Notes and Comment

Comments on Mulligan and Shaw's "Multimodal signal detection: Independent decisions vs. integration"

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Mulligan and Shaw's (1980) assertion in their recent article in this journal that "The conclusions of Eijkman and Vendrik (1965) and Fidell (1970), that performance in a bimodal detection task is best described by an integration model, are not supported by our data" (p. 476) is an overstatement that does not follow compellingly from their published findings. Their unusual presentation of data (Table 2, p. 476), when converted into more conventional units, is summarized in Figure 1. Also plotted in Figure 1 are the data published by Fidell (1970), which Mulligan and Shaw claim are at variance with their own data.

Mulligan and Shaw's rationale for rejecting a parsimonious vector summation (law of cosines) model that accounts for 92% of the variance in disparate data sets is unclear. From communication with the authors, and an advance copy of the manuscript cited as "Reference Note 1" in their recent paper in this journal, it appears that their preference for a "sharing" model is primarily esthetic. The predictions of bimodal detection performance of the sharing model are not readily distinguished from those of vector summation models. Thus, Mulligan and Shaw (1980) have not established an empirical basis for their preference.

Considering other idiosyncracies (such as loose specification of experimental procedures and control

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Figure 1. Comparison of Mulligan and Shaw (1980) and Fidell (1970) data on bimodal detection performance.

of signal and noise conditions, and imprecise estimates of detection performance) of Mulligan and Shaw's report as well, it seems premature from the evidence presented to reach firm conclusions about "independent decisions vs. integration" in multimodal signal detection.

REFERENCES

- FIDELL, S. Sensory function in multimodal signal detection. *Journal of the Acoustical Society of America*, 1970, **47**, 1009-1015.
MULLIGAN, R. M., & SHAW, M. L. Comments on multimodal signal detection: Independent decisions vs. integration. *Perception & Psychophysics*, 1980, **28**, 471-478.

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