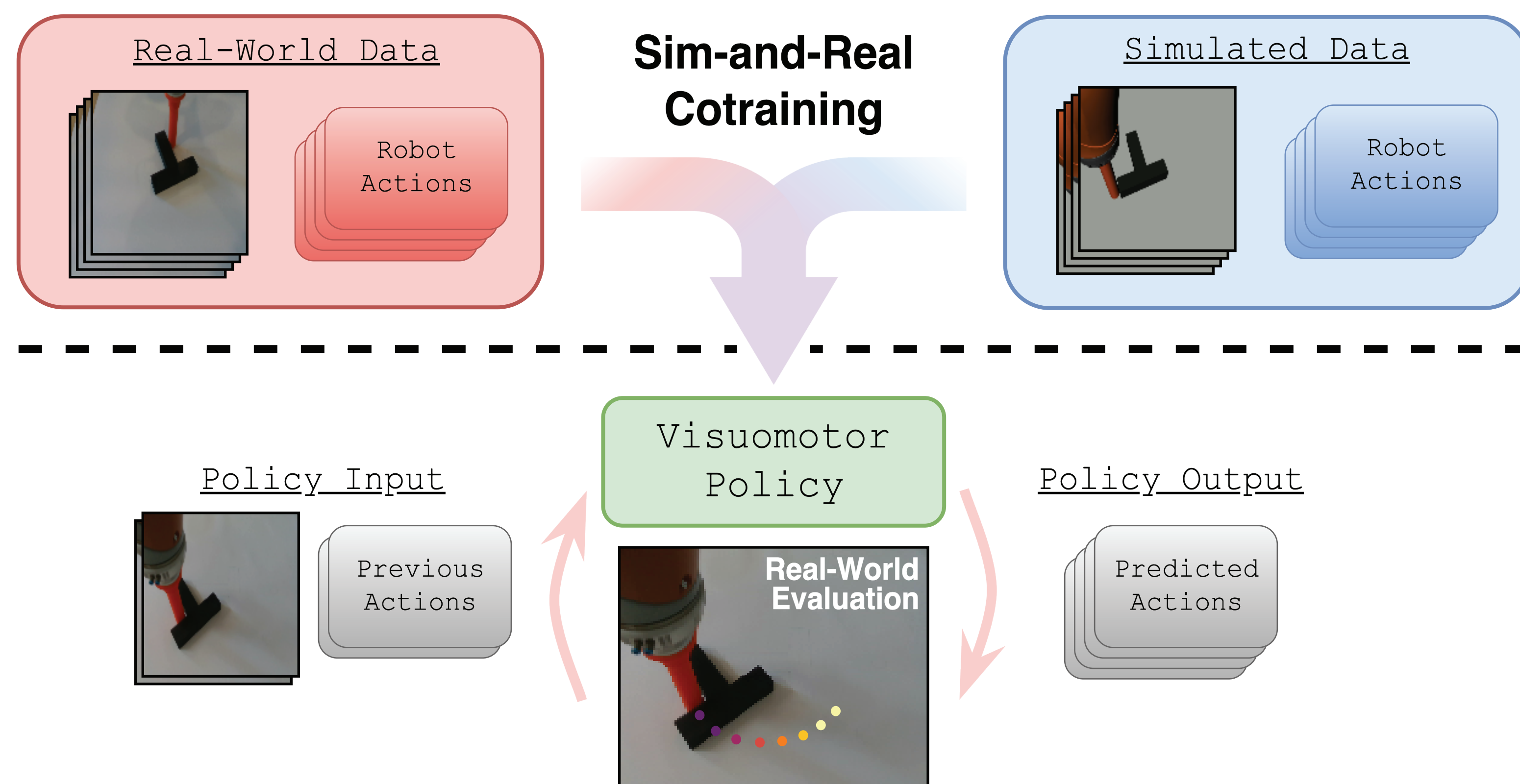


# Empirical Analysis of *Sim-And-Real* Cotraining

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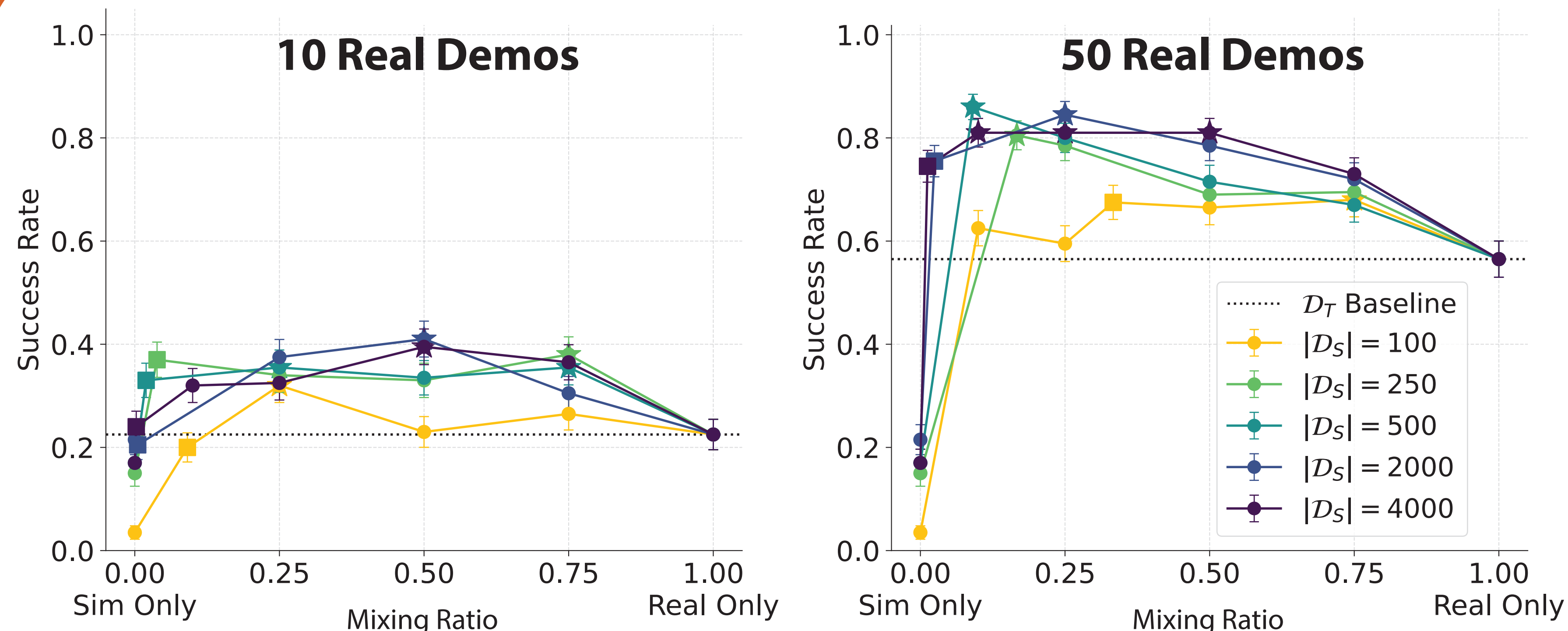


Paper



In sim-and-real cotraining, policies learn from both simulated and real-world data. **We study the principles and mechanisms underlying this learning paradigm.**

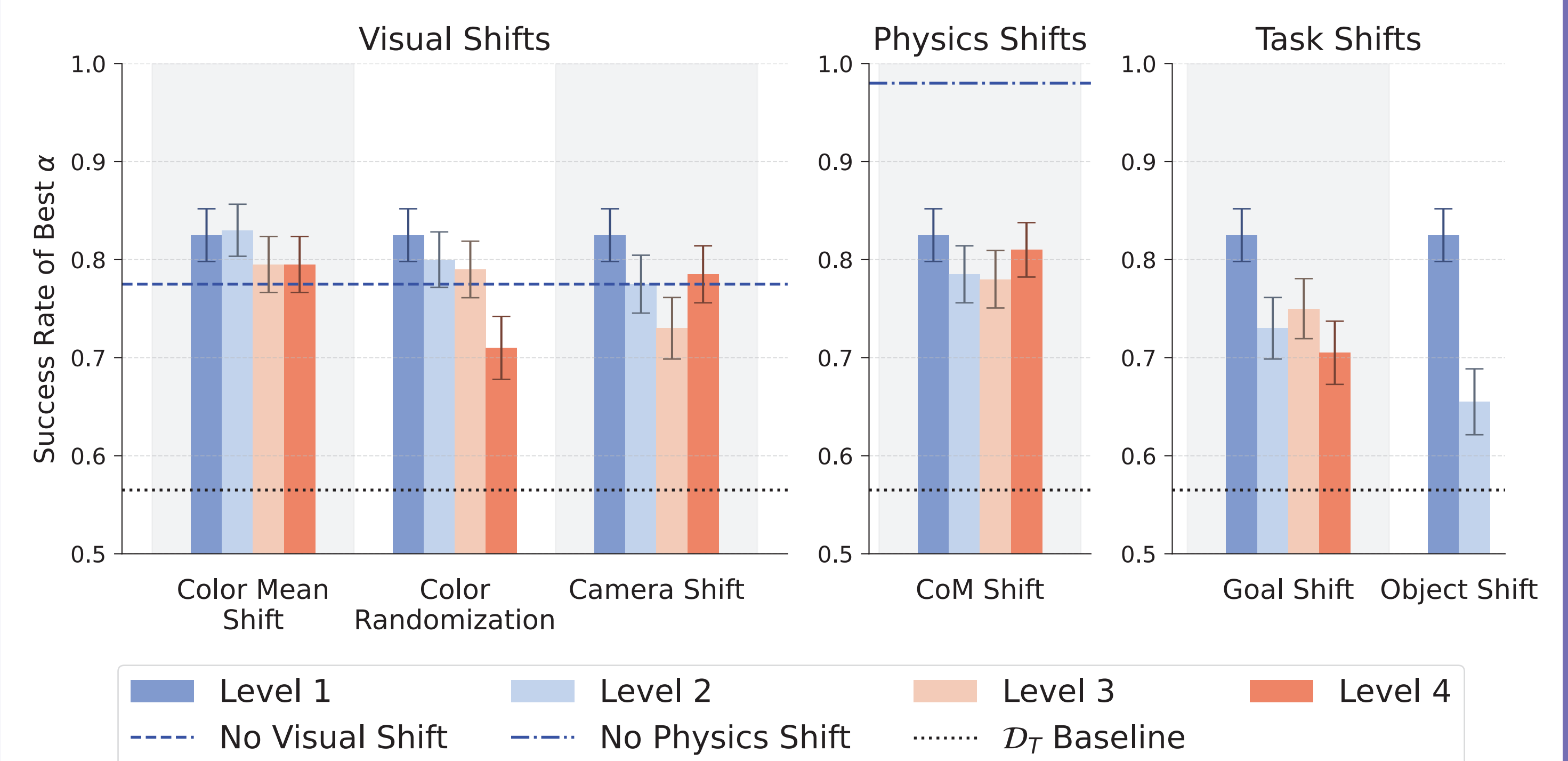
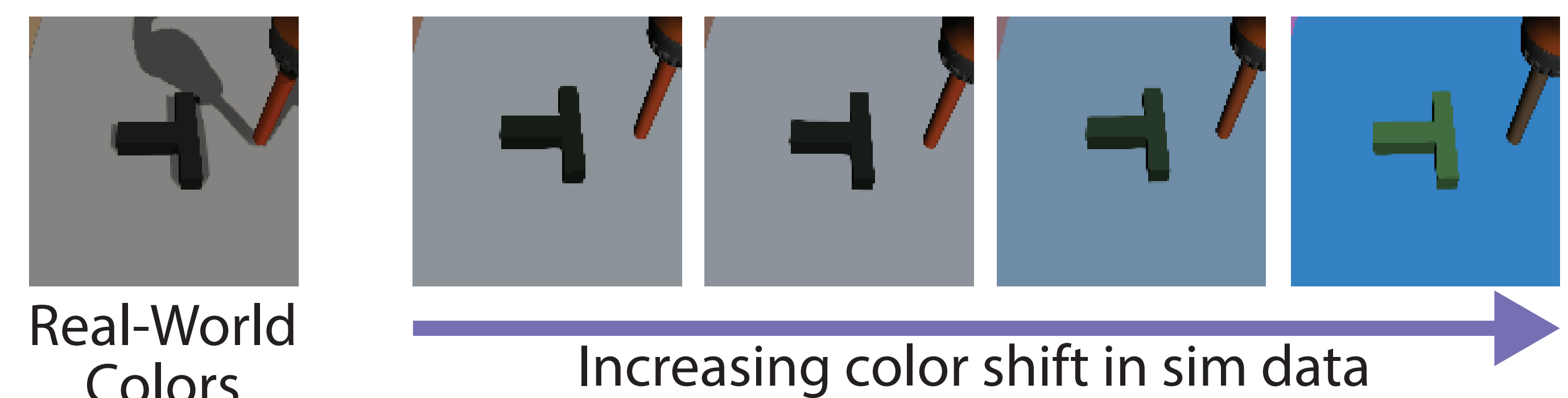
## Sim-and-Real Performance



Cotraining improves performance by up to 7x. Performance from **scaling sim plateaus** without more

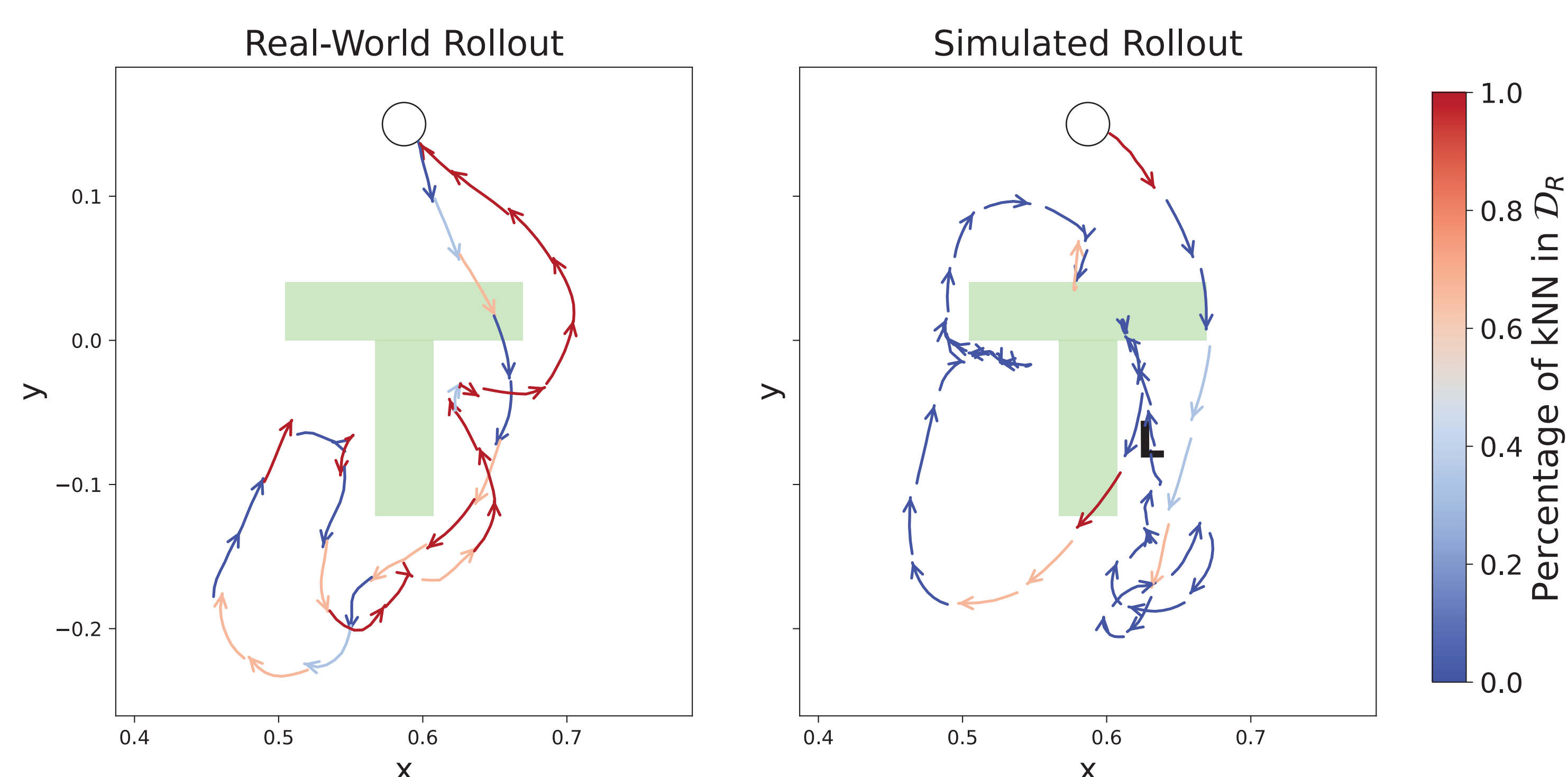
## Sim2Real Distribution Shifts

Example: Studying **Color Mean Shift**

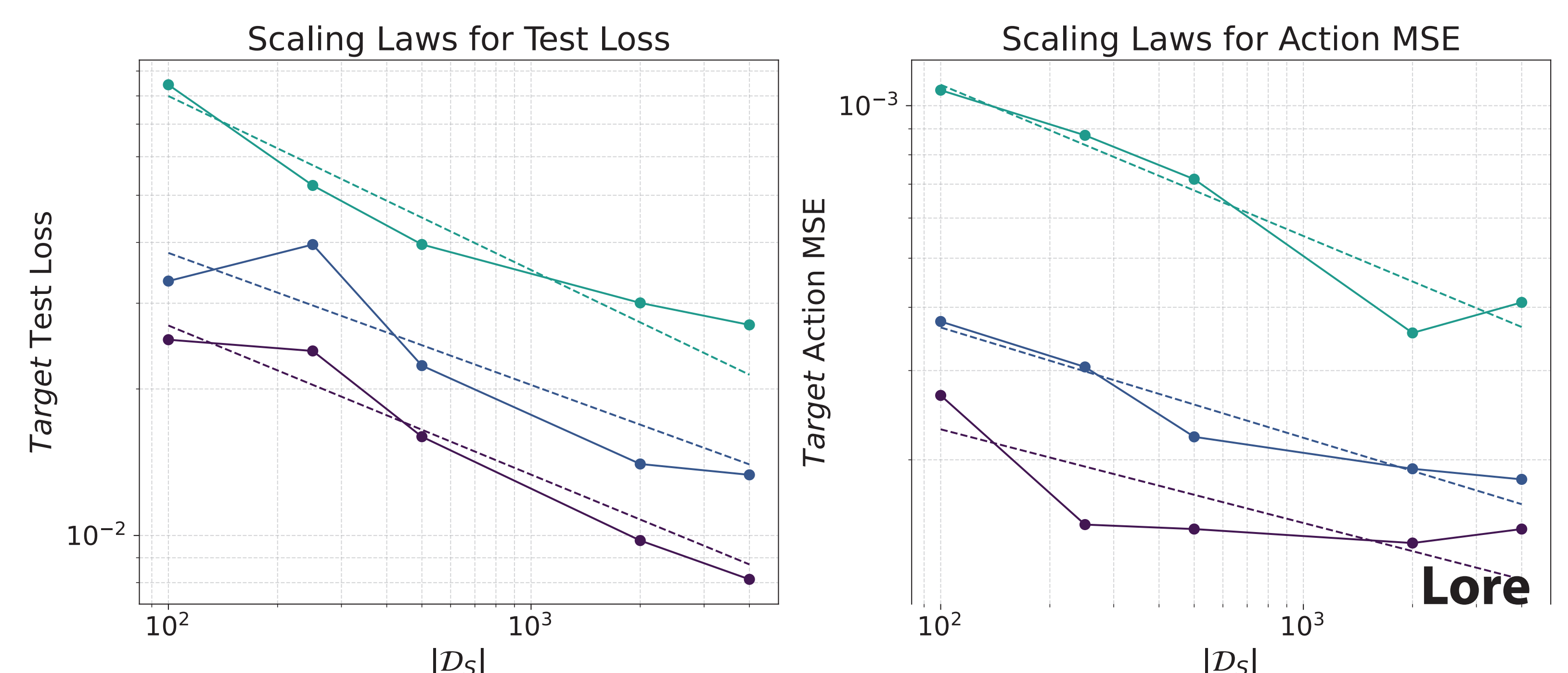


**Physical sim2real gaps are most impactful**  
**Visual alignment improves performance, but perfect rendering can hurt performance** (see [below](#) & paper)

## Analysis of Mechanisms



Policies must **distinguish real from sim** and **learn distinct behaviors** (red vs blue arrows) since their physics require different actions.



Sim data provides **positive transfer** to real:  
 • Improves real-world metrics according to **power laws**.  
 • Improves **data coverage** & reduces **compounding error**