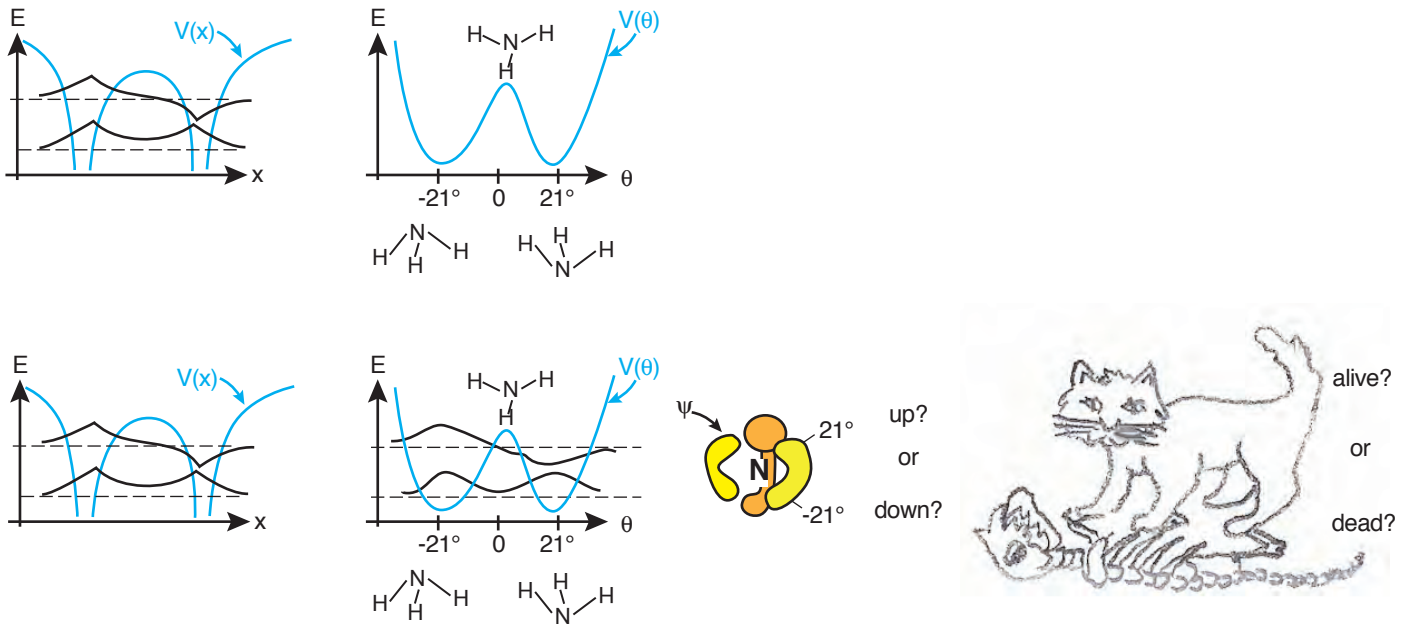
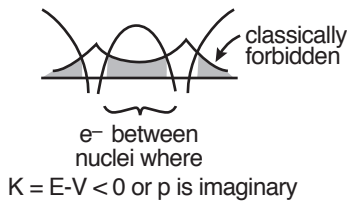


# Tunneling in quantum mechanics

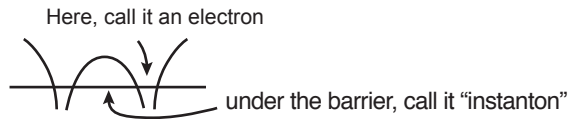
## H<sub>2</sub> vs. ammonia: A Schrödinger's cat molecule



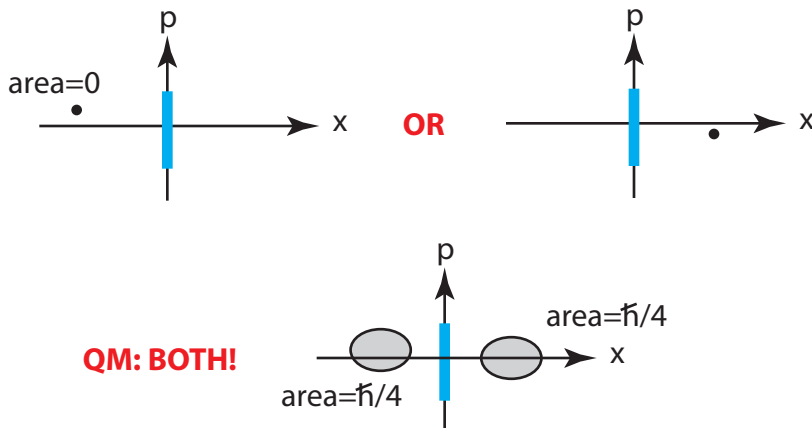
## Quantum particles penetrate into the classically forbidden region



## $\Delta E \Delta t = \hbar/2$ allows energy conservation violation for an instant in time



## Classical and quantum particle in phase space (x-p plot):



## Tunneling even occurs in the harmonic oscillator:

