

# BauchModel\_DefaultParamsHighMovement

Sophie Wulfing

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Table 1: Parameter values used in this analysis

Parameter	Population_1	Population_2	Def
r	0.35	0.35	Fish net growth
s	0.8	0.8	Supply and demand
h	0.5	0.5	Harvesting efficiency
k	1.014	1.014	Social learning rate
w	0.35	0.35	Conservation cost
c	1.5	1.5	Rarity valuation
d	0.5	0.5	Social norm strength (within pop)
i	0.2	0.2	Fish immigration (from opposite patch)
rho	0.5	0.5	Social norm strength (opposite pop)

Table 2: Starting values used in this analysis

Parameter	Population_1	Population_2
F	0.406	0.406
X	0.240	0.240

## SCENARIO: DEFAULTS PARAMS HIGH MOVEMENT

Function:

$$\frac{dP_1}{dt} = r_1 P_1 (1 - P_1) - \frac{h_1 * P_1 (1 - X_1)}{P_1 + s_1} - e_1 P_1 + i_1 P_2$$

$$\frac{dP_2}{dt} = r_2 P_2 (1 - P_2) - \frac{h_2 * P_2 (1 - X_2)}{P_2 + s_2} - e_2 P_2 + i_2 P_1$$

$$\frac{dX_1}{dt} = k_1 X_1 (1 - X_1) \left[ \frac{1}{P_1 + c_1} - w_1 + d_1 (2X_1 - 1) + prop_1 (2X_2 - 1) \right]$$

$$\frac{dX_2}{dt} = k_2 X_2 (1 - X_2) \left[ \frac{1}{P_2 + c_2} - w_2 + d_2 (2X_2 - 1) + prop_2 (2X_1 - 1) \right]$$

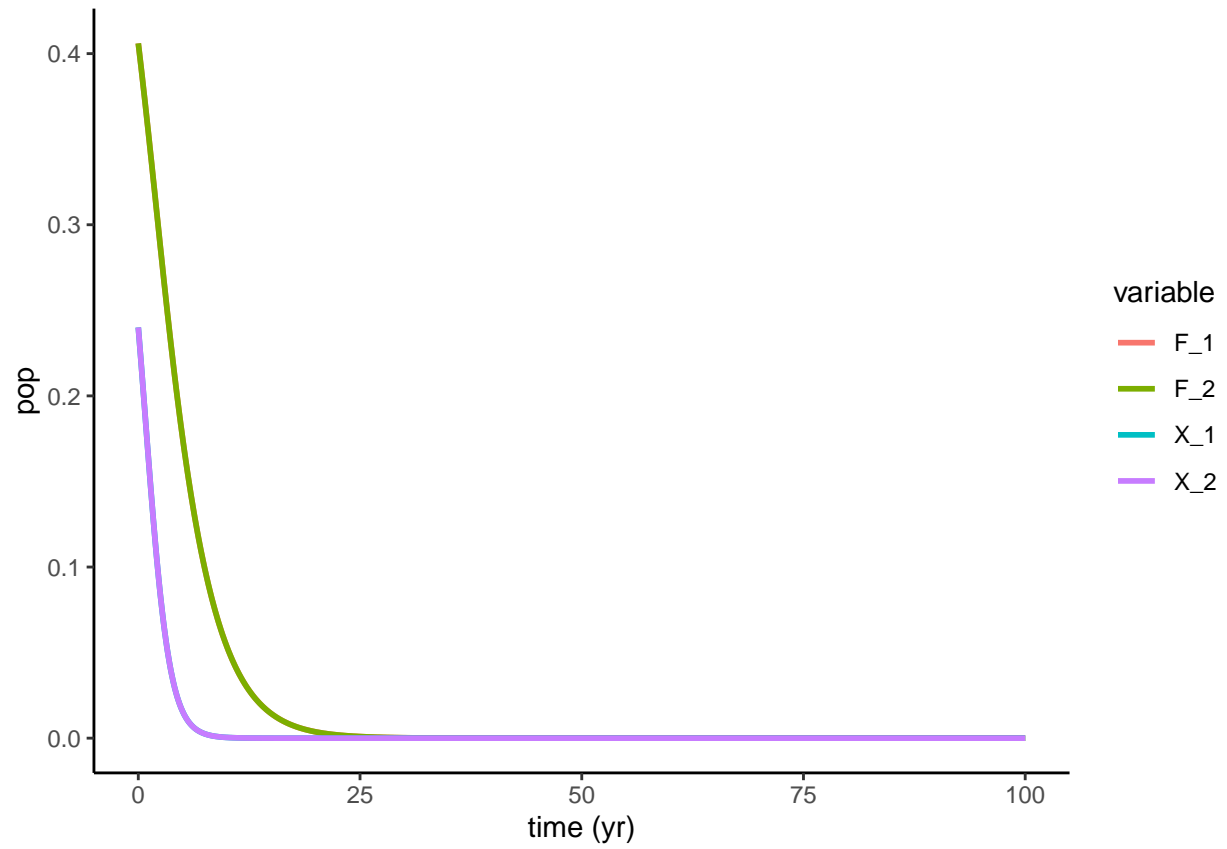


Figure 1: New Model with default paramters

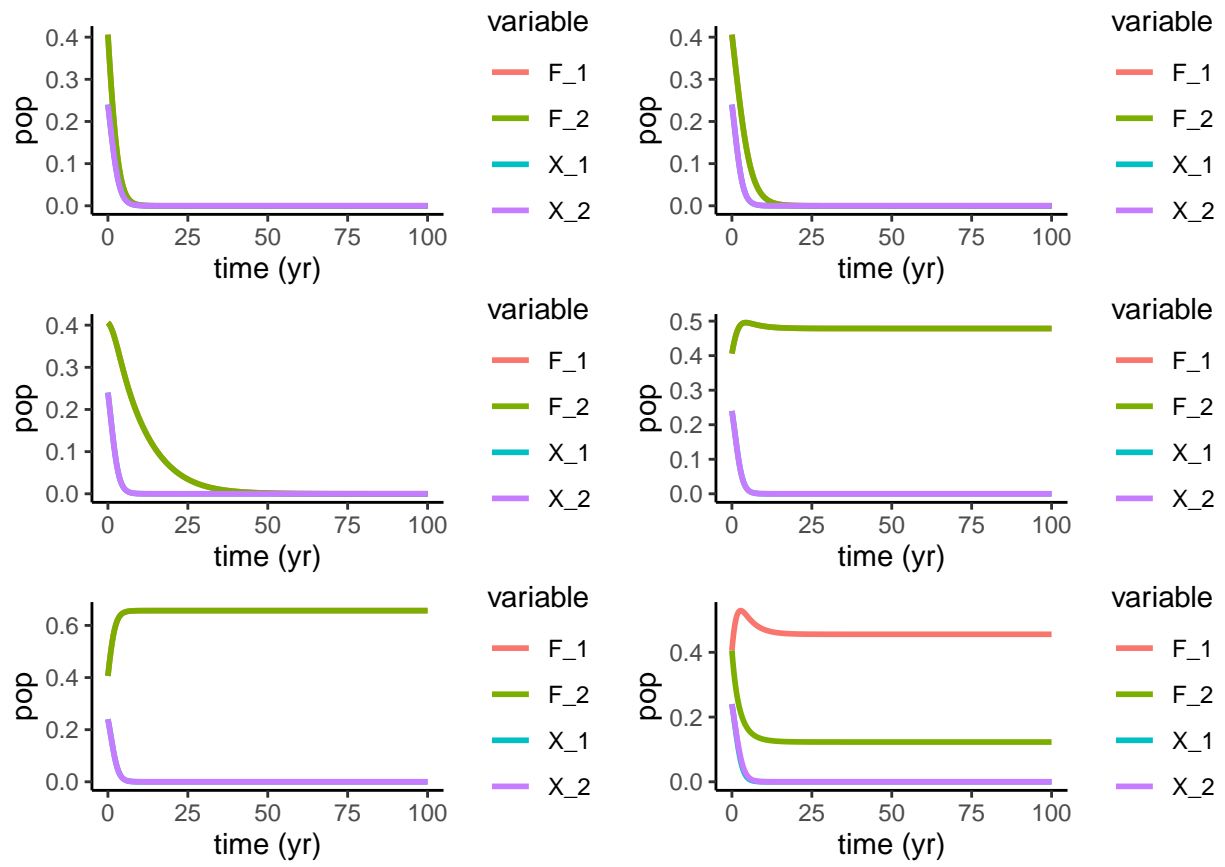


Figure 2: r - Net growth/fecundity, range 0 to 1

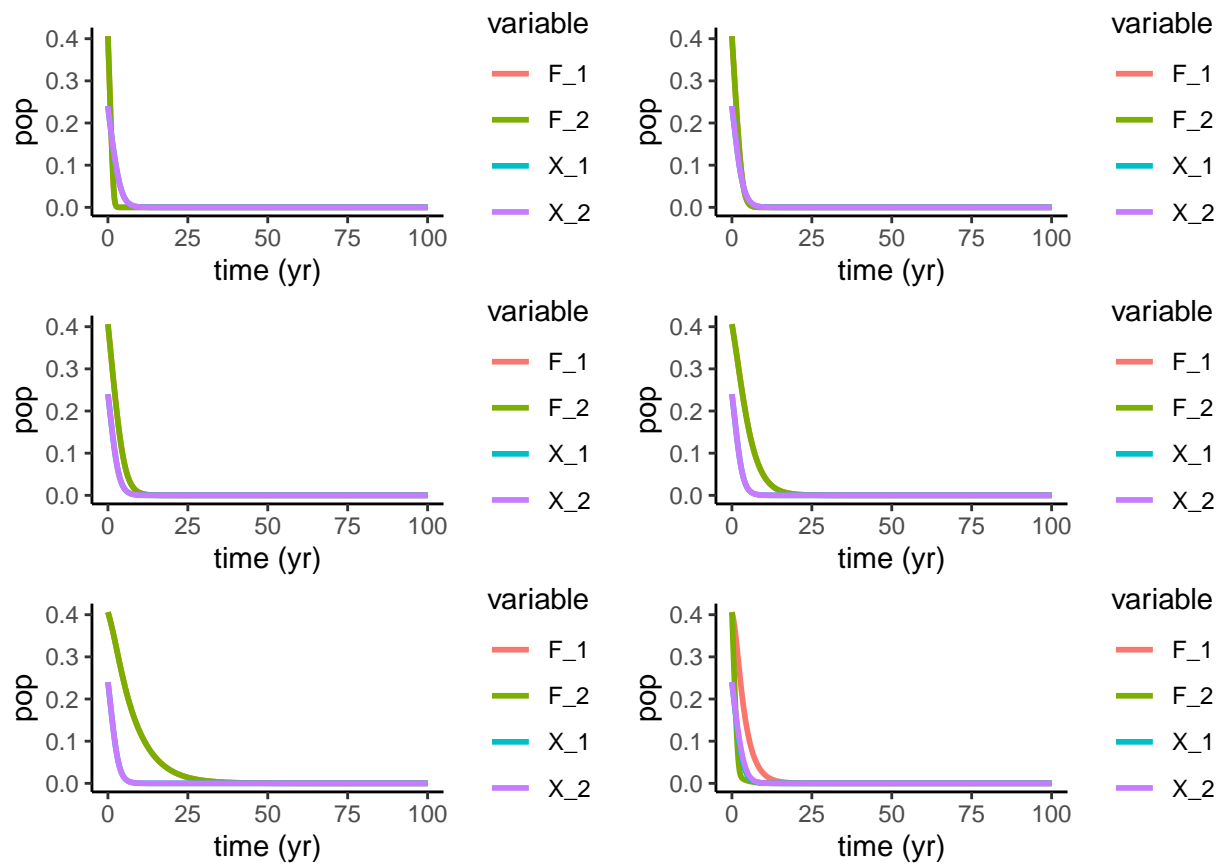


Figure 3: s - supply and demand, range 0.1 to 1

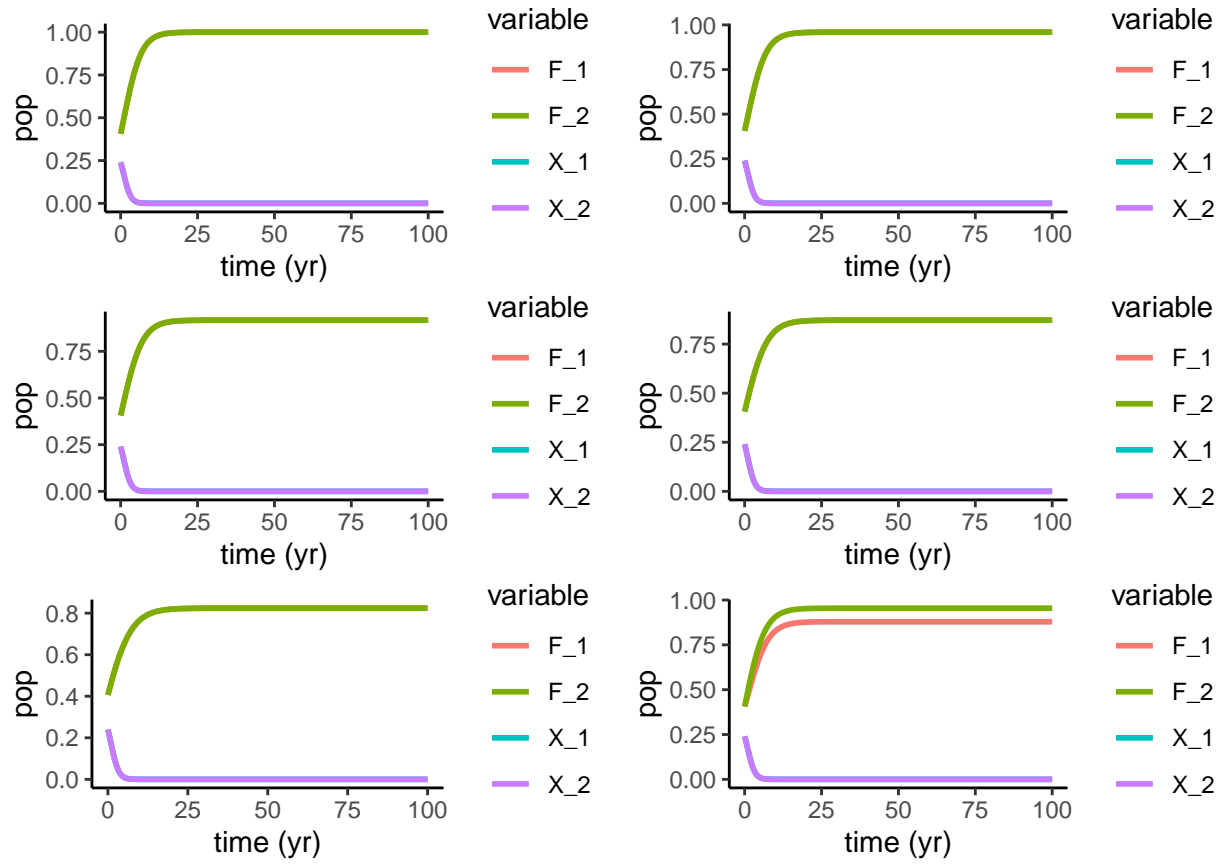


Figure 4: h - Harvesting efficiency, range 0 to 0.1. Note, default is .075

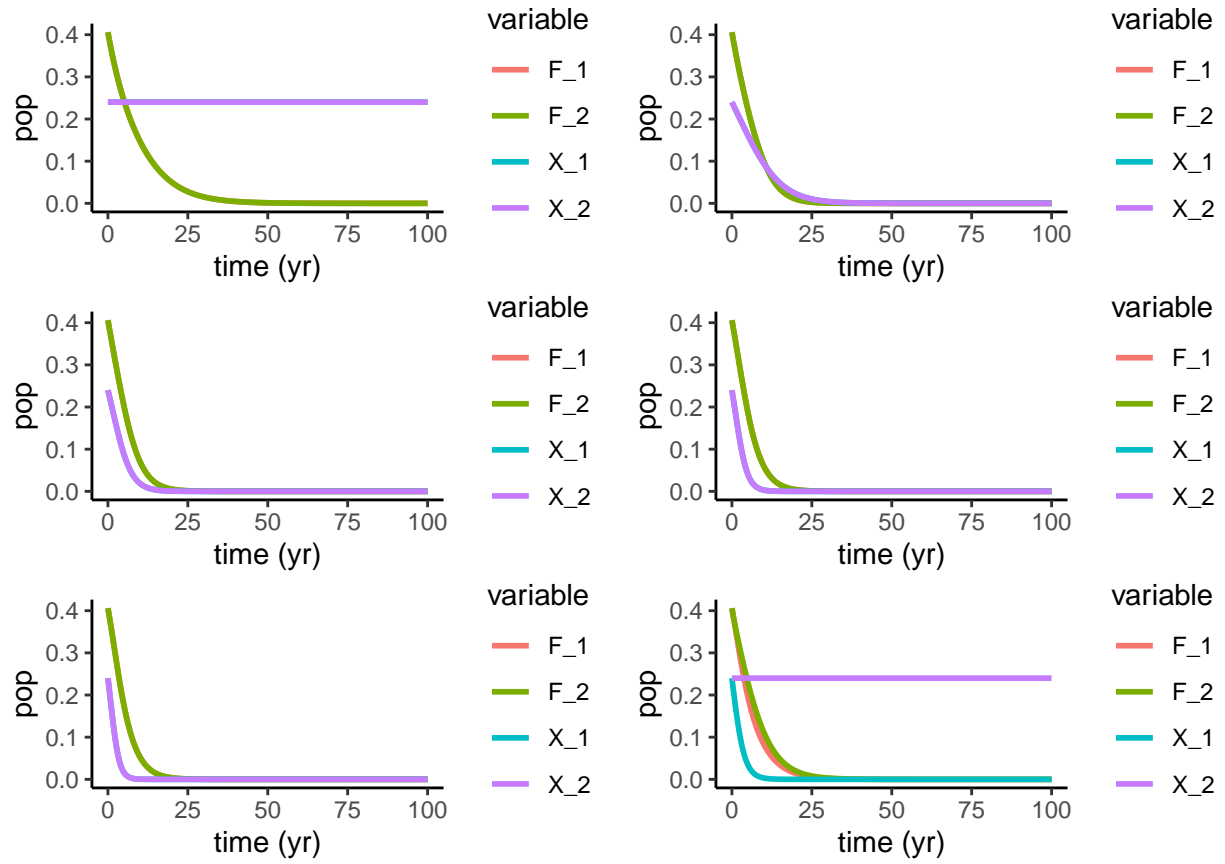


Figure 5: K - Social learning rate 0 to 1

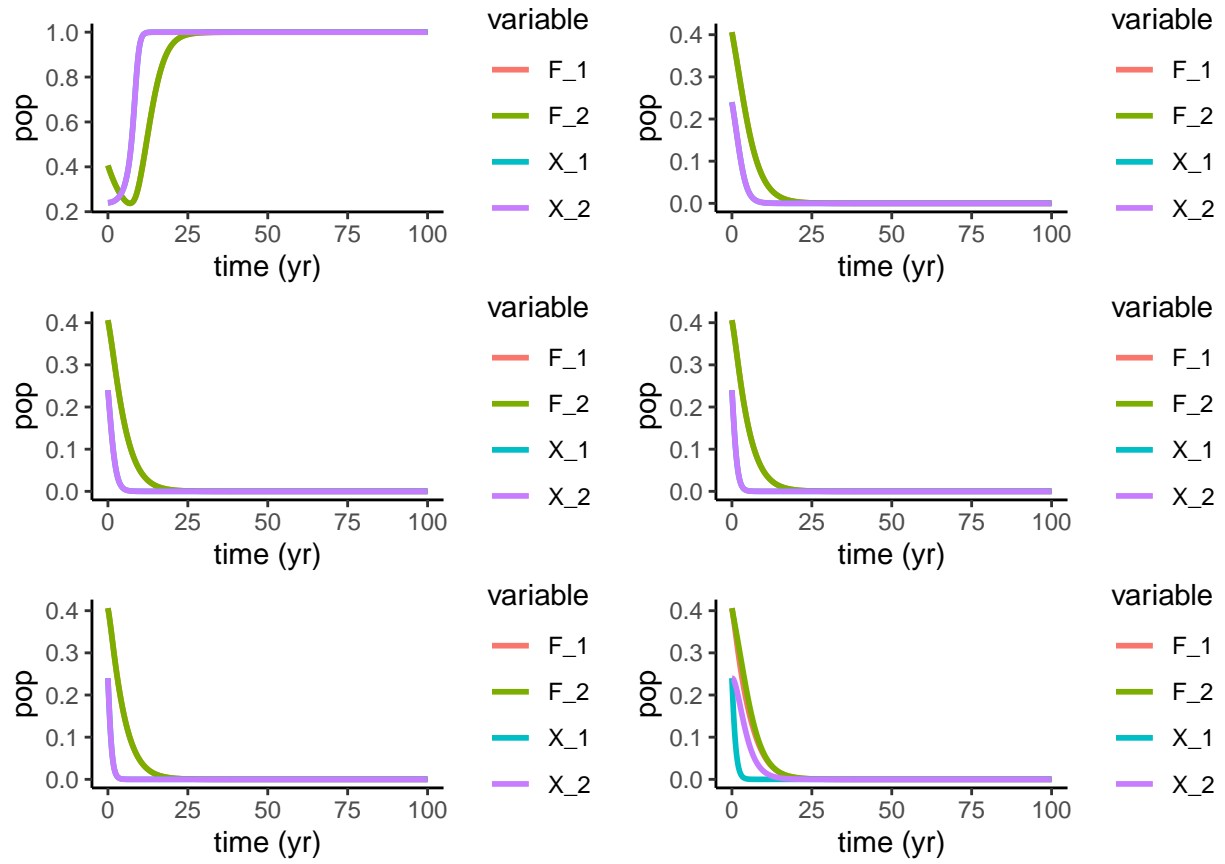


Figure 6: w - conservation costs



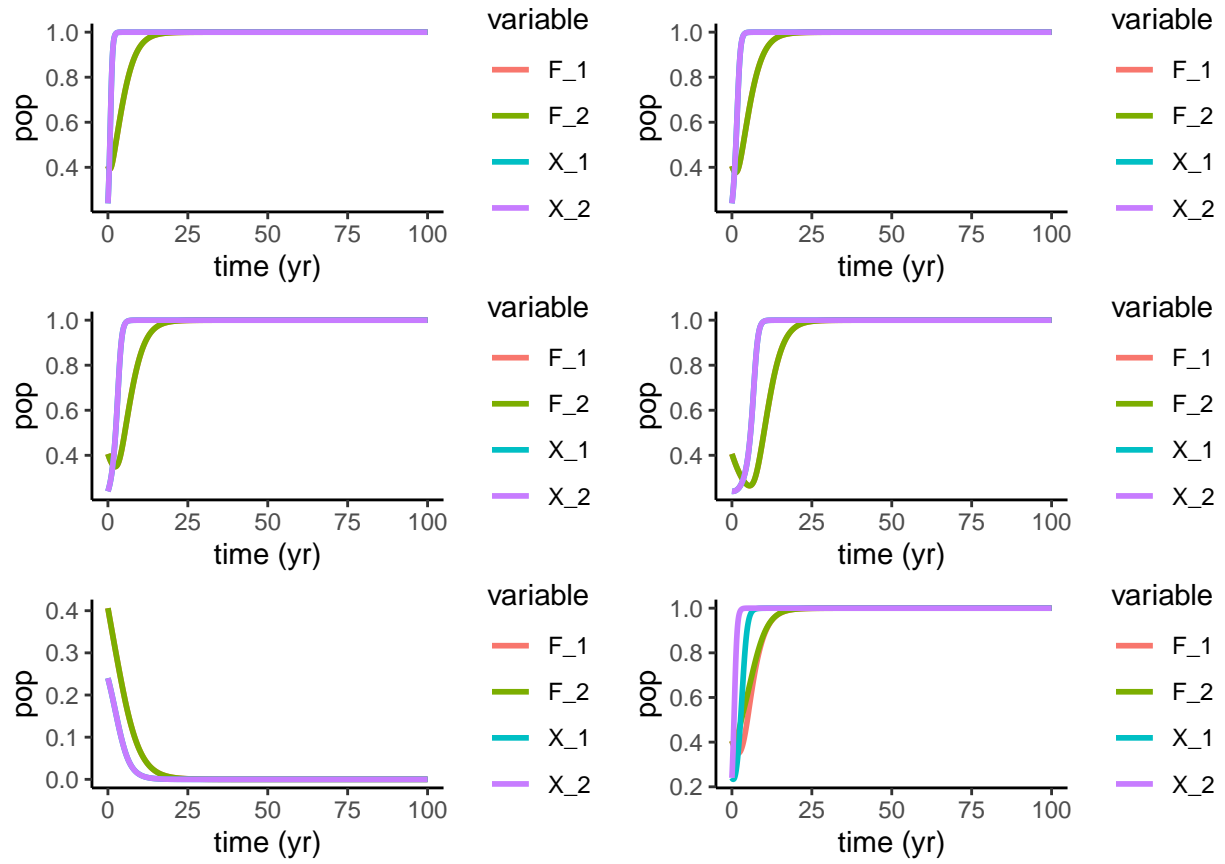


Figure 7: c - rarity valuation param

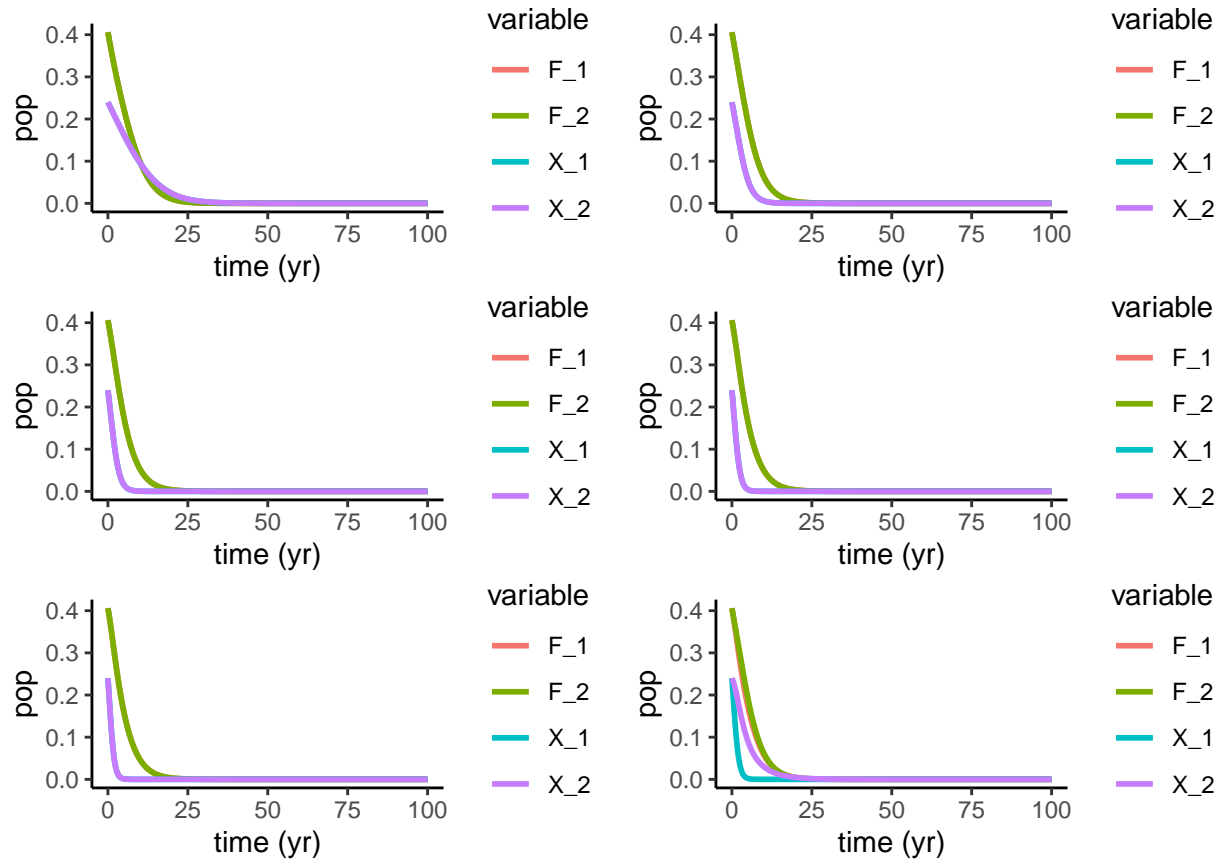


Figure 8: d - social norm strength

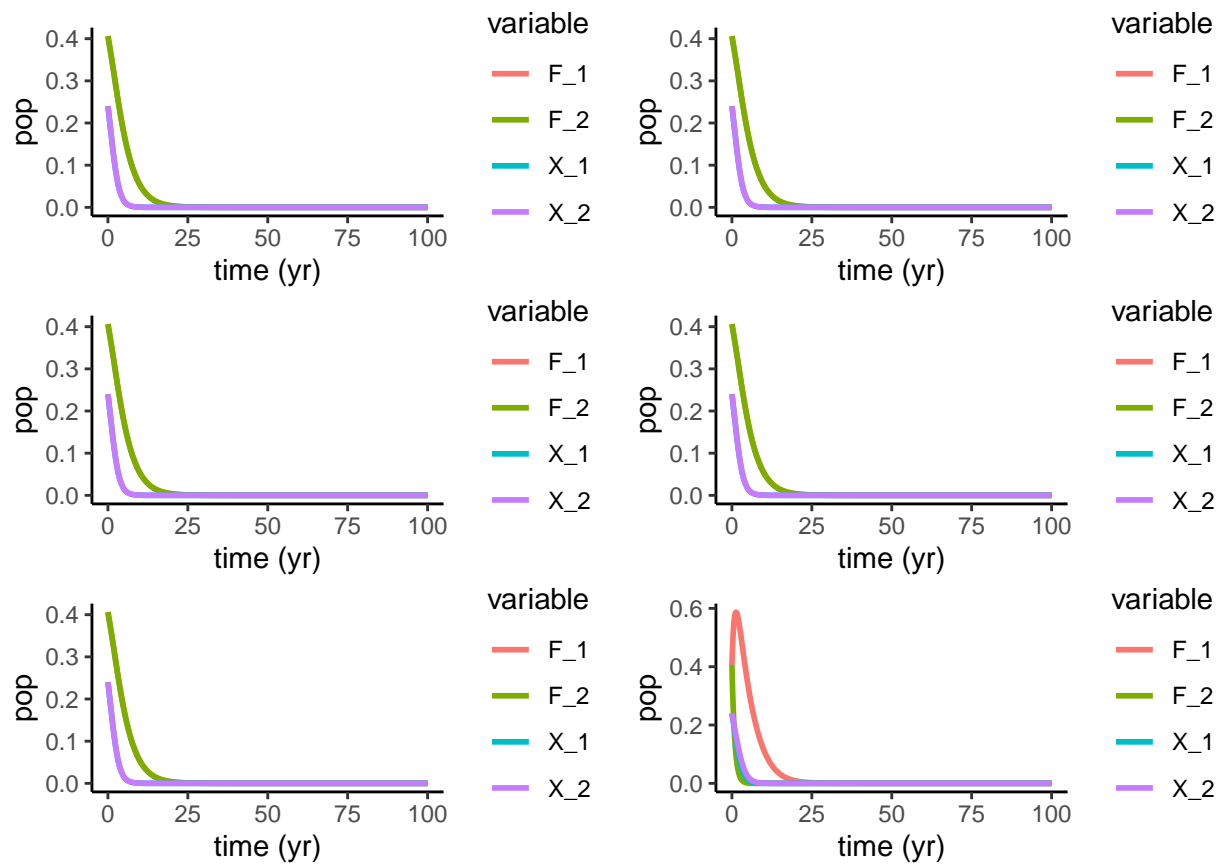


Figure 9: i - fish immigration

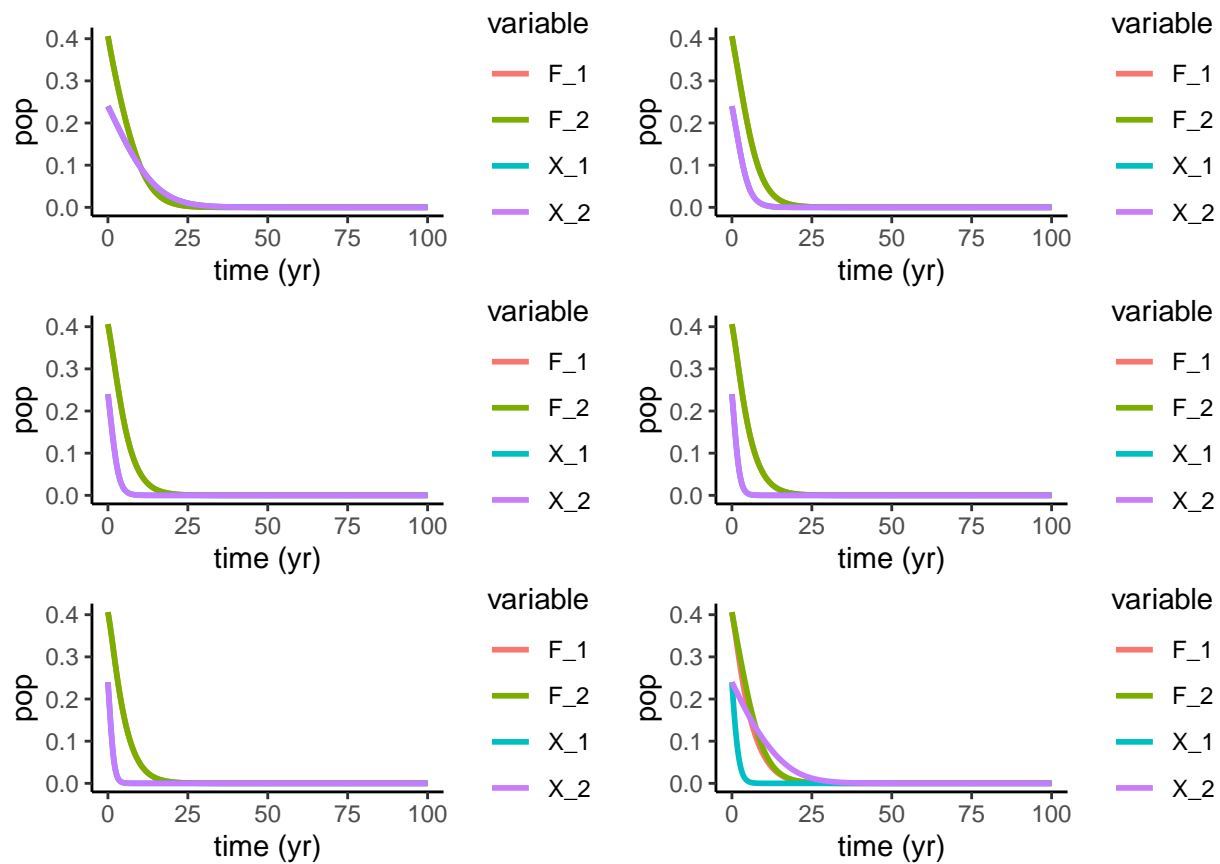


Figure 10: rho - Population influence on the other

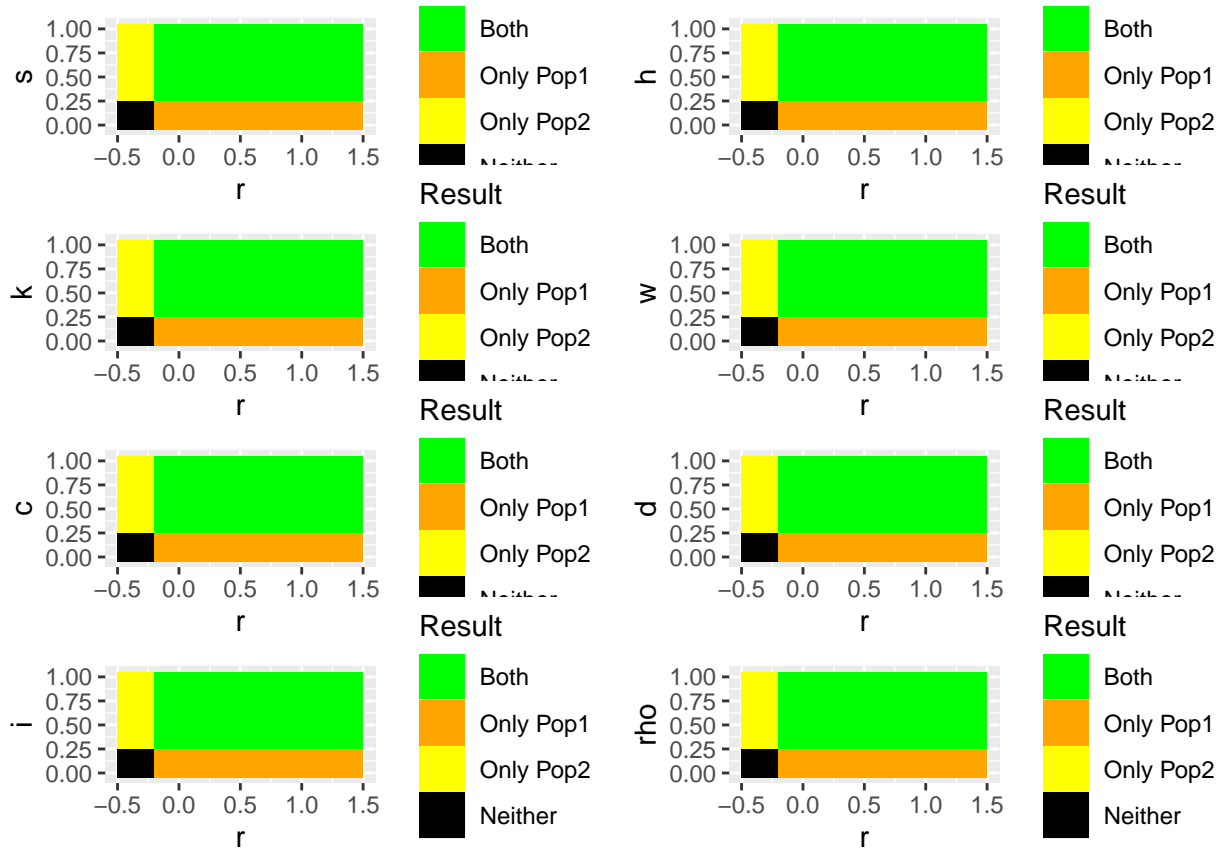


Figure 11: R parameter planes

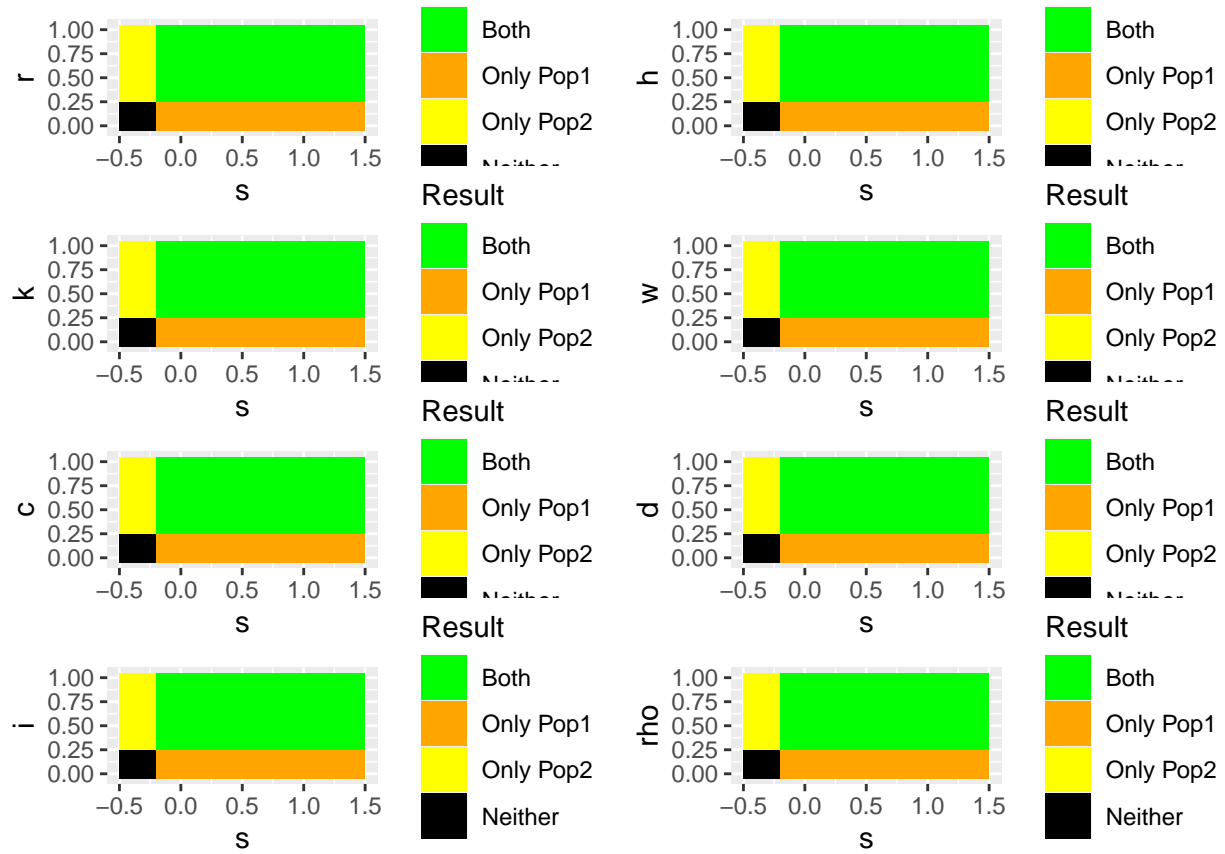


Figure 12: S parameter planes

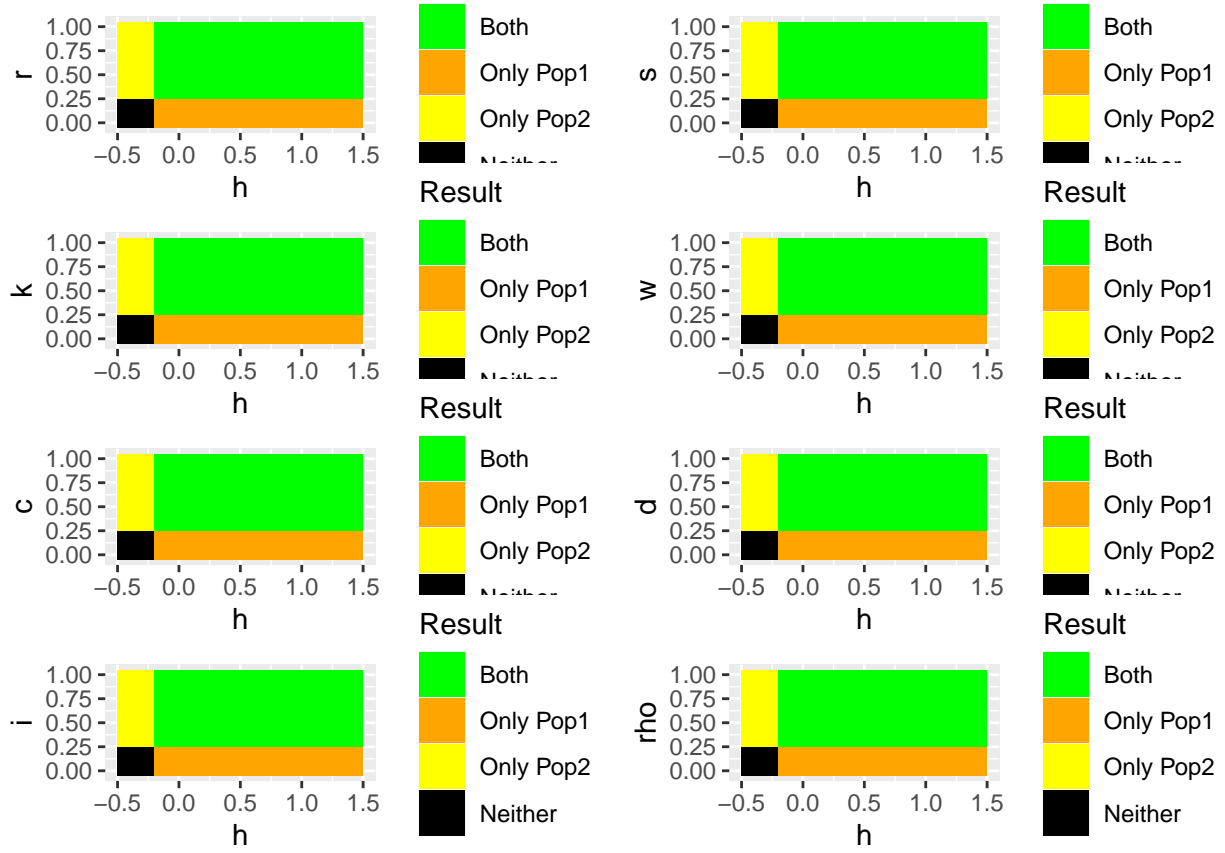


Figure 13:  $h$  parameter planes

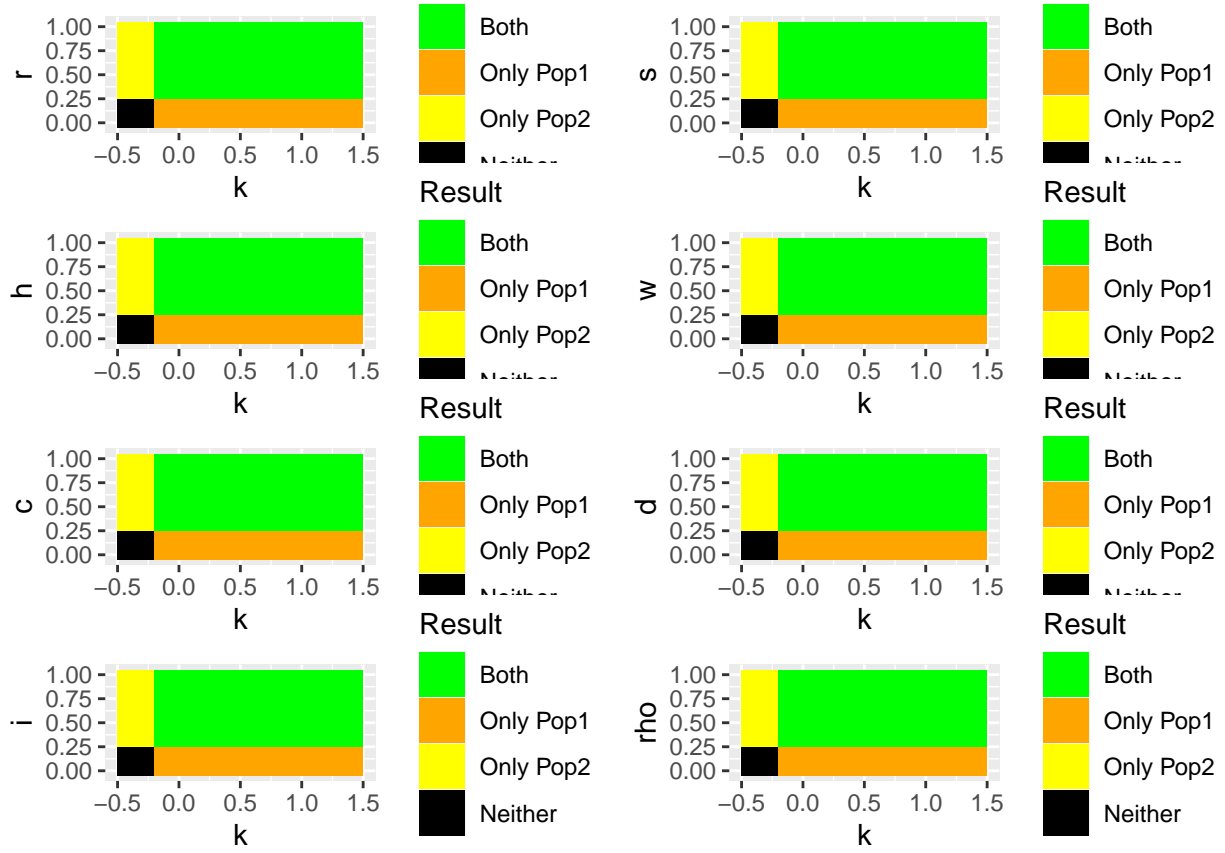


Figure 14: K parameter planes ranging from 0-1



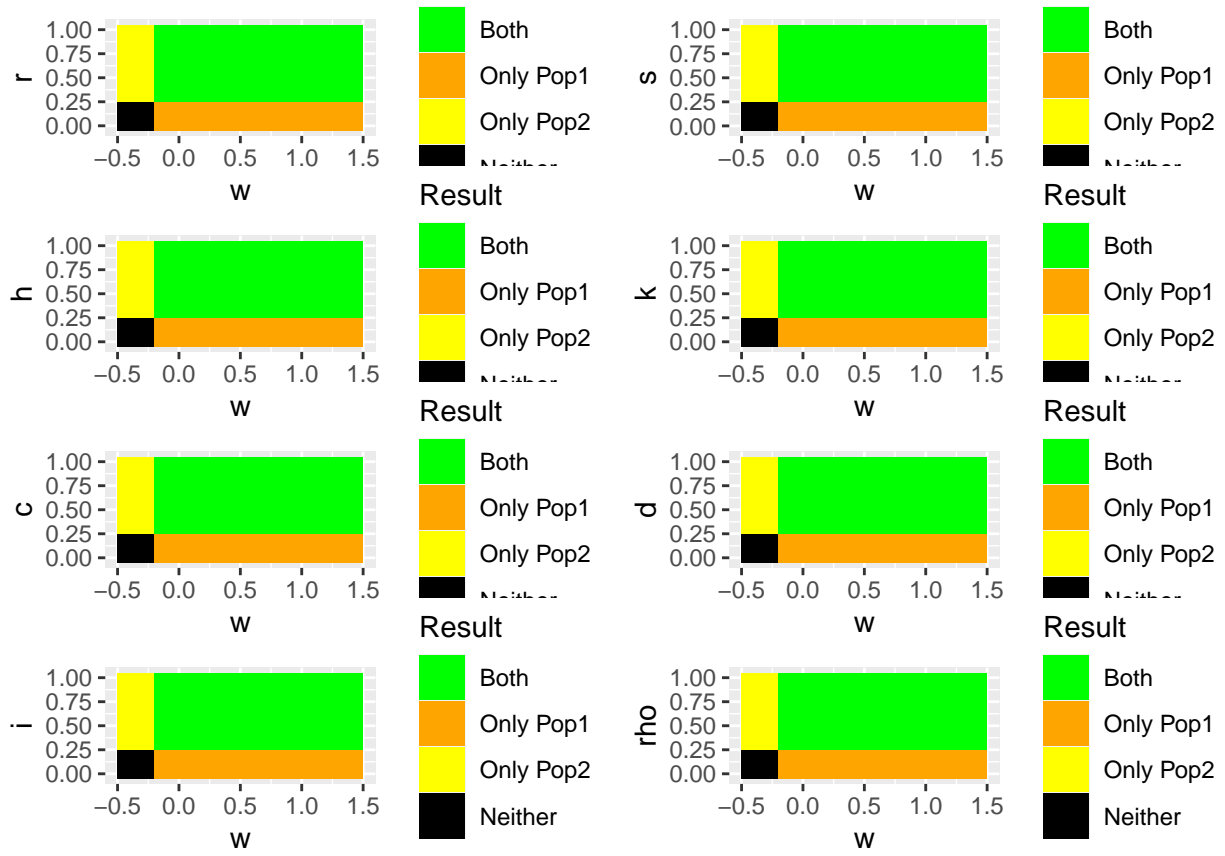


Figure 15:  $w$  parameter planes

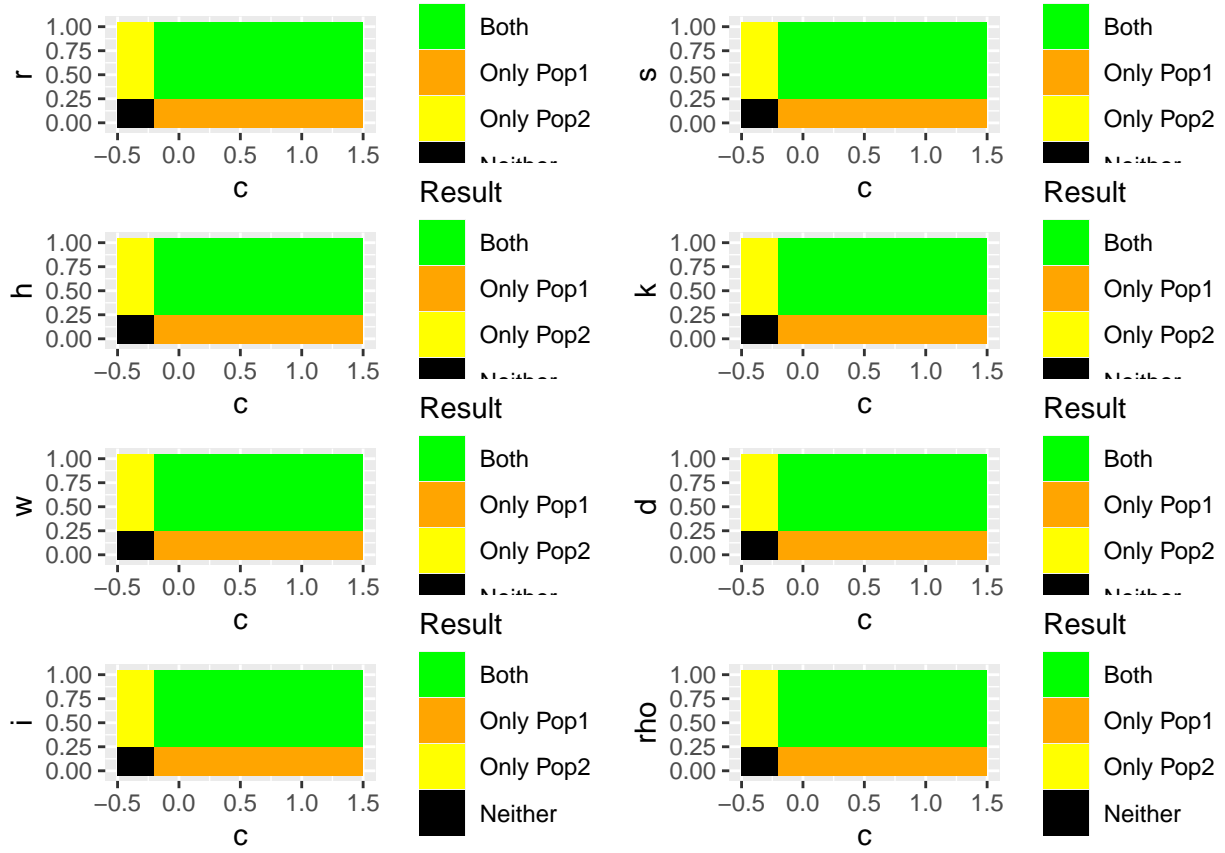


Figure 16:  $c$  parameter planes

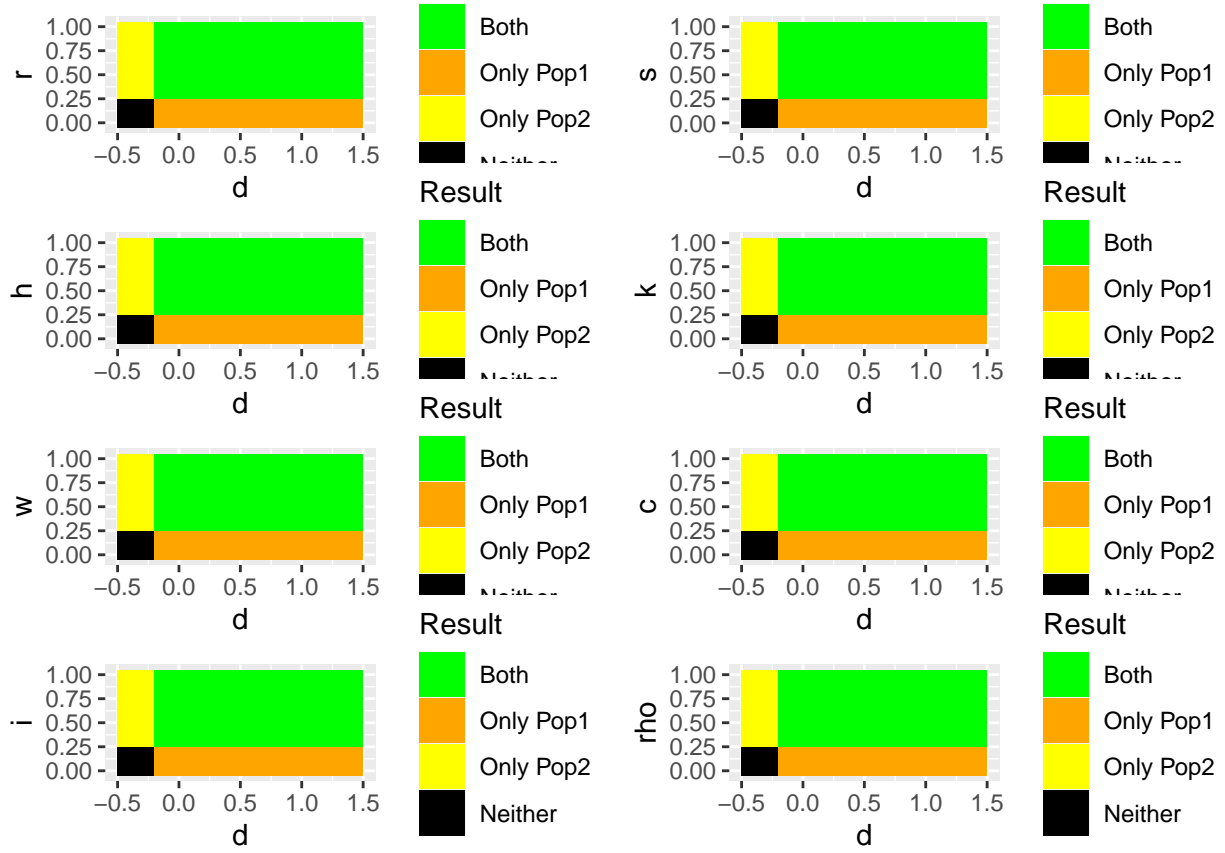


Figure 17: d parameter planes

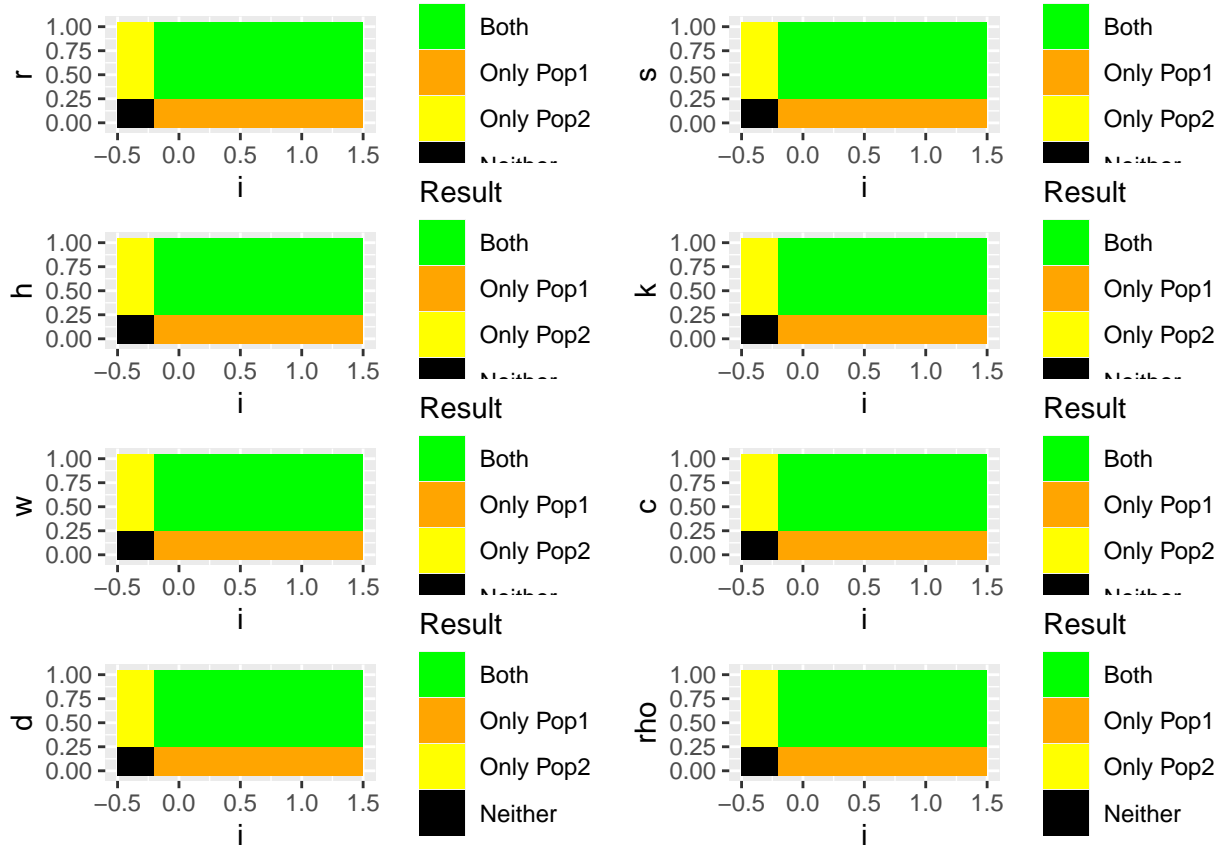


Figure 18:  $i$  parameter planes

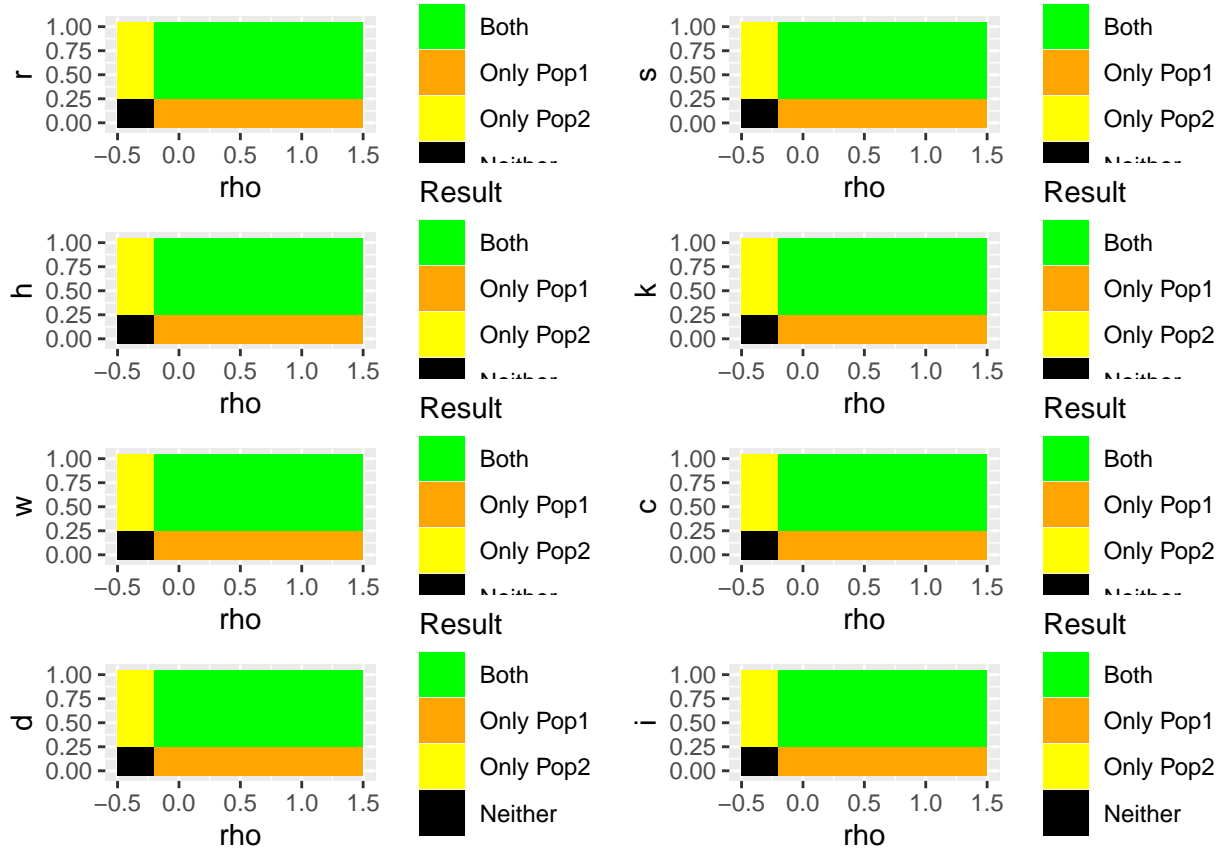


Figure 19: rho parameter planes

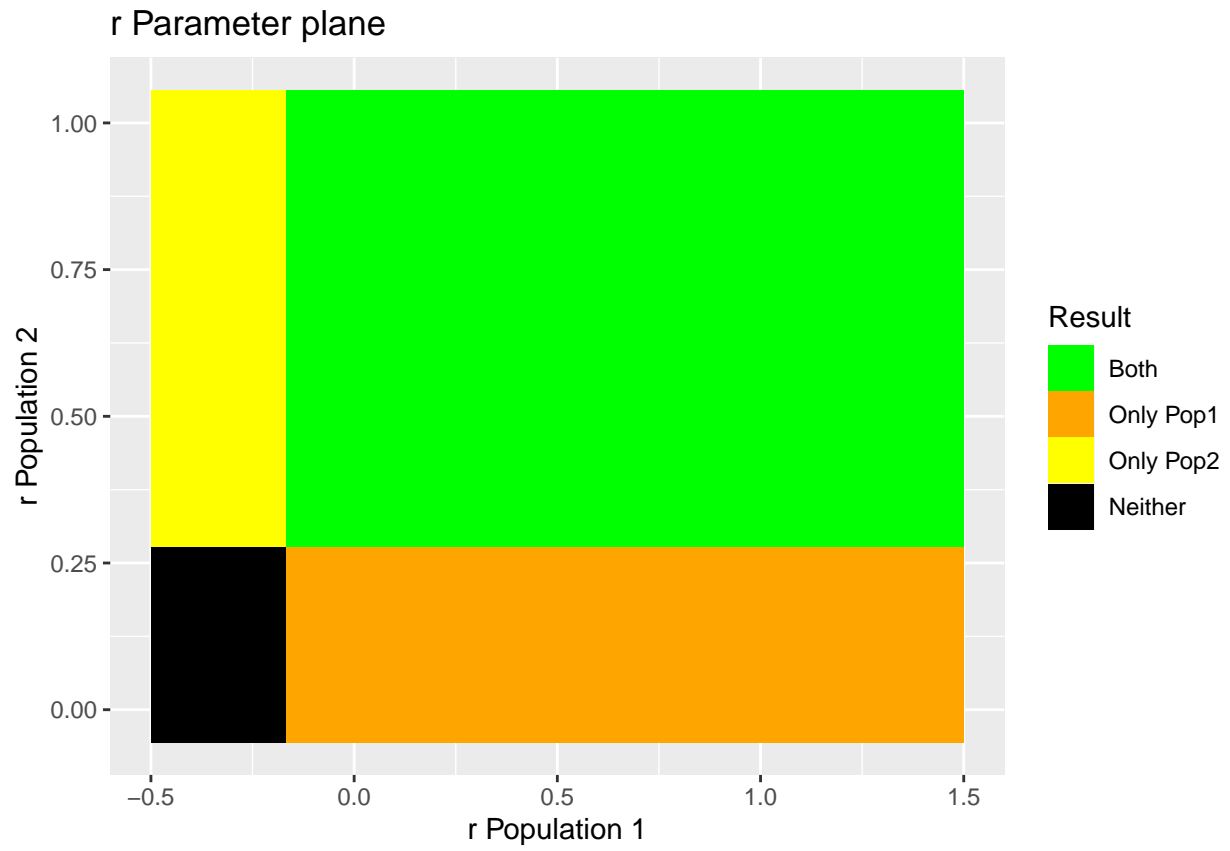


Figure 20: r population planes

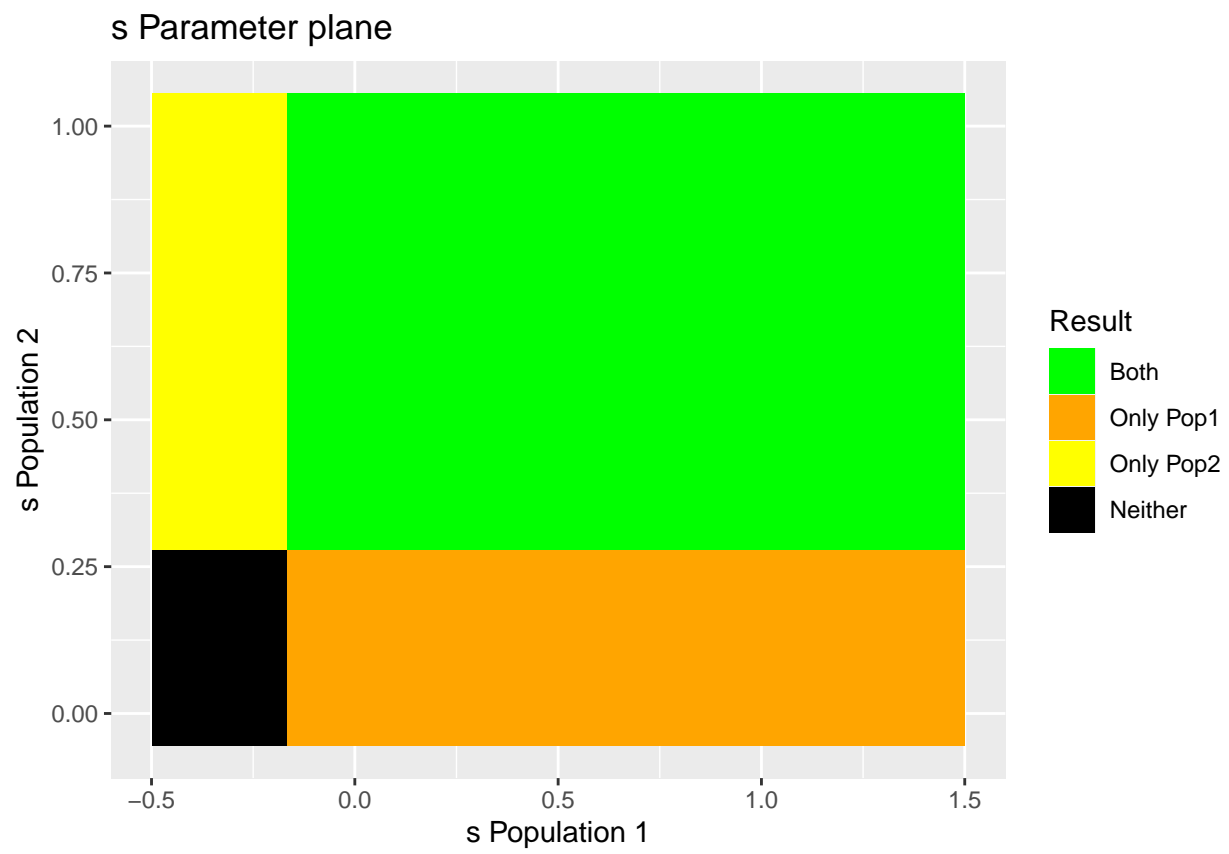


Figure 21: s population planes

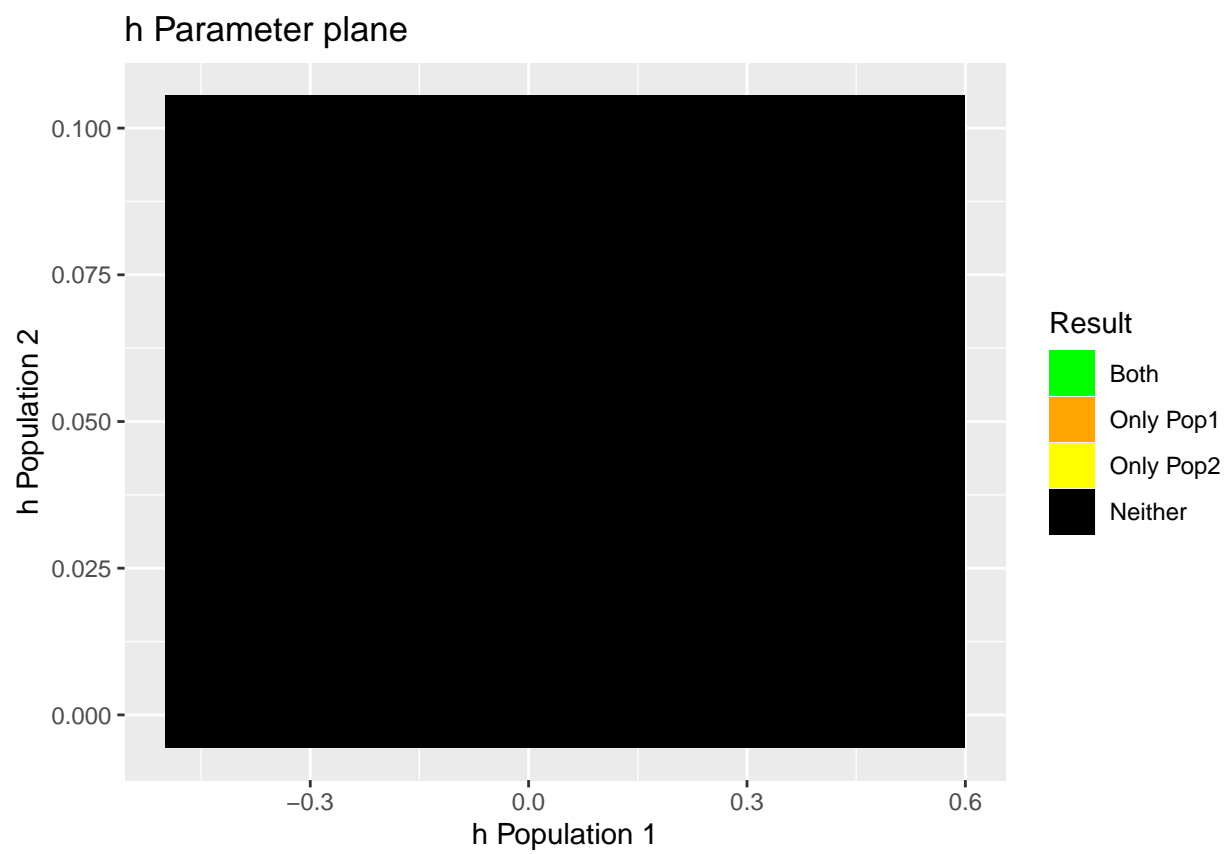


Figure 22: h population planes



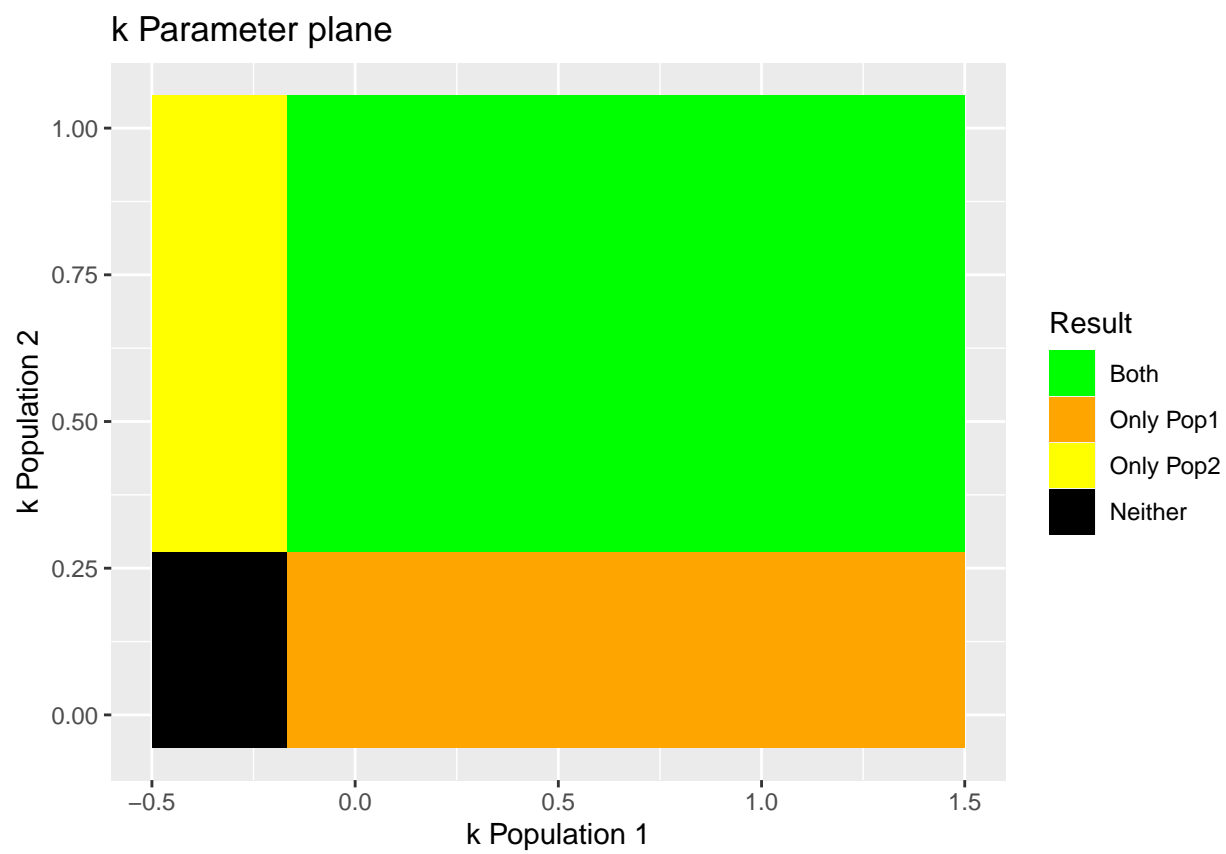


Figure 23: k population planes 0 to 1

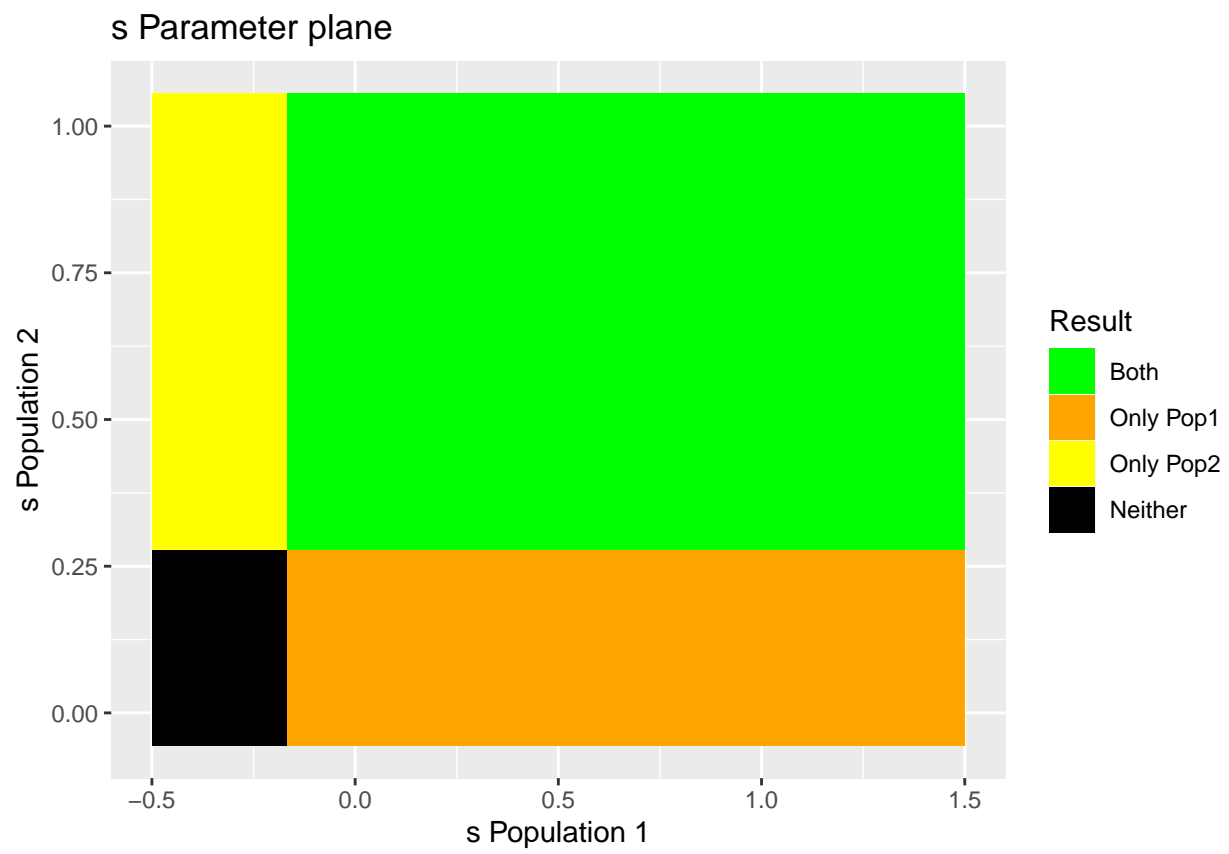


Figure 24: w population planes

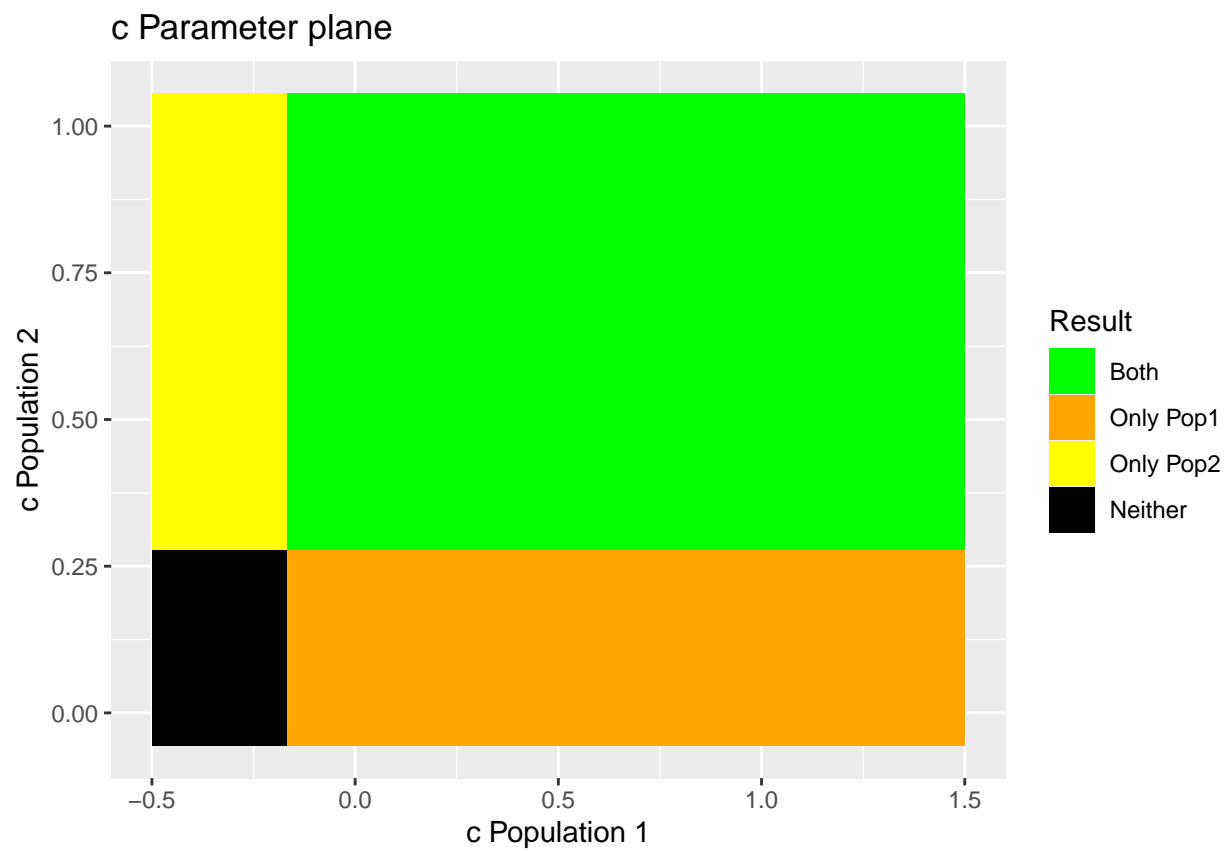


Figure 25: c population planes

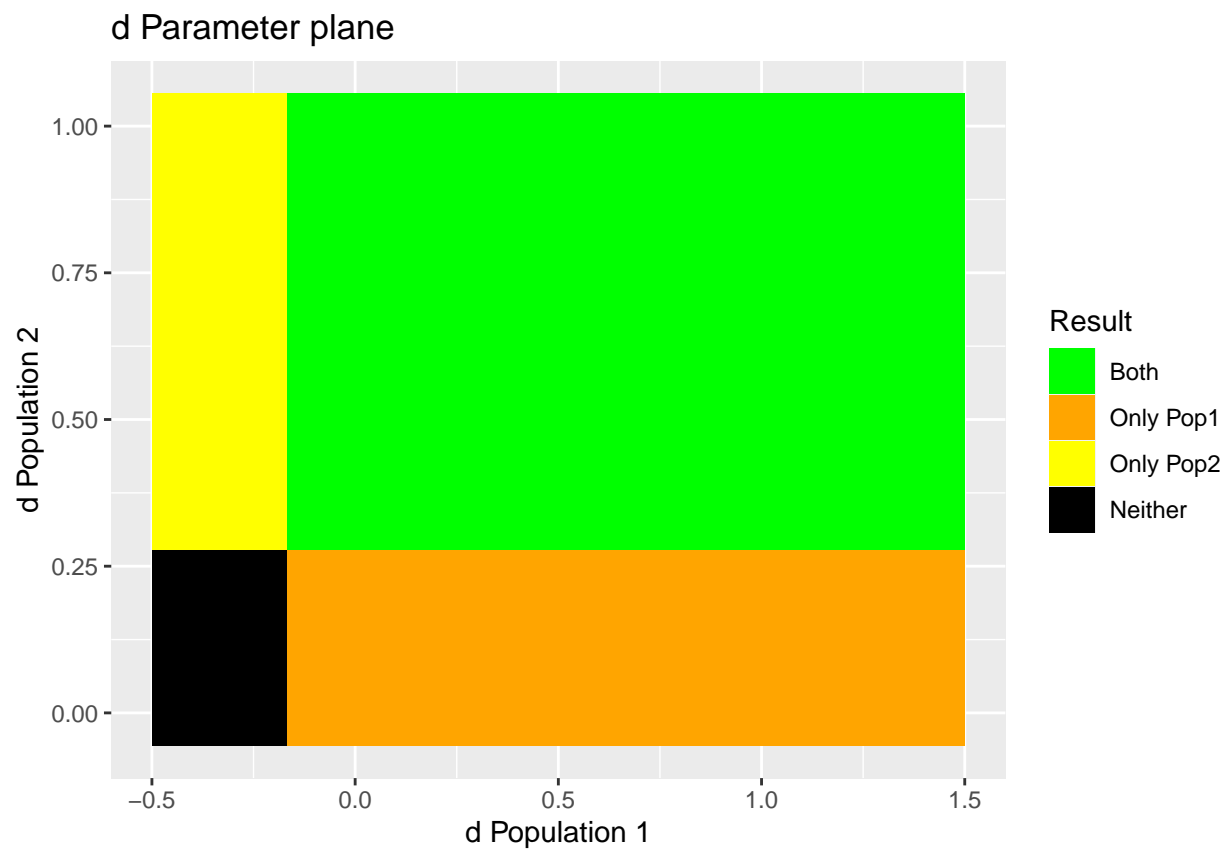


Figure 26: d population planes

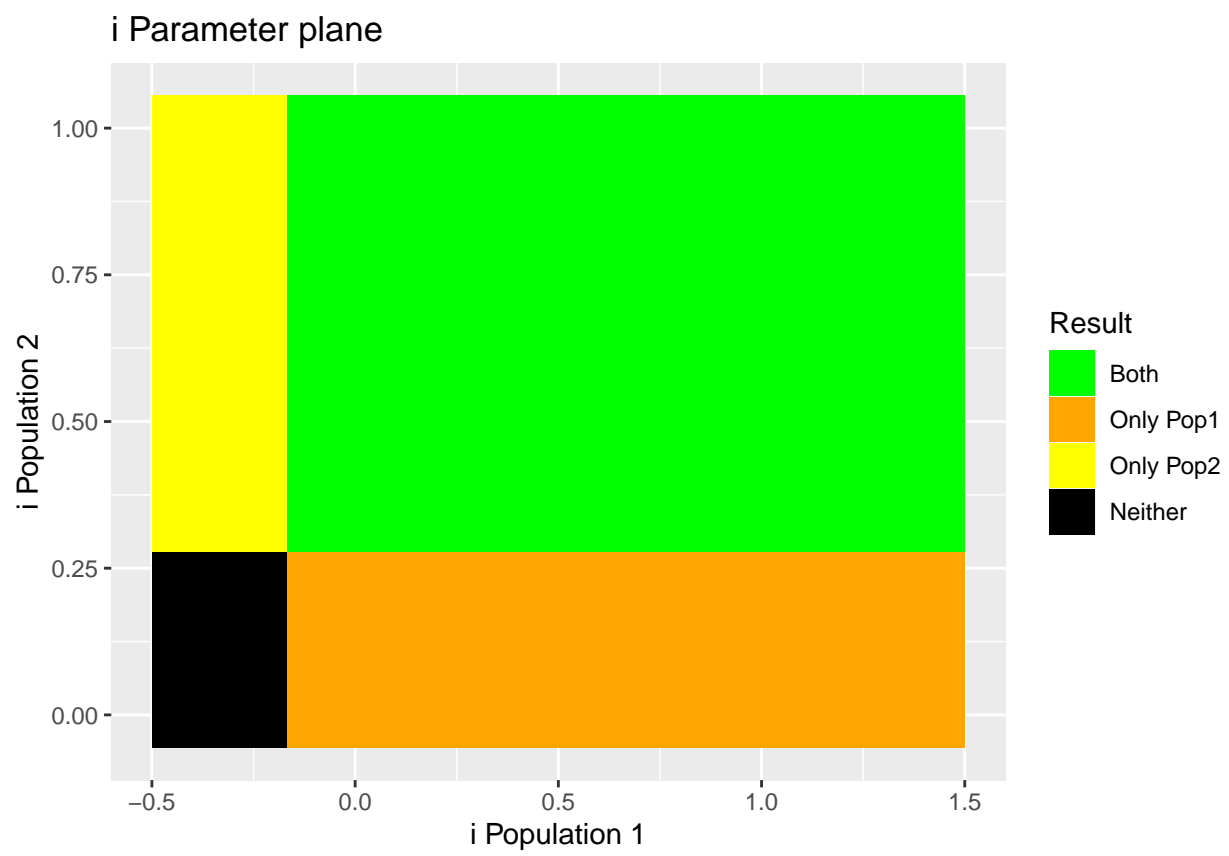


Figure 27: i population planes

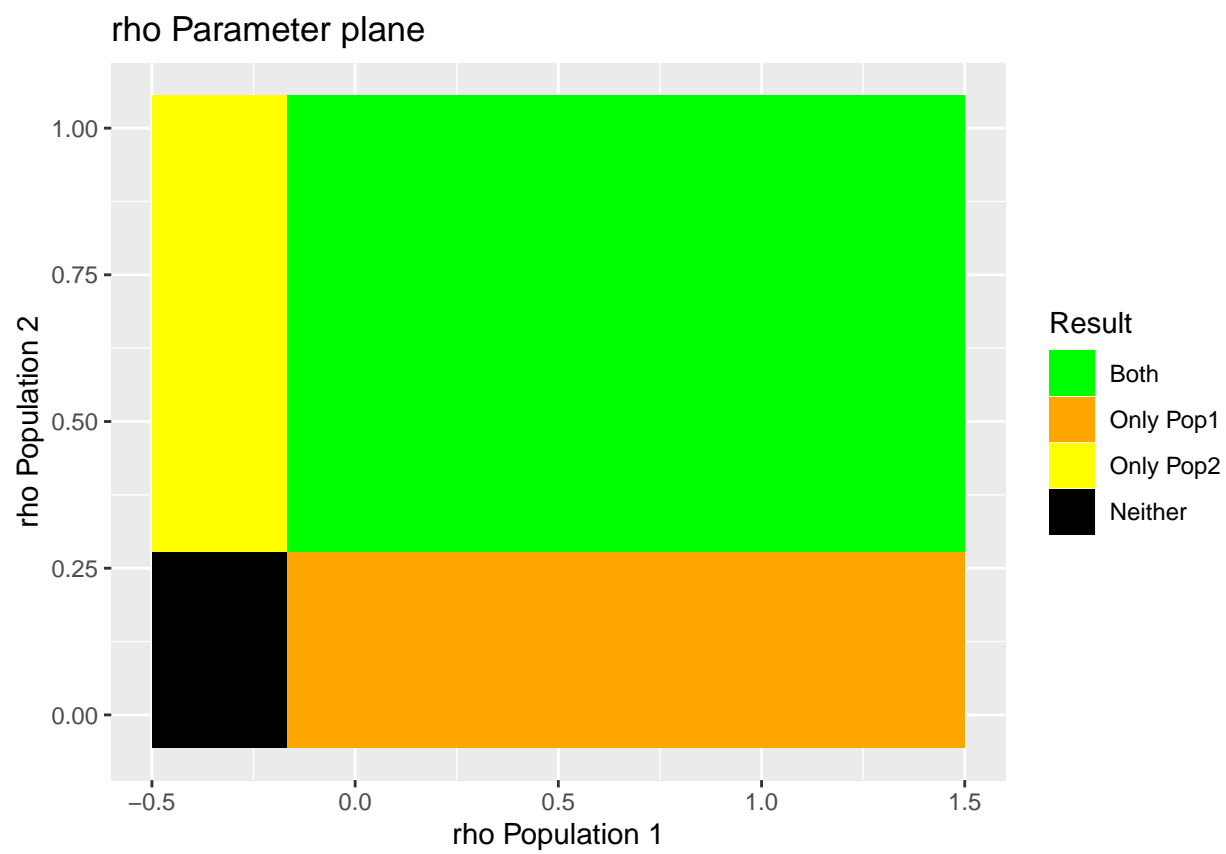


Figure 28: rho population planes