

HEARING



The **Human +** The Future of Our Senses *Hearing* episode looks at what our sense of hearing is capable of and how its capacities interact with the brain.



TOPIC

1

Organic adaptations

Hearing is the sense that sends its messages to the brain the fastest and, therefore, the one we feel we have the least control over. You cannot blink to shut out sound—hearing does not turn off even when we are asleep. Clarisse's hyperacusis is stressful, as she lives in a heavily populated city where she cannot avoid traffic and the onslaught of violent noise. And yet, when we meet Ethan, we learn that humans can adapt their hearing to perceive space through echolocation. When we adapt using our sense of hearing, we become superhuman.

DISCUSSION QUESTIONS

Noise pollution is a problem for everyone, not just those with hyperacusis, especially since the rise of industrialism. Where would people with hyperacusis be able to use their heightened senses more comfortably?

People respond emotionally to sound and especially to a lack of sound, to silence. In what circumstances would it be useful for humans to fear silence? Why is it an emotional experience to hear nothing?

What does it mean for our society if we can learn and improve our abilities while we sleep? Could teachers assign homework to be done while students are asleep? Could employers assign enhanced memorizations?

Echolocation is interpreted in the “vision” part of the brain. What does it mean that the brain uses hearing as sight? What does it say about human sensoria?

EXPLORE

Other stories about augmented human senses...

Noise pollution and health links

<https://www.newyorker.com/magazine/2019/05/13/is-noise-pollution-the-next-big-public-health-crisis>

Singing and memory

<https://www.medicalnewstoday.com/articles/303941.php#1>

**“IT’S WHAT HIS BRAIN
DOES WITH THE
INCOMING INFORMATION
THAT’S DIFFERENT”**

TOPIC

2

Synthetic adaptations

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In addition to humans adapting their hearing on their own, scientists are researching ways to adapt hearing for hard-of-hearing communities. These technical innovations could improve every person's sense of hearing. In the episode, Jeff has to relearn how to hear with his cochlear implant. He calls this his "new normal," because it is not just that the implant hears for him, but that his brain must learn to integrate it as another kind of sensory input. His story shows us how humans absorb inorganic technologies, making it possible to be both body and machine.

DISCUSSION QUESTIONS

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Jeff's adaptation to his cochlear implant takes only two months. What does his quick adaptation to the implant say about the human brain?

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Sounds enrich our lives. They alter moods and allow us to connect. What kinds of sounds are most important for human connection?

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Some hard-of-hearing communities worry about the loss of their culture through cochlear implants. What kinds of communication does being hard-of-hearing allow? What would happen if no one was hard-of-hearing ever again?

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We improve our sight with glasses, but improving our hearing with technologies is more stigmatized. Why do you think that is?

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What does it say about our concept of ourselves as human beings when technology can enhance our abilities? Do these technological enhancements bring us closer to being a cyborg? What do the connotations of that idea mean to you? What does it say about what is "natural" or "organic" and what is "technological" or "synthetic"?

EXPLORE

Other stories about augmented human senses...

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Children make more gains with cochlear implants

<https://www.asha.org/public/hearing/Tuning-In-With-a-Cochlear-Implant/>

Tinnitus, another hearing issue, and what it sounds like

<https://www.chs.ca/tinnitus-and-hyperacusis>

<https://www.ata.org/understanding-facts/symptoms>

New technologies for hearing aids

<https://www.healthyhearing.com/help/hearing-aids/technology>

Cochlear implants and ethical considerations

<https://www.cbsnews.com/news/the-cochlear-implant-controversy/>

What a cochlear implant sounds like

<https://www.youtube.com/watch?v=lzgQrHFDNLE>

Guess what?

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Did you know that the inner ear is responsible for both hearing and balance? So a disease that affects one system can also have an impact on the other. For example, Menière's disease is characterized by low frequency hearing loss and dizziness.

<https://www.signiausa.com/blog/fun-facts-about-hearing-1/>



TOPIC 3

GROUP DISCUSSION

Sonic capacities

How would you want to improve your hearing and why?

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How does noise pollution affect you?



HUMAN +

HUMAN + The Future of Our Senses
Impact Campaign

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