Juvenile proportion linear models

Model: breeding year, day, zone and random effects

▶ Formula, with independent random effects:

```
## glmer(formula = propjuv ~ Breeding_year + days + zone + (1 |
##     Food_type) + (1 | Observer) + (1 | flocksize), data = geese,
##     family = "binomial")
```

▶ Flocksize explains most of the variance due to random effects:

```
## Groups     Name        Std.Dev.
## flocksize (Intercept) 0.0247697
## Observer  (Intercept) 0.0011131
## Food_type (Intercept) 0.0010956
```

▶ **Breeding year** and **days into winter** are significant predictors:

```
##                   Estimate    Std. Error    z value    Pr(>|z|)
## (Intercept)     460.27463443 1.478903e+02  3.1122703 0.001856545
## Breeding_year    -0.23167649 7.370176e-02 -3.1434321 0.001669792
## days             -0.01100736 4.155046e-03 -2.6491538 0.008069360
## zoneIJsselmeer    0.34622609 1.237099e+00  0.2798694 0.779577700
## zoneOther        -0.41592707 2.983401e+00 -0.1394138 0.889123205
## zoneRhinelands    1.32944427 1.093794e+00  1.2154435 0.224196970
## zoneSouthwest     0.26222141 1.177271e+00  0.2227367 0.823740434
```

Model: breeding year and day without zone, refs included

- Formula, with zone as a random effect:

```
## glmer(formula = propjuv ~ Breeding_year + days + (1 | zone) +
##     (1 | Food_type) + (1 | Observer) + (1 | flocksize), data = geese,
##     family = "binomial")
```

- AIC (model: `year+days+zone`, random effects): 419.2319917
- AIC (model: `year+days`, random effects): 421.6624972
- AIC increases though the model without zone has fewer terms.
- Ω^2 (model: `year+days+zone`, random effects): 13.1229687
- Ω^2 (model: `year+days`, random effects): 13.9874039