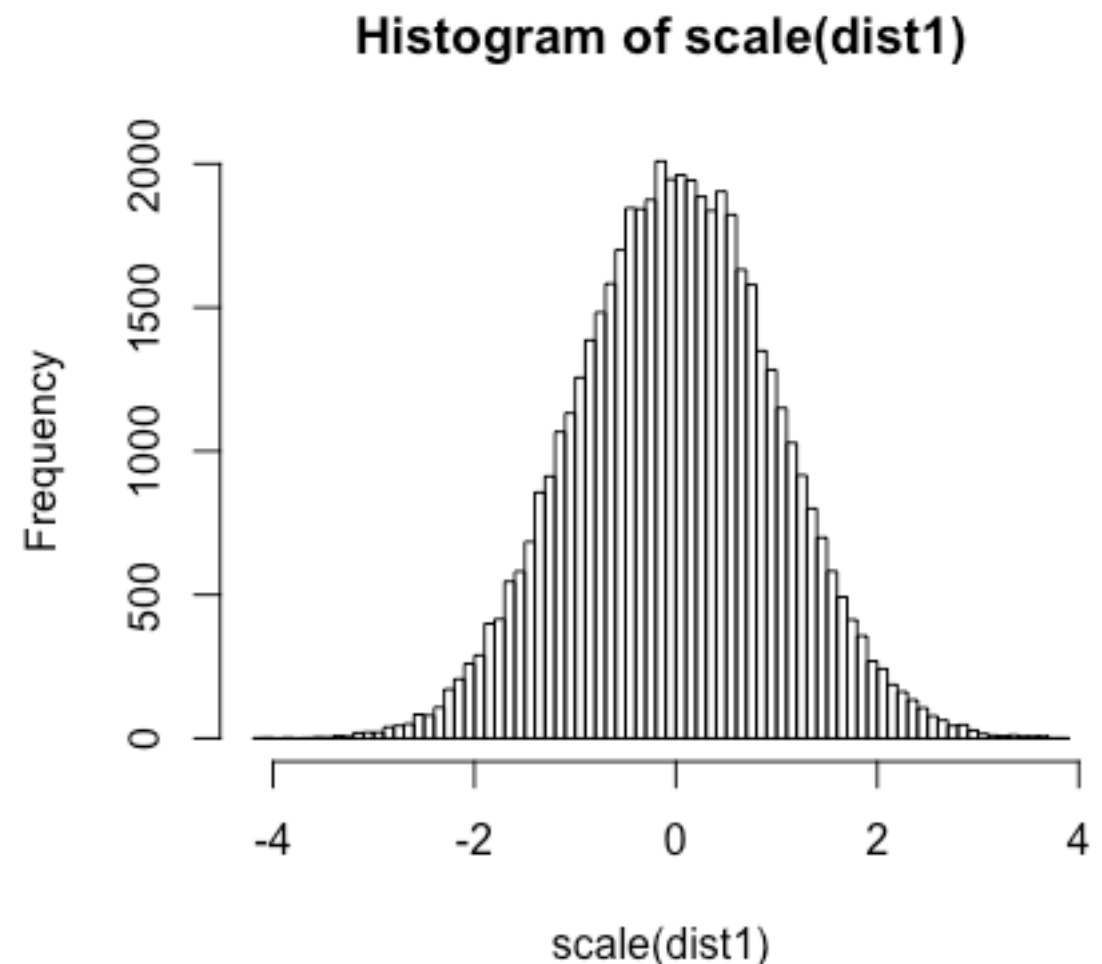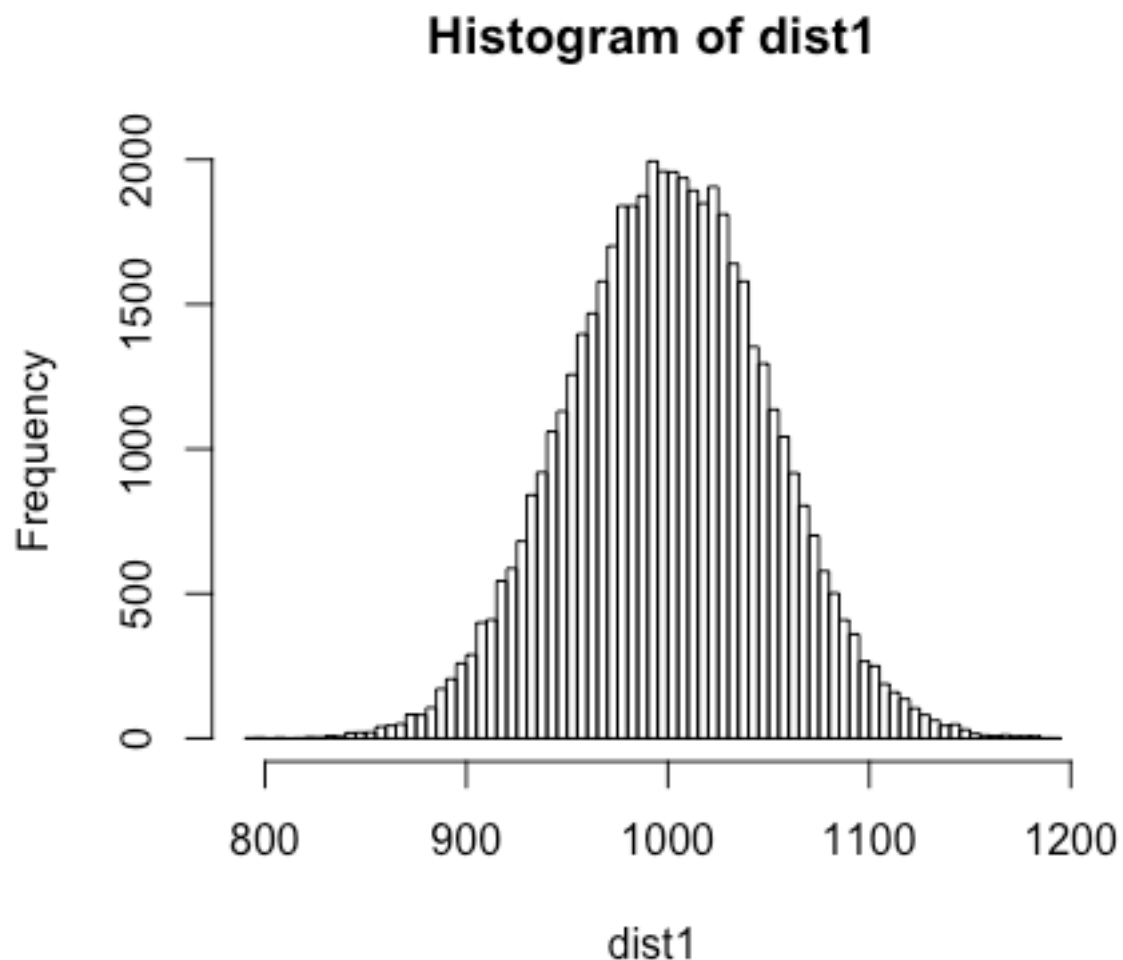- We can convert any normally distributed data to the standard normal (i.e., Z) distribution by using the `scale()` function. This will centre it so the mean is 0 and scale it so that the standard deviation is 1.

```
> set.seed(1234)

> dist1 <- rnorm(50000, 1000, 50)

> hist(dist1, breaks = 100)

> hist(scale(dist1), breaks = 100)
```



Histogram of dist1



Histogram of scale(dist1)

- Simulating data sampled from 2 distributions and plotting them on the same graph:

```
> set.seed(1234)
> cond1 <- rnorm(1000000, 0, 1)
> cond2 <- rnorm(1000000, 1.96, 1)
> data <- as.tibble(cbind(cond1, cond2))

> ggplot(data) +
    geom_density(aes(x = cond1, y = ..density.., colour = "red")) +
    geom_density(aes(x = cond2, y = ..density.., colour = "green")) +
    xlab("Data") +
    guides(colour = FALSE)
```