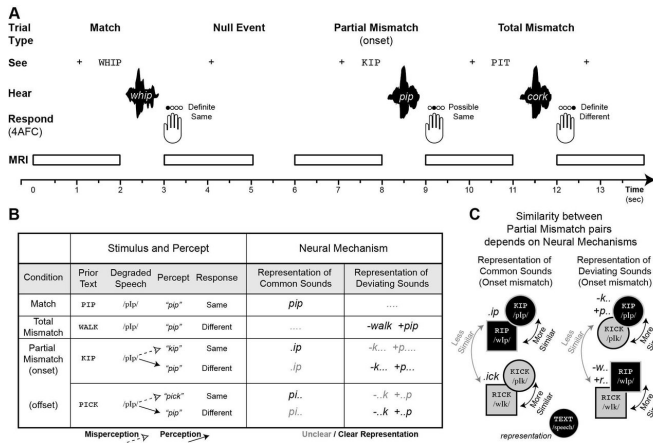


Slips of the ear: When knowledge deceives perception

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misperception, Helen Blank, Matt Davis, and colleagues presented participants with pairs of written and degraded spoken words that were either identical, clearly different or similar-sounding. Reading and hearing similar sounding words (like kick followed by pick), led to frequent misperception.

Using [functional magnetic resonance](#) imaging the researchers found that [misperception](#) was associated with reduced activity in the left superior temporal sulcus, a brain region critical for processing speech sounds. Furthermore, when perception of speech was more successful, this brain region represented the difference between prior expectations and heard speech (like the initial k/p in kick-pick).

These results provide new evidence that speech perception involves comparing what we hear with what we expect. This mechanism—predictive coding—has implications for treating age-related hearing loss or understanding auditory hallucinations in disorders such as schizophrenia.

Misperception of speech results from a weak representation of the difference between what we expect to hear and what is actually said, according to a human neuroimaging study published in *JNeurosci*. The research provides new evidence for how the brain creates perceptual illusions when speech is degraded at cocktail parties, in song lyrics or for older listeners. Credit: Blank et al., *JNeurosci* (2018)

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The ability to draw on past experience is important to keep up with a conversation, especially in noisy environments where [speech](#) sounds are hard to hear. However, these prior expectations can sometimes mislead listeners; convincing them that they heard something that a speaker did not actually say.

To investigate the neural underpinnings of speech

More information: Neural Prediction Errors Distinguish Perception and Misperception of Speech, *JNeurosci* (2018). DOI: [10.1523/JNEUROSCI.3258-17.2018](https://doi.org/10.1523/JNEUROSCI.3258-17.2018)

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