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library(ez)
library(lme4)
library(multcomp)
source(file.path(pfadu, "phoc.txt"))

# S. 6
soa = read.table(file.path(pfadu, "soa.txt"))

# S. 7
# Wort-Variation
bwplot(F1 ~ W, data = soa)
# Sprecher-Variation
bwplot(F1 ~ Vpn, data = soa)

# S. 8
o = lmer(F1 ~ Pos + (1 | Vpn) + (1 | W), data = soa)
fitted(o)
fixef(o)
ranef(o)
-18.88889 * 1 + 522.11111 -20.557646 -27.94979
fitted(o)[4]

# S 9-10
anova(o)
ohne = lmer(F1 ~ 1 + (1 | Vpn) + (1 | W), data = soa)
# oder
ohne = update(o, ~ . -Pos)
anova(o, ohne)

# S 11
ow = update(o, ~ . -(1|W))
anova(o, ow)
ovpn = update(o, ~ . -(1|Vpn))
anova(o, ovpn)

# S. 12
amp = read.table(file.path(pfadu, "amplitude.txt"))
head(amp)
# man sieht nicht die Unterschiede wegen Sprechervariabilität
bwplot(d ~ Amplitude, data = amp)
# getrennt pro Sprecher
bwplot(d ~ Amplitude | Vpn, data = amp)

# S. 13
a = lmer(d ~ Amplitude + (1|Vpn), data = amp)
ohne = update(a, ~ . -Amplitude)
# oder
# ohne = lmer(d ~ 1 + (1|Vpn), data = amp)
anova(a, ohne)

# S. 14
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```
summary(glht(a, linfct = mcp(Amplitude = "Tukey"))))

# S. 15
param = read.table(file.path(pfadu, "param.txt"))
head(param)

# S. 16
o = lmer(slopes ~ Group * Cont + (1|Vpn), data = param)
anova(o)
o2 = lmer(slopes ~ Group + Cont + (1|Vpn), data = param)
# oder
o2 = update(o, ~ . -Group:Cont)
anova(o, o2)

# S. 17
o3 = update(o2, ~ . -Group)
anova(o2, o3)
# 33.249      2 6.028e-08 ***

o4 = update(o2, ~ . -Cont)
anova(o2, o4)
# 19.002      1 1.306e-05 ***

# S. 19
noise = read.table(file.path(pfadu, "noise.txt"))
head(noise)
str(noise)
bwplot(rt ~ Noise | Type, data = noise)

# S. 20
o = lmer(rt ~ Type * Noise + (1|Subj), data = noise)
o2 = update(o, ~ . -Type:Noise)
# das gleiche
o2 = lmer(rt ~ Type + Noise + (1|Subj), data = noise)
anova(o, o2)

# S. 21
beide = with(noise, interaction(Type, Noise))
b = lmer(rt ~ beide + (1|Subj), data = noise)
p = summary(glht(b, linfct = mcp(beide = "Tukey"))))
round(phsel(p), 3)
round(phsel(p, 2), 3)

# S. 23
asp = read.table(file.path(pfadu, "asp.txt"))
```