Why Clipping Hurts: Loss of Granularity

WITHOUT Clipping

Near terminal (1 step) Q = -0.1 → target ≈ -16.1

Medium distance (10 steps) Q = -150 → target ≈ -155

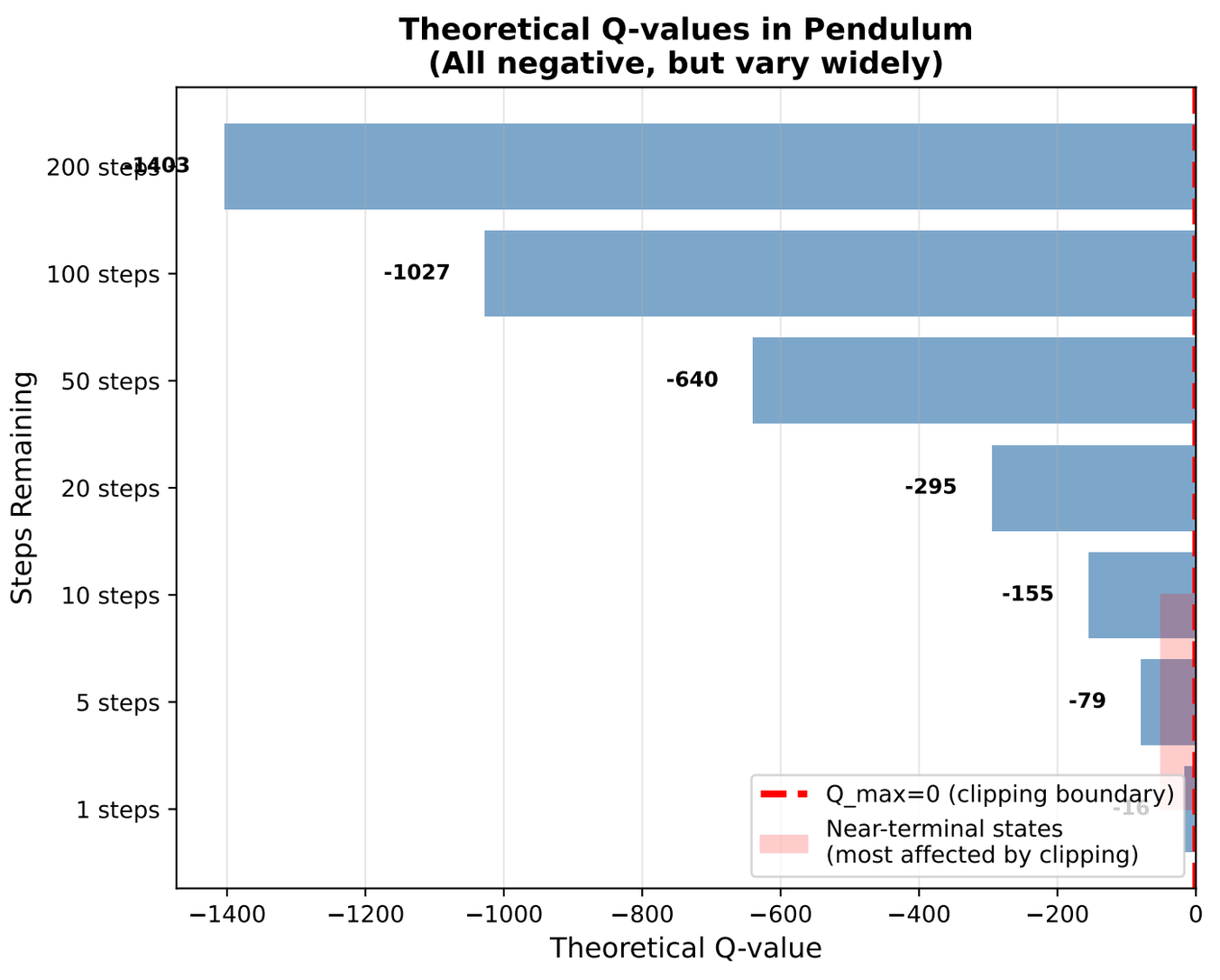
Far from terminal (500 steps) Q = -300 → target ≈ -640

✓ Relative ordering preserved
✓ Fine distinctions learned

WITH Clipping

Near terminal (1 step) Q = -0.1 → 0 → target ≈ -16.2

Medium distance (10 steps) Q = -66 → target ≈ -66

Far from terminal (500 steps) Q = -300 → target ≈ -640

✗ Clipping biases near-terminal states
✗ Can't distinguish 1 vs 2 steps