Euclid - Division of a Monochord

Preliminaries

1. If there should be rest and absence of motion, there would be silence. If there is silence and nothing moves, nothing would be heard. If, therefore, anything is to be heard, it is necessary that there first be pulsation and motion.

2. So, since all notes arise from some existing pulsation, and pulsation is impossible unless first arising from motion—and, of motions, there are the more frequent and the intermittent; and the more frequent make higher notes, the intermittent, lower notes—it is necessary that there be on the one hand higher notes since they are compounded of more frequent and abundant motions, and on the other hand lower notes, since they are compounded of intermittent and fewer motions.

3. So those higher than proper are loosened by subtracting motion and reach the proper point, and those lower are tightened by adding motion and reach the proper point.

4. Therefore, it is necessary to say that notes are compounded of parts, since by addition and subtraction they reach the proper point.

5. For as all things compounded from parts are ordered one to another in numerical proportion, so also is it necessary that notes be ordered to one another in numerical proportion.

6. For as with numbers there are some which are ordered in multiple ratios and others in superparticular and others in superpartient, so also is it necessary that notes be ordered one to another in such ratios.

7. Of these, the multiple and the superparticular are ordered one to another by one term: consonant. So we also recognize concerning notes that some are consonant and some are dissonant; and that consonant notes together make a single blend, and dissonant notes do not.

8. As this is the case, it is reasonable that two consonant notes, since they both are made into a single blend of sound, are—when ordered numerically one to another by one term—either multiple or superparticular.

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