

This Week's Citation Classic

CC/NUMBER 10
MARCH 10, 1980

Howard I P & Templeton W B. *Human spatial orientation*. London: Wiley, 1966. 533 p.
[Univ. Durham, Durham, England]

This book is about how people perceive the direction and orientation of things. Early chapters review the relevant physiology of vision, eye movements, kinesthesia, the vestibular system, and auditory localization. Middle chapters review behavioral studies on gravitational, geographical, and egocentric orientation. End chapters review the behavioral consequences of distorting sensory inputs, with a chapter on the behavioral effects of weightlessness. [The *Science Citation Index*[®] (*SCI*[®]) and the *Social Sciences Citation Index*[™] (*SSCI*[™]) indicate that this book has been cited over 305 times since 1966.]

Ian P. Howard and W.B. Templeton
Department of Psychology
York University
Downsview, Ontario
Canada

August 24, 1979

"In 1961 we were working on the perception of the visual vertical and decided to write a short review paper on this topic because no such review existed. Our search through the literature soon revealed an extensive earlier German literature. We also began to receive a flood of reports sponsored by the American space programme. Our review became a journal monograph supplement. It soon became apparent that visual orientation to gravity concerns kinesthesia and the vestibular system just as much as vision, and no adequate review of these topics existed at the time. Our monograph supplement became a small book.

"At about this time the translation into English of the work of Erisman and Kohler in

Austria was leading to a revival of interest in the behavioral effects of upside-down vision.¹ It was becoming generally recognized that the problem of how people adapt to an upside-down world is one of a larger set of problems having to do with distortions of vision and other senses. Our small book became larger. In moments of euphoria we planned to write a multivolume work on all aspects of space perception. In moments of fatigue and despair we wondered why we were writing at all rather than doing experiments. The idea of confining ourselves to the orientation aspects of space perception, leaving out distance and movement perception, finally emerged and, after four years, we had a manuscript which we called complete.

"In retrospect we can see that the attempt to be comprehensive interfered with the smooth flow of ideas, and our efforts to cover the literature caused us to ignore the obvious implications of very recent work, especially the work of Hubel and Wiesel on the physiology of orientation detectors.² We were nevertheless pleased with the good reception that the book received.

"The second author, Templeton, died suddenly in September, 1979. The first author is just completing a sequel to the 1966 volume entitled *Human Visual Orientation*.³ There has been more published work on this topic since 1966 than there had been up to that time. In order to encompass this new material only one percent of the references in the new book are to pre-1966 publications. The most that any writer of such a book can hope is that it will help to shorten the time it takes for the book to become out of date.

"The book has been cited often because it is the only detailed review of human spatial orientation. We have been pleased to note that our suggestions for further research have been acted upon."

1. Kohler K. The formation and transformation of the perceptual world. Monograph No. 12. *Psychol. Issues* 3:1-175, 1964.
2. Hubel D H & Wiesel T N. Receptive fields of single neurones in the cat's striate cortex. *J. Physiology* 148:574-91, 1959.
3. Howard I P. *Human visual orientation*. London: Wiley, 1982.