Results- simulation paper

*Intrinsic rate of growth, r*

The intrinsic rate of growth (r) influences the level of kin preference that appears as well as average relatedness but has less of an effect on group size and average cooperation (table 1). Intrinisic rate of growth appears only to make a difference to group size and cooperation when c is low (i.e. when the group carrying capacity is high). Otherwise it appears to have little or no effect.

*Group carrying capacity, 1/c (is this necessary to include? Seems pretty obvious to me!)*

According to the ANOVA, table x, the group carrying capacity has a large effect on the size of groups formed but proportionally little effect on kin preference, relatedness or average cooperation.

*Cost of cooperation, β*

As the cost of cooperation increase the average cooparatoin decreases, although this does not seem to be such as large difference (table x). The cost of cooperation only seems to have an effect on cooperation when the intrinsic rate of growth is small and the group carrying capacity is large (figure 1)

**Scratch that! ... Start again!**

**Results**

Kin preference, average relatedness within groups, average group size and cooperation all evolved within this models.

*Evolution of Group Size*

The size of groups was mainly affected by the group carrying capacity, 1/c (table x.) When the group carrying capacity was high however (c=0.02) the larger the intrinsic rate of growth, r, the larger the average group size observed. (table x). The cost of cooperation , β, only had an effect on the group size observed with C and r was small (C=0.02 and R<1.0), keeping groups below the stable group size. Otherwise the average group size stayed around the stable group size

*Evolution of cooperation*

When the group carrying capacity was small (C =0.1) average cooperation evolved to a high level regardless of the cost of cooperation or intrinsic rate of growth. However when the group carrying capacity is larger and the cost of cooperation is larger (C=0.02 and β 0.6, C=0.06 and β =0.8) lower levels of cooperation evolve.

*Evolution of relatedness*

90.7% of the variability in average relatedness is due to r, the intrinic rate of growth (table x). The intrinsic rate of growth, r, has a very large effect on the average relatedness within groups. The group carrying capacity, 1/c, and the cost of cooperation, β, have little effect (table x, figure 1)

Evolution of kin preference