if f *is* $RELU$, *then*

$$\frac{\partial J}{\partial w} = \frac{\partial J}{\partial \hat{y}} \frac{\partial \hat{y}}{\partial O} \frac{\partial O}{\partial M_1} \frac{\partial M_1}{\partial c} \frac{\partial c}{\partial w}$$

$$= (\hat{y} - y) U^T I x^T$$

if $MU + b_2 > 0, w \cdot x_{i:i+h-1} + b_1 > 0$:

$$\frac{\partial J}{\partial w} = (\hat{y} - y) U^T I x^T$$

otherwise,

$$\frac{\partial J}{\partial w} = 0$$

$$Thus: \; w' = w - lr \cdot \frac{\partial J}{\partial w}$$