

Older people find it harder to see the wood for the trees

July 25 2011

When looking at a picture of many trees, young people will tend to say: "This is a forest". However, the older we get, the more likely we are to notice a single tree before seeing the forest. This suggests that the speed at which the brain processes the bigger picture is slower in older people. In a new study published in the July-August issue of Elsevier's *Cortex*, researchers have found that these age-related changes are correlated with a specific aspect of visual perception, known as Gestalt perception.

Markus Staudinger, together with Gereon R. Fink, Clare E. Mackey, and Silke Lux, investigated the brain's ability to focus on the local and global aspects of visual stimuli, in a group of young and elderly healthy subjects. They also studied how this ability is related to Gestalt perception, which is the mind's tendency to perceive many similar smaller objects as being part of a bigger entity. As expected, [older people](#) found it more difficult to concentrate on the global picture, but they also had trouble with the Gestalt principle of Good Continuation – the mind's preference for continuous shapes.

Participants in the study were shown groups of letters which were arranged in a pattern so that they formed a larger letter (see below), and asked whether a letter appeared on the local or global level. Importantly, the number of small letters forming the pattern was then varied. Usually, the smaller the letters are in the pattern, the easier it is to perceive the larger letter, and this was indeed true for the younger participants in the study. However, varying the number or letters did not help the older people, who remained slower to notice the global figure.

These findings provide the first evidence that changes in attention - meaning, the ability to concentrate on one thing, while ignoring others - and in Gestalt perception are correlated to healthy aging. More generally, they show that there may be age-related changes in different cognitive domains which interact. Furthermore, the results help us understand which specific aspects of visual perception become impaired in healthy aging.

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More information: The article is "Gestalt perception and the decline of global precedence in older subjects" by Markus R. Staudinger, Gereon R. Fink, Clare E. Mackay, and Silke Lux, and appears in *Cortex*, Volume 47, Issue 7 (July 2010)

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