SOUND THAT FEELS LIKE YOU

The Sound Preference Framework

Understanding and using individual sound preferences in hearing rehabilitation

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Conflict of Interest - I have the following potential conflict(s) of interest to report:
(i.e.) one or more authors have declared an industry affiliation - WSAudiology

~50%

- of listeners prefer one of two sound designs
- differences not predicted by audiogram, age, or lifestyle.

Balling et al., 2026 Whitepaper

What Explains Sound Preference?

Conceptualizing insights from five research fields

1 Auditory neuroscience

How the brain encodes and adapts to sound

2 Affective neuroscience

How sounds trigger stress or reward responses

3 Cognitive psychology

How cognitive fluency, effort, and expectation shape listening

4 Social & cultural psychology

How identity, context, and belonging influence sound perception

5 Behavioral decision-making

How autonomy, confidence, satisfaction, and co-creation affect behavioral changes and clinical outcomes

Fischer, R.-L., & Engelund, G. (2026). Whitepaper Part I , Engelund, G., & Fischer, R.-L. (2026). Whitepaper Part II

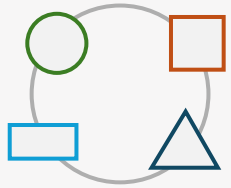
Three Interacting Components

SCIENCE

WHAT ?

Sound Preference Formation

What are the sensory, neurological and psychological bases of sound preference formation?



Three Interacting Components

BEHAVIORAL & CLINICAL MEANING

WHY ?

Sound Preference Approach

Why does sound preference matter for client autonomy and satisfaction?

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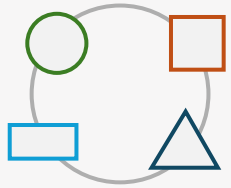

Three Interacting Components

PRACTICAL APPLICATION

HOW ?

Sound Preference Exploration

How to explore and frame sound preference in clinical practice?

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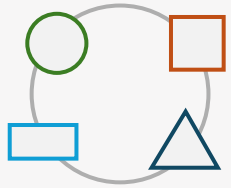

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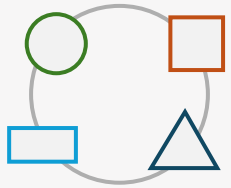
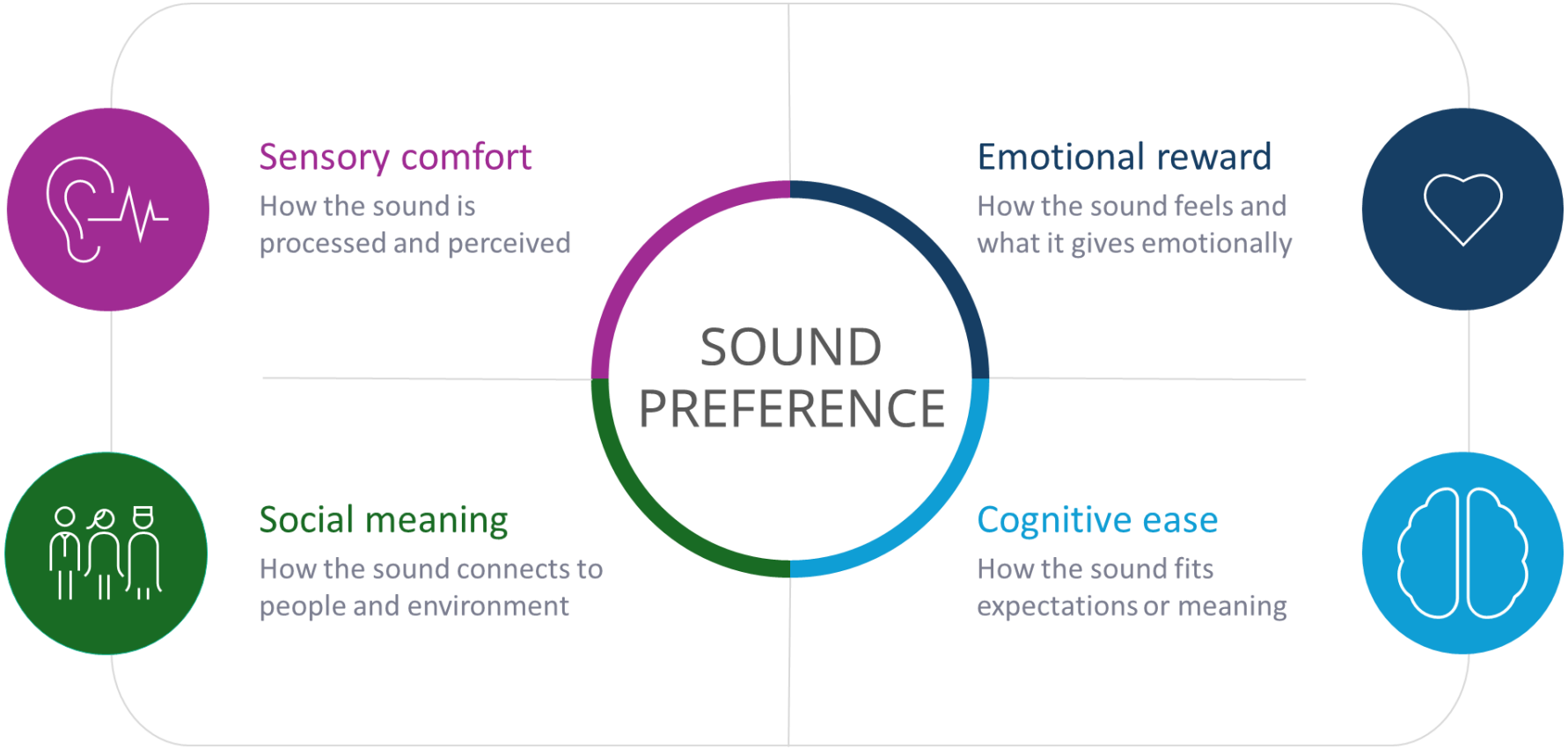


The science of how preferences develop in the brain

Sound Preference is not Simply a Matter of Taste

Sound preference might emerge from four deeply layered neurological and psychological processes; all operating below conscious awareness



Sound Preference Is Not Simply a Matter of Taste

Four neurological & psychological processes operating below conscious awareness

Sensory Comfort

Listening without strain

Aversive sounds activate the amygdala (stress response).
Personality shapes how identical acoustic features are experienced.

Emotional Reward

Sound as affective anchor

Preferred sounds activate reward circuits (nucleus accumbens).
Reward is automatic and embodied. Might anchor the decision to use hearing aids more.

Cognitive Ease

Effortless listening

The brain works less when it can predict what it will hear.
A correct intelligibility score does not mean the brain is working easily.

Social Meaning

Sound as identity signal

Sound is a social cue and identity marker.
Listening can trigger oxytocin, the neurochemical of trust and social bonding.

Sound preference is not a superficial like or dislike, it is a signal of whether the sound fits the listener and their context.

It reframes the clinical encounter.

Sound Preference Approach - they WHY

BEHAVIORAL &
CLINICAL MEANING

Sound Preference Approach

Why does sound preference matter for client autonomy and satisfaction?

The Sound Preference Approach frames sound preference as stance in the clinic – giving people a choice

People are more likely to commit to solutions they feel they have chosen themselves

Self-Determination Theory

- autonomy supports sustained motivation

Deci & Ryan, 2000

Cognitive Dissonance Theory

- expressing a preference motivates consistency with that choice

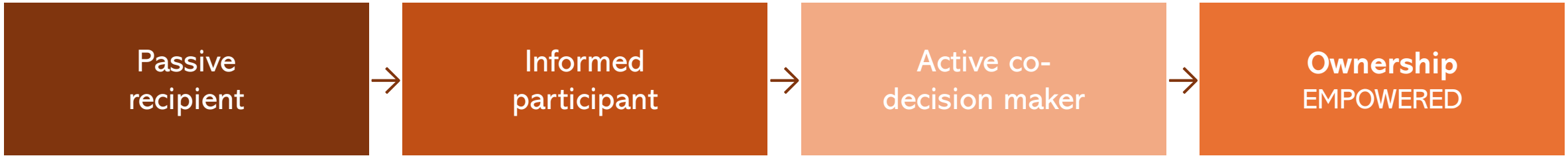
Festinger 1957

Expectation-Disconfirmation Theory

- participation makes expectations more personal and satisfaction more likely

Oliver, 1980

Inviting Clients to Choose Is Itself Clinically Meaningful



WHAT EMPOWERMENT MEANS

Supporting the client's capacity to influence their own hearing care by enhancing participation, confidence, knowledge, and agency.

Gotowiec et al. 2022; Bennett et al. 2024

EVEN THE INVITATION MATTERS

Research on autonomy support, shows that simply being offered a meaningful choice, often improve satisfaction and sense of control.

Ridgway et.al. 2016, Elwyn et .al 2012)

Sound Preference Exploration - the how to

PRACTICAL APPLICATION

Sound Preference Exploration

How to explore and frame sound preference in clinical practice?

The Sound Preference Exploration – a tool to support clients comparing two A/B sound profiles

Not a Test. A Guided Exploration

There is no objectively correct sound preference.

If framed as a TEST

- There is a correct answer
- Client focuses on performance
- Anxiety may reduce authentic response

If framed as EXPLORATION

- No objectively correct sound
- Client reflects on experience
- Reflection supports authentic response

> How the sound preference choice task is introduced shapes how it is experienced

Goal Framing Theory: Lindenberg & Steg, 2007

Exploration is a Structured A/B Comparison Process. Not a Performance Assessment

1

Experience

Clients listen to two different sound processing profiles

2

Reflect

Perceptual and emotional responses to sound are noticed and acknowledged

3

Articulate

Impressions are expressed and connected to fitting decisions

Sound Preference Exploration is not intended as an evaluation of auditory ability.
It creates a clinical moment in which perceptual and emotional responses to sound are acknowledged as relevant to decision-making.

Boisvert et al., 2017

The Four Psychological Phases Of Exploration

Preference develops through a sequence of psychological shifts - not a fixed script

"I'm allowed to choose"

Engagement & Autonomy

Being invited to participate activates a sense of agency.

Ryan, R. M., & Deci, E. L. 2000

"I can manage it"

Manageability & Confidence

The comparison feels understandable the client can reflect without feeling tested.

Antonovsky, A. 1987

"This sound fits me"

Meaning & Identity

Attention shifts from acoustic comparison to personal fit.

Festinger 1957

"It works for me"

Expectation & Satisfaction

The real-life experience is evaluated based on expectations formed during exploration.

Oliver, R. L. 1980

Sound exploration might not always unfold in the same way

A lot of psychological and situational conditions can shape how a person responds to being invited to the sound preference exploration.

INDIVIDUAL CONDITIONS

SITUATIONAL CONDITIONS

Conditions that Shape how Exploration Unfolds

INDIVIDUAL CONDITIONS

The person brings these, the HCP cannot change them

Cognitive capacity

How demanding does the comparison feel? Working memory varies across individuals. (Sweller 2024)

Sense of Coherence

Does the task feel comprehensible and meaningful, or uncertain and hard to interpret? (Antonovsky 1987)

Locus of control

Does the person welcome participating in decisions, or prefer to defer to the professional? (Rotter 1966)

Motivational orientation

Are autonomy, competence, and relatedness being supported, or does engagement feel imposed? (Ryan & Deci 2000)

SITUATIONAL CONDITIONS

The HCP shapes these, they can be adjusted in the clinic

How the task is framed

Test framing activates performance pressure. Exploration framing opens reflection. This is one of the single most powerful moderators. (Linderberg & Steg 2007)

Cognitive load in the consultation

Pace, complexity, and number of dimensions are all adjustable. Slow down. One dimension at a time. (Furnham & Marks 2013)

Response to ambiguity

When no clear preference emerges, normalising ambiguity explicitly keeps the process open rather than closing it. (Kahneman 2011, Budner 1962)

WHICH PATHWAY EMERGES

ENGAGED PATHWAY

DIS-ENGAGED PATHWAY

The HCP's Role

HCP behaviors that can help shape which pathway emerges

FRAMING

Exploration vs test framing is the most powerful single moderator available. It shapes every subsequent interaction.

'Let's explore together' opens the positive pathway.

'Tell me which is better' closes it.

PACING

Too fast → cognitive overload → negative pathway.

Matching the client's processing speed, not the appointment schedule, keeps the door to the positive pathway open.

QUESTIONS

'What do you notice?' invites reflection.
'Which is better?' invites performance.

One opens the positive pathway. The other closes it.

(Lindenberg & Steg 2007, Pichora-Fuller et al. 2016)

Conceptual Steps in Sound Preference Exploration

BEFORE	DURING	AFTER
Introduce as exploration, not testing	'What do you notice?', not 'Which is better?'	Acknowledge the preference explicitly
No right or wrong answer	Accept tentative impressions, all responses valid	Connect it visibly to the fitting decision
Client's impressions actively guide decisions	Pace to the client's cognitive load	Frame as starting point, not final verdict

> The aim of the professional is not to guide the client toward a predetermined preference, but to create conditions that support reflective evaluation and engagement.

Sound Preference in the Full Clinical Picture

Clinical Data

Client reactions reveal sensory, emotional, cognitive, and social fit and they are information, not noise in the fitting process.

Empowerment Through Participation

Inviting clients to actively influence their hearing solution supports motivation, ownership, and long-term engagement beyond the appointment.

Shared Language for Sound

The framework gives both HCPs and clients structured ways to notice, describe, and act on individual sound experiences.

Starting a Rehabilitation Dialogue

Preferences evolve and this framework could support ongoing clinical conversation and not only a one-time event.

The framework proposes that sound preference should be explored deliberately in clinical practice.

Frederic Marmel will now show what happened when we study people's Sound Preference.

NEXT - PRESENTATION 2 OUT OF 3

Appraising patients' preferences for distinct hearing aid sound designs to inform hearing aid recommendation

Marmel F., Lelic D., Engelund G., Nielsen M., Best S., Balling L.W.