

[FOR XIXI: Do you think that this belongs to background, too?]

For this measure, we evaluate the likelihood of a counterfactual trace by determining whether a counterfactual leads to the desired outcome or not. For this purpose, we use the predictive model, which returns a prediction for each counterfactual sequence. As we are predicting process outcomes, we typically predict a class. However, it is often difficult to force a deterministic model to produce a different class prediction. Therefore, we can relax the condition by maximising the prediction score of the desired counterfactual outcome[1]. If we compare the difference of the counterfactual prediction score with the factual prediction score, we can determine an increase or decrease. Ideally, we want to increase the likelihood of the desired outcome. Therefore, we compute the difference between the two prediction scores. We refer to this value as *delta*, as it reflects the delta between both prediction scores. Equation 1 shows the corresponding formula.

$$\textit{delta} = p(o|s^*) - p(o|s) \tag{1}$$

Here,  $p(o|s)$  describes the probability of an outcome  $o$  given a sequence of events  $s$ .  $s^*$  denotes a counterfactual sequence.