

CHAPTER TWO
EMBODIED COGNITION AND ELEMENTS OF KANT'S
METAPHYSICS OF THE 1750s

This chapter is divided into four sections. In section 2.1, I discuss in greater detail Kant's understanding of the divine schema of our world. I focus on the role of attractive and repulsive forces in the schema. This provides background for my discussion, in section 2.2, of a specific application of Kant's solution to the mind/body problem, his account of the role of the body in cognition. The two central ideas I discuss are that all of the conceptual activities of the soul are dependent on bodily processes and that the material constitution of the body impedes the ability of the mind to think. In section 2.3, I discuss two relevant metaphysical principles, the principle of succession and the principle of coexistence. Finally, in section 2.4 I develop two central problems with Kant's pre-critical metaphysics, namely its apparent inability to explain how souls can be located in space and to prove that simple souls do not have the same material nature as physical monads.

2.1 Cosmology and the schema of our world

I discuss two topics in this section. In section 2.1.1, I explain how Kant's doctrine that the souls in our world must be in interaction with bodies led him to

develop what I call an account of embodied cognition.⁷⁸ In section 2.1.2, I connect this doctrine with the role of attractive and repulsive forces in the divine schema of our world.

2.1.1 Bodily action is involved in every mental change

In *Living Forces*, Kant asserted that souls are caused to have perceptions when they are acted upon by substances existing in space.⁷⁹ He thus rejected a basic principle of Leibnizian monadism, the principle that a substance can act on itself only and can neither act on nor be acted upon by any other substance. Kant's principle of succession (see section 1.3.2 above) entailed that souls must interact with something else. Although this principle by itself did not suffice to show that souls must interact with bodies, I show in section 2.2 below that Kant used his notion of the divine schema of our world to show this. What emerged was an argument that a bodily action is involved in every mental change.⁸⁰ The

⁷⁸ I am grateful to Hannah Ginsborg for pointing out to me the importance of stressing Kant's claim that our souls must be in interaction not just with other souls but also with bodies.

⁷⁹ See section 1.6 above.

⁸⁰ Viewed this way, this argument may have been a distant ancestor of the Refutation of Idealism in the second edition of the *Critique of Pure Reason*. However, a crucial difference is that this argument considered the metaphysical causal conditions for having thought, whereas the Refutation was an epistemological argument about the justification of knowledge.

system of interaction that Kant defended in *Living Forces* thus led to his positing a thoroughly embodied account of cognition.⁸¹

2.1.2 The divine schema of our world

In the *Universal Natural History*, Kant attempted to reconcile the concept of a mechanical universe governed by laws with that of a teleological universe dependent on divine design. His goal was to show that Newtonian science led to neither materialism nor atheism because the susceptibility of matter to laws of motion was explained by the divine schema of our world.

An important difference between *Living Forces* and the *Universal Natural History* was that in the latter work Kant discussed a universal repulsive force.⁸² Although his stated goal in the *Universal Natural History* was to account for the mechanistic origin of the world using Newtonian attraction, Kant argued that matter is organized by the conjoint action of attractive and repulsive forces.

⁸¹ As I pointed out in the Introduction, I use the term “embodied cognition” in a specific sense. The view I discuss centered on a metaphysical account of the causal conditions on thinking; Kant did not raise epistemological questions about the justification of our beliefs and thus did not develop an “embodied epistemology.”

⁸² Kant’s discussion of the universal attractive force in *Living Forces* should have led him to post a repulsive force, for, as I show later in this section, a commitment to an attractive force without a compensating repulsive force would hardly be coherent. Although I am aware of no evidence that Kant referred to a repulsive force before the 1750s, nothing he said in *Living Forces* was incompatible with there being such a force.

The second part of the first section of the *Universal Natural History* was devoted to “the origin of the planetary world-edifice in general and of the course of its motions” (1:261). Kant first explained how differences in elements’ densities led to clumping through gravitational attraction. After noting that “elements have essential forces to set each other in motion,” he argued that a universal attractive force *not* acting conjointly with a repulsive force would lead to a static and not dynamic universe:

Matter is immediately in the tendency to develop itself. The scattered elements of heavier kind gather, through attraction...Inasmuch as one follows in thought this self-developing nature through the entire realm of chaos, one easily perceives that all results of this process would in the end consist in the putting together of various lumps [of matter] which, after the completion of their formation, would be at rest and forever unmoved. (1:264)

In a world with attractive but with no repulsive forces, all matter would fall together and henceforth would never move. Since Kant’s project was to explain the development of the cosmos by explaining how objects’ “essential forces set each other in motion,” there must be a fundamental repulsive force that prevents the gravitational collapse of the universe. Kant held that “through this repulsive

force...the elements [of matter] sinking toward their points of attraction become directed sideways in all sorts of ways" (1:265).⁸³

Kant understood universal physical laws to be principles that realize God's divine schema for our world. He concluded that "all of nature...has a harmonious relation with the delight of the divinity" (1:322).

2.2 Knowledge and the body in *Universal Natural History*, Third Part (1:173-200)

In this section, I discuss Kant's account of embodied cognition in the Appendix to the *Universal Natural History*. I approach this text as an application of Kant's solution to the mind/body problem in *Living Forces* sections five and six.

In the Appendix, the third section of the *Universal Natural History*, Kant gave an account of the role in cognition of specific actions of the body on the mind. Although his discussion of the inhabitants of other planets was speculative and may strike contemporary readers as fanciful, it raised two important philosophical points. The first was the idea that all the soul's conceptual activity is

⁸³ In the critical period, Kant argued that if there were attractive but no repulsive force, then matter would contract to a point. His position in 1755 was different from this: he asserted that all matter would "gather through attraction", but he also said that matter would form "lumps." He apparently believed that matter would contract, but not to a single point. It is unclear to me why Kant believed this, for his views in the *Universal Natural History* should have led him to assert that matter would contract to a point. As I show in section 2.4.4 below, by 1756 Kant argued that matter needed a repulsive force to occupy a volume of space.

dependent on sensory material that it receives as the effect of bodily action. For Kant, as for Leibniz before him, the soul's perspective or outlook on the world was mediated by the body.⁸⁴ Leibniz emphasized the confused nature of these perceptions and the soul's power to clarify them. The second philosophical idea was that the sluggishness of the body, which is caused by the body's specific material constitution, impedes the ability of the soul to think. If cognition is viewed as a succession of mental states, Kant's claim was that this succession depends causally on a corresponding succession of bodily processes.⁸⁵ Specifically, he argued that the body's sluggishness hinders, degrades, or impedes the succession of states that occur in the soul. Because the succession of states in the soul depends on the succession of states of the body, Kant concluded, the specific character of our bodies' material constitution affects the character of our cognition.

Thus what I call Kant's account of embodied cognition in the *Universal Natural History* did not merely assert that the quality of the sensory material provided by the body affects the quality of cognition. As I show below, Kant argued that the soul is dependent for any change—and thus for cognition, which in-

⁸⁴ I owe this point to Daniel Warren.

⁸⁵ I am grateful to Daniel Warren for providing me with this formulation of Kant's thesis.

volves a temporal sequence of mental states—on the successive states of the body.

These two points were systematically related by Kant. A sluggish body will only register large-scale changes in the world, for it is not nimble enough to respond to or track subtle or quick changes. Thus this sluggishness limits the quality of the sensory material that the body provides. Kant's second point was that the sluggishness also degrades the efforts of the soul to overcome this sensory confusion by using its own conceptual powers to (among others) compare, abstract, reflect, and find a universal. Since the succession of mental states depends in such a strong manner on the succession of bodily states, a sluggish body does not allow the mind to operate at a rate that gives the mind's own activities a fighting chance to clarify confused perceptions. Kant believed that this sluggishness was a characteristic of the material that constituted the entire body, and this is why he was concerned with the "nimbleness" of the entire body and not just in particular with the state of the brain.

Kant argued that the soul's ability to act on itself was dependent on its receiving an appropriate succession of bodily actions. His deepest point about the soul's dependence on the body was that our bodies' sluggishness entails that our souls do not receive appropriate successions of bodily actions. A sluggish body, he maintained, gives the soul gross sensory information *and* causes the soul to exercise its own powers in a gross manner.

In section 2.2.1, I discuss the reason why Kant thought that our bodies were sluggish in the way I've described. He argued that matter is unequally distributed in our solar system: heavier matter collects on the inner planets while the outer planets are constituted out of lighter matter. Our bodies are relatively sluggish because they are composed out of earthly matter, which is relatively dense. In section 2.2.2 and 2.2.3, I discuss Kant's views about the effect of our material constitutions on our cognition.

2.2.1 The unequal distribution of matter in our solar system

The third section of the *Universal Natural History* was titled "Appendix, of the inhabitants of the stars" (1:173).⁸⁶ Kant noted that matter is distributed unequally in our solar system: heavy matter collects on the inner planets, lighter matter on the outer planets.⁸⁷ After asking what effect this distribution of matter might have on the bodies of any inhabitants of the other planets in our solar

⁸⁶ The Appendix has generally been passed over by Kant scholars in embarrassed silence. An exception is J.B. Schneewind, who discusses its significance for the development of Kant's moral thought. See his *The Invention of Autonomy: A History of Modern Moral Philosophy* (Cambridge: Cambridge University Press, 1998), pp. 498-501. I am grateful to Damian Konkoly for providing this reference.

⁸⁷ Kant was not the first early modern philosopher to speculate about the inhabitants of other planets. In this *Elementa Mathesos Universae*, Wolff used planets' distances from the sun to infer the size of their inhabitants. On this see Schneewind, *The Invention of Autonomy*, p. 498 n.29 and W.H. Barber, *Leibniz in France* (Oxford: Oxford University Press, 1955), p. 153.

system, Kant sensibly concluded that this question can only be answered by studying the inhabitants of Earth. He set out a specific query about humanity:

We merely wish to investigate as to what limitations his ability to think and the mobility of his body...would suffer through [the specific earthly nature] of the properties of matter with which he is linked and which are proportioned to the distance from the sun.
(1:180)

Just as each planet is constituted out of a specific proportion of heavier and lighter matter ("proportioned to the distance from the sun"), so too is every being on that planet. Any inhabitants of Jupiter, for example, would have much less dense bodies than our own, which would be composed of relatively dense earthly matter. It is plausible to suppose that this difference might affect the relative mobility of the inhabitants of the planets: the lighter, airier bodies of Jupiter's inhabitants might be expected to move more nimbly and quickly than we can, and indeed their bodily processes generally might well be able to proceed at a higher rate than is possible for our earthly bodies.

2.2.2 The effect of this on our ability to think

The philosophical heart of the Appendix to the *Universal Natural History* consisted of Kant's speculations on how these bodily differences might affect beings' ability to think. Kant addressed this issue in the continuation of the passage cited above:

Whatever the infinite distance between the ability to think and the motion of matter, between the rational mind and the body, it is still certain that man—who obtains all his notions and representations through the impressions which the universe through the mediation of bodies evokes in his soul, both in respect of their meaning and of the readiness to connect and compare them, which man calls his ability to think—is wholly dependent on the properties of that matter to which the creator joined him. (1:180).

Although it was not the main point of this quotation, metaphysical dualism was part of the philosophical context of this passage: in 1755, Kant believed that the "rational mind" or "soul" was an immaterial substance distinct from the matter of our body. Though separate substances, he thought that our minds and bodies are closely related, for the ability of a being's mind to think "is wholly dependent on the properties of that matter to which the creator joined" it, which is to say that it is wholly dependent on the properties of the matter of its own body. As Kant made clear in this passage, this dependence does *not* consist simply in the body serving as a conduit of sensory stimulation. Rather, Kant's view was that *all* of our ability to think, even abilities that seem purely mental like "the readiness to connect and compare" representations, are "wholly dependent" on the material constitution of our bodies.

Kant made this claim repeatedly. In this passage, for example, he asserted that the body was "indispensable" even for "interior" mental operations:

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. (1:182)

Here again Kant affirmed the necessity of bodily activity for thinking in general and not simply for the reception of outer impressions. For Kant, bodily action stood 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. However, as I have shown, Kant’s claims about the role of the body in cognition went far beyond this. Just as our sense organs must limit which impressions we receive, so do they and other bodily structures set limits on how quickly and how well our souls can “recall and connect” impressions. Kant’s guiding idea was that the character of the soul’s actions depends on the relative distribution of heavy and light matter. Namely, the soul performs swift and accurate comparisons, abstractions, and other conceptual activities only if the body with which it is associated is composed of light matter that can act in a quick and not in a sluggish manner.

2.2.3 The constitution thesis: the “forces of the soul” are “hemmed in and impeded by the obstacles of a crude matter to which they are most intimately bound”⁸⁸

Here is Kant's position “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; Kant’s emphasis)

From this, Kant argued, a second general notion follows. If the “spiritual faculties have a necessary dependence on the stuff of the [bodily] machines which they inhabit” (1:358), 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; Kant’s emphasis)

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.

Kant argued that “the lives of most men” are ill-suited to promote the development of the interaction between their bodies and souls (1:355). In a striking

⁸⁸ This quotation is from 1:184.

passage, Kant remarked that “in the measure of which the body develops, the faculties of the thinking nature also obtain the corresponding degrees of perfection” (1:355). 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” (1:355).

Physical maturity, however, is insufficient for mental or intellectual maturity. Kant noted 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. Kant concluded gloomily:

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]. (1:355)

Though we are blessed with souls that can surpass a purely animalistic existence, Kant pessimistically observed 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 physical strength and agility and intellectual maturity are at their greatest, our bodies' material constitutions degrade and debase our souls. To improve our condition, however, we should of course not wish for the escape of our souls from our bodies (for in that case we would not think at all), 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 because the relatively dense material of our bodies cannot move lightly or quickly or gracefully enough to act on the soul in a manner that produces good cognition. Our bodily motions are too "gross", Kant argues, because the dense matter we are composed of makes us "unbending", "sluggish", and "immobile". He wrote:

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)

By contrast, those whose bodies—and in particular whose brains and nervous systems—operate the most nimbly, 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.

It is important to emphasize that Kant did not assert that the problem with our cognition is that the soul is dependent on its interaction with a corporeal body. Rather, the fault lies in the specific, contingent natures of that matter of our bodies. Kant wrote:

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)

If our bodies are too sluggish, our souls will exist in the “passive condition” which is a hallmark of merely animalistic existence. This is why Kant believed that the best form of human existence—that with the highest intellectual and moral refinement—required a nimble, healthy body that can both act upon and be acted upon by its soul in the right ways.

Although as a separate substance the soul can exist apart from the body, Kant insisted that disembodied human souls cannot have human cognition. The reason for this, as I discussed above, is that the soul's ability to act on itself is dependent on it receiving an appropriate succession of bodily actions.⁸⁹ As the body becomes less nimble in old age, the soul too fades into senescence. Kant concluded:

[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)

To be sure, Kant believed that there are distinctively *mental* powers, which he refers to here generally as “the forces of the spirit” and that include memory and such conceptual actions as the comparison and abstraction of representations. According to Kant's account of embodied cognition, however, these mental powers are activated only if the body provides the right input. 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” (1:184)

⁸⁹ This is why, in the Appendix to the *Universal Natural History*, Kant focused on the body's effect on the soul and not on the soul's effect on the body or the soul's effect on itself.

Although we can never escape the dismal heritage of the gross earthly matter of our bodies, our souls would not think at all if they were not continually acted on by their bodies. This is why Kant was committed to a thoroughly embodied account of cognition in 1755.

2.3 The metaphysical underpinnings of Kant's account of embodied cognition

In this section, I discuss the two great metaphysical principles of Kant's pre-critical philosophy, the principle of succession, which I introduced in section 1.3 above, and the principle of coexistence. According to the principle of succession, a substance can change only if it is acted on by another substance. According to the principle of coexistence, the mere existence of two substances does not guarantee that they can interact; what is required for this, Kant argued, is that they be related via the principle of interaction of a world's divine schema.

In section 2.3.1, I discuss Kant's three demonstrations of the principle of succession. For the purposes of this study, Kant's second demonstration was particularly interesting because it used a crucial idea from *Living Forces* section four, namely the idea that our world is one where the *nach und nach* thesis obtains.⁹⁰ In section 2.3.2, I discuss the principle of co-existence. A significant point

⁹⁰ See section 1.4 above.

that emerged was that the schema of our world is such that a thing's sphere of activity is determined through the reciprocal interaction of its attractive and repulsive forces. It is the conjoint action of the two forces, Kant maintained, that explains how something can be located in the space of our world. This section raised a crucial problem for Kant's early metaphysics: Do souls possess both repulsive and attractive forces? If they do, then, for reasons that I explain in sections 2.4 and in Chapter Three below, Kant's rational psychology was inconsistent. If they do not, then Kant had no account of *how* souls could be located in space, a view to which he had been committed to since the publication of *Living Forces*.⁹¹

In section 2.3.3, I discuss how Kant's principle of coexistence and his notion of a divine schema entail that, to explain the possibility of interaction between substances, one must appeal to substances' common dependence on their divine creator. In section 2.3.4, I relate my discussion of the principles of succession and coexistence to two important elements of the critical philosophy, the Refutation of Idealism and the Analogies of Experience sections of the *Critique of Pure Reason*. Finally, in section 2.3.5, I discuss exactly how the principle of succession supports the *Universal Natural History's* account of embodied cognition.

⁹¹ See section 1.5 above.

2.3.1 The principle of succession

In *A New Elucidation of the First Principles of Metaphysical Cognition* (1755), Kant developed two metaphysical principles governing the interaction between substances. The principle of succession stated that “no change can happen to substances except in so far as they are connected with other substances; their reciprocal dependency on each other determines their reciprocal changes of state” (1:410). According to this principle, a substance can change only if it is acted upon by another substance. For example, "if the human soul were free from real connection with external things, the internal state of the soul would be completely devoid of changes" (1:412).

Kant's proof of the principle of succession involved a thought experiment that explored a world consisting of a single isolated substance of the sort whose possibility he endorsed in *Living Forces*, namely a substance that exists in a world of its own and that cannot interact with any other substance.⁹² He asked whether such a substance would be able to affect itself (i.e., cause itself to change) and he concluded that it could not.

Kant gave three demonstrations of the principle of succession, each of which he believed showed that an isolated substance could not change. In the

⁹² See section 1.5.2 above.

first argument, he concluded that the sufficient reason for change in a substance's inner state could only originate from outside that substance:

Suppose that some simple substance, the connection of which with other substances had been canceled, were to exist in isolation. I maintain that it could undergo no change of its inner state. The inner determinations, which already belong to the substance, are posited in virtue of inner grounds which exclude the opposite. Accordingly, if you want another determination to follow, you must also posit another ground. But since the opposite of this ground is internal to the substance, and since, in virtue of what we have presupposed, no external ground is added to it, it is patently obvious that the new determination cannot be introduced into the being. (1:410)

Kant presupposed that there must be a sufficient reason or reasons that determine a substance's states. If so, at any particular time there would be reasons that determine the isolated substance's inner states. Since, by hypothesis, this substance has no connection with other substances, these reasons must consist in "inner grounds". As Kant pointed out, however, these grounds "exclude the opposite:" it would be absurd to think that the same inner grounds would provide a sufficient reason for two different sets of internal determinations. Kant concluded from this that the sufficient reasons for change always include external grounds.

This argument harkened back to Kant's discussion of the successive expenditure of *vis activa* in *Living Forces* section four, where he put heavy weight on the question of why *vis activa* is not expended all at once. His point about change in the *New Elucidation*, I think, was that any determinative ground that is wholly internal would be sufficient reason for the immediate determination of the substance. If this is so, then a substance could change states over time only due to the effect of transeunt causes. This would entail that change would be impossible for a substance that was connected with no other substance: an isolated substance could not undergo a succession of states, for all its strictly internal determinations would happen at a single time.⁹³ This example was directed against pre-established harmony. Like Leibnizian monads, all the properties of Kant's isolated substance would be pre-established or pre-determined in, to use Leibniz's language, its complete concept. In effect, Kant denied that substances possess an inner force like Leibniz's appetite.

⁹³ The account of physical influx which Kant developed was sharply different from the influential account published by his teacher, Martin Knutzen, in 1735 and 1745. Knutzen grounded the capacity of a substance to act on other objects on substances' power to change themselves. According to the principle of succession, however, substances lack this latter power. Notably, however, Kant agreed with his teacher about the central use of the notion of impenetrability in arguments for physical influx. For more on Knutzen and other defenses of physical influx in the early 1700s see Eric Watkins, forthcoming, "From Pre-established Harmony to Physical Influx: Leibniz's Reception in Eighteenth Century Germany."

Kant's second demonstration of the principle of succession built on this point. This argument appealed to another idea found in *Living Forces*, that there must be some reason why forces are not expended all at once. Suppose there was no genuine interaction between substances. In this case, Kant argued, each substance would have within itself the sufficient reasons for every change it will experience. In the first demonstration, Kant argued that such a substance could not undergo a succession of different states. In the second demonstration, he said more about why succession over time requires interaction with an external object. Though prolix, this passage illuminates Kant's claim that undergoing a succession of states requires an external reason for change:

It is necessary that whatever is posited by a determining ground be posited simultaneously with that determining ground. For, having posited the determining ground, it would be absurd if that which was determined by the determining ground were not posited as well. Thus, whatever determining factors exist in some state of a simple substance, it is necessary that all factors whatever which are determined should exist simultaneously with those determining factors. But since change is the succession of determinations, that is to say, since a change occurs when a determination comes into being which was not previously present...it follows that the change cannot take place by means of those factors which are to be found within the substance. (1:411)

By hypothesis, change in an isolated substance must be caused by a reason internal to itself. Unless there was some reason to delay them, however, all these internal determinations would occur instantaneously. Kant's argument considered the source of the reasons for successive determination. The sufficient reason for change must not be present in the substance at the beginning, for otherwise its effect would be felt immediately and all the internal determinations would occur simultaneously. There must therefore be a second sufficient reason that produced the first sufficient reason at some later time. But this sufficient reason too would act immediately unless there was a third sufficient reason, and so forth in a regress of sufficient reasons. Kant's point was that change in isolated substances would be impossible because the idea of an internal sufficient reason for change is absurd. Kant's philosophical targets were obvious: change would be impossible if Leibnizian pre-established harmony was correct. Substances as they were conceived by that tradition would contain all their future states simultaneously and thus could not undergo a succession of states. As Kant surely realized, his argument entailed that it was absurd to think that isolated substances could be governed by a principle of appetition.

Kant's third and final demonstration of the principle of succession assumed for the sake of argument that the instantaneous determination of a substance by internal grounds does count as genuine change. His argument is a *reductio* of this assumption:

Suppose that a change takes place under the conditions specified [i.e. instantaneously due to inner determining grounds]. Since it begins to exist when it was not present previously, that is to say, when the substance was determined to the opposite, and since no grounds, apart from those which are internal, are supposed to be involved in determining the substance from any other source, it follows that the same grounds, by which the substance is supposed to be determined in a certain way, will determine it to the opposite, and that is absurd.

(1:411)

We commonly experience bodies that have incompatible properties at different times; for example, we observe a leaf that changes color. Isolated substances, Kant argued, could not undergo change like a leaf, for this would entail that they have incompatible states at the same time. In the case of change that involves incompatible determinations, he suggested, it is absurd to think that a substance's inner grounds could lead to both determinations in succession, for this would entail that the same grounds contain sufficient reason for contradictory determinations. Kant concluded from this that change of the sort that can bring a succession of incompatible states can take place in a substance only insofar as some other substance acts on it.

2.3.2 The principle of coexistence

If the principle of succession holds true in our world, then change is possible only if there is genuine interaction between substances. Kant's second metaphysical principle, the principle of coexistence, was meant to explain how such interaction is possible. According to the principle of coexistence, our world was created by God in a way that guarantees that all substances in it exert force successively.

This was Kant's definition of the metaphysical principle of coexistence:

Finite substances do not, in virtue of their existence alone, stand in a relationship with each other, nor are they linked together by any interaction at all, except in so far as the common principle of their existence, namely the divine understanding, maintains them in a state of harmony in their reciprocal relations.

(1:412-413)⁹⁴

⁹⁴ This argument was repeated in the *Lectures on Metaphysics*. In the *Metaphysik Herder* (1762-4), Kant was reported to have argued:

To the connection of the things in the whole belong *not merely the existences of the things*. It is always asked with this whether they constitute a whole, since each could exist alone. If they are many and coexistent, then they do not immediately have community on that account. Thus for a connection, *something special, reciprocal interaction*, is still required...[substances'] *connection still requires a special ground: a special action still of the creator*, since he connected them. Thus *the state of diverse substances that each acts on and suffers from the others (com-*

The mere existence of substances, Kant asserted, does not guarantee that they can undergo genuine interaction.⁹⁵ This followed from his account in *Living Forces* of the plurality of actual worlds: he argued there that substances may exist in worlds completely isolated from each other, the limiting case being a world consisting of a solitary, inactive substance.⁹⁶ According to Kant, God's harmonizing plan for our world involved God conceiving of the substances in space as being involved in a reciprocally interacting community. This community, Kant wrote, involves "the universal interaction of all things" (1:413).

The principle of coexistence served to legitimize Kant's commitment to attractive and repulsive forces: their place in our world is a matter of divine agency. In the fifth application of the principle of coexistence, he characterized Newtonian attraction as "probabl[y]...the most fundamental law of nature governing matter," and concluded that it "remain[s] in force only in virtue of God's sustaining it" (1:415).

mercium) has a special ground in God, who willed that they should depend upon one another (28:51).

⁹⁵ The *Lectures on Metaphysics* suggest that Wolff's objections to physical influx were a source of the principle of coexistence. In the Rational Cosmology section of the *Metaphysik L₁* (1781-2), it is noted that "to maintain [a] connection of substances without any ground, merely because they are there, is that which the Wolffian philosophy called physical influx in a crude sense which could be better called blind" (28:213). Kant must have believed that his early physical influx theory answered the Wolffian objections.

⁹⁶ See section 1.5 above.

Kant's discussion of gravity in the *New Elucidation* contained a detailed account of his notion of substances' spheres of spatial activity. He wrote:

[S]ubstances which are distinct from each other reciprocally act on each other... If the external appearance of this universal action and reaction throughout the whole realm of space in which bodies stand in relation to one another consists in their reciprocally drawing closer together, it is called *attraction*. Since it is brought about by co-presence alone, it reaches to all distances whatever, and is *Newtonian attraction* or universal gravity. (1:415)

In *Living Forces*, Kant claimed that a substance is present in a region of space in virtue of being able to act immediately in that space. Since Kant spoke of bodies' gravitational attraction reaching "all distances whatsoever," in a sense all bodies are present throughout the entire universe. However, since this force diminishes according to the square of distance, a substance acts only weakly on bodies far from it. Roughly speaking, an object is located in exactly that space where its activity dominates the activity of all other substances.

Kant's appeal to an essential repulsive force allowed him to complete his account of spheres of activity, for a substance's precise location is at that area where its sphere of repulsive activity is strong enough to repel other bodies from coming near to it. Without a repulsive force, objects would be omnipresent. As I explained in section 2.1.2 above, something can occupy a determinate volume of space in our world only if it possesses both attractive and repulsive forces.

Kant maintained that the schema of our world is such that spheres of activity are determined through the reciprocal interaction of objects' attractive and

repulsive forces. It is the conjoint action of the two forces that explains how something can be located in the space of our world.⁹⁷ The important question is: Did Kant believe that souls and other immaterial substances manifest spheres of activity by exerting attractive and repulsive forces? As I show below, Kant eventually saw that he faced a dilemma: If he did believe this, his rational psychology was inconsistent and his dualism collapsed into materialism, but if he did not he had no account of how immaterial substances could act in space.

When Kant recognized the dilemma confronting his metaphysical system of the 1750s, I show in Chapters Three and Four, he quickened his pace down the road that led to the development of his critical system of philosophy.

2.3.3 Substances' dependence on God

Like Leibniz, Kant appealed to God's agency to explain the systematic unity of the world. Leibniz held that God sustained the illusory appearance of

⁹⁷ It is true that, in contrast to attractive relations, repulsive relations are not universal because the repulsive force is not omnipresent and is not exerted between every object. Kant seems to have thought that repulsive relations obtain only between objects in physical contact and thus are not universal, although this was in tension in his claim in the *Physical Monadology* that the repulsive force diminishes in intensity according to an inverse cube law. In *Living Forces* sections ten and twelve, Kant argued that attraction enters into the divine schema precisely because our world is unified by the omnipresent attractive force. The repulsive force enters the divine schema in a more complex manner, namely as a force that must act jointly with the attractive force for objects to be located in a determinate volume of space. My understanding of this was helped greatly by discussions with Daniel Warren.

interaction by harmonizing the perceptions of metaphysically isolated substances. For Kant, by contrast, God acted to make possible genuine intersubstantial interaction. God did this in virtue of being the common cause of all substances in the world. Kant made this point in his sole demonstration of the principle of coexistence. He concluded that:

...[I]n so far as each individual substance has an existence which is independent of other substances, no reciprocal connection occurs between them; and since it certainly does not fall to finite beings to be the cause of other substances, and since, nonetheless, all the things in the universe are found to be reciprocally connected with one another – since all this is the case, it has to be admitted that this relation depends on a communality of cause, namely on God, the universal principle of beings. (1:413)

Except in cases where one substance causes another to exist, the mere existence of two substances does not imply that they can interact. In the case of substances “of which none is the cause of the existence of another,” any such substance “can be completely understood independently” of all the others (1:413). Although obviously a substance that creates another substance can act on that substance, the case that Kant found philosophically interesting is when substances are not dependent in this manner.

This second case is the philosophically significant one because, according to Kant, only God can create substances. As Kant put it, “it certainly does not fall to finite beings to be the causes of other substances”. Thus his view was that all the finite substances in our world are independent in the way he specified.

From this, it followed that no examination of the objects in our world can explain their capacity to interact with each other. Kant noted:

If, therefore, nothing further than this were admitted, no substance would stand in relation to any other substance, and there would be no interaction between substances. (1:413)

To explain genuine interaction, we must appeal to substances' common dependence on their divine creator. This dependence does not ensue simply because God created all substances; one of the main consequences Kant drew from the principle of coexistence was that finite substances' status as creations of God guarantees that God can act on them but not that they can interact with each other. Thus Kant warned "it does not follow from the fact that God simply established the existence of things that there is also a reciprocal relation between those things" (1:413). Kant's positive point was that this commonality of cause nonetheless allows us to appeal to God's agency to explain genuine interaction.

Kant thus believed that positing the mere existence of one object does not "prove the existence of other substances" (1:414). What explains substances' connectedness with each other is their shared status as God's creations. Specifically, although their mere status as creations is insufficient to guarantee intersubstantial interaction, what guarantees this is "the manner of their common dependence on God" (1:414). Interaction between objects is possible because substances share "a certain community of origin" that provides them with "an

harmonious dependence on each other” (1:414). Kant’s appeal to God’s schema for the world was meant to explain how this dependence can be explained without rejecting his conclusion that that objects’ mere coexistence in a created world arise does not explain their capacity to interact.

In the elucidation of the principle of coexistence, Kant discussed exactly what God has added to the world to allow for genuine interaction. The key notion was that God’s creative power brought into being an “enduring act” that grounded interaction:

The schema of the divine understanding, the origin of existences, is an enduring act (it is called preservation); and in that act, if any substances are conceived by God as existing in isolation and without any relational determinations, no connection between them and no reciprocal relation would come into being. If, however, they are conceived as related in God’s intelligence, their determinations would subsequently, in conformity with this idea, always relate to each other for as long as they continued to exist. That is to say, they would act and react; and the individual substances would have a certain external state. But if you abandoned this principle, no such state could exist in virtue of their existence alone. (1:414)

Kant’s appeal to the divine schema provided a metaphysical grounding for the laws of motion. If objects don’t belong to any reciprocally interacting community, then they constitute metaphysically isolated worlds of their own. What distinguishes objects in spatial worlds from those that are isolated is the manner in which God conceives of them. In virtue of “their existence alone” objects could not “act and react”. For this reason, the divine schema was essential to Kant’s system of physical influx; the schema stands as a positive counter-balance to

the negative consequences of the principle of coexistence. As Kant puts it, substances can act on each other only in virtue of “the means of which they are linked together in the idea entertained by the Infinite Being” (1:415).

Although Kant did not explicitly make this connection, Kant's arguments in *Living Forces* complemented this view. Namely, it is God's schema that causes *vis activa* to be expended in a specific manner that causes our world to have its particular spatial character. Combining Kant's views in this way has the virtue of explaining how Kant might have articulated what it is that God did to guarantee that a certain principle of influx holds true in our world. Since Kant already had in hand an argument connecting the exertion of *vis activa* to the real possibility of space, he could give content to his notion of God's activity by claiming that God caused our world to be such that *vis activa* is expended successively in just the way that was required for world to have space as we know it. Although Kant did not refer to his earlier account of *vis activa* in the *New Elucidation*, the earlier text was perfectly compatible with what he did say there.

2.3.4 Continuities with the critical philosophy

Kant's two metaphysical principles contributed to his metaphysical system in several ways. They explained how interaction is possible, undermined pre-established harmony, and shed much more light onto a central notion of his earliest writings, the idea of substances' spheres of activity. It is important to note

that there were also several important continuities with Kant's later writings. Kant's demonstration of the principle of coexistence followed his solution to the mind/body problem in *Living Forces* as the second example of an argument Kant continued to develop in his last work, the *Opus postumum*, and the most famous version of which is the Refutation of Idealism in the *Critique of Pure Reason*. Kant concluded that the principle of coexistence demonstrated that "the existence of some substance or another...proves the existence of other substances distinct from itself" (1:413). Given the manner in which the divine schema organizes our world, this world must contain a plurality of substances. In other words, Kant's argument here amounted to a proof of an external world outside of us.

The second continuity was between the principle of succession and the Analogies of Experience in the *Critique of Pure Reason*. In the *New Elucidation*, Kant argued that reciprocal interaction provided the metaphysical basis for time: genuine interaction is necessary for succession, and succession is necessary for the ordering of events. This was a consequence of Kant's argument that isolated substances would have all their determinations simultaneously; without a sufficient external reason for the succession of determinations, a world cannot be in time. In a world without interaction, there would be no time because substances would move from one state to another instantaneously. Here, as in *the Critique of Pure Reason* and in *Living Forces*, Kant took himself to have explained the

possibility of making temporal judgments about the order of events in the world. As Kant pointed out, this idea is an elaboration of his earlier account of belonging to a world. Recall that in *Living Forces*, he concluded that only if objects interact can they exist in the same world. In the *New Elucidation*, he reiterated his earlier conclusions that metaphysically isolated substances would literally “have no place” and that there could be other worlds that consist of either isolated substances or of substances that interact according to a divine schema that instituted different principle of influx (1:414).

2.3.5 The principle of succession and Kant's embodied cognition

Kant’s clearest statement about embodied cognition in the *New Elucidation* occurred in the scholium to the fourth application of the principle of succession. According to the principle of succession, no substance and therefore no soul has the power to change its own states. For the soul to have a succession of representations, it must remain in reciprocal interaction with other substances. Kant concluded that “if the human soul were free from real connection with external things, the internal state of the soul would be completely devoid of changes” (1:412).

He developed this idea in the first application of the principle of succession, where he discussed the role of the body in human cognition. He concluded:

It follows from this that we could not have a representation, which was a representation of a body and which was capable of being determined in a variety of ways, unless there was a real thing present to hand, and unless its interaction with the soul induced in it a representation corresponding to that thing. For this reason, it can easily be inferred that the compound, which we call our body, exists. (1:412)

If our souls did not interact with our bodies, we could not have determinate representations of objects outside of us. Although Kant did not explicitly refer to the *Universal Natural History*, his discussion of the soul's ability to have representations was consistent with his account of embodied cognition in that work.⁹⁸

2.4 Trouble brewing—locating the soul

In this section, I discuss a problem with Kant's metaphysical dualism. I discuss both stronger and weaker versions of this problem, and I conclude that there is evidence, although not decisive evidence, that Kant's views generated the stronger problem. The weaker problem, which Alison Laywine discussed in

⁹⁸ Kant came close to explicitly endorsing this view in the first application of the principle of succession. He concluded there that "the human soul is bound with matter in carrying out the *internal* functions of thought" (1:411). In the Appendix to the *Universal Natural History*, Kant maintained that the soul's bonds with its own body are "indispensable for thinking" (1:180). See section 2.2 above.

As I discuss in section 2.1.1 above, the principle of succession did not suffice to show that souls must be in interaction with bodies. To show this, Kant employed his notion of the divine schema of our world. Kant's presentation here is therefore somewhat misleading, but only slightly so because he clearly intended both doctrines to be considered together.

her recent book, is that Kant's dualism was unmotivated because he had no explanation of what souls could be other than physical monads.⁹⁹ In this case, souls would not be matter, which is a compound of physical monads, but would have the same material nature as physical monads.

This position would have been unsatisfactory to Kant for two reasons. First, Kant repeatedly endorsed metaphysical dualism, but this position would be a form of materialism. Second, and more seriously, souls would possess all the properties of physical monads, including attractive and repulsive forces. As I explain in this section, Kant took himself to possess very good reasons for holding that souls do *not* possess a repulsive force.

This last point relates to the stronger interpretation of the problem. In the early 1760s, Kant held that each soul fully penetrates the body with which it is associated. I also believe, although the evidence is not decisive, that Kant held this view before the early 1760s. If so, then attributing repulsion to souls would generate a contradiction in Kant's metaphysics: souls with repulsion could not fully penetrate bodies, for they would be impenetrable. On this stronger interpretation of the problem, Kant's inability to distinguish souls and monads made his metaphysics inconsistent.

⁹⁹ See Laywine, *Kant's Early Metaphysics and the Origins of the Critical Philosophy* (Atascadero, California: Ridgeview Publishing Company, 1993), pp. 43-54.

To show that Kant's doctrines generated this strong version of the problem, I appeal to Kant's argument about the unity of the world in *Living Forces* sections ten and twelve, which I discuss in section 1.5 above. There Kant argued that *all* substances are connected in virtue of their attractive force: every substance continuously attracts every other substance via an attractive force whose intensity varies with distance according to Newton's inverse square law of gravitation. If, as I believe, Kant held that substances in space cannot possess an attractive force without also possessing a repulsive force, then the contradiction I described in the last paragraph would be generated by a central feature of Kant's metaphysics, his account of the divine schema of our world.

In section 2.4.1, I discuss several elements of Kant's physical monadology. In section 2.4.2, I discuss Kant's doctrine that our souls fully penetrate our bodies. In section 2.4.3, I raise a central problem: could Kant account for souls' spatial locations without attributing to them a repulsive force? I evaluate Kant's possible answers to this question in section 2.4.4, where I conclude, first, that by the mid 1760s Kant had no account of how souls could exist in space that did not attribute to them a repulsive force and, second, that Kant was nonetheless unwilling to reject the metaphysical assumptions that made this such an acute issue for him.

2.4.1 Physical monads

The first part of the *Physical Monadology*, Kant's major work of 1756, was devoted to showing that "the existence of physical monads is in agreement with geometry" (1:477). Kant's goal was to show that unextended simple monads can be present in a volume of infinitely divisible space. Since simple substances are indivisible but geometry shows that space is infinitely divisible, it is a primary task of a physical monadology to show that space can be occupied by bodies that are compounds of a finite number of simple monads. About this, Kant complained that "there is certainly no opinion which constitutes a greater impediment to the marriage of geometry and metaphysics" than the widespread assumption that things present in space must be infinitely divisible (1:479). Kant addressed this problem by appealing to his doctrine that unextended substances are present in space in virtue of their spheres of spatial activity.

Kant developed this response to the problem about divisibility and simplicity in the sixth, seventh, and eighth propositions of *Physical Monadology*.

Proposition six asserted:

The monad does not determine the little space of its presence by the plurality of its substantial parts, but by the sphere of activity, by means of which it hinders the things which are external to it and which are present to it on both sides from drawing any closer to it.
(1:480)

Extended objects do not fill space in virtue of possessing a multiplicity of parts, each of which fills a certain volume. Rather, monads occupy space because they

exert a force of repulsion on nearby objects. When two physical monads move closer to each other, they exert greater repulsive forces on each other and eventually are forced apart. Thus, Kant argued in proposition seven, “the force by which the simple element of a body occupies its space is the same as that which others call *impenetrability*” and concluded “if the former force is denied, the latter would not be possible” (1:482).

2.4.2 A fatal flaw

In the *Physical Monadology*, Kant affirmed that physical monads fill space in virtue of the “sphere of activity, by means of which it hinders the things which are external to it and which are present to it on both sides from drawing any closer to each other” (Proposition VI, 1:481). As this quotation made clear, Kant explained physical monads’ spheres of activity by attributing to them a repulsive force: a monad fills precisely that space throughout which its repulsive force prevents anything else from entering. Although the *Physical Monadology* specifically discussed only physical monads, the simple constituents of material bodies, in other works Kant used the notion of a sphere of influence to discuss souls’ locations in space. In the *Metaphysik Herder*, which was written in the early 1760s, Kant taught that a soul’s “presence” in space “is nothing more than a *sphaera activitatis*” (28:147). However, the same passage implied that Kant could not have understood souls to possess the same kind of spheres of activity as physi-

cal monads. He concluded that “the soul has no particular place in the body,” for “it is in all places of the body” (28:147).¹⁰⁰ If the soul fully penetrates its body, then its sphere of activity cannot be explained by appeal to the soul’s repulsive force: if the soul possessed a repulsive force, then its sphere of influence would repulse the body’s physical monads. To be consistent, Kant must maintain that a soul’s sphere of influence is the effect of some *other* kind of force. This is precisely what he affirmed in the early 1760s; according to the *Metaphysik Herder*, he held that “the corporeal elements externally act on one another through forces of repulsion, etc.” but noted that “the soul is not present [in space] by the force of impenetrability” (28:146).

If souls were present in space in the same way as physical monads, then they would possess a repulsive force and they could not co-exist with their bodies in the same spaces and at the same times. In the *Metaphysik Herder*, Kant articulated a stark dilemma. On the one hand, he could attribute a repulsive

¹⁰⁰ Laywine cites these passages from the *Metaphysik Herder* in *Kant’s Early Metaphysics*, p. 52. Interestingly, Kant’s solution to the mind/body problem in *Living Forces* did not commit him to this doctrine. In the *Universal Natural History*, Kant’s talk of the soul being “sunk into” the body (2:182) is slight evidence that he entertained this doctrine at the time he wrote the *Physical Monadology*, although this language is also consistent with the soul being located at some particular place in the body.

It would be interesting to know the reasons why Kant was so firmly committed to the view that the soul fully penetrated the body and why he did not return his first solution to the mind/body problem after he became aware of the inconsistency in his metaphysical system of the 1750s. A full answer to these questions is beyond the scope of this study, although I hope to pursue it later.

force to souls. A consequence of this would be—to avoid contradiction—rejecting two cherished metaphysical doctrines, that souls do not have a material nature and that they fully penetrate the bodies with which they are associated. This would have unpalatable consequences, Kant believed, such as making it impossible to explain the location and immediacy of bodily sensation.¹⁰¹ On the other hand, Kant could assert that souls act and are present in space in virtue of an unknown force. This would have the unpalatable consequence of making it equally mysterious how a soul could act on bodies. Kant made this last point himself in the *Metaphysik Herder*. After raising this difficulty about souls' spatial presence (he asked, “what kind of *law of presence* [i.e., in space] do they have?”), he concluded that “the difficulty is completely mysterious, because one has not understood a spirit, much less its union with the body” (28:147). As I show in greater detail in Chapter Three, by the 1760s Kant no longer accepted his own solution to the mind/body problem.

¹⁰¹ Kant argued this in the *Metaphysik Herder* (28:147) and in *Dreams of a Spirit-Seer* (2:324-25). He maintained that, if the soul were lodged in some empty space in the body, then we would feel our sensations as all occurring at that place. See section 2.4.4 below.

2.4.3 Spatial presence without repulsion

To summarize the argument of the last section, the soul's ability to penetrate the body implies that souls do not have the repulsive forces that are necessary for other substances to have a sphere of activity and therefore presence in space. By the early 1760s, Kant came to see that unless he could provide a new explanation of how souls possess spheres of activity, his metaphysics was hopelessly inconsistent.

Recall Kant's criteria for existing in a world, which he first discussed in *Living Forces*.¹⁰² Objects can exist in the same world, only if they exert reciprocal influence on each other. Propositions VI, VII, VIII, and X of the *Physical Monadology* implies that bodies have a determinate volume only if physical monads impress attractive and repulsive forces on each other (1:480-485). In *Living Forces* sections ten and twelve, Kant argued that *all* substances in our world exert an attractive force on each other. In *Physical Monadology* proposition X, he argued that bodies would not have a determinate volume if they did not possess both attractive and repulsive forces.

Although that work speaks of bodies and physical monads, the reasons Kant gave seem to apply equally well to souls: if souls had attractive but no repulsive force, they would all fall together and no soul "would have a volume

¹⁰² See section 1.5 above.

which was circumscribed by a determinate limit” (1:484). As Kant argued for bodies, “it is therefore, necessary, that there be opposed to this striving [attraction] another striving which is opposed to it [repulsion],” for without both forces simple substances’ spheres of influence “would have no determinate volume” (1:484). For the same reason, when Kant spoke of attraction as being a principle of the divine schema of our world—a schema that applies to *all* the substances in our world¹⁰³—so too should he be understood as being committed to the doctrine that the schema of our world contains a principle of repulsion. What Kant required, but what his metaphysical system apparently could not provide, was an account of how souls could be present in the space of our world and yet not possess a repulsive force.

In 1764, Kant concluded that he did not have the resources to solve this problem. In this passage from the *Inquiry*, he summarized his positive metaphysical conclusions and pointedly highlighted what remained to be shown:

I admit that the proof we have in our possession for establishing that the soul is not matter is a good one. But take care that you do not infer from this that the soul is not of a material nature. For this latter claim is universally taken to mean not merely that the soul is not matter, but also that it is not a simple substance of the kind which could be an element of matter. But this requires a sepa-

¹⁰³ See section 2.1 above.

rate proof – the proof, namely, that this thinking being does not exist in space in the way in which a corporeal element exists in space, that is to say, in virtue of impenetrability; it also requires proof that this thinking being could not, when combined with other thinking beings, constitute something extended, a conglomerate. But no proof has actually been given yet of these things. Such a proof, were it to be discovered, would indicate the incomprehensibility of the way in which a spirit is present in space. (2:293)

Kant asserted that the soul is not matter, but that his proof of this did not show that the soul is of a different nature from physical monads, the elements of matter. Since matter is divisible and souls are simple, souls are not matter. However, since the elements of matter—physical monads—are simple, this simplicity argument alone does not show that souls do not have the same material nature as physical monads.¹⁰⁴ Therefore, Kant’s philosophical focus should have been on comparing simples against simples: How do monadic souls compare with the monadic constituents of bodies (for example, would compounds of souls differ in nature from compounds of physical monads?)?¹⁰⁵

¹⁰⁴ Kant discussed this argument at the beginning of *Dreams of a Spirit-Seer* (2:320), where he concluded that it can show that souls are not bodies but says nothing about whether souls are physical monads. I am grateful to Daniel Warren for bringing this use of the simplicity argument to my attention.

¹⁰⁵ As I show in section 3.2.2, in *Dreams of a Spirit-Seer* Kant discussed a thought experiment in order to investigate whether it is possible to distinguish physical monads

I have shown in section 2.4.2 that, in the 1750s, Kant was committed to treating souls' presence in space in a way parallel to his treatment of bodies' presence: souls and bodies exist in space in the same way, namely in virtue of possessing spheres of activity grounded on repulsion. By 1766, Kant admitted that *he had no account of how souls could be present in space*. He pointed out that this had not been explained and he admitted that this was an important lacuna in his theory of physical influx. If it turned out that souls do not possess spheres of activity, then not just their presence in space but their very existence in our world would become a matter of incomprehensibility.

2.4.4 The location of the soul with respect to the body

By 1766, when he published *Dreams of a Spirit-Seer*, Kant had not solved this problem, but he was also unwilling to abandon his belief that the soul was present throughout the entire body. As a prelude to my discussion of this complex work in Chapter Three, it is worth looking now at one long passage. Kant wrote:¹⁰⁶

Now, suppose that we had proved that the human soul is a spirit..., the next question to which we might then proceed would perhaps be the following: where is the place of this human soul in the world

and souls by distinguishing their compounds. I owe this characterization of Kant's thought experiment to Daniel Warren.

¹⁰⁶ Alison Laywine cites this passage as evidence that Kant affirmed in the 1760s that souls penetrate bodies. See Laywine, *Kant's Early Metaphysics*, p. 159 n. 22.

of bodies? My answer would run like this: The body, the alterations of which are *mine* – this body is my body; and the place of that body is at the same time *my place*. (2:324)

Kant's question, of course, was central to the inconsistency of his metaphysical system of the 1750s. As an initial answer, Kant affirmed the common view that where we are in the world is determined by the location of our bodies. Note carefully the context in which Kant made this claim: he appealed to bodily location to answer the question of "where is the place of the...soul in the world of bodies." Kant had no sympathy for an account of a disembodied soul which gains a cognitive perspective on the world in virtue of some spiritual relation to the body's perceptions. As I demonstrate below, Kant insisted in 1766 that our souls fully penetrate our bodies.

As Kant's argument continued, he unequivocally rejected the idea that the soul might be located in some particular part of the body:

If one pursued the question further and asked: Where then is *your* place (that of the soul) in this body? then I should suspect there was a catch in the question....The question presupposes, namely, that my thinking 'I' is in a place which is distinct from the places of the other parts of this body which belong to my self. (2:324)

According to the hypothesis that Kant rejected, the soul could be located, for example, in some empty part of the skull. In this case, the soul would interact with the rest of the body mediately, presumably by interacting with the nervous system.

Kant's argument against this possibility turned on the soul's relation to bodily sensation. He argued that our own experience of our own bodies entails that our souls fully penetrate our bodies. After raising the possibility given above, he objected:

But no one is immediately conscious of a particular place in his body; one is only immediately conscious of the space which one occupies relatively to the world around. I would therefore rely on ordinary experience and say, for the time being: Where I feel, it is there that *I am*. I am as immediately in my finger-tip as I am in my head. It is I myself whose heel hurts, and whose heart beats with emotion. And when my corn hurts, I do not feel the painful impression in some nerve located in my brain; I feel it at the end of my toe. (2:324)

Kant believed that it would be inconsistent with our experience of sensation to feel a sensation as occurring in any part of the body unless the soul was present there. If this were the case, then the soul's being present in some part of the brain would entail that I could experience sensations only as occurring in my brain. That I locate my sensations as occurring throughout my body, Kant thought, proves that my soul penetrates my body entirely.

Kant maintained that, to have a sensation, our souls and bodies both must be immediately affected. He denounced the idea of sensation mediated through the nervous system, arguing:

No experience teaches me to regard some parts of my sensation of myself as remote from me. Nor does any experience teach me to imprison my indivisible 'I' in a microscopically tiny region of the brain, either so as to operate from there the levers governing my body-machine, or so as myself to be affected in that region by the workings of that machinery. For that reason, I would insist on its

strict refutation before I could be persuaded to dismiss as absurd what used to be said in the schools: *My soul is wholly in my whole body, and wholly in each of its parts.* (2:324-5)

Sensation can be explained, Kant suggested, only if the soul's presence in space allows for unmediated action between it and the entire body. This is the deepest reason why Kant held that souls fully penetrate their bodies. The problem, of course, was that Kant had not yet addressed the crucial problem of how souls can have spheres of activity without possessing a repulsive force and thereby losing their ability to penetrate bodies.