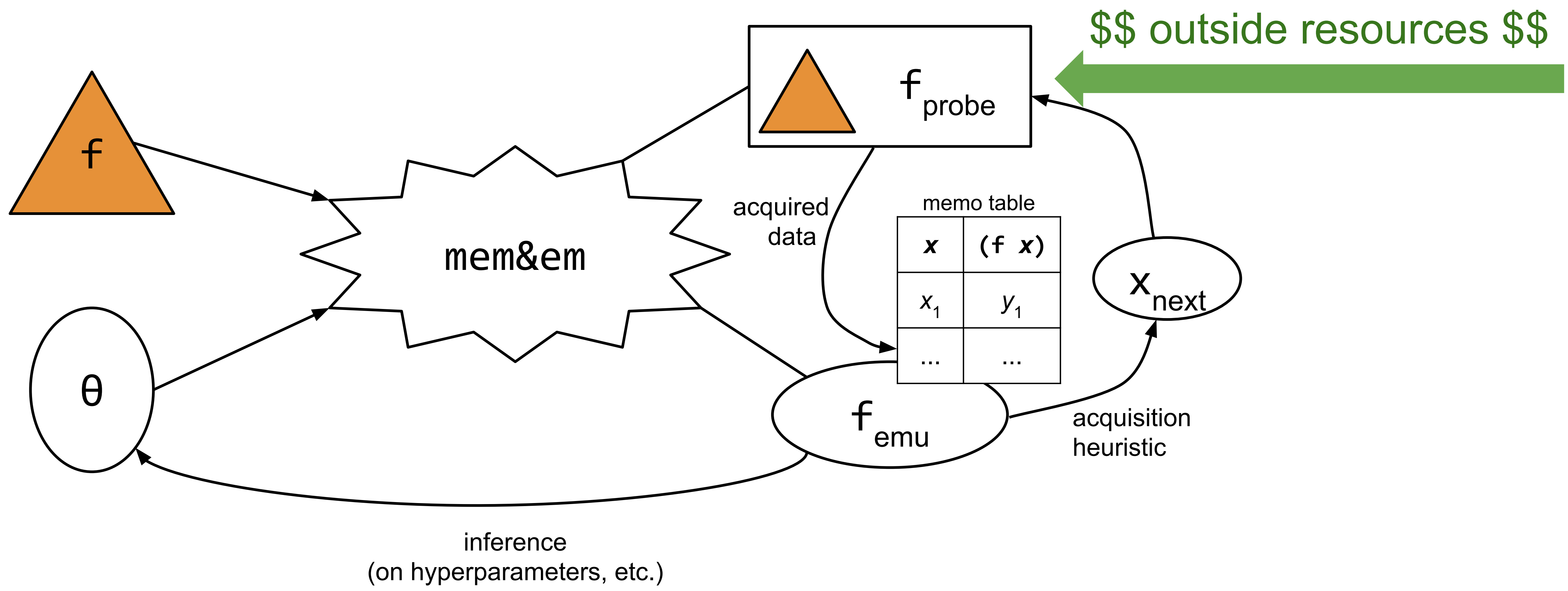

In general:

$$P\left(\left(\mathtt{f}_{\text{emu}}\ \mathbf{x}\right) \,\middle|\, \text{memo table} = (\mathbf{x}_{\text{past}}, \mathbf{y}_{\text{past}})\right) \sim P\left(f(\mathbf{x}) \,\middle|\, f(\mathbf{x}_{\text{past}}) = \mathbf{y}_{\text{past}}\right),$$
$$\text{where } f \sim P\left(\mathtt{f}_{\text{emu}} \,\middle|\, \text{memo table} = (\emptyset, \emptyset)\right)$$

For $\mathcal{GP}(\mu_{\text{prior}}, K_{\text{prior}})$ prior on $\mathtt{f}_{\text{emu}}$:

$$P\left(\left(\mathtt{f}_{\text{emu}}\ \mathbf{x}\right) \mid \mathbf{x}_{\text{past}}, \mathbf{y}_{\text{past}}\right) \sim \mathcal{N}\left(\mu(\mathbf{x}), K(\mathbf{x}, \mathbf{x})\right)$$
$$\mu(\mathbf{x}) = \mu_{\text{prior}}(\mathbf{x}) + K_{\text{prior}}(\mathbf{x}, \mathbf{x}_{\text{past}})\, K_{\text{prior}}(\mathbf{x}_{\text{past}}, \mathbf{x}_{\text{past}})^{-1}\left(\mathbf{y}_{\text{past}} - \mu_{\text{prior}}(\mathbf{x}_{\text{past}})\right)$$
$$K(\mathbf{x}, \mathbf{x}) = K_{\text{prior}}(\mathbf{x}, \mathbf{x}) - K_{\text{prior}}(\mathbf{x}, \mathbf{x}_{\text{past}})\, K_{\text{prior}}(\mathbf{x}_{\text{past}}, \mathbf{x}_{\text{past}})^{-1} K_{\text{prior}}(\mathbf{x}_{\text{past}}, \mathbf{x})$$

If $\mathtt{f}$ is (nearly) smooth, then as $|\mathbf{x}_{\text{past}}| \to \infty$, $\mathtt{f}_{\text{emu}} \approx \mathtt{f}$.