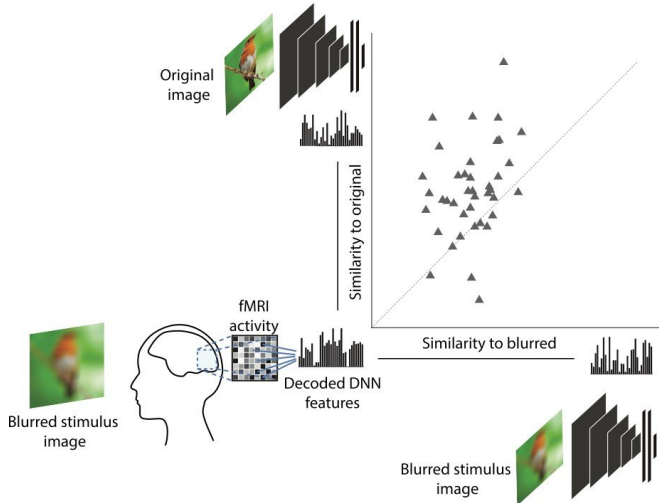


Neuro filter sharpens visual processing

7 May 2018



unaltered images. This effect was enhanced when participants were informed that they would be viewing images from a distinct set of categories. These findings provide a more comprehensive account of how individuals perceive their world through vision by combining visual input with prior knowledge.

A better understanding of the top-down and bottom-up pathways could help to explain how their disruption may, for example, generate hallucinations.

More information: Sharpening of hierarchical visual feature representations of blurred images, *eNeuro*, DOI: [10.1523/ENEURO.0443-17.2018](https://doi.org/10.1523/ENEURO.0443-17.2018)

Blurry and clear versions of an image are represented similarly in the brain, showing how the visual system fills in missing information to maintain perception when visibility is low. Credit: Abdelhack and Kamitani, *eNeuro* (2018)

Provided by Society for Neuroscience

Blurry and clear versions of an image are represented similarly in the brain, according to a neuroimaging study published in *eNeuro*. The research shows how the visual system fills in missing information to maintain perception when visibility is low.

Vision arises from a "bottom-up" process that transduces light into [neural signals](#) and a "top-down" process in which the [brain](#) assembles that [information](#) into a coherent visual representation of the environment. The interaction between these two pathways is not fully understood.

Mohamed Abdelhack and Yukiyasu Kamitani investigated top-down processing of degraded visual information with an [artificial neural network](#) that translates human brain activity as participants view blurry and progressively sharper images. They found that the representations of the blurrier images were skewed toward that of the original,

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