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CORRECTION
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Corrigendum: Modeling Emotions Associated With Novelty at Variable Uncertainty Levels: A Bayesian Approach

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A Corrigendum on

Modeling Emotions Associated With Novelty at Variable Uncertainty Levels: A Bayesian Approach
by Yanagisawa, H., Kawamata, O., and Ueda, K. (2019). Front. Comput. Neurosci. 13:2. doi: 10.3389/fncom.2019.00002

In the original article, there were errors in Equations (5) and (12) and the text.

In Equation (5) there was a typographical error in the numerator and we wrote

$$\eta_{post} = \frac{s_p \eta + s_l \bar{x}}{s_p + s_l} \tag{5}$$

when it should be

$$\eta_{post} = \frac{s_p \bar{x} + s_l \eta}{s_p + s_l} \tag{5}$$

In Equation (12) it was written that uncertainty is always less than zero:

$$\frac{\partial \beta}{\partial s_p} = \frac{1}{2}\left\{-\frac{s_p}{s_l(s_p + s_l)} - \frac{s_l}{(s_p + s_l)^2}\right\} \leq 0 \tag{12}$$

This has been corrected to show that uncertainty s_p is always more than zero:

$$\frac{\partial \beta}{\partial s_p} = \frac{s_p}{2(s_p + s_l)^2} > 0 \tag{12}$$

Similarly, there was a miscalculation in the text preceding Equation (14). We wrote "We derived $\delta^2 + (\alpha_1 - \alpha_2)/(\beta_1 + \beta_2) = 0$ under $\beta_1 \neq \beta_2$. Therefore,

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$(\alpha_1 - \alpha_2)/(\beta_1 + \beta_2) < 0$ it is the condition." We actually derived "$\delta^2(\alpha_1 - \alpha_2) + (\beta_1 - \beta_2) = 0$ under $\beta_1 \neq \beta_2$" and the condition is "$(\alpha_1 - \alpha_2)(\beta_1 - \beta_2) < 0$."

A correction has been made to the Model of Emotional Dimensions Elicited by A Novel Event section, subsection Interaction Effect of Uncertainty and Prediction Errors on Information Gain, paragraph 5.

"A condition where the two functions have an intersection is $\alpha_1\delta^2 + \beta_1 = \alpha_2\delta^2 + \beta_2$. We derived $\delta^2(\alpha_1 - \alpha_2) + (\beta_1 - \beta_2) = 0$ under $\beta_1 \neq \beta_2$. Therefore, $(\alpha_1 - \alpha_2)(\beta_1 - \beta_2) < 0$ is the condition. We found that this condition applies when the relationship between different uncertainties s_{p1} and s_{p2} and constant external noise s_l is as follows:

$$s_{p1}s_{p2} > {s_l}^2 \tag{14}$$

The authors apologize for these errors, which does not change the scientific conclusions of the article in any way. The original article has been updated.