

Head Size Illusion

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The “head size” is defined as the width shown by the red arrow below. You can also think of it as the size of a hat that fits this person.



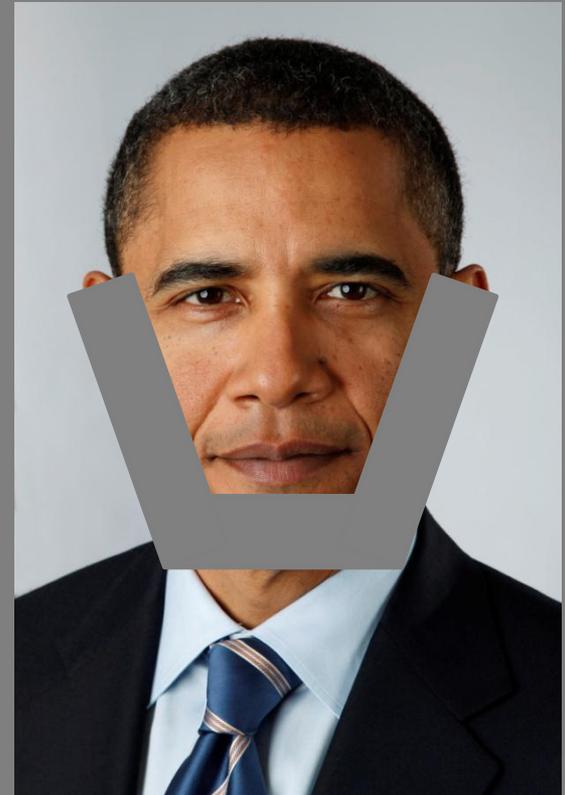
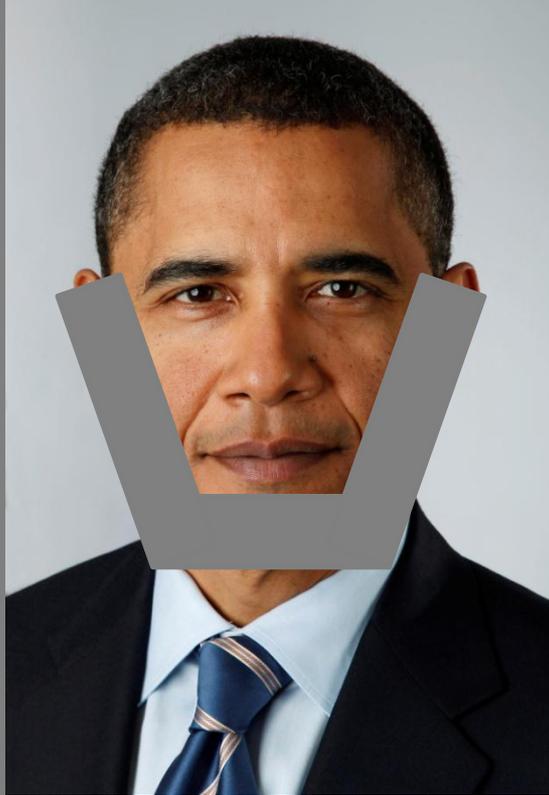
His head appears
wider



His head appears
narrower



This impression is especially pronounced if you
look at the face rather than the head.



Actually, both faces are identical except the width of cheeks, jaws and necks

The illusion works regardless of race and gender



Her head appears narrower



Her head appears wider





Again, both faces are identical except the width of cheeks, jaws and necks

The illusion works regardless of race and gender



His head appears
wider



His head appears
narrower





Again, both faces are identical except the width of cheeks, jaws and necks

The illusion works regardless of race and gender



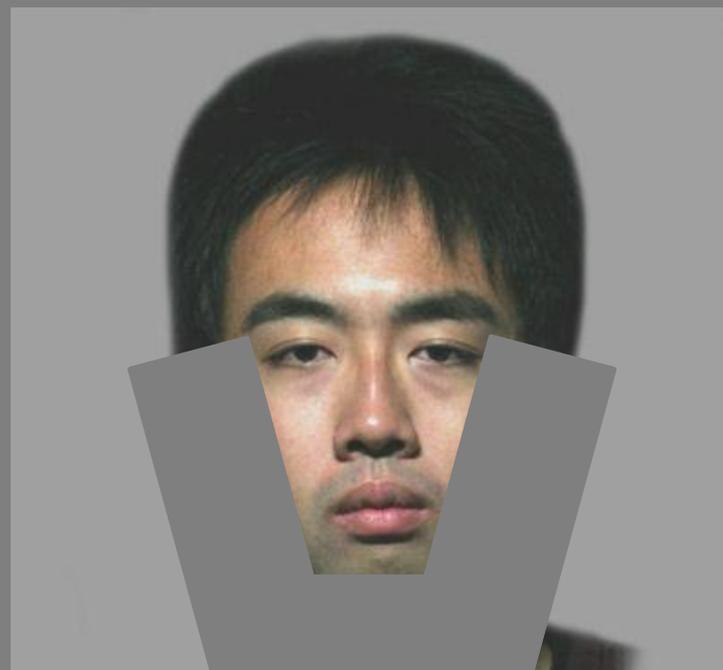
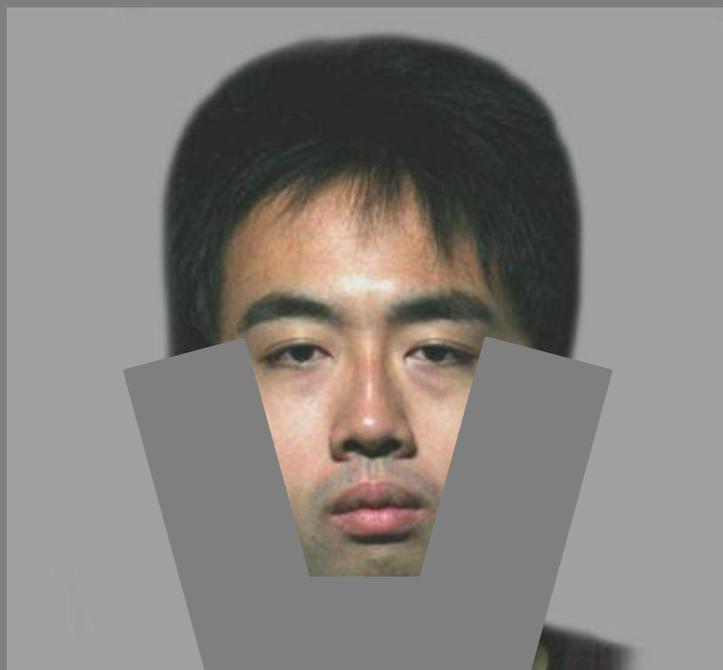
His head appears wider



His head appears narrower

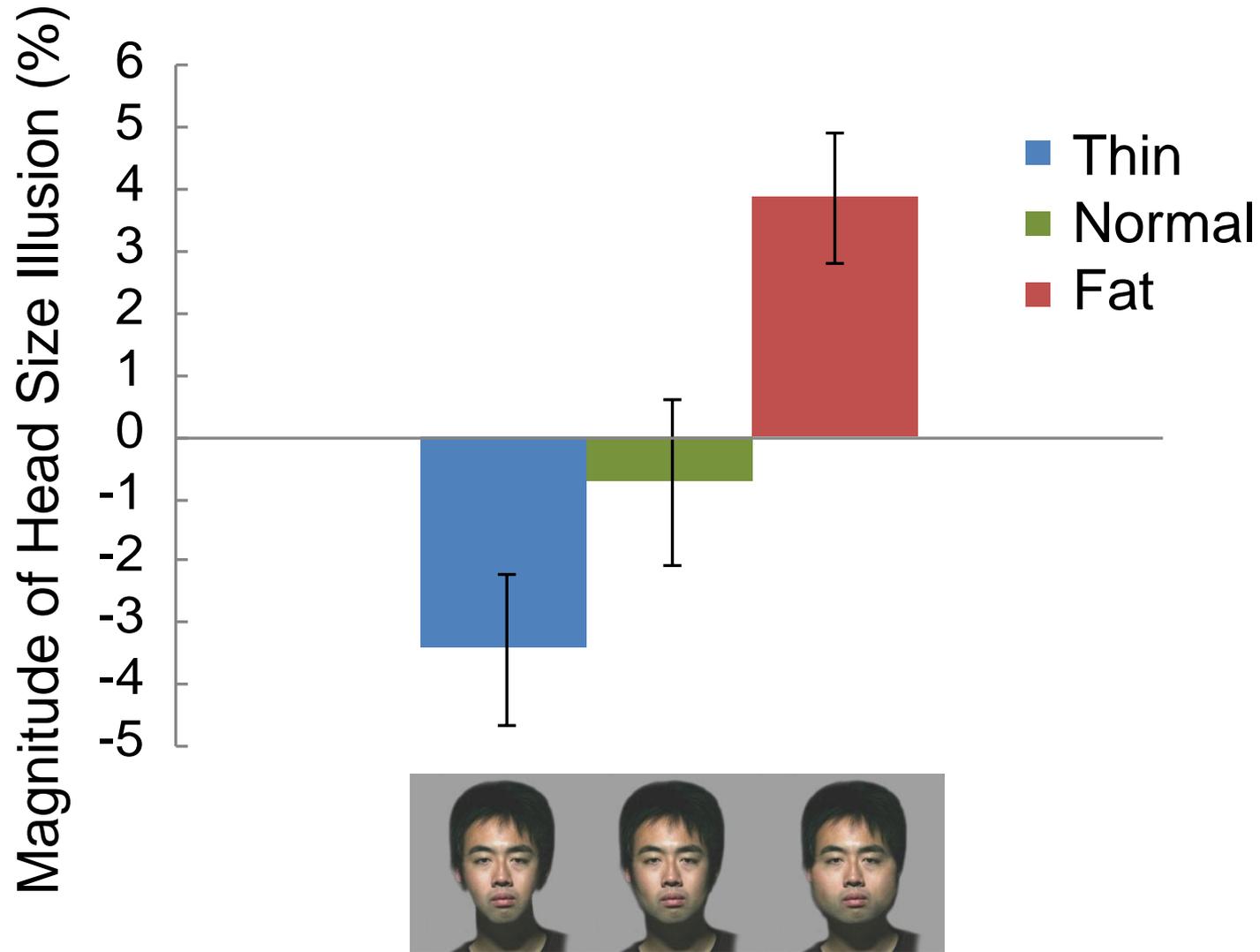


This impression is especially pronounced if you look at the face rather than the head.



Again, both faces are identical except the width of cheeks, jaws and necks

Results of Psychophysical Experiment



Explanation:

The amount of the illusion decreases by half when faces are upside down. The illusion also decreases by half when the internal features of faces are erased. These results indicate that at least 50% of the head size illusion depends on holistic perceptual processing of faces. It is well known that the human brain processes faces holistically. The head size illusion demonstrates that head outlines are also processed holistically because the lower half outlines influence the perceived shape of the upper half outlines. The visual system seems to take natural biological constraints and/or correlations into account (e.g. if one part of the human body is fat, likely so are other parts) when perceiving head shape.