

# On Tinnitus

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**hear·ing** *n.* **1.** The sense by which sound is perceived; the capacity to hear. **2.** The range of audibility; ear-shot. **3.** An opportunity to be heard. **4. Law.** **a.** A preliminary examination of an accused person. **b.** The trial of an equity case. **5.** A session, as of an investigatory committee, at which testimony is taken from witnesses.

*The American Heritage Dictionary: Second College Edition 1985*

**tin-ni-tus** *n.* A sound in the ears, such as buzzing, ringing, or whistling, caused by a defect in the auditory nerve. [Lat. < p.part of *tinnire*, to ring.]

*The American Heritage Dictionary: Second College Edition 1985*

'Tinnitus is the name given to hearing ringing or buzzing noises that do not actually exist. It is not really one single problem, but can be the result of several different problems. It can be caused by outer ear problems, such as earwax stuck in the ear canal, and by middle ear problems, such as infections. Most commonly, though, it arises as a result of damage to the cochlea. Although some drugs may help a little, tinnitus is difficult to treat. Some patients wear a "masking device", a small piece of equipment that fits into the ear like a hearing aid. This produces a constant noise that takes the patient's attention away from the irritating tinnitus sounds.' - Carol Ballard, *Ears: Injury, Illness and Health* (2009), p19

'There are two main types of tinnitus: *subjective tinnitus* and *objective tinnitus*. Tinnitus is usually subjective, meaning that others cannot hear it. [...] In very rare cases tinnitus can be heard by someone else using a stethoscope [...]. In such cases it is objective tinnitus...'

Wikipedia

'Chronic tinnitus is often accompanied by a hearing impairment, but it is still unknown whether hearing loss can actually cause tinnitus. The association between the pitch of the tinnitus sensation and the audiogram edge in patients with high-frequency hearing loss suggests a functional relation, but a large fraction of patients with hearing loss does not present symptoms of tinnitus. We therefore investigated how the occurrence of tinnitus is related to the shape of the audiogram. [...] Our results suggest that the occurrence of tinnitus is promoted by a steep audiogram slope. A steep slope leads to abrupt discontinuities in the activity along the tonotopic axis of the auditory system, which could be misinterpreted as sound.'

Course of hearing loss and occurrence of tinnitus.

König, O; Schaette, R; Kempster, R; Gross, M. 2006

'But what is the sound of the self as a neuronal network? The proliferation of brain scan technology and targeted psychotropic drugs in recent decades has encouraged a neurological understanding of self, one that has been uneasily embraced by laypeople while never reconciled with conflicting beliefs in a soul or an underlying, inner self. [11] In the screech of tinnitus, the body displaces the privileged voice and undermines the coherence of the self the voice represents, blurring Chion's categories of objective and subjective internal sound. The raw affect of tinnitus has gained cinematic salience in parallel with film and other humanities scholars' increased interest in affect

theory, flat ontology, and other affronts to subjectivity as (we think) we've known it.'  
THE TINNITUS TROPE: ACOUSTIC TRAUMA IN NARRATIVE FILM  
Mack Hagood

216-217: Henri Michaux: (Shade-haunted Space) L'espace aux ombres:  
'Space, but you cannot even conceive the horrible inside-outside  
that real space is.

Certain (shades) especially, girding their loins one last time,  
make an effort to "exist as a single unity".  
But they rue the day. I met one of them.

Destroyed by punishment, it was reduced to a noise, a thunderous noise.  
An immense world still heard it, but it no longer existed, having become simply and solely a noise,  
which was to rumble on for centuries longer, but was fated to die out *completely*, as though it has  
never existed.'

### **Reader 1:**

It was about eight years ago. I went to a gig in Oxford – I think it was near the time of a friend's birthday. The gig itself was rather good but throughout it I felt that the venue seemed too small, too enclosed for the volume the speakers were putting out. Above and around the sound of the band I could hear what sounded like a mash-up of all the high frequencies of the music echoing and rebounding off all the walls and surfaces in the venue.

### **Reader 2:**

When I left the venue my ears were ringing. I had had it before after hearing loud music, and initially I thought this bout of ringing was no different and would be just as temporary. It was only when my friends asked why I was shouting everything that I realised just how much of my hearing was being blocked by the ringing. Staying at a friend's house on the couch, I laid awake most of the night unable to get to sleep because of how loud the ringing sounded over what should have been silence.

The ringing eased off considerably over the course of the next day but remained quite noticeable in all but fairly loud places. Between that time and this I had a job in a very noisy environment which seems to have aggravated the condition, making the rings a little louder and more varied in tone and texture.

### **Reader 3:**

It took a while to get used to the increased noise whenever I would otherwise have expected silence from a situation. For some time it was difficult to get to sleep quickly because of the 'sounds'. I had never been one for loud or raucous places – and I had never been much of a party animal – but I found that even in moderately noisy pubs I was unable to join in group conversations: although the tinnitus itself didn't obscure too much real sound, the accompanying hearing damage meant that unless someone was facing me more or less directly, I simply couldn't hear what they were saying clearly enough to be able to participate in the conversation. The same is even the case for some quieter situations - I found that often I could hear that someone was talking but that there were numerous syllables that sounded very muffled and ambiguous.

The sound of the tinnitus, close in to the head, creates an *inward* turn – an experience of being

trapped in one's head – a point to which I will soon return – but the hearing damage that caused the tinnitus caused me to feel socially isolated in addition to the perceived physical separation from my immediate surroundings caused by the tinnitus. Thankfully, my tinnitus would appear to be nowhere near as bad as it is for some people with the condition.

#### **Reader 4:**

I'm particularly keen today to speak about the sounds (non-existent) using terms reminiscent of descriptions of texture, shape, the visual and/or sounds with real-world origins. I am seeking to *spatialise* the 'sound'. I will do this by describing the three main 'sounds' (or groups of 'sounds'), comparing them to an artificially rendered 'tinnitus' fed through the headphones you are wearing. It was extremely difficult to get the pitch of the tones right but short of improving the simulations of the sound, this is probably as close as I can get to having others feel what it like to inhabit my head.

The lowest 'sound' is a dull ringing, and sounds like the faint echo left soon after a large brass or tin bell or gong has been struck – except here the echo is continuous and doesn't fade away. I rarely notice this one – only when it's pretty quiet around me does it become more apparent. To say it sounds tinny might make it seem like it has a higher or sharper sound than it does. It's almost entirely confined to my right ear – it sits in close and feels spherical in terms of how it seems to occupy quite a defined space; one that almost spreads out evenly from its point of origin. The sphere-shaped gong also feels like it is partially run through with a sliver of the grainy mid-level tone to which I now come.

#### **Reader 5:**

I would describe the next tone/group of tones as being a mid-range tone (at least in comparison with the main other two tones) – it can be heard in both ears but is far more prevalent in my left ear – though it is difficult to assign it too exact a spatial position. It has a rounded, duller edge to it. It seems slightly less constant insofar as it has what might be termed a *granular* texture to it. I could almost call it a hiss but that might give the impression of it being smoother than it actually is. – The sound of an analogue television playing static run through a low pass filter might serve as a reasonable analogy. This tone is usually the loudest of the tones when I'm in a semi-quiet environment.

#### **Reader 6:**

The highest pitch is a constant sound – and is biased to the left. Some parts of it are as or nearly as high in volume but are more muted, and *seemingly* less loud in comparison with other, more prominent tones – all of which intermingle. This tone is easiest to hear in even moderately noisy places.

Another phenomenon I have noticed (but am not simulating here) is a controlled ringing I can produce by tensing the ear canals: not sure how exactly I can do this – it's a similar muscle movement to an attempt to wiggle the ears but with more sustained force. It creates a *rumbling* effect (a form of objective tinnitus perhaps?) like earth movements as if heard from underground. This seems to create, as a by-product, a fragmented, discontinuous ring – like very small and delicate pieces of metal dinging together – or the higher pitches of a very distant alarm bell – again, partial and discontinuous (could this be a form of 'subjective' tinnitus linked to the objective version?). Almost all of this occurs in the left and feels internal to the ear itself.

#### **Reader 7:**

I would now like to return to what I termed the inward turn. That tinnitus is a subjective creation perceived – experienced – as though it were an objective fact is worth closer examination. The apparent *closeness* of the sounds – the fact that 90% of them appear to be inside or only just outside the ears – has the effect of turning one's attention and perceptions *inward*. They make the limits of one's own head feel *more* enclosed, more shut-off from the outside reality and field of sensations, in effect making that outside reality seem more separate and theatrical in its *being-for-observation*.

The phenomenological status of the 'sounds' is obviously my own subjective experience of the 'sounds'. But the nerve impulses that the brain both creates and interprets as sound are as real, as actual, as the hearing damage to which they are a response. What is significant in an exploration of their status is their status *as sound*. If sound is understood as our perception (detection + experience) of sound waves then how can we speak of a 'sound' that has had no more contact with the air (or ear) than the words 'spoken' in one's thoughts? Indeed, the two would be equal (ontologically) were it not for the lack of volition involved in tinnitus.

### **Reader 8:**

The involuntary nature of the sounds – and their meaninglessness – is what makes them different to and obstructive of the thoughts that I would normally identify as constituting my *self*. These uninvited 'sounds' are rarely listened to: they are heard. Although I have listened to the 'sounds' of the tinnitus before, the even more focused listening involved in trying to identify the pitch of the different tones has been an odd experience. Essentially, the exercise has involved me trying to compare these 'virtual', imagined sounds with the sonic sensations received from vibrations in the air. Even the 'artificial' sounds that are purely digital in origin *become* 'real' sound when they inform the vibrations of a speaker system.

These 'sounds', created by my own brain, I experience as if objective fact. Depending on which philosophical line you follow, neither the phenomenological experience nor the nerve impulses to which it is weakly supervenient, can be reduced to a simple cause-effect relationship. In hearing these 'sounds' I hear my brain's attempt to interpret its own signals. I hear my self as a physiological phenomenon.

### **Reader 9:**

*If* experience of the outside world via the brain's interpretations of sensations gives us only approximations of the nature of matter external to ourselves then perhaps the experience of these (tinnitus) signals originating in the brain are the more direct type of sensation available – they aren't 'translations' of external phenomena: these sensations, interpreted as sound, exist independently of the outside world. And yet, they would still refute any attempt to reduce the world to the sensations we take from it insofar that these phantom sounds are generated by the brain in order to 'fill in' *missing* sounds – sounds/sensations the brain has been *trained* to expect to receive from the world around it.

And if the origin of the particular tones lies in the brain's filling in of *gaps* left by absent but expected sounds – like an amputee sensing the phantom of an absent limb their brain expects to be there – then am I even really able to hear those frequencies anymore? If my tinnitus is made up of tones I should no longer be able to hear, how can I then know I am really hearing the digital tone to which I am trying to match it rather than its disappearance between other related tones?

### **Reader 10:**

*Auditory localization* is a term used to describe how the ears are used to locate a sound in relation to

the body. In addition to the more obvious point about the ear nearer the source of the sound receiving the sound fractionally sooner, the placement of the ears also causes them to receive slightly different phases of the soundwave.

The ear further away from the sound will also receive a weaker signal – especially if the ear is fully turned away from the sound – due to a sound ‘shadow’ cast by the subject’s head. In a sense, the subject is not only hearing the position of the sound relative to their head but they are, in a sense, hearing the position – *and the shape* – of their own head in relation to the position of the sound. The gap or absence within the sound is created by the presence of the subject as physical object – in particular, their head.

### **Reader 11:**

When thinking about how the brain perceives the apparent positions of tinnitus sounds, I note that I hear some tones as being closer or further from the ear, with some seeming to emanate – or continue, at least – around or toward the front of my head. Presumably the ‘closeness’ is related to the perceived loudness of the tone and its pitch. But the sound is generally flatter than real sound and there is no sound ‘shadow.’

The apparent continuity between some of the tinnitus ‘sounds’ must be due to some similarities and overlap in the type and extent of the damage to the hearing of each ear. I suspect the lack of a sound ‘shadow’ – an absence of an absence – contributes to the very small distances – almost negligible as distances – of the ‘sounds.’

### **Reader 12:**

Perhaps the relative ‘loudness’ of the tones could in some incidences contribute to some simulation of partial ‘shadows.’ But with my own tinnitus the ‘shadows’ are absent and my brain doesn’t invent them or (mis)perceive them through the signals it generates in its attempt to fill in the gaps in my hearing, thus contributing to the apparent closeness of the sounds and the effect that has of turning my attention inward.

But if in normal hearing a sound ‘shadow’ – a gap or absence within the sound – indicates the *presence* of the subject, then the ‘sounds’ of the tinnitus – generated by the subject’s own brain – are distinguishable from real sound by their absence of the absence – that moveable gap in the sound that betrays the presence of the subject. I hear my brain as physiological object but am blocked from properly sensing my head.