$$\hat{p}_{\mathrm{BO}}(w_3 \mid w_1, w_2) = \begin{cases} f^*(w_3 \mid w_1, w_2) & \text{if } f^*(w_3 \mid w_1, w_2) > 0 \\ \alpha_{w_1, w_2} \times \lambda(w_1, w_2) \times \hat{p}_{\mathrm{BO}}(w_3 \mid w_1, w_2) & \text{otherwise} \end{cases}$$