EPIGRAPH

Even though it may be possible to analyze the complex forms of brain waves into a number of different sine-wave frequencies, this may lead only to what might be termed a "Fourier fallacy," if one assumes ad hoc that all of the necessary frequencies actually occur as periodic phenomena in cell groups within the brain. However, frequency analysis, when related at all times to the original recording, is proving to be a useful adjunct to the electroencephalographer's armamentarium, if and when the various spectra thus obtained can receive adequate and valid interpretation.

Herbert H. Jasper. Charting the Sea of Brain Waves. *Science*, 1948.

We note, that for there to be any power in the alpha band (as seen in a spectral analysis) there must be something oscillating in that frequency band to generate that section of the 1/f frequency spectrum. That one does not see an oscillation “by eye” in the 10 Hz frequency range or a bump in the frequency spectrum, but that power exists, implies that the oscillator is heavily damped (overdamped as opposed to underdamped).

Anonymous cognitive neuroscientist, 2018