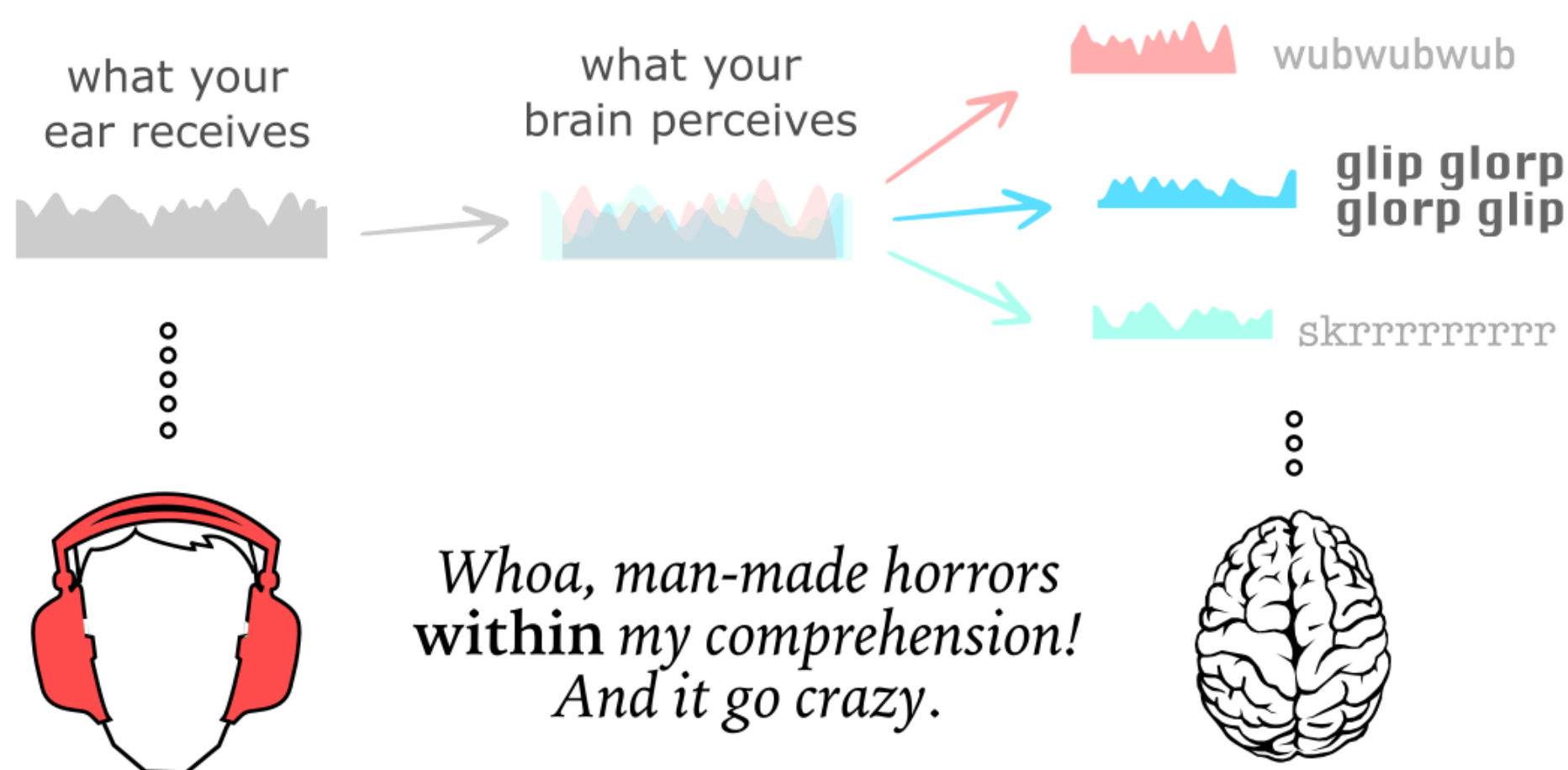# Information-theoretic neural networks for online perception of auditory objects

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## Finding

The auditory neuroscience literature evidences that disentangling sound is a complementary process of bottom-up feature processing and top-down selectivity of sound entities encoded in cortical neurons, i.e. perceptual schema. This framework based on sense data is hardly explored in online source separation, despite advances in ML for pattern recognition.

## Question

Imagine an online model processing audio in time and frequency. What grouping and pattern recognition rules recreate our perception of "edge" and "contour" in sound? Can information-theoretic neural networks represent schema-based processing? Ultimately, can a complex model of auditory object perception exceed source-based paradigms of sound separation?

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