Henry Somers-Hall
Henry.somershall@gmail.com

The Three Characteristics of Intensity

Introduction

Last week, we looked at Deleuze's analysis of Merleau-Ponty's theory of depth. There, we saw that Merleau-Ponty makes the claim that the field of extensity that was presupposed by thermodynamics, and also by our representational understanding of the world, is in fact the product of a non-extensive field of relations, which Merleau-Ponty characterises in terms of depth. Deleuze follows this analysis by noting that we can map Merleau-Ponty's account of depth onto the account of the three syntheses of time given in chapter two of *Difference and Repetition*. The first synthesis is roughly equivalent to habit, and is the moment of non-representational difference as it appears within our perceptual field. So, Merleau-Ponty's claim that a figure on a ground is the most basic element of sense-perception, introducing a difference into the heart of phenomena, would be roughly what Deleuze is talking about. The second synthesis was the field of depth itself, as that which allows phenomena to form relations such as figure and ground. This non-extensive field of depth was what also generated the extensive dimensions which we find in representation. Deleuze's claim is that these non-extensive syntheses are in fact intensive syntheses, which relates his discussion here to his characterisation of the eternal return in the first couple of chapters of *DR*. Just as there was a third synthesis of time, so there is a there is a third synthesis of space. This synthesis is essentially depth understood apart from the process of constitution of the world of representation (which Deleuze characterises as the *spatium*). Now, as we saw when we looked at thermodynamics in the first week of this term, we have an idea of what intensity is when it is localised within extensity. A temperature difference between two points in space, for instance, allows work to be done. The question for this week is, how do we characterise intensity apart from the extensity that it gives rise to?

The Three Characteristics of Intensity

So what are the characteristics we find in intensity? We can see that spatiotemporal intensity differs from extensity. Whereas adding two extensities just gives us an area equal in size to the two original areas, combining two liquids at different temperatures leads them to instead reach an average temperature, for instance. Deleuze's presentation here focuses on the difference in the way elements relate to one another in intensity and extensity, and the nature of the elements themselves, but his aim is to show that the nature of the extensum and the spatium as a whole are radically different. While his presentation focuses on the mathematics of cardinal and ordinal numbers, in the background of this discussion is Bergson's account of two multiplicities in *Time and Free Will*. Deleuze claims that intensity has 'three characteristics.' (DR 232/291) These are that it 'includes the unequal in itself,' (DR 232/291) it 'affirms difference,' (DR 243/293) and it 'is an implicated, enveloped, or "embryonised" quantity.' (DR 237/297) In this section, I want to go through these three characteristics.

In what sense does intensity 'include the unequal in itself'? To explain this point, I want to follow the analysis provided by DeLanda (2002: 73-74). As we have seen, one of the key differences between intensive quantities and extensive quantities is that extensive quantities can be added

without changing their nature. As Deleuze notes, this difference reflects one of the key features of extensive magnitudes: that they can be measured numerically, and that these measurements are comparable (or commensurate) with one another. Now, if we just look at the natural numbers (0, 1, 2, 3...), we find that frequently we come across magnitudes that cannot be expressed in these terms. For instance, provided we remain with the natural numbers, we cannot divide 7 by 2, as the result is not itself a natural number. The obvious solution to this difficulty is to introduce another order of numbers that does allow us to relate these two quantities to each other, in this case, fractions. Similarly, we will discover that fractions do not allow all quantities to be related to one another, leading to the instigation of a new order of numbers: real numbers (such as √2 or π). In each case, we have an incommensurability between quantities that cannot be cancelled within the order of numbers themselves, but only by instigating a new order of numbers. As Deleuze notes, as well as proceeding from natural numbers to fractions and real numbers, we can also ask if there is an order from which natural numbers themselves proceed. Now, we can make a distinction between cardinal numbers (one, two, three...) and ordinal numbers (first, second, third...). Whereas cardinal numbers can be constructed out of basic numerical units, and so we can construct identities between them (for instance, that the difference between one and three is equal to the difference between two and four), ordinal numbers just give us a sequence without requiring that the difference between the elements is the same in each case (thus, the difference between first and third does not have to be the same as the difference between second and fourth). Now, in a technical sense, we *can* talk about distance in relation to ordinal numbers, in that they form an ordered sequence, but these distances are not metric or measurable distances as they would be for cardinal numbers. Without ordinal numbers presupposing a basic metric unit, the kinds of operations we can perform with cardinal, natural numbers cannot be performed, meaning that we cannot produce equalities within this domain. Rather, it is only by the addition of a common measure between numbers (and thus the conversion of ordinal numbers to cardinal numbers) that we can begin to talk about equalising quantities: 'In fact, ordinal number becomes cardinal only by extension, to the extent that the distances enveloped in the spatium are explicated, or developed and equalised in an extensity established by natural number.' (DR 233/292) We can note that in these cases, we have a model that parallels the account of intensity we have seen so far. An uncancellable difference (intensity) gives rise to a new domain (extensity) within which that difference is cancelled. 'Here, however, we rediscover only the duality between explication and the implicit, between extensity and the intensive: for if a type of number cancels its difference, it does so only by explicating it within the extension that it installs. Nevertheless, it maintains this difference in itself in the implicated order by which it is grounded.' (DR 232/292) Whereas in the thermodynamic model, difference is cancelled *within its own domain*, leading to the idea of the heat death of the universe, for Deleuze difference can only be equalised in a constituted realm, leaving it unequalised in its original domain. Now, while we have been discussing the relationships between numbers, these relationships presuppose different conceptions of space. As cardinal numbers are constituted from elements that are absolutely identical with one another, they presuppose an extensive space, since it is only their difference in position in a conceptual space that allows them to be distinguished from one another. Bergson makes the point as follows:

> And yet [numbers] must be somehow distinct from one another, since otherwise they would merge into a single unit. Let us assume that all the sheep in the flock are identical; they differ at least by the position which they occupy in space, otherwise they would not form a

> flock. But now let us even set aside the fifty sheep themselves and retain only the idea of them. Either we include them all in the same image, and it follows as a necessary consequence that we place them side by side in an ideal space, or else we repeat fifty times in succession the image of a single one, and in that case it does seem, indeed, that the series lies in duration rather than in space. But we shall soon find out that it cannot be so. For if we picture to ourselves each of the sheep in the flock in succession and separately, we shall never have to do with more than a single sheep. In order that the number should go on increasing in proportion as we advance, we must retain the successive images and set them alongside each of the new units which we picture to ourselves: now, it is in space that such a juxtaposition takes place and not in pure duration. (Bergson 1910: 77)

Thus, Deleuze follows what he takes to be Bergson's claim that 'space [is] a condition of number, even if only an ideal space, the time that arises in the ordinal series arising only secondarily, and as spatialized time, that is to say as space of succession.' (L 00/00/70) We can say at this stage, therefore, that extensity is generated through that introduction of an identical element into an intensive series. This identical element allows us to measure differences in intensity, and therefore to generate the kinds of distance relationships needed for a field of extensity to be generated. We can relate this back to Merleau-Ponty's account of depth we looked at last week by noting how representation emerged from it. We move from a perspectival notion of depth to an extensive notion by making the claim that what is depth for me is simply breadth for another looking at the scene from a different perspective (with the limit case being God, who views everything from all perspectives simultaneously, and thus reduces all depths to lengths). This is achieved through the introduction of a unit of identity which allows the two incommensurate dimensions to be compared with one another, and thus found to be equal.

The second claim Deleuze makes is that intensity affirms difference. Whereas the first claim aimed to show that intensity couldn't be understood in terms of extensity, this second claim is that it also cannot be understood as a quality. Now, in order to support this claim, he argues that whereas qualities are understood in terms of negation, intensity, while it is characterised by difference, is not also characterised by negation. As we saw in chapter one, within the Aristotelian notion of definition, a difference presupposes negation. That is, when we wanted to talk about the essence of man, we did so by attributing a property to him called a difference. This difference allowed us to divide the genus into two opposed classes: the rational and the non-rational. Negation was thus fundamental to the process of definition, and to the specification of properties. We can sum up this characterisation of difference with the claim that if x differs from y, x is not y. As we saw in chapter one, this constraint on the concept of difference was not inherent in difference itself, but only difference thought in terms of extensity. Scotus' intensive conception of difference avoided the need to define it in terms of negation. We can, in effect, note that the introduction of negation into difference rests on the need to see contrary properties as not inhering in the same object, or occupying the same 'space.' Since intensity is prior to the emergence of both objects and (extensive) space, these restrictions do not apply to it. As Deleuze points out, even if we do look at intensity as it occurs within extensive space, we do not find the strict absence of intensity: 'It is said that in general there are no reports of null frequencies, no effectively null potentials, no absolutely null pressure, as though on a line with logarithmic graduations where zero lies at the end of an infinite series of smaller and smaller fractions.' (DR 234/294) Thus, whereas negation can be applied to properties, we never actually discover the negation of an intensity, but only its difference from other intensities.

Deleuze here supports Plato's insight that the fact that objects can possess contrary properties presents a shock capable of leading to thinking. Rather than seeing these contrary properties as leading us to contemplation of a timeless realm of forms, Deleuze argues that they refer us to a field of intensive difference responsible for the change in qualities we find in the world around us. What makes the qualities in becoming contradictory is that they actualise an underlying intensive difference, and it is this difference that provides the real opening to thought.

Finally, as a third characteristic, 'intensity is an implicated, enveloped, "embryonised" quantity.' (DR 237/297) This third characteristic is derived from the previous two. We have seen that cardinal numbers are divisible. Deleuze makes the claim in a lecture on Bergson that this is because since they are a collection of equal units, dividing them is simply an intellectual operation:

> The divisibility of the unit; for a number is a unity only by virtue of the cardinal colligation, that is to say the simple act of the intelligence that considers the collection as a whole; but not only does the colligation bear on a plurality of units, each of these units is one only by virtue of the simple act that grasps it, and on the contrary is multiple in itself by virtue of its subdivisions upon which the colligation bears. It's in this sense that every number is a distinct multiplicity. And two essential consequences arise from this: at once that the one and the multiple belong to numerical multiplicities, and also the discontinuous and the continuous. The one or discontinuous qualifies the indivisible act by which one conceives one number, then another, the multiple or continuous qualifying on the contrary the (infinitely divisible) matter colligated by this act. (L 0/0/70)

Qualities, on the other hand, are not divisible. It makes no sense to talk of dividing rationality, or animality, for instance. Now, intensity is not like quality, in that it *can* be divided. It is not composed of equal elements, however, but rather is a sequence of asymmetrical relations: the ordinal numbers (it is asymmetrical in that second is defined by being 'in between' first and third, but first and third are not 'in between' second). Thus, 'a temperature is not composed of other temperatures, or a speed of other speeds.' (DR 237/297) If an intensive multiplicity is not simply constituted from pre-existing elements, then division is true division, leading to a change in the nature of what is divided. Here we can turn to Bergson's alternative form of multiplicity. For Bergson (at least at this stage of his philosophical development), this alternative form of organisation is that which we find in our conscious states, although for Deleuze this mode of organisation is not simply a feature of our perception of the world, but rather of the world itself. As we can see, Bergson's account of the perception of a melody presents clearly the way in which dividing non-extensive multiplicities leads to a change in their nature:

> Pure duration is the form which the succession of our conscious states assumes when our ego lets itself live, when it refrains from separating its present state from its former states. For this purpose it need not be entirely absorbed in the passing sensation or idea ; for then, on the contrary, it would no longer endure. Nor need it forget its former states : it is enough that, in recalling these states, it does not set them alongside its actual state as one point alongside another, but forms both the past and the present states into an organic whole, as happens when we recall the notes of a tune, melting, so to speak, into one another. Might it not be said that, even if these notes succeed one another, yet we perceive them in one another, and that their totality may be compared to a living being whose parts, although

> distinct, permeate one another just because they are so closely connected? The proof is that, if we interrupt the rhythm by dwelling longer than is right on one note of the tune, it is not its exaggerated length, as length, which will warn us of our mistake, but the qualitative change thereby caused in the whole of the musical phrase. We can thus conceive of succession without distinction, and think of it as a mutual penetration, an interconnexion and organization of elements, each one of which represents the whole, and cannot be distinguished or isolated from it except by abstract thought. (Bergson 1910: 100-101)

The two different notions of multiplicity can be mapped onto the extensive and intensive in a relatively straightforward manner:

> Therefore there are two types of multiplicity: one is called multiplicity of juxtaposition, numerical multiplicity, distinct multiplicity, actual multiplicity, material multiplicity, and for predicates it has, we will see, the following: the one and the multiple at once. The other: multiplicity of penetration, qualitative multiplicity, confused multiplicity, virtual multiplicity, organized multiplicity, and it rejects the predicate of the one as well as that of the same. (00/00/70)

These two forms of multiplicity can be related to the *extensum* (extensity in general), and the *spatium* (the field of intensive difference as a whole).

Conclusion

At the heart of Deleuze's metaphysics is therefore a claim that there are two kinds of multiplicities. Those of extensity, which we find in the world of representation, and those of intensity, which give rise to the world of representation without ceasing to themselves remain intensive. Here, we once again return to the question of the eternal return. In the first term, we saw that the question in reading Nietzsche was to find out what returns. Here we have an answer – it is not the objects themselves which return, but rather the field of intensity which is expressed in them that returns. The final question that we need to explore, and which we will turn to next week, is, what is the relationship between these two forms of multiplicities? Furthermore, what is the relationship between the field of intensity we find described here and the Idea which we looked at last term? We will turn to these questions next week.