is divisible into divisibles that are always divisible: and if we take this as the definition of continuous, it follows necessarily that time is continuous. For since it has been shown that the quicker will pass over an equal magnitude in less time than the slower, suppose that A is quicker and B slower, and that the slower has traversed the magnitude CD in the time FG. Now it is clear that the quicker will traverse the same magnitude in less time than this: let us say in the time FH. Again, since the quicker has passed over the whole CD in the time FH, the slower will in the same time pass over CJ, say, which is less than CD. And since B, the slower, has passed over CJ in the time FH, the quicker will pass over it in less time: so that the time FH will again be divided. And if this is divided the magnitude CJ will also be divided in the same ratio; and again, if the magnitude is divided, the time will also be divided. And we can carry on this process for ever, taking the slower after the quicker and the quicker after the slower, and using what has been demonstrated; for the quicker will divide the time and the slower will divide the length. If, then, this alternation always holds good, and at every turn involves a division, it is evident that all time must be continuous. And at the same time it is clear that all magnitude is also continuous; for the divisions of which time and magnitude respectively are susceptible are the same and equal.

Moreover, the current arguments make it plain that, if time is continuous, magnitude is continuous also, inasmuch as a thing passes over half a given magnitude in half the time, and in general over a less magnitude in less time; for the divisions of time and of magnitude will be the same. And if either is infinite, so is the other, and the one is so in the same way as the other; i.e. if time is infinite in respect of its extremities, length is also infinite in respect of its extremities; if time is infinite in respect of divisibility, length is also infinite in respect of divisibility; and if time is infinite in both respects, magnitude is also infinite in both respects. 233a13-233a21

Hence Zeno's argument makes a false assumption in asserting that it is impossible for a thing to pass over or severally to come in contact with infinite things in a finite time. For there are two ways in which length and time and generally anything continuous are called infinite: they are called so either in respect of divisibility or in respect of their extremities. So while a thing in a finite time cannot come in contact with things quantitatively infinite, it can come in contact with things infinite in respect of divisibility; for in this sense the time itself is also infinite: and so we find that the time occupied by the passage over the infinite is not a finite but an infinite time, and the contact with the infinites is made by means of moments not finite but infinite in number. 233a22-233a31

The passage over the infinite, then, cannot occupy a finite time, and the passage over the finite cannot occupy an infinite time: if the time is infinite the mag- 233a32-233b16

referring to the Dichotomy

nitude must be infinite also, and if the magnitude is infinite, so also is the time. Let AB be a finite magnitude, and an infinite time C, and let a finite period CD of the time be taken. Now in this period the thing will pass over a certain segment of the magnitude: let BE be the segment that it has thus passed over. (This will be either an exact measure of AB or less or greater than an exact measure: it makes no difference which it is.) Then, since a magnitude equal to BE will always be passed over in an equal time, and BE measures the whole magnitude, the whole time occupied in passing over AB will be finite; for it will be divisible into periods equal in number to the segments into which the magnitude is divisible. Moreover, if it is the case that infinite time is not occupied in passing over every magnitude, but it is possible to pass over some magnitude, say BE, in a finite time, and if this measures the whole, and if an equal magnitude is passed over in an equal time, then it follows that the time too is finite. That infinite time will not be occupied in passing over BE is evident if the time be taken as limited in one direction; for as the part will be passed over in less time than the whole, this must be finite, the limit in one direction being given. The same demonstration will also show the falsity of the assumption that infinite length can be traversed in a finite time. It is evident, then, from what has been said that neither a line nor a surface nor in fact anything continuous can be indivisible.

233b17-233b31 This conclusion follows not only from the present argument but from the consideration that the opposite assumption implies the divisibility of the indivisible. For since the distinction of quicker and slower may apply to motions occupying any period of time and in an equal time the quicker passes over a greater length, it may happen that it will pass over a length twice, or one and a half times, as great as that passed over by the slower; for their respective velocities may stand to one another in this proportion. Suppose, then, that the quicker has in the same time been carried over a length one and a half times as great, and that the respective magnitudes are divided, that of the quicker into three indivisibles, AB, BC, CD, and that of the slower into two, EF, FG. Then the time may also be divided into three indivisibles; for an equal magnitude will be passed over in an equal time. Suppose then that it is thus divided into KL, LM, MN. Again, since in the same time the slower has been carried over EZ, ZH, the time may also be divided into two. Thus the indivisible will be divisible, and that which has no parts will be passed over not in an indivisible but in a greater time. It is evident, therefore, that nothing continuous is without parts.

233b32-234a4 § 3 · Necessarily, too, the now—the now so-called not derivatively but in its own right and primarily—is indivisible and is inherent in all time. For the now is

an extremity of the past (no part of the future being on this side of it), and again of the future (no part of the past being on that side of it): it is, we maintain, a limit of both. And if it is proved that it is of this character and one and the same, it will at once be evident also that it is indivisible.

Now the now that is the extremity of both times must be one and the same; for if each extremity were different, the one could not be in succession to the other, because nothing continuous can be composed of things having no parts; and if the one is apart from the other, there will be time between them, because everything continuous is such that there is something between its limits described by the same name as itself. But if the intermediate thing is time, it will be divisible; for all time has been shown to be divisible. Thus on this assumption the now is divisible. But if the now is divisible, there will be part of the past in the future and part of the future in the past; for past time will be marked off from future time at the actual point of division. Also the now will be a now not in its own right but derivatively, for the division will not be a division in its own right. Furthermore, there will be a part of the now that is past and a part that is future, and it will not always be the same part that is past or future. Nor, then, will the now be the same; for the time may be divided at many points. If, therefore, the now cannot possibly have these characteristics, it follows that it must be the same now that belongs to each of the two times. But if it is the same, it is evident that it is also indivisible; for if it is divisible it will be involved in the same implications as before. It is clear, then, from what has been said that time contains something indivisible, and this is what we call the now. 234a5-234a23

We will now show that nothing can be in motion in a now. For if this is possible, there can be both quicker and slower motion. Suppose then that in the now N the quicker has traversed the distance AB. That being so, the slower will in the same now have traversed a distance less than AB, say AC. But since the slower will have occupied the whole now in traversing AC, the quicker will occupy less than this in traversing it. Thus we shall have a division of the now, whereas we found it to be indivisible. It is impossible, therefore, for anything to be in motion in a now. 234a24-234a31

Nor can anything be at rest; for we assert that, that only can be at rest which is of such a nature to be in motion but is not in motion when, where, or as it would naturally be so; since, therefore, nothing is of such a nature as to be in motion in a now, it is clear that nothing can be at rest either. 234a32-234a35

Moreover, inasmuch as it is the same now that belongs to both the times, and it is possible for a thing to be in motion throughout one time and to be at rest throughout the other, and that which is in motion or at rest for the whole of a time 234a36-234b4

will be in motion or at rest in any part of it in which it is of such a nature as to be in motion or at rest: it will follow that the same thing can at the same time be at rest and in motion; for both the times have the same extremity, viz. the now.

234b5-234b7 Again, we say that a thing is at rest if its condition in whole and in part is uniform now and before; but the now contains no before; consequently, there can be no rest in it.

234b8-234b9 It follows then that the motion of that which is in motion and the rest of that which is at rest must occupy time.

234b10-234b20 § 4 · Further, everything that changes must be divisible. For since every change is from something to something, and when a thing is at the point to which it was changing it is no longer changing, and when both it itself and all its parts are at the point from which it was changing it is not[41] changing (for that which is in whole and in part in an unvarying condition is not in a state of change); it follows, therefore, that part of that which is changing must be at the starting-point and part at the goal; for it cannot be in both or in neither. (Here by 'goal of change' I mean that which comes first in the process of change: e.g. in a process of change from white the goal in question will be grey, not black; for it is not necessary that that which is changing should be at either of the extremes.) It is evident, therefore, that everything that changes must be divisible.

234b21-234b29 Now motion is divisible in two ways—in virtue of the time that it occupies, according to the motions of the parts of that which is in motion: e.g. if the whole AC is in motion, there will be a motion of AB and a motion of BC. Let DE be the motion of the part AB and EF the motion of the part BC. Then the whole DF must be the motion of AC; for it must constitute its motion inasmuch as they severally constitute the motions of each of its parts. But the motion of a thing can never be constituted by the motion of something else; consequently the whole motion is the motion of the whole magnitude.

234b30-234b35 Again, since every motion is a motion of something, and the whole motion DF is not the motion of either of the parts (for each of the parts is the motion of one of the parts) or of anything else (for, the whole motion being the motion of a whole, the parts of the motion are the motions of the parts of that whole; and the parts are the motions of AB, BC and of nothing else; for, as we saw, a motion that is one cannot be the motion of more things than one): since this is so, the whole motion will be the motion of the magnitude ABC.

234b36-235a8 Again, if there is a motion of the whole other than DF, say HI, the motion of

[41] Retaining *ou* (MSS) for Ross's *oupo*.