Subjects trained in a standard data entry task, which involved typing numbers (e.g., 5421) using their right hands. At an initial test (6 months after training), subjects completed the standard task, followed by a left-hand variant (typing with their left hands) that involved the same perceptual, but different motoric, processes as the standard task. At a second test (8 months after training), subjects completed the standard task, followed by a code variant (translating letters into digits, then typing the digits with their right hands), which involved different perceptual, but the same motoric, processes as the standard task. For each of the three tasks, half the trials were trained numbers (old) and half were new. Repetition priming (faster response times to old than new numbers) was found for each task. Repetition priming for the standard task reflects retention of trained numbers; for the left-hand variant reflects transfer of perceptual processes; and for the code variant reflects transfer of motoric processes. There was thus evidence for both specificity and generalizability of training data entry perceptual and motoric processes over very long retention intervals.

In the data entry task, subjects typically see four-digit numbers, read them silently, and type them into the computer. (For training principles derived from the data entry task, see Healy, Kole, Wohllkamm, Buck-Gengler, & Bourne, 2011). The task is a sequential task with both cognitive and motoric requirements that can be examined separately through the different components of response time. For example, response execution time (which is the average time to type the second, third, and fourth digits after typing the first) has been shown to reflect the motoric aspects of the task (e.g., Chapman, Healy, & Kole, 2016; Fendrich, Healy, & Bourne, 1991).

At test, 26 subjects were given the standard version of the data entry task, in which they were shown four-digit numbers presented as numerals and entered them using the keyboard with their right hand. At Test 1, 6 months after training, subjects were given the standard task along with a left-hand variant. The left-hand variant involves different motoric processes because the numbers were entered with the left hand rather than with the right hand, but the perceptual aspects of the task did not change. At Test 2, 8 months after training, subjects were given the standard task along with a code variant. The code variant involves different perceptual processes because participants see letters and enter digits, but the motoric aspects of the task did not change.

The numbers entered during Tests 1 and 2 were either the same as during training (old) or numbers entered for the first time during the test (new). Repetition priming (old faster than new) at test for the standard task reflects specificity of training. Repetition priming for the left-hand task implies motoric transfer and for the code task implies perceptual transfer.

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