

Sound, noise and listening
in the modern world

Julian Treasure

www.thesoundagency.com

THE SOUND AGENCY

WARNING!
I am not a scientist

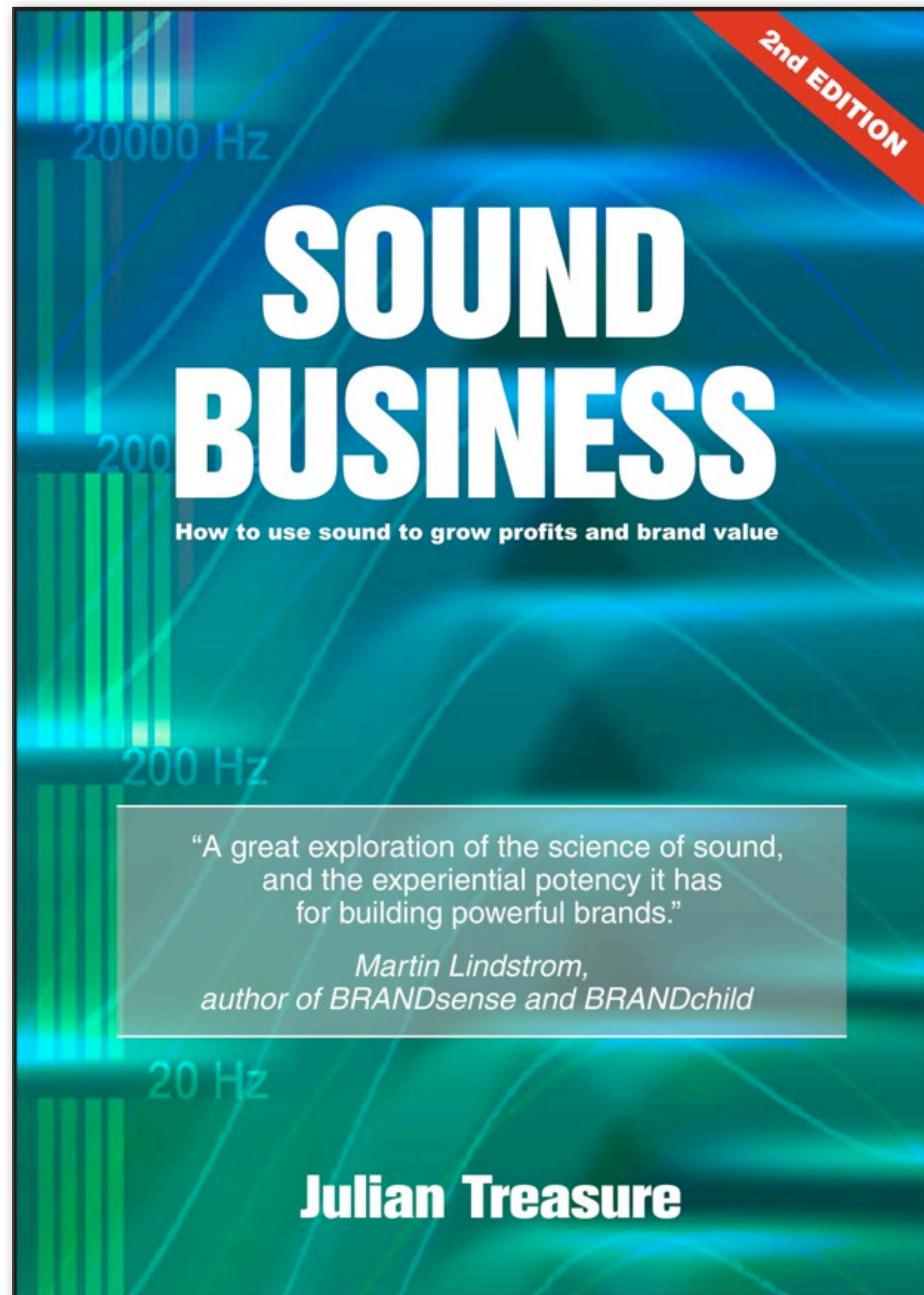
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بنك مسقط
BankMuscat





THE SOUND AGENCY



The background of the image consists of concentric, wavy lines in shades of blue and cyan, creating a ripple effect that radiates from the center. The lines are more densely packed in the center and become more widely spaced as they move towards the edges, giving a sense of depth and movement.

1 sound

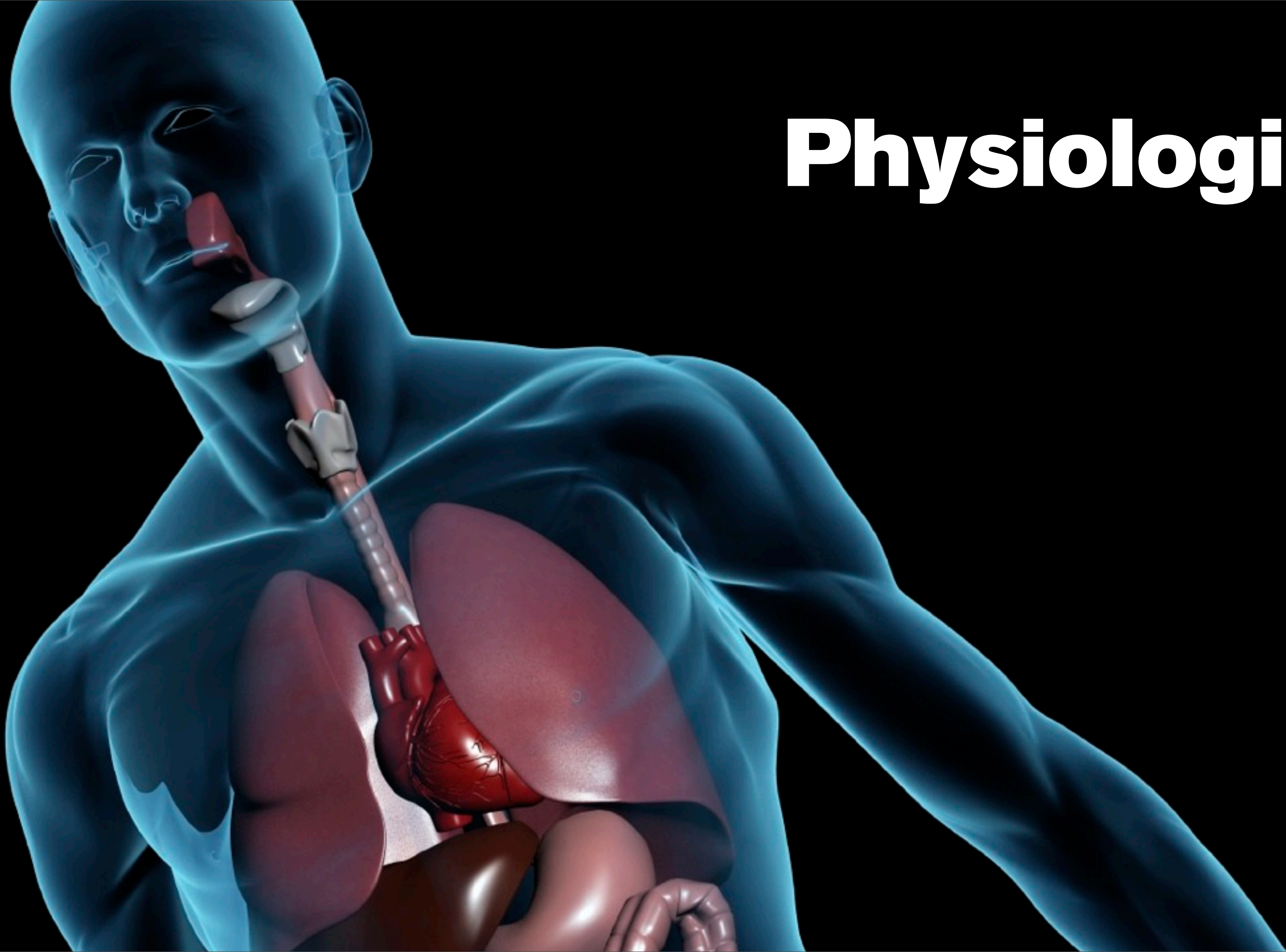
accidental and unpleasant



unconscious



Physiological





Psychological

Cognitive



Open plan offices

productivity

↓ 66%

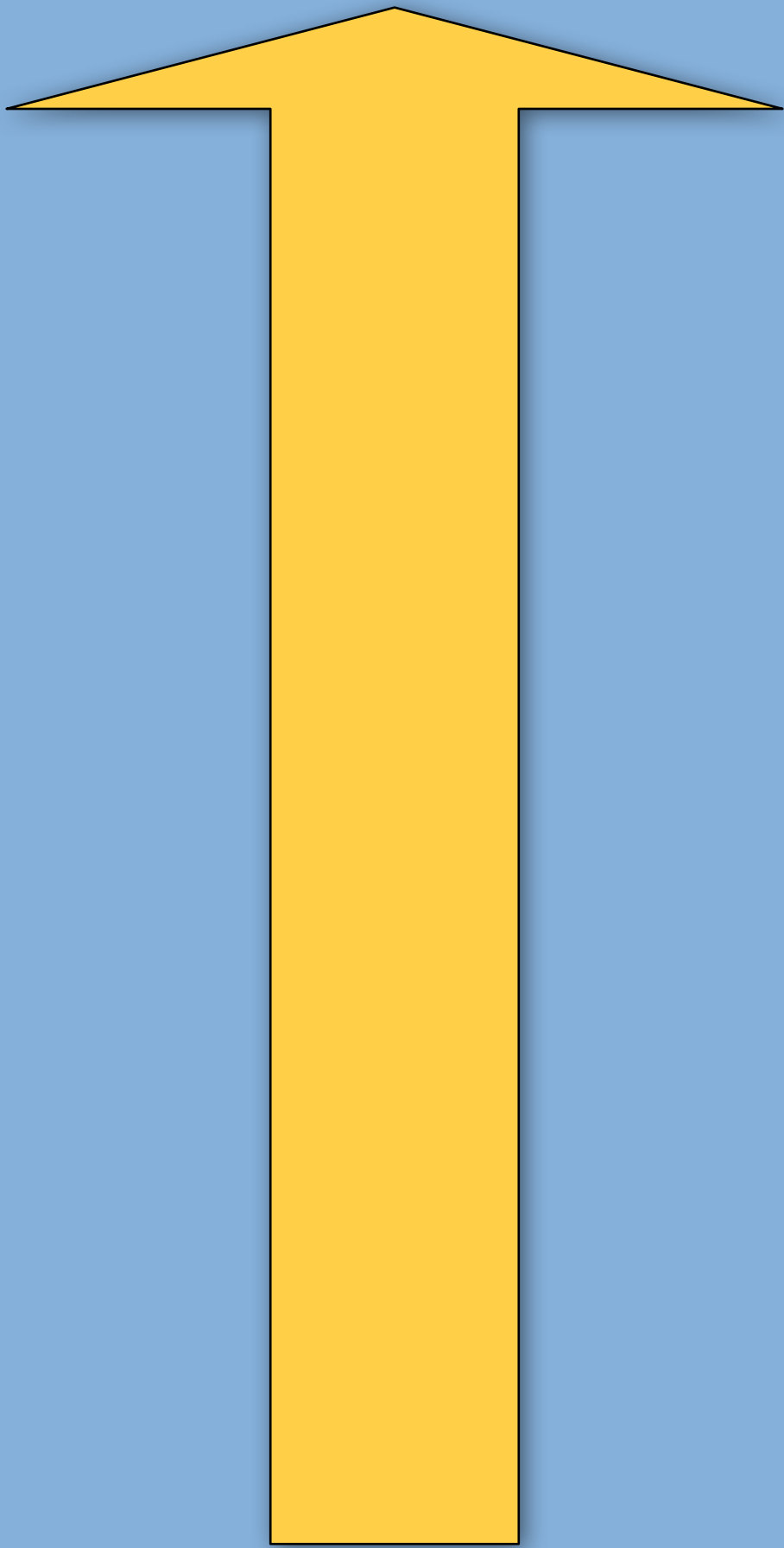
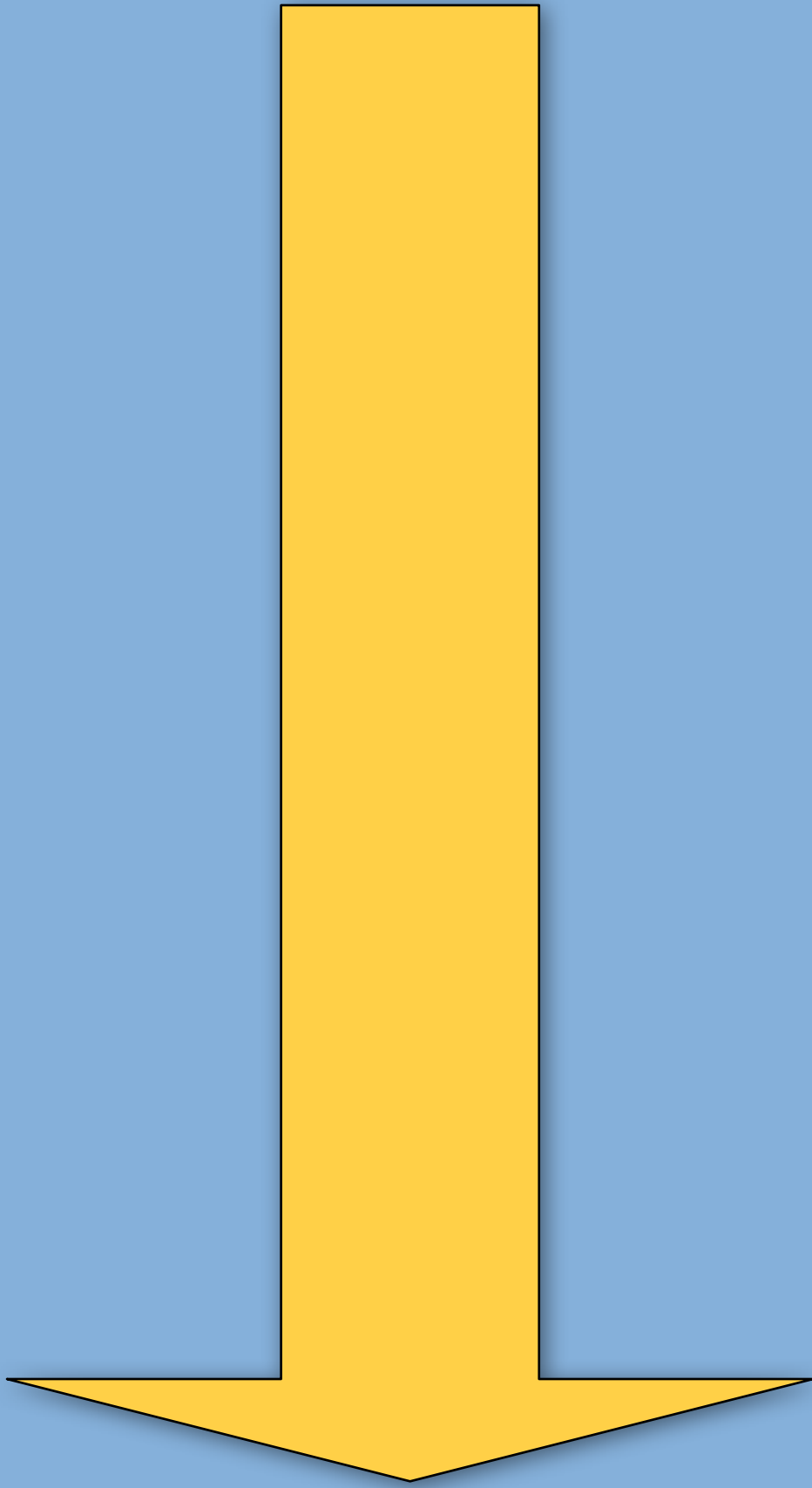
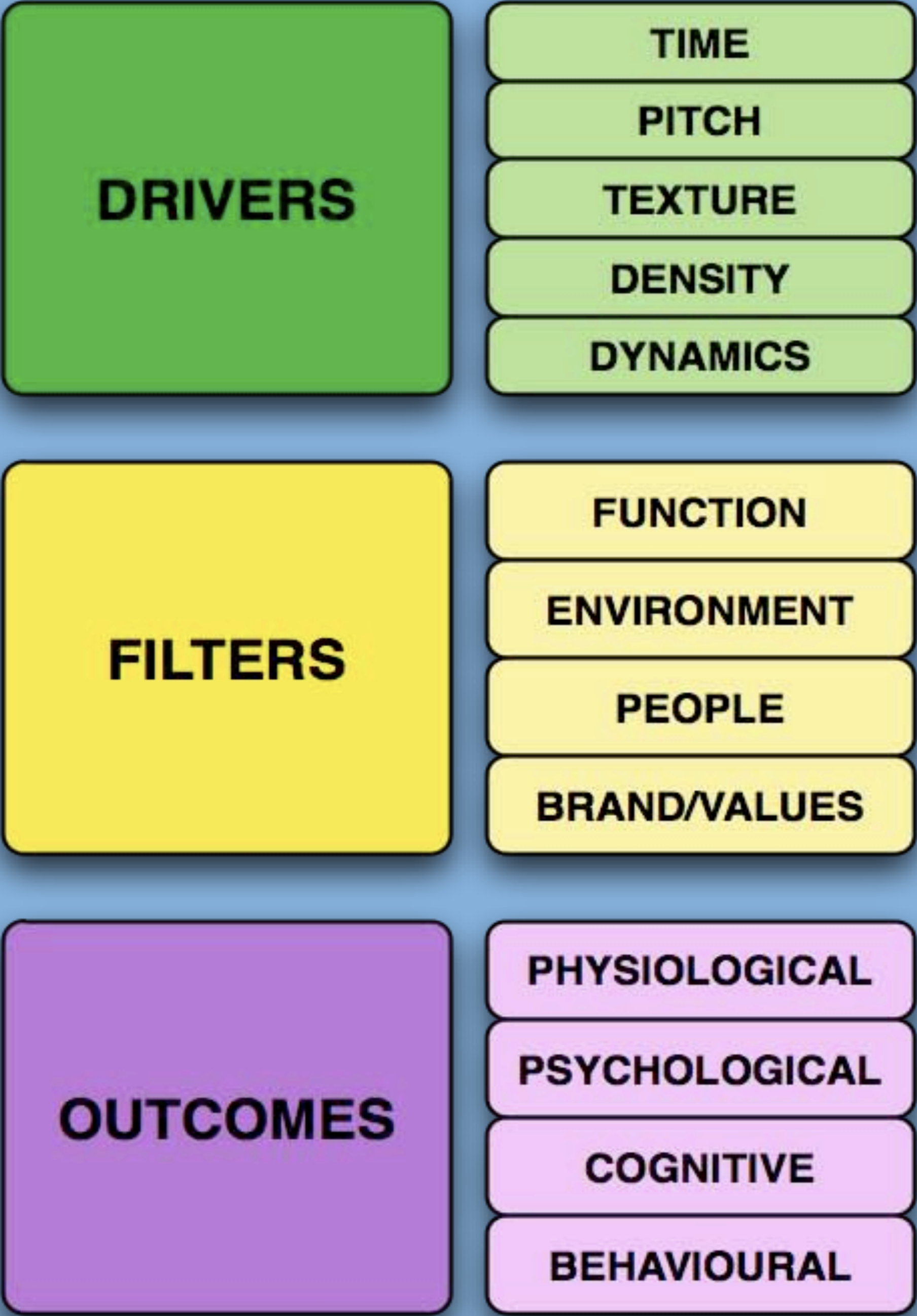
Behavioural



Inappropriate retail soundscapes

sales
↓ 28%

SoundFlow™

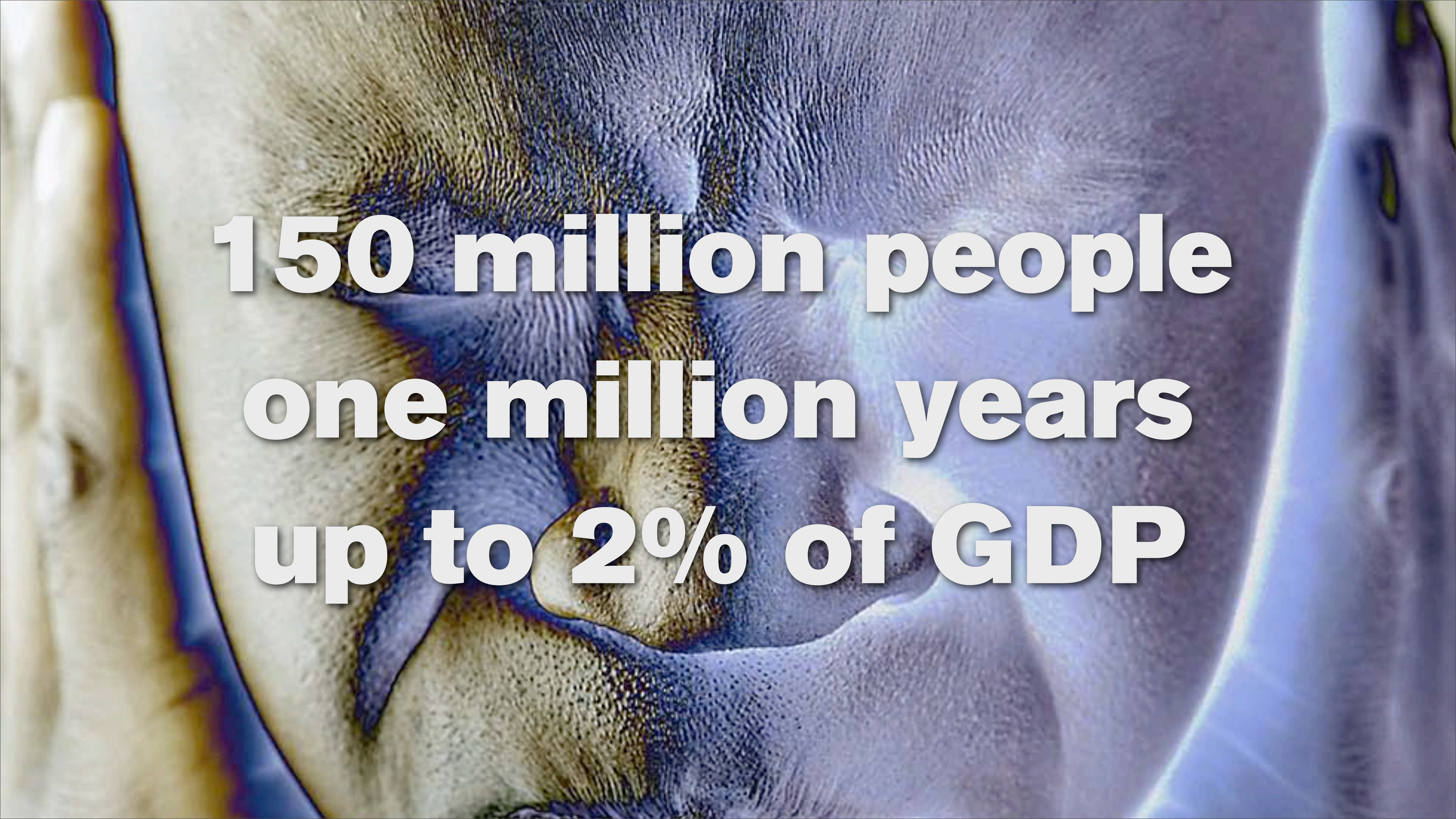


2 noise





**health
behaviour
productivity**

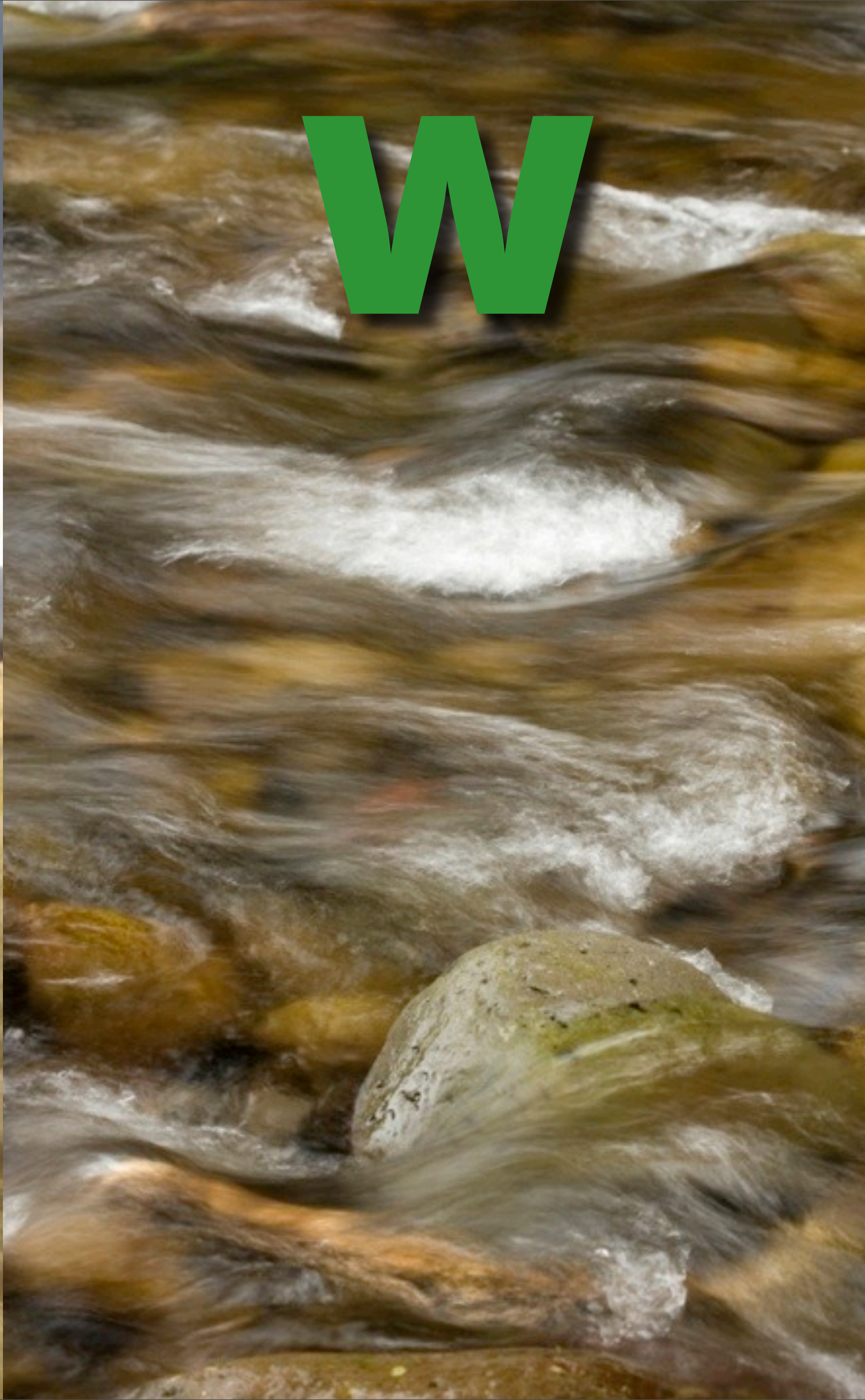
A close-up photograph of a person's face, focusing on the nose and mouth area. The image has a blue-tinted overlay, particularly on the right side. The text is overlaid in the center of the face.

**150 million people
one million years
up to 2% of GDP**

W



W



B



A blurred photograph of a hospital hallway. In the foreground, a person in a white lab coat is pushing a gurney. In the background, other people are walking down the hallway. The text is overlaid in the center.

**Noise levels in hospitals and
healthcare facilities have
doubled since 1972**

Source: David M. Sykes
ANSI S12 Work Group 44
May 21 2009



Accuracy

**Noise distractions
substantially increase
dispensing errors**

Create a Hospitable Indoor Climate
Wayne Morgan Caverly
Pharmacy Post September 2000



Recovery

**Sleep is
compromised
by noise**

A modern classroom with a whiteboard at the front. The whiteboard has the text "Do architects have ears?" written on it. To the left of the whiteboard is a desk with a laptop and a small cabinet with a globe and books. The room is filled with rows of white chairs and desks. A projector is mounted on the ceiling.

Do architects
have ears?

PAINT: Special paint on the external structure was applied wrongly and the repair bill estimated at £500,000



THE ROOF: Flat roof leaks, leading to problems with the floors below when they get wet

ICT: Cabling, servers and wireless system failed 'from day one' and had to be replaced at a cost of £1.2m

HEATING AND AIR CONDITIONING: Often breaks down and five of its six pumps have had to be replaced. The overall heating and electricity bill is far too high for a school of this size, possibly due to the open-plan design inside, and a glass exterior – which requires extra heating in the winter and air conditioning in the summer

TOILETS: Designer Italian lavatories have had to be replaced because they constantly break and are so expensive to repair

THE CHANGING ROOMS: School spends £15,000 a year on temporary changing facilities, as the original ones only accommodated 25 students at a time in a 1,500-pupil school

STORAGE: School spends £14,000 a year on external storage because there is not enough space on site

SEWAGE SYSTEM: Persistent complaints about foul smells from drains permeating classrooms

BEXLEY FACTFILE

- Total roll of 1,500 pupils
- 234 staff, including 105 teachers, 74 teaching support staff and 36 management and administration staff, as of last year
- Two years ago, just 19 per cent of pupils managed five or more GCSEs of Grade C and above
- School faces a projected deficit of £859,000
- Chief executive earns £120,000 – and has a flat paid for by the school



GATES: Electronic gates go wrong: fixing them costs £4,000 each time

Graphic:
John Lawson

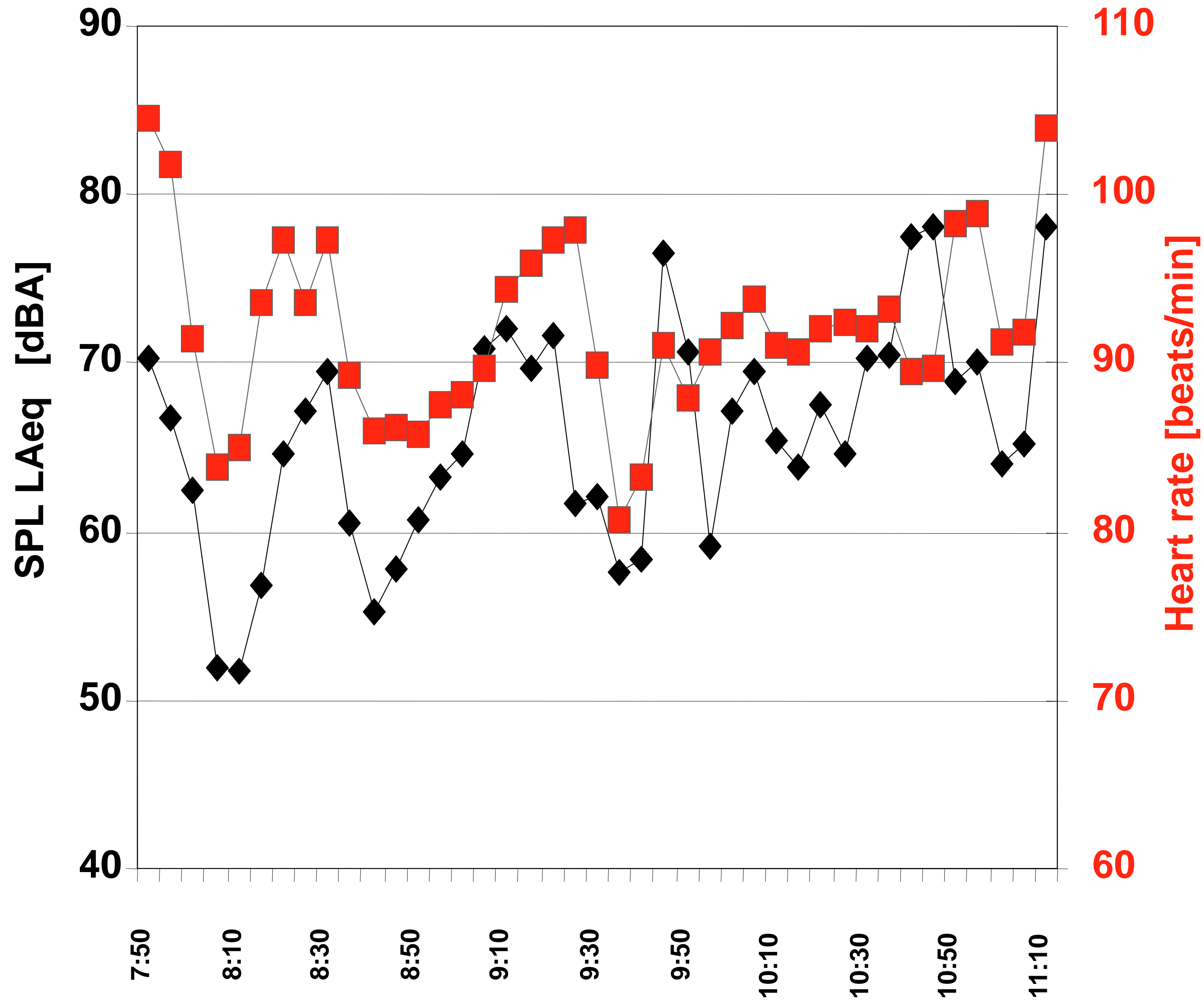
OUTDOOR SPACE: Not enough of it, almost no grass. Many pupils have no access to outside play areas, so they are mostly trapped in a glass box



ACOUSTICS: Open-plan design meant classrooms were too noisy, so £600,000 had to be spent on makeshift subdividers to break up spaces into useable sizes



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65 dB

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*Health effects caused by noise : Evidence in the literature from the past 25 years
H Ising, B Kruppa Noise & Health 2004 Volume 6 Issue 22 Page 5-13*

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A photograph of a classroom from a rear perspective. In the foreground, two female students are seated at a wooden desk, their backs to the camera. The student on the left has long dark hair in a ponytail and is wearing a yellow shirt. The student on the right has long blonde hair and is wearing a green shirt. Both have their right arms raised. In the background, a teacher is visible at the front of the room, and other students are also raising their hands. The room is brightly lit, and a chalkboard is visible in the background.

50%

Siebein 1998

600 classrooms in Florida

acute groups

impaired hearing (16%)

2nd language (10%?)

introverts (33%)

ADHD (5%)



American Academy of Audiology
Position Statement

Classroom Acoustics

August 2011

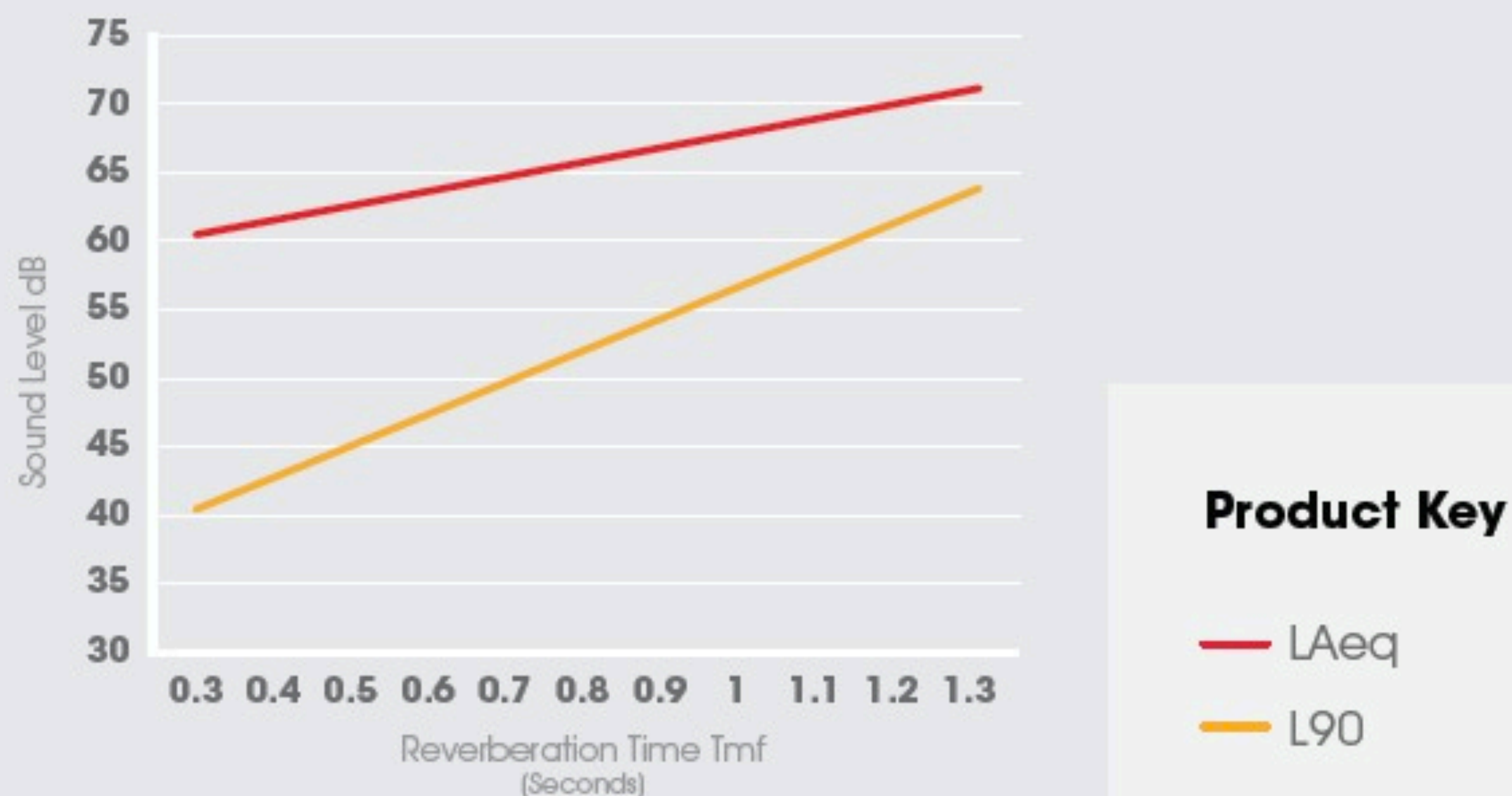
1. All students require an appropriate acoustical environment in order to learn effectively.
2. Younger students are especially vulnerable to poor acoustics because of their immature central auditory nervous systems.
3. Students with hearing loss are especially in need of appropriate acoustical environments.
4. Bilingual students and students with other communicative challenges require an optimal acoustical environment to maximize learning.
5. Quiet rooms are better for learning than loud classrooms with amplification, particularly for receiving indirect instruction from peers.
6. The cost of quiet classrooms is more than balanced by improving the ability of students to hear and therefore to learn.
7. Classrooms that meet the acoustic criteria specified in the above standards will greatly assist students in their ability to hear their teachers and peers with reduced voice fatigue for the individual speaking.

sound
education



www.soundededucation.tv

Classroom sound levels vs Reverberation time



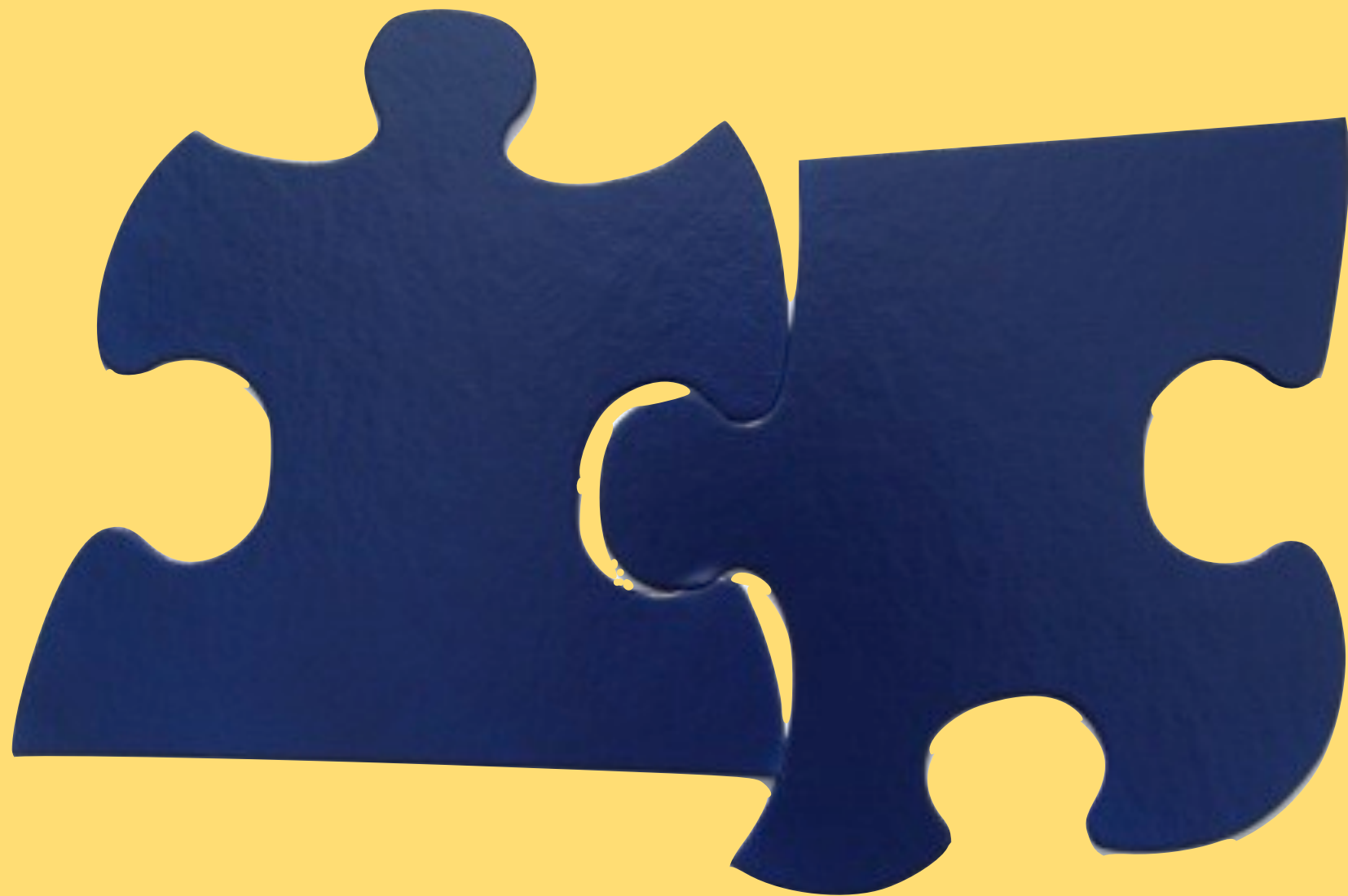
Objective measurements of noise levels during classes show a much larger than expected reduction in LA90 as the reverberation time (RT) decreases. **This leads to the conclusion that pupil behaviour and attentiveness all improve as RT decreases.** This leads to a much better signal-to-noise ratio while requiring less vocal effort from teachers. This is consistent with the results of the interviews in which teachers and Communication Support Workers all reported substantial improvements in behaviour and comprehension of pupils in classrooms with a shorter RT.

action

- 1. Set high standards (BATOD)**
- 2. Police and enforce them**
- 3. Remedy problems in stock**
- 4. Newbuild to best standard**
- 5. Inform and inspire**

better learning
better behaviour
better health

retail soundscapes





music

recognition + association = power





ICING ON MUD

French v German wines


**Identical
visual displays**

**Alternating days of
French and German
music**

North, Hargreaves & McKendrick (1997)

**French music days
5F to 1G**

**German music days
2G to 1F**



generative sound: the Ambifier™

**surface
transducers**

**directional
speakers**

Content

Sound system

Noise sources

Acoustics

BAA | Glasgow Airport

**Target:
reduce stress**

**Generative
soundscape**

**Retail sales
increased by 3-10%**





HARRODS



An aerial, high-angle photograph of the New York City skyline. The Empire State Building is the central focus, standing tall with its iconic spire. The surrounding city is a dense grid of skyscrapers and buildings, extending to the water's edge. The sky is filled with soft, white clouds, and the overall lighting is bright and clear.

urban planners

An aerial photograph of the New York City skyline, featuring a dense cluster of skyscrapers. The Empire State Building is the most prominent structure, standing tall in the center. The city extends to the horizon, with the Hudson River and New York Harbor visible in the distance under a cloudy sky.

urban **sound** planners



office planners

A modern office interior featuring a prominent staircase with wooden steps and a metal railing. Several large, reflective silver spheres are suspended from the ceiling. The office space includes desks with computers, a lounge area with a purple sofa, and large windows. The overall atmosphere is bright and contemporary.

office **sound** planners

A warm, dimly lit hallway with a patterned rug in the foreground and a blurred interior scene in the background. The rug is a light brown color with a dark, repeating geometric pattern. The hallway is illuminated by several recessed ceiling lights, creating a soft, golden glow. In the background, a doorway leads to another room where a dark wooden table and a lamp are visible. The overall atmosphere is cozy and inviting.

interior designers

A blurred interior hallway with warm lighting and a patterned rug. The text "interior sound designers" is overlaid in the center. The word "interior" is white, "sound" is yellow, and "designers" is white. The background shows a hallway with a patterned rug, a doorway leading to another room, and warm lighting fixtures.

**interior
sound
designers**



appearance

3 listening

**making meaning
from sound**

pattern recognition

differencing

filters

culture
language
values
beliefs
attitudes
expectations
intentions



“Most people never listen.”

Ernest Hemingway

DANGER

**we are losing
our listening**

Fragmentary ancient text on papyrus, likely from the Book of the Dead. The text is written in hieroglyphs and is arranged in vertical columns. The papyrus is heavily damaged, with significant portions missing, particularly in the center and right-hand side. The remaining text is difficult to decipher due to the fragmentation and the nature of the script.



*"Now can we have it as a
sound bite ?"*

SENSATION

SHOCK

REVEALED

SCANDAL

FURY

EXPOSED



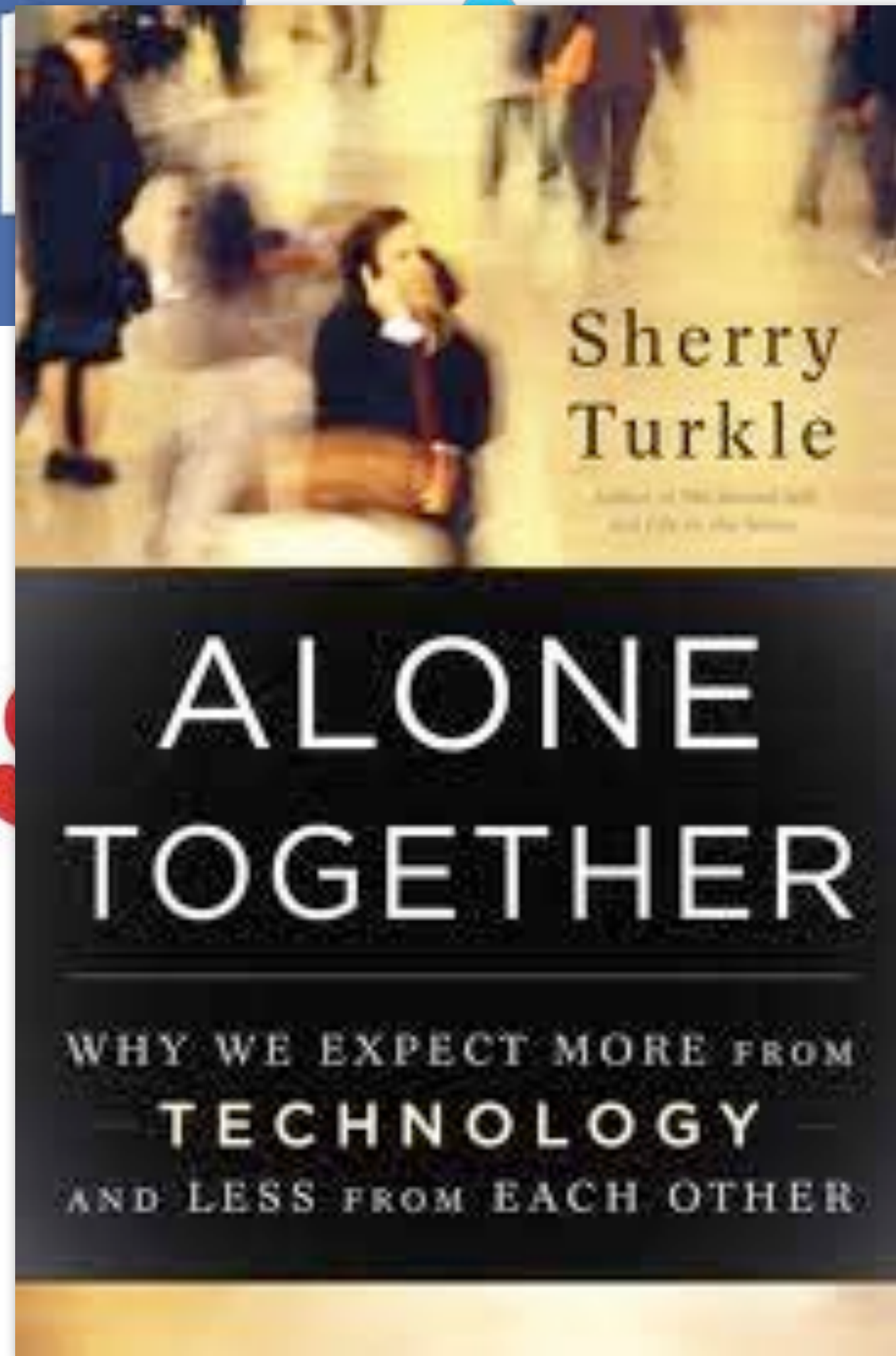
connected?

facebook

twitter



Pinterest



you





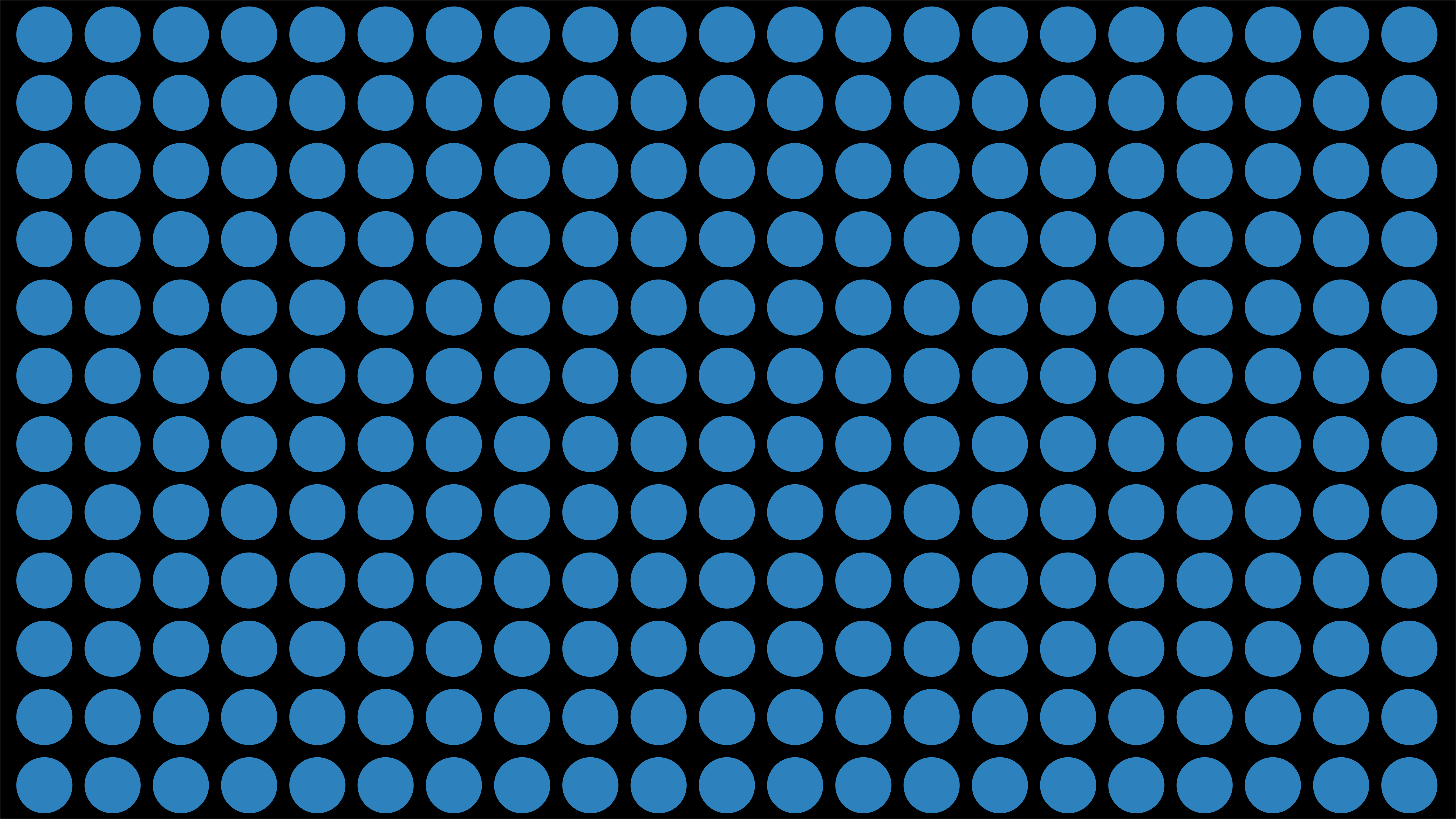
NWHL



schizophrenia

the cost of compression











4 listening positions

listening positions

active | passive

reductive | expansive

critical | empathetic

R

A

S

A

5

leaders

teachers

spouses

parents

friends

R

A

S

A

Receive

Appreciate

Summmarise

Ask



**conscious
listening**

**conscious
creating**

beautiful

THE SOUND AGENCY

thank you

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