Does Music Move?

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Friday Night Lecture
St. John's College, Annapolis, MD
February 15, 2013*

Does music move?

Well, yes—if by "music", we meant the vibrations of sound that allow us to hear what a musician plays: from instrument to air to ear.

Or yes again—if by "move", we meant the way we can be moved by music: from table-taps to tangos to tears.

But the question is harder to answer, if we ask it of music's movement in a more elementary sense. —The sense in which we might say, of a rhythm, that it quickens and slows; or of a melody, that it rises and falls; or of a harmony, that it departs and returns. And suppose we say all this about the first movement of a symphony, not thinking twice about calling this a "movement". For we talk as if we hear just that in the symphony—movement—and as if any piece of music moves itself in moving us.

Our talking this way has a point. For if we didn't hear music move, would we hear it at all? Without movement, music would seem no more than a series of sounds.[1] But there is a problem with our talking this way, despite its point. And this is the problem I discuss in my lecture tonight. In its first part, I explain what I take the problem to be. In its second part, I explain why I take the problem to be important. In its final part, I offer two solutions to the problem, in the attempt to deepen our sense of it.

I The nature of the problem.

So what is the problem with our talking as if music moved? The problem, in a word, is space: the space in which we hear music move. —The space that allows it to quicken and slow, rise and fall, depart and return. For this space

*The formatting and notes of this copy are dated February 17, 2013. I thank Gabriela Hopkins for helping me improve the lecture with comments and conversation about earlier drafts. I also thank participants in the Question Period for further thoughts, some of which appear in the footnotes of this copy.

[1]For further discussion of this, see Chapter VII, "The Paradox of Tonal Motion", in Victor Zuckerkandl's *Sound and Symbol: Music and the External World*; and the section "Movement" of Chapter 2, "Tone", in Roger Scruton's *The Aesthetics of Music*.

makes something close to complete sense on the one hand, yet something closer to nonsense on the other.[2]

To see the sense it makes, we can start by comparing the movement we hear in music, with the variation we hear in sounds more generally. Consider, for example, the difference between a melody and a siren. Both involve a change in pitch over time. And we might say, in that respect, that both rise and fall. But unlike the siren, the melody does this in a kind of articulated space, usually conceived as a scale. And this space gives us the impression of movement, from one place to the next. We sense a change of place, in other words, within the melody's change in pitch, as if having caused it.

As illustration, suppose we hear the beginning of "Twinkle, Twinkle, Little Star" on middle-C, where C is followed by the G a fifth above. Within this change in pitch, we hear a change of place—from the first degree of a melodic scale to the fifth; or otherwise put, from the $\hat{1}$ to the $\hat{5}$.[3] And this change of place gives us the impression of a movement having caused the change in pitch: in this case, of a leap from the $\hat{1}$ to the $\hat{5}$, causing C to be followed by G.

Now suppose we hear the siren rise from C to G. We don't hear this rise happen in the articulated space of a scale; and the continuity of the rise would seem to preclude it, since the places in a scale are discrete. But this means we are given no impression of movement by the siren's change in pitch, from one place to the next. It's as if the siren rises only in time, not in space. True, we can see, or at least infer, a change of place behind the siren's change in pitch, in the fire engine, say, that produced it. But we don't hear any change of place within the change in pitch, that might replace the fire engine as cause, and turn what we hear as a signal into what we could hear as a melody.

Of course, we may not know about a musical scale, to account for the change of place we hear in the melody. But this ignorance is only more evidence for the sense made by the space of music's movement, in its own terms. And it reflects a striking fact about what it means to understand music. For we can develop an altogether discerning musical ear, while remaining all but illiterate about what we hear. And becoming literate, by studying music theory, underlines the sense music makes even without this theory. For the topography of this theory—such as the melodic scale—is more discovered than invented, and in the discovery, more inhabited than observed. One sign of this is the way we are moved by music; for we are thus moved inwardly, in the space we inhabit as selves. But I will now try to show this more explicitly. And my conclusion

[2]For a defense of the necessity of thinking that music moves in space, but that the space in question is metaphorical, see Chapter 4, "Movement", in Roger Scruton's *Understanding Music*.

[3]Strictly speaking, I refer here to the melody of "Twinkle, Twinkle...", which predates the words by some forty years in a French song called "Ah! vous dirai-je, Maman". In a more important strictness, what I call the beginning of "Twinkle, Twinkle..." is really the second "event" in the melody. The first is a repeating of middle-C, within which we hear the repeating of the $\hat{1}$. But is this first event a movement? Does it involve a change of place? I thank John Verdi for drawing my attention to this question after the lecture. I think this is a movement, and can even be said to involve a change of place, but one that shows why the melody is temporal rather than spatial. I say more about this in subsequent notes.

will be that it is because we inhabit what we hear, in hearing music move, that the space of this movement makes complete sense. The completeness in this sense has to do with the experience of inhabitance.

To begin to see this, recall the terms I used for the melody "Twinkle, Twinkle." I identified its first two pitches by note—middle-C and the G a fifth above. This identification depends on two topographical facts in our perception of notes, even outside a musical context. The first such fact is that we hear a difference in pitch, whereby one note is distinguished from another, as a difference in relative place: one note sounding higher, the other note lower. This perception is also transitive: if one note sounds higher than a second, and the second higher than a third, then the first will also sound higher than the third. Our perception of pitch difference so gives every note its own position along an axis of height. Hence my talk of the G a fifth above middle-C, to distinguish it, say, from the G a fourth below.

Then there is my reference just now to the two G's on either side of middle-C, along with my reference to middle-C itself, in order to distinguish that C from every other C there is. This repetition of note letters reflects the second topographical fact in our perception of notes: the phenomenon of the octave. For while we distinguish notes by their difference in pitch, this difference reaches a kind of limit at the interval called the "octave", where the notes sound the same, despite their difference in pitch, and are thus given the same letter as name. Exactly why we hear this sameness is hard to say: Aristotle ascribed it to a perception of the whole number ratio two-to-one; while Victor Zuckerkandl calls it a miracle.[4] But however it happens, the sameness we hear in notes, once their difference in pitch reaches the octave, in effect contains that difference. If we pass beyond it, we don't encounter new notes, but only new instances, higher or lower, of old notes. The octave thus turns the axis of height, along which notes are arranged by pitch, into a kind of circumference, which continues to trace their increase or decrease in pitch without end, but always to the same place again.

Yet this image, of notes now arranged into a circumference by the octave, is not yet an image of the space in which music moves. For it only comprehends the change in pitch involved, as we might conceive this change to carry us along the circumference. But in hearing a melody, we again hear a change of place within the change in pitch, such as the leap from the $\hat{1}$ to the $\hat{5}$ at the start of "Twinkle, Twinkle...". And this description reflects another pair of topographical facts in our perception of notes, once we hear these notes in a musical context. The first such fact is that we hear movement from note to note, without having to hear any notes between. So in "Twinkle, Twinkle...", we hear a leap from the $\hat{1}$ to the $\hat{5}$, without having to hear the $\hat{2}$, $\hat{3}$, and $\hat{4}$ first. And to hear them first would not complete the leap, as if to fill it in, but rather transform the leap into a climb. Why this is a fact of musical perception may

[4]Aristotle attributes the cause of the octave to the ratio 2:1 in Book II, Chapter 3, of his *Physics*, 194b28–29. Zuckerkandl calls it a miracle in his discussion of the octave in the section "Scale" of Chapter VIII, "The True Motion of Tones", in *Sound and Symbol.*

be as hard to explain as the octave. But as a phenomenon, it seems to involve a sense of being oriented in the movement we hear from note to note. It's as if we faced the note we were moving to, and reached it as a goal, heedless of any notes on the way.[5]

The sense of being oriented among notes is even clearer in the second topographical fact, which involves our perception of notes in musical contexts we call tonal. It is this fact that forced me to shift from letters to numbers, when identifying the leap in "Twinkle, Twinkle..." from the $\hat{1}$ to the $\hat{5}$. For in tonal musical contexts—and the name "tonal" is derived from this fact—we will hear one note as a kind of center, which orients us with respect to the other notes we hear, as if to provide a place from which to face them. The central note is so assigned the number 1 in analysis, and the other notes assigned other numbers in reference to 1. Again, why we can hear a certain note as central is hard to say. But the phenomenon, as Zuckerkandl would remind us, is dynamic, in an orientation more felt than seen. We hear the central note as central, that is, by sensing a stability in it relative to the other notes, as if it provided a place to face them as a center of gravity. This second topographical fact so informs the first: for we then move from note to note as if under the influence of a gravitational pull, requiring effort to overcome, and supplying momentum in success, in a deepened sense of having faced the note being moved to, and reaching that note as a goal.

We can accommodate these facts of musical perception into the earlier image of a circumference of notes, arranged by pitch and bounded by the octave. For once we hear one note in the melody as central, especially if we hear it as a center of gravity, it's as if we were projected with that note inside the circumference. And this projection allows us to move from note to note not simply along the circumference, through every note between, but now across the circumference, guided by the one note inside it as a center of orientation. This image so gives a geometric form to the complete sense made by the space in which music moves. For this is the sense in which we inhabit that space.

To be sure, the development of this sense, as shown by the specifically tonal context in which we hear one note of a melody as central, depends on the like development of a specific form of musical art—the art of tonality, to which we owe the music of the West. But there would be no such art to develop, unless the result made a difference to what we could hear; and in this case, to what we could inhabit in what we hear. And much of tonal music's development can be explained as a deduction from the features of a place we inhabit.

I spell this thought out briefly, in one example, for those familiar with this

[5]It could also be noted here, in light of a previous note, that we hear the repeating of the $\hat{1}$ at the start of "Twinkle, Twinkle..." in the same way: as a movement from origin to goal, even though the origin and goal in this case are the same. This already suggests there is something fundamentally temporal about our orientation in the perception of notes in a musical context. For we would simply stay in the same place (on the $\hat{1}$) except for the repetition allowed by time, which distinguishes the place at one moment from the place at a subsequent moment, and allows the staying to be the result of movement (in this case from the $\hat{1}$ to the $\hat{1}$).

development. If we inhabited the space of music's movement, it seems we should not simply be fixed at a single center of orientation. We should rather be able move that center, carrying it with us from place to place. And move it we can—once tonal music developed the device of modulation, to carry us from key to key. We might also expect the movement of that center to happen along an axis of depth, away-and-back, not just to distinguish it from the up-and-down movement between notes along an axis of height, but also from a sense of perspective, which implicitly belongs to our sense of orientation when we inhabit a place. And so we do move away and back—once tonal music developed the harmony out of polyphony that modulation relies upon. We might further expect the movement of the center to clarify our sense, as I described this above, of the gravity felt at work in such a space. And clarified it is—once the use of modulation effectively reduced the modes of chant to the major-minor scale. We might finally expect the movement of the center to deepen our sense that we inhabit one space, which contains the places moved between, rather than many spaces distinguished and divided by those places. And deepened it is—once the use of modulation forced upon the tuning of a scale the leveling of equal temperament. For this restricts the notes of any key to the notes in every key. And as Roger Scruton has strikingly described the result, equal temperament thus "places the whole of tonal space within reach of its every occupant."[6]

Along with this deduction comes a plausible measure of the greatness in a musical work. The greater it is, the deeper it carries us into the space of music's movement. And by that measure of inhabitance, the best demonstration of the complete sense this space can make, is found not in my account, but rather in those masterpieces of music—such as Beethoven's *Eroica*—where this space is explored to a kind of limit, in the conquest of it.[7]

But as I said, the space of music's movement also makes a kind of non-sense. To see this, we can start by now comparing the movement we hear in music, with motion as we observe this more generally. Consider, for example, the difference between the movement of a melody, like "Twinkle, Twinkle..." again, and the motion of our hand in following that melody, as if to conduct it. We could say that both rise and fall, and do so not just in time but in space, through a discernible change of place. But there is a difference. For as I mentioned earlier, we hear the change of place in the melody, such as the leap from the $\hat{1}$ to the $\hat{5}$ in "Twinkle, Twinkle...", without having to hear any places between. The movement happens discretely. By contrast, we see the hand's change of place happen continuously, from place to place through all the places between. And this continuity would seem a necessary feature of its

[6]Roger Scruton, *The Aesthetics of Music*, p. 244.

[7]I also suspect that the space we are carried into so clearly and compellingly by tonal music is what makes atonal music so off-putting for first-time listeners; it doesn't carry us (at least at first) into any space. There is also a question, then, about what allows atonal music to make sense once a listener does grow accustomed to it. If atonal music can carry us into a space in which we hear it move, then is this a different space from tonal music or not? I thank Sam Weinberg for bringing this issue up in the question period.

motion. For if our hand got from place to place discretely, like the melody did, skipping places along the way, then it would look to us as if our hand reached each place not by motion, but rather by magic. Or at least we'd be tempted to think there was something in the space where the motion occurred, beyond just space, that was interrupting the motion, disrupting the continuity it would otherwise have. But this is one reason, then, to think there isn't really a space for the melody to move in. For if there were, then it would allow the melody to move in it continuously rather than discretely.

But this reflects another difference—involving identity rather than continuity—between the movement of the melody and the motion of our hand in following it. For the melody is composed of the notes it moves between, while our hand is not composed of the places it moves between. And this explains at once why the melody has to move discretely. For it has to become what it is. And this means passing through only those notes that compose it, and that distinguish it, thus composed, from any other melody. But then the melody can only be what it is by becoming so, over an interval of time. And in this sense, the melody is temporal rather than spatial, with an identity in time rather than space.[8] But this is then another reason to think that there isn't really a space for the melody to move in. For if there were, then it would allow the melody to possess an identity in space; that is, it would allow the melody to be what it is in space without having to become so, and to remain what it is, unchanged, through every change of place.

But here is perhaps a stronger way to put the nonsense: If there really were a space for the melody to move in, then there would be a melody to hear, in the space where we hear it move. But there isn't. We hear the leap in "Twinkle, Twinkle", for example, without hearing anything making the leap. For we hear this leap being made between unleaping notes, but nothing further to which we might attribute the leap. And this is true for music in general—a fact reflected in the unmoving notes on a musical score. Once the score is performed, we hear a movement being made between the unmoving notes, but nothing further to which we might attribute the movement. So we hear movement, but nothing making the movement. Yet how, in that case, could there be any movement to hear? And what could be making it?

Yet this is only the start of the nonsense. And the end of it implicates our very inhabitance of the space in question. We can see this through an objection to the analysis I just gave. True, the objection runs, we have a sense of the space in which motion ordinarily occurs, that we cannot apply to the movement of music. For applying it makes nonsense of the movement, by depriving this movement of any object to which it might be attributed. But what follows from this? Perhaps only that the space in which music moves, is not ordinary,

[8] As I mentioned in an earlier note, another mark of the temporal identity of a melody is the fact that a note can be repeated in it (like at the beginning of "Twinkle, Twinkle..."), and we hear a movement in this repetition even though the place remains the same (making the staying-in-place of the melody event-like rather than inertia-like). This implies that the places in a melody are not just defined by the articulated space we know as a scale, but also by the articulated time we know as beat, meter, and rhythm.

but extraordinary. And this is one way to understand my earlier defense of the sense—the complete sense—made by this space. For this was not an observed sense of space, but rather an inhabited sense of space. The sense, for example, in which we face the note being moved to, and reach it as a goal. So if there is a space for music to move in, which makes sense of the movement, then this space will have to be conceived from within, as a matter of inhabitance, rather than from without, as a matter of observation.

The objection has a point. But it makes the nonsense even clearer. For what is it, finally, that makes an inhabited sense of space extraordinary? Here is one answer. An inhabited sense of space is extraordinary, in not stopping short of totality. That is, our inhabited sense of space implicitly includes everything there is, known or unknown; anything captured in the word "Being". For it is beings, finally, that we take ourselves to be surrounded by, and our own being that provides the place from which to face them. This is why, despite our sometimes talking as if there were more than one world, and even more than one world we might inhabit, we can also talk intelligibly of the world, as if there were only one. And it is our being-in-one-world, on this answer, that grounds our inhabited sense of space.

But what happens, then, when our inhabited sense of space is divided? —For example, between sleeping and dreaming, where it seems we inhabit two spaces at once? We resolve the division, evidently, by conferring worldhood on only one such space, taking it to contain the other such space. That is, we credit only one space with the totality, and thus the reality, of inhabitance, and regard the other space as merely part of this totality. The credit we give to its own totality, then, is the credit we give to a dream. We still inhabit the dream—and more alertly than we inhabit the bedroom in which we dream, often with a sense that everything is put at stake in the dream, in a matter of life or death. But in waking from the dream, we prove it part of a larger space of inhabitance. And this gives the dream's apparent totality the status of mere appearance; and our inhabitance of it, the form of an illusion. To our relief, or perhaps our regret, what happened to us in the dream, didn't really happen after all.

But if this is so, then it gives us reason to suspect the very same thing of the space we inhabit when hearing music move. The space may well be illusory, making all the sense—but also all the nonsense—of a dream. And in that case, the greater the work of music, the deeper it carries us into the dream. We hear the sound of Beethoven's *Eroica* surge forth in a concert hall, seeming to make the whole world shake. Yet the musicians barely move by comparison, while the notes they play move not at all. And we concert-goers stay glued to our seats—entranced. And once the work is finished, in a triumph of conclusiveness, we are released from the trance in a daze—and the desire, perhaps, to have remained. For we leave the concert hall likely finding the world we truly inhabit unchanged by what we heard, and nothing comparable to its conclusiveness in the life we have to live.

This, then, is what I take to be the problem with our talking as if music moved. Talking that way fails to distinguish our experience of music from a

dream, in which nothing we experience really happens.

II The importance of the problem.

I also take this problem to be important. To explain why, I discuss this problem again, but now as a problem not simply with our experience of music, but more generally, with our experience of the world. For we talk not just as if music moved, but as if anything moved. Yet this too involves a kind of nonsense, known since the time of Parmenides. And it proves to be the same kind of nonsense we encountered in the movement of music.

To see this, recall my earlier analysis of why there really isn't a space for a melody to move in. For the melody, in this respect, is temporal rather than spatial. It is composed of the places it moves between, and can only be what it is by becoming so. So there isn't a space, strictly speaking, for the melody to move in, with the continuity or identity of truly spatial things, like our hand in following that melody.

But while our hand may be spatial in this respect, the motion of our hand is temporal, just like the melody. In a sense, it too is composed of the places moved between, and can only be what it is by becoming so. But this implies, on the earlier analysis, that there isn't really a space for our hand to move in, or for anything to move in. There is only a space for it to be contained in, and to occupy, over the course of its motion, at every place composing that motion. Space, in other words, contains only the path of the motion, not the motion itself.

But here again is perhaps a stronger way to put the nonsense. If there really were a space for our hand to move in, then there would be a hand to see, in the space where we see it move. But there isn't. All we see is the motion being made from place to unmoving place, by something that occupies each such place. We see nothing further, to which we might attribute the motion between places, rather than just the occupancy of those places. So we see motion, but nothing making the motion. Yet how, in that case, could there be any motion to see? And what could be making it?

One answer, the kind Zeno might give, is that there isn't any motion to see.[9] When we think we see something move, all we really see is that it occupies different places at different times. And the appearance of motion in this, is something like the appearance of motion on a movie screen, or in a flip book, from a succession of images, each of a single place and time, that happens too rapidly for us to detect. But this first answer leads to a second answer, found for example in calculus, where there is a motion to see.[10] When we see something move on this answer, all we see, again, is that something occupies

[9]For further discussion of Zeno's arguments against motion, see Aristotle's *Physics* Book VI, Chapters 2 and 9, and Book VIII, Chapter 8; and Lecture VI, "The Problem of Infinity Considered Historically," in Bertrand Russell's *Our Knowledge of the External World.*

[10]For a further discussion of this answer, see Lecture V, "The Theory of Continuity," and Lecture VII, "The Positive Theory of Infinity," in Russell's *Our Knowledge of the External World.*

different places at different times. Still, it can be proved that there are more such places than we could ever arrange from one to the next. The places are many enough, that is, to form a real continuum, beyond the mere appearance of one. And this makes for a real continuity in the motion we see, giving it all the reality it needs.

There is a sense, however, in which this second answer misses the point. For the continuity in question belongs to the motion's path rather than to the motion itself. And the way this path is proved continuous—for example, in Dedekind—is by analogy to a line, undivided by time, where every place upon it is present at once.[11] But the proper analogy for the motion itself would seem to be a line divided by time, where only one place upon it is ever present at once—the point right now, so to speak. But how could such a line prove continuous, if it is made of only one point at a time?

The second answer so leads to a third answer, more philosophical than mathematical, and found, for example, in Bergson.[12] This answer is distinguished from the first answer in taking the motion we see to be real, and from the second answer in taking this reality to involve more than just the continuity of the motion's path. But the promise of this answer comes at a price: for it embraces the nonsense that makes the problem a problem. On this answer, that is, there is nothing to see, in the space where we see anything move. And this is because the space where we see anything move, is the space where the motion belongs to us, rather than to anything we might see outside us. So there is a motion to see, when we are the ones making it.

On this answer, in other words, motion occurs in the space we inhabit, rather than in the space we observe. In the space we observe, we see only the continuous path of a motion, occupied at every place by the thing that moves. But in the space we inhabit, we see the motion itself, which is not simply continuous, but indivisible. The motion in this indivisible sense stretches from the beginning of its path to the end in a single bound, as if the entire path were a single place for the moving thing to occupy. And we know this indivisibility when moving ourselves. For in that case, we face the end of our motion at the beginning of it, and reach the end as a goal, heedless of any places on the way—just like in the movement of a melody. And the path we trace in reaching that goal can be divided only by our changing the goal, in a motion now different from what it was, but again indivisible. This too is like the movement in a melody; for only further notes can divide the distance from note to note, but thereby produce a new melody out of the old one, showing the movement between notes in any one melody to be indivisible.

But what should we make of this answer? It makes the same appeal to our inhabited sense of space that we encountered before in making sense of

[11] Dedekind draws the analogy in Chapters II and III of his *Continuity and Irrational Numbers*.

[12] See, for example, Bergson's lecture "The Perception of Change" in the collection *The Creative Mind*. There Bergson even connects his account of motion generally to the movement in a melody. Zuckerkandl follows Bergson's lead in his own account of music's movement in *Sound and Symbol*.

the movement in music, only now to make sense of motion as such. But does it have the same problem? That is, can we show, or know, that we aren't dreaming when we see anything move?

The question put this generally might seem absurd. After all, to suppose we were dreaming when seeing anything move, would mean suspecting something illusory about our inhabitance of the world. But there is reason for this suspicion. And it explains why a question like "Are we dreaming right now?" has been raised in the history of thought—for example, by Descartes.[13] For while we might not be dreaming right now, there is arguably nothing in our inhabitance of the world to prove it. And we lack this proof, so the argument goes, because we inhabit the world. If we had the proof, we would no longer inhabit it, but merely observe it.

To see why this argument is worth taking seriously, consider, first, a striking fact about optical illusions, such as the look of a stick half-plunged in water, and seemingly half-bent by it. Our knowing the stick stays straight does nothing to dispel the illusion. But why? One answer is that there is nothing in the illusion to tell us it's an illusion, and if there were, then the illusion wouldn't be an illusion. We so remain in the illusion, or inhabit it, as a matter of perception, even if we stand outside the illusion, or merely observe it, as a matter of knowledge.

This could also be said of dreams, taking "dreams" in the ordinary sense. For our dreams so often contain implausible or even impossible events, not to mention the sense in which all its events, once we wake up, prove unreal. So why did they seem so real in the dream? Again, one answer is that there is nothing in the dream, no matter how implausible or impossible, to tell us we are dreaming, and if there were, then we wouldn't be dreaming. Not being able to tell is what it means to inhabit the dream. And it is only when something in the dream wakes us up from it, and puts us outside the dream to observe it, that we can know it for the dream that it is.

We can give this same answer to the question of why our experience of music would still seem so real, even if we were convinced—say, by my lecture tonight—that it was only a dream. For there is nothing in the music to tell us so, even if there is some account of the music to tell us so. And this is what it means to inhabit the music, past the point of any account we might give of it.

This answer, then, points to perhaps the most decisive, if negative, feature of our inhabitance of the world. There is nothing we might encounter in the world—motion, for example—to tell us the encounter is illusory. For if there were, then we wouldn't be having the encounter. So for all we know, we might be dreaming. Arguing against this prospect, perhaps, is our sense that this is the world, not just some world. But this sense can never be decisive. For the cost of inhabiting the world, on this answer, is to be past the point of telling whether it involves any illusions.

[13] Descartes raises this question in his *First Meditation*. It is also discussed in Plato's *Theaetetus*, 158b-d; and mentioned, but also dismissed, in Aristotle's *Metaphysics*, 1011a6.

This, then, is what I take to be the importance of the problem with our talking as if music moved. For it illustrates a more general problem, with our talking as if anything moved. Talking that way fails to distinguish our experience of the world from a dream, in which nothing we experience really happens.

III Two solutions to the problem.

I conclude my lecture with two solutions to this problem, in the attempt to deepen our sense of it. They are incompatible solutions, since they give contrary answers, in effect, to the question "Are we dreaming right now?"

In the first solution, the answer to this question is yes, we are dreaming right now. And the solution, then, is to make no appeal to the dream, when we try to understand the world. We try to understand the world, in other words, by making no appeal to the sense it makes only from a place of inhabitance—or even better, by challenging that sense.

Thus described, the solution may sound unpromising; for how can we avoid this appeal? Still, this is one way to characterize how we have tried to understand the world since Descartes. And we might call this first solution the solution of science. A central example of it is the way we try to understand motion, by means of calculus rather than introspection. But more generally, the terms in which we explain the world, as a matter of observation, are not the terms in which we encounter the world, as a matter of inhabitance—and in many cases, such as quantum physics, could never be the terms of such an encounter. Yet we take this discrepancy as a sign that the world has been explained rather than erased. And we look for an explanation of our encounter with music, not in Beethoven's *Eroica*, but rather in the mathematician's account of numerical ratios, or the physicist's account of wave phenomena, or the neuroscientist's account of brain patterns, or the biologist's account of evolutionary adaptations, or even the Nietzschean's account of a sickness in the soul. Despite the fact we don't encounter music as music in such terms, we credit these accounts as attempts to explain that encounter. Which suggests that we find nothing self-justifying in the encounter itself; nothing there to tell us what's really going on—as if the encounter were just a dream. —Or, according to this first solution to that problem, as if the encounter were what required explanation, rather than what provided explanation.

This brings me to the second solution. My sketch of it will remind many of you of Heidegger.[14] But I call it the solution of philosophy. For it embraces our inhabitance of the world in a way that I suspect always distinguishes a philosophic understanding of the world from a scientific one. In this solution, then, the answer to the question "Are we dreaming right now?" is no. There may be nothing to tell us this—true—but this doesn't mean we might be dreaming; it rather means we aren't.

[14]For a further account of Heidegger's actual answer, see Part One, Division One, Chapters II and III of his *Being and Time*.

This solution may already sound unpromising. After all, there may be nothing in a dream to tell us we are dreaming, but we are. On this solution, however, it turns out we aren't, at least as a matter of inhabitance. For any space of inhabitance is real, because it can be inhabited. And this means we are always surrounded by beings, and always face them from a being of our own, whether we find ourselves in a dream, in a symphony, or in the world that contains them. True, we have reason to think otherwise, in thinking that these smaller spaces are contained in a larger space that proves their own totality to be illusory. But this assumes that any space of inhabitance lies in space. Yet it is only a space of observation, on this solution, that lies in space. Any space of inhabitance lies instead in time.

Perhaps this solution now sounds even more unpromising. For how can there be any room in time for a space of inhabitance, when the only part of time that ever exists is 'right now', that instant between the no-longer and not-yet at the seeming size of a point? Still, this very fact about time's evanescence turns the illusion of motion into an object of wonder, if not astonishment. For according to our earlier analysis, motion is what it is, only in time. But if time exists only at a point, then how could we ever encounter a temporal whole like motion—even in the form of an illusion? How could we even dream that we hear the rise and fall of a melody, or see the rise and fall of our hand in following it?

It is in offering an answer to this question, that the solution starts to look more promising. And the answer is this. 'Right now' may be no larger than a point. But this is still room enough to establish a space of inhabitance, in providing a center of orientation. And this is the center from which the not-yet lies ahead of us, the no-longer lies behind us, and the right-now is always with us. And in being always at this center, we are always in the world, even when we find ourselves in a dream, or a symphony. We inhabit even these smaller spaces from the same center of orientation, where the not-yet is ahead of us as a matter of expectation, the no-longer is behind us as a matter of memory, and the right-now is always with us as a matter of attention. And in these terms, temporal terms, any space of observation becomes a place of inhabitance.

It is also in these temporal terms that any place of inhabitance is real rather than illusory. For this center of orientation, despite being a mere point in time, comprehends a totality of time for each of us: from a beginning in birth that no one else can share, to an end in death that no one else can know, in a span of time without remainder. This is the center, then, from which the not-yet ahead of us is a future to face; the no-longer behind us is a past to bear; and the right-now always with us is a present at stake. So in being always at this center, at a point of totality, we are always in a world that is real, even when we find ourselves in a dream or symphony. We inhabit even these smaller spaces from the same center of orientation, with a future to face, a past to bear, and a present at stake. This is why we can be released from their spell, without having recovered from it. In this sense, again temporal rather than spatial, we are not carried from the world by a dream or symphony, but concentrated in it. And if our inhabitance of the world is temporal rather than spatial, then

we are surrounded by events rather than things, to which we are open rather than closed, making dreams and symphonies possible, not impossible.

Or to summarize this second solution to the problem in conclusion: we can only talk as if anything moved, much less as if music moved, insofar as the space we inhabit in talking that way, makes complete sense of what we say, without any room for nonsense. And this is the space we inhabit right now: the space made possible by time.