Making sense

Book review by Jonathan Ashmore
Nat. Neurosci. 7, 95 (2004)

In this book review, the price of the book was listed incorrectly. The correct information appears below.

Sensory Transduction

by Gordon L Fain

Sinauer Associates, 2003
340 pp. hardcover, \$64.95
ISBN 0-87893-171-6

Random presentation enables subjects to adapt to two opposing forces on the hand

Rieko Osu, Satomi Hirai, Toshinori Yoshioka & Mitsuo Kawato
Nat. Neurosci. 7, 111–112 (2004)

Due to an editing error, “day 1” was printed instead of “day 2” in the first paragraph of this Brief Communication (p. 111, bottom of left-hand column). The corrected paragraph appears below.

Over two consecutive days, ten subjects learned reaching movements to eight targets located radially from a central start position. The movements took place in either a clockwise or a counterclockwise velocity-dependent rotational force field^{1,2,5} (Fig. 1), presented in a random order. Each force field was repeated no more than 5 times (average, 1.76 times). This randomized sequence is different from previous studies in which two force fields were presented either in alternating blocks of many trials¹ or alternating trial by trial^{5,7}. Before reaching in the clockwise force field (RF), subjects were presented with a red background, a red windmill-like diagram showing the direction and magnitude of rotational forces, and a high-frequency beep. Before reaching in the counterclockwise force field (BF), they were presented with a blue background, a blue windmill-like diagram and a low-frequency beep. After a 2-s presentation of these cues, one of the eight targets was randomly presented. Subjects were required to start within 1 s and reach the target within 225 ± 50 ms (time between exiting the start circle and entering the target circle) with straight and uncorrected trajectories. The distance between the starting point and each target was 12.5 cm. Visual feedback of the hand position was suppressed during movements, but the entire hand path was shown after the movement terminated. One cycle consisted of 16 trials, including randomly ordered movements to all eight targets in the two force fields. On both days, the subjects executed a block of 14 cycles. On day 2, another block of 16 cycles was added, during which force fields were randomly (twice per cycle) turned off while audiovisual cues were retained, to examine aftereffects². Before testing, subjects were familiarized with the task during a block of 192 trials without any force fields (null force field, NF; Fig. 2a).