No One Hears It Like You

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Have you ever considered what it takes for the acoustic part of our mind to hear the individual instruments and voices in a song.

It could be live or on vinyl or even an unnatural digital source, it does not matter, there is still a bizarrely complex process that happens and I think it is fair to say it would be a tad different for each of us.

A single source (single driver speaker, instrument, or voice) can only create one sound wave at a time. So the sound wave that leaves a source carrying a complex mix of notes & tones must represent all the individual sounds. On route that wave may be manipulated or decayed somewhat depending on distance and environment (walls, furniture etc). In theory we should just hear one big mono toned thump but instead we hear several things at once.

Even in a very simple example with a bass drum and a bass guitar both hitting the beat at the exact time. There is only one sound wave to carry it to our ears (or in a live performance there are two waves but they arrive at the same time so they may have even become a single larger wave by the time it arrives at our ears), yet we hear the two instruments (drum & bass) overlaid but separate.

The wave hits our ears which absorbs it in extremely granular sections. As the wave enters the ear the lower tones are detected by the larger outer areas while higher frequencies get further into the small inner end of the ear canal. This way the ear helps break the big wave into bits and pieces. The ear sends signals to the brain based on the strength (loudness) and how far into the ear these now bits of vibrations went (frequency).

Now the acoustic part of our brain somehow figures out, based on what is now electrical impulses, what source (instrument) should make what sounds. That interpretation is presented internally in the form of musical sounds from familiar instruments. In fact, despite how it seems, particularly in a stereo, we think we hear sound in our ears but the sound is not really there it is just something presented to the mind much like a internal thought.

My premise is that this process would virtually never be identical in any two people. There are several factors like is the source identical, are they in the identical location, ears size & shape, condition of ears sensors to detect vibrations, bone density, head shape, and of course the internal workings, processes and interpretive function of ones mind (which I doubt could ever be objectively compared).

Whether or not the music is amazing, the mind is spectacular in presenting it to us.

Note: This is just my take on how this probably works. I think it is correct by if not, feel free to correct me although I may not hear you right :)

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