

$\mathbb{E} \left[\frac{\partial}{\partial \theta} \log p(\mathbf{A}; \theta) \right] = \mathbb{E} \left[\frac{\partial}{\partial \theta} \log p(\mathbf{A}; \theta) + \frac{\partial}{\partial \theta} \log p(\mathbf{B}; \theta) \right]$