CAN THERE BE AN END TO MELODY?

In a letter to the *Pioneer* magazine Senya Haikin asks: "Will there come a time when all melodies, all harmonious combinations of sounds will come to an end?"

So much music is being composed, and has been for such a long time, that one might indeed think that it will soon be impossible to invent any new tunes and we shall have to repeat the old ones.

Now let us see whether the range of possible sound combinations is really so limited. We shall take chess by way of illustration, since I am sure that most of the readers of the *Pioneer* are familiar with the game. I am very fond of it myself. Now, I once knew a chess player who got the idea of writing a book which would give the answer to any chess problem. Let us see what came of it. White can open the game with any of his eight pawns, moving them up on one or two squares, or either of his two knights, each of which can make two moves. This makes a total of 20 moves to choose from. Black can reply with one of an equal number of moves. If you multiply 20 by 20 you get 400 variants by White's second move, and by Black's second move the number already amounts to 8,000. For the fourth move of the White there will be about 60 million variants, yet the game has barely started. And so the idea of writing the above book had to be dropped.

In music we begin a tune with one or another note. For the second note we can choose any of those lying within the limits of the octaves going up or the octaves going down. Both octaves have 12 notes. If we add to this the note with which we have begun (for in a melody we can repeat one and the same note twice), we have already 25 variants for the second note of our tune, and 25 multiplied by 25 for the third, i.e., 625 variants.

Now imagine a short tune of say eight notes. How many different variants does that offer us? I will tell you: 25 multiplied by 25 six times or 25^7. How much does that come to? Take a pencil and a slip of paper and work out the sum for yourself. The result, I believe, is something like 6,000 million possibilities. That does not mean that one can make six thousand million tunes out of these eight notes. But there exist six thousand million combinations out of which the composer might choose those that would be melodious.

But that is not all, Notes have different lengths and the

rhythm changes the melody completely. Besides this, harmony, counterpoint, accompaniment also change the character of the melody. Hence the six thousand million can be multiplied still more for all the possibilities to be exhausted.

The interesting thing is that the human ear is constantly changing. The music people enjoyed hundreds of years ago does not appeal to us today; and on the contrary, melodies which were not considered melodies at all once, are now accepted, several centuries later, as beautiful and interesting.

I daresay many readers of the *Pioneer* have seen the film *Alexander Nevsky*. I wrote the musical accompaniment for that picture. Those who saw the film will remember that the Teutonic knights sing Catholic psalms as they march into battle. Since the action takes place in the thirteenth century I wanted to know what sort of music the Catholics sang at that time. In the library of the Moscow Conservatoire I found a book in which Catholic church music of past centuries had been collected. And what did I find? The music was so completely alien to our ear that I had to give up the idea of using it in the film. No doubt the crusaders going into battle sang it with a sort of frenzy, yet to our ear it sounded cold and dull. I had to discard it and compose something better suited to our modern conception.

On the other hand, combinations of sounds once considered unmelodious turned out later to be beautiful melodies, as was the case with many great classical composers. When Beethoven composed his melodies they were so different from the music of his time that many of his contemporaries rejected them. "That deaf old man," they said, "cannot hear what he is composing." Yet Beethoven correctly divined the future and today, a hundred years after his death, his melodies delight us. The same applies to Wagner, Liszt and many other great musicians. Consequently, combinations of notes formerly rejected as unmelodious may in future prove to be splendid music.

There is one other way of extending musical possibilities. The scale we now use did not always exist in the present form, it was Bach who introduced it some 200 years ago. Before his time the scale was somewhat different and had a narrower range of sounds. Latterly musicians have often wondered whether it is not possible to extend the existing scale still further. In this respect the work of the Soviet scientist Ogolevets who proposes dividing the octave into 17 instead of 12 parts is of

interest. He arrived at this idea after a long and careful study of our scale and some of the scales used by Oriental peoples. He was given special funds with which to construct a harmonium and later a piano with a 17-note octave. For this each black note was divided in two so that the performer could learn to play the new instrument with less difficulty.

It is still hard to say whether Ogolevets' invention will take root, but those who have played his instrument say that it gives combinations of sounds that are far more interesting than the 12-tone scale now in general use. If this instrument does come into general use it should not be thought that it will oust the existing piano, because far too much fine music has been written for the piano as we know it for anyone to wish to discard it. But both instruments can co-exist, and then what a tremendous field for new melodies there would be.[12]

So we need not be afraid that there will come a time when all melody will have been exhausted and we shall be obliged to repeat old tunes.

The future is full of such awesome possibilities. It makes one dizzy to think of them. For instance, there will come a time when the sun will cease to shine, when the earth will cool down and then, oh horrors! hosts of dead planets will whirl around the dark star that was once the sun. . . .

Why should we worry about what will happen millions of years from now? Better let us learn to appreciate really good music. And what is good music? Not cheap little tunes which sound nice when you first hear them but which you soon get tired of, but melodies that have their roots in classical music and in folk songs. But why is classical and folk music considered good music? Because that music has stood the test of time, it has lived for tens and even hundreds of years and still gives us pleasure.

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