

ストレス条件下の運動学習：
反応産出フィードバックの処理の促進現象

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**Motor Learning under Stress :
Facilitation Response-Produced-Feedback Processing**

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Abstract

The present study examined the effect of skill acquisition under stress on learning. Two theories of the relationship between stress and motor performance, namely the conscious control theory and resource shortage theory predict different effects on acquisition under stress, transfer, retention and automatization. During acquisition, 48 participants practiced a pattern—Production task in one of four conditions, in which evocation of stress (stress and control) and the frequency (60% and 100%) of presenting knowledge of results (KR) were manipulated. After the acquisition phase, all the participants were administered transfer and retention tests. Then the participants performed transfer and retention trials under dual-task condition with an arithmetic task, in order to assess the degree of automatization.

The results were as follows : Stress didn't impair performance in acquisition, although the participants showed significant stress reactions. Transfer performance was improved at least when KR frequency was 100%. No effects of stress were found on the dual-task tests. These findings can be explained mainly in line with the conscious control theory. Especially, the improvement of transfer by stress reveals that more response—Produced feedback was processed under stress because the stress forced performers to continuously execute closed-loop control of movement, resulting in compensation for disadvantages of frequent KR-Presentation to transfer.

Key Words: stress, motor learning, closed-loop control, knowledge of results