Title
Action-Monitoring Processing is More Sensitive to Gain than to Avoidance of the Loss

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Citation
The 47th Annual Meeting of the Society for Psychophysiological Research, October 17-21, 2007. Hyatt Regency Hotel, Savannah, Georgia USA

Issue Date
2007-10

Doc URL
http://hdl.handle.net/2115/30148

Type
conference presentation

File Information
47AMSPR1.pdf

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Action-Monitoring Processing is More Sensitive to Gain than to Avoidance of the Loss
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INTRODUCTION

Action-monitoring
- monitors and regulates our action to achieve goals
- is more activated for inappropriate behavior than for appropriate behavior
- not only detects errors but also evaluates the outcome of them

Response-locked ERP (event-related brain potential)
- reflects processes related to the onset of the motor response
- ERN (error-related negativity), which is elicited by the erroneous response, is an effective index of error processing in the action-monitoring.
- CRN (correct response negativity) is sometimes observed in the ERP for correct response, but the functional significance is still unclear.

RESULTS & DISCUSSION

Behavioral data
Correct ERP data

Evaluation of correct response
The action-monitoring processing did not distinguish the outcomes of correct responses without conflict.
With conflict, action-monitoring processing was sensitive to acquisition of the reward.
Evaluation of error (Murata & Katayama, 2006 SPR)
Failure to gain for error had greater impact than loss for error.
The functional significance of the positivity for correct trials should be investigated in further research.

CONCLUSION
The action-monitoring processing
- evaluates the outcome of correct response with response conflict
- regards gain/failure to gain as more impact event than avoidance of loss/loss
Acquiring reward may have special importance for the human.