

$$\begin{array}{ccc}
I \sim \text{Categorical}(\theta) & \longrightarrow & I = \underset{k}{\operatorname{argmax}} \{ \theta_k + G^{(k)} \} \\
& & \downarrow \\
& & I = \operatorname{softmax} (\theta_k + G^{(k)})
\end{array}$$