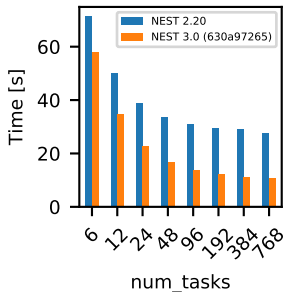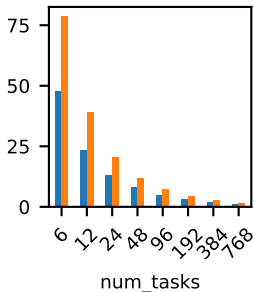Population model strong scali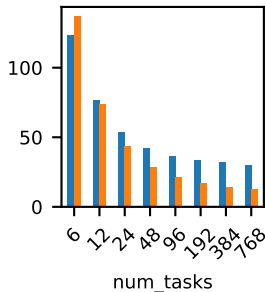ng