NOISE: INVISIBLE AND FORGOTTEN POLLUTION

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Citizens are increasingly aware that a polluted environment is detrimental to the environment and to human health. In Euskadi as in Europe, today's cities are far from those industrial cities where soil, water and air were visibly contaminated.

It is no longer so common to see columns of smoke coming out of industrial areas or episodes of smog caused by burning coal in cities like London. We also see how the rivers that cross the cities are getting cleaner. In addition, the most dangerous soils within cities have been decontaminated over the last decades.

But beyond the three most well-known contaminations, soil, water and air, it is important to focus on another type of contamination, invisible a priori, but in reality, invisible. This is noise pollution, a type of pollution that everyone experiences and repudiates but is easily forgotten. It is also the most harmful pollution for mental health, which, like these, its cause is also forgotten.

Citizens do perceive noise, and they do so on a daily basis, but they have had to learn to live with it, they have resigned themselves to having it present in their day-to-day lives. This seems to remove the issue from the center of the debate. Institutions legislate and control acoustic emissions, but never effectively to meet the health thresholds proposed by the WHO (World Health Organization). Despite certain actions, the public administration does not propose structural changes. In the Basque Country, municipalities are required to have noise maps and update them every 5 years. The question is, having seen the maps, are there ambitious enough plans to improve the quality of life of the population?

There is more ambition and more awareness about air pollution. Air pollution is talked about and debated more frequently. And it is known by all that it diminishes the health and reduces the life expectancy of the population. On the other hand, from the collective imagination we do not associate noise with deaths or health problems as we increasingly do with air pollution. And it is important to do so, since noise pollution is also a problem of the first order. According to a study by the European Environment Agency (EEA), noise causes 72,000 hospitalizations and 16,600 premature deaths annually in Europe.

Beyond hospitalizations or premature deaths, noise pollution also affects our health without having to go to such extremes. And this is not always accounted for with data. Noise causes and/or exacerbates psychosomatic illnesses, such as respiratory agitation, pulse acceleration, increased blood pressure, headache. In case of being extreme and constant sounds, gastritis, colitis or even heart attacks are also caused. Noise can also cause episodes of stress, depression, anxiety or hysteria. A contamination closely linked to mental illness. Hearing loss is also linked to continued exposure to noise.

This noise pollution also affects our behavior, beyond our mental health. Reduces memory and inattention, which affects work productivity. It even goes so far as to make citizens more aggressive and irritating, which affects their social relationships. Despite being a sound problem, it seems that it has been silenced. Noise, relegated to the background of our daily lives, remains constant, polluting our neighborhoods and minds.

Barcelona is the seventh most acoustically polluted city according to the Ranking prepared by *The*

World Hearing in 2018. According to the 2014 study, Noise and Health in Barcelona, more 40% of citizens lived with daytime noise levels above 65dB, which marks the WHO threshold. GAES carried out a perception study whose main conclusions were that more than 87% of Barcelonans consider that they live in a noisy city and that more than 85% consider that the population is still not fully aware of the noise problem and its influence on health.

But what are the limits established by the WHO to be able to enjoy an environment free of noise pollution?

The WHO defines noise as sound above 65dB. This becomes harmful at 75dB and painful at 120dB. Different limits are established between day and night noise. During the day it is recommended not to exceed 65dB and during the night, we should not have an exposure to more than 30dB, also we should never reach 45dB that prevents sleep.

These are noise levels and their connection to hearing loss and the ability to converse:

Niveles de sonido	Efectos de los decibelios	dB	Discurso	Ejemplos comparativos de Los niveles de ruido
Sonidos más altos posibles	Discapacidad/pérdida permanente del oído	194	Discurso imposible	Ondas de choque
Sonidos ensordecedores	Ruptura del tímpano	150	Discurso imposible	Pistola Despegue de un jet en pista Pistola de fogueo
	Discapacidad/pérdida inmediata posible del oído	140	Discurso imposible Náuseas tras varios minutos	Cubierta de un portaaviones Rifle Petardo
	Umbral del dolor Vibración del tímpano	130	Exposición máxima recomendada al ruido con protección auditiva	Avión de hélice Explosión de un globo Martillo neumático
	Umbral de incomodidad Doloroso (32 veces igual de alto que 70 dB)	120	Discurso posible Esfuerzo vocal máximo	Soplete de oxígeno Martillo neumático Trueno
Sonidos extremadamente altos	Umbral medio del dolor para humanos (16 veces igual de alto que 70 dB)	110	Discurso posible pero imposible de entender	Música rock en vivo Máquina remachadora
Sonidos muy altos	Discapacidad auditiva seria tras 8 horas de exposición (8 veces igual de alto que 70 dB)	100	Discurso posible pero imposible de entender	Cortadora de césped con motor Discoteca
	Discapacidad auditiva probable tras 8 horas de exposición (4 veces igual de alto que 70 dB)	90	Conversación prácticamente imposible	Motocicleta, camión diésel Batidora de alimentos Fábrica ruidosa, obra de construcción
	Discapacidad auditiva posible tras 8 horas de exposición (2 veces igual de alto que 70 dB)	80	Conversación difícil	Tren de mercancías a una distancia de 15 m Silbido, secador de pelo Fábrica con ruido medio, molinillo
Sonidos altos	Base arbitraria de comparación (sonido alto molesto sobre los 70 dB)	70	Conversación posible pero en voz alta	Aspiradora Ducha, tocar el piano Ruido callejero severo
Ruidos bajos	Sin efectos perjudiciales (la mitad de alto que 70 dB)	60	Conversación en un restaurante	Oficina de negocios Impresora láser/inyección Ruido callejero ligero
	Sin efectos perjudiciales (1/4 de alto que 70 dB)	50	Conversación en casa	Nevera Lluvia moderada Barrio tranquilo
Sonidos débiles	Sin efectos perjudiciales (1/8 de alto que 70 dB)	40	Conversación silenciosa	Biblioteca Oficina privada Límite más bajo de sonido ambiental urbano
Sonidos muy débiles	Sin efectos perjudiciales (1/16 de alto que 70 dB)	30	Susurro	Dormitorio Zona rural muy tranquila
	Sin efectos perjudiciales	20	Sonidos apenas audibles	Teatro vacío Tictac del reloj Mosquito
Sonidos silenciosos	Sin efectos perjudiciales	10	Sonidos apenas audibles	Respiración normal Aguja cayendo desde 1 centímetro oída a una distancia de 1 metro Crujido de hojas
Los sonidos más débiles posibles	Sin efectos perjudiciales	0	Silencio	

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What can be the measures that must be implemented to properly tackle this type of pollutant?

About 80% of urban noise is generated by the circulation of vehicles. Other causes are the transit of railways, works and leisure. Which means that most of the

measures must be aimed at electrifying transport, calming the streets, reduce the maximum speed in cities, introduce asphalt that reduces noise, naturalize cities and create noise-free spaces within the urban frameworks. Well, it's important to reduce noise, but it's also important offer places of silence.

It's time to get the muted but loud pollutant out of our cities.

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Ranking prepared with data from Mimi Hearing Technologies GmBH, the WHO and SINTEF

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There are no comments yet.