IN THEIR OWN WORDS

Johannes Boen, *The Art of Music (Ars musicae)* (c1350),
and Johannes Grocheio, *On Music* (c1300)

There are times in the history of music when composers, separated by a great temporal distance, hit upon very similar musical processes. The type of total rhythmic control evident in the tenor of a fourteenth-century isorhythmic motet of Philippe de Vitry can also be found in certain early twentieth-century pieces by Anton Webern, for example. Both Vitry in his isorhythmic motets and Webern in his serial compositions established a sequence of pitch and rhythmic durations determined *a priori* and that sound again and again in the course of the work. During the fourteenth century the isorhythmic motet became more complex. In the early pieces of Vitry the melody (*color*) and the rhythm (*talea*) of the tenor coincide at regular spans and reflect simple ratios (two statements of the *talia* for each one of the *color*, for example). As the century proceeds, however, the relationship between the length of the *talia* and *color* becomes more complex, involving ratios such as 4:3 or 7:4. In these works, typified by the late motets of Guillaume de Machaut, a rhythmic dissonance develops as the *talia* and *color*, which start together, get progressively “out of phase,” only to come back into phase at point of congruence.

In a similar way, the modern composer Steve Reich created *Piano Phase* (1967) for two pianos. In this piece, two pianos first repeat a twelve-note melody (which might be called a *color*) at the unison. Then, as one part maintains the melody with exact precision, the other speeds up and gets out of phase with the other, only to come back gradually into phrase. This going out of and into phase occurs three times, with cycles two and three using shorter versions of the melody. Isorhythmic motets, too, often have compressed cycles—the rhythmic values being made shorter—toward the end.

Oddly, this same process of moving in and out of phase occurs in the natural world as well. Well-known to biologists and psychologists is the phenomenon of the “frog chorus” in which a leader bull frog and a chorus start croaking at a temporal distance that gradually becomes shorter and shorter until the chorus gets “in phase” with the leader—then utter silence, until the bull frog starts the process again. To read an article on the subject, consult “Frog Communication,” by Peter Narins, available at http://www.acoustics.org/press/rsa9501.html.

The following excerpts discuss the construction of the tenor in fourteenth-century isorhythmic motets. The first brief passage—relating to the importance of the tenor—comes from the treatise of French music theorist Johannes Grocheio, his *De musica* of early in the century.

The tenor is the part above which all others are founded, just as parts of a house or a building are built above a foundation. The tenor regulates them and gives durational quantity to them, just as the bone is the structure of all the limbs.

The second, longer passage was written mid-century by the Dutch theorist Johannes Boen. It states how a composer should choose a melody to serve as the *color* of an isorhythmic motet and then should parse it into sections, to each of which can be assigned a rhythmic sequence (*talea*) that is repeated in each section of the *color*. Very clearly, we are not working with improviser-composers here but composers in the more modern sense of individuals who work things out carefully in advance. Notice in particular the last sentence of this passage, in which theorist Boen states
that it would be more effective to analyze the isorhythmic structure visually than to perceive it aurally. This casual remark is of enormous importance in the history of music because it tacitly acknowledges a shift in perspective: from music as an aurally perceived art recorded only in memory to a visual, written document. Indeed, unlike in Reich’s *Piano Phase*, the workings of the underlying repeating rhythms in an isorhythmic motet are hardly perceptible.

Because we have mentioned *color*, let us digress momentarily to discuss how you choose a *color* and how it should be shaped... It is done in this way: First you look for a phrase that has as many notes as you want to have in the *color*. For example, let’s take a phrase of thirty notes because you can divide it a number of ways. Divide it, for example, into five equal parts, and thus each part will have six notes, for six times five equals thirty. Therefore, set out your first section so that it has six notes, and similarly you place six notes in the second section exactly [in the same rhythm] as they are in the first part. And so the melody [of the tenor] will be held together by the *color*. This was the technique used in the motet *Virtutibus* [Impudenter circuivi/Virtutibus laudabilis by Philippe de Vitry]. For the composer took the first thirty pitches and divided them into five sections, and each part is identical to the others because after the sixth note the seventh commences exactly as had the first, and so on the others. But because this motet would have been far too short with only thirty notes in the tenor, therefore he added another thirty, which made half the value of the first thirty, and in these thirty he used the same *color* as before [in this motet Vitry repeats his thirty-note *color* now using diminution—halving the note values]. And so in the motet *Flos virginum* the composer [actor] wasn’t content with the number thirty, so he doubled the length to sixty. The number sixty can be cut into three parts, thereby obtaining twenty notes in each. He placed the first twenty so well that he achieved by a similar distribution a beautiful *color* in the following two parts. [In this motet, *Apta caro/Flos virginum/Alma redemptoris mater* from the end of the fourteenth century, the anonymous composer has fashioned a *color* of thirty pitches, which he repeats, and he divides these sixty notes into three equal *talea*; in other words, *color* and *talea* are out of phase, as discussed above]

Because, however, the *color* can more easily be seen than heard, it would be better not to expend too much intellectual curiosity on the matter [the structure of the tenor] because it would detract from the melody and force the eye to correct the ear with regard to what it heard.