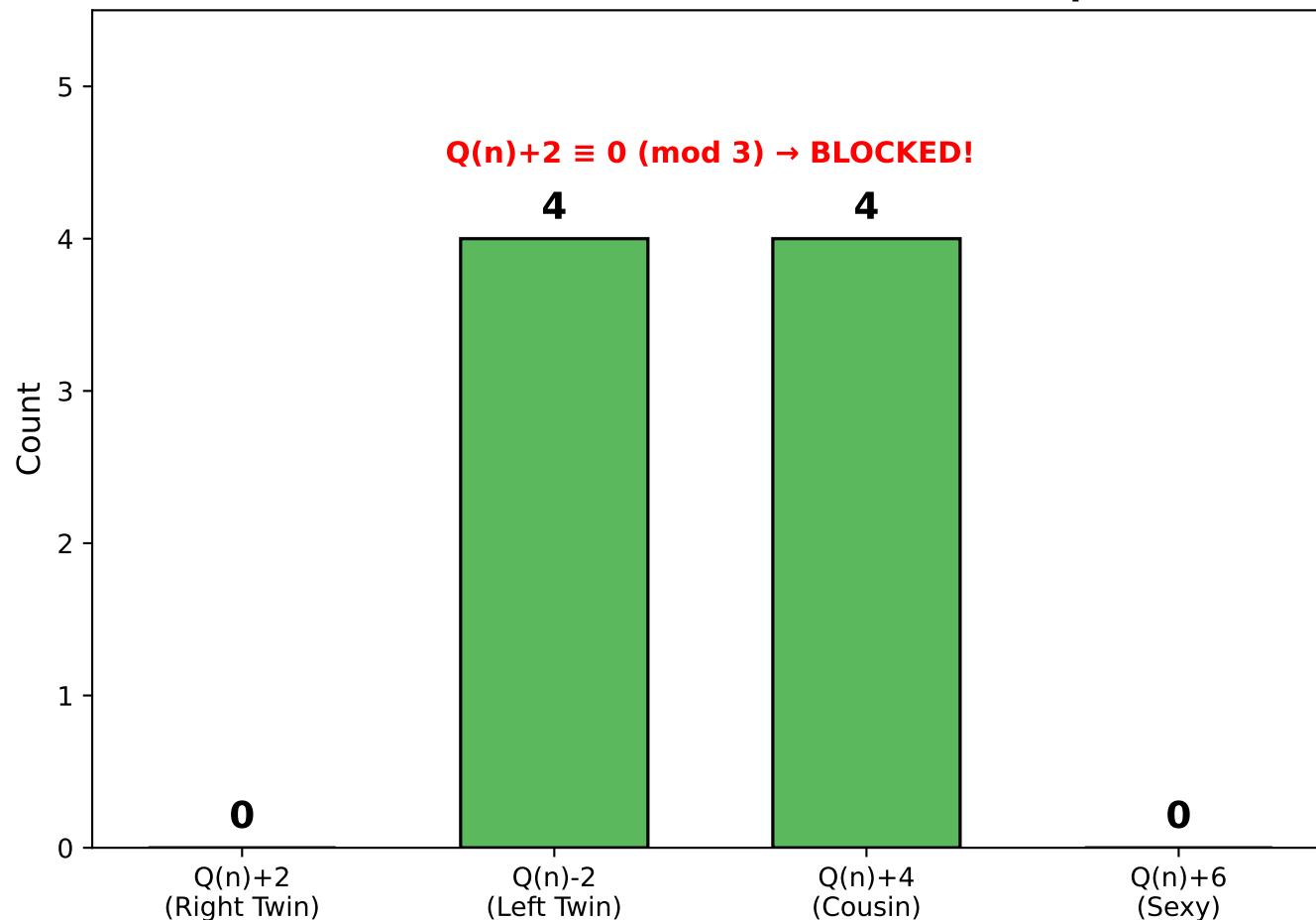
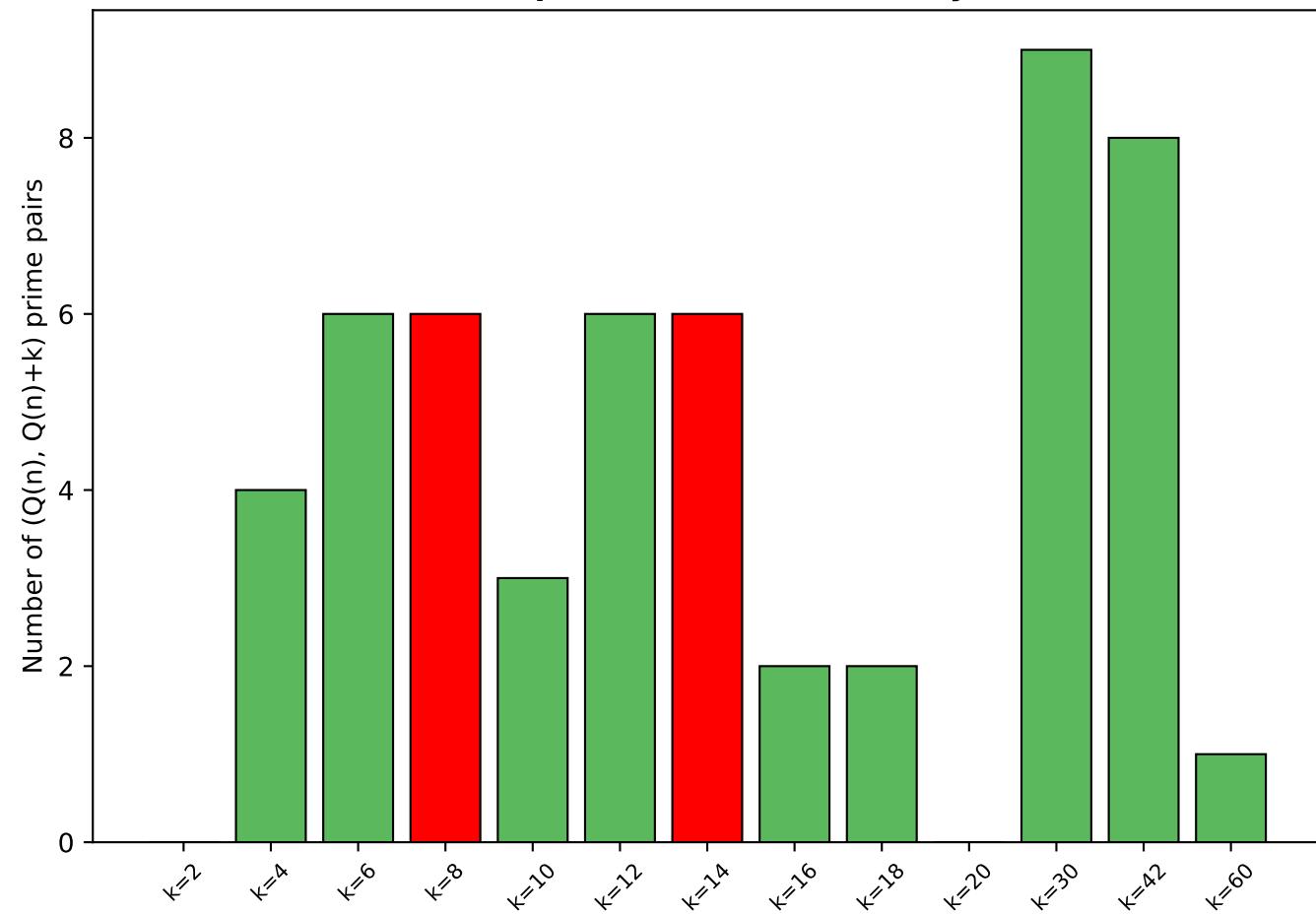


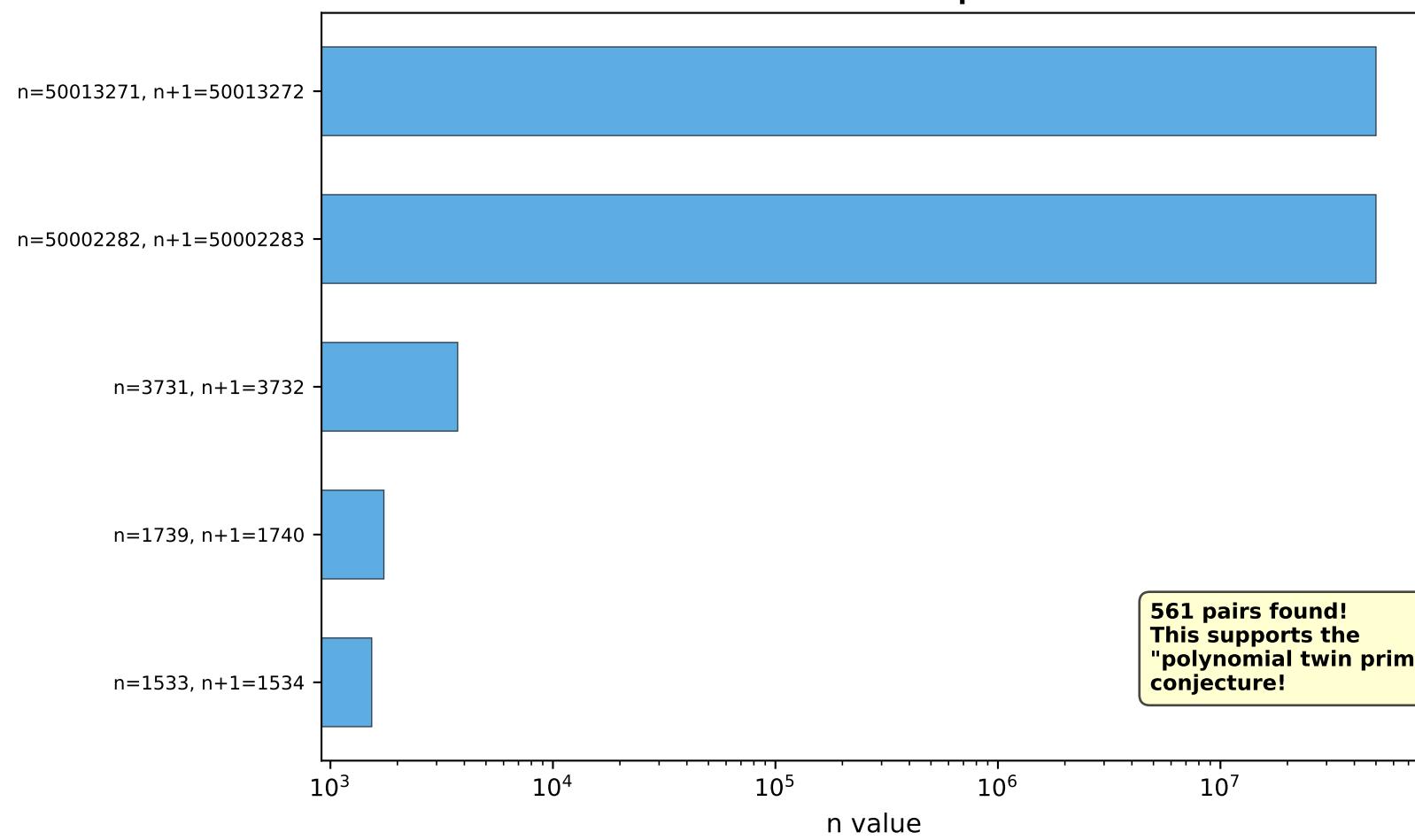
Twin Prime Structure of Q(n) "Arithmetic Resonance" Exclusion Principle



Gap Distribution: mod 3 Compatible vs Blocked (Green=Compatible, Red=Blocked by mod 3)



Consecutive n Pairs where Q(n) and Q(n+1) are BOTH Prime Total Found: 561 pairs!



$Q(n) = n^{4/7} - (n-1)^{4/7}$ TWIN PRIME ANALYSIS ||
 Based on Zhang Yitang / Terence Tao
 Bounded Gap Theory

THEOREM 1: Right Twin Exclusion

For all $n \geq 2$: $(Q(n), Q(n)+2)$ cannot be prime. ||

PROOF: $Q(n) \equiv 1 \pmod{3}$
 $\Rightarrow Q(n)+2 \equiv 0 \pmod{3}$
 $\Rightarrow Q(n)+2$ is divisible by 3 QED

OBSERVATION 1: Left Twins Exist

Found 4 cases where $Q(n)-2$ is prime.
 (No mod 3 obstruction since $Q(n)-2 \equiv 2 \pmod{3}$) ||

OBSERVATION 2: Consecutive n Pairs

Found 561 pairs $(n, n+1)$ where $Q(n)$ and $Q(n+1)$ both prime!
 This is strong evidence for a "polynomial twin prime conjecture"

CONJECTURE: Infinitely many n exist such that $Q(n)$ and $Q(n+1)$ are both prime.

BATEMAN-HORN FACTOR

$w(p) = 0$ for all small primes p
 $(Q(n) \text{ never } \equiv 0 \pmod{p} \text{ for } p < 283)$
 $\Rightarrow C_Q \approx 8.70$ (very high prime density!)