



Review: Hearing range

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Problem 15: Hearing range

There is a considerable variation in the range of frequencies that can be heard by humans and other mammals. Suggest a problem to investigate the lowest and highest audible frequencies for specific species of societal groups.



Overview

- Theory
- Experiment
- Results
- Agreement between theory and experiment
- Conclusions

Green = very good

Yellow = average

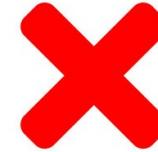
Red = needs improvement



Reporter



1. Made an explanation of the anatomy of human ear
2. Main parameters of sound discussed
3. Methods provided for determining the perception
4. Other animals tested

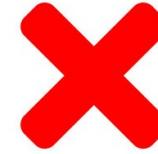


1. Unclear criteria for measuring the degree of perception of sound
2. Unclear definition of the nature of sound (i.e. redistribution of pressure in a medium)
3. Decibels - relative scale for intensity of sound, not absolute
4. Used a narrow range of frequencies (2)
5. No specification for how the results for other animals were obtained
6. Sample size not large enough
7. Only used people of the same age

Opponent



1. Mentioned the age as a parameter for the problem
2. Noted the absence of enough data in the reporter's experiment
3. Deep understanding of the problem



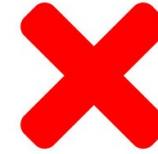
1. Did not cover points from the entire report of the reporter
2. Said the hypothesis was missing
3. Asked too theoretical questions that were not based on the fundamental of the observed problem and the experiment of the reporter
4. Couldn't form a good discussion (just question-answer)
5. Used own methods for comparison

DISCUSSIO

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1. Opponent asked for the structure of the ear in different animals
2. Discussion about the effect of age on the hearing range



1. Didn't elaborate on one of the main points of the task - comparison between humans and other animals
2. Presented elements from their own solution

Missed points

How do you ensure that the animals didn't react to other stimulus rather than the sound produced by the tuning fork?

Didn't determine a trend in human's age and hearing range.

Is the environment where the test subject lives an important factor to their hearing? What long-term factors can affect it's hearing range?



Clash

Point of discussion: Sample size

Reporter: 5 people are sufficient

Opponent: at least 25 people



Thank you!