

## Equilibrium calculation

$$A[\alpha_-, \gamma_-] := \frac{1 - \gamma}{\alpha \gamma};$$

$$k[\alpha_-, \gamma_-, r_-] := \frac{r + 1}{A[\alpha, \gamma] (r - 1) + r} - 1$$

equilibrium[r\_, β\_, α\_, γ\_, f\_, type\_] :=

$$\text{If} \left[ \text{type} == \text{False}, (*\text{Type I uses this formula}*) \frac{1}{k[\alpha, \gamma, r]^{1/\beta} + 1}, \right. \\ \left. (*\text{Type II uses this formula}*) \frac{1 / (k[\alpha, \gamma, r] + 1) - f}{1 - f} \right];$$

In[69]:= q2 = 3; q1 = 2; β = .; u = 0; α = 0.83;

In[64]:= plt[i\_] := Plot[equilibrium[q2 / q1, ToExpression[allparams[[i, 7, 2]]],  
α, γ, 1 / ToExpression[allparams[[i, 12, 2]]], types[[i]], {γ, 0, 1},  
PlotRange → {{0, 1}, {0, 1}}, PlotStyle → Directive[Black, Thickness[0.01]],  
Frame → True, AspectRatio → 1, PlotLabel → ToString[folders[[i]]];

## Import data

In[2]:= folders = FileNames[]

Out[2]:= {typeI\_anticonformist\_b-0.1, typeI\_anticonformist\_b-1,  
typeI\_anticonformist\_b-2, typeII\_anticonformist\_f1.2, typeII\_anticonformist\_f2,  
typeII\_anticonformist\_f2\_longer, typeII\_conformist\_f1.2,  
typeII\_conformist\_f2, typeII\_mixed\_f1.2, typeII\_mixed\_f1.2\_lowthreshold,  
typeII\_mixed\_f2\_longer, typeII\_mixed\_f2\_lowthreshold}

In[3]:= allraw = {};

allparams = {};

For[i = 1, i ≤ Length[folders], i++,

raw = Import[folders[[i]] <> "/out.csv", "CSV"];

params = Import[folders[[i]] <> "/params.csv", "CSV"];

AppendTo[allraw, raw];

AppendTo[allparams, params];

]

In[14]:= types = StringMatchQ[ToString[#], "typeII" ~~ \_\_\_] & /@ folders

Out[14]:= {False, False, False, True, True, True, True, True, True, True, True}

In[15]:= If[types[[1]] == False, Print["type1"], Print["type2"]]

type1

## Plotting and saving images

```
In[61]:= images = {};
For[i = 1, i ≤ Length[folders], i++,
  dp = ListDensityPlot[allraw[[i]][[2 ;;]], PlotRange → All,
    PlotLegends → Placed[BarLegend[Automatic, LegendMargins → {{0, 0}, {10, 5}},
      LegendLabel → "Equilibrium frequency of low-quality morph",
      LabelStyle → {FontFamily → "Calibri"}], Above],
    Frame → True, FrameStyle → Directive[Black, Thickness[0.003]],
    FrameLabel → {Style["Probability of copying,  $\gamma$ ", FontFamily → "Calibri", 18],
      Style["Initial frequency of low-quality morph",
        FontFamily → "Calibri", 18]}, PlotLabel → ToString[folders[[i]]];
  image = Show[dp, plt[i]];
  Export[folders[[i]] <> "/image.pdf", image];
  AppendTo[images, image];
]
```

## Visualise it here

```
In[73]:= GraphicsGrid[Partition[Table[images[[i]], {i, 1, Length[images], 1}], 3]]
```