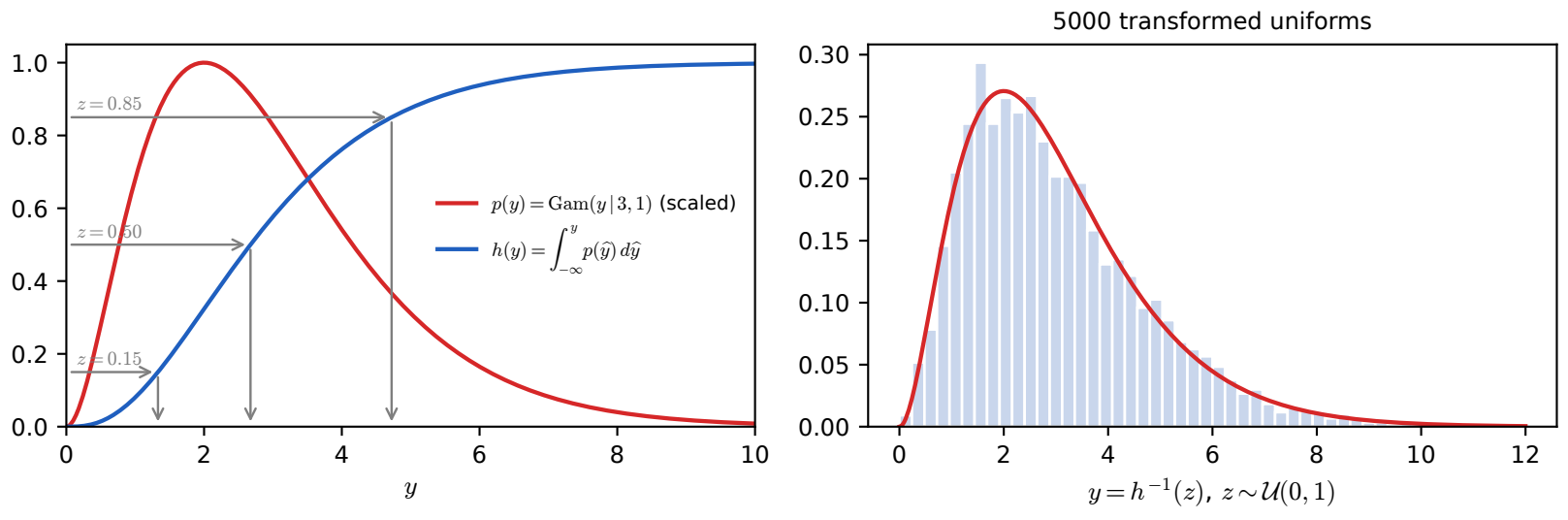

$z = 0.85$
$z = 0.50$
$z = 0.15$
$p(y) = \mathrm{Gam}(y \mid 3, 1)$ (scaled)
$h(y) = \int_{-\infty}^{y} p(\hat{y})\, d\hat{y}$
y
5000 transformed uniforms
$y = h^{-1}(z),\ z \sim \mathcal{U}(0, 1)$