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IN DEFENCE OF SPATIALLY RELATED UNIVERSALS

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Abstract: Immanent universals, being wholly present wherever they are instantiated, are capable both of *bi-location* (one entity's being wholly present in two places at one time) and of *co-location* (two entities' being wholly present in the same place at one time). As a result, they can become involved in some bizarre situations, situations whose contradictory appearance cannot be dispelled by any of the relativising techniques familiar to metaphysicians as solutions to the problem of change. Douglas Ehring takes this to be a fatal problem for immanent universals, but I do not. Although the old relativising techniques don't solve the problem, I propose a new one that does. I spend half the paper defending the proposed solution against objections, and in the course of this task I have occasion to touch upon such topics as backward time travel and the distinction between universals and particulars. I close by putting forward – merely as an option – a new way to draw the distinction in question.

I. Introduction

To say that universals are *immanent* is to say that they exist *in* their instances, where this is taken to mean that each universal is wholly present at each location at which it is instantiated. Consider, for example, *charge –1*, which is a property of electrons. Construed as an immanent universal, this property is a multiply located entity, one that can be found, in its entirety, wherever an electron can be found.

As a way of making this notion of immanence a bit more precise, I shall henceforth adopt the following stipulation: in order for universals to count as immanent, not only must they share the spatial *locations* of the objects that instantiate them, but they must also stand in the same spatial *relations* as the relevant objects, and they must do all of this *in a non-derivative way*. To see the force of this last requirement, suppose again that *charge –1* is an immanent universal. Then, when this property has a spatial location, it's not that the property has the location merely in an *extended* or *derivative* sense, e.g., in the sense of being instantiated by a particular that has the location; rather, it's that the property has the location *in its own right*, non-derivatively. Similar remarks apply to the way in which immanent universals stand in spatial relations.

So understood, immanent universals face a problem, one recently uncovered by Douglas Ehring [2002]. In this paper, I propose a solution to that problem (Section II) and defend the proposed solution against several objections (Section III).

II. The Problem and the Proposed Solution

The problem in question takes the form of the following argument:

> *The Argument from Local External Relations*. Assume that universals have spatial relations non-derivatively and that their spatial relations match those of their instantiating objects (without deriving from the latter or from the spatial relations of the locations of these objects). Suppose that object *a* located at *L* is two feet from object *c* and object *b* located at *L´* is not two feet from *c*. Universal *V* is instantiated once by *c* and by nothing else at that time. Universal *U* is instantiated by *a* at *L*. It follows that *U* at *L* is two feet from *V*. *U* is also instantiated by *b* at *L´*; so *U* at *L´* is not two feet from *V*. Since *U* at *L* is identical to *U* at *L´*, *U* is two feet from *V* and *U* is not two feet from *V*. But that is contradictory.[1]
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> [Ehring 2002: 17]

Formulated in this way, the problem of Local External Relations for immanent universals is no worse than its well known analogue, the problem of Temporary Intrinsic Properties for persisting objects, also known as the problem of change. The latter problem runs roughly as follows. Consider some object, O, and suppose that it changes. In particular, suppose that O goes from being bent at time *t* to being straight (hence not being bent) at some later time, *t**. If the object that is bent is numerically the same as the object that is straight, then we seem forced to conclude that one and the same thing, O, both *is* and *is not* bent, which is contradictory. One familiar solution here is to regard *being bent* not as a one-placed property but as a two-placed relation that holds between an object and a time.[2] This allows us to replace the contradictory conclusion that O

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[1] One might raise the following objection to Ehring's way of framing the problem: the problem is not that U both *is* and *is not* two feet from V. (If U *is* two feet from V, then it's just false to say that U is *not* two feet from V.) Rather, the problem is that *U stands in two incompatible relations to V*: U is two feet from V, and U is also five feet from V, where no two things can be both two feet and five feet from each other. As far as I can tell, however, nothing that I shall say in this paper depends upon which formulation of the problem we adopt. Hence I shall follow Ehring's formulation.

[2] There are a number of variants of this solution that do not, in my view, need separate discussion here. Among these are (i) the view that replaces the intrinsic property of *being bent simpliciter* with a series of relational, time-indexed properties such as *being-bent-at-t*, *being-bent-at-t**, etc., and (ii) the view that gives this sort of relativising or time-indexing treatment not to properties such as *being bent* but to the instantiation relation that ties properties to their instances. See [Teller 2001; Lewis 2002] for the full range of familiar solutions and [MacBride 2001] for some unfamiliar ones.

both does and does not have the property *being bent* with the consistent conclusion that O bears the *being-bent-at* relation to one time, t, and fails to bear the *being-bent-at* relation to the different time, t*.

An analogous technique can be applied to the initial version of the problem of Local External Relations (PLER) for immanent universals. Ehring calls the technique the '*Distance as Three-Placed*' proposal and states it thus: 'Distance relations have an additional place for spatial location (and maybe a fourth place for times) [2002: 21].' How does this help? Ehring explains:

> Where [location] *X* includes the locations of *a* and [*c*] and [location] *Y* includes the locations of [*b*] and *c*, *U* is two-feet-relative-to-*location X* from *V*, but *U* is not two-feet-relative-to-*location Y* from *V*. There is no contradiction since there is a difference in one argument place.[3]
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> [Ibid. 2002: 21]

This shows that the initial version of PLER is no more serious than the problem of Temporary Intrinsic Properties.

Ehring notes, however, that there is a different version of PLER that cannot be solved by appeal to the Distance as Three-Placed proposal:

> *U* and *V* are each instantiated twice at [time] *t*, once each at the North and South Pole, perfectly overlapping at each Pole. *U* at the North Pole is north of *V* at the South Pole and *U* at the South Pole is not north of *V* at the North Pole. The apparent contradiction then is this: *U* is both north and not north of *V*.
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> [Ibid. 2002: 21]

To resolve this contradiction with the *Distance as Three-Placed* proposal, Ehring observes, we would need to find a pair of distinct locations X and Y such that: U *is* north of V relative to X whereas U is *not* north of V relative to Y. But, he continues, there just isn't any remotely plausible candidate for being such a pair:

> If X is the North Pole alone, then since the North Pole instantiation of U is not north of the North Pole instantiation of V, it is false that U stands north-of-at-the North Pole to V. The same point applies if X and Y are the South Pole. We need X (and Y) to include both the North Pole and the South Pole. So suppose that X and Y are each 'the North and South Pole.' In that case, X and Y include exactly the same locations, and the apparent contradiction is not dispelled. X and Y must be different. But there are no plausible candidates for different values.
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> [Ibid. 2002: 21-22]

[3] I have corrected some mislabeling in the original; that my corrections conform to Ehring's intent is confirmed at [2002: 22], where Ehring writes, 'X includes the locations of a and c and Y includes the locations of b and c.' Thanks to an AJP referee for catching this.

The lesson to be learned here is this. Immanent universals are capable not only of *bi-location* (an entity's being wholly present in two places at the same time) but also of *co-location* (two entities' being wholly present in the same place at the same time); and as a result they can become involved in situations whose contradictory appearance cannot be dispelled by any of the relativising techniques (or straightforward analogues thereof) that are familiar as solutions to the traditional problem of change.

Rather than take this as a fatal problem for immanent universals, however, I suggest that we consider a new relativising technique – viz.:

> *The 2n Proposal*. Apparently n-placed spatial relations that hold among spatially located entities are really 2n-placed, with n argument places for spatially located entities and an additional n argument places for spatial locations occupied by the relevant spatially located entities. Thus, e.g., the apparently two-placed relation 'x is north of y' becomes the four-placed relation 'x, at its location L_x, is north of y, at its location L_y'; and the apparently three-placed relation 'x is between y and z' becomes the six-placed relation 'x, at its location L_x, is between y, at its location L_y, and z, at its location L_z'.[4]

First consider the 2n proposal as it applies to the original version of PLER. In that case, the apparent contradiction was this: U is two from V and U is not two feet from V. Applying the 2n proposal, we begin by noting that, as Ehring describes the case, there are two distinct locations where U is wholly present (viz., L and L′) and one location where V is wholly present (call it L_V). We then note that since location L but not location L′ is two feet from location L_V, U *at L* is two

[4] Equally effective variants of this proposal can be obtained in either of the following ways:

> (i) By adding only *one* additional argument place (rather than *n* additional argument places) to any apparently n-placed spatial relation, but reserving this argument place for an *ordered n-tuple* of locations (rather than for a single location). Thus 'x is two feet from y' becomes 'x is two feet from y at the ordered pair <x's location L, y's location L*>'.
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> (ii) By putting the additional argument place or places in the *instantiation relation* rather than in the spatial relations. Thus, roughly speaking, 'x is two feet from y' becomes 'x and y instantiate-at-<L, L*> the relation *being two feet from*.'

(My thanks to an AJP referee for prompting me to mention (i).) Given the obviousness of the parallel between my proposal and these variants, I shall assume that the variants do not require separate discussion.

feet from V at L_V whereas U *at L′* is not two feet from V at L_V. Thus we replace the contradictory conclusion that U and V both do and do not stand in the relation ‘x is two feet from y’ with the consistent conclusion that U, L, V, and L_V (in that order) stand in the relation ‘x, at L_x, is two feet from y, at L_y’, whereas U, L′, V, and L_V do not stand in this relation.

The 2n proposal can also be applied to Ehring’s case involving the North and South Poles. Ehring tells us that U and V are instantiated once apiece at each Pole, and he challenges us to find a way of blocking the inference from this description of the case to the contradictory conclusion, ‘U is north of V and U is not north of V’. The 2n proposal allows us to meet this challenge. With it, we can say: U, at its location at the North Pole, is north of V, at its location at the South Pole, whereas U, at its location at the South Pole, is *not* north of V, at its location at the North (or South) Pole. In other words, we can replace the contradictory conclusion that

(i) U both does and does not bear the ‘x is north of y’ relation to V,

with the following, consistent conclusion:

(ii) U, the North Pole, V, and South Pole (in that order) stand in the relation ‘x at L_x is north of y at L_y’ whereas U, the South Pole, V, and the North Pole (in that order) do not stand in the given relation.

I conclude that the 2n proposal constitutes an effective solution to *both* of Ehring’s versions of PLER.

But now it is easy to see that this proposal constitutes an equally effective solution to *every* version of PLER. Consider any apparently n-placed spatial relation R, and suppose that some ordered n-tuple of spatially located entities appear both to *succeed* and to *fail* in standing in R, where this apparent contradiction arises from the fact that at least one of the entities in question is multiply located. (Call the entities $e_1 \ldots e_n$.) In any such case there will be at least two distinct ordered n-tuples of *locations* of these entities, $<L_1 \ldots L_n>$ and $<L_1^* \ldots L_n^*>$, such that:

For simplicity, I shall follow Ehring [2002: 21] and pretend that no additional argument places are needed for times.

e_1 *at* L_1, . . ., and e_n *at* L_n do stand in R, whereas e_1 *at* L_1* . . . e_n *at* L_n* do not stand in R.[5] But if so, then we can always replace the contradictory conclusion that

(i) the ordered n-tuple <e_1 . . . e_n> both does and does not instantiate the n-placed relation R,

with the consistent conclusion that

(ii) the ordered 2n-tuple <e_1, L_1 . . . e_n, L_n> *does* instantiate the 2n-placed relation R whereas the *distinct* ordered 2n-tuple <e_1, L_1* . . . e_n, L_n*> does *not* instantiate the 2n-placed relation R.

This shows that the 2n proposal provides us with an effective solution to *every* version of the problem of Local External Relations.

III. Objections and Replies

First Objection: The 2n proposal is purely *ad hoc* and therefore unacceptable.

Reply. I have two things to say in response to this objection. First, the 2n proposal can hardly be considered much more *ad hoc* than the Distance as Three-Placed proposal. If the latter proposal is worthy of the detailed attention that Ehring gives it, then surely the former proposal should not simply be dismissed as too *ad hoc* to be credible.

Second, the 2n proposal is not nearly as *ad hoc* as it (or the Distance as Three-Placed view) might initially appear to be. For it turns out that this proposal can be independently motivated.

The need for the 2n proposal, recall, stems from the fact that immanent universals are capable of both bi-location and co-location. Initially, it may seem that immanent universals are unique in this regard, hence that no one but a friend of immanent universals would ever have any need for the 2n proposal. A closer look, however, shows this to be far from obvious. Let me explain.

[5] I assume throughout that some form of spatial or spatiotemporal substantivalism is true.

Suppose that material objects persist through time not by having different temporal parts existing at different times (not by ‘perduring’), but rather by being wholly present at each moment of their careers (by ‘enduring’). Now let *a* be a persisting point-particle located at the North Pole and let *b* be a numerically distinct persisting point-particle located at the South Pole. Suppose also that backward time travel is possible. In particular, suppose that in the year 2011 *a* and *b* are sent back to the year 2003 (i.e., now), at which time they both coexist with ‘younger versions’ of themselves. Thus it so happens that right now there are ‘two versions’ of *a* in existence and ‘two versions’ of *b* in existence. Further, suppose that two collisions are occurring right now: at the North Pole, the older version of *b* (the version that has returned from the future) collides with the younger version of *a*; and at the South Pole, the older version of *a* collides with the younger version of *b*.

This puts us in the following situation. Since *a* is an enduring rather than a perduring object, we cannot say that the younger version of *a* (which is located at the North Pole) and the older version of *a* (which is located at the South Pole) are numerically distinct *temporal parts* of *a*; rather, we must say that the younger version is numerically one and the same thing as the older version. And *mutatis mutandis* for *b*. So, right now, at the moment of the collisions, *a* and *b* coincide with each other at the North Pole, and *these very same particles* coincide with each other at the South Pole.

Here we have a case in which entities other than immanent universals are bi-located and co-located. As enduring time-travellers, *a* and *b* are bi-located, each being wholly present at each Pole. And as colliding point-particles, they are co-located, each spatially coinciding with the other (twice over, as it happens). Thus it turns out that the current case is precisely analogous to Ehring’s own North Pole/South Pole case. If the 2n proposal is needed as a way of handling the latter case, it will also be needed as a way of handling the former. This shows that the 2n proposal is not purely *ad hoc*: it is not just the friend of immanent universals who needs the this proposal. The proposal will also be needed by any philosopher – friend or foe of immanent universals –

who accepts the possibility of collisions between enduring, backward-time-travelling point-particles. The First Objection, then, is unsuccessful. (For more on the combination of endurance and time travel, see [Keller and Nelson 2001: §IX; Sider 2001: 98-110].)

Second Objection:[6] The 2n proposal is incompatible with the view that spatial relations between universals are *non-derivative*; the 2n proposal would make these relations derive from spatial relations between the *locations* of universals. To see this, begin by noting that if the 2n proposal is correct, the apparently two-placed spatial relation 'universal U is two feet from universal V' really has the following form: 'universal U, at its location L_U, is two feet from universal V, at its location L_V'. Now ask: What *is it* for this relation to hold between a pair of universals (U and V) and their respective locations (L_U and L_V)? The only plausible answer seems to be this:

(A) It is for U to be instantiated at L_U, V to be instantiated at L_V, and L_U to be two feet from L_V.

And if (A) is correct, it seems to follow that U and V are two feet from each other *only in the derivative sense* that they are instantiated at *locations* that are two feet from each other. Generalizing, we get the result that while *locations* can be spatially related in a fundamental way, *universals* can be spatially related only in a derivative way. But, as we stipulated in §1, in order for universals to count as being genuinely *immanent*, they must be able to stand in spatial relations non-derivatively. Thus it seems that the 2n proposal saves universals only by denying their immanence.

Reply. In responding to this objection, it will be useful to distinguish between two versions of the 2n proposal – a restricted version and an unrestricted version. According to the restricted 2n proposal, the most fundamental distance relations holding between universals (and

[6] This objection is due to an AJP referee.

between material objects) are four-placed,[7] whereas the most fundamental distance relations holding between locations are two-placed. (*Mutatis mutandis* for other spatial relations with different -adicities.) The unrestricted 2n proposal, by contrast, applies to *all* spatially located entities, including locations themselves. (I see no reason to deny that each spatial location is located at – i.e., occupies – itself.) According to the unrestricted 2n proposal, just as the most fundamental distance relations holding between *universals* are four-placed relations (e.g., 'x, at L_x, is two feet from y, at L_y'), the most fundamental distance relations holding between *locations* are these very same four-placed relations (and, again, *mutatis mutandis* for other spatial relations with different -adicities). Thus, the most fundamental way in which locations L and L* can be two feet from each other is for L, at its location (namely, itself), to be two feet from L*, at its location (itself).

Now, although it would be enough for me to show that *at least one* of these versions escapes the charge of rendering spatial relations between universals derivative, I want to argue that *both* can escape the charge. This is pretty obviously true of the unrestricted 2n proposal: it allows us to say that universals stand in spatial relations in exactly the same sense as locations themselves do. Suppose that universal U at location L_U is two feet from universal V at location L_V. According to the unrestricted 2n proposal, this fact does not derive from L_U's being two feet from L_V in some sense more basic than the sense in which U is two feet from V. The most basic sense in which L_U is two feet from L_V, according to the unrestricted 2n proposal, is that L_U at L_U is two feet from L_V at L_V, and *it is exactly this sense* in which U is two feet from V.

What about the restricted 2n proposal? Does it make spatial relations between universals derive from spatial relations between locations? I think not. To be sure, as advocates of the restricted 2n proposal, we would have the *option* of treating the former relations as being defined

[7] Of course, even if we say that the *most fundamental* distance relations between universals are four-placed, we can still *define* two-placed distance relations for universals, in the following manner: universal U is two feet from universal V *simpliciter* $=_{df}$ (i) there are locations L_U and L_V such that U at L_U is two feet from V

in terms of, and hence as deriving from, the latter relations. We would have the option of adopting such definitions as the following:

> Universal U, at its location L_U, is two feet from universal V, at its location $L_V =_{df}$ U is instantiated at L_U, V is instantiated at L_V, and L_U is two feet *simpliciter* from L_V.

But nothing would *force* us to embrace these definitions: we would be free to take both families of spatial relations (those between universals and those between locations) as primitives, hence as equally basic. We would be able to say, for example, that there are two equally fundamental and equally genuine ways of being two feet apart: there is being two feet apart *simpliciter* (e.g., 'L_U is two feet from L_V'), and there is being two feet apart *in a relativised way* (e.g., 'U at L_U is two feet from V at L_V'). So, if we were to adopt the restricted 2n proposal, we would not be forced to treat spatial relations between universals as derivative. I conclude, therefore, that regardless of which version of the 2n proposal we adopt, we can resist the Second Objection.

Third Objection:[8] By freeing universals to be multiply located in space without risk of contradiction, the 2n proposal (or at least the unrestricted version of it) also frees material objects in just the same way. But surely it is absurd to say that a material object (or any particular) can be wholly present in two places at once: to say this would be to treat particulars as universals!

Reply. The 2n proposal does not obviously entail that material objects can be multiply located; what it does is to undermine one *argument*[9] for the impossibility of multiply located material objects. Advocates of the 2n proposal remain free either to (i) accept the ban on multiply located material objects as a brute axiom or (ii) endorse some *other* argument for the ban. One might, for example, attempt to derive the ban from

at L_V and (ii) for any pair of locations (L, L*), if U occupies L and V occupies L*, then U at L is two feet from V at L*. *Mutatis mutandis* for other spatial relations.

[8] This objection is due to an AJP referee.

[9] The argument it undermines is just a version of PLER: if material objects could be multiply located in space, then a single material object could be both *two feet from* and *five feet from* (or two feet from and not two feet from) some other object, which is absurd.

(a) the widely accepted principle that distinct spacetime regions R and R* can both exactly contain the whole of the very same material object O only if there is an appropriate sort of causal relation holding between the contents of R and the contents of R*,

together with

(b) the view that the relevant sorts of causal relations can never hold between the contents of distinct, instantaneous, simultaneous spacetime regions (i.e., between the contents of distinct locations at a single time).[10]

Taken together, (a) and (b) entail that, necessarily, if R and R* are distinct, instantaneous, simultaneous, spacetime regions (or place-time pairs), then they do not contain the very same material object. It should be clear, then, that nothing about the 2n proposal commits us to the possibility of multiply located material objects.

Even if we *were* to accept this possibility, however, we would still be a long way from being forced to treat material objects as immanent universals. There are at least two ways of distinguishing between these categories of entities that would still remain open to us.

One approach is to draw the distinction in terms of instantiation. The simplest version of this approach runs as follows: to be a universal is just to be an entity that can be instantiated, whereas to be a particular is just to be an entity that cannot be instantiated. Whether or not some version of this approach will ultimately prove to be tenable is too large a question to decide here; but the important point is merely that the approach is not obviously closed off to us. (For a recent defence of the approach, see [Lowe 2002: 350].)

[10] This principle will be rejected by anyone who accepts both (a) and the possibility of enduring objects that travel backward in time and coexist with their younger selves. It will also be rejected anyone who accepts both (a) and the possibility (discussed in [Johnston 1989: 382] and defended in [Dainton 1992]) of an enduring object that survives fission as a bi-located object wholly present in two places at once.

A second way to distinguish universals from particulars is to note that a universal can be wholly present in distinct spacetime regions R and R* *even if there is no causal relation holding between the contents of these regions*, whereas this does not seem to be the case for particulars.

I conclude that the Third Objection is no more successful than the first two. The 2n proposal therefore appears to provide a tenable and effective solution to the problem of Local External Relations for immanent universals.[11]

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