

Synchrony update: February 2, 2021



A quick reminder of the project goals and questions:

1. How has the phenology of different trophic levels changed over time and are there differences across suites of interactions?

$$d\hat{o}y = \alpha_{sp_i} + \beta(year_i)$$

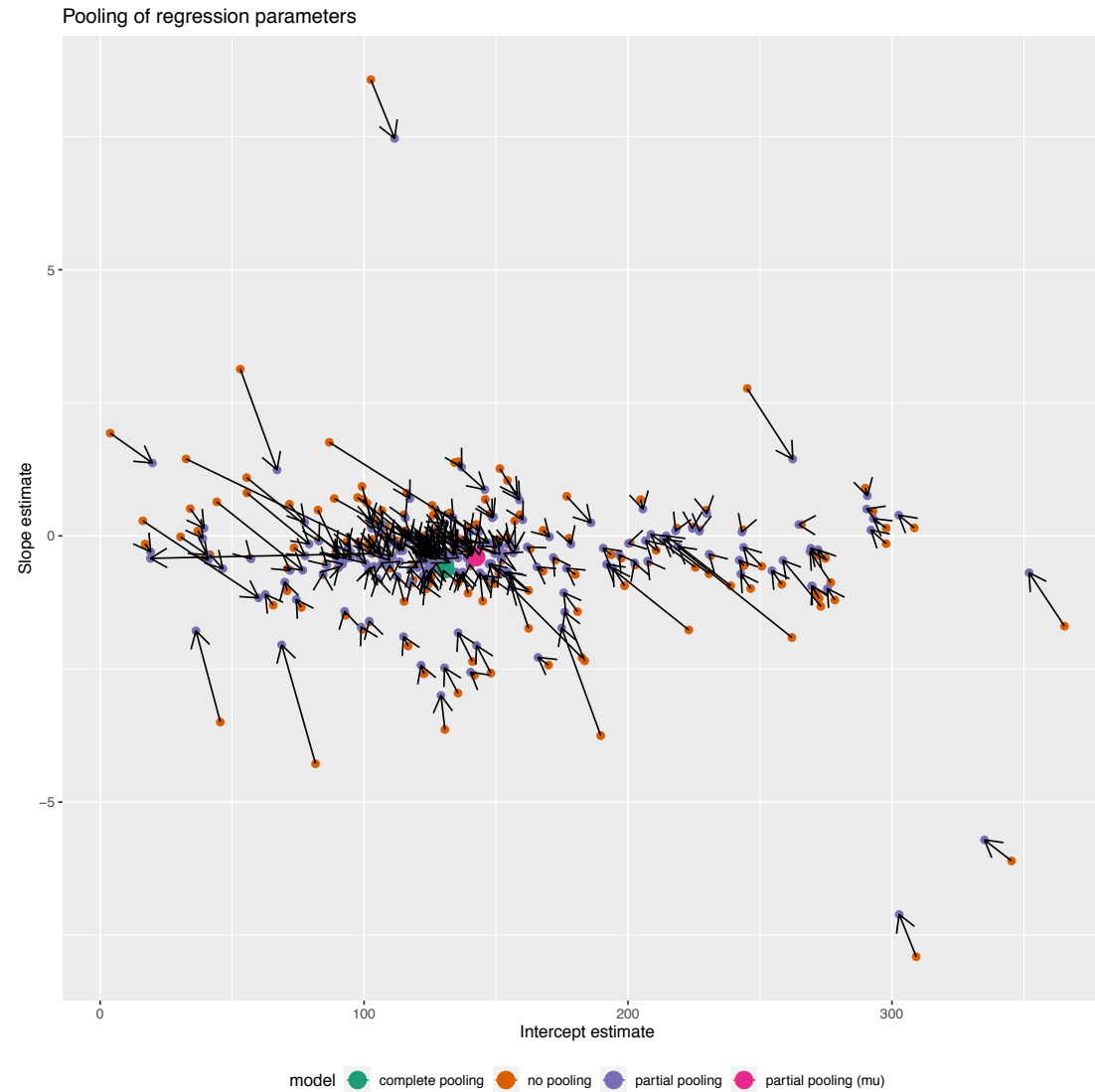
$$\alpha_{sp} \sim N(\mu_a, \sigma_a)$$

$$\beta_{sp} \sim N(\mu_b, \sigma_b)$$

$$doy_i \sim N(d\hat{o}y, \sigma_i)$$

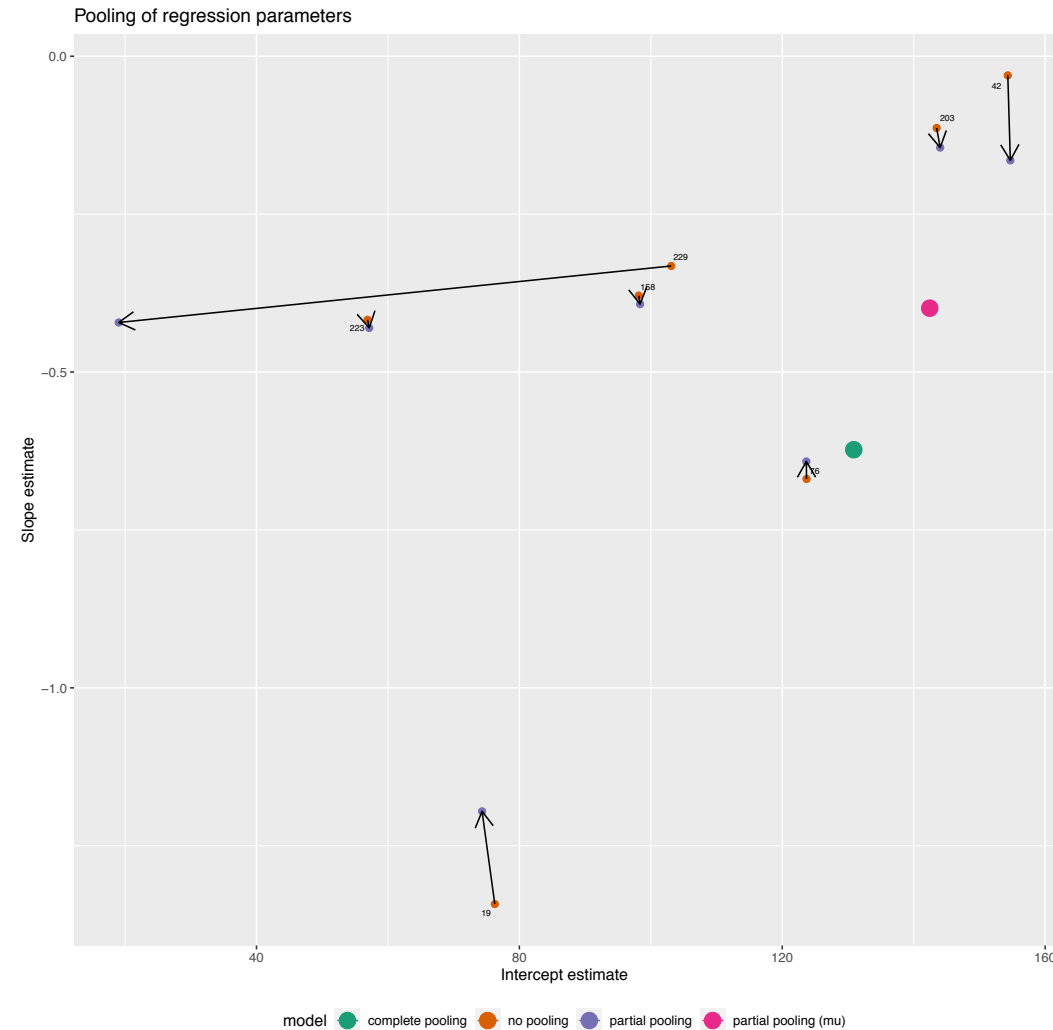
2. Are the observed trends in shifts in interactions similar using data from single- species studies, or should we be using biologically relevant paired species data?

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Oddest species response is from a 20-year study. of white-throated sparrow.



Next steps: Adding study id to the intercept

1. Started by using rstanarm:

```
synch<-stan_lmer(formula = doy ~ yr1980 + (1 + yr1980 | species.fact) + (1 + yr1980 | study.fact), data =final)
```

2. Next attempted to write it in stan:

```
Projects/deirdre/stan/singlesp_randomslopesint_studyid.stan
```

Partial pooling looks way off:

