of the reasons why this element of Kant's philosophy has not been widely explored is that many readers have underestimated the significance of Kant's pre-critical works. Today I would like to discuss the philosophical significance of Kant's great cosmological work of 1755, the *Universal Natural History*.

Other commentators have focused on the scientific merits of this work almost to the exclusion of its extensive philosophical content. I believe that this work provides the key to understanding Kant's metaphysical system of physical influx. For those of you who are unfamiliar with this doctrine, it affirms causation between substances, for example between the soul and the body. (1) It competed with two other metaphysical doctrines, namely pre-established harmony and occasionalism. Up through the early part of the Eighteenth Century, physical influx was held in widespread disrepute. The standard objections to physical influx theories centered on problems with the alleged interaction between the soul and the body. First, the radically different natures of souls and bodies make them incapable of acting on one another. Second, any action by the soul on the body would violate laws of conservation of motion. Third, physical influx involves the metaphysically ridiculous claim that accidents migrate from substance to substance. More generally physical influx theories were also thought to lead to a determinism that was morally pernicious, namely because it undermines freedom, responsibility, and Scripture.

So much for historical background. Kant's theory of physical influx begins with his interest in Newtonian universal forces. This interest is in his *Universal Natural History and Theory of the Heavens* (1755), a work whose subtitle is *Essay on the Constitution and Mechanical Origin of the Entire Universe, Treated in Accordance with Newtonian Principles*. The plan

of this work is to show how "general laws of motion" and "the accepted law of attraction" can be used to explain the development of the universe out of an original chaos (1:246, Jaki p. 92.) (2) In this way, he seeks "to discover the systematic factor which ties together the great members of the created realm in the whole extent of infinity" (1:221, Jaki p. 81).

Kant's focus on the systematicity of nature makes his concerns even more far-reaching than extending Newtonian mechanics to explain the evolution of the cosmos. Kant raises a number of philosophical questions about laws, law-likeness and systematicity which foreshadow questions which are extremely important in such critical writings as the Appendix to the Dialectic in the *Critique of Pure Reason*, in both introductions to the *Critique of Judgment*, and a number of well-known passages in the Critique of Teleological Judgment.

Kant's theological aims are also relevant to our concerns. The second way in which Kant's project in *Universal Natural History* goes beyond a mere extension of Newtonian science is in his attempt to reconcile the concept of a mechanical universe governed by laws with that of a teleological universe dependent on divine design. Kant hopes to show that Newtonian science does not lead to materialism and atheism, but rather that the susceptibility of matter to laws of motion proves both its divine spiritual origin and the existence in this world of both physical matter and embodied spiritual substance-what Kant calls "spirituous matter" (1:265, Jaki p. 115). The theological foundations of Newtonian mechanics and Kant's detailed account of our souls as spirituous matter located in the space occupied by our bodies are the central elements of his physical influx theory of the 1750s.

One of the main considerations that leads Kant to investigate God's creative action is a doctrine which he put forward in his first published work, *Thoughts of the True Estimation of Living Forces*, which was published in 1747. Kant argued there that space is an objective but derivative phenomena. His metaphysical account of space is a strange mixture of Leibnizian and Newtonian ideas: he accepts Leibniz's claim that space is a phenomenon, but also holds that it is an objective phenomenon unified by Newtonian forces. In *Universal Natural History*, Kant appeals to the omnipresent reach of gravitation allows Kant to explain the organization of the heavens: our galaxy and our solar system are both held together by the force of attraction exerted from their centers. By analogy with these bodies, and drawing upon observations of nebulae, Kant posits the existence of an "infinite field of creation" in which there is an organized system of galaxies (1:253; Jaki, p. 107).

What emerges is a prospect of an infinite universe whose structure can be understood by analogy with the organization of our own solar system. As Kant puts it, in our solar system we have "the first members of a progressive relation...[which] already permits to be known what should be conjectured about the whole" (1:256; Jaki, p.108). God's agency is what guarantees that all the objects in the universe are susceptible to universal attraction; God could have created worlds that are not spatial at all or that have a different type of spatiality from ours. Here Kant turns to the question of what God did when he made our world one where objects follow Newtonian laws of motion.

Kant sees in the action of the forces of nature a *planned* coordination. He retains the idea that the Newton's principles of motions describe lawful motion, and that these laws are the principles around which our world is governed, but he adds a new idea, namely that these laws are understandable only if we posit them as the purposes of an infinite understanding. Kant's goal in *Universal Natural History* is to bring into view the cosmic universal plan in conformity which the universe is structured and has developed. As Kant puts it nearly five decades later, "[m]atter does not organize itself but is being organized through something immaterial" (22:507).

In *Universal Natural History*, Kant sees two immaterial sources of matter's organization. The first is God's divine purpose, the plan God used in creating the universe. The second is a strange metaphysical thesis, according to which the intermingling of spiritual substance *in* matter serves to organize matter. The former counts as a distal or originating cause of organization, the latter as its proximal or sustaining cause. For although the universe is planned, Kant denies that it is sustained by God's constant intervention. God's purposes are realized in the cosmos through the intermingling of spiritual and material substance.

I hope it is clear by now that this early work of Kant is *not* simply derived from Leibniz or Wolff and that it contains a lot which should pique philosophers' interest. For the rest of the time that is left, I would like to focus on one particular view which I find fascinating. I am going to discuss two consequences of Kant's metaphysical account of space. First, Kant believes that our souls penetrate our bodies, which is to say that our souls and our corporeal bodies occupy the same space at the same time. Second, this gives rise to an account of cognition in which human souls can have representations only because they are affected by human bodies. It follows from this second doctrine that, if we have cognition, the physical influx view must be correct.

I am going to focus on the second of these claims, the one about knowledge and the body. One reason I have chosen to spend my time on this has to do with Kant's later philosophical development. By 1763, Kant came to see that his metaphysical account of "embodied souls" was in serious trouble, and he stopped claiming that souls and bodies occupy the same space later in that decade. Kant's commitment to the second doctrine is much longer-lived, however. Indeed, I believe that it is possible to trace the course of Kant's belief that the body stands as a condition of knowledge from his first publications in the 1740s through his monumental final work, the *Opus postumum*.

Kant gives an unambiguous endorsement of the body's role in cognition at the end of *Universal Natural History*:

Man is so created as to receive the impressions and stirrings which the world must evoke in him through that body which is the visible part of his being, and the material of which serves not only to impress on the invisible soul that dwells in it the first notions of external objects, but also to recall and connect them interiorly, in short [that body] is indispensable for thinking. (p. 186)

Note that Kant affirms the necessity of bodily activity for thinking in general and not simply for the reception of outer impressions. The BK thesis is true, Kant suggests, because bodily action stands as a condition for "recalling" and "connecting" representations once they are "inside" the mind. Of course, our bodies' constitutions do set limits on our experience of the world; for example, our ears are sensitive to a certain range of frequencies of sound. Kant's claims about the role of the body in cognition go far beyond this. Just as our sense organs must limit which impressions we receive, so do these and other bodily structures set limits on how quickly and how well our souls can "recall and connect" impressions. In short, the soul's outer relations with the body are necessary for our experience of impressions to be unified together in a conscious perception. For this reason, the body is truly "indispensable for thinking."

This passage is from the appendix to *Universal Natural History*, which is devoted to a speculative comparison of "the inhabitants of the various planets" (1:349; Jaki, p. 182). Kant's guiding idea is that physical and spirituous matter are distributed unequally throughout the solar system, and that the quality of beings' cognitions depends on the relative densities of the two types of substances at their planet of origin. Specifically, the physical forces of attraction repulsion interact to cause the matter which radiates out from the sun to become progressively less dense. Spirit, by contrast, contains an "expansive

nature" and is impelled by these same forces towards the outer planets, where it collects in relatively greater quantities. Kant's major claim is that the efficacy of our souls' actions depends on the relative quantities of the two types of substances in us. On this account, our bodies and souls are each constituted from a different type of matter. The quantity and quality of our cognition depends on the manner of the interaction between the physical matter of our bodies and the spirituous matter of our souls. Both types of matter, and therefore the interaction between them, is governed by the universal physical forces of attraction and repulsion.

In a series of far-reaching speculations, Kant provides a comparative analysis of the cognitive abilities of the inhabitants of each of the planets in our solar system. Kant's philosophical point is not that the planets are or may be inhabited, but that our location on this planet, and the composition of our bodies out of earthly matter, greatly affects how our souls operate. He speculated that the most cognitively able beings would be on Saturn, whereas those on Mercury would be unable to manifest higher any cognitive powers. (3) Inhabitants of Saturn would have a high preponderance of spirituous matter which could interact quickly and easily with the light and nimble matter of their bodies. On Mercury, however, there is so little spirituous matter and the corporeal matter is so dense that the souls and bodies of the inhabitants on that planet could interact only in a crude and slow fashion. Human beings on earth have a limited capacity for higher thought. We contain more spirituous matter than inhabitants of the planets closer to the sun, but our bodies aren't as fine and nimble as those creatures who live on the outer planets and, consequently, we can't "recall and connect" impressions as well as the inhabitants of those locales.

Here is how Kant thinks his view can be "summed up in a general notion:"

The stuff, out of which the inhabitants of different planets as well as the animals and plants on them, are built, should in general be lighter and of finer kind, and the elasticity of the fibers together with the principal disposition of their build should be all the more perfect, the farther they stand from the sun. (1:358; Jaki, p.189; Kant's emphasis)

From this, Kant argues, a second "general notion" follows. Given Kant's doctrine that the "spiritual faculties have a necessary dependence no the stuff of the [bodily] machines which they inhabit" (*ibid.*), it follows that:

[T]he excellence of thinking natures, the promptness in their reflections, the clarity and vivacity of the notions that come to them through external impression, together with their ability to put them together, finally also the skill in their actual use, in short, the whole range of their perfection, stands under a certain rule, according to which these natures become more excellent and perfect in proportion to the distance of their habitats from the sun. (1:359; Jaki, p. 189; Kant's emphasis)

This rule, we shall learn, has everything to do with the way in which body and soul are interact through the physical forces of attraction and repulsion.

According to the account of human nature in *Universal Natural History*, human beings can attain a limited degree of intellectual maturity, but only after great effort and only for limited periods. We suffer from mental lethargy due to the relatively gross and rigid nature of the material in our bodies. This material is unable properly to activate our souls. Beyond this, "the lives of most men" are ill-suited to promote the development of the interaction between their bodies and souls (1:355; Jaki, p. 187.) In an amazing passage, Kant remarks that "in the measure of which the body develops, the faculties of the thinking nature also obtain the corresponding degrees of perfection" (*ibid.*). Bodily physical and sexual maturity is required for our minds to be truly developed; our minds "reach a definite and mature status only when the fibers of [our] body-instrument achieve the strength and endurance which is the completion of their development" (*ibid.*).

Physical maturity, however, is insufficient for mental or intellectual maturity. Kant remarks that "in some men the development stops when mere physical maturity is reached." When development stops here, the results are catastrophic for our cognitive abilities, for "the ability to combine abstract notions and to master the bent of passions through a free application of considerations takes place later" (*ibid.*). The nature of the matter found on earth makes it an arduous task indeed for most of us to learn how to train our bodies to affect our souls in the manner that higher cognition requires. In a gloomy passage Kant concludes:

When we consider the lives of most men, this creature seems to have been created to absorb fluids, as does a plant, and to grow, to propagate his species, and finally to age and die. He of all creatures least achieves the goal of his existence, because he uses his outstanding faculties for such purposes which other creatures accomplish more securely and conveniently with far inferior [faculties]. (*Ibid.*)

Though we are blessed with souls that can surpass a purely animalistic existence, Kant's pessimistic observation is that most of us rarely if ever strive for anything beyond those lowly ends at which plant and animal existence is directed.

Even in the prime of life, when strength, agility and intellectual maturity are at their greatest, our bodies are but flawed "instruments" which degrade and debase our souls. To improve our condition, however, we should not wish for the escape of our souls from our bodies, but rather for the refinement of our control over the bodily actions which are "indispensable for thought". Our debasement does not arise because the body imprisons the soul, but rather because the relatively dense material of our bodies cannot move quickly and gracefully enough to keep up with the demands of the soul. Our bodily motions are too "gross", Kant argues, because the parts of our bodies are "unbending", "sluggish", and "immobile."

If one looks for the cause of impediments which keep human nature in such a deep abasement, It will be found in the crudeness of matter into which his spiritual part is sunk, in the unbending of the fibers, and in the sluggishness and immobility of fluids which should obey its stirrings. The nerves and fluids of his brain deliver to him only gross and unclear concepts, and because he cannot counterbalance in the interior of his thinking ability the impact of the sensory impressions with sufficiently powerful ideas, he will be carried away by his passions, confused and overwhelmed by the turmoil of the elements that maintain his [bodily] machine. The efforts of reason to rise in opposition and to dissipate this confusion with the light of the ability to judge will be like flashes of sunlight when thick clouds continually obstruct and darken its cheerful brightness. (1:356-7; Jaki, p. 187)

By contrast, those whose bodies are the most nimble can expect a host of gifts. In virtue of the manner in which their bodies can stir their souls, they will possess deeper insight, quicker wit, and judgment that is less prone to error. Likewise, because their bodies will be better suited to being stirred by their souls, we should expect these individuals to lead more moral lives and to resist sin better than most.

Kant unequivocally states that our ability to judge in general both presupposes and is limited by the manner in which our bodies interact with our souls. He argues that:

The sluggishness of his ability to think, which is a consequence of its dependence on gross and rigid matter, is the source not only of depravity but also of error. Through the difficulty which is connected with the effort to dissipate the cloud of confused notions and to distinguish and separate the universal knowledge obtained through the comparison of ideas from sensory impressions, one's thinking readily yields to overhasty approval and acquiescence in the possession of a view, in which, because of the sluggishness of its nature and because of the resistance of matter can hardly permit to be looked upon from another side. (1:357; Jaki, p.188)

Our ability to compare ideas, to abstract concepts from sensory impressions, and to judge all require interaction between body and soul. Note that this is a completely general claim which does *not* apply only to the highest levels of abstract reasoning. Kant's focus on the higher cognitive and moral powers should not be taken to suggest that our bodies stand as conditions for the possibility of only higher cognition. Kant's broader implication is that the soul could not think at all without the body; human reason emerges from the reciprocal interaction of body and soul.

It is important to emphasize that Kant does not assert that the problem with our embodied consciousness lies in the fact that the soul is dependent on its interaction with a corporeal body. Rather, the fault lies in the specific, contingent nature of our earthly bodies, which makes it extremely difficult for us to think effectively. Kant writes:

The grossness of stuff and of the texture in the build of human nature is the cause of that sluggishness which keeps the faculties of the soul in perennial dullness and feebleness. The handling of reflections and representations enlightened by reason is a tiresome condition into which the soul cannot place itself without opposition, and out of which the soul would, through the natural inclination of the bodily machine, soon fall back into the passive condition, where the sensory impressions determine and rule all its activities. (1:357; Jaki, pp. 187-8)

Recall that when Kant distinguished the soul from the "bodily machine," he affirms that the soul is susceptible to physical forces. As we saw earlier, the cosmological structure of the universe depends on how spirituous matter interacts via repulsion and attraction with physical matter. Kant's point here is that there is a danger that our souls will be unable effectively to act on our bodies; if our bodies are not sufficiently nimble, we will exist in the "passive condition" which is a hallmark of merely animalistic existence. The problem, that is, is not that our souls are trapped in our bodies, but that they often have a difficult time acting on our bodies in the right way. The best form of rational existence requires a nimble body which can both act upon and be acted upon by its soul in specific ways.

Although he does not deny that the soul can exist apart from the body, in 1755 Kant insists that disembodied souls cannot have human cognition. As the body becomes less nimble in old age, the soul too fades into senescence. Kant concludes:

[T]he spiritual faculties disappear together with the vigor of the body: when owing to the slackened flow of fluids advanced age cooks only thick fluid in the body, when the suppleness of the fibers and the nimbleness in all motions decrease, then the forces of the spirit too stiffen into a similar dullness. The agility of thought, the clarity of representation, the vivacity of wit, and the ability to remember lose their strength and grow frigid. (1:357; Jaki, p.188)

Our souls cannot operate effectively if they do not interact with healthy, well-trained bodies. Whatever existence our souls have after the death of our body, they cannot have knowledge or experience of the sort we possess in our lifetimes. Cognition as we know it is without exception marked by the way "that the forces of the human soul become hemmed in and impeded by the obstacles of a crude matter to which they are most intimately bound" (1:357; Jaki, p. 188).

Notes

(1) Eric Watkins has traced the history of these charges in great detail in his "The Development of Physical Influx in Early Eighteenth Century Germany", *Review of Metaphysics* 49 (December 1995), and in his forthcoming "From Pre-established Harmony to Physical Influx: Leibniz's Reception in Eighteenth Century Germany."

(2) References to *Universal Natural History* are given both to the Akademie pagination and to Stanley Jaki's 1981 English translation. All translations are Jaki's.

(3) Kant predicts the existence of planets beyond Saturn's orbit, but of course none of them had been discovered by the 1750s.