Quick transformations

Always think about a scale that makes the model easier to interpret!

Shade level:

-1 : Low

0: Medium

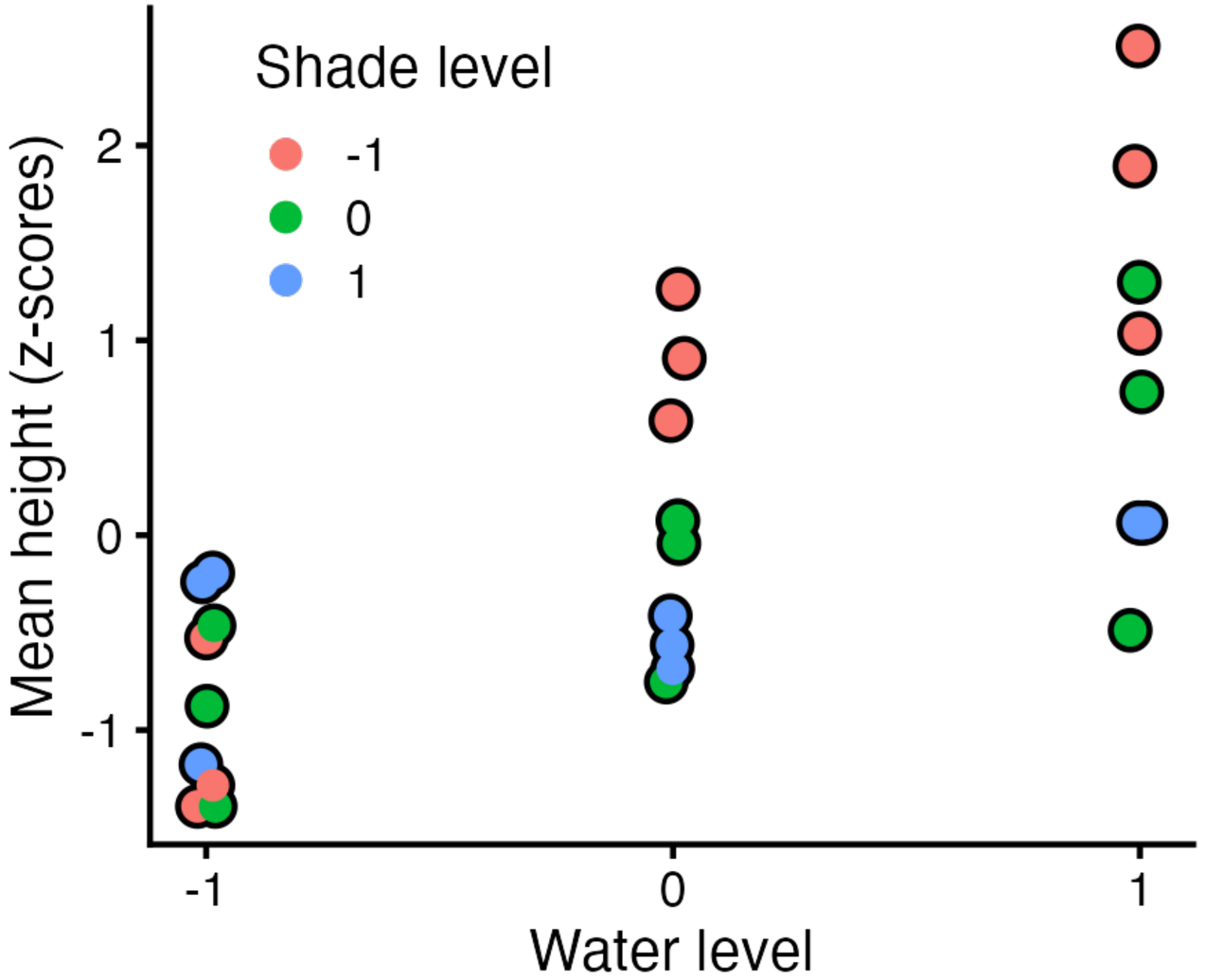
1: High

Water level:

-1 : Low

0: Medium

1: High



Model with interaction

$$Height_i \sim Normal(\mu_i, \sigma)$$

$$\mu_i = a + b\ water_i + c\ shade + d\ water_i \times shade_i$$

```
data("tulips")
df = tulips
df$water  = scale(df$water, scale = FALSE)
df$shade  = scale(df$shade, scale = FALSE)
df$blooms = scale(df$blooms)

rt_fit = ulam(alist(blooms ~ normal(mu, sigma),
            mu <- a + b*water + c*shade + d*water*shade,
            a ~ normal(0, 0.1),
            b ~ normal(0, 1),
            c ~ normal(0, 1),
            d ~ normal(0, 1),
            sigma ~ exponential(1)),
          data = df, chains = 4, cores = 4)
```