## Accepted Manuscript

Title: Temporal Dynamics of Reward Anticipation in the

Human Brain

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PII: S0301-0511(17)30131-X

DOI: http://dx.doi.org/doi:10.1016/j.biopsycho.2017.07.011

Reference: BIOPSY 7401

To appear in:

Received date: 6-1-2017 Revised date: 13-7-2017 Accepted date: 17-7-2017

Please cite this article as: Zhang, Yuanyuan, Li, Qi, Wang, Zhao, Liu, Xun, Zheng, Ya, Temporal Dynamics of Reward Anticipation in the Human Brain. Biological Psychology http://dx.doi.org/10.1016/j.biopsycho.2017.07.011

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ACCEPTED MANUSCRIPT

**Temporal Dynamics of Reward Anticipation in the Human Brain** 

Running head: Temporal Dynamics of Reward Anticipation

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Number of pages: 27 Number of figures: 3 Number of tables: 2

Number of words for abstract: 159 Number of words in the text: 5859

**Highlights** 

• We investigated the neural dynamics of reward anticipation.

• Participants completed an ERP task and a behavioral task.

• The cue-P3 and SPN were more sensitive to gain vs. loss anticipation than the CNV.

• The gain cue-P3 and SPN selectively predicted participants' approach motivation.

• The prediction was strongest when reward uncertainty was maximal.

**Abstract** 

Reward anticipation is a complex process including cue evaluation, motor preparation, and

feedback anticipation. The present study investigated whether these psychological processes

were dissociable on neural dynamics in terms of incentive valence and approach motivation. We

recorded EEG when participants were performing a monetary incentive delay task, and found a

cue-P3 during the cue-evaluation stage, a contingent negative variation (CNV) during the motor-

1

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