Re-acquisition of ballistic arm movements under the visually transposed condition

1998 Fiscal Year Final Research Report Summary

Re-acquisition of ballistic arm movements under the visually transposed condition

Research Project

Project/Area Number

09610074

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

実験系心理学

Research Institution

Kanazawa University

Principal Investigator

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1997 – 1998

Keywords

visual transposition / left-right reversed vision / hand-eye coordination / auditory localization / reaching / perceptual-motor coordination

Research Abstract

In August 1997, I conducted a two-week scale experiment, in which a subject wore the left-right visually reversing goggles and doing daily life during the period. The horizontal wide field of vision, 110 degree could be realized by making the left-right reversal goggles from six right-angle acrylic prisms.
The motion analysis system for video-recorded data was introduced in the experiment. By sampling the video images every 33 msec, the subject's arm movements to a visual or auditory target were traced. One of the most important results from the analysis is the difference of the reaching behavior between to the visual target and to the auditory target : As the adaptation progressed, the tasks in the visual target condition could be performed correctly to the physical target. On the other hand, the task to an auditory target became more and more difficult to perform because of the uncertainty of auditory

localization. Another important result was that the ballistic characteristics of the arm movements to the target were interrupted in the horizontal dimension in which visual information was reversed, while in the here-there dimension which was not transposed by the transposing goggles, the ballistic arm movements were preserved. These patterns were observed in the vision occlusion condition in which when the subject left the hand from the resting (starting) position, a liquid crystal glass immediately occluded the vision in front of the subject. Although the subject might not disturbed by the current visual information (because of occlusion of vision), the ballistic characteristics were interrupted only in the left-right dimension.

Research Products (8 results)

All | Other

All | Publications (8 results)

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[Publications] 吉村 浩一: "ストラットンとコーラー:逆さまの世界を探求した2人の心理学者" 金沢大学文学部論集 行動科学・哲学篇. 18. 1-12 (1998)

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