Supplementary materials

Supplementary materials to accompany the article:

Yanovich, Igor. 2017. Analyzing imperfective games. *Semantics and Pragmatics* 10(17). https://doi.org/10.3765/sp.10.17.

Contents

SM 1. Infinite-population trajectories in the Imperfective Game, under a number of combinations of four independent misacquisition rates in matrix Q. ..... page 2

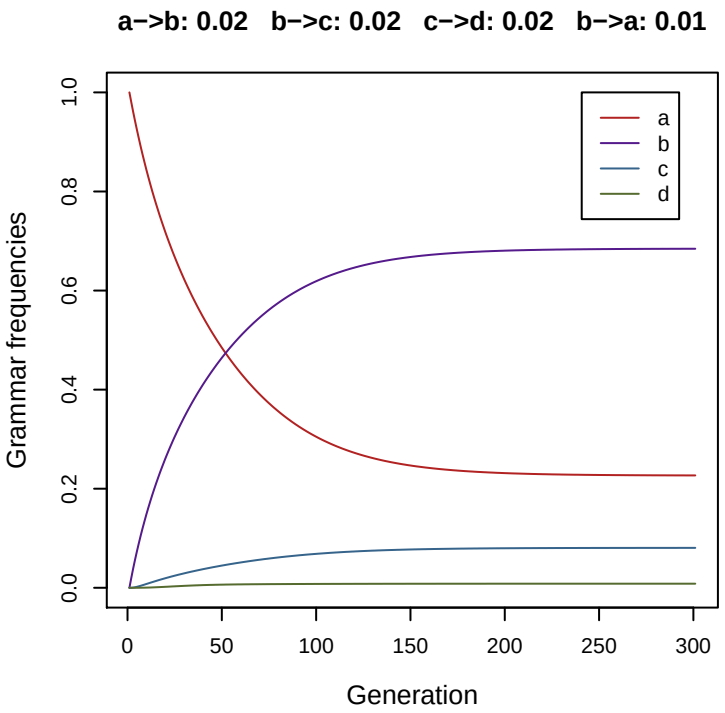
SM 2. Infinite-population trajectories illustrating the effect of varying α and β. ..... page 9

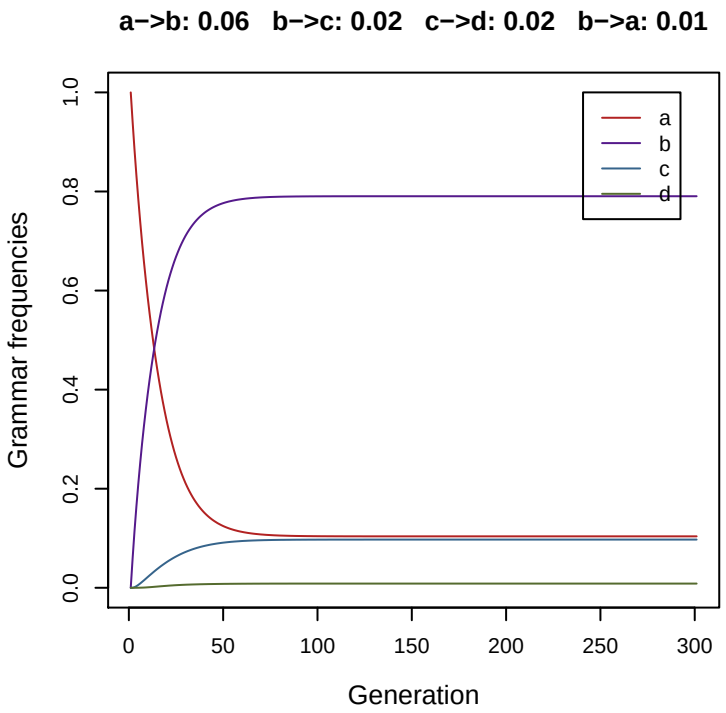
SM 1.

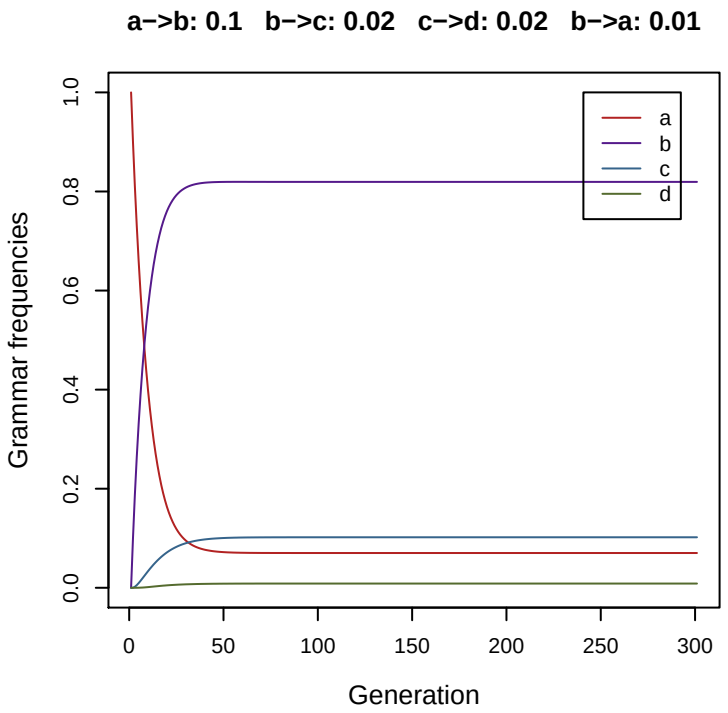
Infinite-population trajectories in the Imperfective Game, under a number of combinations of four independent misacquisition rates in matrix Q.

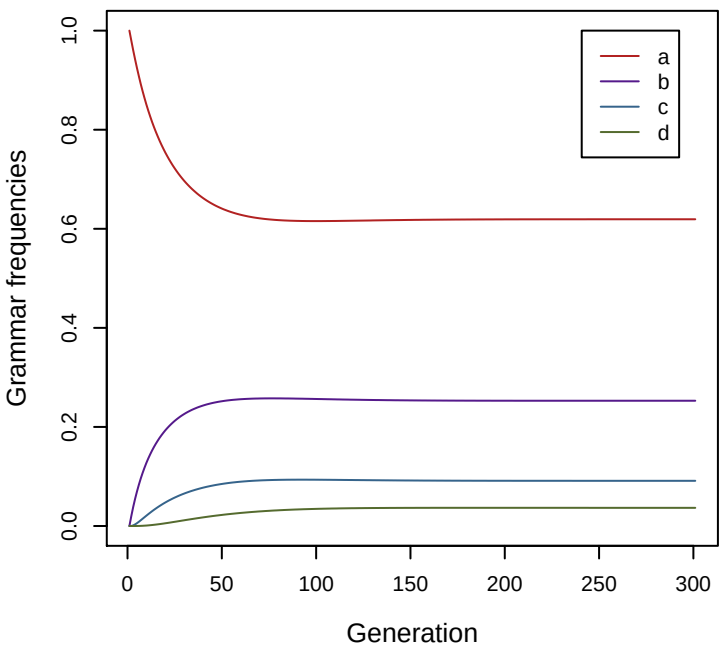
The figures illustrate both the dependence of the trajectories on the exact form of Q, and the limits on how much one can vary the trajectories by changing Q. Four independent non-zero rates in Q are listed in the title of each figure. A is constant and is as in Deo (2015), that is as in Table 2 of the current article's main text with $k = 0.01$.

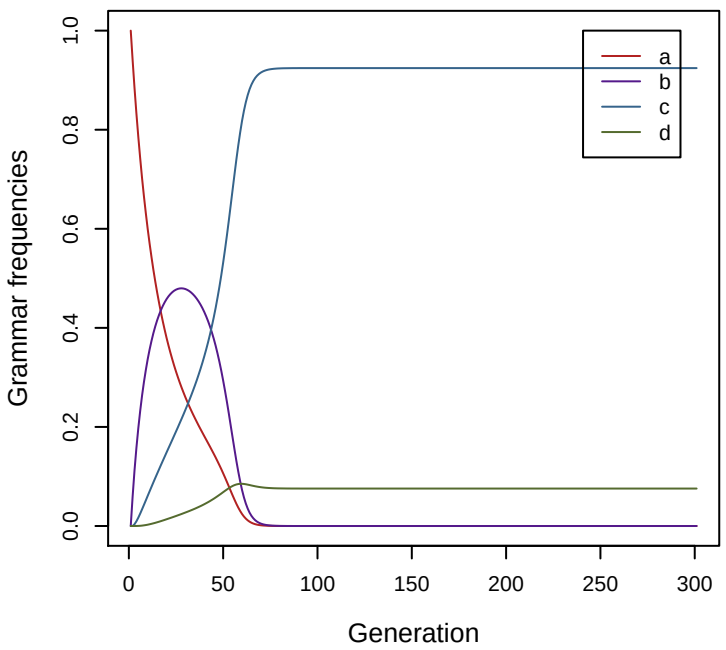
In particular, the figures show that it does not appear possible to get the intermediate grammars in the cycle to reach close to 100%. Indeed, that impossibility can be demonstrated analytically, see e.g. Yanovich 2016: Sec. 4 and the brief discussion in the main text of this article. The visual illustration here serves only to build the corresponding intuition.

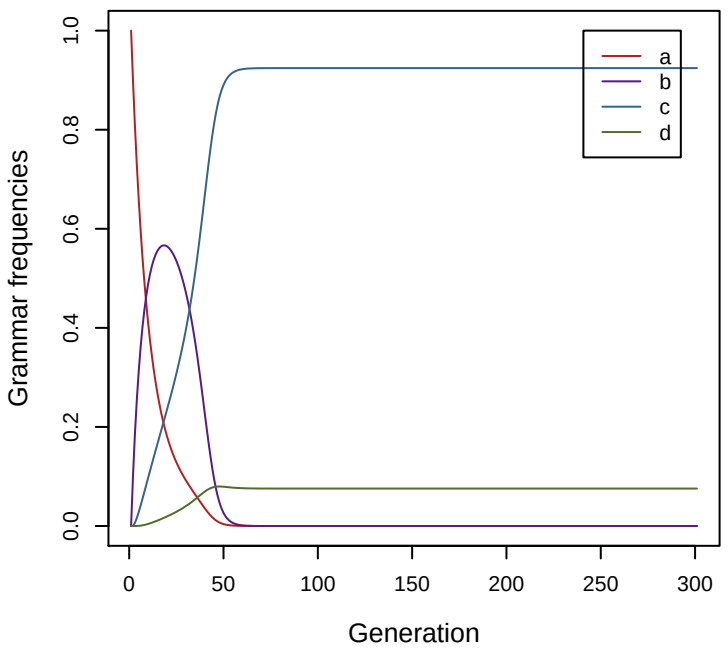

a->b: 0.02 b->c: 0.02 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

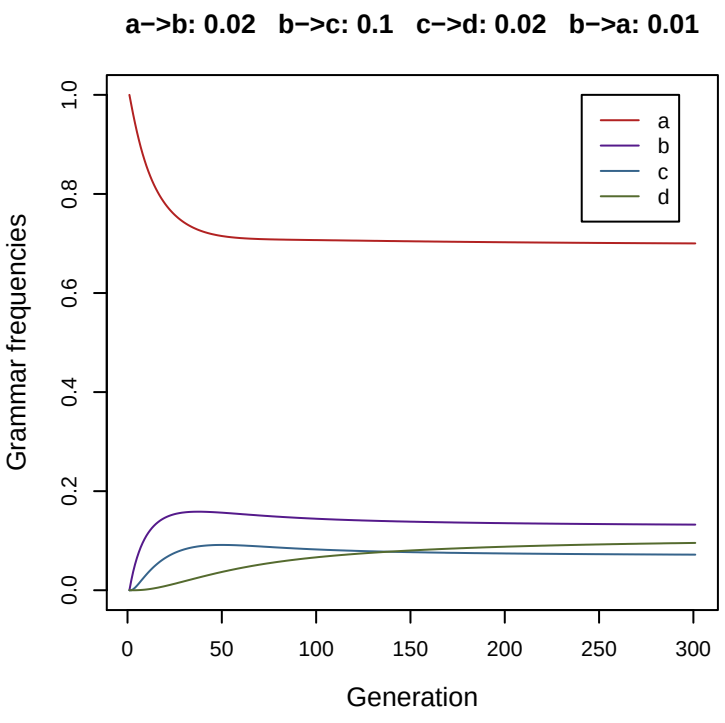

a->b: 0.06 b->c: 0.02 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

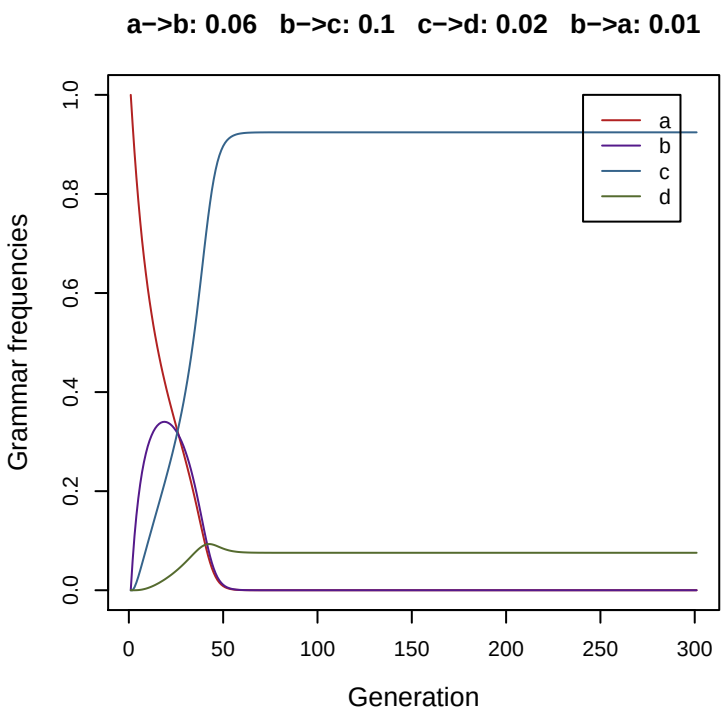

a->b: 0.1 b->c: 0.02 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

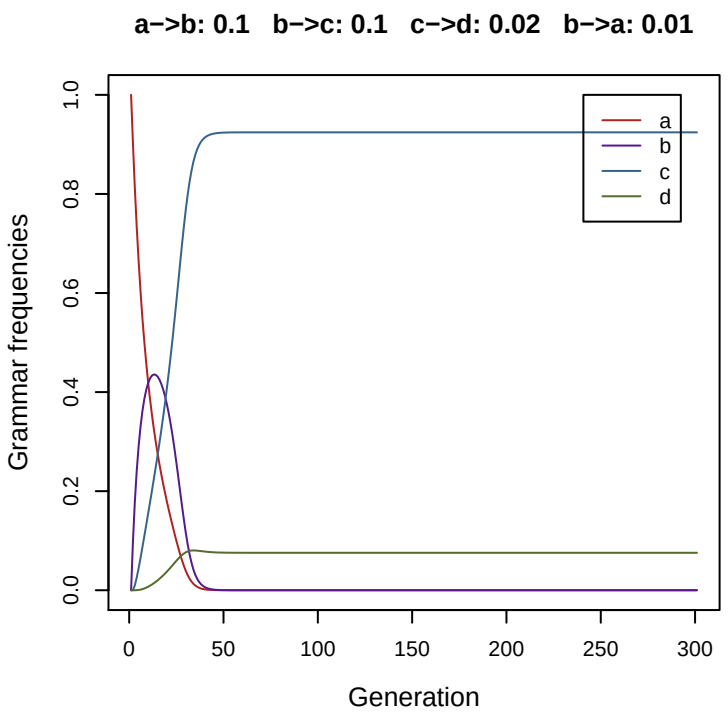

a->b: 0.02 b->c: 0.06 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

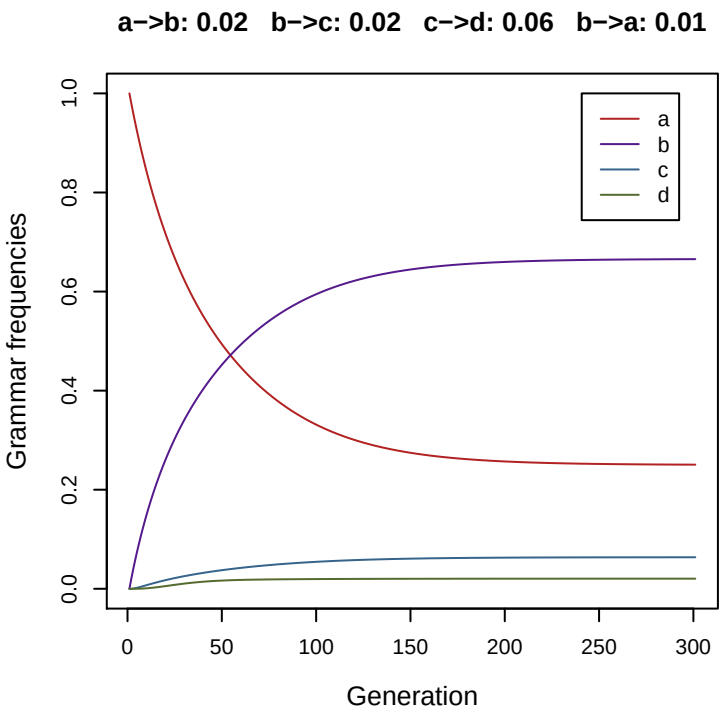

a->b: 0.06 b->c: 0.06 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

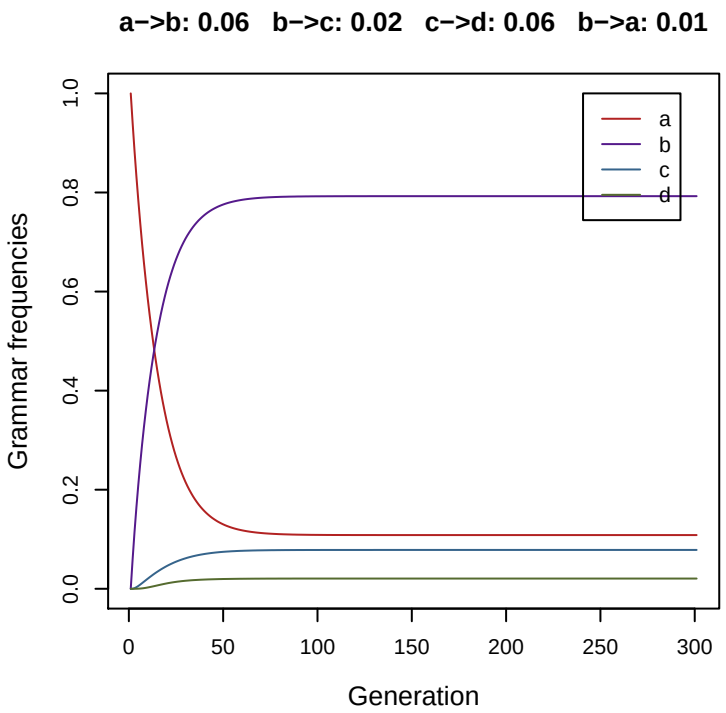

a->b: 0.1 b->c: 0.06 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

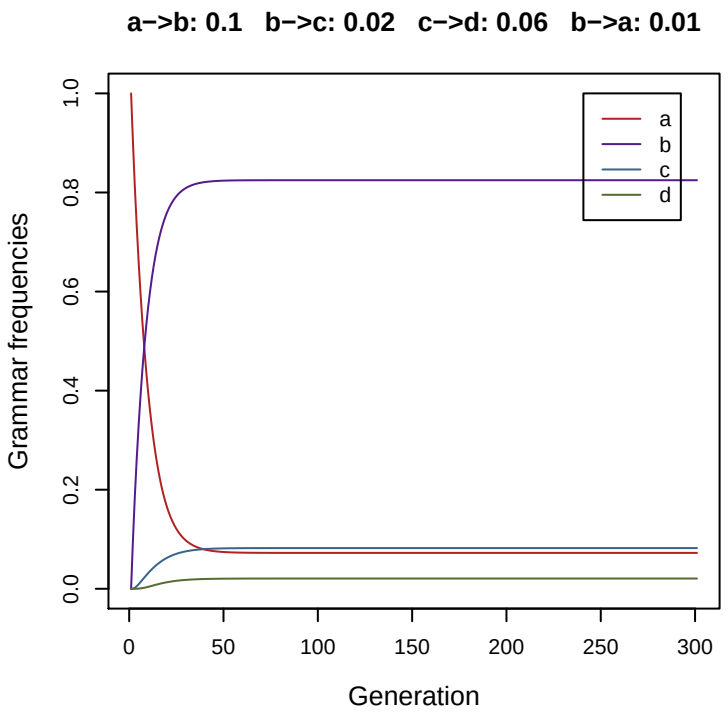

a->b: 0.02 b->c: 0.1 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

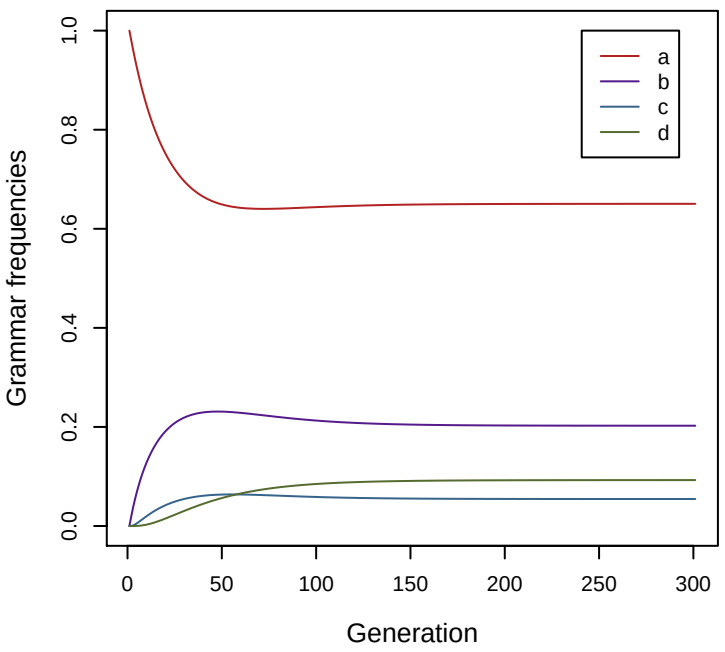

a->b: 0.06 b->c: 0.1 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

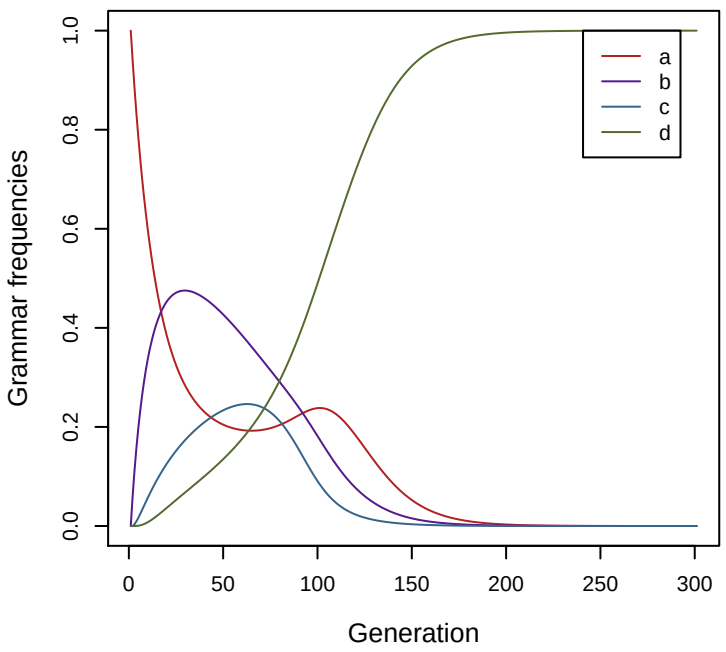

a->b: 0.1 b->c: 0.1 c->d: 0.02 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

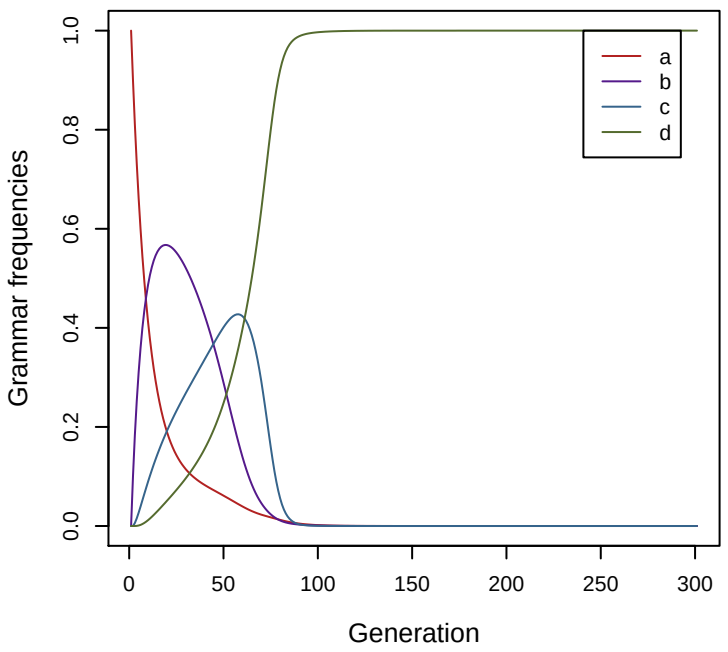

a->b: 0.02 b->c: 0.02 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

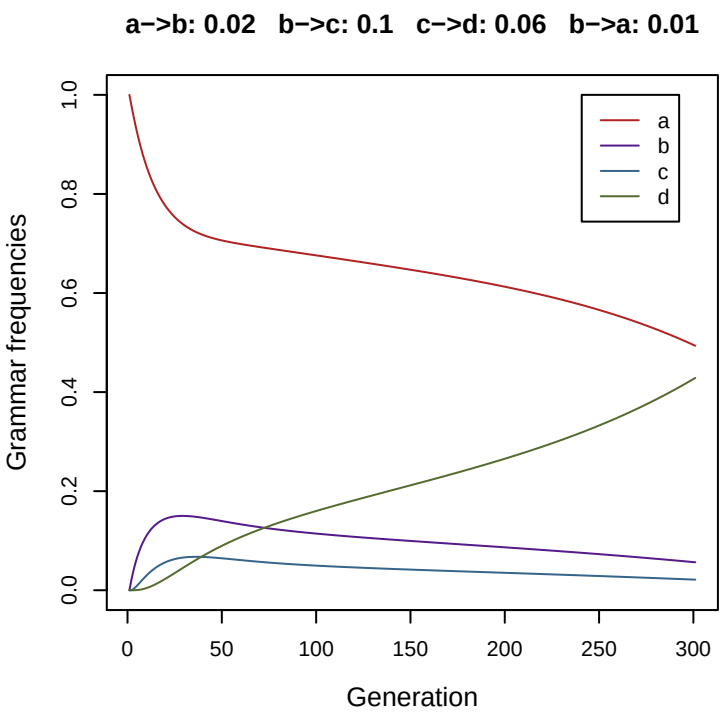

a->b: 0.06 b->c: 0.02 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

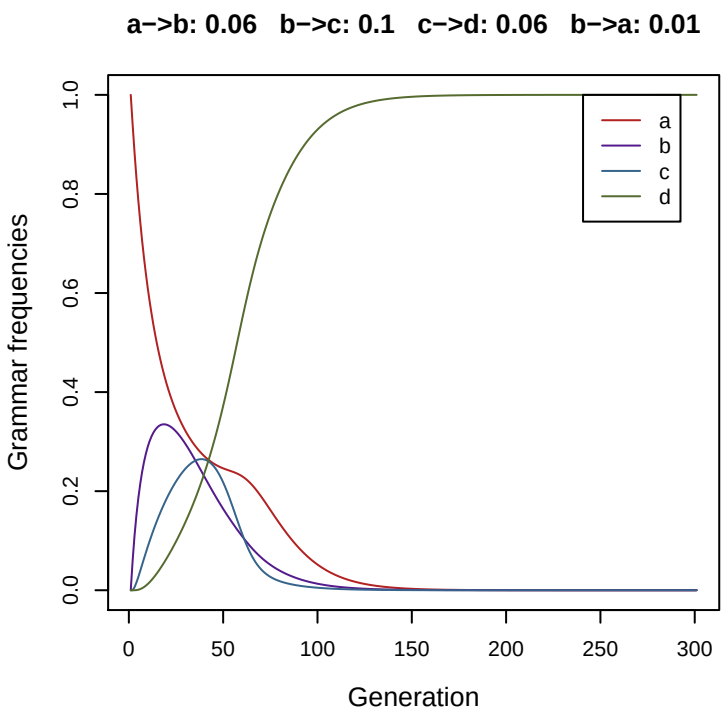

a->b: 0.1 b->c: 0.02 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

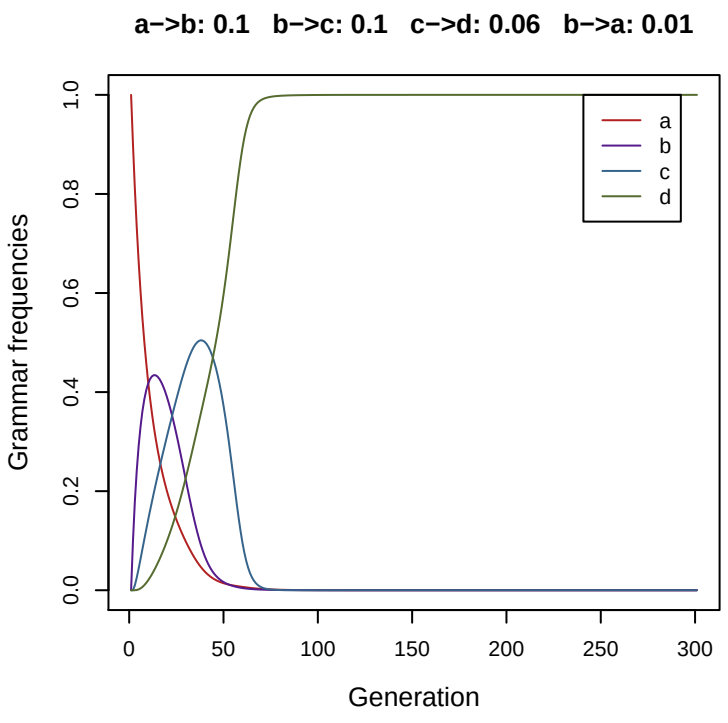

a->b: 0.02 b->c: 0.06 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

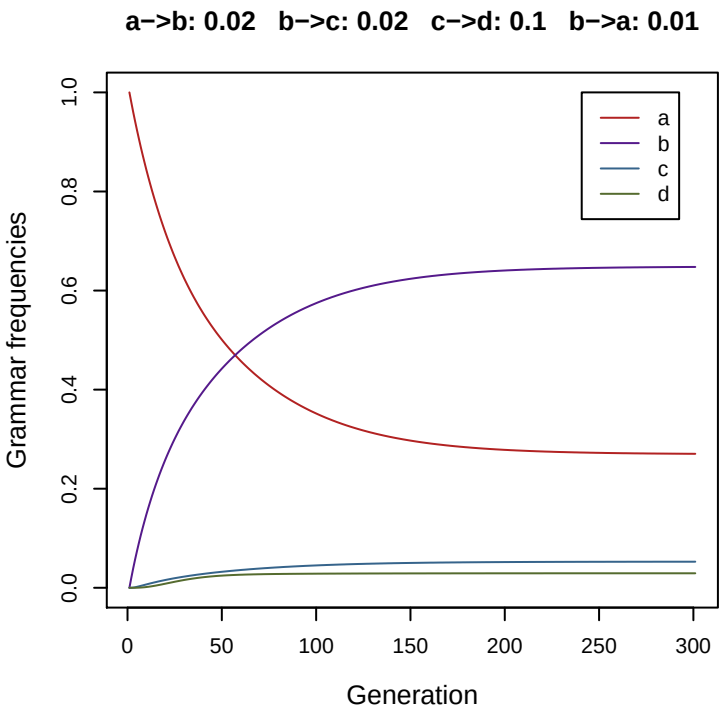

a->b: 0.06 b->c: 0.06 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

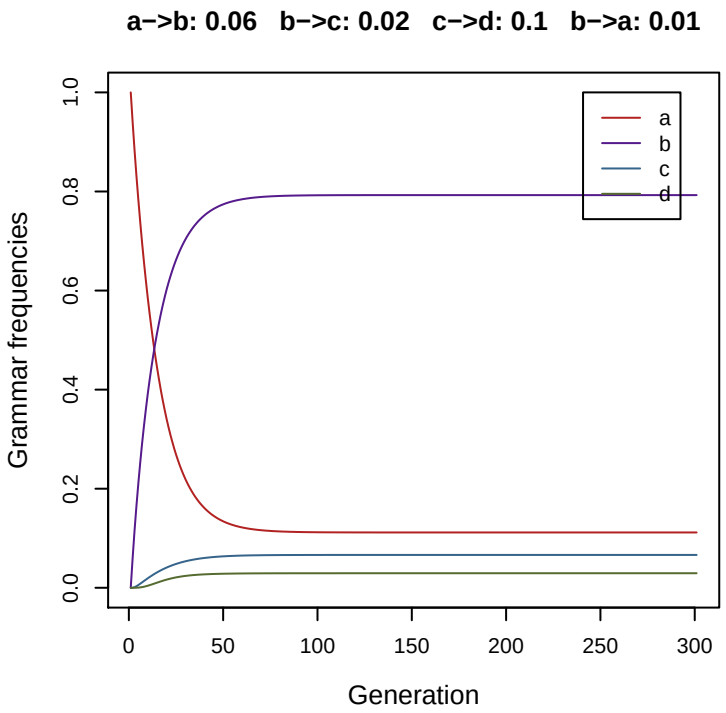

a->b: 0.1 b->c: 0.06 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

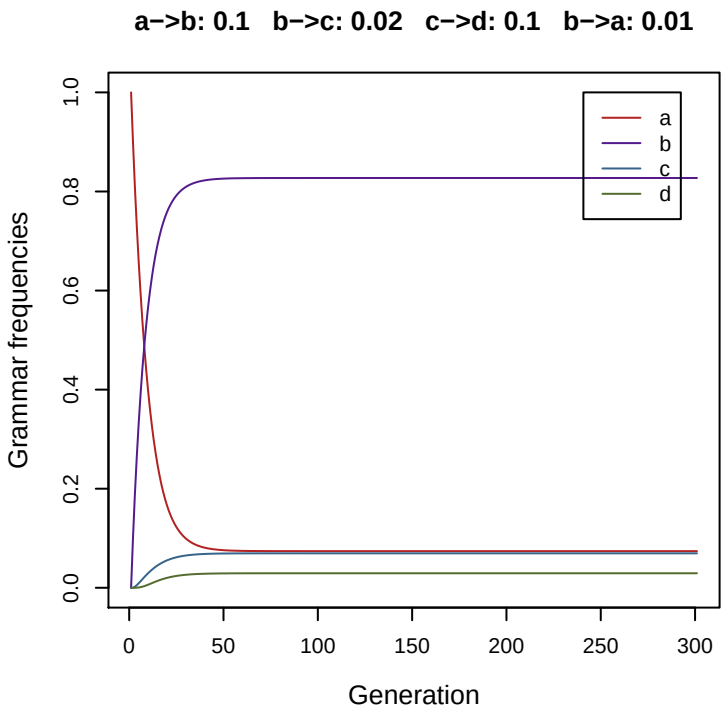

a->b: 0.02 b->c: 0.1 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

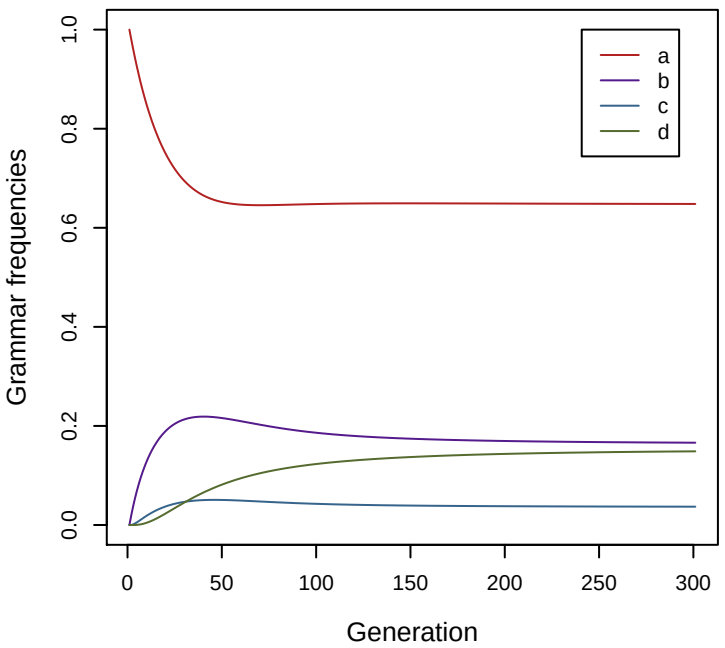

a->b: 0.06 b->c: 0.1 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

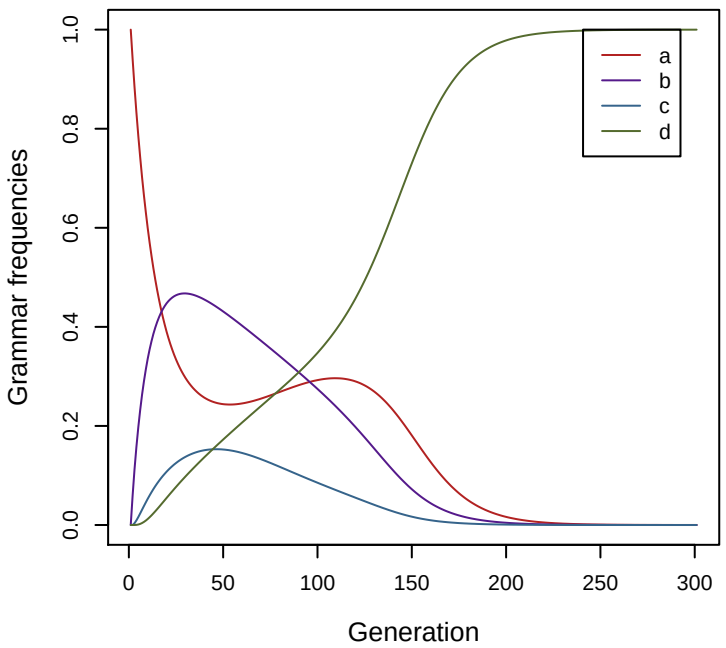

a->b: 0.1 b->c: 0.1 c->d: 0.06 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

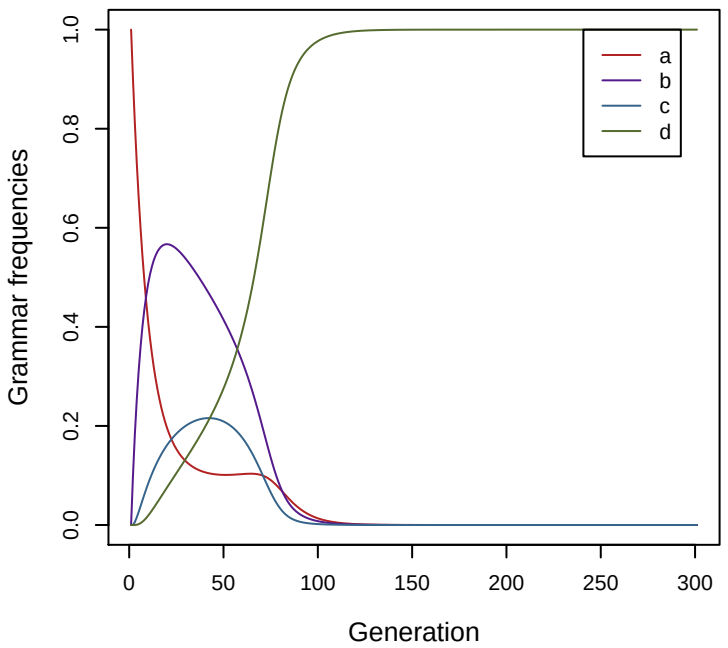

a->b: 0.02 b->c: 0.02 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

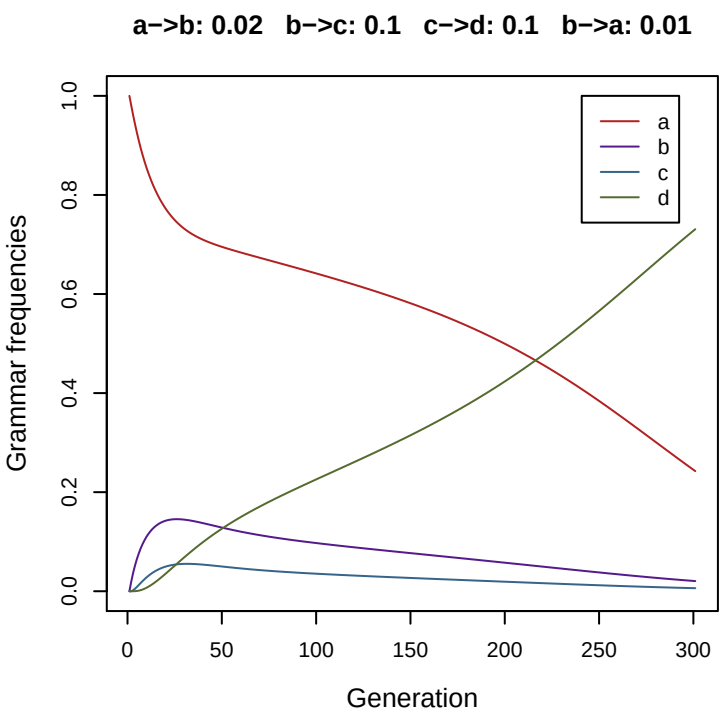

a->b: 0.06 b->c: 0.02 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

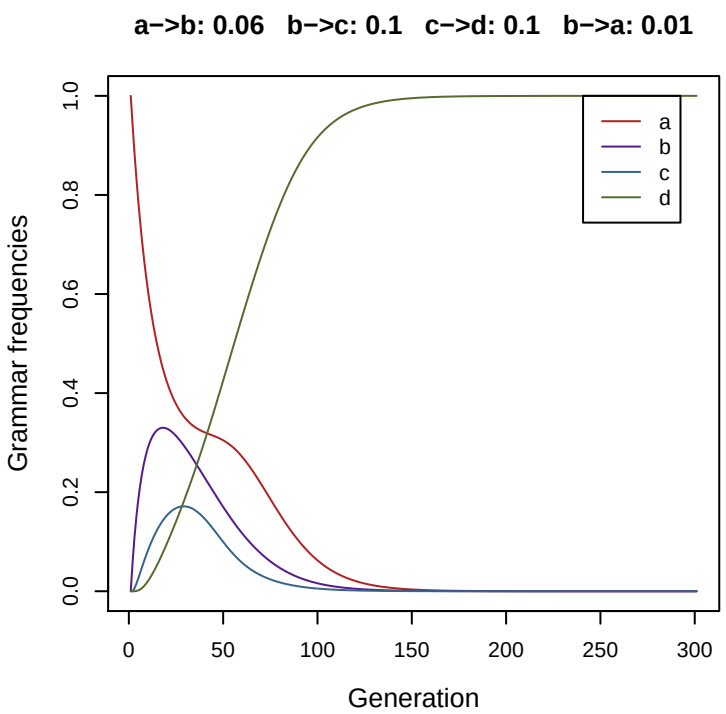

a->b: 0.1 b->c: 0.02 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

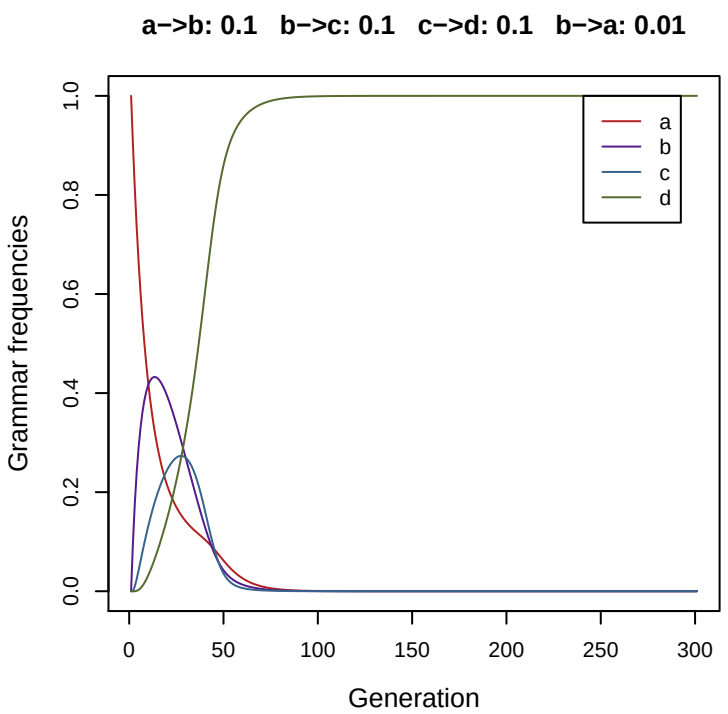

a->b: 0.02 b->c: 0.06 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

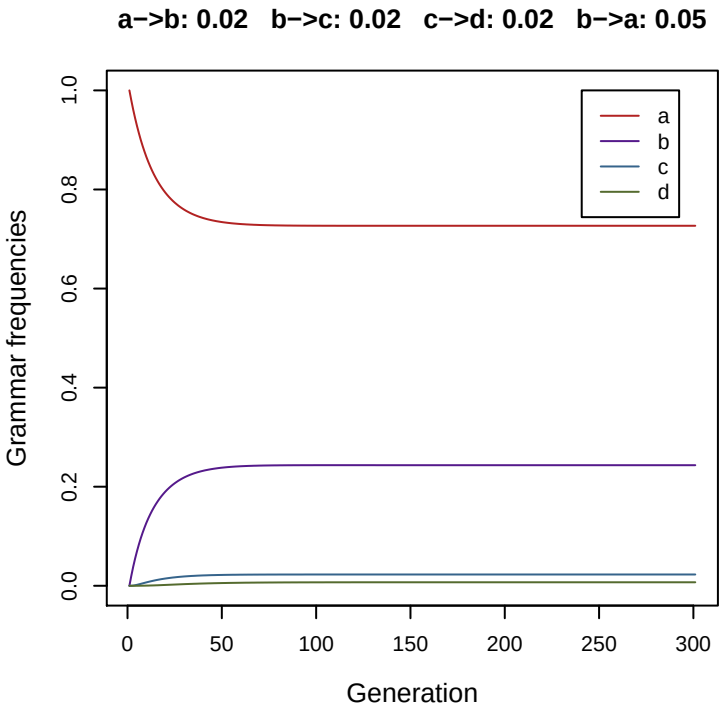

a->b: 0.06 b->c: 0.06 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

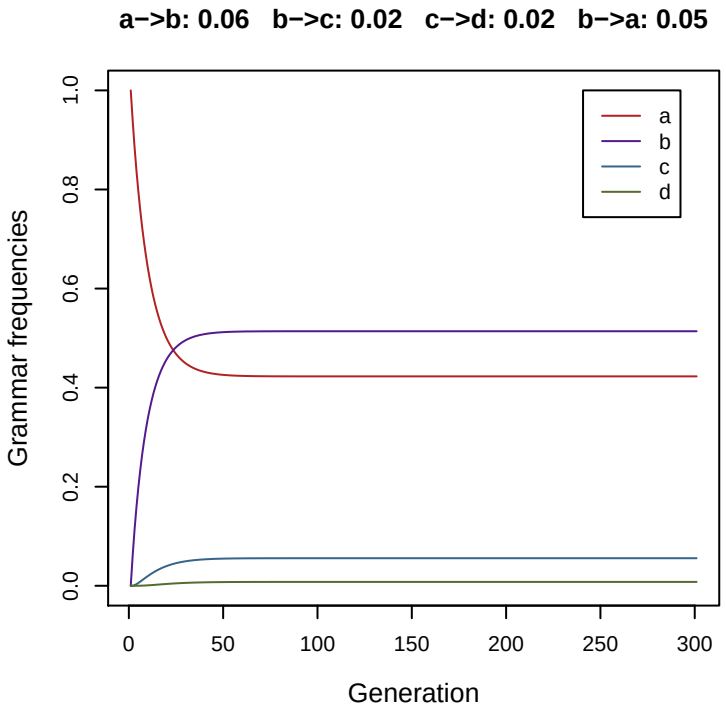

a->b: 0.1 b->c: 0.06 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

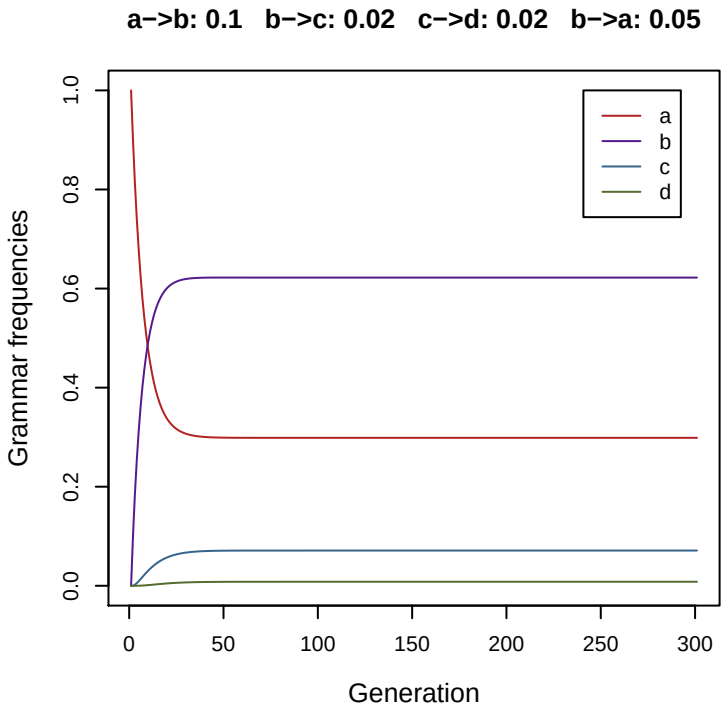

a->b: 0.02 b->c: 0.1 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

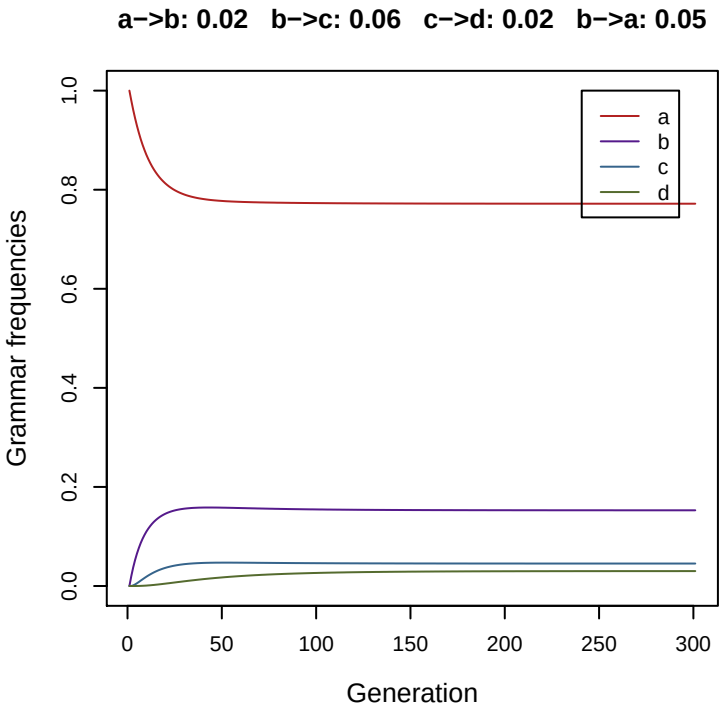

a->b: 0.06 b->c: 0.1 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

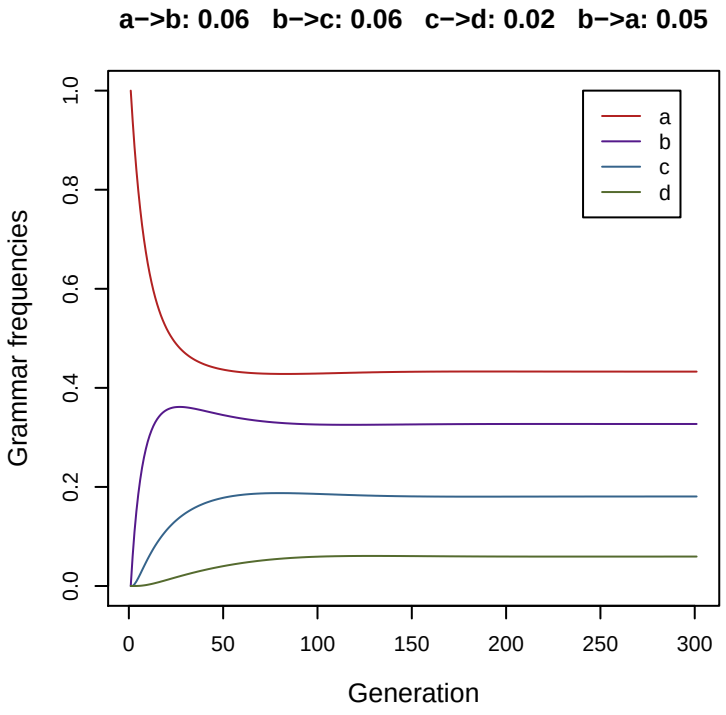

a->b: 0.1 b->c: 0.1 c->d: 0.1 b->a: 0.01
Grammar frequencies
Generation
a
b
c
d

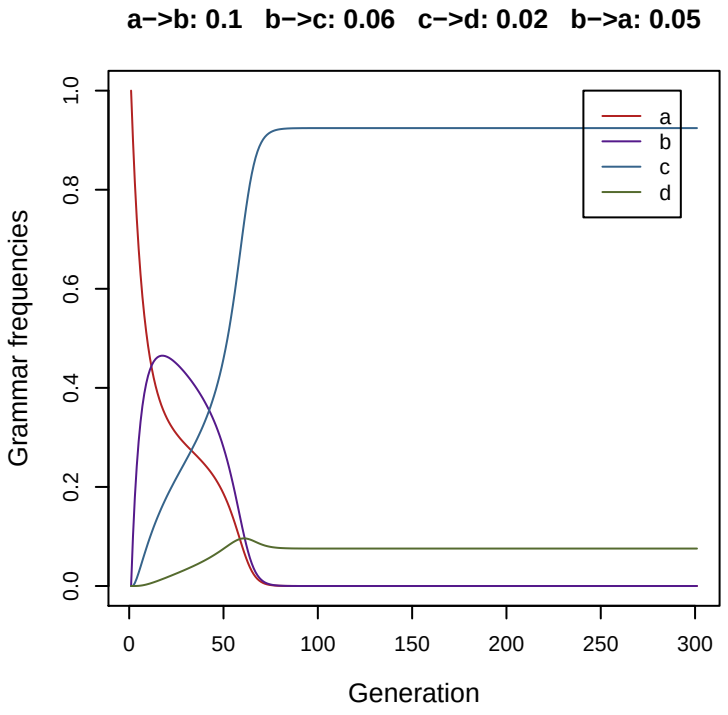

a->b: 0.02 b->c: 0.02 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

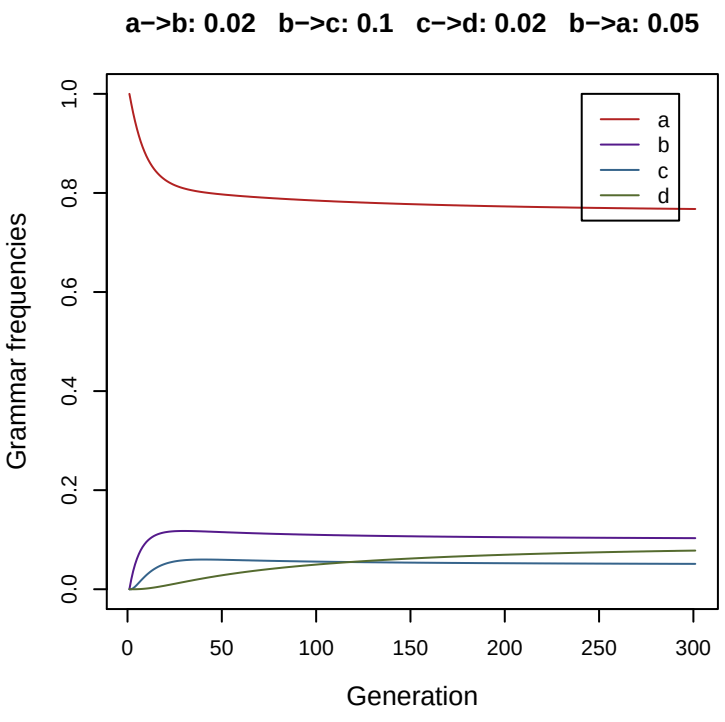

a->b: 0.06 b->c: 0.02 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

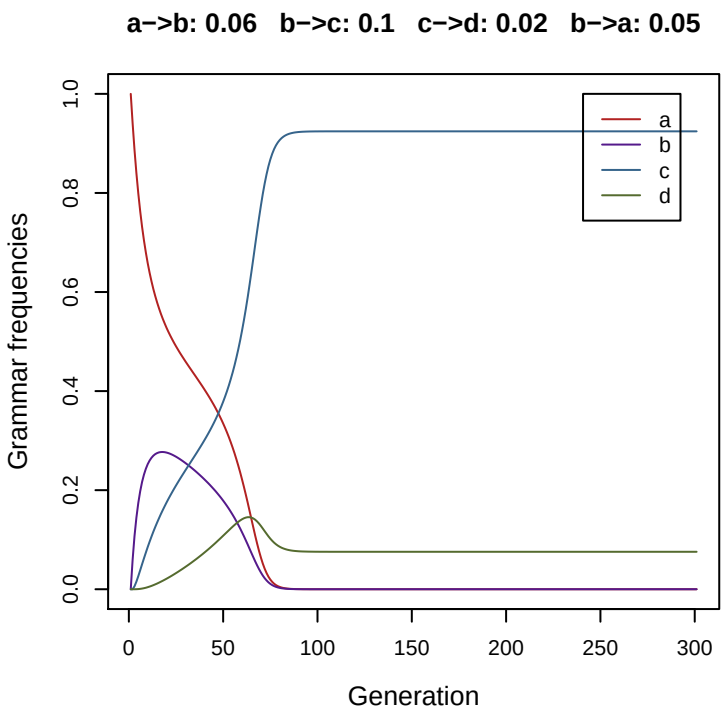

a->b: 0.1 b->c: 0.02 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

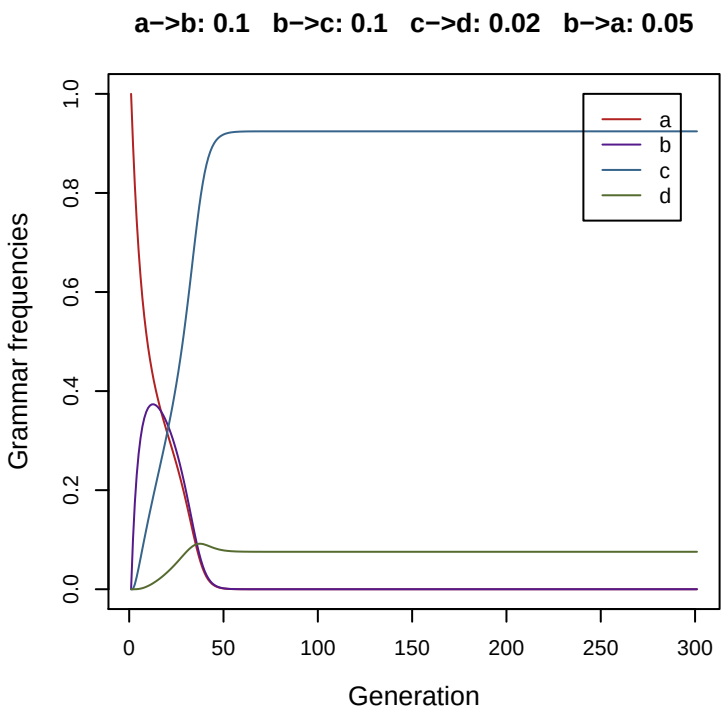

a->b: 0.02 b->c: 0.06 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

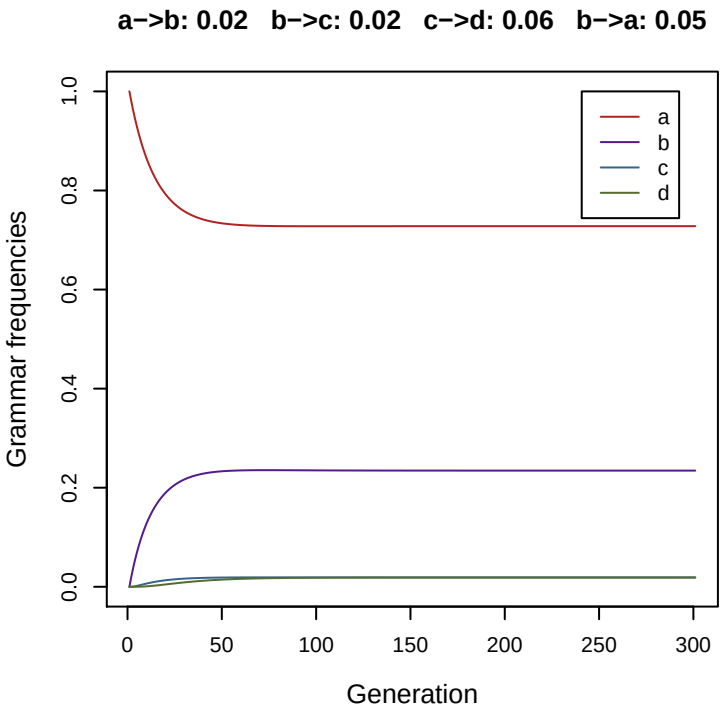

a->b: 0.06 b->c: 0.06 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

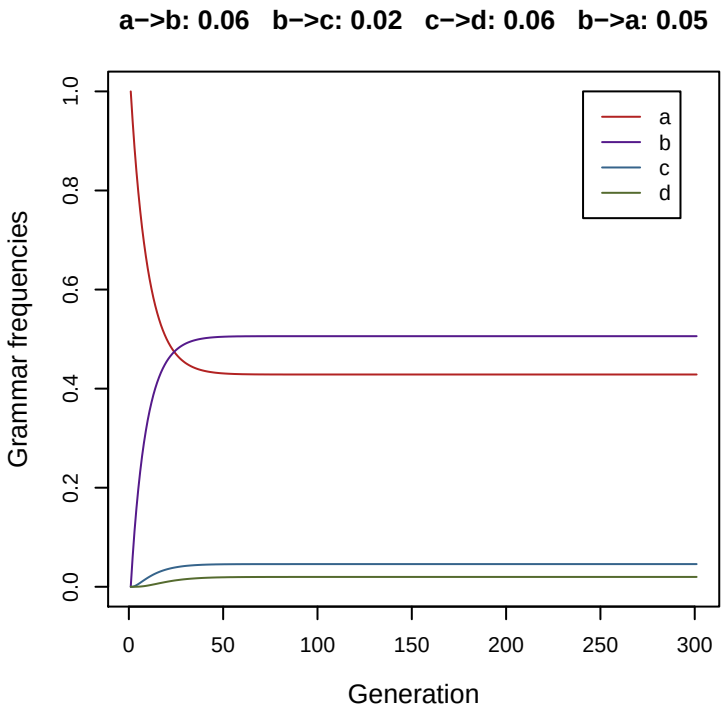

a->b: 0.1 b->c: 0.06 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

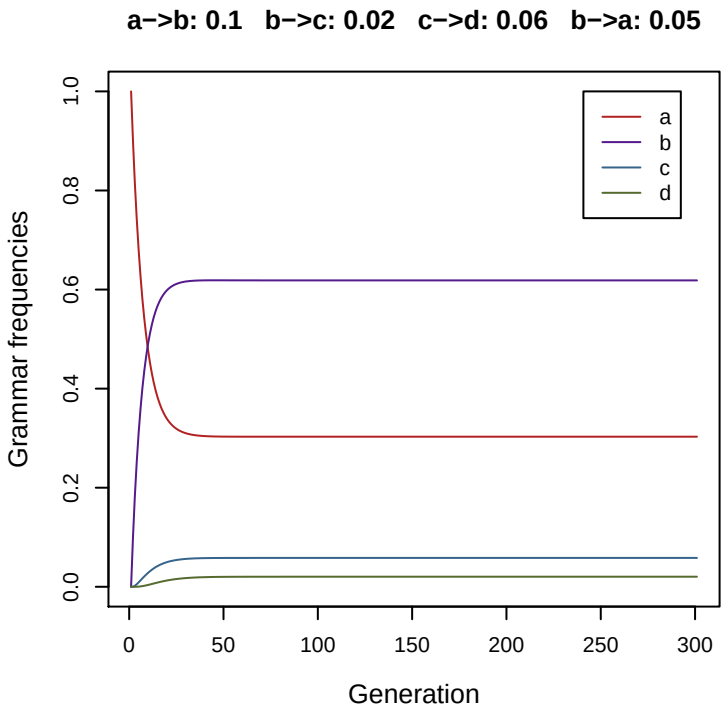

a->b: 0.02 b->c: 0.1 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

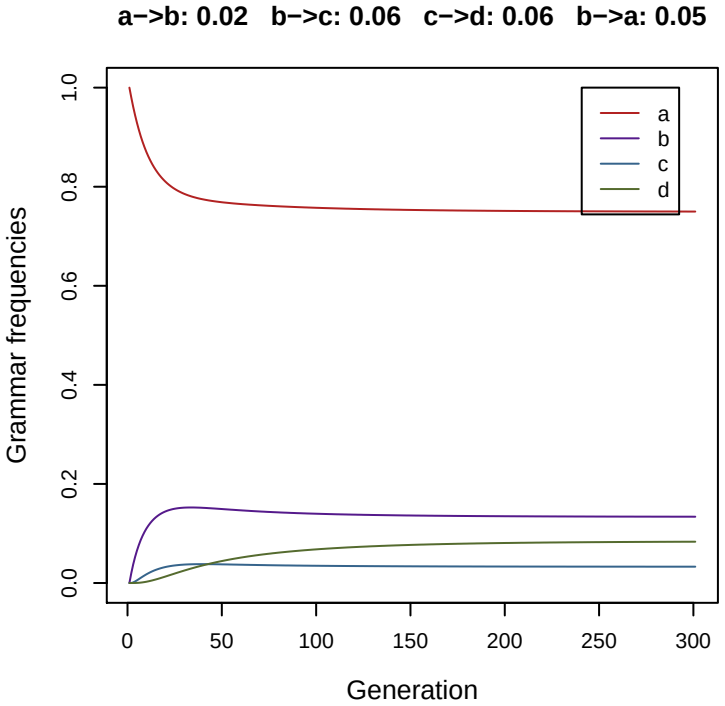

a->b: 0.06 b->c: 0.1 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

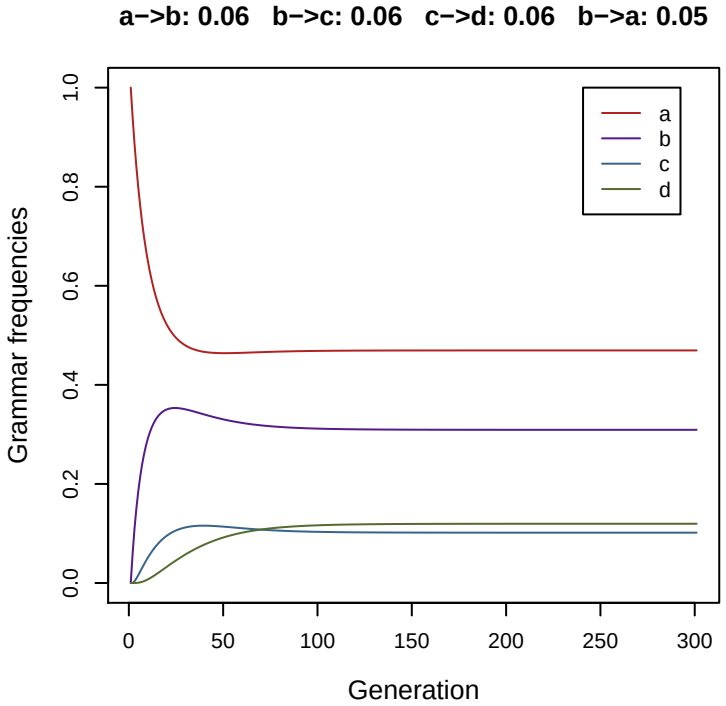

a->b: 0.1 b->c: 0.1 c->d: 0.02 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

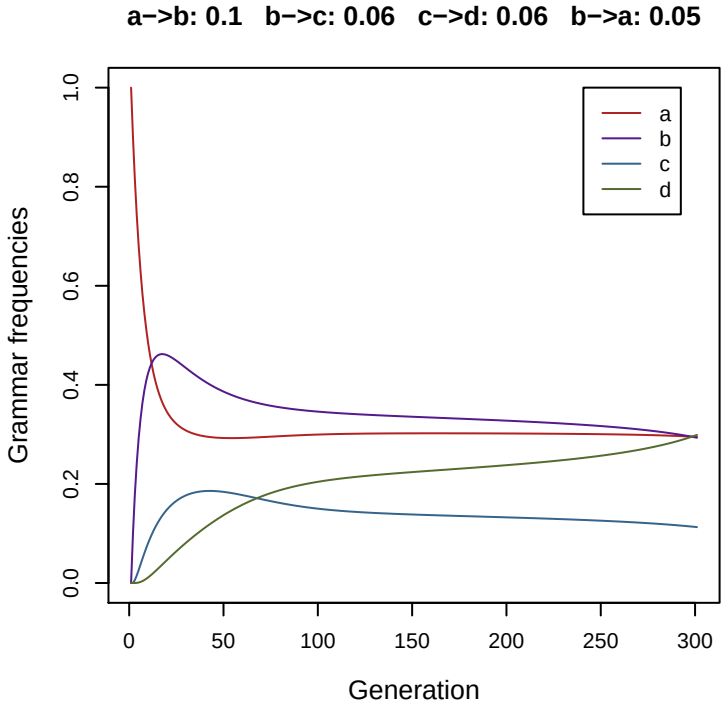

a->b: 0.02 b->c: 0.02 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

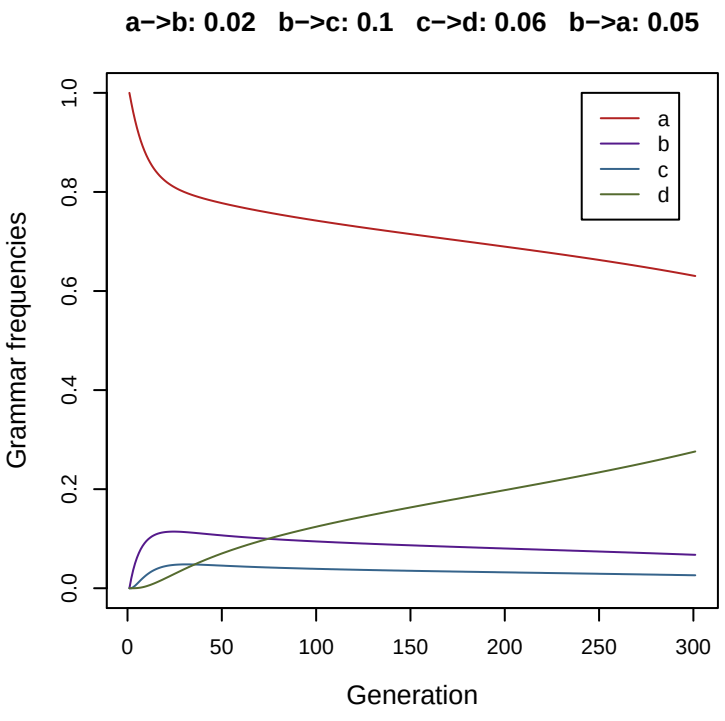

a->b: 0.06 b->c: 0.02 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

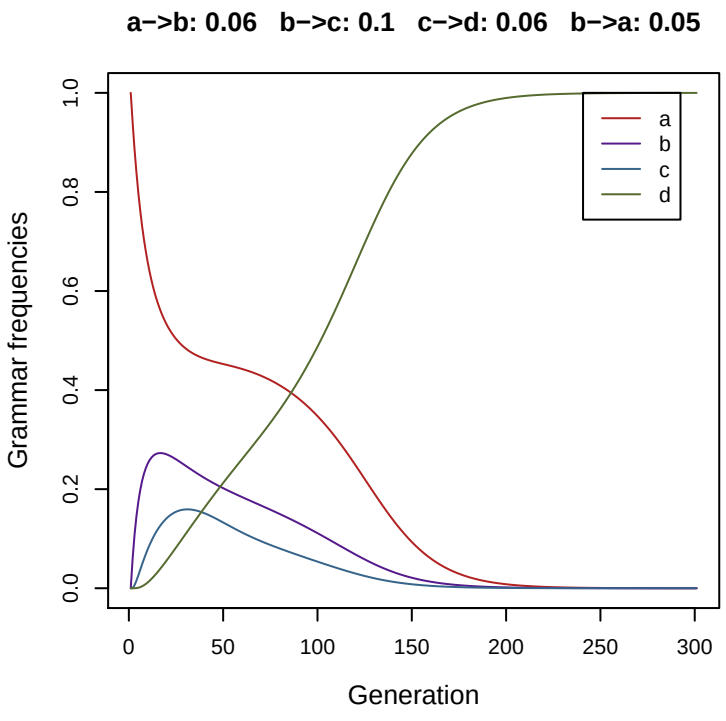

a->b: 0.1 b->c: 0.02 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

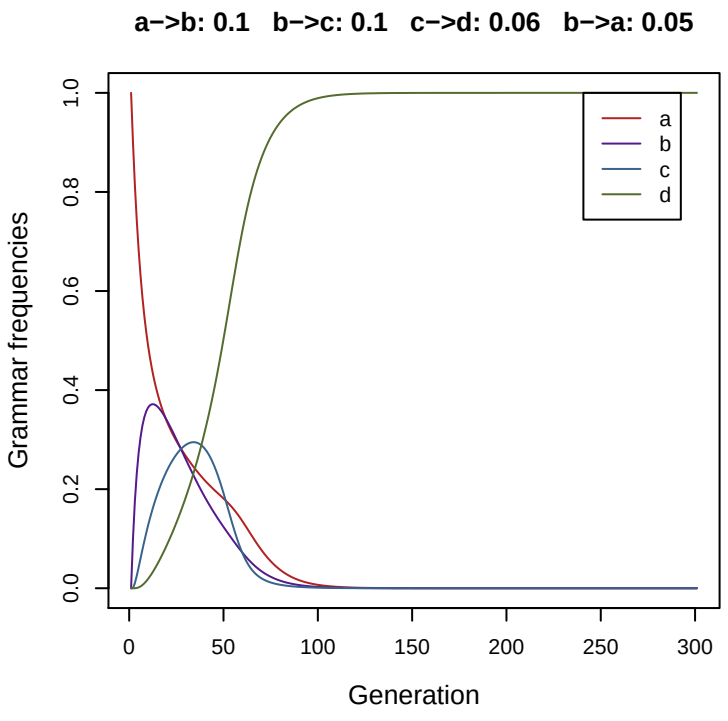

a->b: 0.02 b->c: 0.06 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

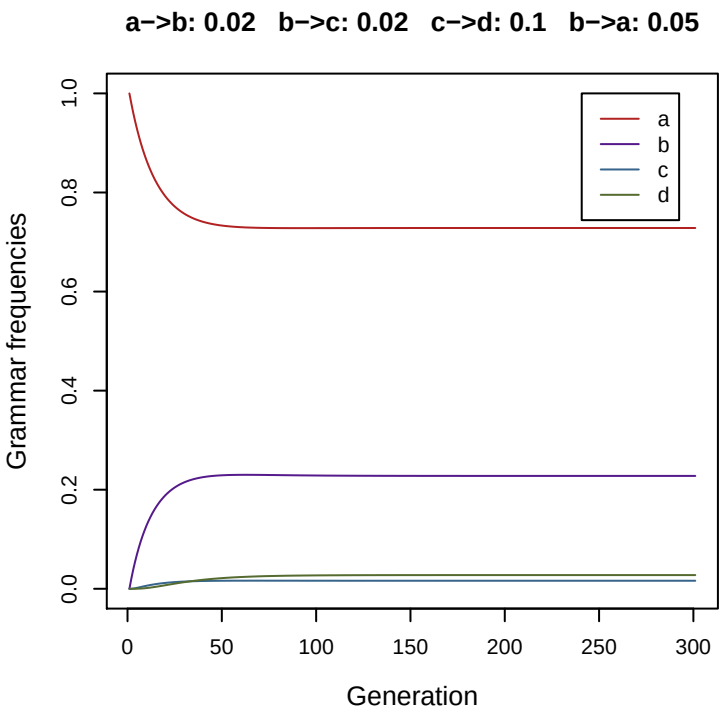

a->b: 0.06 b->c: 0.06 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

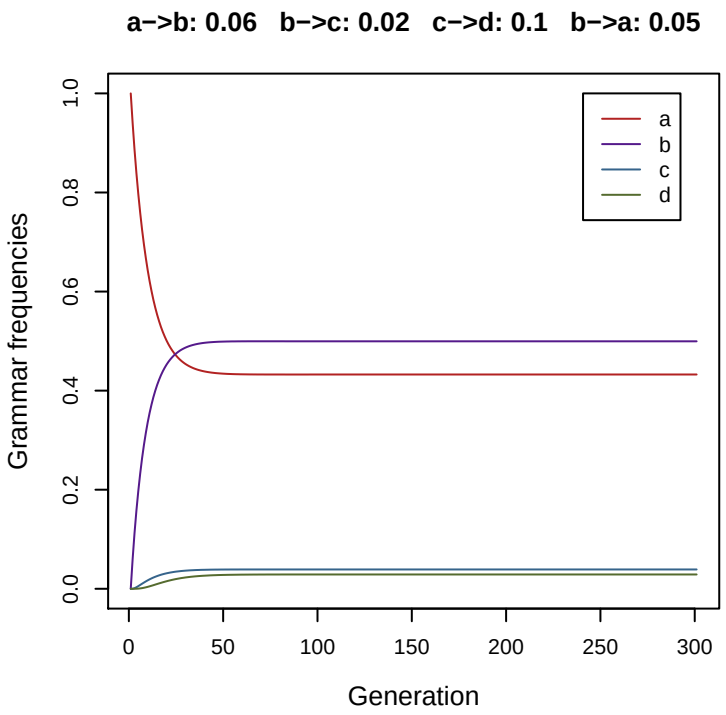

a->b: 0.1 b->c: 0.06 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

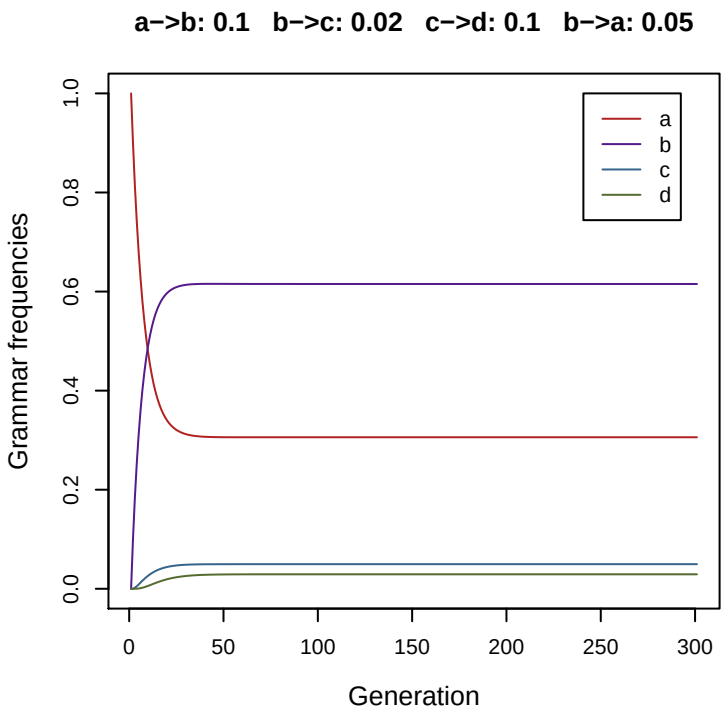

a->b: 0.02 b->c: 0.1 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

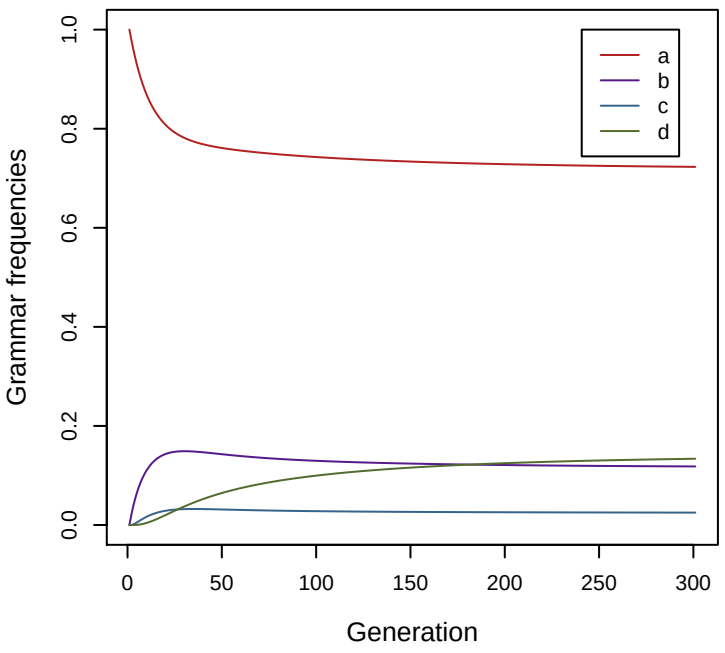

a->b: 0.06 b->c: 0.1 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

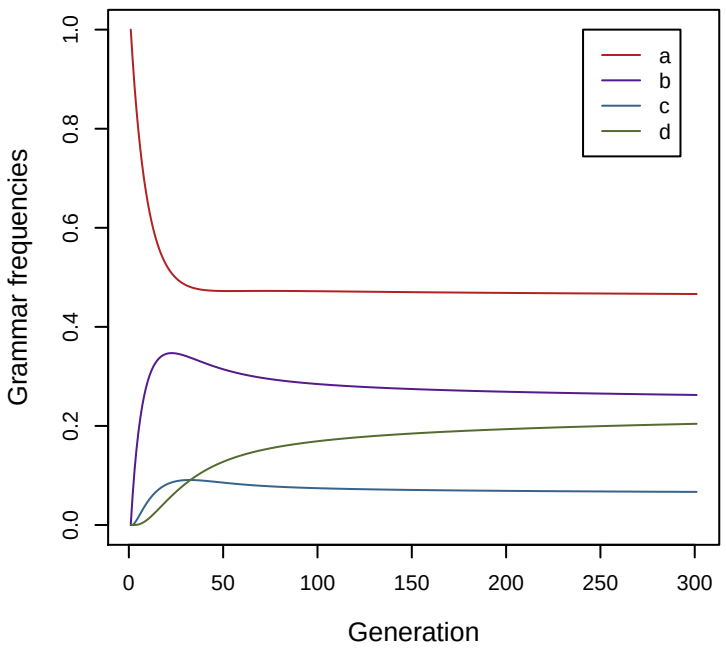

a->b: 0.1 b->c: 0.1 c->d: 0.06 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

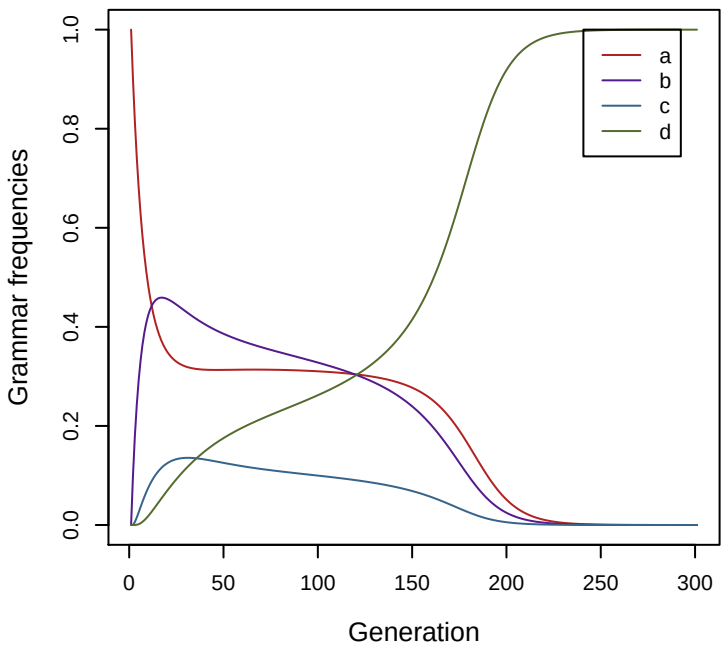

a->b: 0.02 b->c: 0.02 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

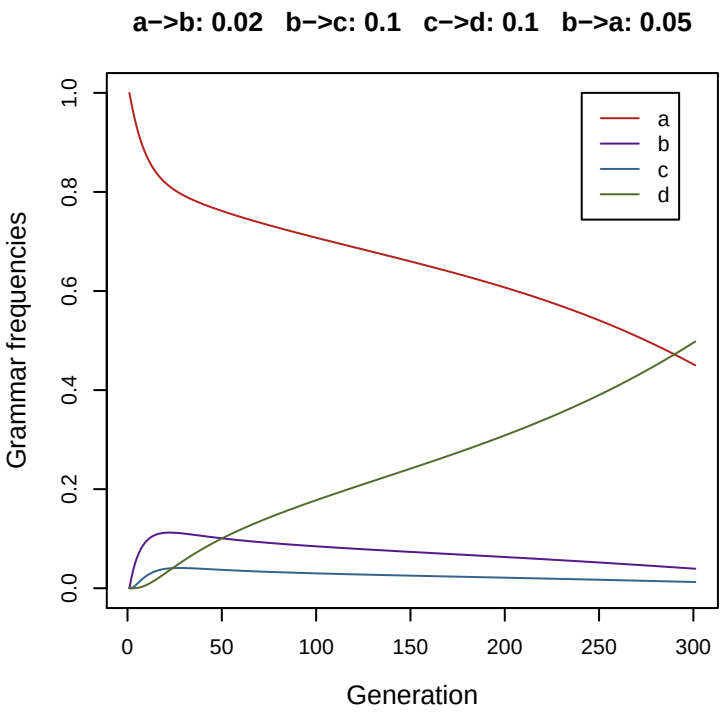

a->b: 0.06 b->c: 0.02 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

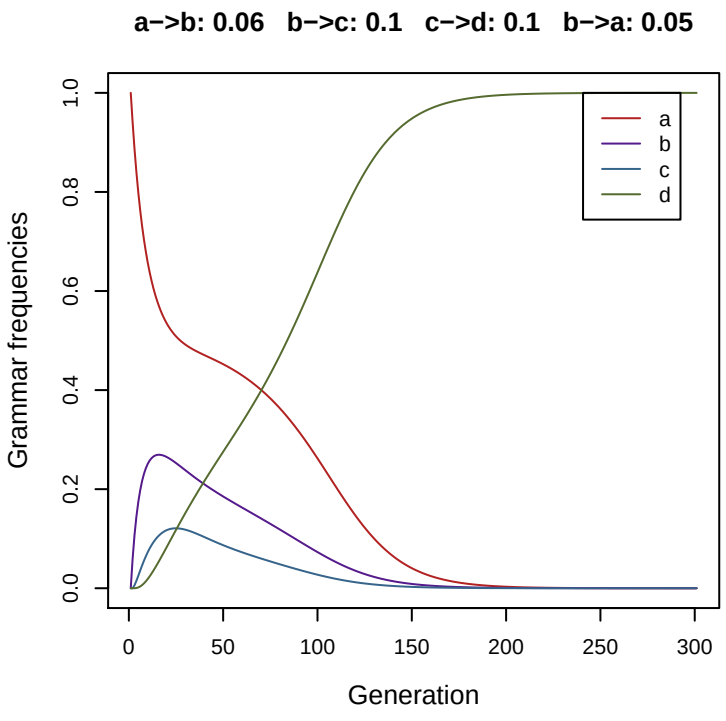

a->b: 0.1 b->c: 0.02 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

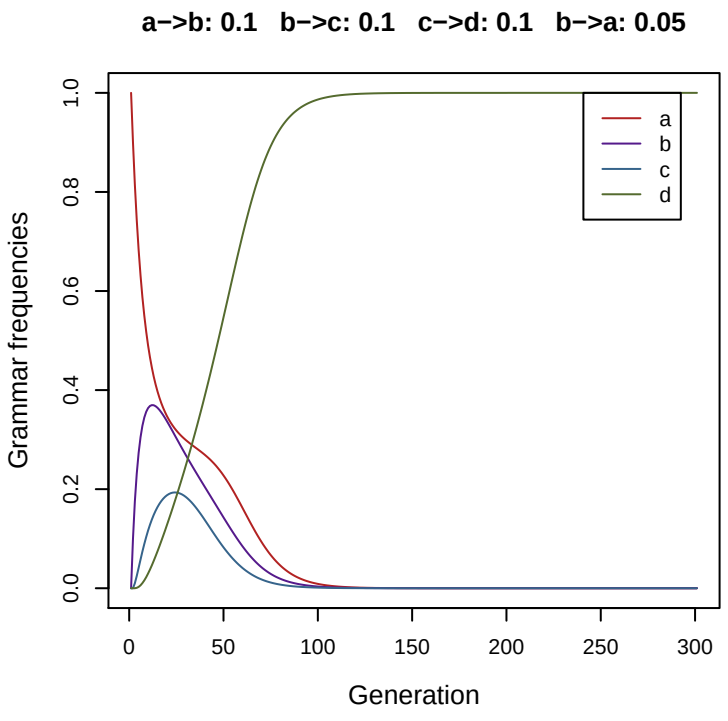

a->b: 0.02 b->c: 0.06 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d


a->b: 0.06 b->c: 0.06 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d


a->b: 0.1 b->c: 0.06 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d


a->b: 0.02 b->c: 0.1 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

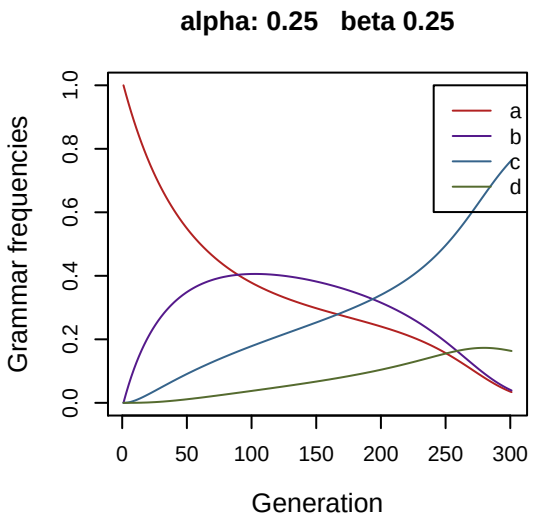

a->b: 0.06 b->c: 0.1 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

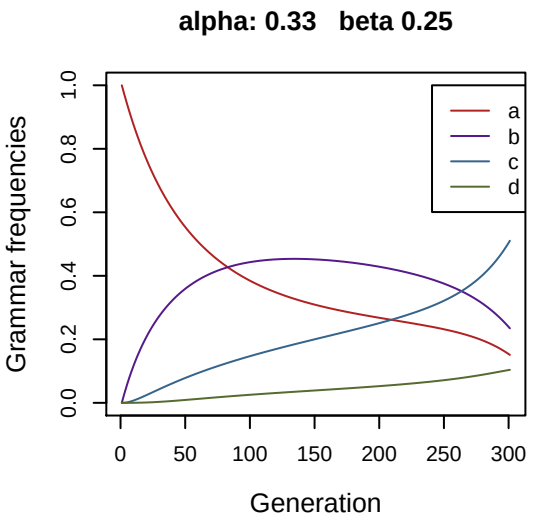

a->b: 0.1 b->c: 0.1 c->d: 0.1 b->a: 0.05
Grammar frequencies
Generation
a
b
c
d

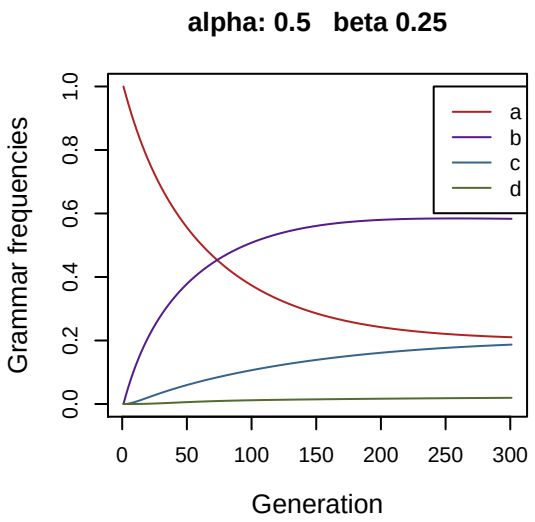
SM 2.

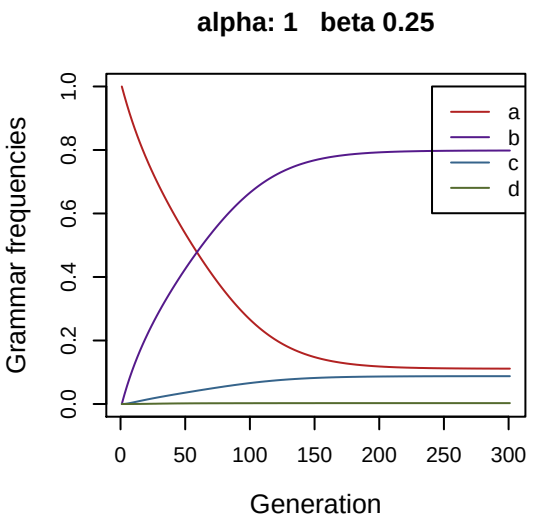
Infinite-population trajectories illustrating the effect of varying α and β.

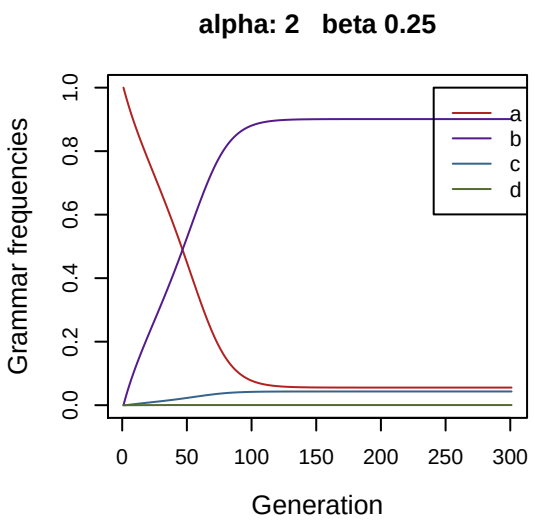
A and Q as in Deo (2015), that is as in Table 2 (of the main article's text) with $k = 0.01$ and in Table 3, respectively. α and β are listed in the title of each figure.

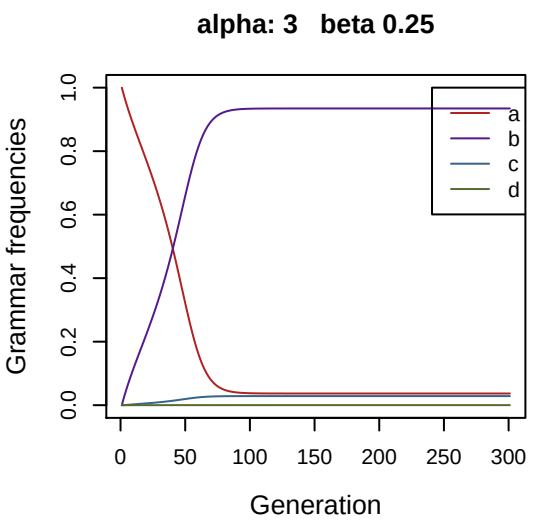

alpha: 0.25 beta 0.25
Grammar frequencies
Generation
a
b
c
d

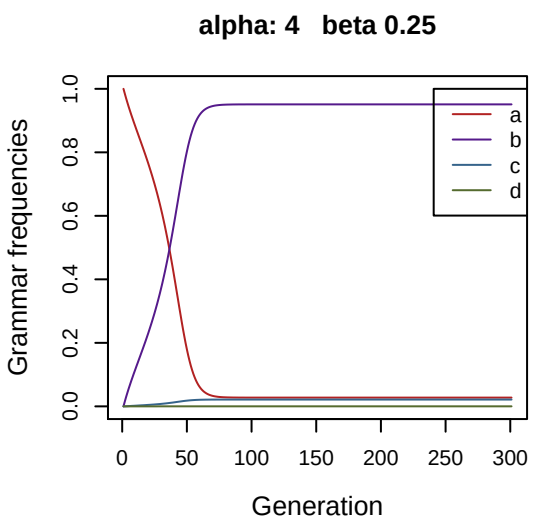

alpha: 0.33 beta 0.25
Grammar frequencies
Generation
a
b
c
d

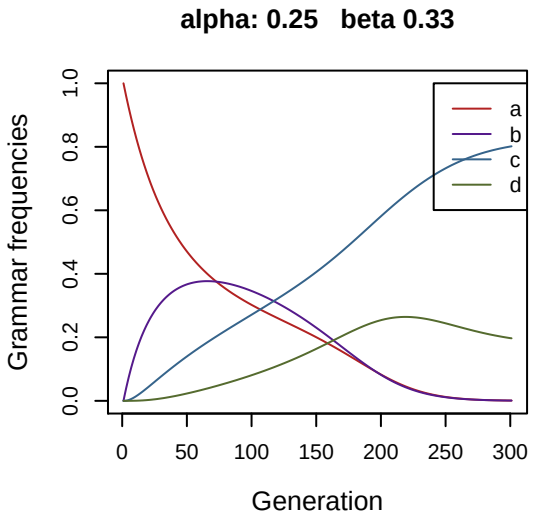

alpha: 0.5 beta 0.25
Grammar frequencies
Generation
a
b
c
d

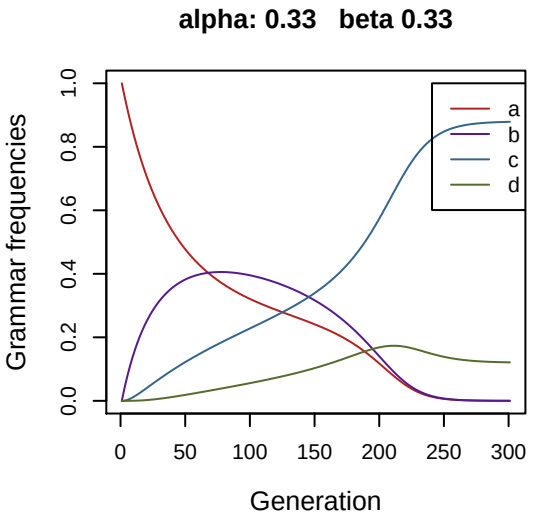

alpha: 1 beta 0.25
Grammar frequencies
Generation
a
b
c
d

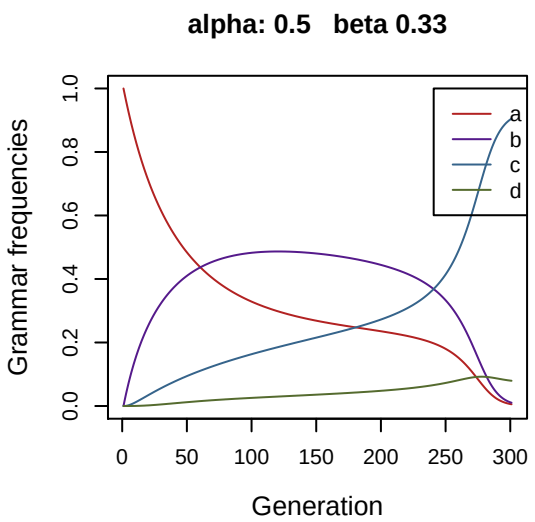

alpha: 2 beta 0.25
Grammar frequencies
Generation
a
b
c
d

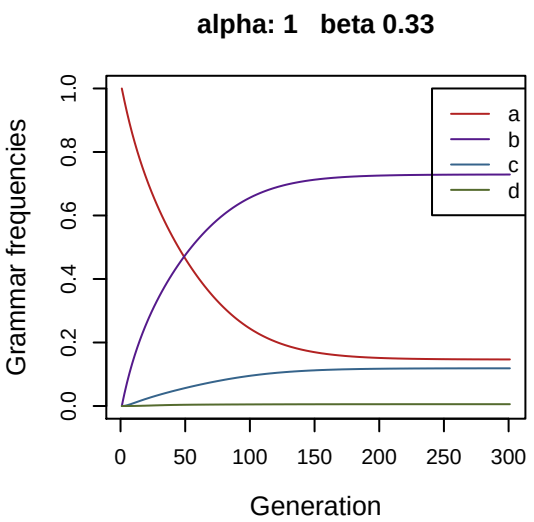

alpha: 3 beta 0.25
Grammar frequencies
Generation
a
b
c
d

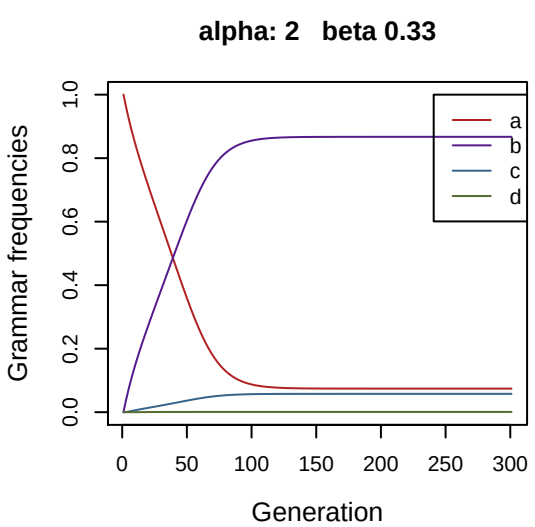

alpha: 4 beta 0.25
Grammar frequencies
Generation
a
b
c
d

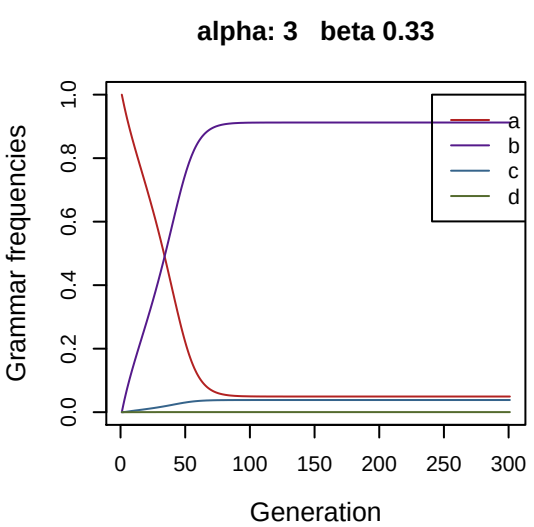

alpha: 0.25 beta 0.33
Grammar frequencies
Generation
a
b
c
d

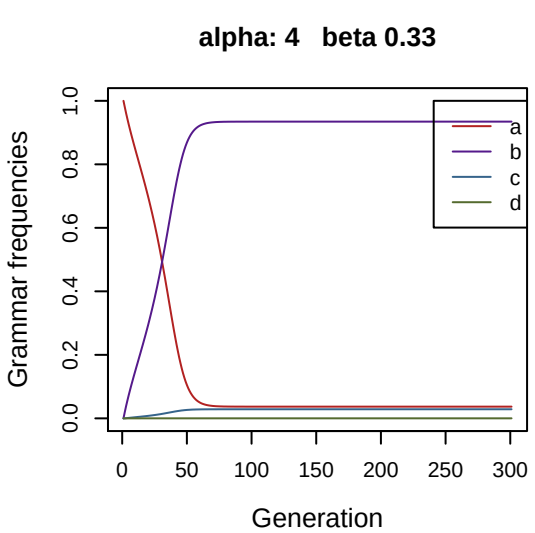

alpha: 0.33 beta 0.33
Grammar frequencies
Generation
a
b
c
d

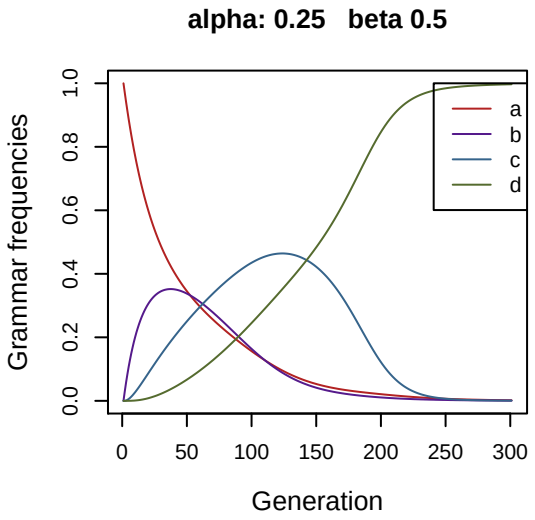

alpha: 0.5 beta 0.33
Grammar frequencies
Generation
a
b
c
d

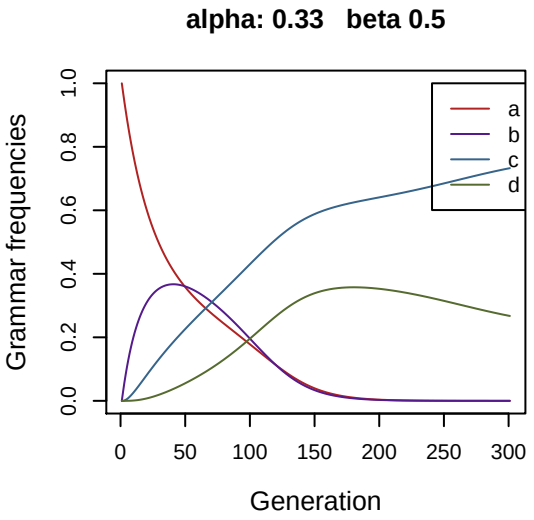

alpha: 1 beta 0.33
Grammar frequencies
Generation
a
b
c
d

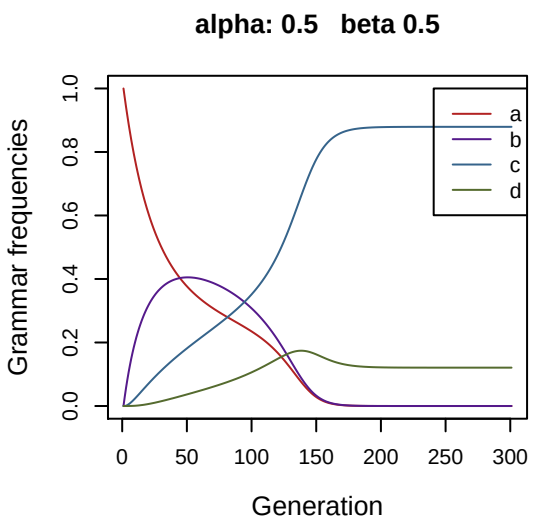

alpha: 2 beta 0.33
Grammar frequencies
Generation
a
b
c
d

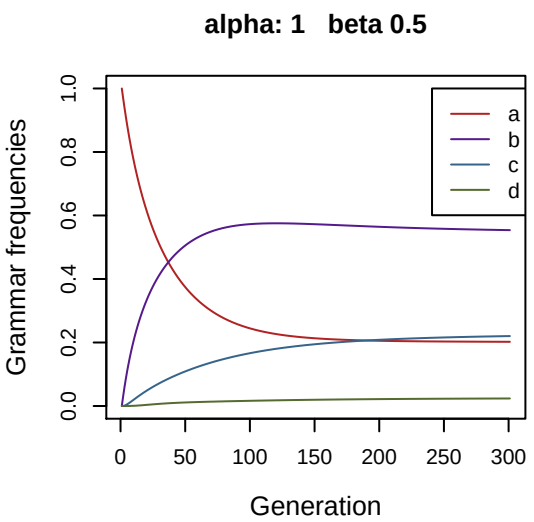

alpha: 3 beta 0.33
Grammar frequencies
Generation
a
b
c
d

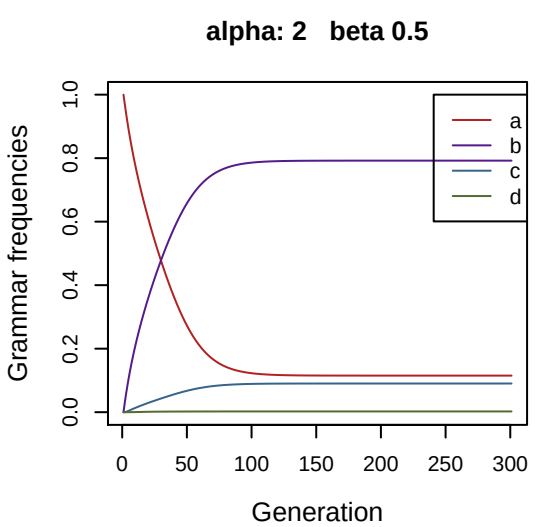

alpha: 4 beta 0.33
Grammar frequencies
Generation
a
b
c
d

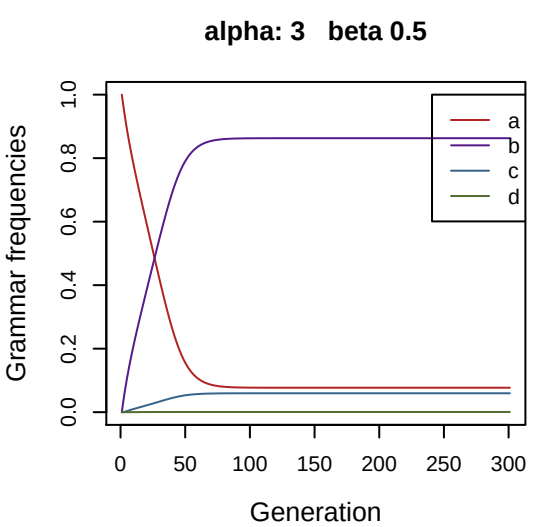

alpha: 0.25 beta 0.5
Grammar frequencies
Generation
a
b
c
d

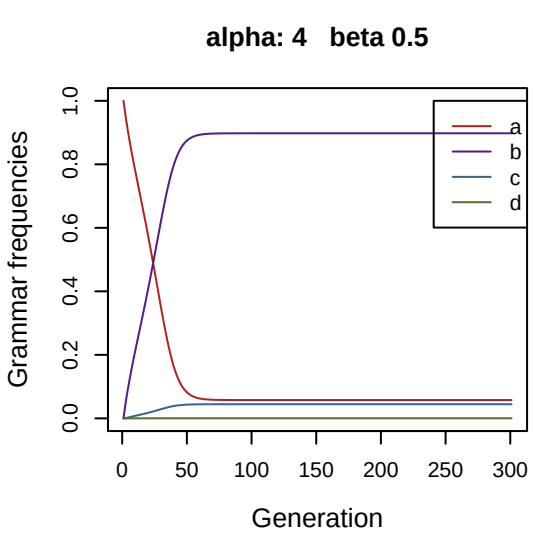

alpha: 0.33 beta 0.5
Grammar frequencies
Generation
a
b
c
d

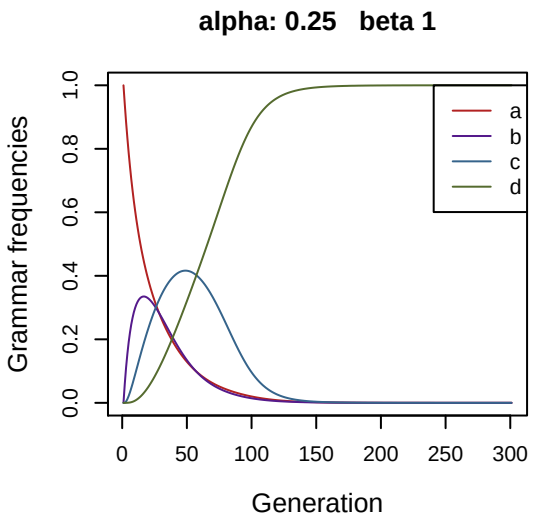

alpha: 0.5 beta 0.5
Grammar frequencies
Generation
a
b
c
d

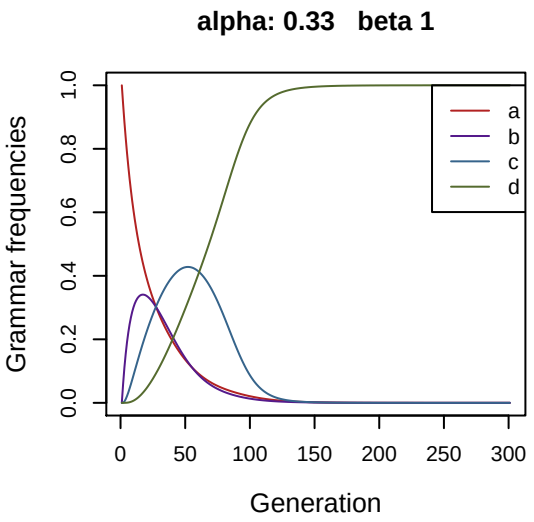

alpha: 1 beta 0.5
Grammar frequencies
Generation
a
b
c
d

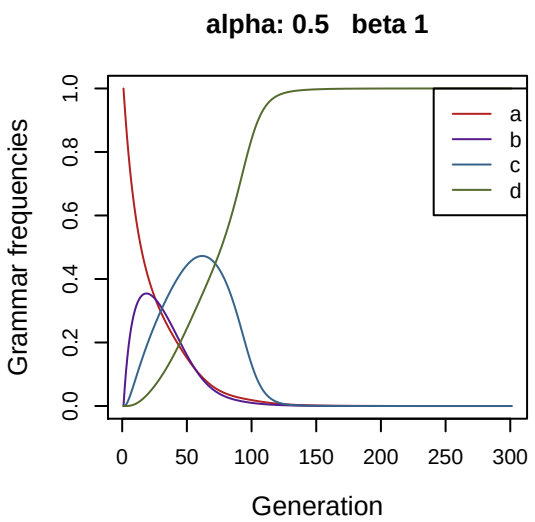

alpha: 2 beta 0.5
Grammar frequencies
Generation
a
b
c
d

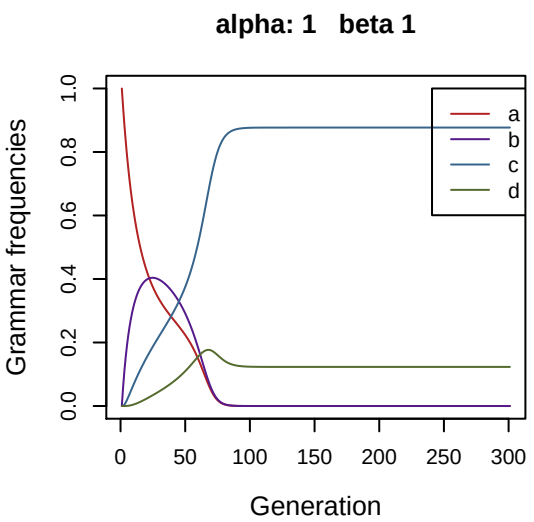

alpha: 3 beta 0.5
Grammar frequencies
Generation
a
b
c
d

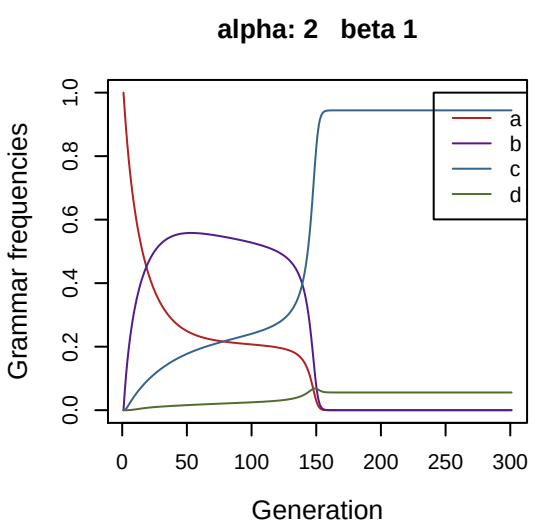

alpha: 4 beta 0.5
Grammar frequencies
Generation
a
b
c
d

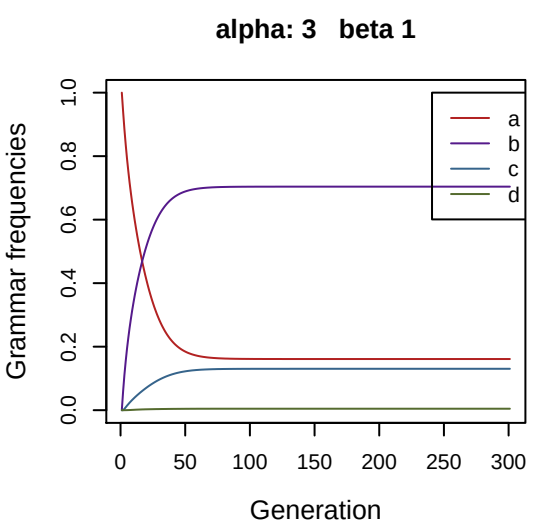

alpha: 0.25 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

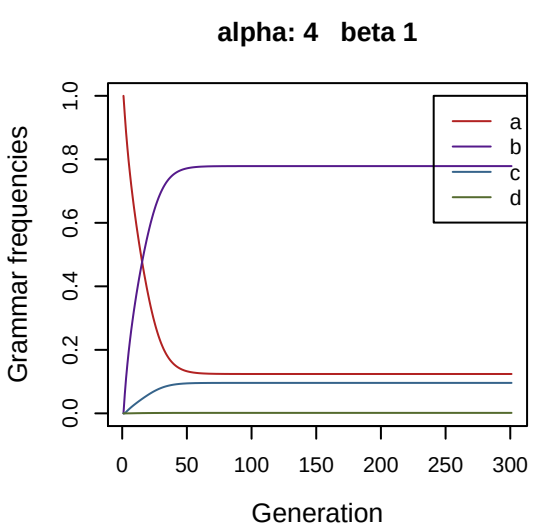

alpha: 0.33 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

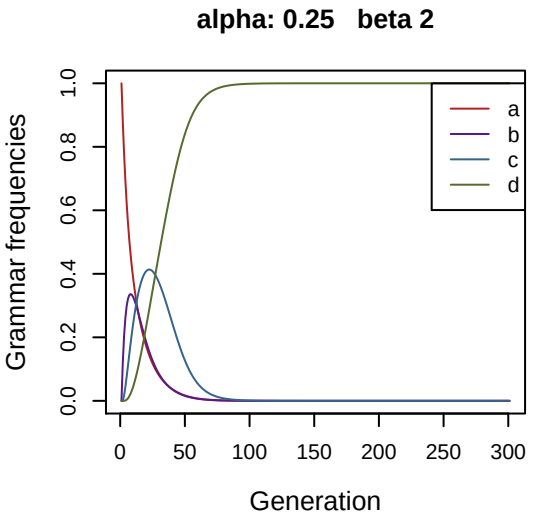

alpha: 0.5 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

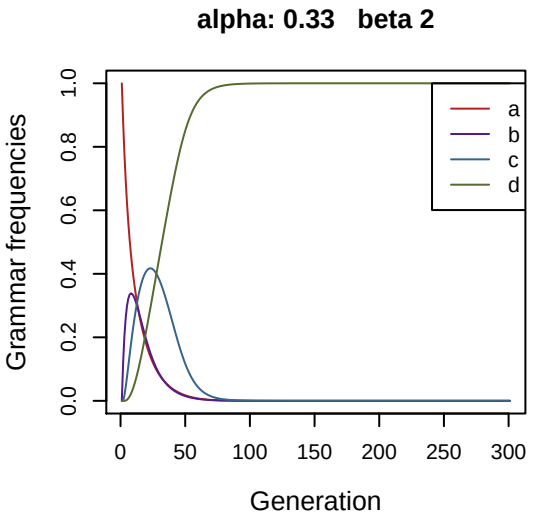

alpha: 1 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

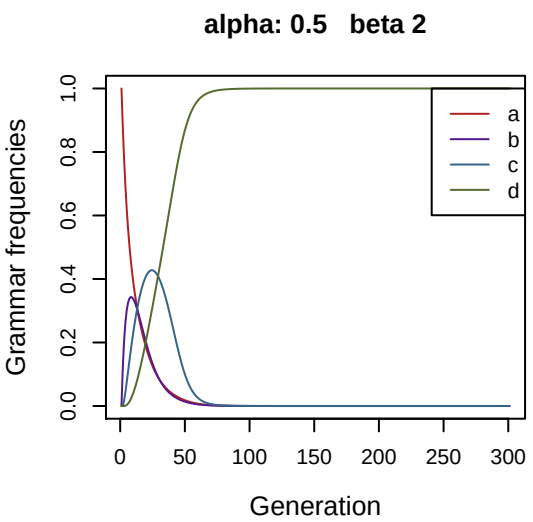

alpha: 2 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

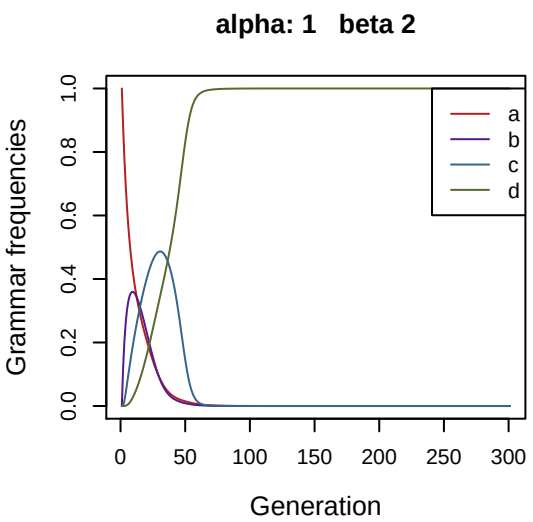

alpha: 3 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

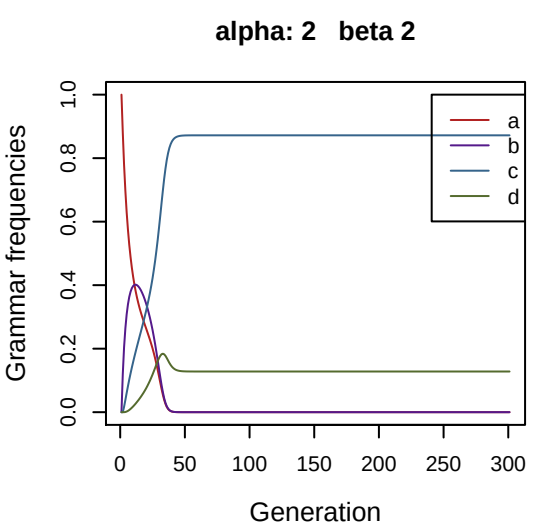

alpha: 4 beta 1
Grammar frequencies
0.0
0.2
0.4
0.6
0.8
1.0
0
50
100
150
200
250
300
Generation
a
b
c
d

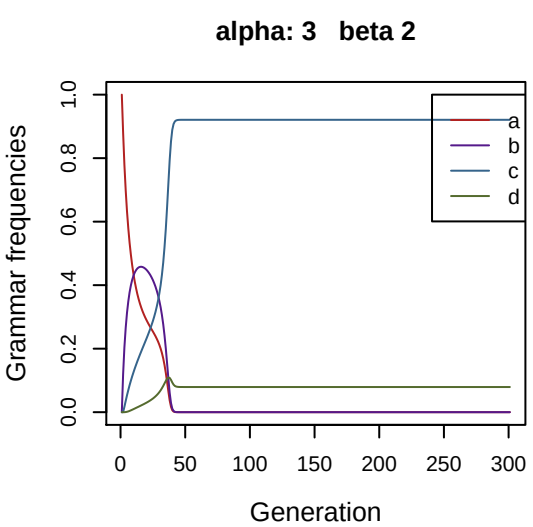

alpha: 0.25 beta 2
Grammar frequencies
Generation
a
b
c
d

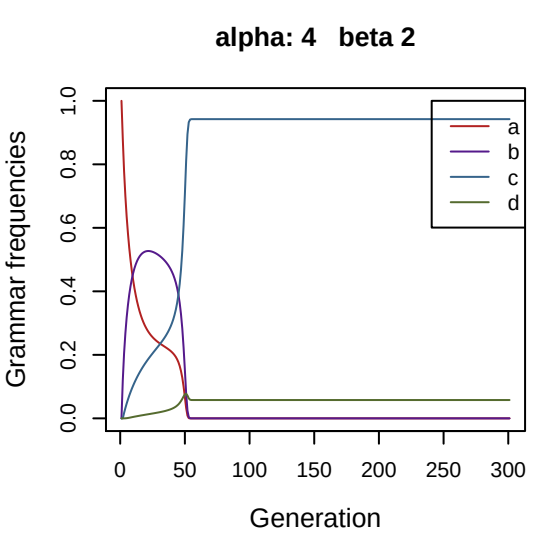

alpha: 0.33 beta 2
Grammar frequencies
Generation
a
b
c
d

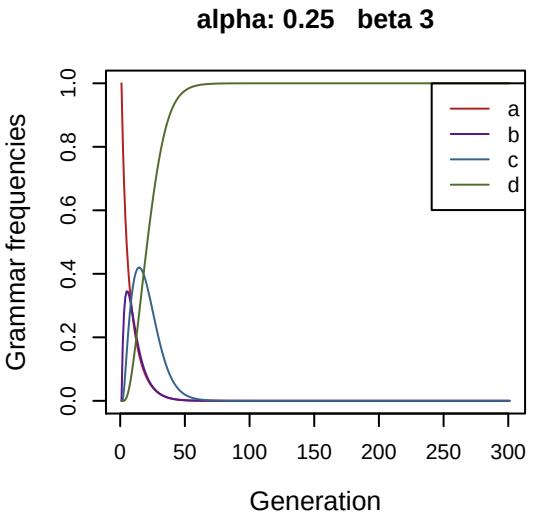

alpha: 0.5 beta 2
Grammar frequencies
Generation
a
b
c
d

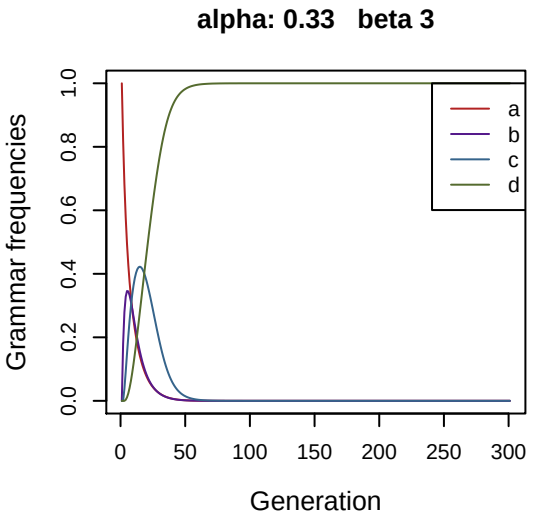

alpha: 1 beta 2
Grammar frequencies
Generation
a
b
c
d

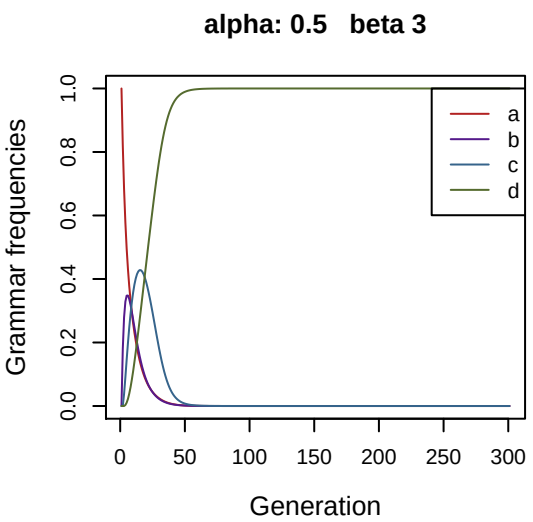

alpha: 2 beta 2
Grammar frequencies
Generation
a
b
c
d

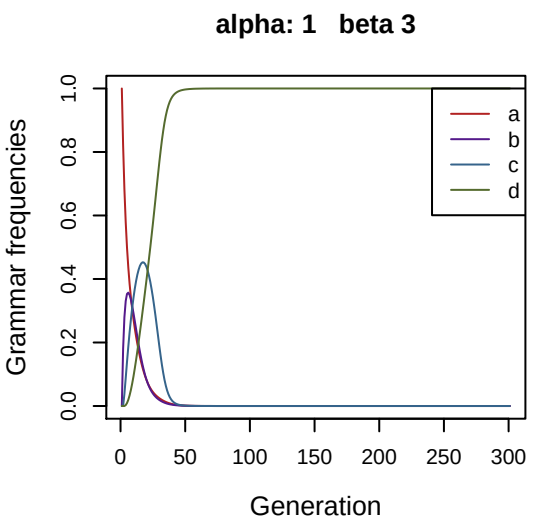

alpha: 3 beta 2
Grammar frequencies
Generation
a
b
c
d

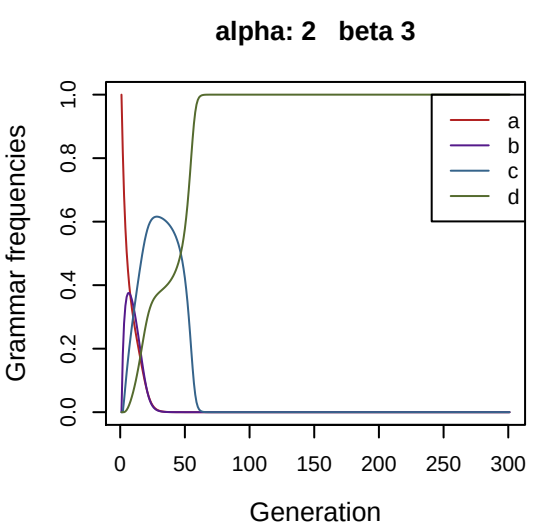

alpha: 4 beta 2
Grammar frequencies
Generation
a
b
c
d

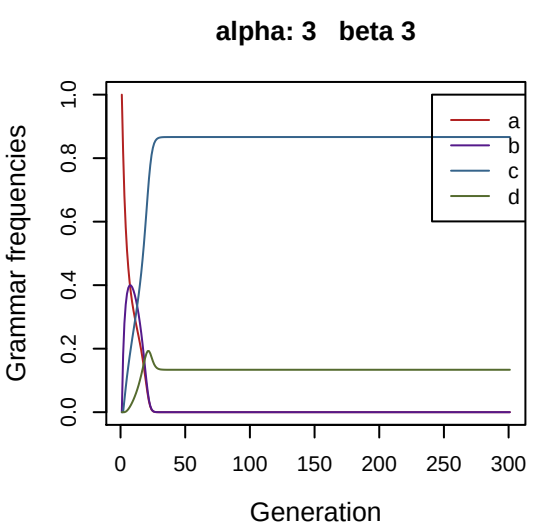

alpha: 0.25 beta 3
Grammar frequencies
Generation
a
b
c
d

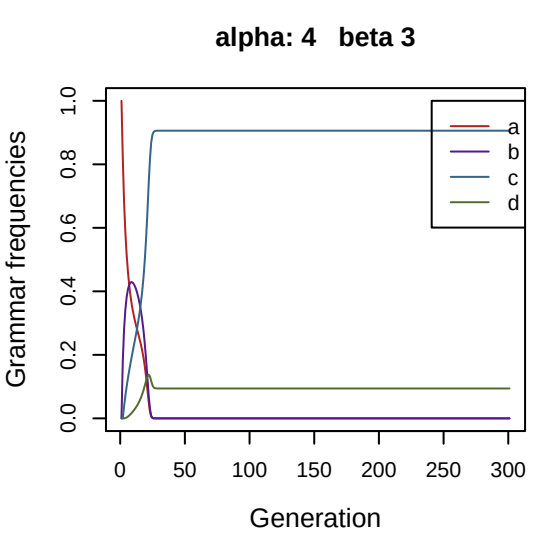

alpha: 0.33 beta 3
Grammar frequencies
Generation
a
b
c
d

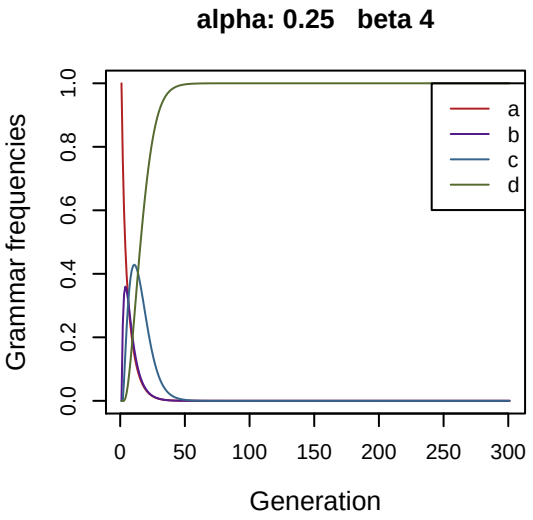

alpha: 0.5 beta 3
Grammar frequencies
Generation
a
b
c
d

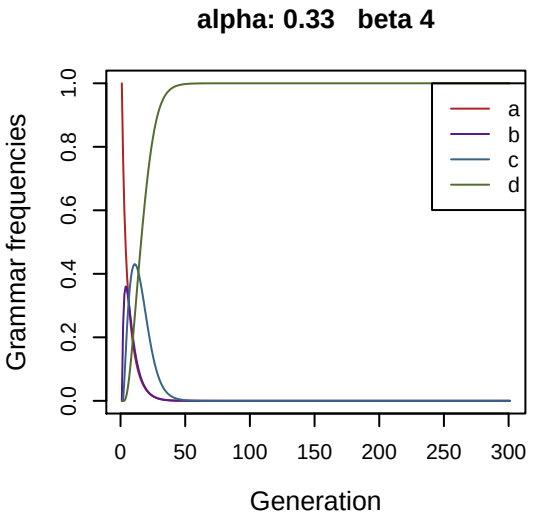

alpha: 1 beta 3
Grammar frequencies
Generation
a
b
c
d

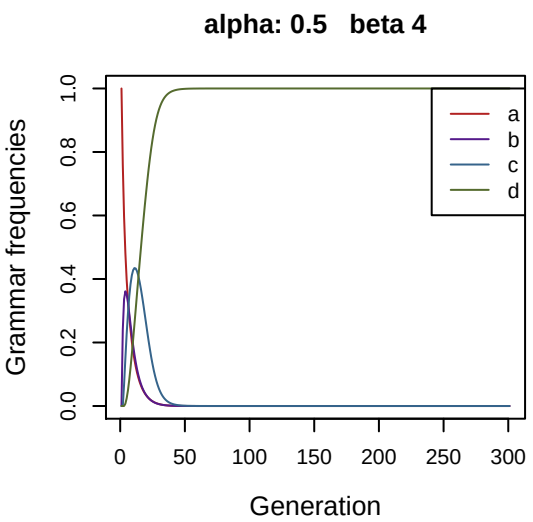

alpha: 2 beta 3
Grammar frequencies
Generation
a
b
c
d

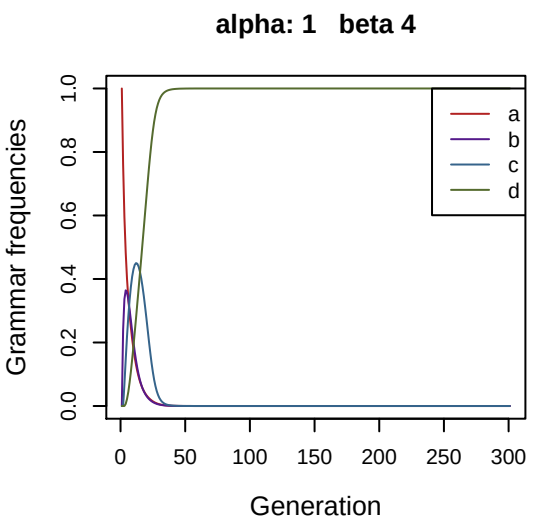

alpha: 3 beta 3
Grammar frequencies
Generation
a
b
c
d

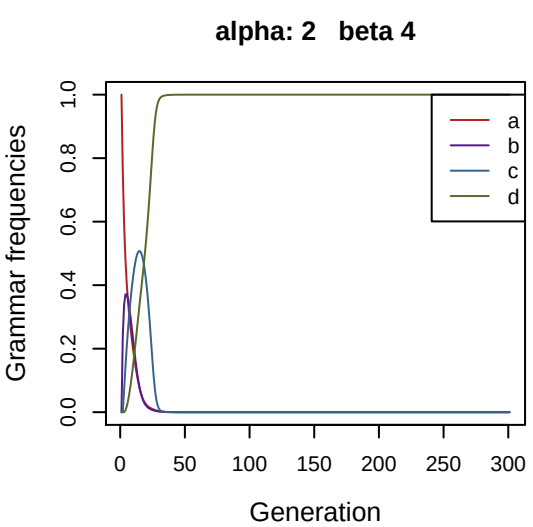

alpha: 4 beta 3
Grammar frequencies
Generation
a
b
c
d

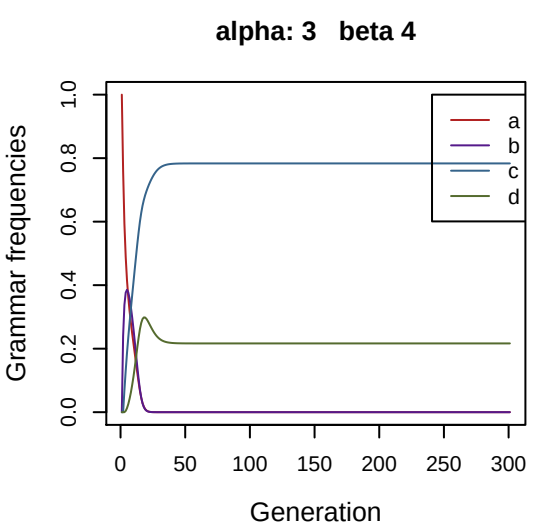

alpha: 0.25 beta 4
Grammar frequencies
Generation
a
b
c
d

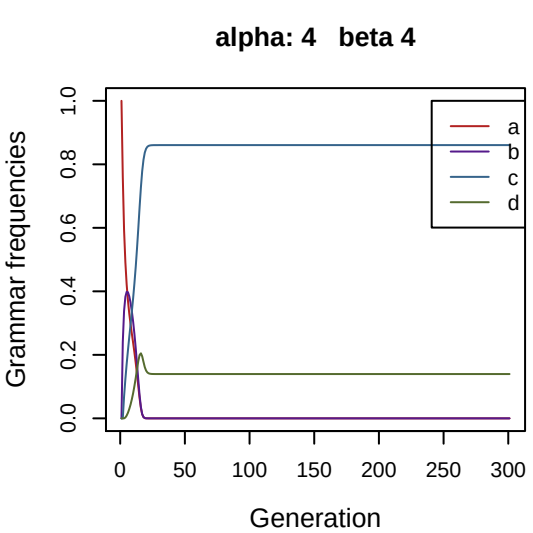

alpha: 0.33 beta 4
Grammar frequencies
Generation
a
b
c
d


alpha: 0.5 beta 4
Grammar frequencies
Generation
a
b
c
d


alpha: 1 beta 4
Grammar frequencies
Generation
a
b
c
d


alpha: 2 beta 4
Grammar frequencies
Generation
a
b
c
d


alpha: 3 beta 4
Grammar frequencies
Generation
a
b
c
d


alpha: 4 beta 4
Grammar frequencies
Generation
a
b
c
d