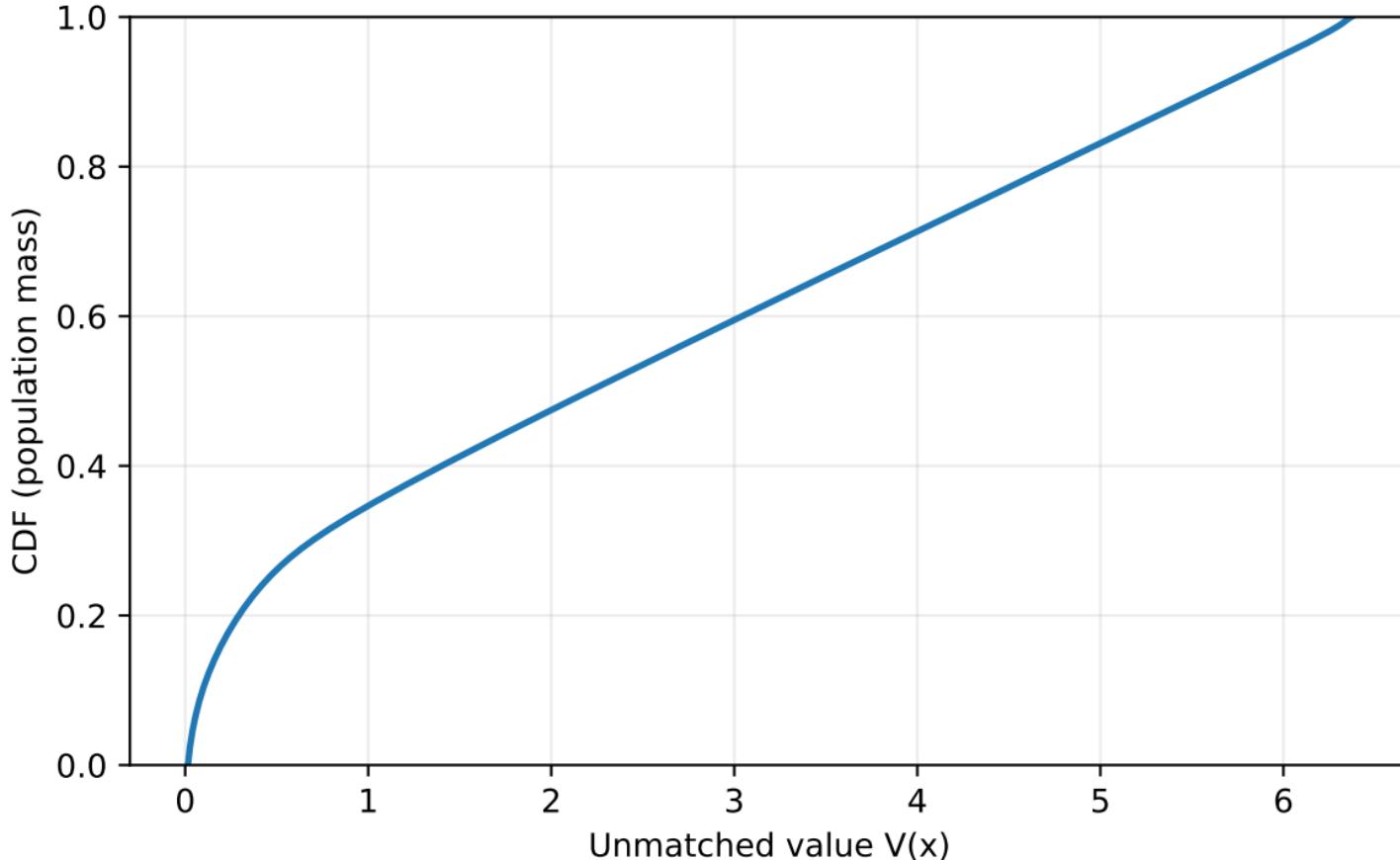Population-weighted CDF of V