Asymmetric confidence intervals

Confidence intervals don't have to be symmetric.

By the same algebra as before

$$P(\mu - a < X < \mu + b) = 0.95$$
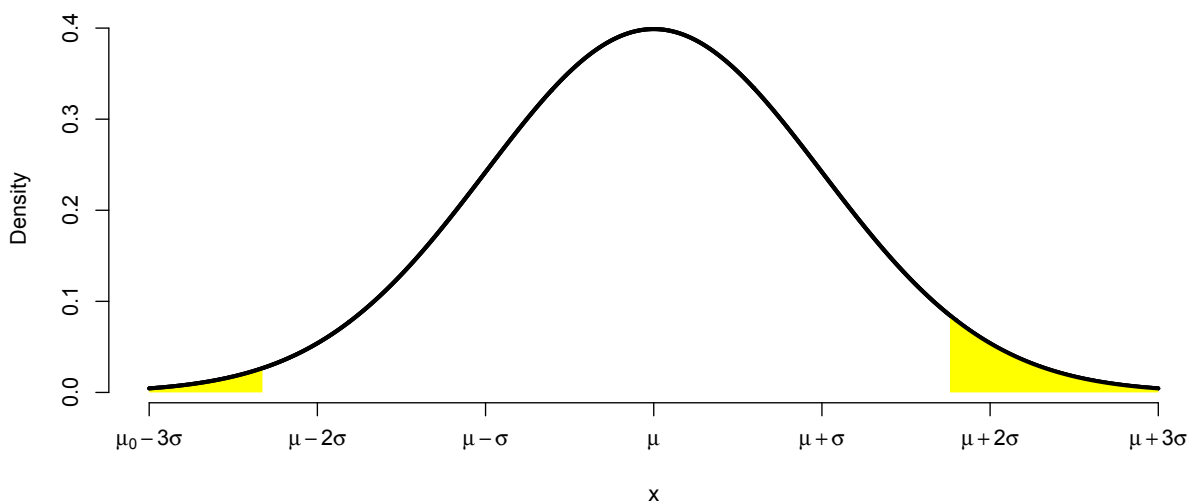
$$P(-a < X - \mu < b) = 0.95$$

$$P(-X - a\sigma < -\mu < -X + b\sigma) = 0.95$$

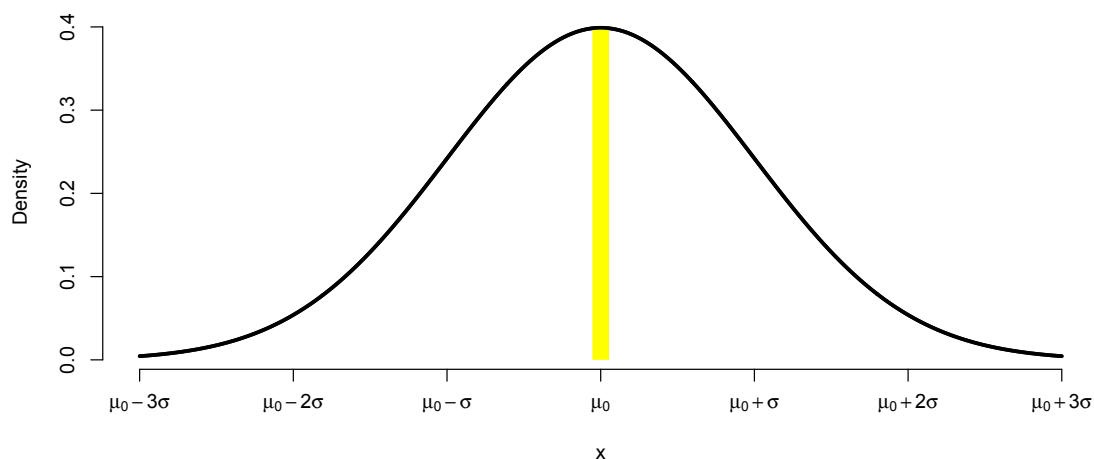$$P(X - b < \mu < X + a) = 0.95.$$

Asymmetric confidence intervals

Such a confidence interval is based on an asymmetric rejection region.

Where to put the rejection region

We could even have a rejection region in a small sliver around the null hypothesis value.

Perhaps this would reflect evidence of cheating of some sort: the data fit *too* well.