

Strasburger H & Malania M:  
Source confusion is a major cause of crowding

In his Gestalt analysis of reading, Korte (1923) has proposed five reasons of what Stuart & Burian later called the crowding effect. One reason, word compression with a loss of perception of a character, has been widely recognized (Levi, 2008). A major of Korte's reasons, however, the loss of positional information, has been largely neglected. We present new data which show that the confusion of entire characters accounts for more than 30% of the crowding effect. In a paradigm that separates featural from positional errors and further manipulates transient attention by a positional cue, we measured at 2°, 4° and 6° horizontal eccentricity and a range of flankers' distances and cue sizes. The effect of flanker distance confirms earlier findings, distance acts similarly on both featural and positional errors. Source confusion is highest with flankers close by. The cue has an effect on featural information only; cue size has no effect. Our results are a psychophysical counterpart to a separate neural coding of *what* and *where* in pattern recognition.

Key words: Indirect vision, peripheral vision, attention, character recognition, contrast sensitivity

#### References

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- Levi D M (2008). Crowding – an essential bottleneck for object recognition: a minireview. Vision Res. 48(5):635-54.