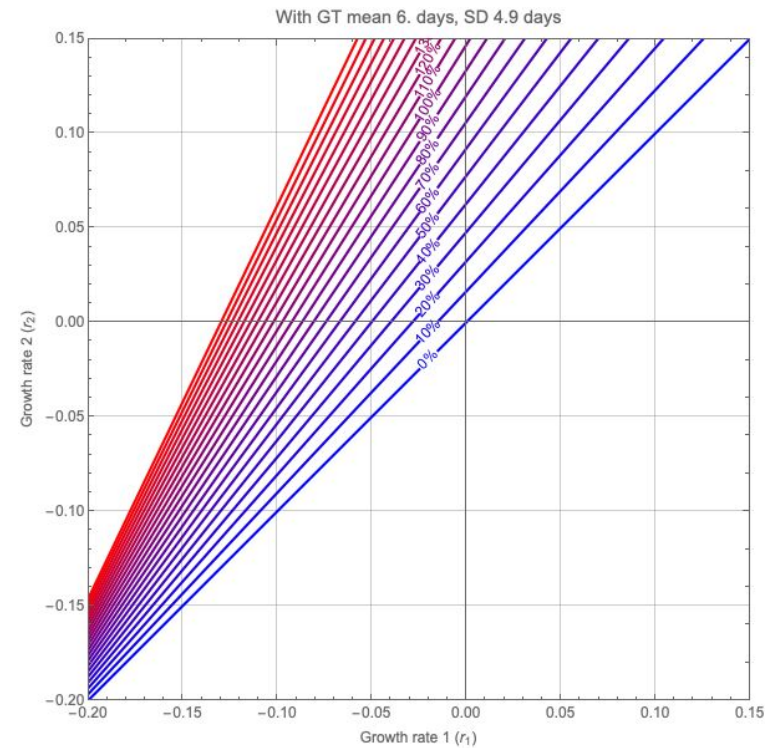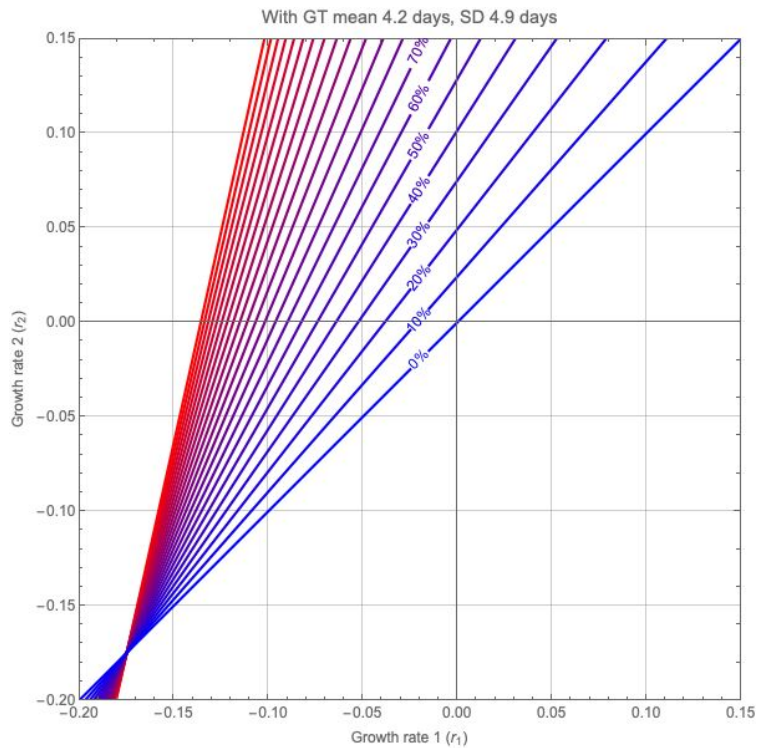# Estimates of R advantage at fine spatial scale
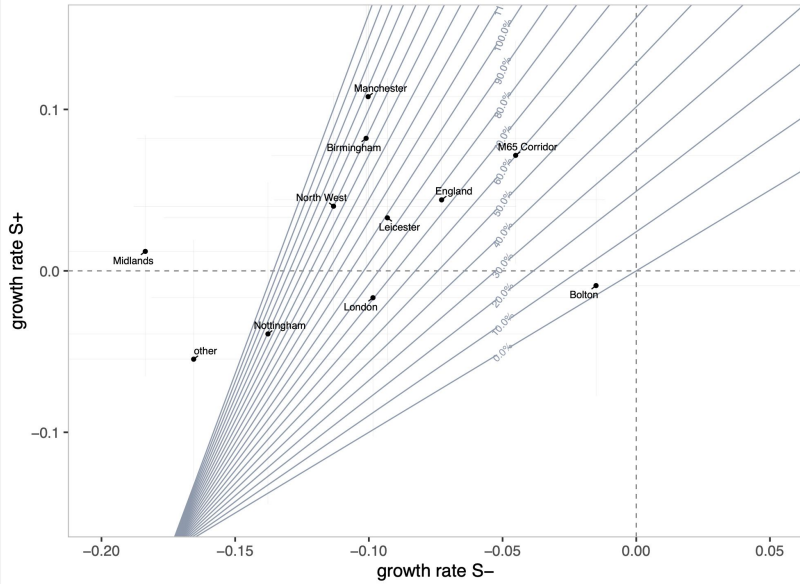
2nd June 2021

VERY PROVISIONAL - work in progress
Subject to change, please don't share further

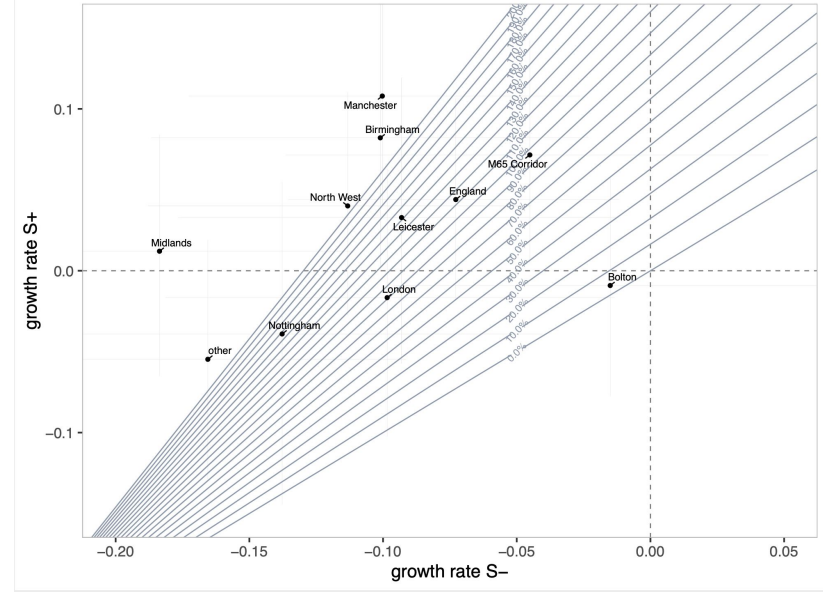Note r<-0.175 not valid for this distribution

R advantage can be estimated from growth rates for S+ and S-, but very sensitive to growth rate distribution assumptions. (Mean and SDs here from Hart *et al.*, distribution is gamma)

Visualisation of S+ vs S- growth rates with R advantage contours (different mean GT left and right, dots same in both). Estimates are a wide range (England 60-70% if mean GT=4.2days, 110-120% for 6.0 days).

Some coordinates lead to implausably high (or impossible) advantage estimates - likely sensitivity in estimating when S- in steep decline.

Growth rate comparison (with GT mean 4.2 days, SD 4.9 days)
On Fri. 21 May 2021

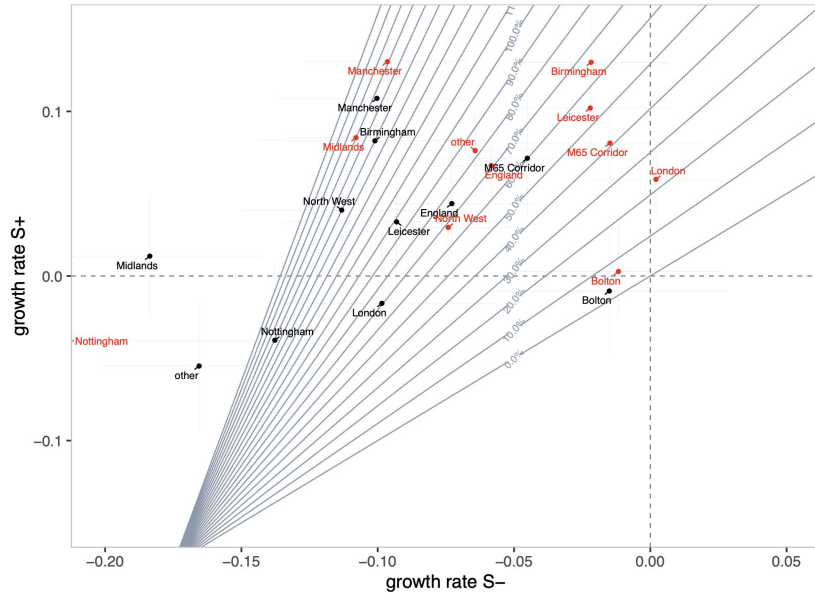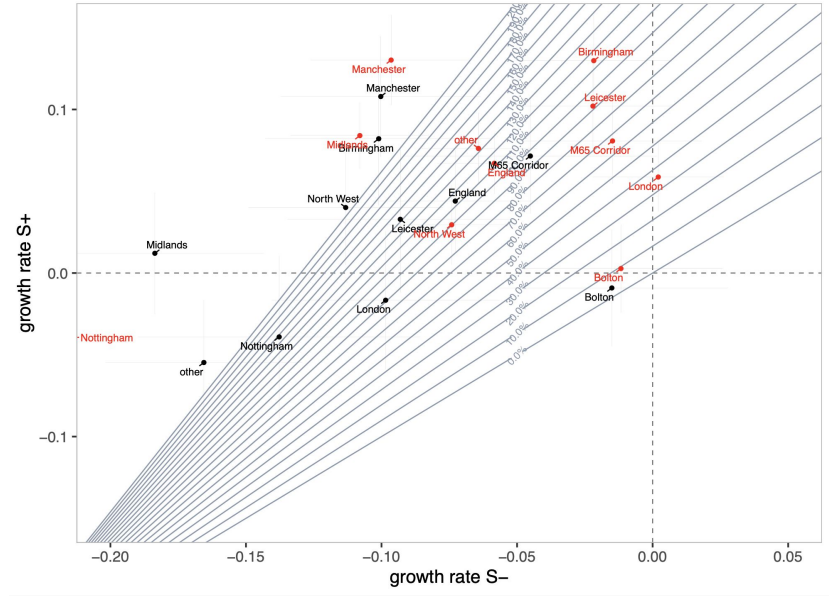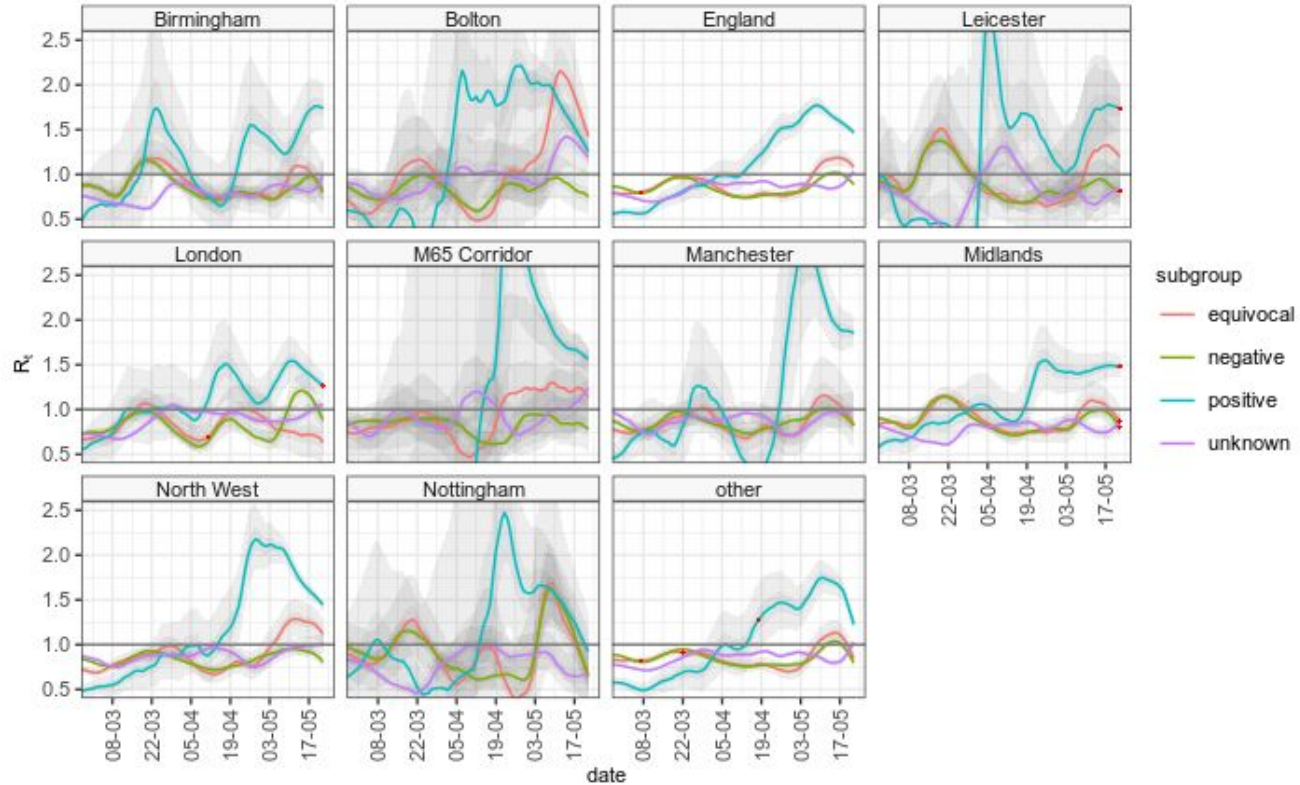Growth rate comparison (with GT mean 6. days, SD 4.9 days)
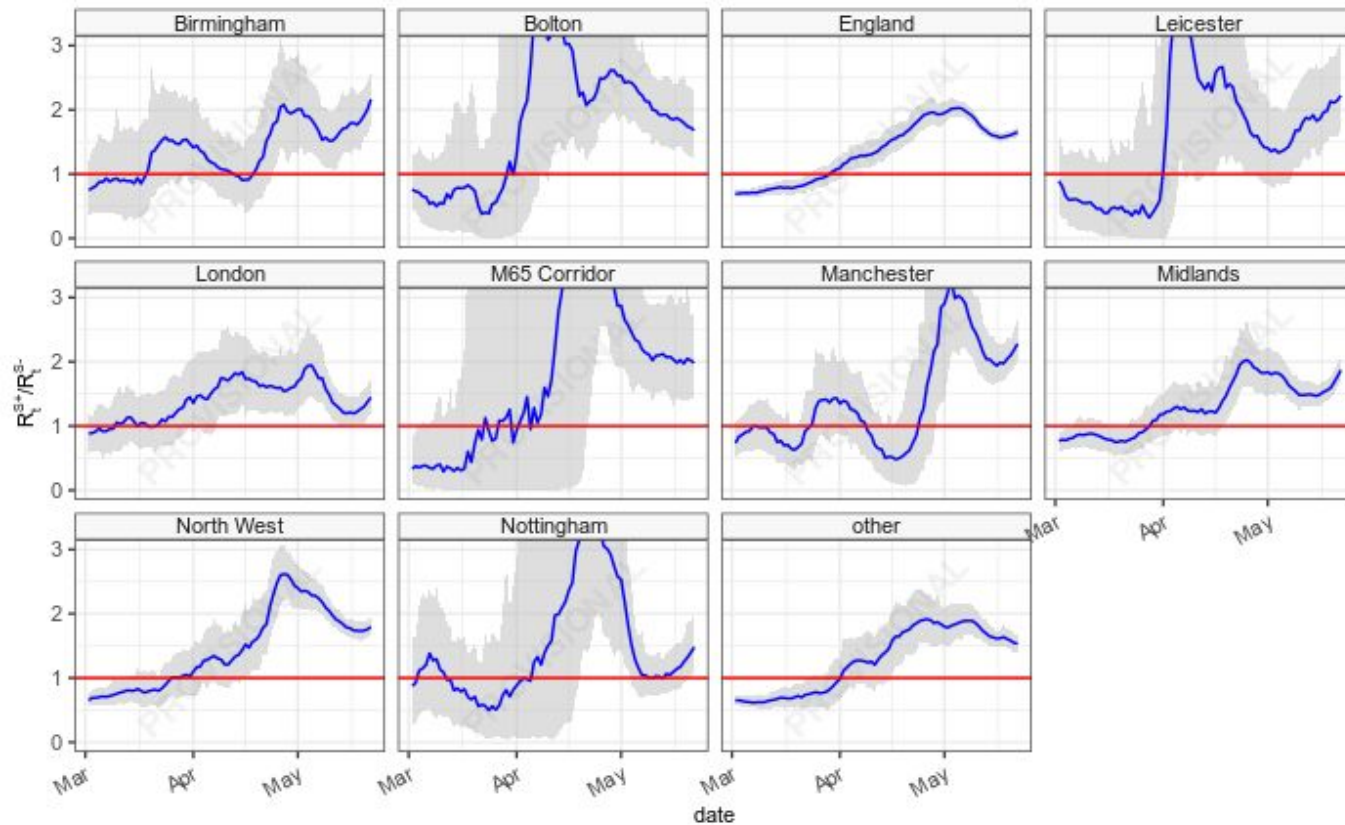On Fri. 21 May 2021

(Black and red - estimates from different approaches - will update verbally)
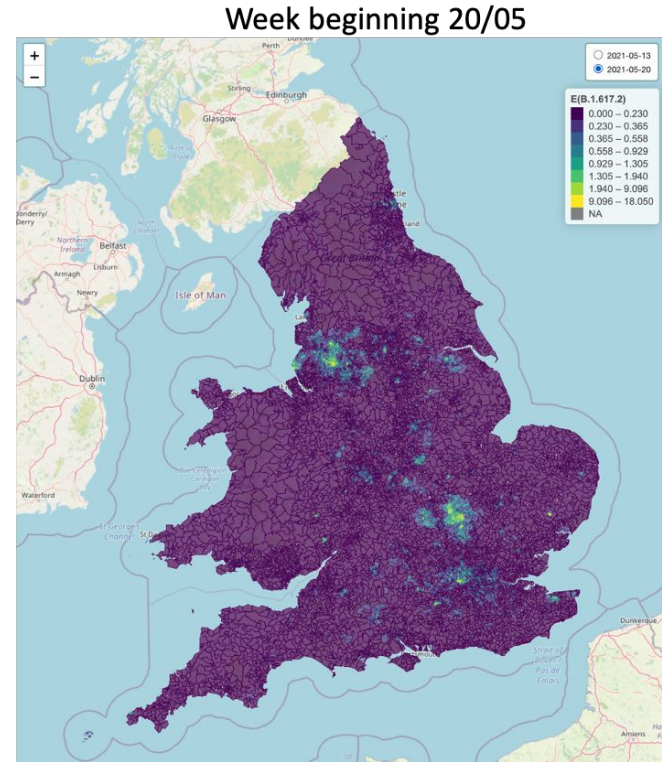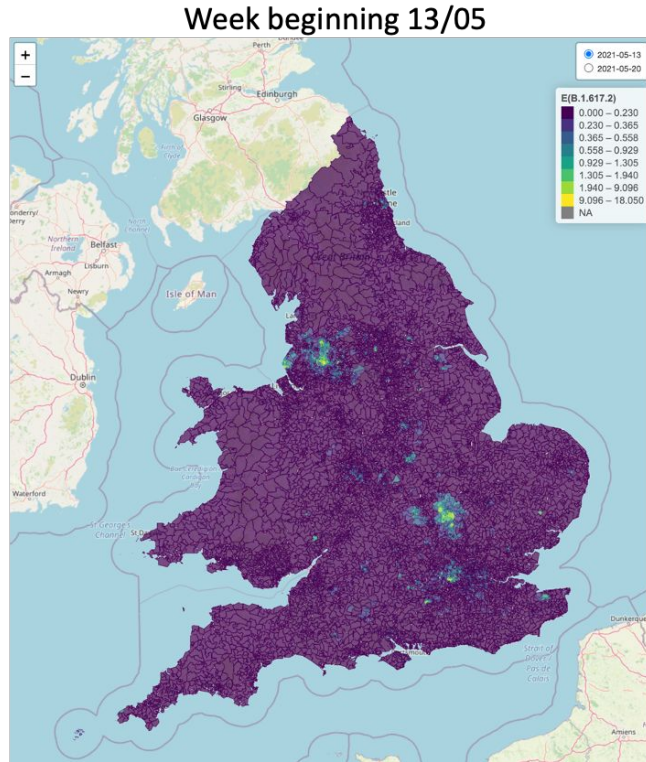
Patterns are not static over time, but clearly higher R for S+ in recent weeks (latest time points not reliable). Picture murkied by equivocals and unknowns.

Direct estimate of R advantage over time (GT has mean 5.59 SD 4.15). Estimates of advantage from ANY approach likely sensitive to generation time distribution, time window use and geographic area.
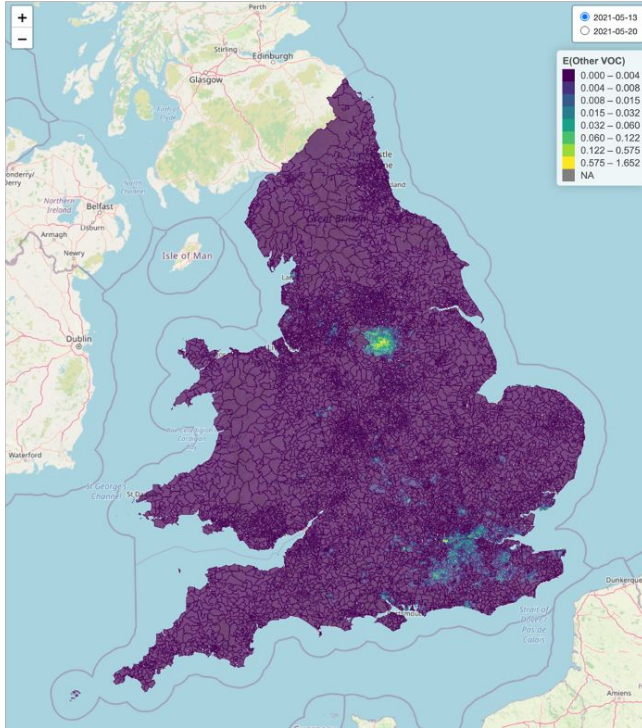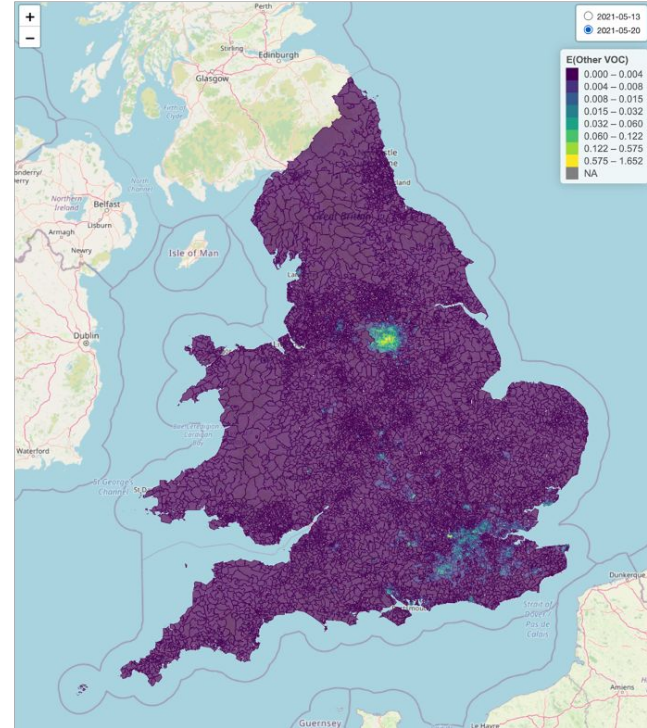
Expected number of B.1.617.2 cases

Expectation value of the number of cases of B.1.617.2 from spatio-temporal variant classifier model

Expected number of other VOC

Week beginning 13/05

Week beginning 20/05

Expectation value of the number of cases of other VOC (not B.1.617.2)