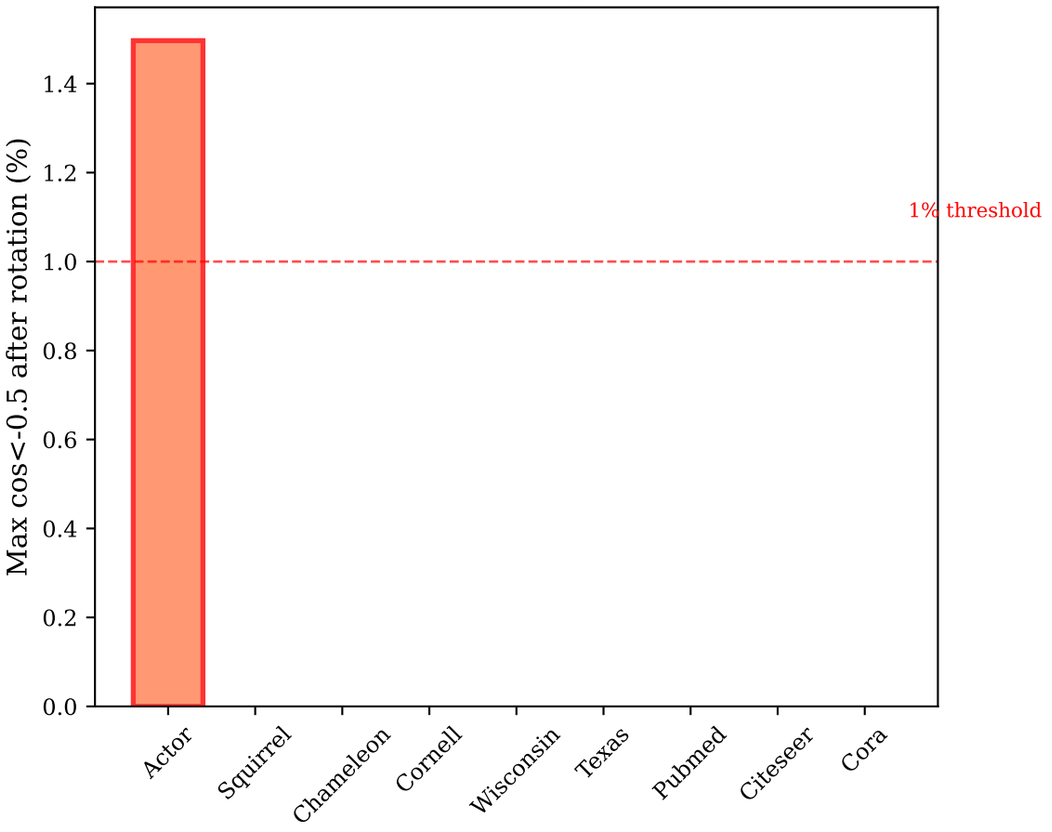

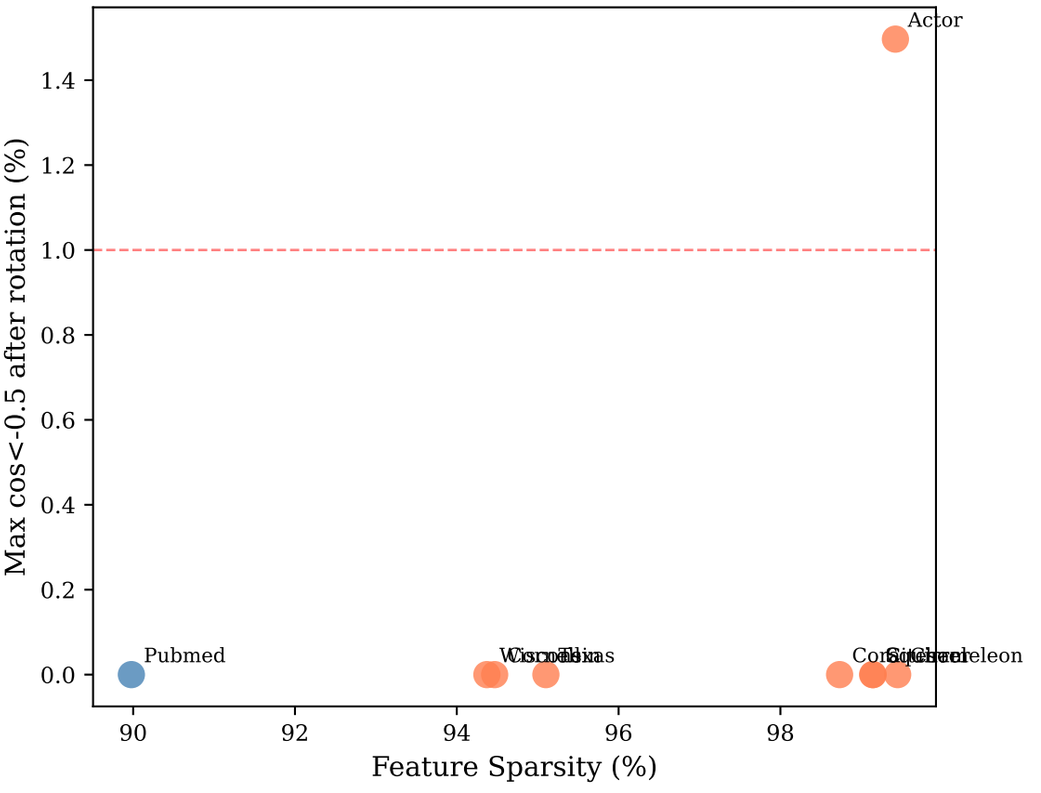

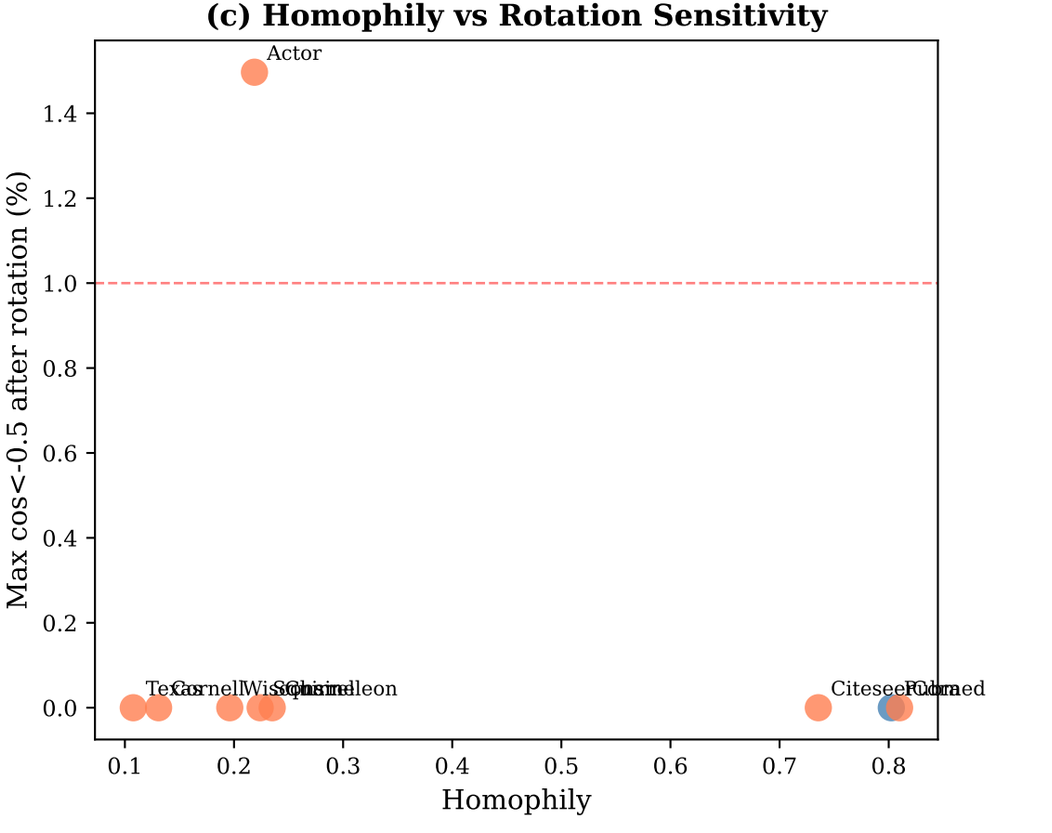


```
ACTOR ATTRIBUTION ANALYSIS SUMMARY

Why Actor shows 1.48% cos<-0.5 after rotation:

1. UNIQUE FEATURES
   • Binary one-hot encoded (not continuous)
   • Extremely sparse (99%+ zeros)
   • Few non-zero entries per row (~2-3)

2. ROTATION EFFECT
   • Sparse→dense transformation
   • Orthogonal pairs (cos≈0) can become negative
   • This is geometric artifact, not NOON violation

3. KEY EVIDENCE
   • Original Actor features: 0% negative
   • All datasets: 0% negative without rotation
   • Even with rotation: Actor 98.5% non-opposite

4. IMPLICATION FOR NOON
   • NOON holds for all original features
   • Rotation sensitivity is a boundary condition
   • Actor is edge case, not counter-example

Legend: ■ Binary features  ■ Continuous features
```