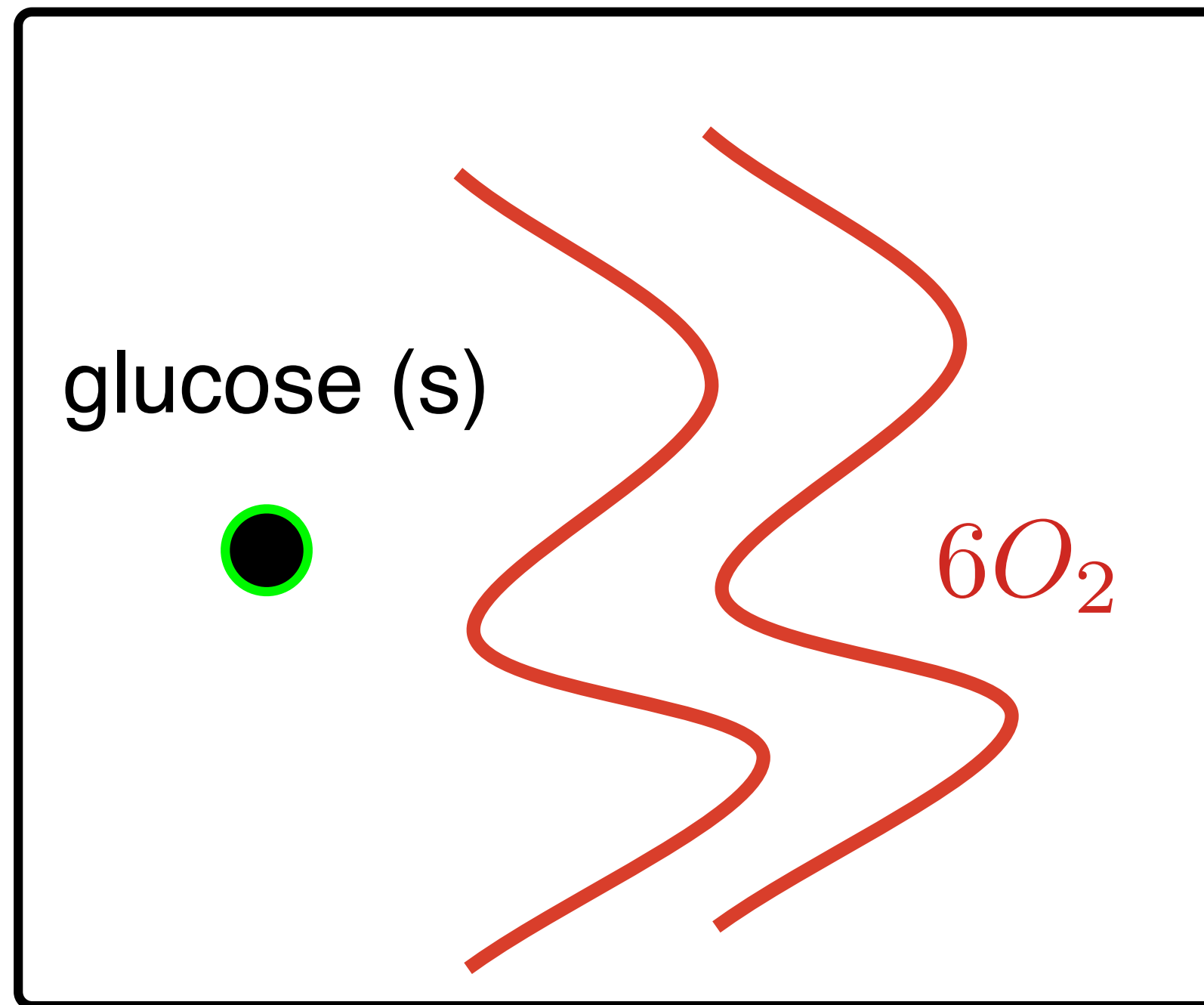
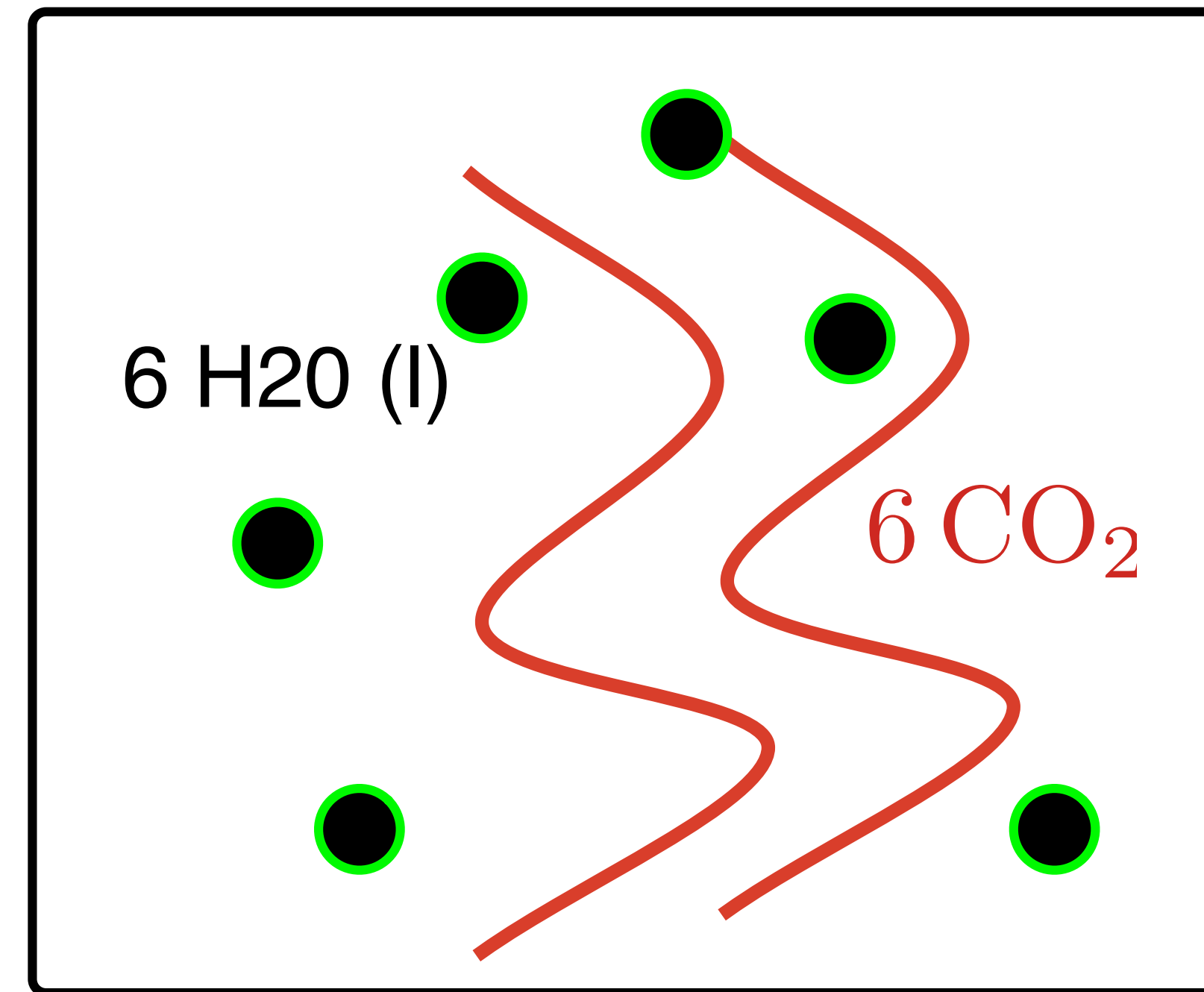


Oxidation of Glucose Cartoon

Before



After



Surroundings at Temperature T

$$Q = T\Delta S$$



Maxwell Relations

$$\left(\frac{\partial T}{\partial V}\right)_S = - \left(\frac{\partial p}{\partial S}\right)_V$$

Energy, $E(S, V)$

$$\left(\frac{\partial T}{\partial p}\right)_S = \left(\frac{\partial V}{\partial S}\right)_p$$

Enthalpy, $H(S, p)$

$$\left(\frac{\partial S}{\partial V}\right)_T = \left(\frac{\partial p}{\partial T}\right)_V$$

Free Energy, $F(T, V)$

$$\left(\frac{\partial S}{\partial p}\right)_T = - \left(\frac{\partial V}{\partial T}\right)_p$$

Gibbs Free Energy $G(T, P)$