Localizing Sensations: A Reply to Anthony Quinton's Trouble with Kant

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Introduction

The trouble with Kant, according to Anthony Quinton (*Philosophy* **72** [1997], 5–18), is that he does not take empirical experience to have any significant role to play in our knowledge of the world. The world we know is constituted through the imposition of *a priori* forms—space, time, substance and cause—on a 'wholly passive sensory raw material'. This sensory material does not guide the manner in which the *a priori* forms are imposed in any way, so that the imposition is 'entirely arbitrary'. Thus, Kant's 'account of the matter allows for an indefinitely large number of orders in which our successive manifolds of sensation could be arranged. None of these ways of distinguishing what there is and occurs from what I merely think is and occurs has any priority or superiority to any of the others' (Quinton, 17–8).

I think that Quinton is right, though I am not sure that he is right about Kant as opposed to a number of popular, hyper-rationalist interpretations of Kant. Quinton's paper makes a lucid and convincing case for the unworkability of these interpretations. But the actual Kant may have been more of an empiricist than Quinton has allowed. This is particularly so where his views on the relation between space and sensation are concerned. (I shall have little to say about Quinton's acute remarks on difficulties with the notions of substance and cause, but since his reading of Kant's position on the relation between space and sensation is foundational for those remarks, what I do have to say will have obvious implications for those remarks as well.)

Quinton takes it that Kant held a 'lavish' view of the relation between space and sensation (Quinton, 10). According to this view, '*all* the spatial features of the world of experience are imposed on it by the mind, without any influence or constraint on the operation being present in the given, the manifold of sensation' (Quinton, 12, my stress). The problem with this view, Quinton points out, is that it renders the constitution of the spatial world an arbitrary act of the mind. If sensations are purely qualitative, and contain nothing that indicates where they ought to

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be located in space, then 'At any given time one could carry[the spatial arrangement of the contents of the world of experience] out in any of an indefinite number of ways; he could do it in different ways at different times; there is no reason why any of the ways he chooses should agree with the ways chosen by anyone else and no reason why their ways should agree with each other' (Quinton, 12).

As Quinton rightly goes on to observe, this arbitrariness would have to infect all of the higher stages of Kant's account of cognition as well. For example, 'no counter example to a causal claim need ever be admitted'. Were the matter of intuition to place no constraints on the imposition of spatial form, 'we could always [arrange] the manifold of sensation so as to produce an instance of the alleged cause near to an instance of the alleged effect' (Quinton, 15).

Quinton is not the first to have drawn our attention to these problems. According to Hans Vaihinger, they were raised 'countlessly' in Eberhard's anti-Kantian journal,[1] as well as by Kant's unfortunate contemporary, J. G. H. Feder, and were paradigmatically articulated in the early nineteenth century by Johann Friedrich Herbart, whose discussion of the 'problem of localization' in Kant set the stage for the development of the theory of local signs by Lotze and the subsequent empirist school of thought on the theory of vision.[2] Vaihinger sets the problem forth as follows:

> According to Kant ... there are two elements required for objective intuition: 1) aspatial, unordered, purely qualitative sensations, which are given *a posteriori*; 2) the pure intuition of space, which is given *a priori*. But an important element is missing: why do I represent this object as quadrangular, that triangular; this round, that oval? Obviously, the universal pure intuition of space can contain no basis for this decision, but according to Kant's account it cannot be based on the sensations, either, since they are not merely purely qualitative, but completely unordered, or at least non-ordered, and their coordination is only supposed to first arise through the *a priori* form of space. But then why should this particular collection of sensations be so modified and specified as to represent this object as a quadrangle, that as a triangle; this as a circle, that as an oval? Kant lacks any basis for this decision—or

[1] From my limited acquaintance with the contents of the *Philosophisches Magazin* this seems like an exaggeration.

[2] For an excellent treatment of these issues, see Gary Hatfield, *The Natural and the Normative: Theories of Spatial Perception from Kant to Helmholtz* (Cambridge, Mass.: MIT Press, 1990), ch. 4.

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> at least, he remains completely silent about what this basis is, even though he ought to have identified it.[3]

These worries are quite legitimate, and if the reading of Kant that leads to them is correct, then it is hard not to conclude that they show Kant's position to be seriously flawed. But is the 'lavish' interpretation that generates them in fact correct?

Geometrical and Geographical Space

There are two features of the interpretation that deserve critical scrutiny. First, it claims that sensations are purely qualitative and that *all* their spatial features including their locations, are imposed by the mind (Quinton, 12). Quinton's defence of this position rests on appeal to two texts, A20/B34,where Kant writes (following Quinton's translation) 'that in which our sensations are merely arranged, and by which they are susceptible of assuming a certain form, cannot be itself sensation' ('*das, worinnen sich die Empfindungen allein ordnen, und in gewisse Form gestellt werden können*, [*kann*] *nicht selbst wiederum Empfindung sein*'), and A21/B35, where he writes (again following Quinton's translation) '[Extension and shape] belong to pure intuition, which exists *a priori*, in the mind, as a mere form of sensibility, and without any real object of the senses or any sensation' ('[*Ausdehnung und Gestalt*] *gehören zur reinen Anschauung, die a priori, auch ohne einen wirklichen Gegenstand der Sinne oder Empfindung, als eine bloße Form der Sinnlichkeit im Gemüte stattfindet*').

However, these texts come up somewhat short of establishing Quinton's claim that Kant takes *all* the spatial features of sensations to be imposed by the mind. The first only discusses 'that in which' sensations are arranged, not the specific arrangement itself. It is compatible with this text to suppose that what the mind imposes is just the geometrical structure of a type of container, while it is left to experience to assign sensations to locations in this container.

This point can be made more perspicacious by considering a case Quinton himself discusses at the outset of his paper (5–6). A person is given a bag of coloured squares and asked to arrange them on the top of a table. Now, a table is a particular kind of container (a flat, bounded, simply-connected, two-dimensional surface), that permits certain kinds of ordering and rules out others. A person asked

[3] Hans Vaihinger, *Commentar zu Kants Kritik der reinen Vernunft*, vol. 2 (Stuttgart: Union Deutsche Verlagsgesellschaft, 1892), 180, my translation.

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to arrange squares on a table has options that are not available to a person asked to arrange the same squares along a line, but also lacks options that are available to a person asked to arrange the squares along a closed curve, or paste them on the surface of a globe, or hang them from hooks suspended at different points within the volume of a cube. As Quinton sees it, the bag of squares is analogous to what is given in sensation, and the person being asked to order the squares on the table top is confronted with the same arbitrary task that confronts the mind, which is supposed to impose space on its sensations. But the table top, with its particular topology and the interesting set of constraints that topology imposes on the possibility of ordering the squares, goes unnoticed by Quinton. A more adequate version of Quinton's case would instead take the person to be the analogue of the affecting object, and the constraints imposed by the topology of the table top to be the analogue of what is imposed by the mind. Then we would have an alternative model of Kant's point that is just as consistent with the text, but that takes the locations of ordered elements to be a product of experience or affection rather than something imposed by the mind.

The second of Quinton's texts is also deficient. It only declares 'extension and shape' to be features of the pure form of intuition, not location. And, as elementary geometrical topology teaches us, usually by appeal to a set of points marked on a piece of rubber or a malleable solid object, the locations of these points relative to one another can remain constant while still leaving extension and shape indeterminate. Stretch, twist, or squeeze the rubber and the extension and shape marked on it change dramatically, even though, as long as you do not tear or paste it, the points marked on its surface remain in exactly the same locations with respect to one another. Because relative location (or, more precisely relations of relative position in a neighbourhood) does not determine topology (or extension or shape), it is possible to imagine the same set of locations being projected or mapped onto spaces with different topologies. This again opens the possibility that Kant might have taken just a particular geometrical structure to be imposed *a priori* by the mind while taking the positions at which sensations are projected onto this structure to be an empirical matter, that can only be ascertained through experience. Thus, here as well, the lavish interpretation is under-determined by the text, and a reading is possible that takes locations to be known only through experience, even though there is a sense in which the space in which sensations are located is imposed by the mind.

Over the course of his paper Quinton considers an alternative interpretation of Kant's position on the relation between space and

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sensation. According to this alternative, our visual and tangible experiences consist of shaped and extended sensations that are situated in different positions relative to one another, and only the spatial relations between experiences had at different times need to be imposed by the mind (Quinton, 7–10). I think Quinton is right to reject this alternative. But he does not consider that there is a third way to understand Kant. Rather than be faced with a choice between taking him to suppose that *all* spatial relations between pointal sensations are imposed by the mind, and taking him to suppose that *all* spatial relations between successive experiences are so imposed, we might take Kant to have supposed that there are *some* spatial features imposed by the mind—both on pointal sensations and on successive experiences—while others are given.

Those spatial features that are imposed by the mind are the ones that have to do with the general structural properties of space—its three-dimensionality, its unboundedness, its simple connectedness, its Pythagorean metric, and so on. Those that are given are those that have to do with the specific locations at which particular sensations are to be found. Nor should it be supposed that this is a sophisticated modern distinction that would not have been thought of by Kant. One does not need to know modern mathematics to understand the difference between Geometry and Physical Geography. Geometry describes the general structural features of the container for the world whereas Physical Geography describes what is actually to be found at different locations within that container. Geometry does not tell us where any existing object, much less any given visual or tangible sensation, is to be found in space. For Kant it does, however, place a set of constraints on Geography—it lets us know in advance (*a priori*) that any locations discovered by Geography will have to conform to certain topological and metrical principles (for instance, that there will have to be a path from every place to every other place, and that we will never be able to find five different cities on the globe that are all equidistant from one another).

Intuited and constructed spatial arrangements

A second feature of the lavish interpretation that deserves critical scrutiny is its claim that the reception of sensations and the imposition of spatial form are distinct occurrences—that sensations arrive first in the mind and spatial form is then imposed on them by the perceiver. That Quinton is reading Kant in this way follows from his examples. When he compares the Kantian knower to someone

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who has been given a bag full of coloured squares and asked to arrange them on a table top (5–6) he implies that the squares (i.e., what the takes to be the analogue of the sensations) are given first, whereas the arrangement is something that follows afterwards and is set as a task. Quinton takes it that Kant views the process of perception in the same way. The sensations are given first, all in a heap, and the imposition of spatial form occurs later.

Were Quinton right about this, then the distinction I have just drawn between geometrical and geographical space would be of no account. Even if *a priori* spatial form consisted just of the restricted set of spatial features I have described, if it were the subject who assigned previously given sensations to locations in this space, then the localization problem would still arise. But it is not clear that this picture of the process of perception is truly Kantian. There are two considerations that tell against it.

1. Kant says, at least sometimes, that he rejects the picture. The most explicit instance is A429n/B457n, where he writes, 'Empirical intuition is thus not put together out of appearances and space (perception and empty intuition). One is not the correlate of the other in a synthesis. Rather both are bound together in one and the same empirical intuition, as matter and form of the intuition'.

2. The standard meaning of the term 'intuition' also poses problems, as does Kant's identification of space and time as forms 'of intuition' and his decision to discuss space and time in the Aesthetic rather than the Analytic. Though Kant occasionally identifies 'intuition' with 'singular representation' he also insists that intuition is immediate, and this was the accepted sense of the term in his day.[4] Intuitive cognitions were traditionally contrasted with discursive ones, with the idea being that the latter involved mental 'discourse'—in effect, cognitive processing. If the spatio-temporal array of sensations were a product of first receiving sensations and then ordering them, then it would be odd to describe this product as an 'intuition', since it would not be immediately given—mental activity (beyond the 'activity' of mere, immediate reception) would be involved in its generation. Were Quinton's picture right, Kant should have referred just to sensations as 'intuitions', and should have moved his discussion of space and time in with the categories, and treated them as things that the mind uses to order sensations rather than as, literally, forms in which sensations are originally intuited or given.

Over A20–21/B34–35 Kant does admittedly say that the form and the matter of intuition have different origins, the first 'lying ready'

[4] For a further treatment of this point see Lorne Falkenstein, 'Kant's Account of Intuition', *Canadian Journal of Philosophy* **21** (1991), 165–93.

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a priori in the mind, the latter arising on the occasion of affection by an object. But these claims can be taken at face value without having to be read as entailing that spatial form must be imposed on sensations after they have been received. They can instead be read as claims about the antecedent conditions affecting the original production of sensations.

On this, alternative account, the process that gives rise to the occurrence of sensations is a process that consists in the interaction of two distinct things, an affecting object, and an affected subject. Kant's claim is that a single product results from the interaction of these two things—an integrated spatio-temporal array of sensations. But this product contains something that depends on the contingent character of the affecting object, and something that depends on the constant and abiding constitution of the subject. The general structural features of space and time (notably those features that are described by Euclidean geometry) are taken by Kant to result from the constitution of the subject; both the particular quality of sensations and their specific locations in the Euclidean space result from the contingent character of the object that affects us.

This alternative account of Kant's view of perception or intuition does not merely move the localization problem back a step. Previously given, purely qualitative sensations are not represented as being somehow coordinated with homogeneous, innately existing spatial form; rather, the constitution of the subject's receptor system is represented as interacting with an affecting object. And while it is a mystery how purely qualitative sensations could be assigned to locations in a homogeneous space in any non-arbitrary fashion, it is quite thinkable that particular features of the affecting object should affect particular features of the subject's receptor system, and that as a result of this interaction a particular sensation should be represented as located at one place in space rather than another.[5]

[5] In being so affected, the subject would have to be purely passive or receptive, so that the location at which the sensation appears in space is fixed by the subject's constitution, by the constitution of the affecting object, and by the interaction between the two. Were the subject supposed to be in any way spontaneous—that is, capable of imaginatively deciding to assign the sensation to one location rather than another—Quinton's problem would resurface. This is not to say that the subject could not imaginatively rearrange the order of sensations when, as Kant would put it,'bringing the manifold to a unity of apperception' though such operations as 'figurative synthesis' or 'synthesis in accord with the categories of substance or cause'. But such operations would have to be carried out on a previously given (or 'intuited') manifold of sensations that are alraedy spatially related, and that have these original spatial locations fixed by factors that the subject is not able to control.

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Discussion

On this account, spatial form is as much a product of the interaction between subject and object as is sensation; it is just a product that is taken to have its general structural features determined by one, rather than the other of the interacting causes. Furthermore, spatial form is not a pre-existing product to which sensations are subsequently added. Spatial form is *a priori* in the sense that it has the general structural features that it does independently of what object happens to be affecting the subject (because it depends on the way the subject is rather than on the way the affecting object is). It lies ready *a priori* in the mind in the sense that the subject possesses the constitution that determines the general, structural features of spatial form in advance of being affected by any particular object. But a particular spatial form, exhibiting both this structure and sensations placed at particular locations over its extent, only comes into being through the interaction of a subject with a particular receptive constitution, and an object affecting that constitution in a particular way.

An example might help to make this alternative reading more perspicacious. Consider a computer screen exhibiting an e-mail message. It contains a number of elements, alphanumeric symbols, arrayed above and below one another in a two-dimensional space. Now consider the cause of this display. It is the product of two things: the impact of the author's fingers on a keyboard, which has ultimately had the effect of setting certain switches on and off in a computer, and the way the computer is constituted to generate a display on a monitor depending on how those switches have been set. One could compare the author to the affecting object, which acts on the receptor system of the subject (the computer) by producing a successive series of impacts on different parts of a receptor the keyboard or, derivatively, the switches in the processor). These impacts are then represented (displayed) by the subject (the computer) as a spatial array of elements (alphanumeric symbols on a screen).

This example is distorting to the extent that it deals with an object that is already taken to exist in space and to have components, such as a monitor, that fill space. To more closely approximate Kant's position one would have to envision a device that generates its monitor as a result of having been constituted in a certain way. However, the example also contains other aspects that are instructive: What specific letters are located in what places on the screen is due to what keys the author chose to hit and the order in which the author chose to hit them; so the author, as affecting object, determines both the 'quality' (the particular alphanumeric symbol chosen from the entire set) and the location of the letters. But the general form that the alphanumeric symbols are displayed

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in is a product of the way the computer is constituted. Most computers are hooked up to a monitor and constituted to display their input in the form of a two dimensional array of letters. But one could imagine a machine so constituted as to display this same input as a single line of text that scrolls from right to left across the screen (in effect, a one-dimensional array), or a machine constituted to display a holographic representation of a three dimensional array of letters.

This example illustrates that we do not have to take the subject's contribution to be one that occurs after sensations (considered as the analogues of the letters displayed on a computer screen) have first been received. It could instead be one that occurs before, as a part of the antecedent sequence of events that leads up to the production of a spatially arrayed collection of sensations. What is particularly instructive about this example is that it shows how something that is in no way spatial (a temporal series of finger-punches, or, if you want to carry the causal chain even further back, the verbal articulation of an idea that itself exists instantaneously, and so in a sense timelessly, as well as aspatially) can interact with something that has a certain constitution to produce a very particular and specific manner of arrangement of elements in space.

Quinton's localization problem does not arise on this model because it is granted from the outset that the affecting object determines the specific locations of the elements as well as their qualitative character. But, as noted earlier, simply because you have determined what elements are located in the local neighbourhood of what other elements, you have done nothing to determine any of the topological or metrical features of the space in which those elements exist. As the constitution of the processor and monitor determines the 'form' in which the information the author originally sent is displayed, so my own subjective constitution determines the form in which the effects that objects have on my receptor system is displayed.

The example I have used is admittedly a very modern one, but the general idea is not. A printed book is nothing more than a three-dimensional array of alphanumeric symbols. The only difference between it and a holographic projection of text from a computer is in the technology that intervenes between the idea in the author's mind and the display that is eventually produced. In both cases, the author (as analogue of the affecting object) determines the locations in which the alphanumeric symbols are set in relation to one another by writing them out successively or punching certain keys successively, but the manner in which the symbols are displayed is determined by the constitution of the device used to display them.

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Conclusion

No one can say that Quinton's reading of Kant's position on the relation between space and sensation is extravagant. But I have tried to show here that it is not uniquely mandated by the text, A20–21/B34–35, either. There is at least one other way to read the text that is consistent with everything Kant has to say in it (as well as with other things he has to say elsewhere), and that does not give rise to a localization problem.

Which of these two readings is the correct one is not immediately obvious. A20–21/B34–35 comes from §1 of the Transcendental Aesthetic. As the closing paragraph and the second half of the third last paragraph of this section show, the claims Kant makes at A20–21/B34–35 about the *a priori* origins of spatial form in the mind of the receptive subject and the *a posteriori* origins of sensation through the process of affection by objects are not *premises*, that he is announcing he will rely upon in a subsequent argument, but *conclusions*, that he is advising us he will seek to establish over the course of the coming pages. The premises that Kant's argument takes off from are premises that consist in the description of a full-blown, intelligible experience of the world, invested not only with spatio-temporal structure, but relations of identity, inherence, and causal connection. Kant then laboriously analyses the content of this intelligible experience to try and *infer* what must have been immediately given, what added through intellectual processing, and what in the immediately given can be attributed to the abiding structure of the receptor system itself, and what to the contingent influence of affecting objects.[6]

Given that we cannot simply 'see' or intuit what our immediately given sensory experiences are like prior to synthesis in accord with the categories, but must infer back to them, it is a far from obvious question how our experience comes to be invested with spatial form: whether it originally consists just of a 'bag' of sensations that are subsequently arranged in space, or whether it rather consists of sensations that are originally given as disposed in a space—

[6] Further evidence that this must be Kant's *modus operandi* comes from the opening pages of the Transcendental Logic, where Kant claims that intuitions without concepts are blind. If intuitions that have not been conceptualized are 'blind' then we cannot simply look at our intuitions to tell what they are like prior to synthesis in accord with the categories, much less look at sensations to tell what they are like prior to being invested with spatial form. Our conclusions on these matters must be the product of an analysis of our intelligible experience, directed towards uncovering the precise nature of the different conditions of that experience.

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but in a space that has its general, structural features determined by the constitution of the receptive subject. The only way to choose between the former reading and the latter is by an exhaustive analysis of what Kant's arguments in the Transcendental Aesthetic are in fact directed to prove. Undertaking such an analysis is more than I can do here. What I have instead tried to do is show that the texts Quinton takes to be 'clear' evidence of an adherence to the lavish interpretation (Quinton, 11) are ambiguous, and that Quinton's interpretation cannot simply be read off from them.

At the outset of his paper, Quinton remarks that the chief trouble with Kant 'is that he is a wild and intellectually irresponsible arguer' (Quinton, 5). I tend to agree, but would add that the intellectual irresponsibility is more likely the product, not of any lack of effective criticism in remote Königsberg (Quinton, 5), but rather of a certain intellectual cowardice that leaves Kant congenitally incapable of taking a stand on a controversial issue. His predilection is always to want to affirm both sides in a dispute, and to write something incomplete and obscure to generate an appearance of reconciliation between the two. Sometimes, however, he actually succeeds in this project. I think his account of the relation between space and sensation may be one such successful case. It may reconcile a commitment to the view that the spatial array of sensations is 'not the product of a synthesis' (A429n/B457n) with the view that the form of intuition is given *a priori* while its matter is given *a posteriori* (A20–21/B34–35). More intriguingly, it may succeed at synthesizing a rationalist account of geometrical space with an empiricist account of physical geography.

Quinton's 'The Trouble with Kant', is nonetheless a good reminder of a trouble that is indeed there for a certain hyperrationalist reading of Kant, and it is to be wished that the community of Kant scholars were more sensitive to the very real difficulties that this reading generates and that Quinton has so effectively highlighted.[7]

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[7] I am grateful to David Raynor for pressing me to put my thoughts on these matters into print.

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