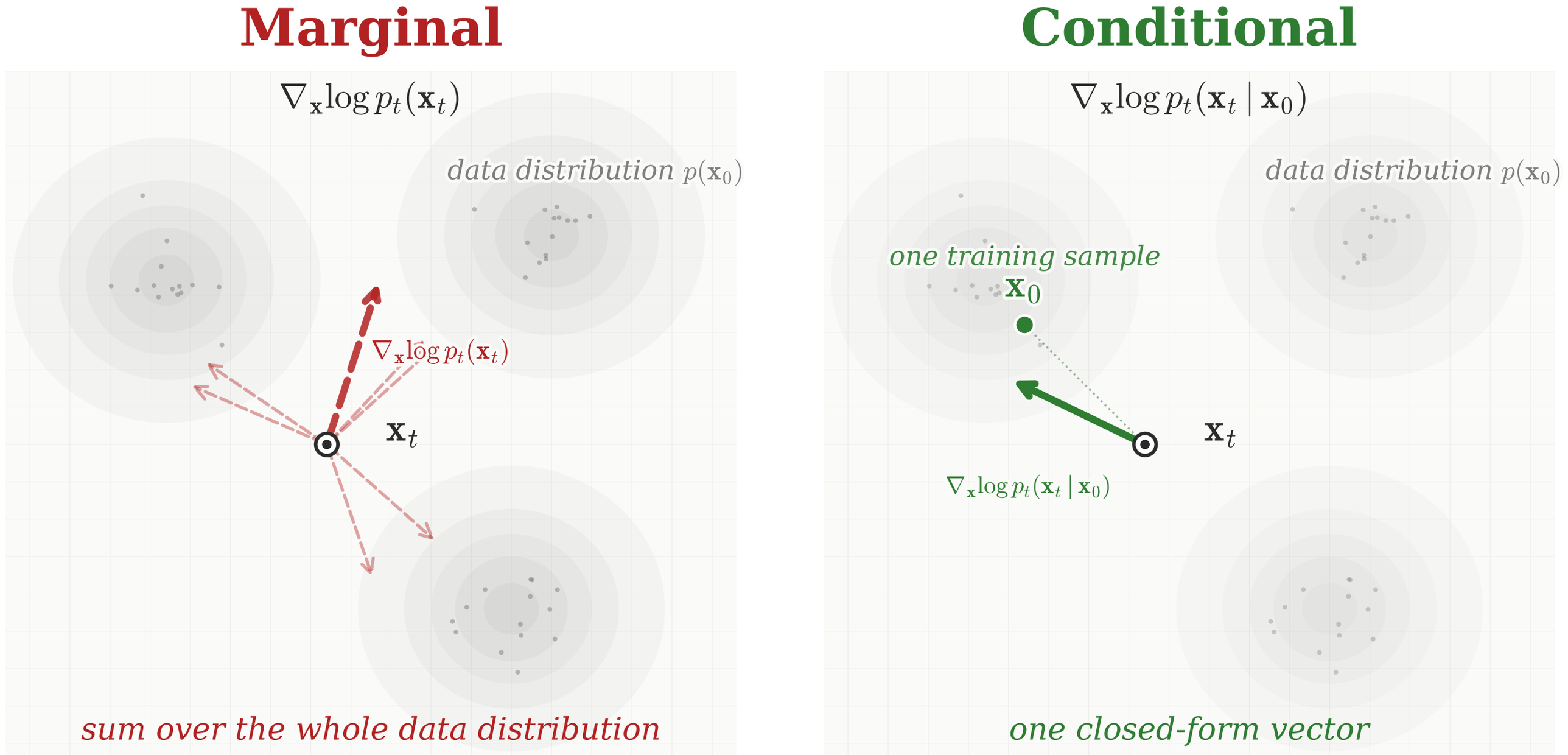

Marginal
$\nabla_{\mathbf{x}} \log p_t(\mathbf{x}_t)$
data distribution $p(\mathbf{x}_0)$
$\nabla_{\mathbf{x}} \log p_t(\mathbf{x}_t)$
$\mathbf{x}_t$
sum over the whole data distribution
Conditional
$\nabla_{\mathbf{x}} \log p_t(\mathbf{x}_t \mid \mathbf{x}_0)$
data distribution $p(\mathbf{x}_0)$
one training sample
$\mathbf{x}_0$
$\mathbf{x}_t$
$\nabla_{\mathbf{x}} \log p_t(\mathbf{x}_t \mid \mathbf{x}_0)$
one closed-form vector