

adjusted them to each other as we find them adjusted, in order that birds might communicate by song, that men might speak and hear, and that language might play its extraordinary part in its operation upon men's thoughts, actions, institutions, and fortunes?

The vibrations of an elastic fluid like the air, and their properties, follow from the laws of motion; and whether or not these laws of the motion of fluids might in reality have been other than they are, they appear to us inseparably connected with the existence of matter, and as much a thing of necessity as we can conceive any thing in the universe to be. The propagation of such vibrations, therefore, and their properties, we may at present allow to be a necessary part of the constitution of the atmosphere. But what is it that makes these vibrations become sound? How is it that they produce such an effect on our senses, and, through those, on our minds? The vibrations of the air seem to be of themselves no more fitted to produce sound, than to produce smell. We know that such vibrations do not universally produce sound, but only between certain limits. When the vibrations are fewer than eighty in a second, they are perceived as separate throbs, and not as a continued sound; and there is a certain limit of rapidity, beyond which the vibrations become inaudible. This limit is different to different ears, and we are thus assured by one person's ear that there are vibrations, though to that of another they do not produce sound. How was the human ear adapted so that its perception of vibrations as sounds should fall within these limits?—the very limits within which the vibrations fall, which it most concerns us to perceive: those of the human voice for instance? How nicely are the organs adjusted with regard to the most minute mechanical motions of the elements?