
Reviews

Touch and blindness: Psychology and neuroscience edited by M A Heller, S Ballesteros; Psychology Press, Hove, Sussex (formerly published by Lawrence Erlbaum Associates) 2005, 392 pages, £45.00 cloth, £18.95 paper (US \$79.95 cloth) ISBN 978 0 8058 4725 3, 978 0 8058 4726 0

In 2002, Morton Heller and Soledad Ballesteros organised an exciting conference on touch, blindness, and neuroscience in Madrid, Spain. Their motivation for this conference was to bring together researchers working in different disciplines, like psychology and neuroscience. They realised that, although these researchers have ‘touch’ as their common interest, they seldom meet and they publish their work in different journals. Significant progress might be expected if they would interact more often, and contribute together to existing and new hypotheses and theories. A number of prominent researchers were invited to give overviews of their work and they were also asked to contribute to this volume.

The result is a book that covers a wide range of topics—as diverse as picture perception, spatial perception, object recognition and representation, cortical processing, and tactual virtual reality. Participants in the various studies are likewise diverse: age groups range from young children to relatively aged adults; individuals can be sighted, have low vision, or be blind; and participants can be healthy or even be Alzheimer patients. Stimuli include raised line drawings, novel clay objects, symmetric and asymmetric unfamiliar objects, daily life objects, Braille, gratings, or even virtual objects. Also the techniques to collect data are obviously rather different from chapter to chapter: spontaneous drawing, questionnaires, comparing haptic lengths, speeded object naming, imagining or exploring three-dimensional objects, and various brain scanning techniques, such as TMS, PET, and fMRI. Finally, the chapters deal with a variety of research questions: How do we process spatial information? What role does visual experience play in perception of pictures? How does aging affect implicit and explicit memory? How can we validate the usefulness of a haptic device? Do visual and tactile object representations share the same neural substrate? What is the role of visual cortex in tactile processing?

The above overview might give the impression that the book is just an odd collection of topics that only share the common theme ‘touch’, but it certainly offers more than that. It consists of ten chapters, starting with an introductory one in which Heller and Ballesteros present the various approaches to touch and blindness and introduce the contributing authors. They highlight important research issues, give an overview of relevant recent literature, and place the subsequent chapters in an appropriate context. They emphasise the role of other senses, most prominently vision, for perception, and this is a theme that can also be found in the rest of the book. The next five chapters are organised around the area of ‘psychology’, with Susanna Millar, Morton Heller, John Kennedy, José Antonio Muñoz Sevilla, and Soledad Ballesteros as first authors. Psychology is followed by three chapters on ‘neuroscience’, contributed by Mel Goodale, Krish Sathian, S Prather, Alvaro Pascual-Leone, and colleagues. The final chapter is again written by the two editors of this book and contains, among others, comments on the work presented in earlier chapters, an overview of the ‘state of the art’, and some concluding remarks. Heller and Ballesteros express an optimistic view on the development of their field of research that has shown a clear increase in research efforts over the last decade, and they have high expectations of the interactions between the approaches based on psychology and cognitive neuroscience.

Although this is a book on touch, a recurring theme is the influence of vision on haptic processing. One common approach is to compare performance in similar visual and haptic tasks, such as, for example, drawing and, more specifically, the use of perspective. Also the occurrence of illusions, the influence of priming, and the influence of reference frames turn out to be insightful tools for learning more about haptic processing. The second noun in the title is ‘blindness’ and in many ways vision, or lack of vision, also plays an important role in the various chapters. In a number of experiments, performance of congenitally blind, late-blind, very-low-vision, and blindfolded sighted persons is compared. Differences or similarities in performance

are used to shed light on diverse research issues. An important message, and a warning to scientists in the field, is that performance of blindfolded persons is often different from that of blind persons. Moreover, persons with very low vision often outperform both blind and blindfolded sighted persons. Therefore, this book also shows that one should be careful in extrapolating results obtained with blindfolded sighted subjects for drawing conclusions about blind subjects.

The field of touch is growing but books on touch are still relatively rare and therefore one like this is more than welcome. Of course, the present discussion cannot give a complete overview of an edited volume like this one, but it should be clear that the variety of topics means that the book provides entertaining reading materials. It gives us some insights into how the research field of touch can be approached from many different directions, and how different these approaches can be. Organisation of this conference was a success in bringing together researchers who were not likely to meet on other occasions. Likewise, the book bridges a gap between psychology on the one hand and neuroscience on the other hand, by showing that, for real progress, input from both fields is essential and that scientists in the various fields can learn from one another. Therefore, this book is of interest both to students new to the field as well as to more experienced researchers.

Although the book covers many different topics, it is certainly not a handbook, nor is it meant to be one. Hopefully, the conference will get a follow-up so that a new book can give us an updated state of the art in a few years time. In the meantime: read this book and appreciate that the field of touch offers an exciting and challenging research area!

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