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The Elephant in the Ear:
A Preliminary Audit of Audio-Chain Reporting in XR Presence Research

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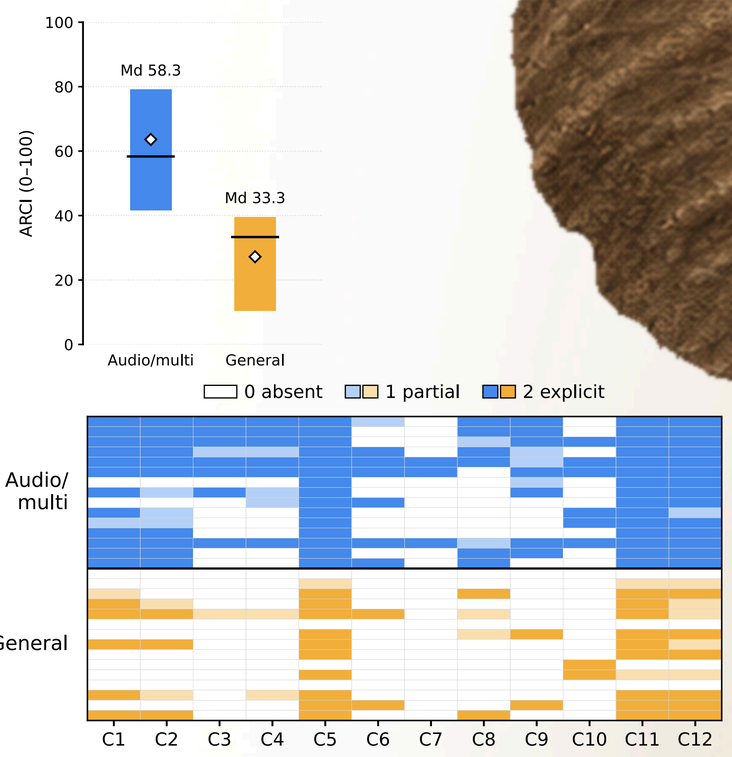
The problem is not necessarily poor audio — but **unknown** audio.

How we audited?

- 15 audio/multisensory + 15 general presence/UX studies
- **ARCI — Audio Reporting Completeness Index**
- Codebook: 12 domains scored: 0 = not found, 1 = partial, 2 = explicit enough for approximate replication
- ARCI = (sum of domain scores / 24) × 100
- LLM-based coding + one blinded expert independently recoded 6 papers: 3 per group, 90.3% exact agreement; Cohen's κ = .887



MARC-XR — MINIMUM AUDIO REPORTING CHECKLIST

www.marc-xr.interactivecrafts.dev - open to community refinement

1 · Playback device
How was audio delivered?

2 · Device type/model
Which model or sufficiently specific type?

3 · Rendering mode
Mono, stereo, binaural, ambisonic, or another mode?

4 · Spatialization/tracking
Was spatialization used? How was it implemented?

5 · Audio content
What did participants hear?

6 · Loudness/volume
How was the playback level set?

7 · Calibration/ normalization
How were levels standardized, or were they not?

8 · Listening environment
What were the listening conditions?

9 · Latency/synchronization
Was timing controlled, measured, or not assessed?

10 · Participant hearing
How was hearing addressed, or was it not assessed?

11 · Role of audio
Manipulated, fixed, cueing, narrative, or background?

12 · Justification
Why did the setup fit the research question?

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