Adjustment strategies in the Vertical-Horizontal illusion

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One of the most persistently studied perceptual illusions is the Vertical-Horizontal (VH) illusion, according to which people tend to overestimate the length of a vertical line when compared with the length of a horizontal line of exactly the same magnitude. The most frequent procedure used to test the presence of the illusion and to assess its size is based on the psychophysical *method of adjustment*, by means of the resulting average error in trying to equate the length of a variable line (V or H) to the length of a standard one (H or V, respectively). The work presented here makes use of this method in order to examine the relative weight of different factors that may contribute to the illusory effect, such as (a) the frame of reference sorrounding the stimulus lines, (b) the proper direction of the length adjustment demanded by the task (V→H or H→V), and (c) the presence (or not) of supervised practice through feedback. Furthermore, the illusory effect has been tested and measured across four different VH configurations: (1) a cross, (2) an L, (3) an inverted T, and (4) a T rotated counter-clockwise 90º. Our data show that the size of the expected illusion increases from figure (1) to figure (2), and from the latter to figure (3), where it reaches its maximum; but in figure (4) the illusion reverses reaching a significant effect in the opposite direction. This pattern of results appears consistently across different stimulus and test conditions, even though the variability in the amount of illusory effect seems to be modulated by the intervention of the critical factors just examined. Their relevance for a better understanding of the mechanisms responsible of the illusion will be discussed, with a look at the modularist charcterization of the early visual processes.

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