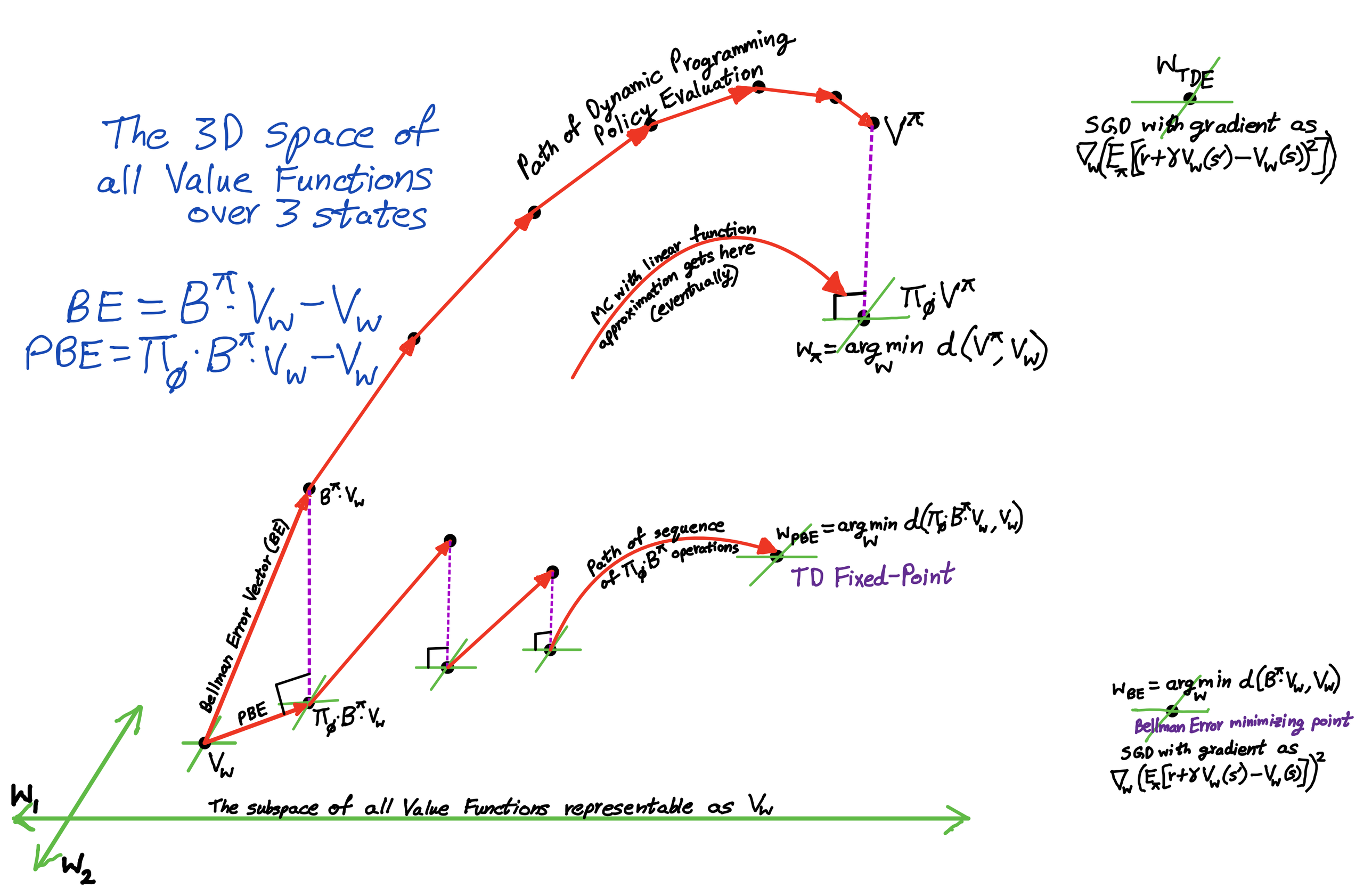
The 3D space of all Value Functions over 3 states

$$BE = B^{\pi} \cdot V_w - V_w$$
$$PBE = \Pi_{\phi} \cdot B^{\pi} \cdot V_w - V_w$$



w_{TDE}

SGD with gradient as
$\nabla_w \left(E_{\pi}[r + \gamma V_w(s') - V_w(s)]^2 \right)$

$w_{BE} = \arg\min_w d(B^{\pi} \cdot V_w, V_w)$

Bellman Error minimizing point

SGD with gradient as
$\nabla_w \left(E_{\pi}[r + \gamma V_w(s') - V_w(s)] \right)^2$