

Study suggests left-side bias in visual expertise

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Facial recognition is not as automatic as it may seem. Researchers have identified specific areas in the brain devoted solely to picking out faces among other objects we encounter. Two specific effects have been established as being critical for facial recognition - holistic processing (in which we view the face as a whole, instead of in various parts) and left-side bias (in which we have a preference for the left side of the face). Psychologists Janet H. Hsiao from the University of Hong Kong and Garrison W. Cottrell from the University of California, San Diego wanted to test if these effects were specific for facial recognition or if they help us to identify other objects as well.

Chinese characters share many of the same features as faces (e.g., thousands must be recognized at the individual level, upright orientation and some characters have a mirror-symmetric configuration, as in faces), so in these experiments, native Chinese and non-Chinese readers were asked to discriminate Chinese characters.

In the first experiment, focusing on the holistic processing effect, volunteers were shown two characters above and below the center of the screen simultaneously and had to determine if the top or bottom halves of each character were identical. In the second experiment, which focused on the left-side bias effect, volunteers were shown a mirror-symmetric Chinese character together with two made-up characters (one created from two left halves of the original character and the other created from two right halves of the original character) and had to indicate which of the two characters was most similar to the original one.

In addition, during the second experiment, the participants' [eye movements](#) were monitored.

The results, reported in *Psychological Science*, a journal of the Association for Psychological Science, showed that the volunteers who were not readers of Chinese tended to look at the Chinese characters more holistically, compared to native Chinese reader volunteers. The researchers hypothesized that the task of reading Chinese characters led the Chinese reader volunteers to better discern specific components of the characters (such as individual stroke patterns), which were not as clear and important to the non-Chinese reader volunteers. In the second experiment, the Chinese volunteers showed a preference for the characters that were made of two left sides.

These findings suggest that whether or not we use holistic processing depends on the task performed with the object and its features, and that holistic processing is not used in general visual expertise. The authors note that when we see a face, we may group the features together because of the uniform configuration of faces, whereas when experts view Chinese characters they may show reduced holistic processing because they have learned to isolate and identify components that appear repetitively in different characters to facilitate character recognition. However, the left-side [bias](#) exhibited by the native Chinese reader volunteers in the second experiment suggests that since this effect does not appear to be face-specific, it may be a marker of general visual expertise.

Source: Association for [Psychological Science](#) (news : [web](#))

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