

Mixed Models

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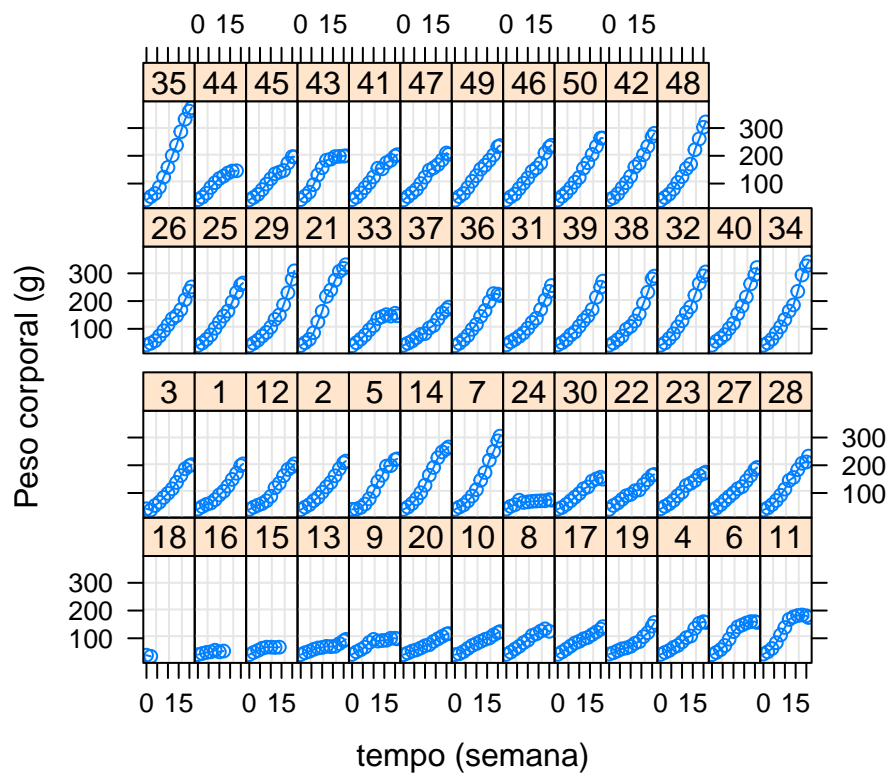
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Dados Dieta - Frango

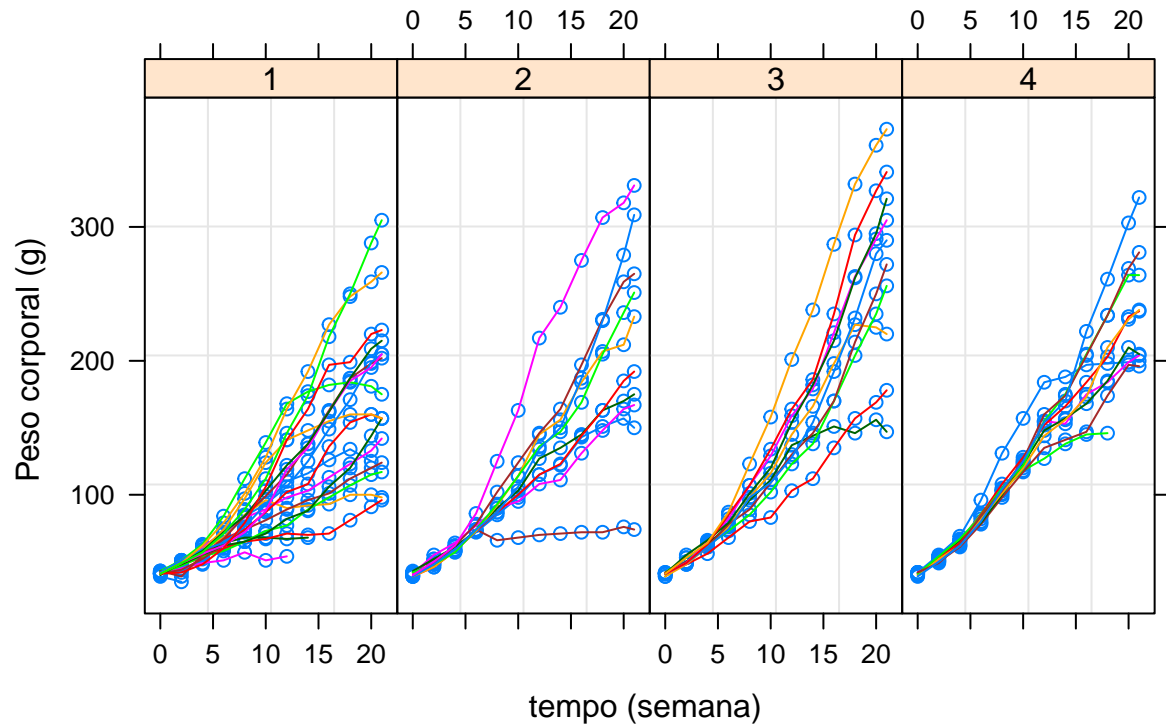
```
data("ChickWeight")

frango <- groupedData(
  weight~Time|Chick, outer = ~Diet, data = ChickWeight,
  order.groups = F,
  labels=list(x="tempo (semana)", y="Peso corporal (g)")
)

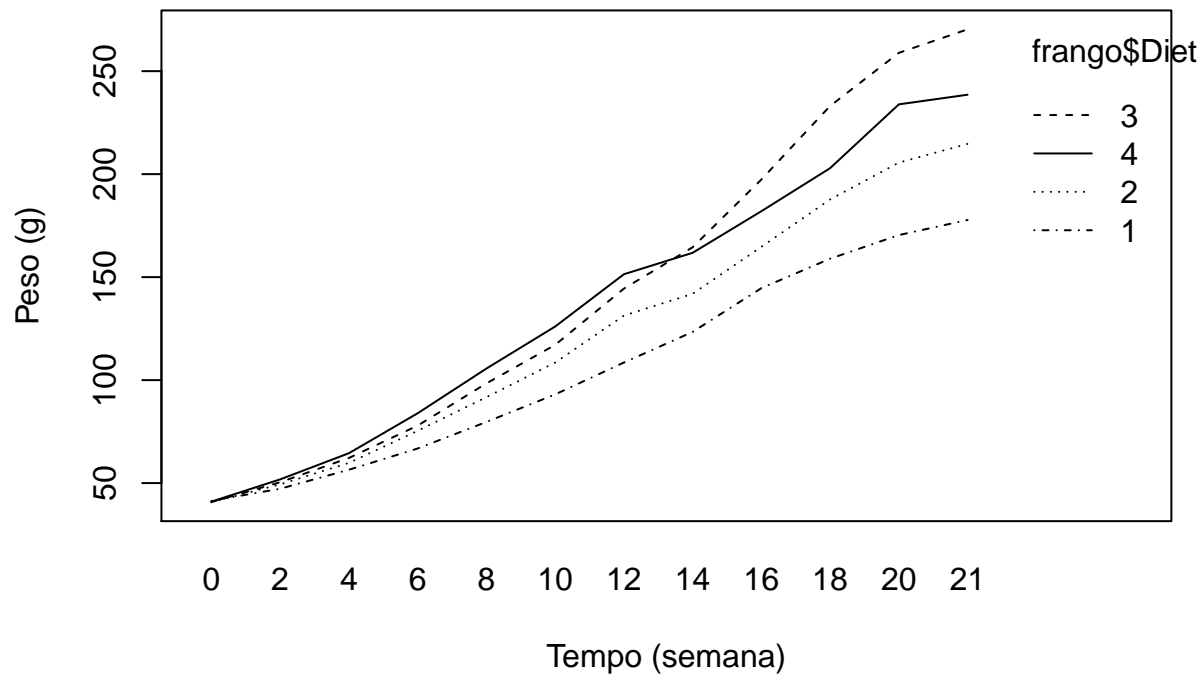
plot(frango,between = list(y = c(0, 0.5, 0)))
```



```
plot(frango, outer = T, key=FALSE) # key omite a legenda
```



```
interaction.plot(frango$Time,frango$Diet,frango$weight,ylab="Peso (g)", xlab="Tempo (semana)")
```



Por tanto podemos observar que os perfis individuais apresentados para cada frango diferem entre si, apresentando um perfil médio o qual apresenta uma clara modificação na variância, quando observado o peso em relação ao tempo, perfil o qual, varia de acordo com cada dieta utilizada.

```
mod1 <- lme(
  fixed = weight~Time+Diet+Time:Diet,
  random = ~1,
  data = frango,
  control = lmeControl(opt="optim")
)
mod2 <- lme(
  fixed = weight~Time+Diet+Time:Diet,
  random = ~ Diet,
  data = frango,
  control = lmeControl(opt="optim")
)
mod3 <- lme(
  fixed = weight~Time+Diet+Time:Diet,
  random = ~Time,
  data = frango,
  control = lmeControl(opt="optim")
)
mod4 <- lme(
  fixed = weight~Time+Diet+Time:Diet,
  random = ~Time + Diet,
  data = frango,
```

```
    control = lmeControl(opt="optim")
  )
mod5 <- lme(
  fixed = weight~Time+Diet+Time:Diet,
  random = ~Time + Diet + Time:Diet,
  data = frango,
  control = lmeControl(opt="optim")
)
```

```
coef(mod3) %>%
  as_tibble() %>%
  kable(format = "latex", booktabs = TRUE)
```

(Intercept)	Time	Diet2	Diet3	Diet4	Time:Diet2	Time:Diet3	Time:Diet4
33.94980	6.0821404	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
48.91139	0.9275944	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
46.57686	2.0830318	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
46.01675	2.1230021	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
45.12966	3.1065073	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
41.35582	3.5399976	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
40.41212	3.9860585	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
38.24910	5.1860977	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
39.21681	4.7721350	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
37.07350	4.7542116	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
34.17914	6.0132306	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
33.79654	6.9839217	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
30.60247	8.5171166	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
26.67009	8.2613885	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
28.20287	7.7521221	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
26.75626	8.1371705	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
26.04689	8.6191198	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
21.76361	9.7336397	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
16.21147	12.1820996	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
11.97323	12.7796153	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
56.59527	-0.9669800	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
42.12084	3.7099195	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
42.22226	3.7409063	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
39.76045	4.5887702	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
37.34690	4.9138575	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
30.21870	7.2899561	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
28.89805	7.5706638	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
25.29045	8.9128557	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
21.31593	9.4732140	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
12.77832	13.5369374	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
51.29844	1.3458263	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
48.18251	1.3897275	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
38.21537	5.0369531	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
37.82660	4.7000759	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
35.63375	5.4100898	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
31.44800	6.5930090	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
28.25827	8.0676981	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
27.36432	8.2114639	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
22.51005	9.7015956	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
15.80988	12.3136613	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
43.34374	3.3758280	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
39.27597	4.3397792	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
38.09903	6.0057850	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
38.02867	5.0974285	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
37.27198	5.1875901	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
33.09317	6.4797517	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
32.86842	6.2846650	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
27.98019	7.9168952	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
26.32363	8.2831550	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743
20.26239	9.7992229	-5.021124	-15.40439	-1.742559	2.332126	5.145861	3.254743