

Online Resource 1

Article: Trapped in a Soundproof Box: How CO₂ Levels Influence Speech Quality Assessment and Response Behaviour

Journal: Quality and User Experience

Authors: Leon Schreiber, Benedikt Schuh, Kirill Shchegelskiy, Wafaa Wardah, Tuğçe Melike Koçak Büyüktaş, Sebastian Möller, Robert P. Spang

Corresponding author: Leon Schreiber, Quality and Usability Lab, Technische Universität Berlin, Berlin, Germany, leon.schreiber@tu-berlin.de

This file contains supplementary figures and tables referred to in the article as Fig. S1, Table S1 and Fig. S2.

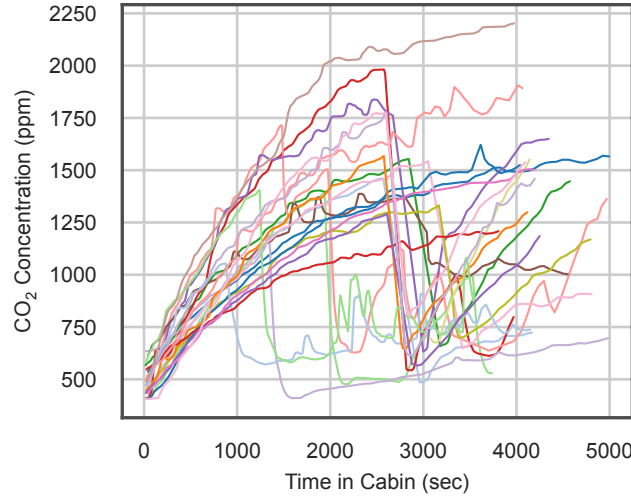


Fig. S1 CO₂ concentration in the sound cabin over time for each participant. The steady increase prior to the break reflects the accumulation of exhaled CO₂ in the environment. The sharp drop around 2,900 seconds corresponds to the 5-minute break, during which participants opened the cabin door for ventilation. Adapted from Schreiber L, Schuh B, Shchegelskiy K, Wardah W, Koçak Büyüktaş TM, Möller S, Spang RP (2025) Cognitive fog under elevated CO₂: The influence of air quality on speech quality assessment and response behaviour. In: 2025 17th International Conference on Quality of Multimedia Experience (QoMEX), IEEE, pp 1–4. <https://doi.org/10.1109/QoMEX65720.2025.11219970> (© 2025 IEEE)

Table S1 Average Response Time (RT) by CO₂ Level. Reproduced from Schreiber L, Schuh B, Shchegelskiy K, Wardah W, Koçak Büyüktaş TM, Möller S, Spang RP (2025) Cognitive fog under elevated CO₂: The influence of air quality on speech quality assessment and response behaviour. In: 2025 17th International Conference on Quality of Multimedia Experience (QoMEX), IEEE, pp 1–4. <https://doi.org/10.1109/QoMEX65720.2025.11219970> (© 2025 IEEE)

CO ₂ Bucket	Mean RT	Median RT	Std.
Low	4.035	3.1250	2.83
Mid-Low	4.055	3.0050	3.071
Mid	3.664	2.8490	2.709
Mid-High	3.659	2.8060	2.676
High	3.855	2.6865	3.232

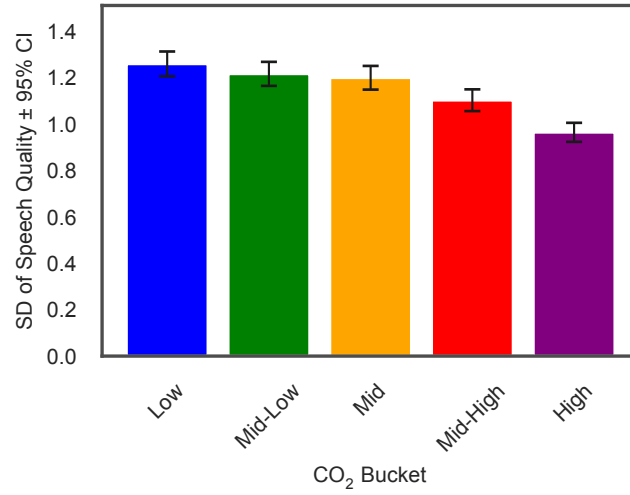


Fig. S2 Standard deviation of speech quality ratings with 95% confidence intervals per CO₂ level (bucketed). Ratings show diminished variability under high CO₂ conditions. Adapted from Schreiber L, Schuh B, Shchegelskiy K, Wardah W, Koçak Büyüktaş TM, Möller S, Spang RP (2025) Cognitive fog under elevated CO₂: The influence of air quality on speech quality assessment and response behaviour. In: 2025 17th International Conference on Quality of Multimedia Experience (QoMEX), IEEE, pp 1–4. <https://doi.org/10.1109/QoMEX65720.2025.11219970> (© 2025 IEEE)