

Alfred Volkmann (1863)

Physiological Investigations in the Field of Optics (Physiologische Untersuchungen im Gebiete der Optik)

Leipzig: Breitkopf und Härtel

Translated by Hans Strasburger¹ and David Rose²

Alfred Wilhelm Volkmann (1801–1877) was a German physiologist, anatomist, and philosopher who worked in Leipzig, Dorpat (currently, Tartu, Estonia) and Halle. He performed original research on a range of topics including neuroanatomy and optics (e.g. 1836, 1846, 1863) which was frequently cited by Helmholtz (1867). In his 1863 book he reported extensive psychophysical studies on visual acuity.

In the following we translate accounts of some background experiments by Volkmann that were cited by Hering (1899). Our centre of interest is the result of Experiment 79 on p. 130, picked (somewhat arbitrarily and perhaps following Wundt, 1874) by Hering as an example for the just noticeable difference of distances in Volkmann's line-separation experiments. However, due to a little slip-up Volkmann reports the wrong value on p. 130, perhaps by a calculation error or by writing down one of the three Weber fractions from the following page ($1/50$) as the just noticeable distance difference of $1/50$ mm.

Hering (1899) further draws a connection to Volkmann's concept of a *just unnoticeable* (*venkenbar*) *difference*, and we therefore draw attention to §54 on p. 96, where Volkmann introduces the term, and to §65, p. 118, where it becomes clear that the term is meant as a counterpart to Fechner's *just noticeable difference*.

Hering finally refers to Volkmann's method of distance comparisons (Streckenvergleichung), and that appears to refer to Volkmann's Chapter VI "On single vision with two eyes" (pp. 181–268). There on p. 246 the term *Strecke* first appears in Volkmann's book. His Chapter VI could easily be overlooked because it is missing in his Table of Contents.

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Physiologische Untersuchungen Im Gebiete Der Optik Heft I

Hermann von Helmholtz



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