

# How the visual system balances sustained and segregated representations

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Credit: [\\_DJ\\_](#) via Flickr.

(Medical Xpress)—The human brain is faced with challenges every day. These may be challenges that you are conscious of, like trying to solve a mathematical equation or learning a new language.

But the brain is also constantly dealing with [challenges](#) that we are probably unaware of.

"Picture yourself walking down a busy street. People can disappear temporarily behind other people and objects, and the same person can be in different locations over time.

"The brain is constantly confronted with changing visual input," explains Dr Stephanie Goodhew, from the Research School of Psychology.

Dr Goodhew is a recent receipt of an ARC Discovery Early Career Researcher Award. Over the next three years, she will continue her research on how the [human brain](#) perceives objects in constantly changing environments.

"The majority of research on object perception has focussed on how we perceive or recognise static, stationary, objects.

"But visual perception is inherently dynamic – the brain is continuously confronted with changing visual input, and it can transform this information to form the coherent and stable visual scene filled with objects that we consciously perceive," she says.

"The [brain](#) regularly has to draw an inference of whether [visual input](#) from a given location belongs to a continuous object identity through time (what is called sustained object representation) or two or more separate objects (what is called object segmentation).

"While research has led to knowledge about each of these processes in isolation, the novel innovation of my project is to consider the value of both of these outcomes – sustained and segregated representations simultaneously, and thus will examine how the visual system balances their competing demands."

Dr Goodhew is hoping her research will enhance our knowledge of the fundamental processes in vision and how these processes will be affected

with ageing.

Provided by Australian National University

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