

whereas if we increase the force of the blow by striking the body with double the weight, this will produce a tone twice as loud as the former. From hence we may infer, that all bodies give a louder and graver tone; not in proportion to the number of times they are struck, but to the force that strikes them. And if this be so, those philosophers who make the tone of a sonorous body, a bell, or the string of an harpsichord, for instance, to depend upon the number only of its vibrations, and not the force, have mistaken what is only an effect for a cause. A bell, or an elastic string, can only be considered as a drum beaten; and the frequency of the blows can make no alteration whatsoever in the tone. The largest bells, and the longest and thickest strings, have the most forcible vibrations; and, therefore, their tones will be more loud and more grave in proportion to the size and weight of the body with which they are struck.

If we strike a body incapable of vibration with a double force, or a double mass of matter, it will produce a sound doubly grave. Music has been said, by the ancients, to have been first invented from the blows of different hammers on an anvil. Suppose then we strike