

# **EFEITO DO DISTÚRBIO NAS ESTRATÉGIAS DE VIDA**

**DINÂMICAS ECOLÓGICAS E EVOLUTIVAS**

**Luísa Novara Monclar Gonçalves**

**ORIENTADOR: Prof. Dr. Alexandre Adalardo de Oliveira**

**COORIENTADOR: Prof. Dr. Paulo Inácio Prado**

# atributo

# atributo



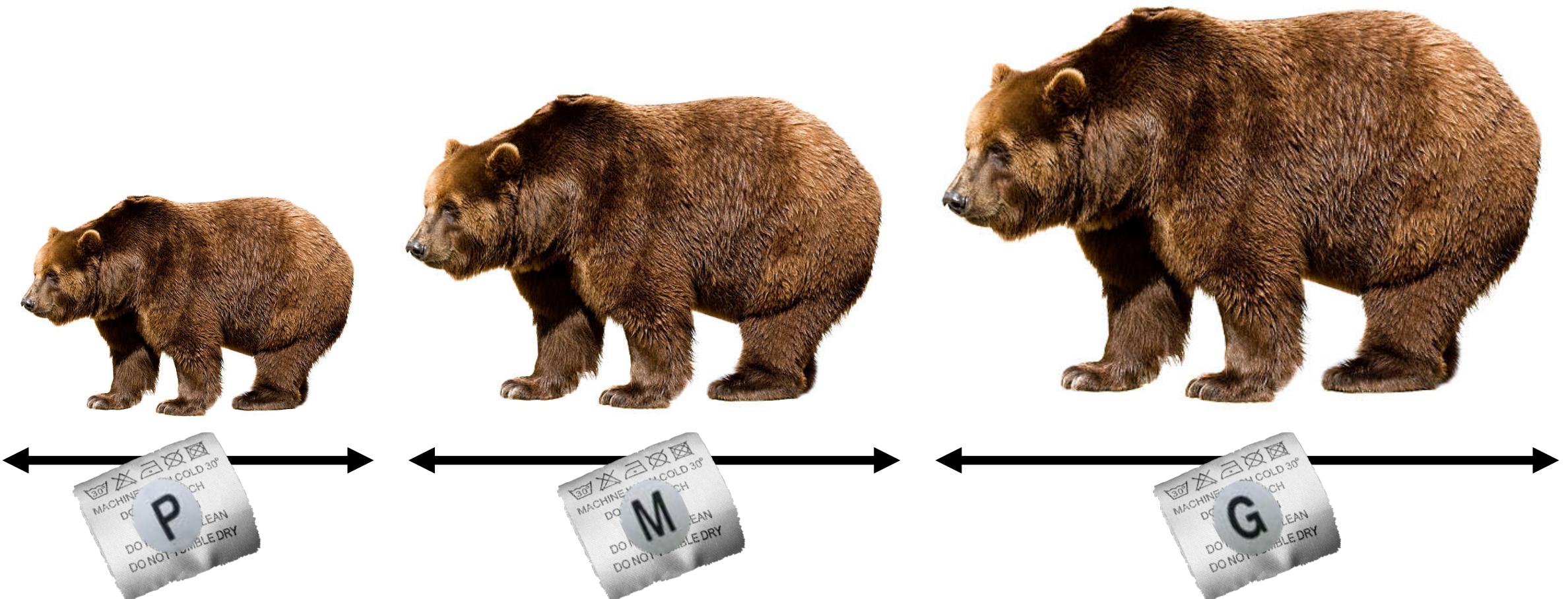
# atributo

estados do atributo



# atributo

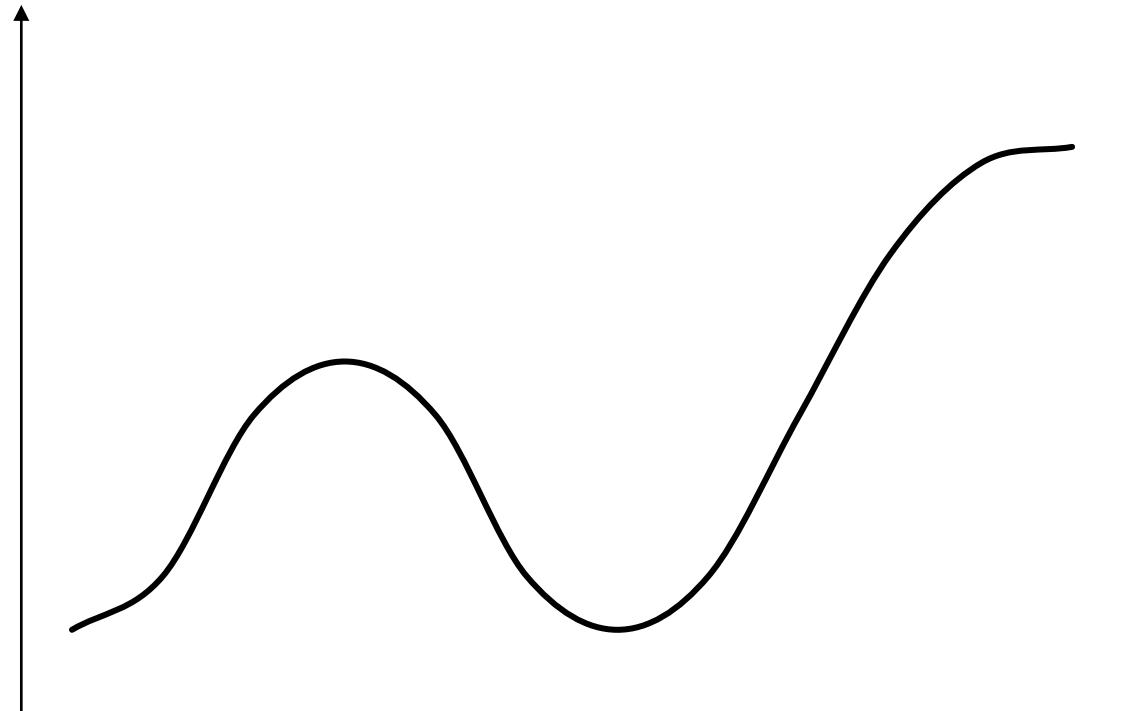
estados do atributo



proporção de  
indivíduos pequenos



# atributo



tempo

Biologia  
Evolutiva

# atributo

Ecologia de  
Comunidades

dinâmica  
evolutiva

## atributo

dinâmica  
ecológica

mudanças na frequência  
de um **atributo** na  
**população**  
a partir de alterações na  
**frequência relativa**  
**dos alelos**

dinâmica  
evolutiva

## atributo

mudanças na frequência  
de um **atributo** na  
**população**  
a partir de alterações na  
**frequência relativa**  
**dos alelos**

dinâmica  
ecológica

mudanças na frequência  
de um **atributo** na  
**comunidade**  
a partir de alterações na  
**frequência relativa**  
**das espécies**

## dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

## dinâmica ecológica

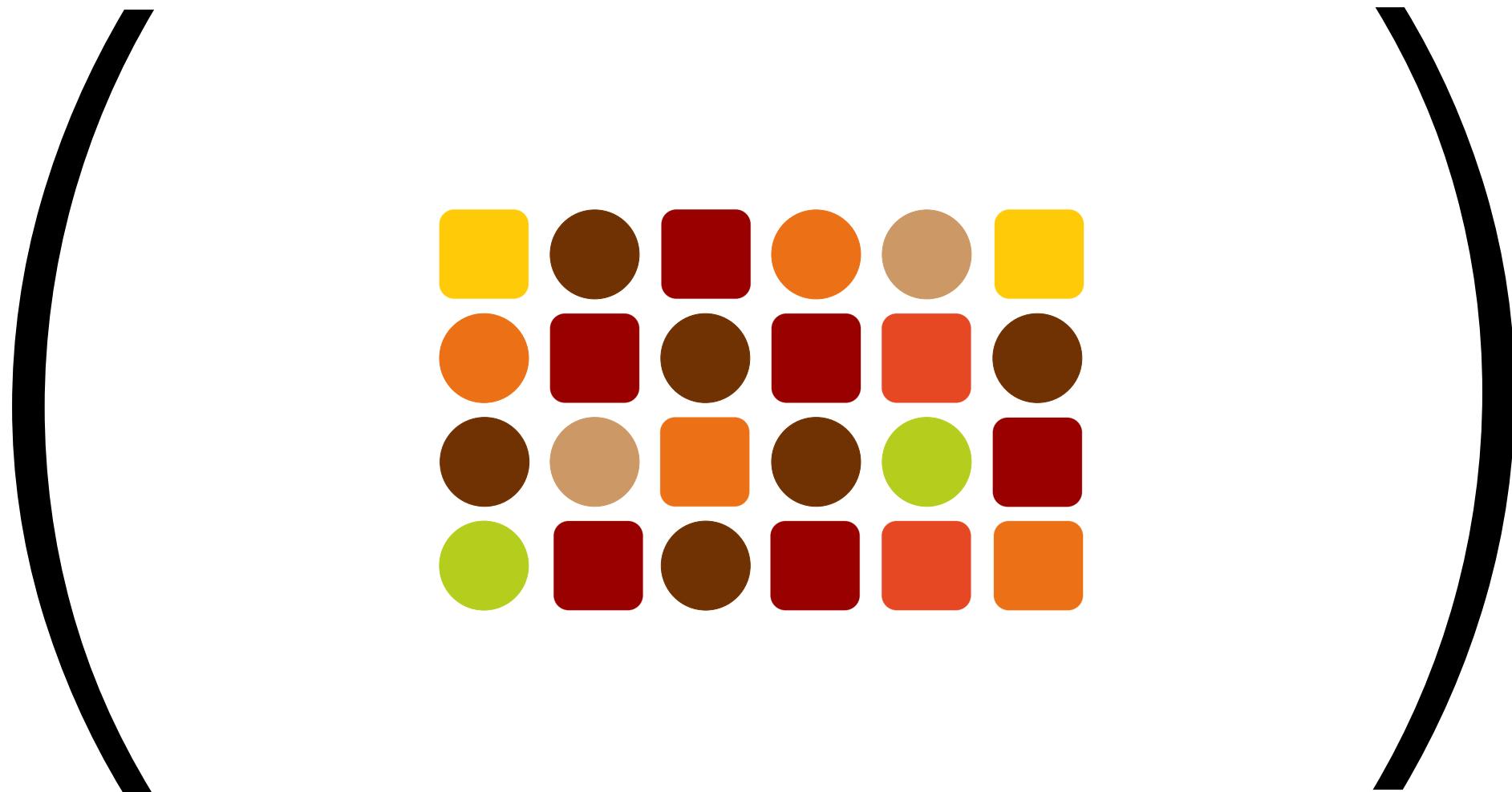
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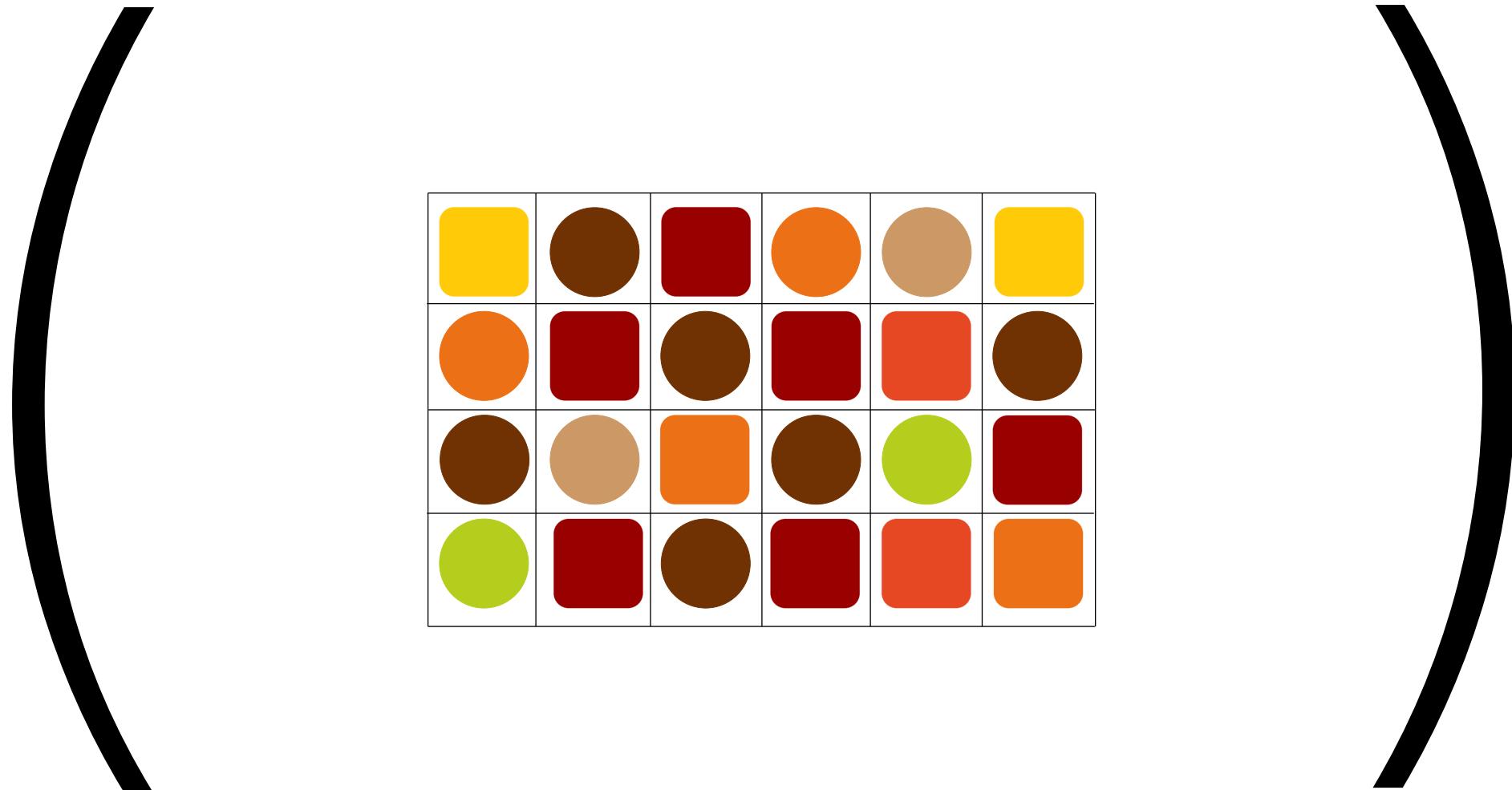
- seleção
- deriva genética
- fluxo gênico
- mutação

## dinâmica ecológica

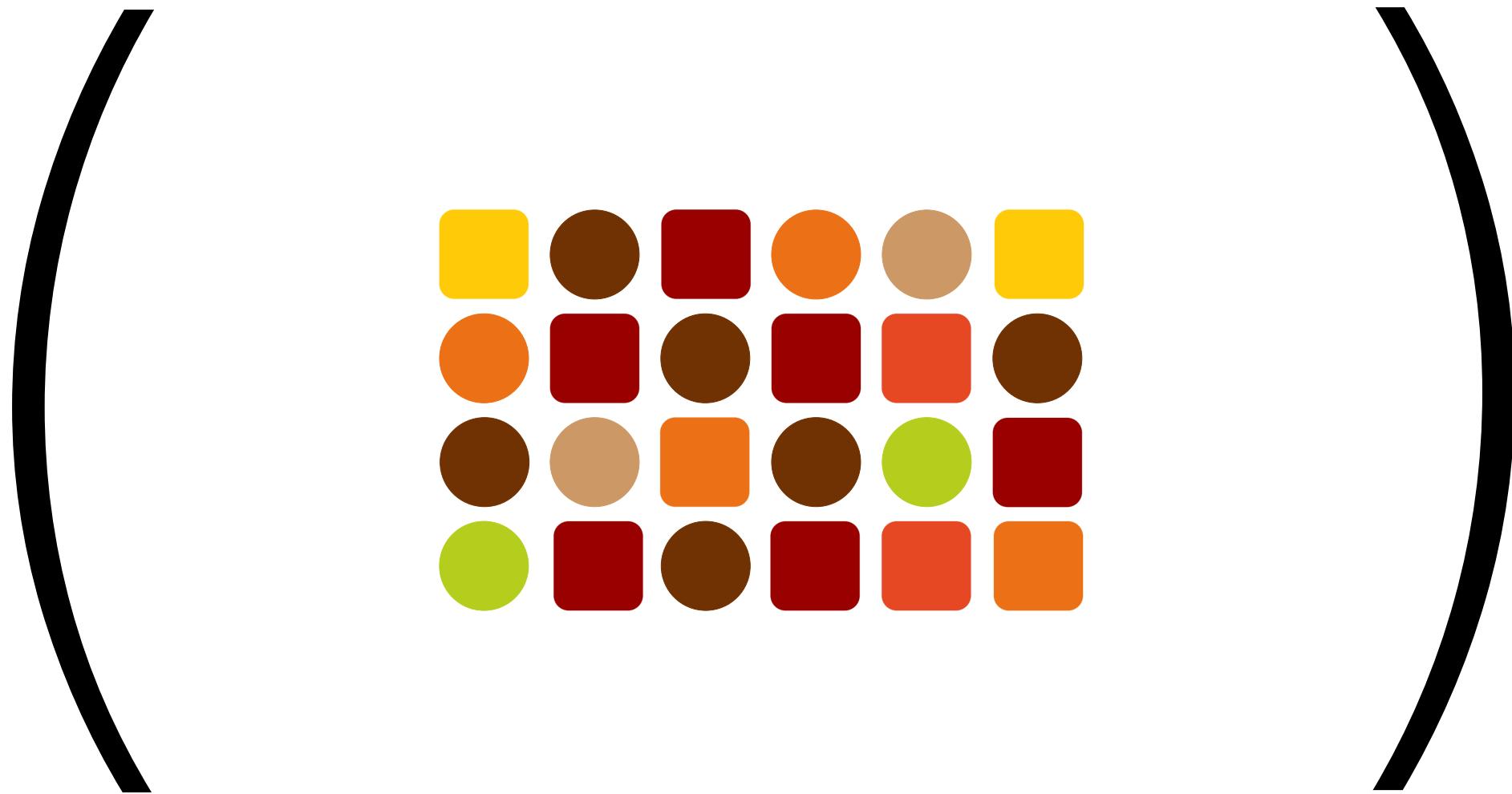
- filtragem ecológica
- deriva ecológica
- migração
- especiação

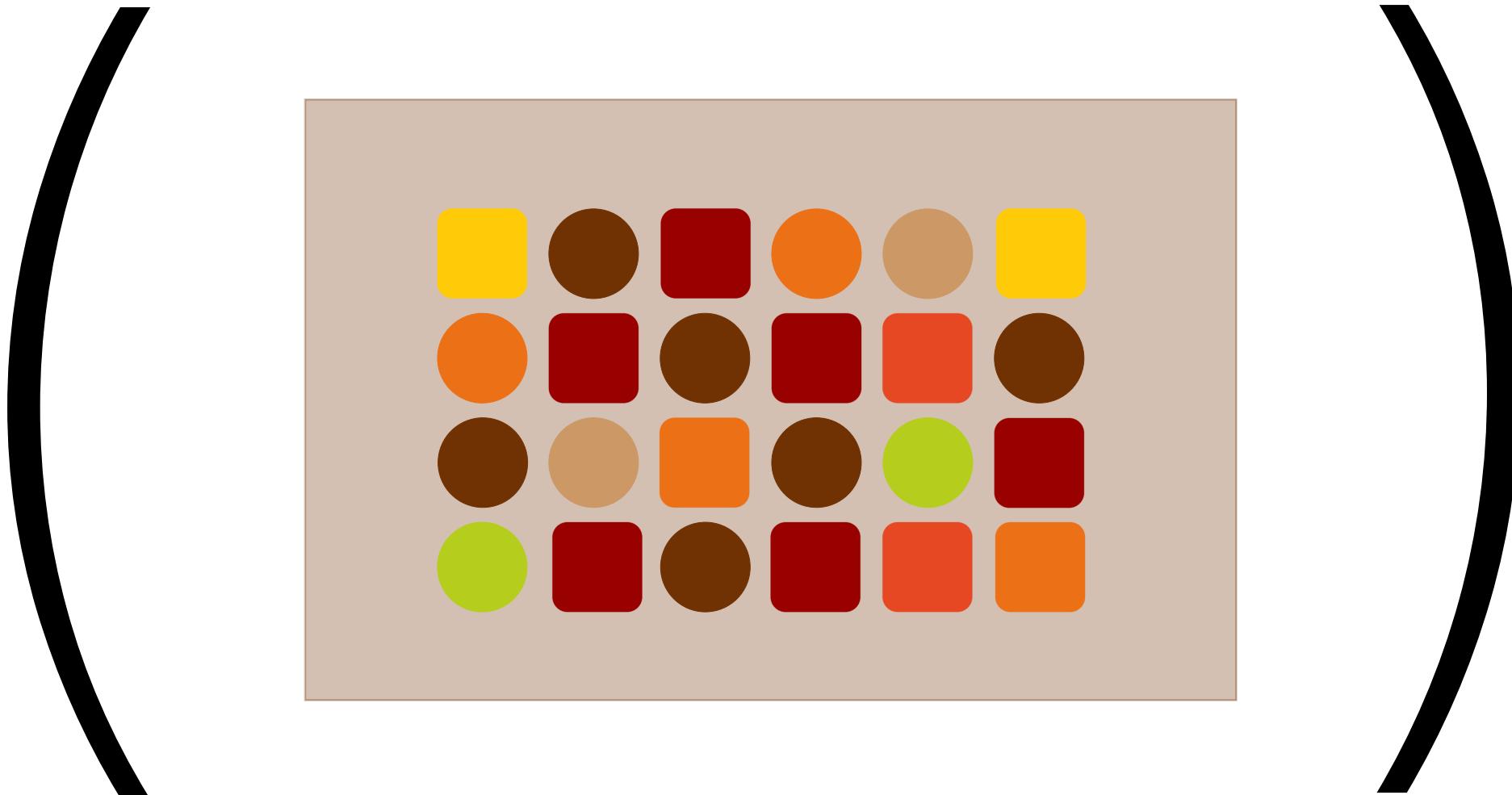






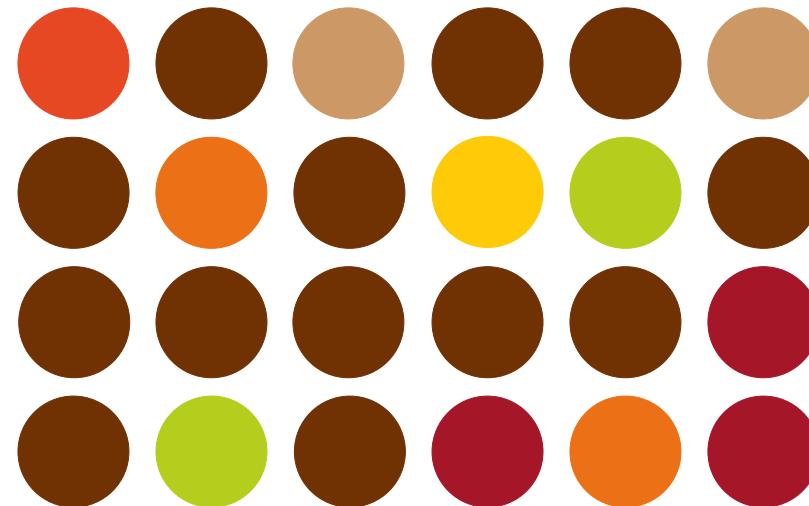






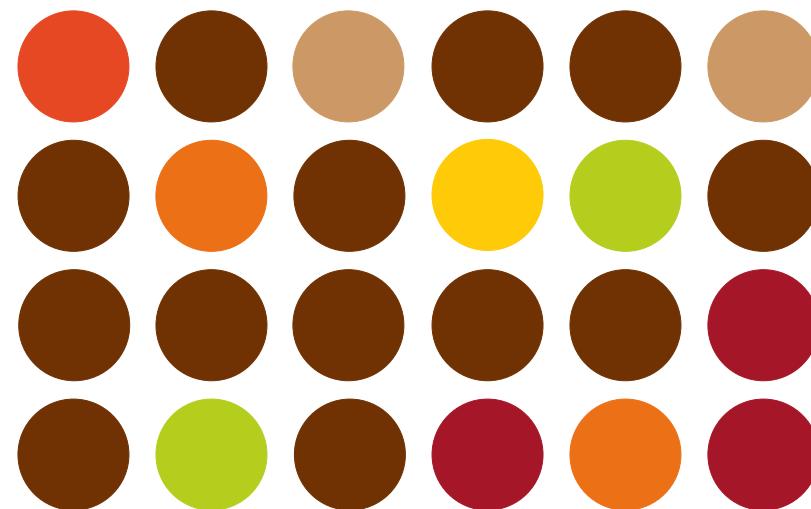
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- seleção
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- fluxo gênico
- mutação



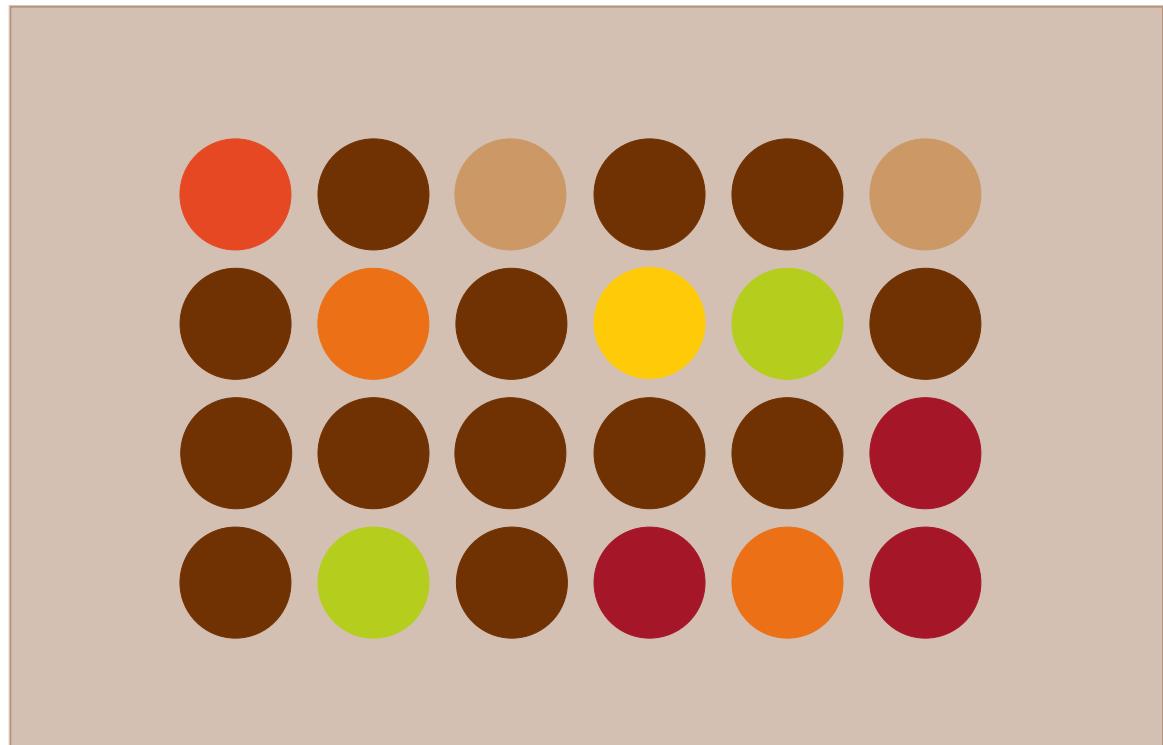
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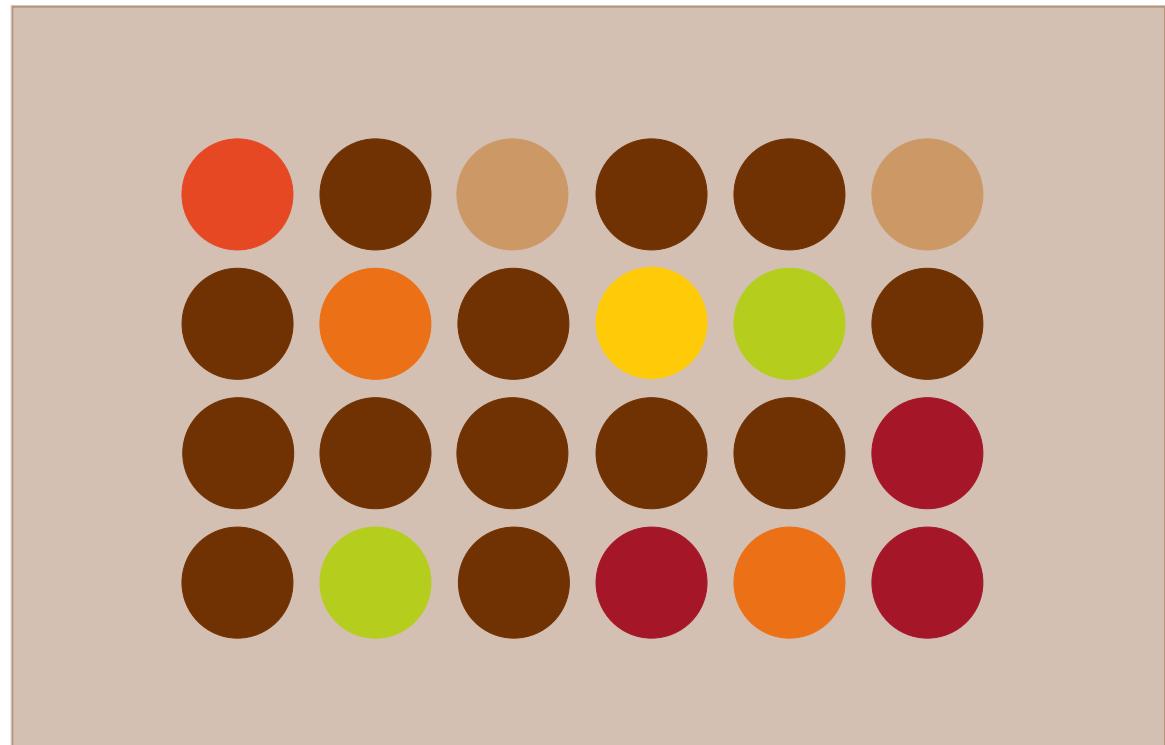
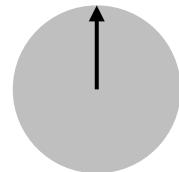
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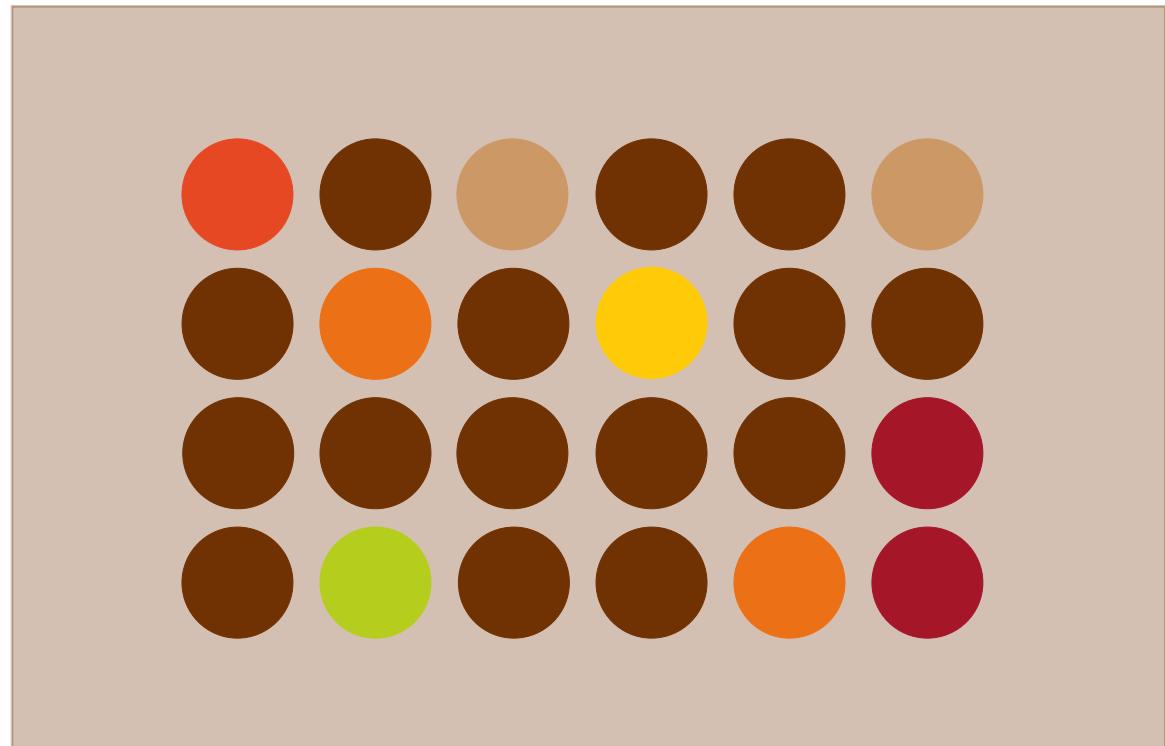
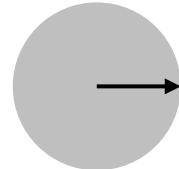
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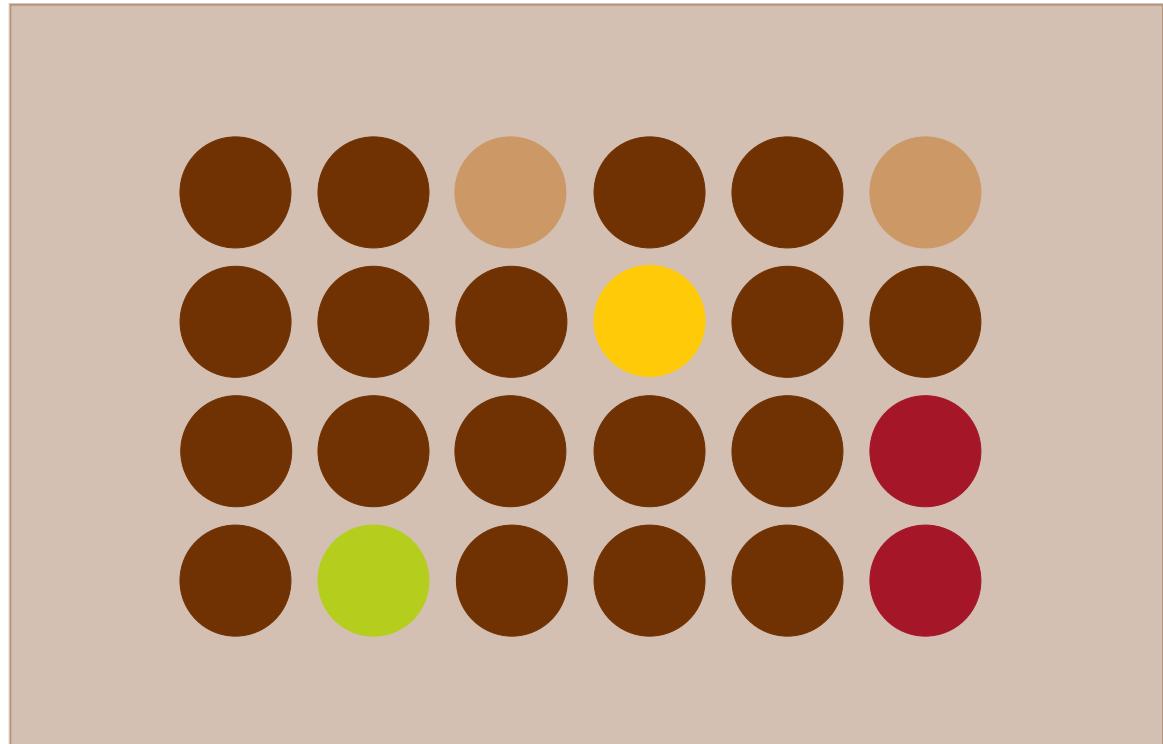
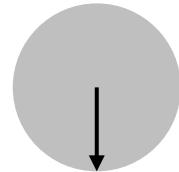
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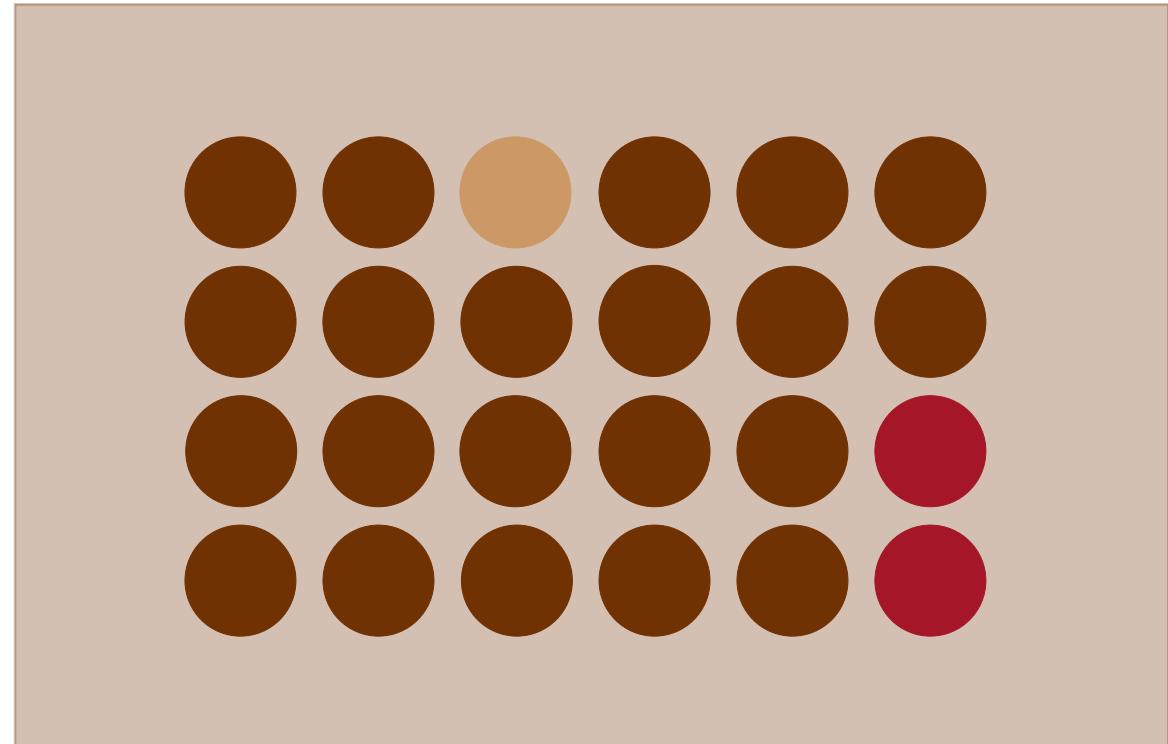
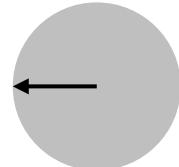
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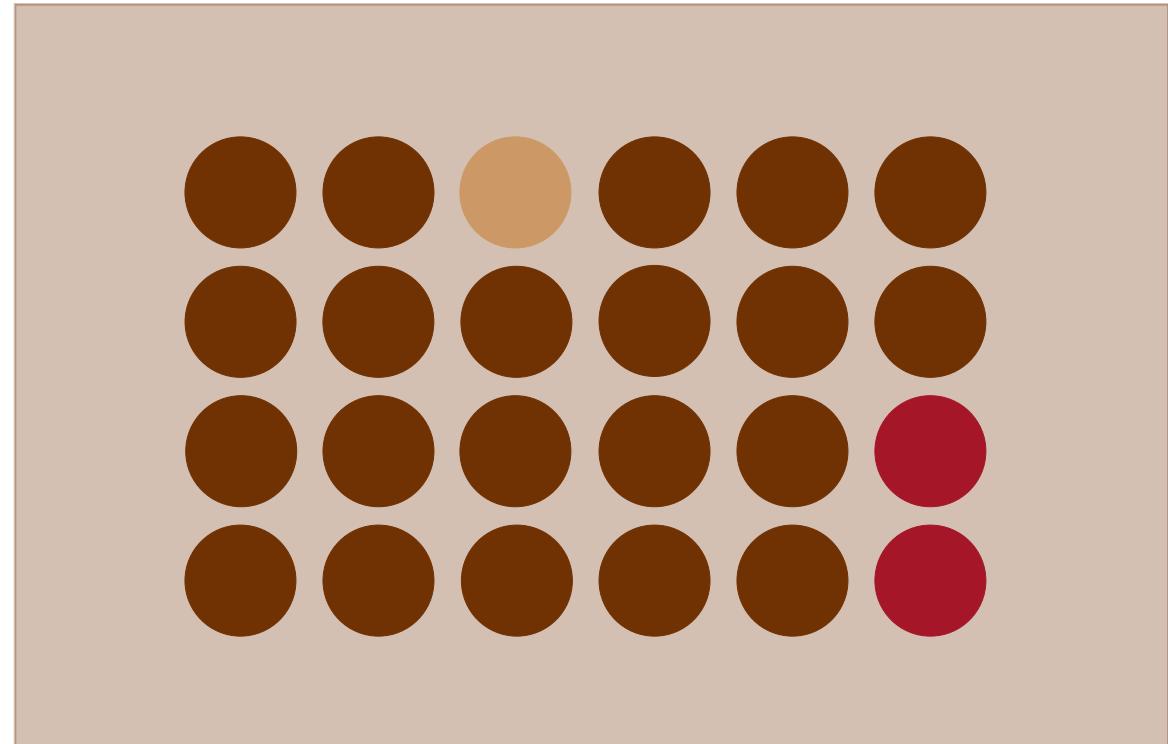
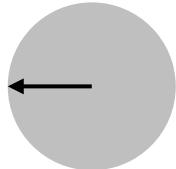
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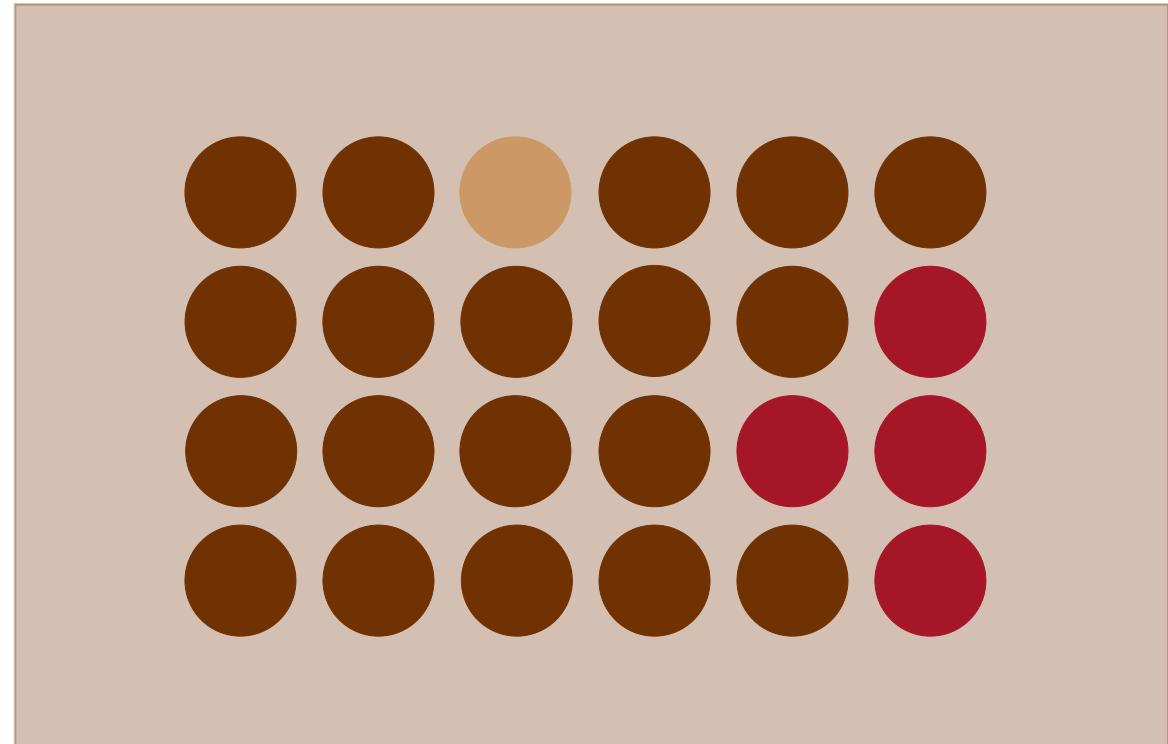
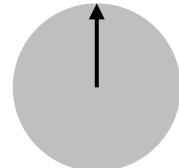
# dinâmica evolutiva

- seleção
- **deriva genética**
- fluxo gênico
- mutação



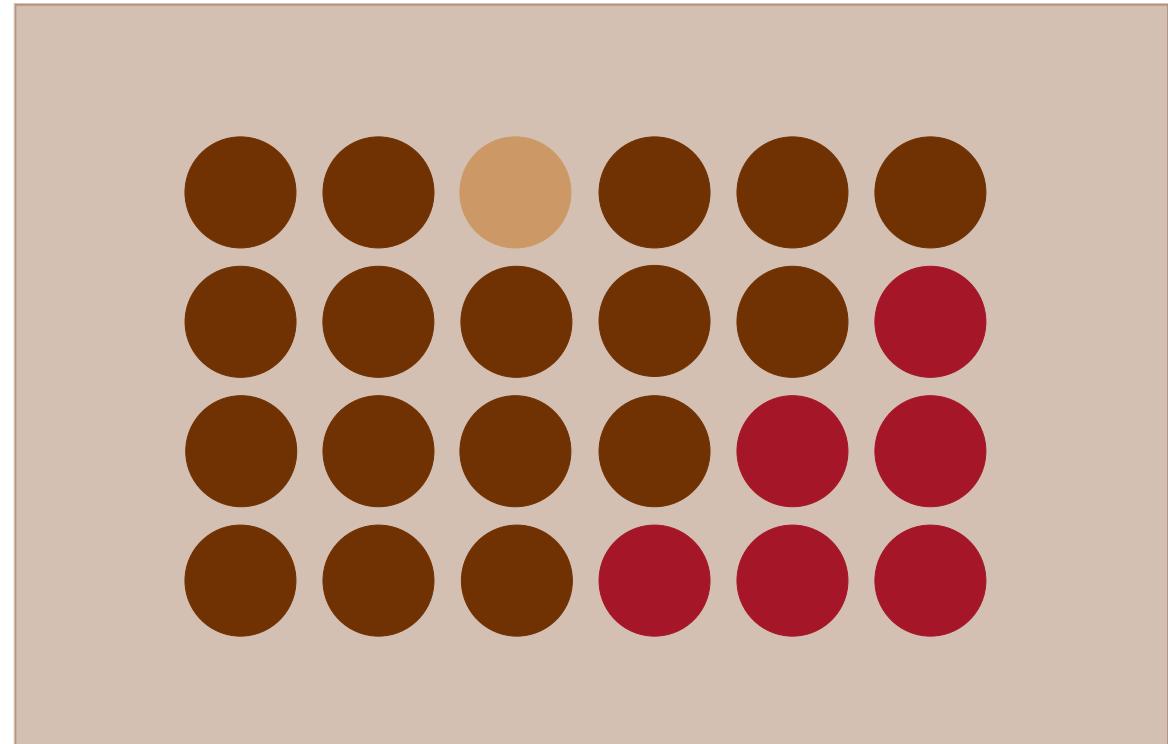
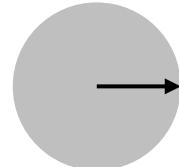
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- **deriva genética**
- fluxo gênico
- mutação



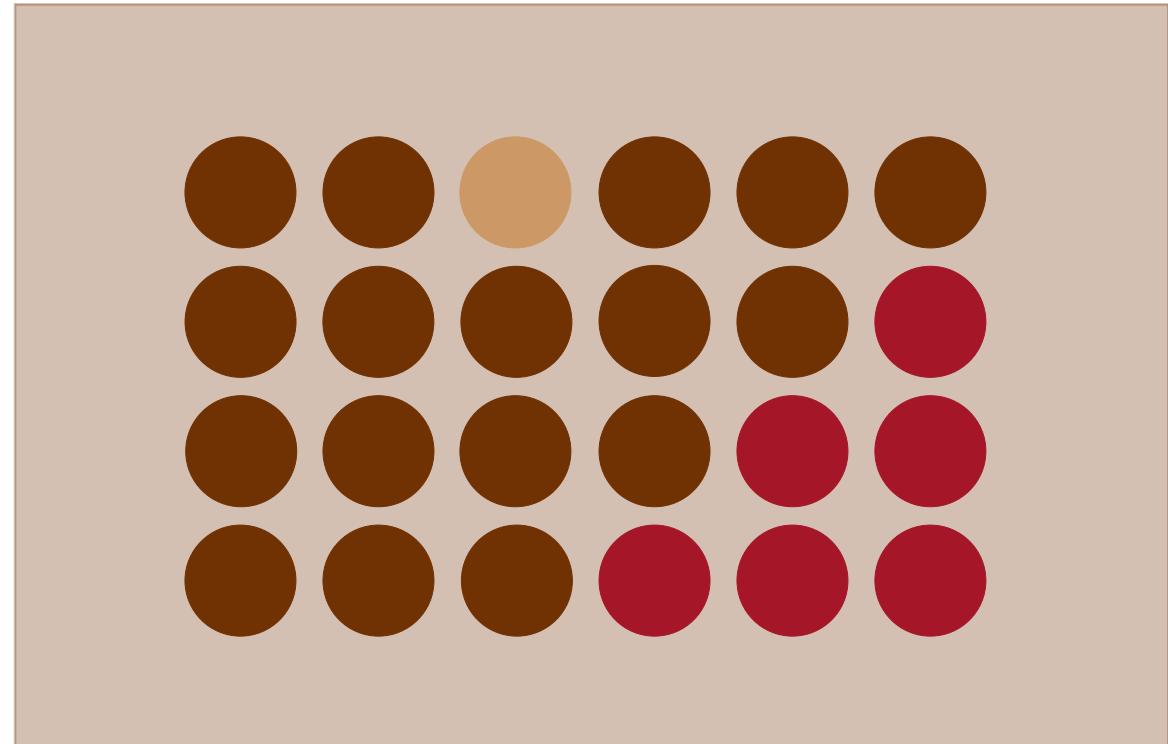
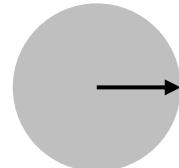
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- **deriva genética**
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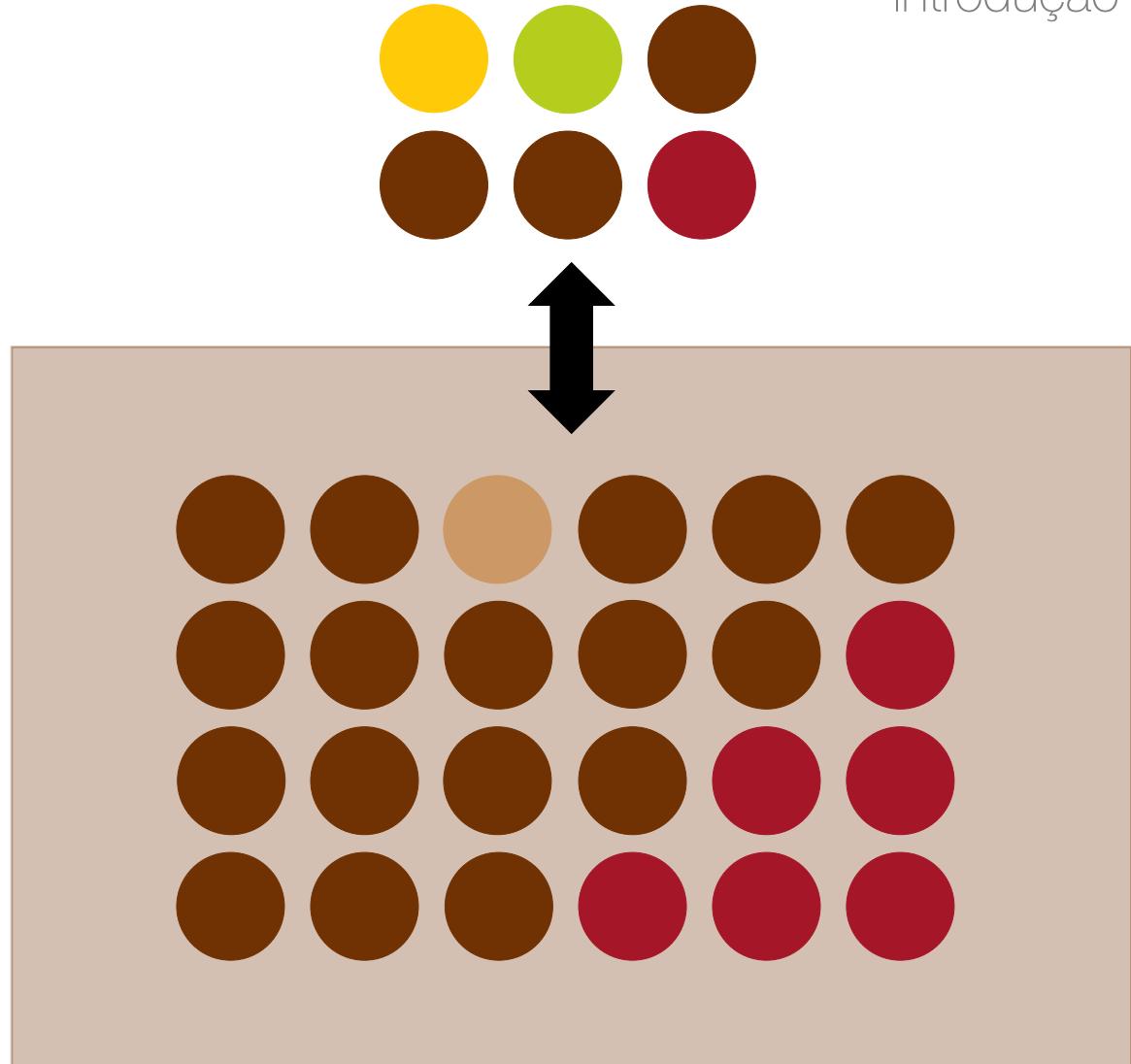
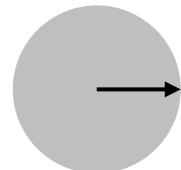
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- deriva genética
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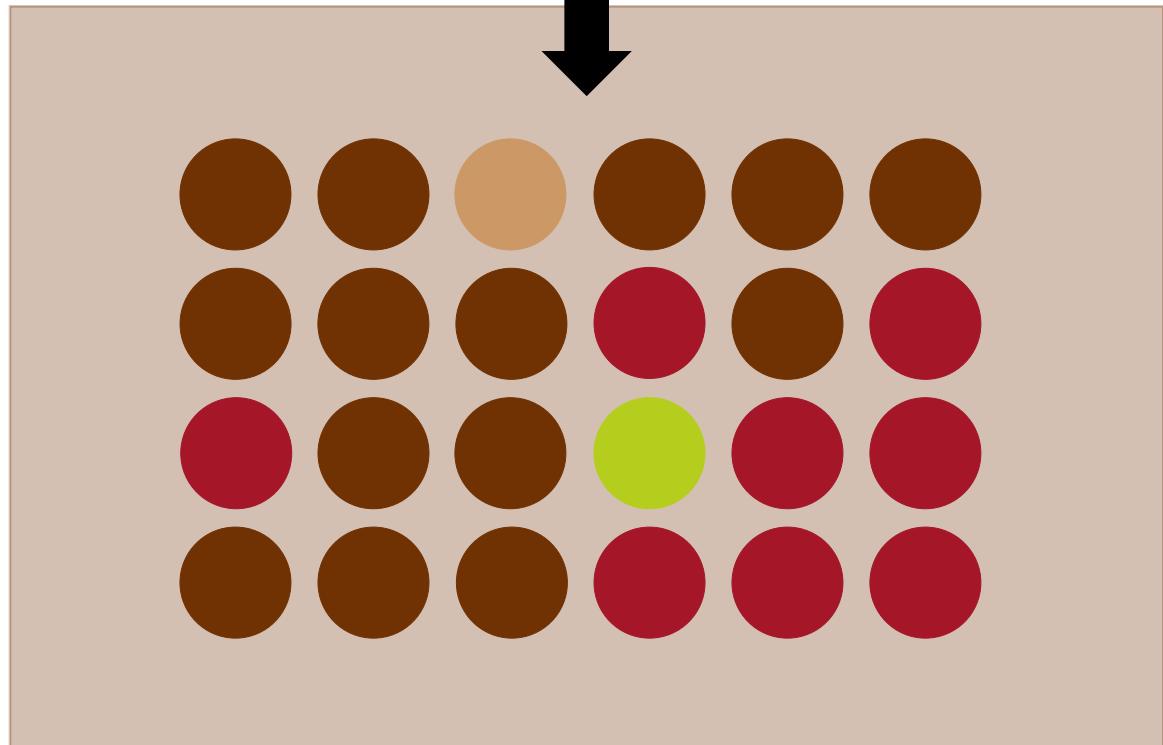
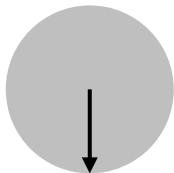
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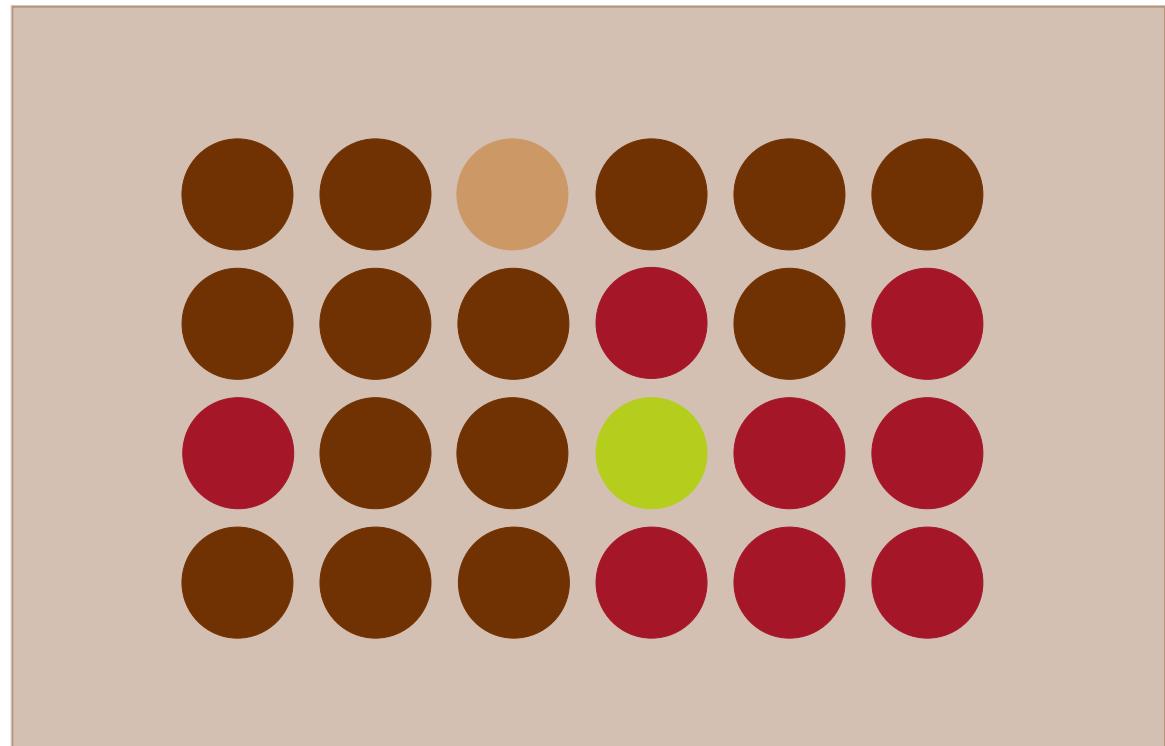
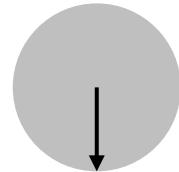
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- deriva genética
- **fluxo gênico**
- mutação



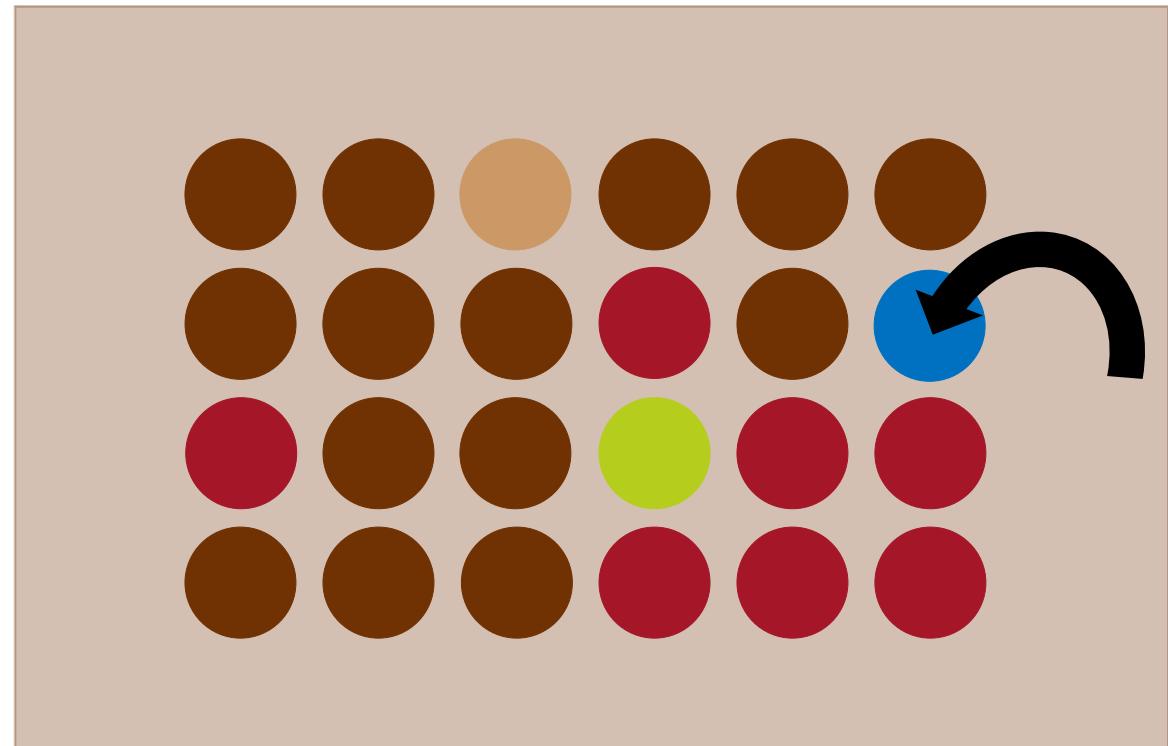
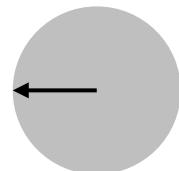
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- seleção
- deriva genética
- fluxo gênico
- **mutação**



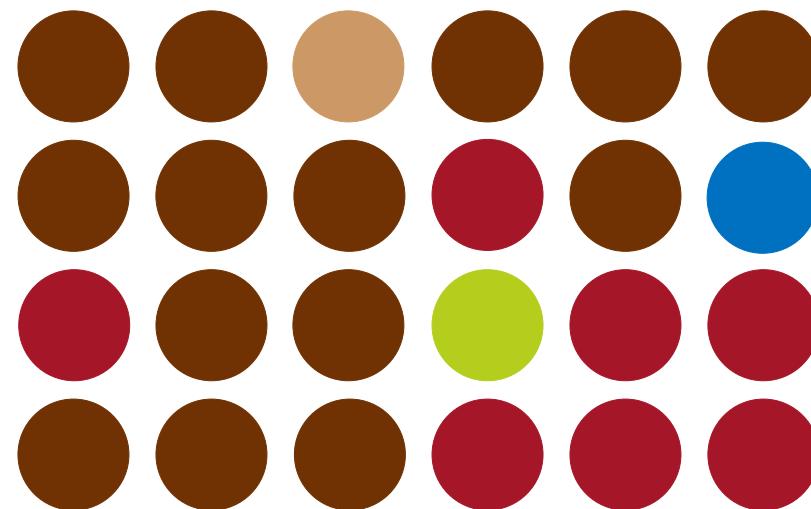
# dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- **mutação**



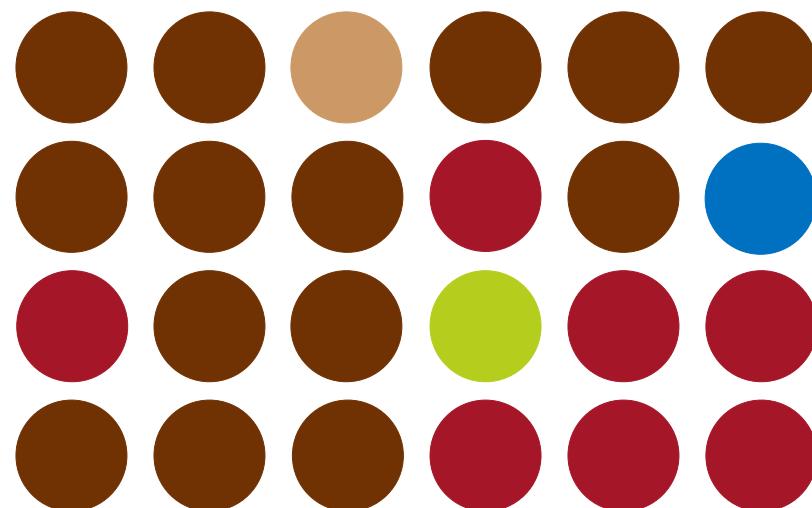
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- fluxo gênico
- mutação



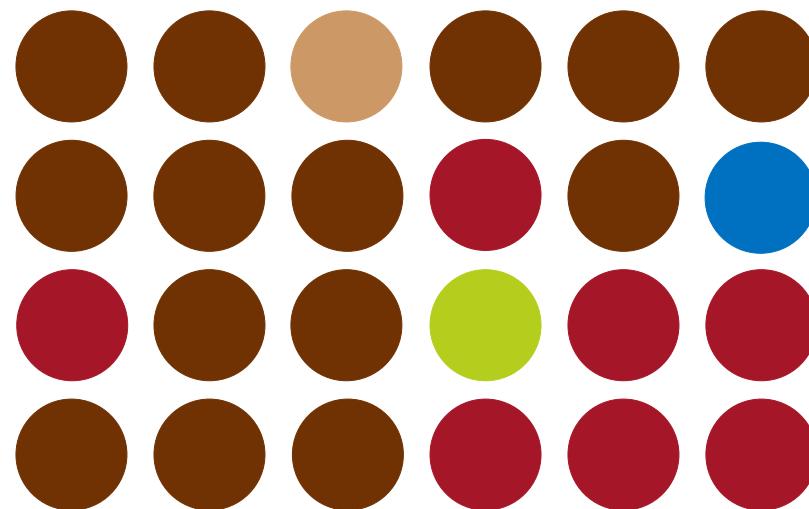
# dinâmica evolutiva

- seleção
  - deriva genética
  - fluxo gênico
  - mutação
- } diversidade
- 



# dinâmica evolutiva

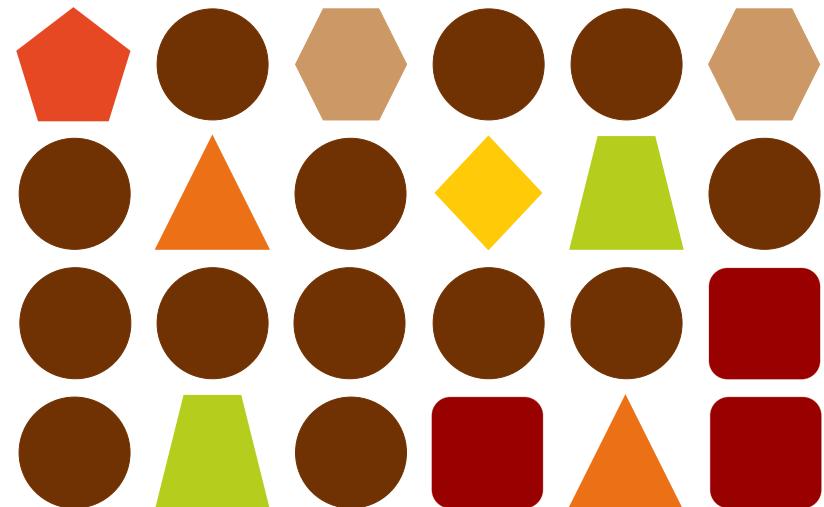
- seleção
  - deriva genética
  - fluxo gênico
  - mutação
- } diversidade
- ↑ diversidade





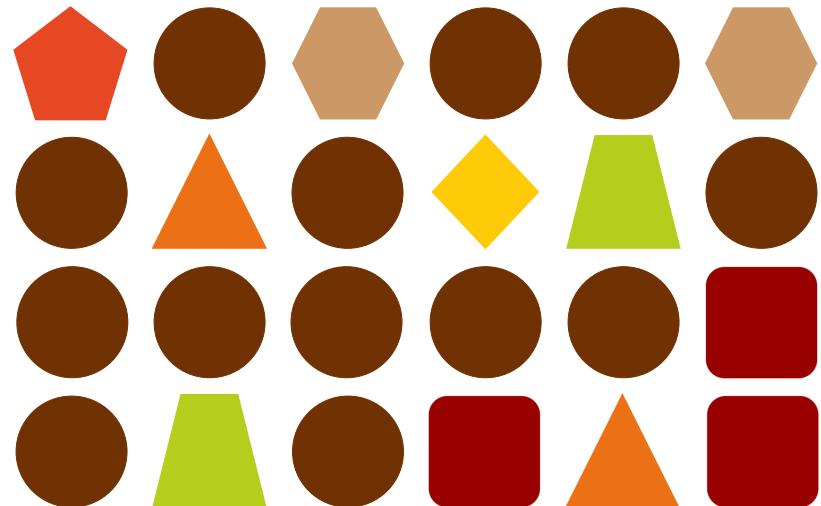
## dinâmica ecológica

- filtragem ecológica
- deriva ecológica
- migração
- especiação



## dinâmica ecológica

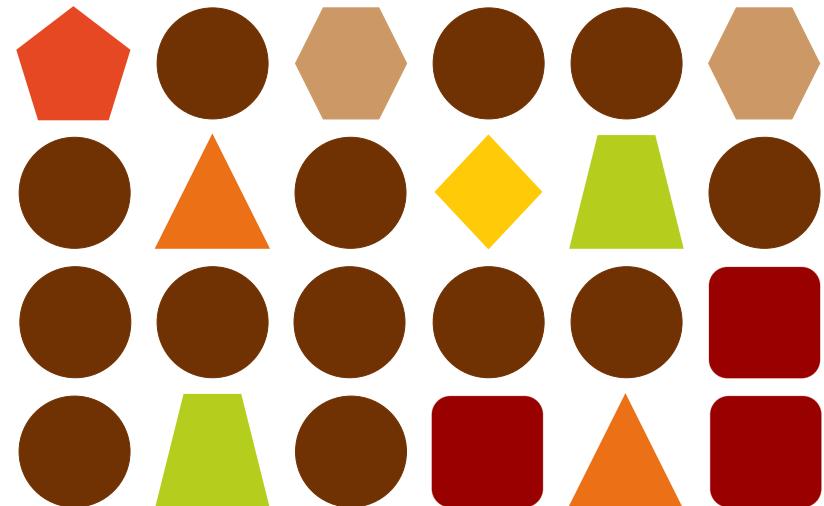
- filtragem ecológica
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- especiação



## dinâmica ecológica

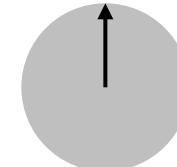
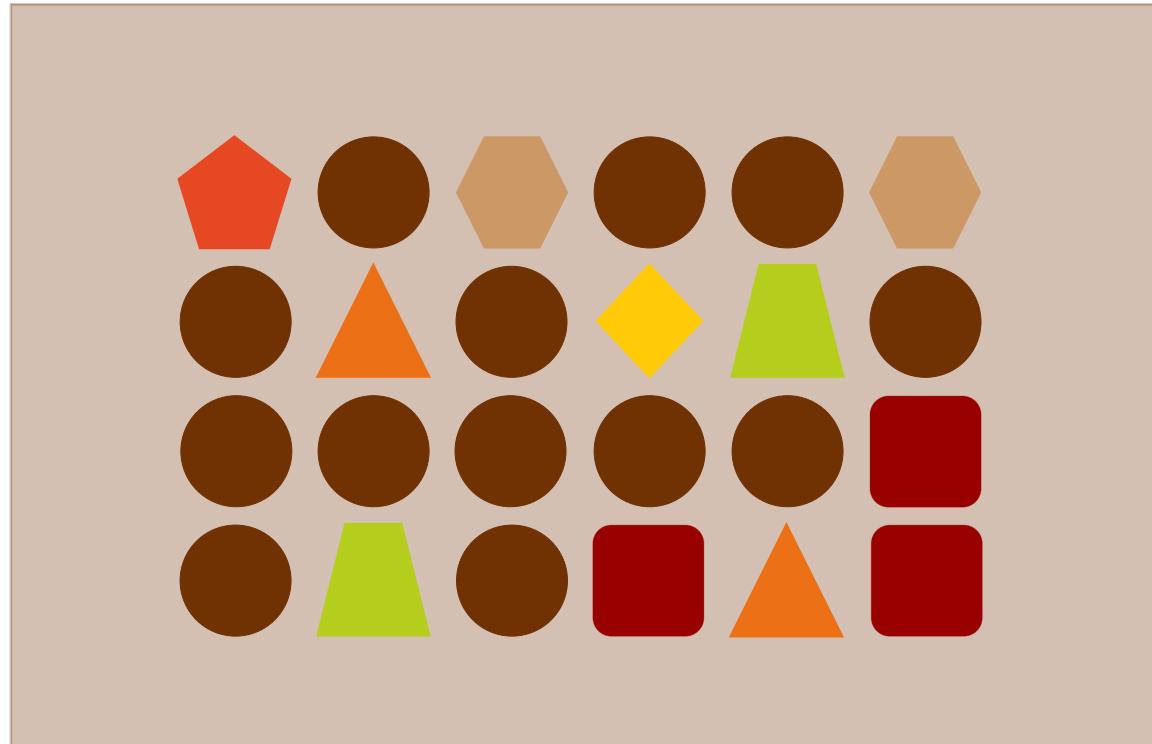
- **filtragem ecológica**
- deriva ecológica
- migração
- especiação

## dinâmica ecológica

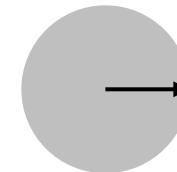
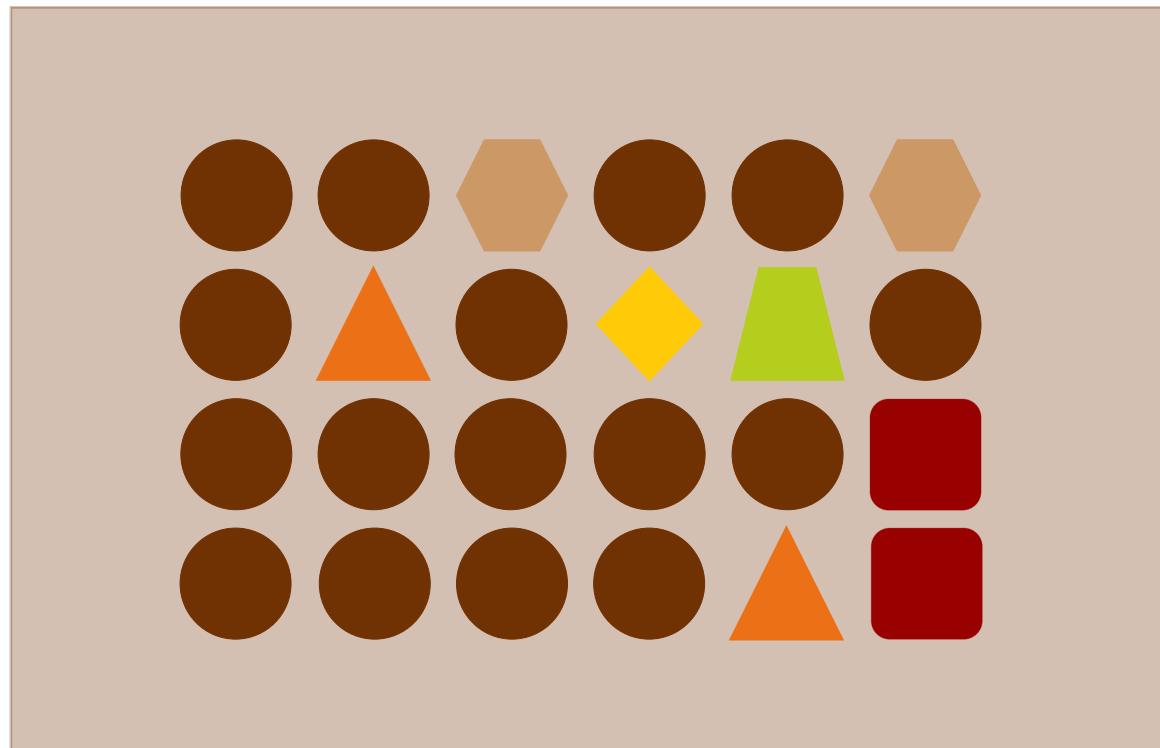


- **exclusão competitiva**
- deriva ecológica
- migração
- especiação

## dinâmica ecológica

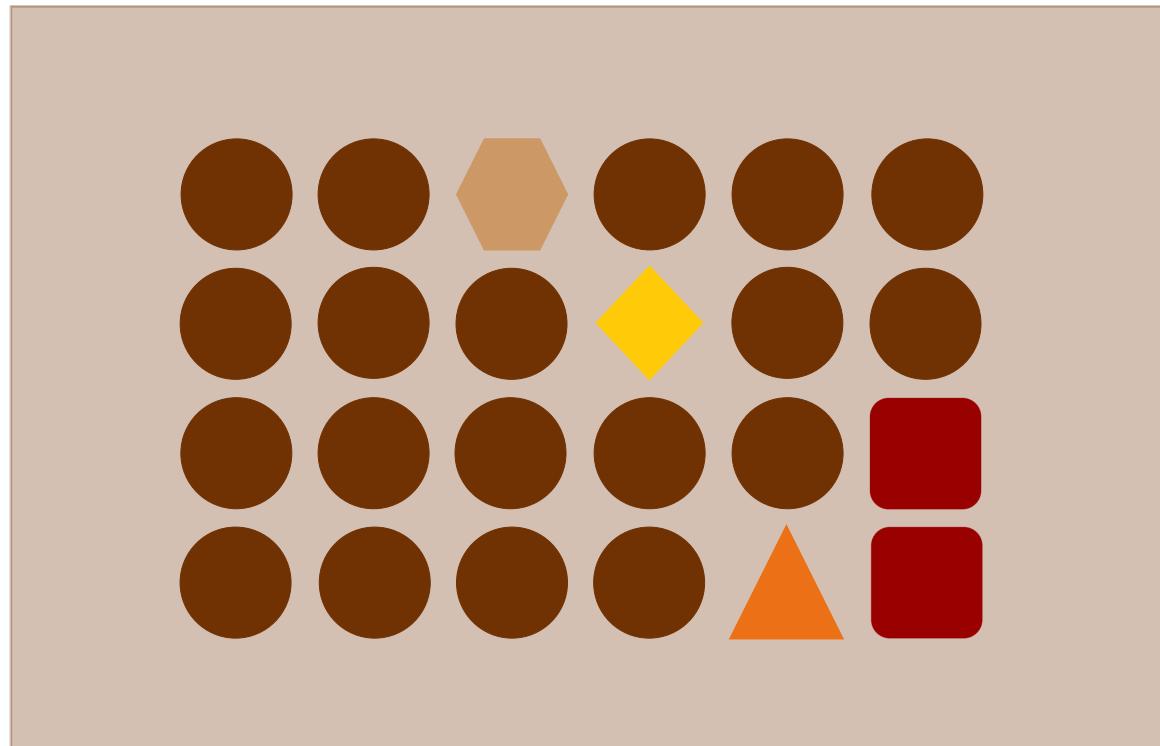


- **exclusão competitiva**
  - deriva ecológica
  - migração
  - especiação



## dinâmica ecológica

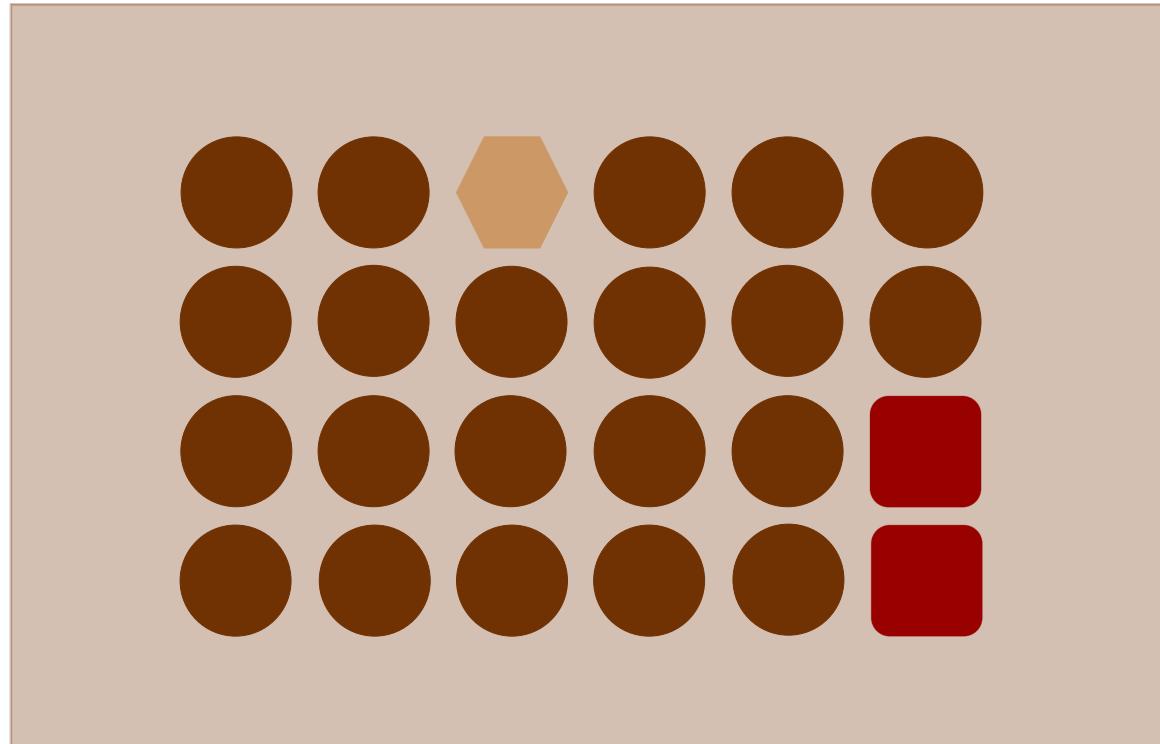
- **exclusão competitiva**
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  - especiação



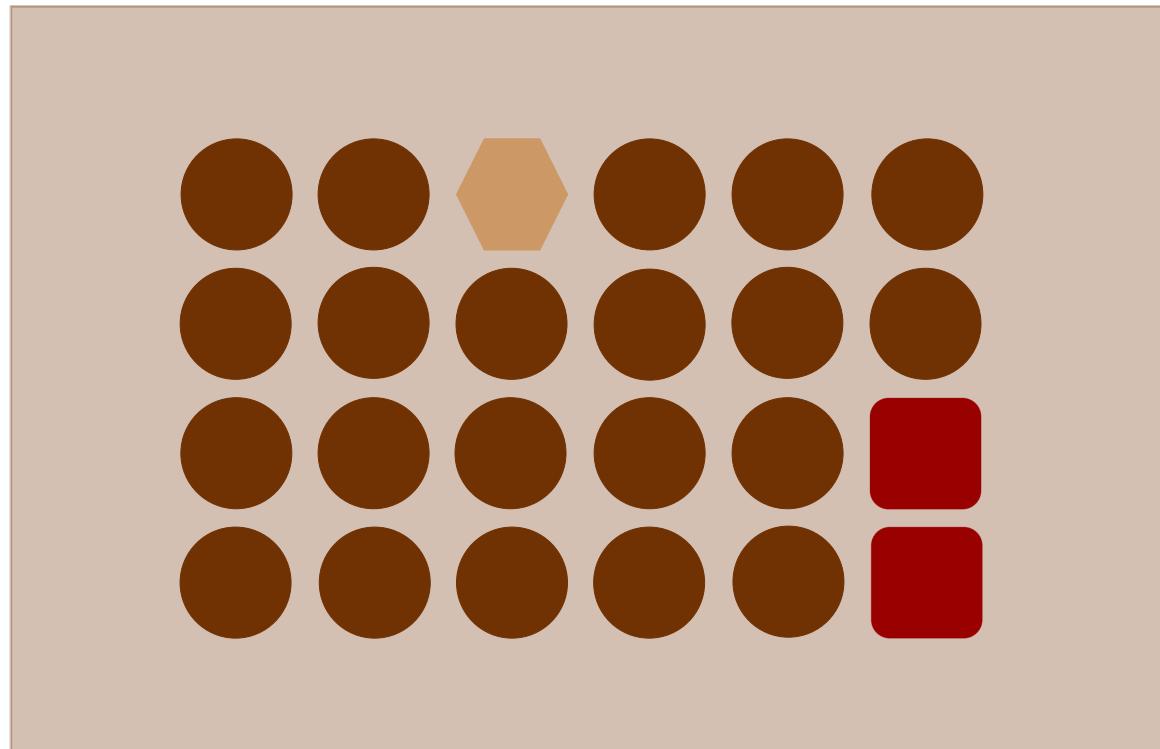
## dinâmica ecológica

- **exclusão competitiva**
  - deriva ecológica
  - migração
  - especiação

## dinâmica ecológica

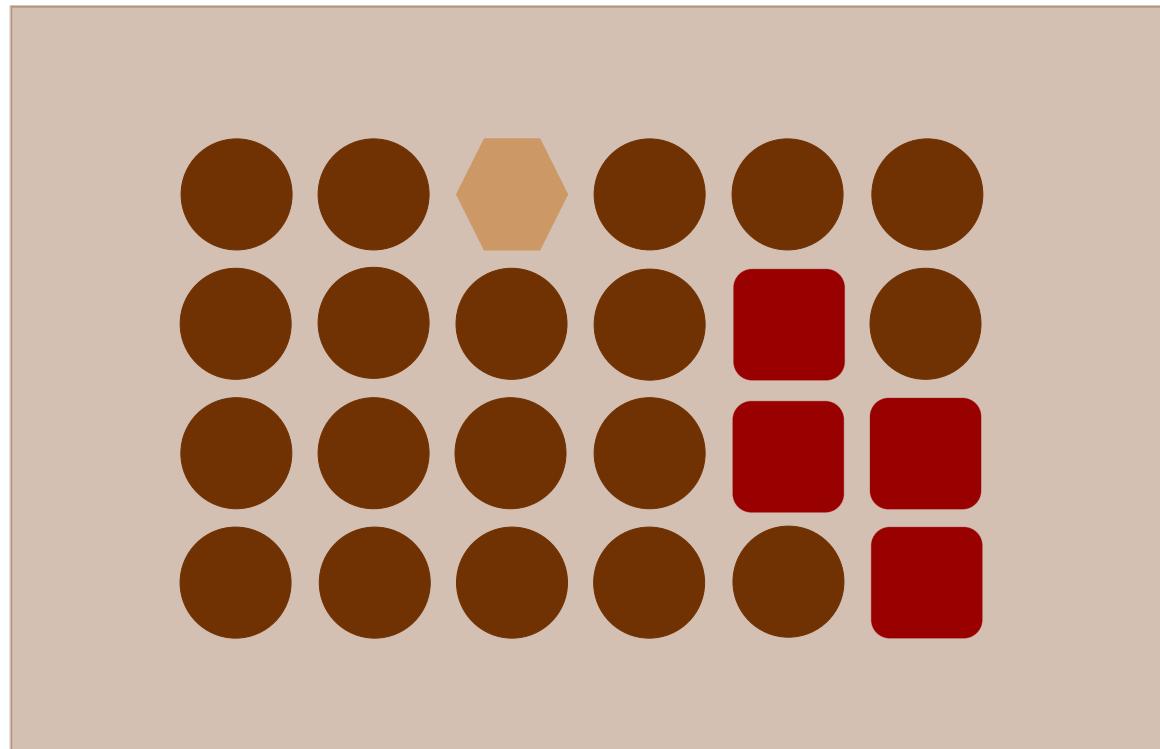


- **exclusão competitiva**
  - deriva ecológica
  - migração
  - especiação



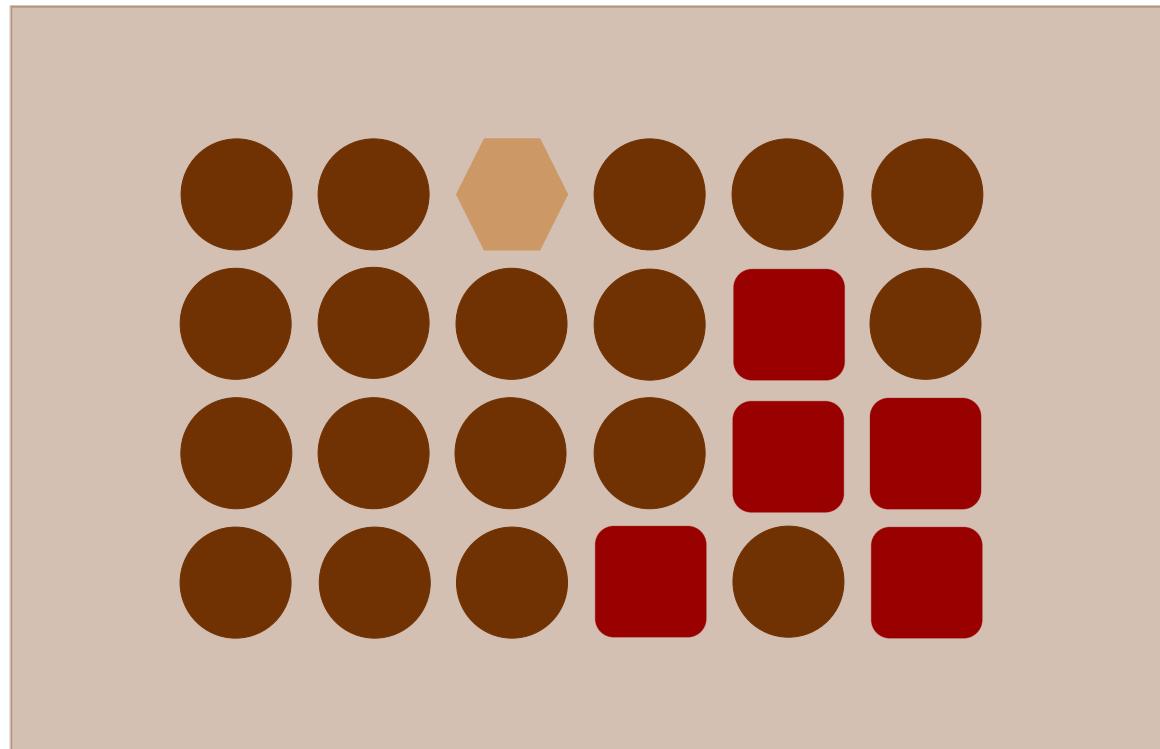
## dinâmica ecológica

- exclusão competitiva
- **deriva ecológica**
- migração
- especiação



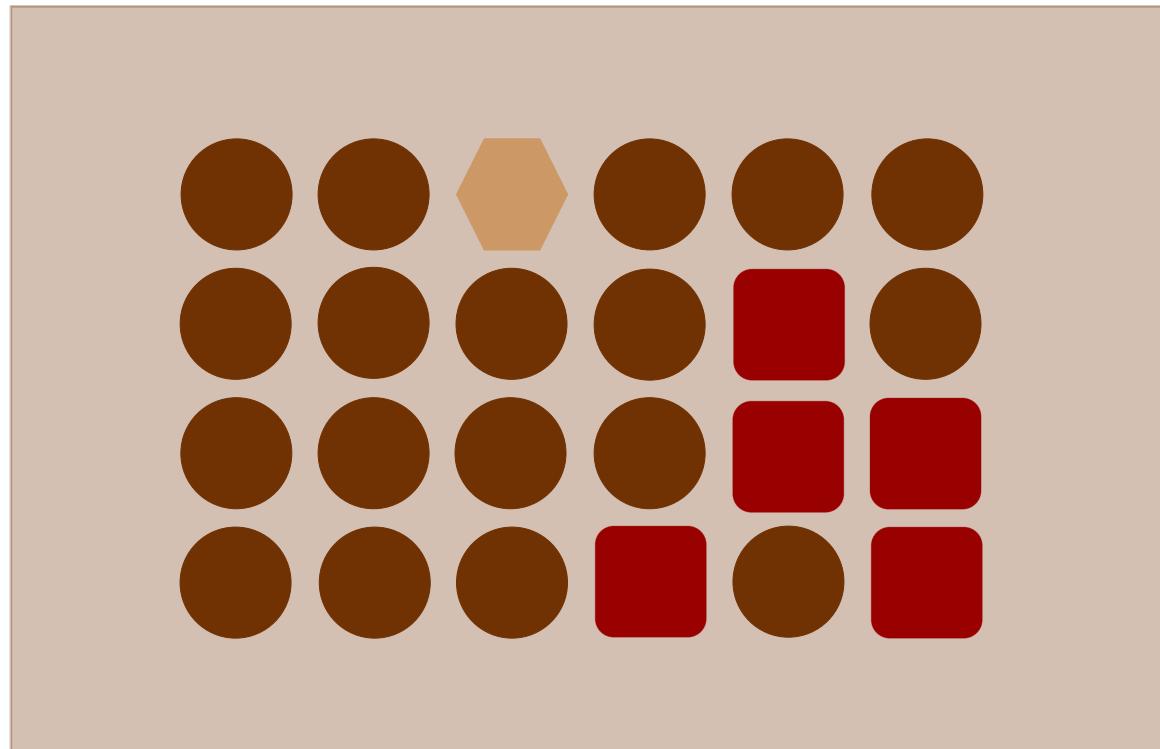
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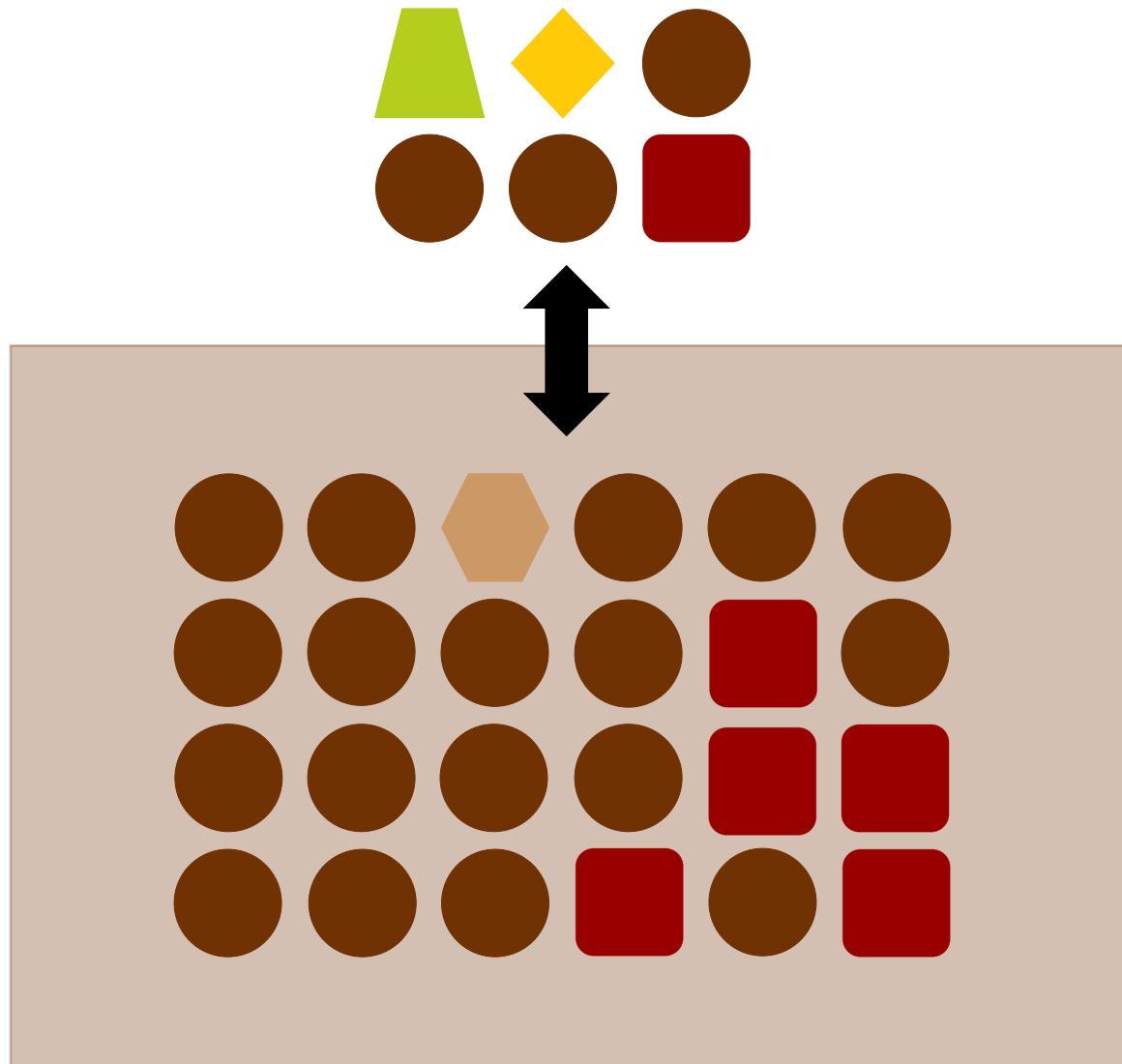
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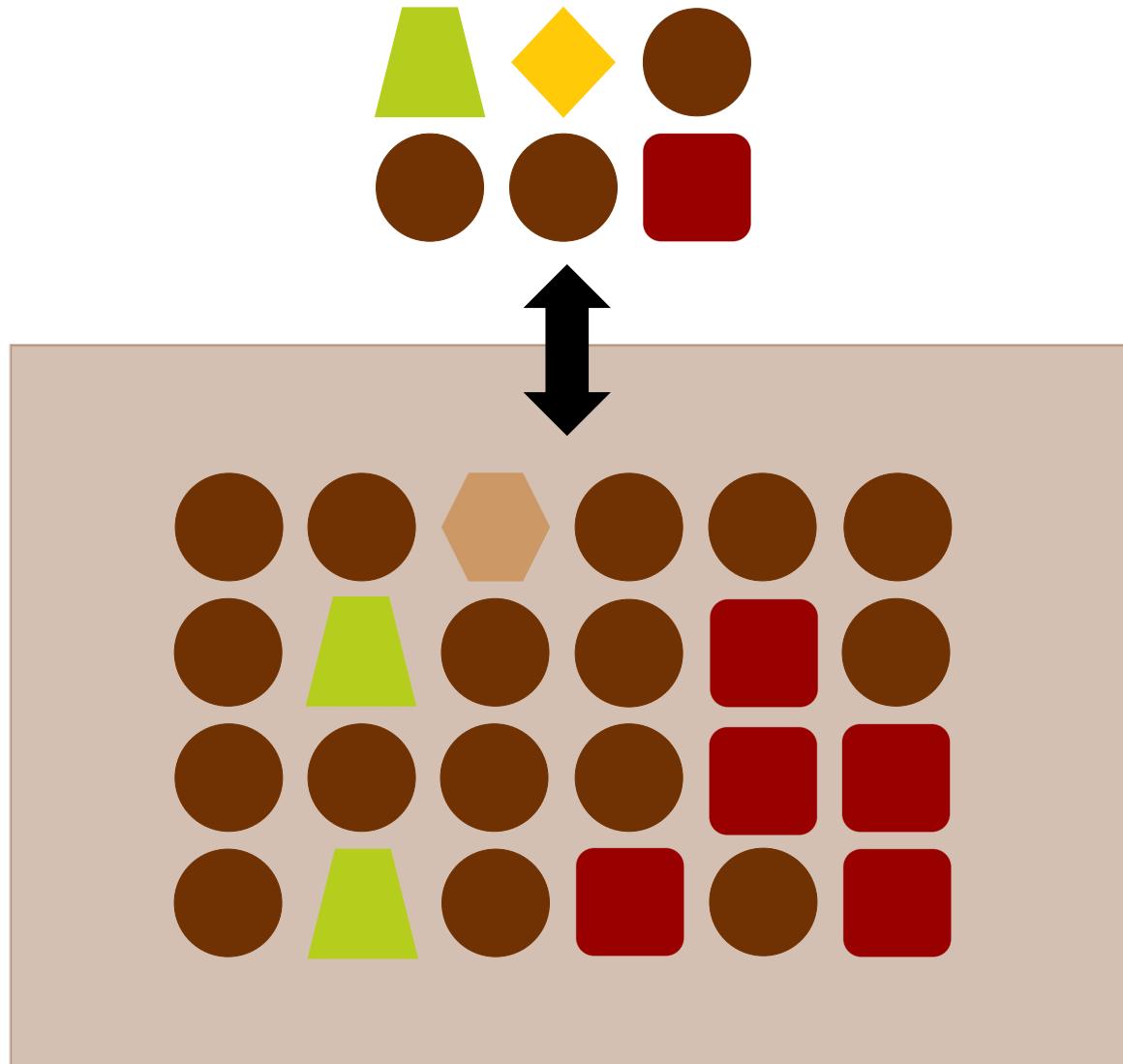
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- exclusão competitiva
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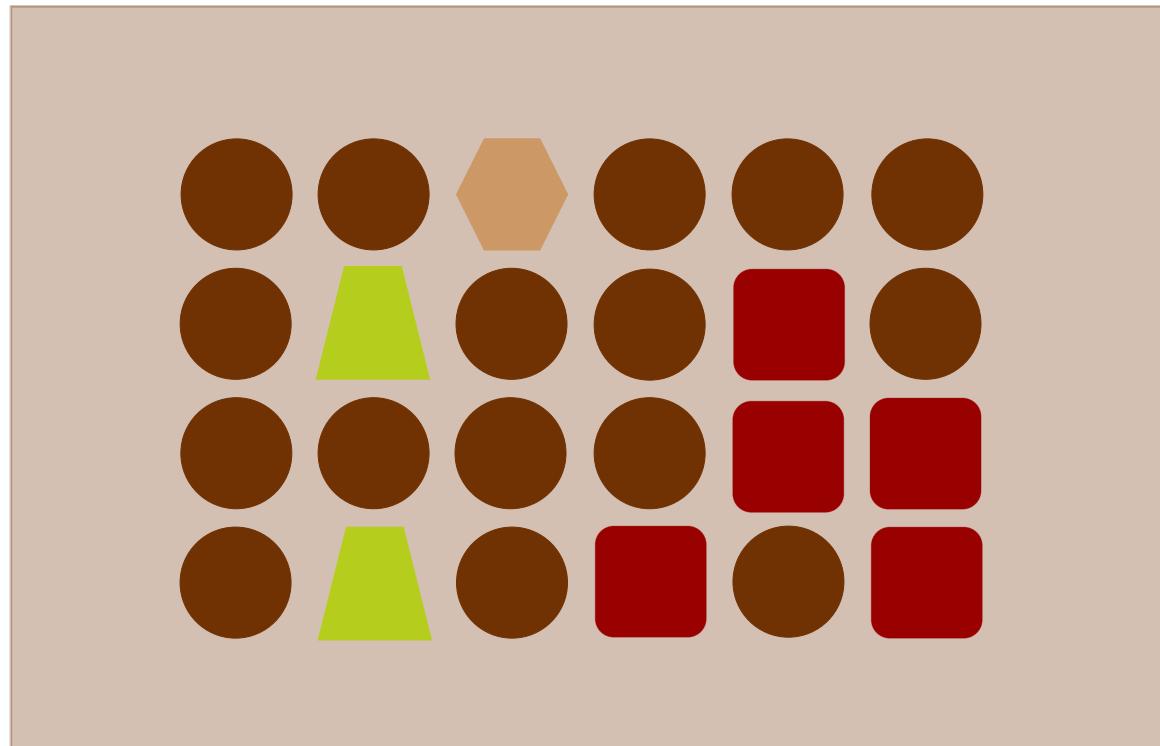
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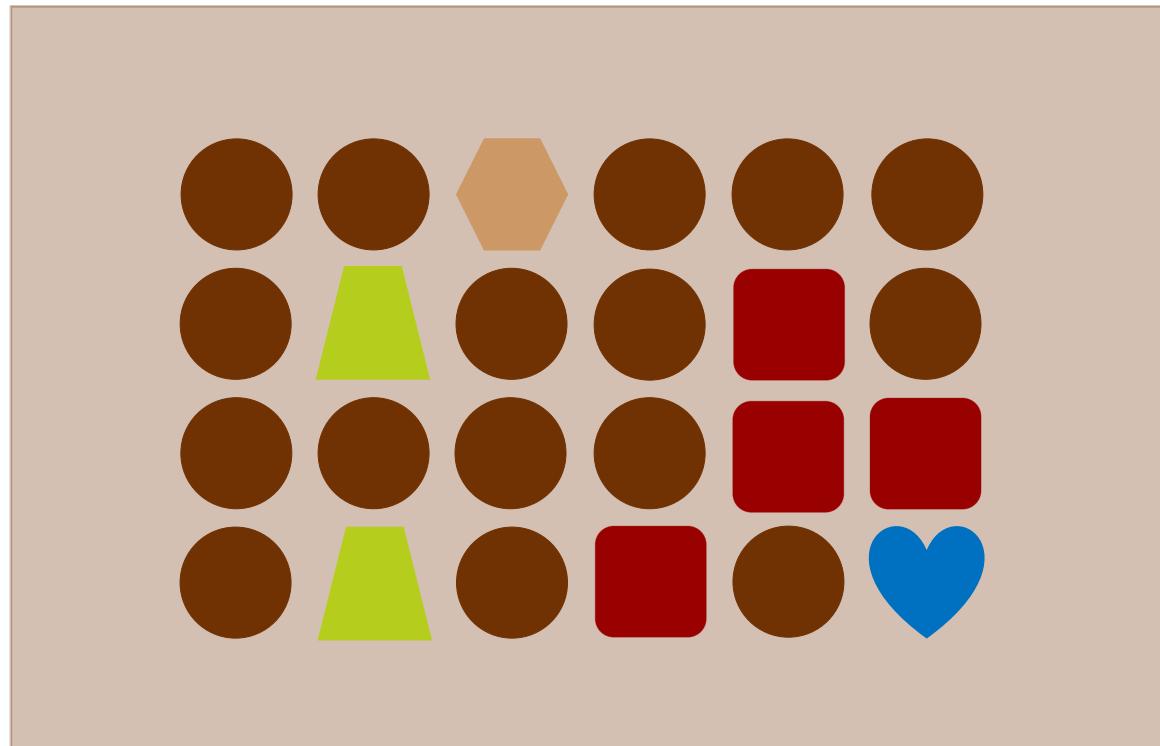
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- exclusão competitiva
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- especiação



## dinâmica ecológica

- exclusão competitiva
- deriva ecológica
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- **especiação**



## dinâmica ecológica

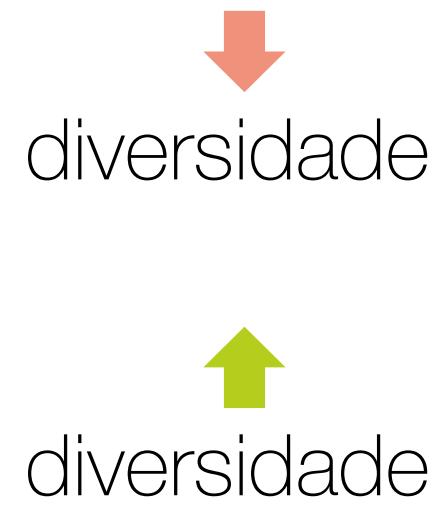
- exclusão competitiva
- deriva ecológica
- migração
- **especiação**

## dinâmica ecológica

diversidade



- exclusão competitiva
- deriva ecológica
- migração
- especiação



## dinâmica ecológica

- exclusão competitiva
- deriva ecológica
- migração
- especiação

## dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

diversidade  
↓  
diversidade  
↑

## dinâmica ecológica

- exclusão competitiva
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva



dinâmica  
ecológica

- seleção
- deriva genética
- fluxo gênico
- mutação
- exclusão competitiva
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



- seleção
- deriva genética
- fluxo gênico
- mutação
- exclusão competitiva
- deriva ecológica
- migração
- especiação



- seleção ←
- deriva genética
- fluxo gênico
- mutação
- exclusão competitiva
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



- seleção ← melhores competidores = mais aptos
- deriva genética
- fluxo gênico
- mutação
- exclusão competitiva
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



- seleção → • exclusão competitiva
- deriva genética
- deriva ecológica
- fluxo gênico
- migração
- mutação
- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



mudança nos atributos =  
mudança nas interações

- seleção
- deriva genética
- fluxo gênico
- mutação
- exclusão competitiva
- deriva ecológica
- migração
- especiação



- seleção ← → • exclusão competitiva
- deriva genética
- fluxo gênico
- mutação
- deriva ecológica
- migração
- especiação



- seleção ← → exclusão competitiva
- deriva genética ← → deriva ecológica
- fluxo gênico ← → migração
- mutação ← → especiação

dinâmica  
evolutiva

dinâmica  
ecológica

## **estratégia de vida**



## estratégia de vida

sobrevivência  reprodução

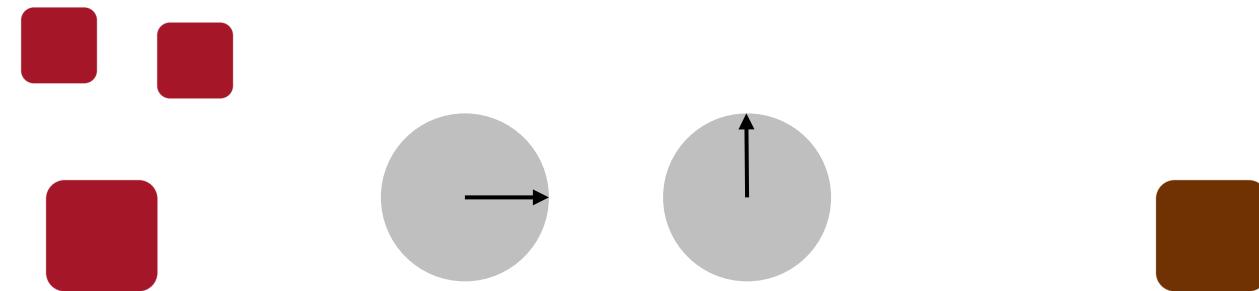
## estratégia de vida

sobrevivência ← → reprodução



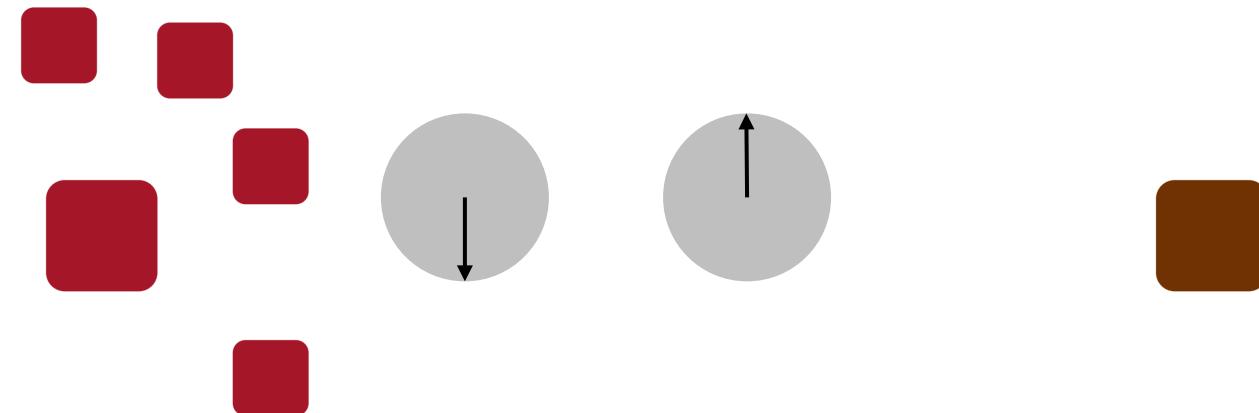
## estratégia de vida

sobrevivência ← → reprodução



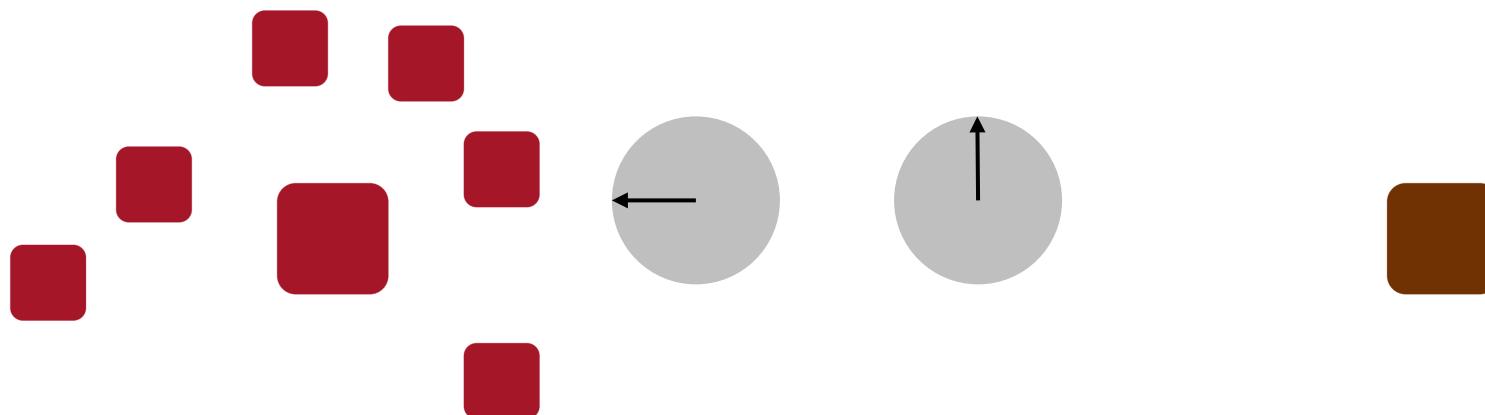
## estratégia de vida

sobrevivência ← → reprodução



## estratégia de vida

sobrevivência ← → reprodução

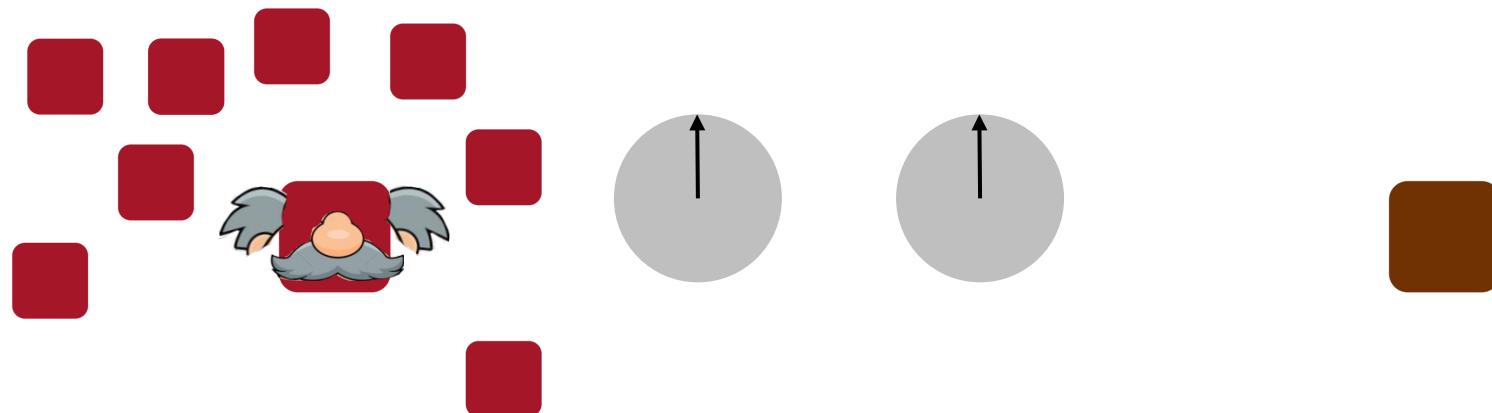


## estratégia de vida

sobrevivência



reprodução

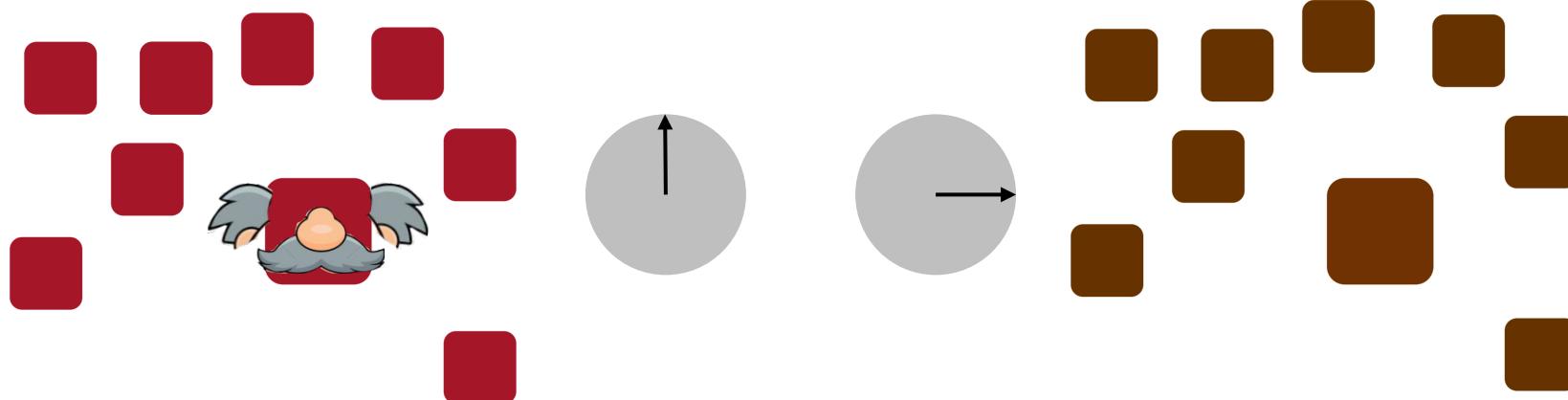


## estratégia de vida

sobrevivência



reprodução

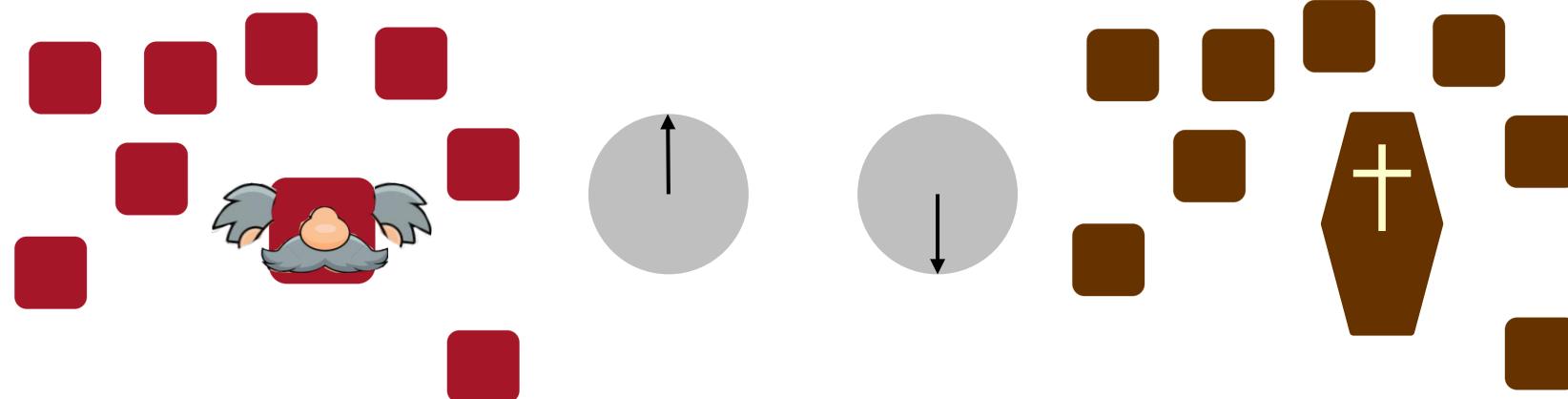


## estratégia de vida

sobrevivência



reprodução

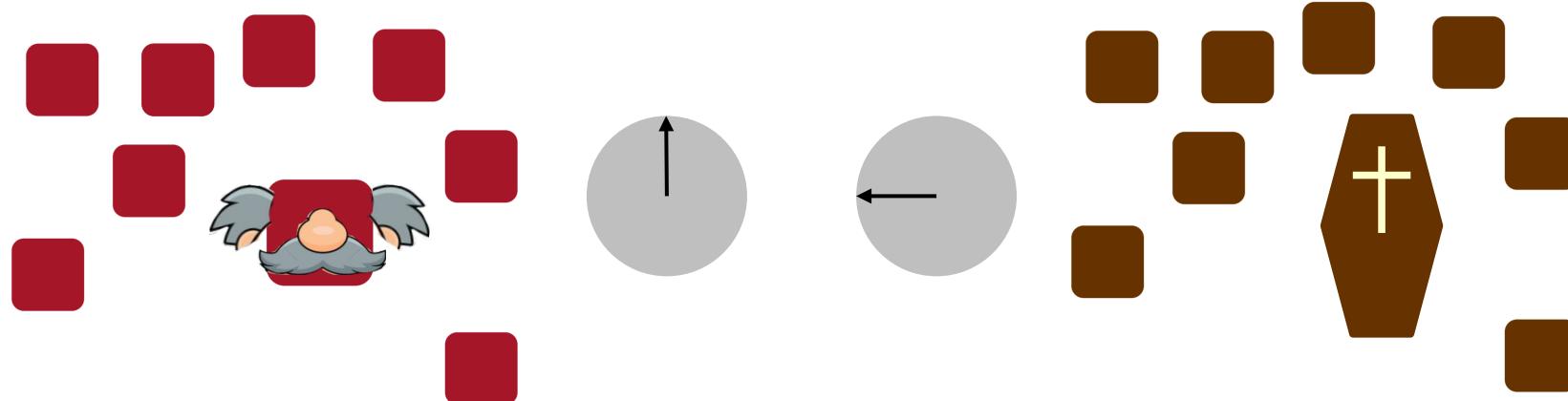


## estratégia de vida

sobrevivência



reprodução

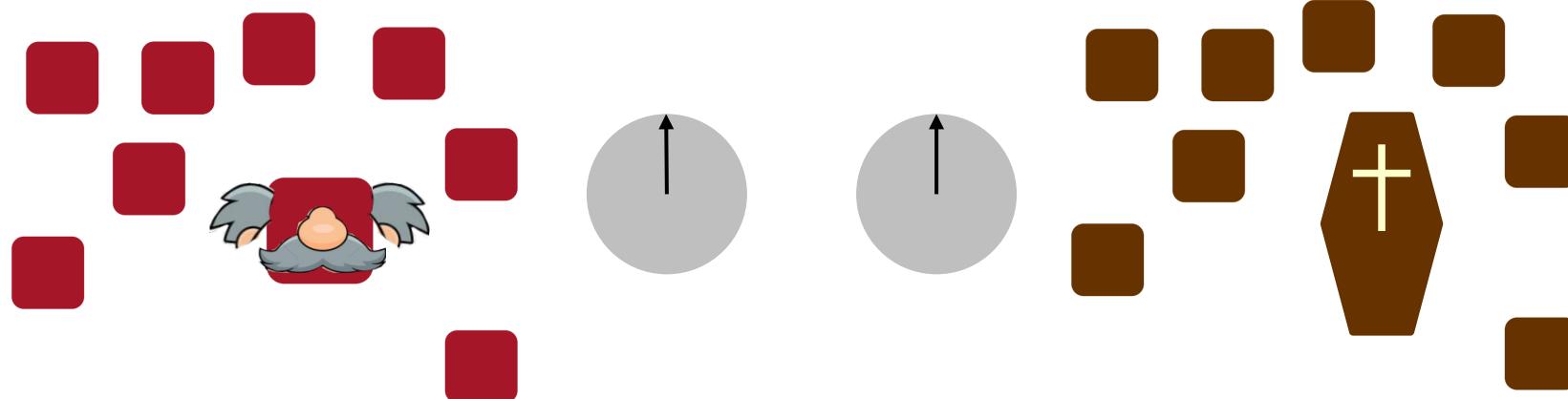


## estratégia de vida

sobrevivência



reprodução



dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



**estratégia de vida**

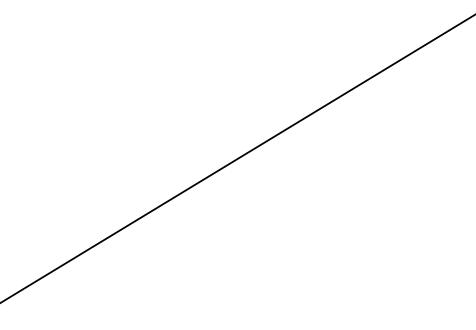
dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica

## estratégia de vida

número de  
descendentes



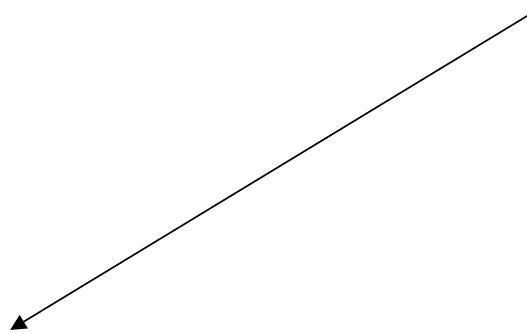
dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica

**estratégia de vida**

aptidão



dinâmica  
evolutiva

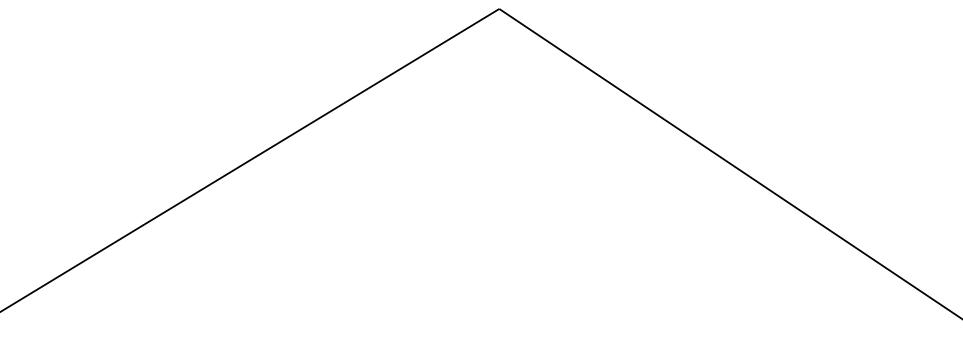
dinâmica  
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dinâmica  
ecológica

## **estratégia de vida**

aptidão

uso eficiente  
do recurso



dinâmica  
evolutiva

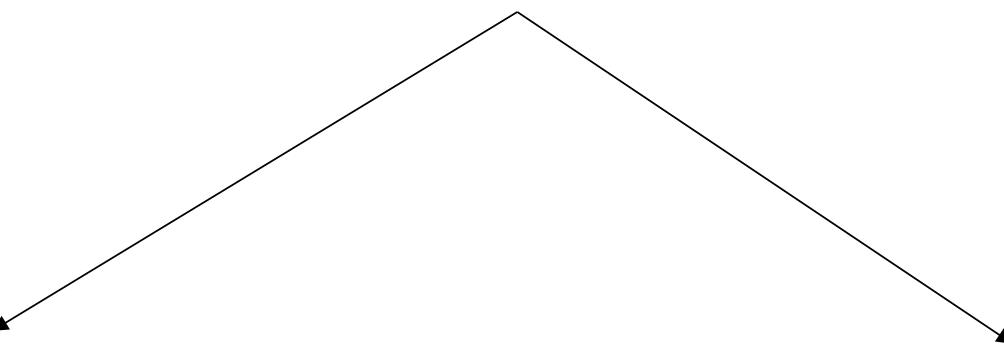
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dinâmica  
ecológica

## **estratégia de vida**

aptidão

habilidade  
competitiva

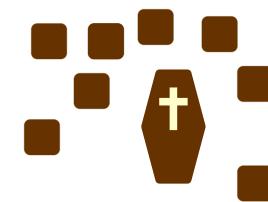


# estratégia de vida



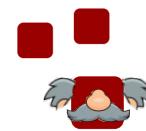
fatores ambientais





↓ recurso

reprodução



**sobrevivência**

# distúrbio



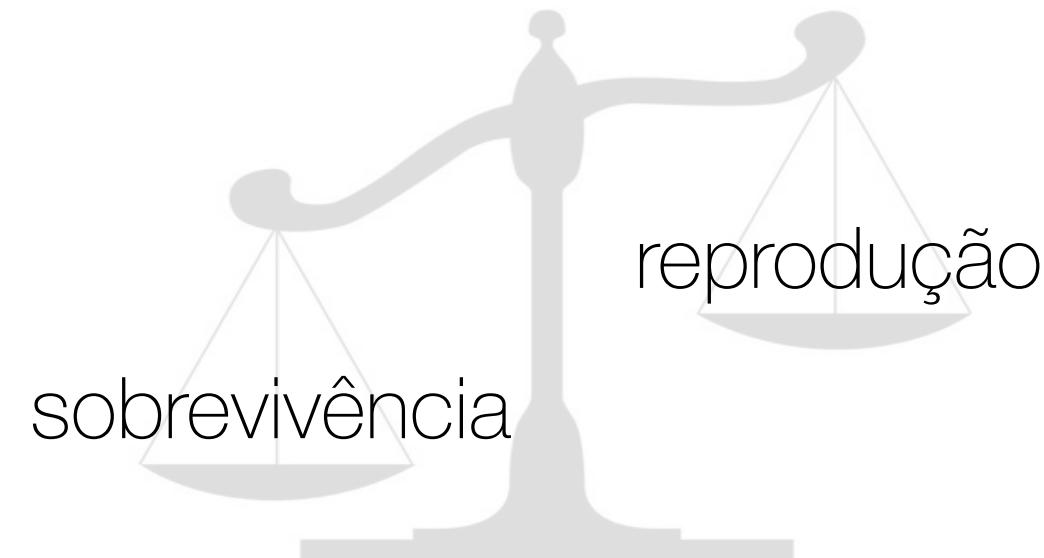
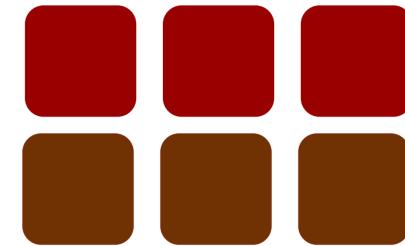
recurso



# distúrbio



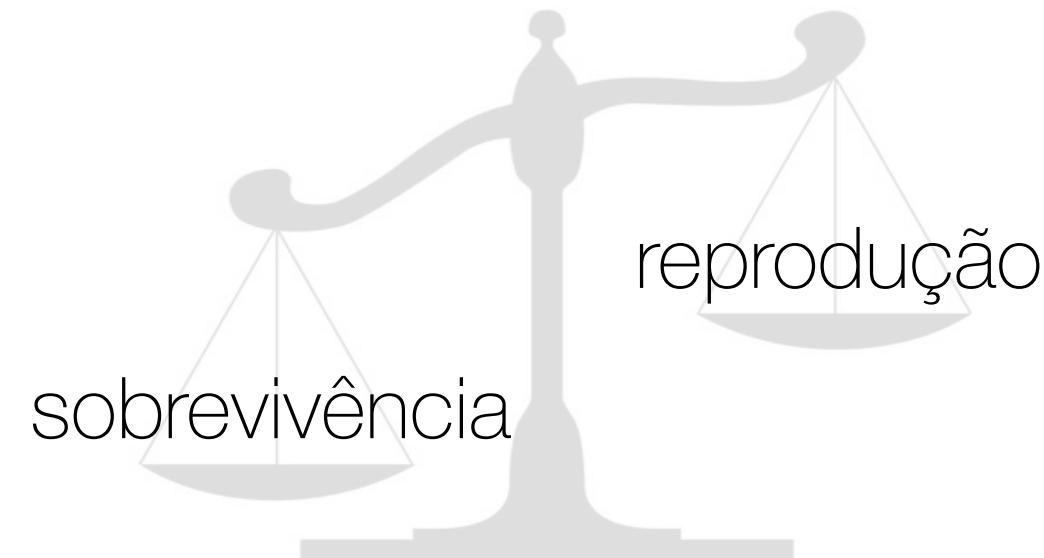
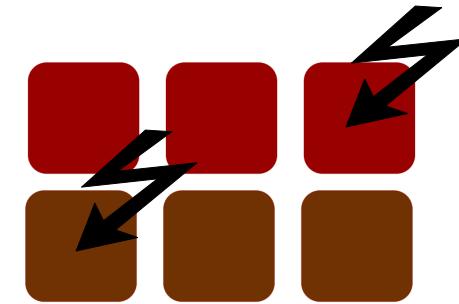
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# distúrbio



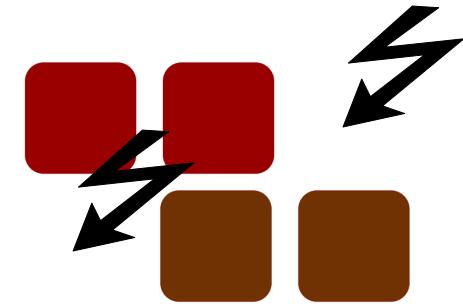
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# distúrbio



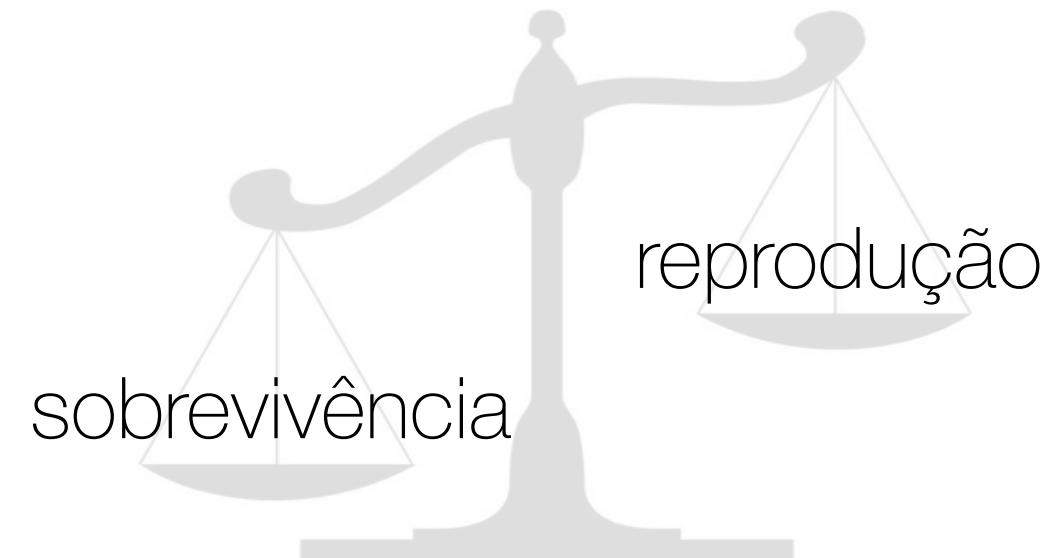
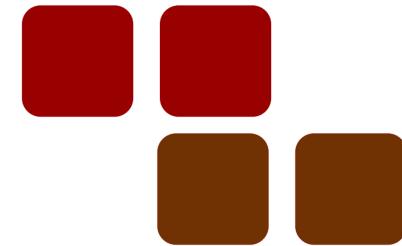
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# distúrbio



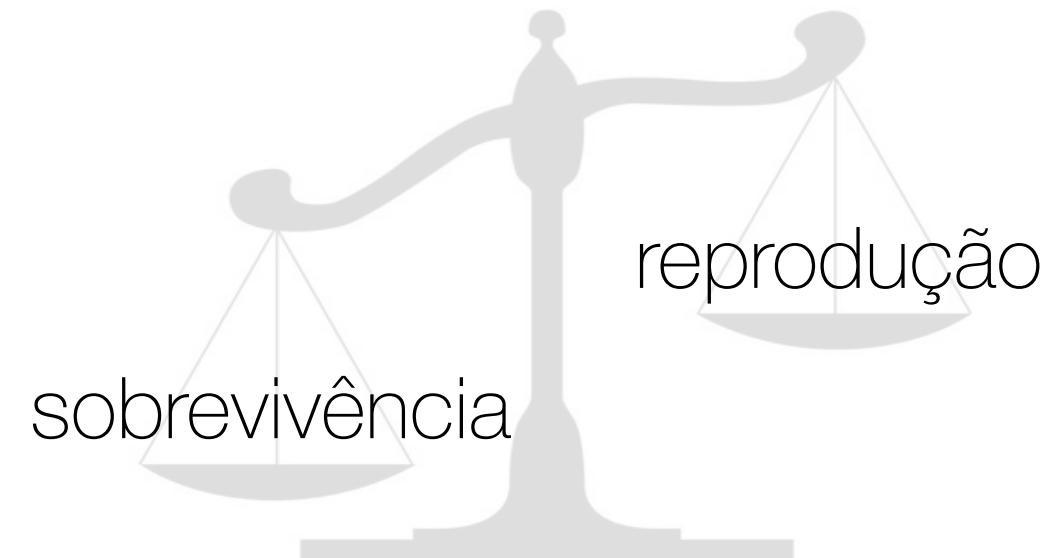
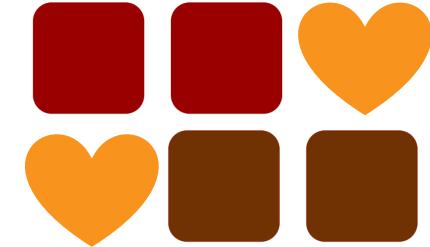
recurso



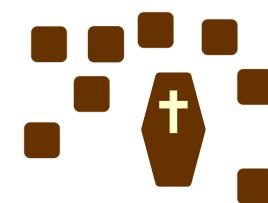
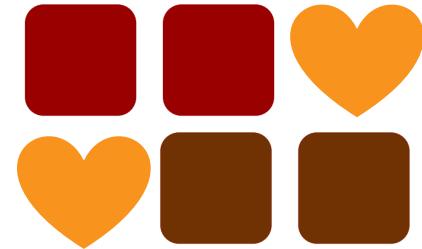
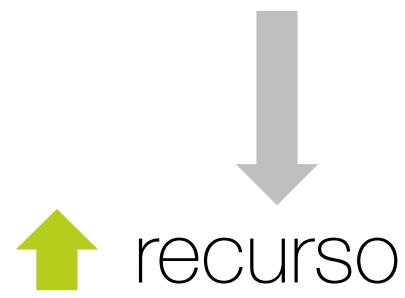
# distúrbio



recurso



# distúrbio





# **distúrbio**

- abundância
- recurso

# distúrbio

dinâmica  
evolutiva

- abundância
- recurso

dinâmica  
ecológica

# distúrbio

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

dinâmica  
ecológica

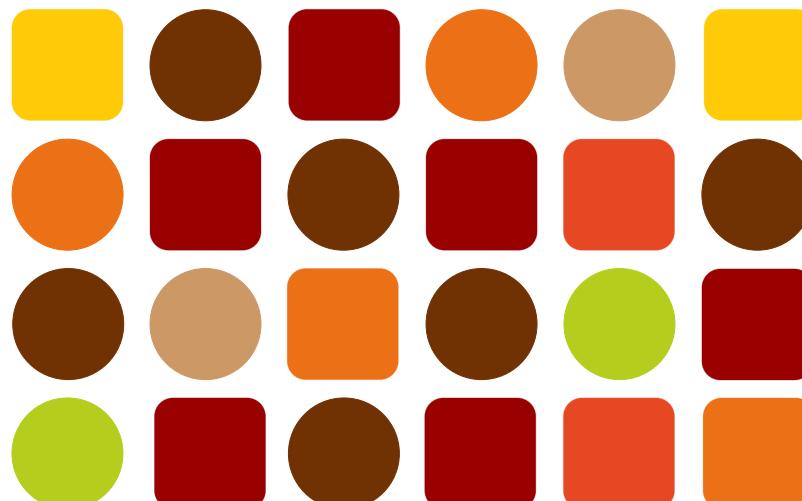
- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

- abundância
- recurso

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

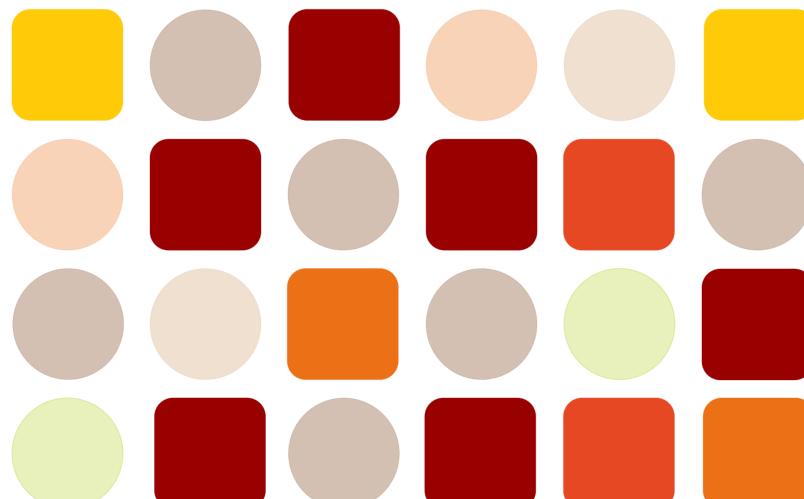


- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
ecológica

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



## distúrbio

- abundância
- recurso

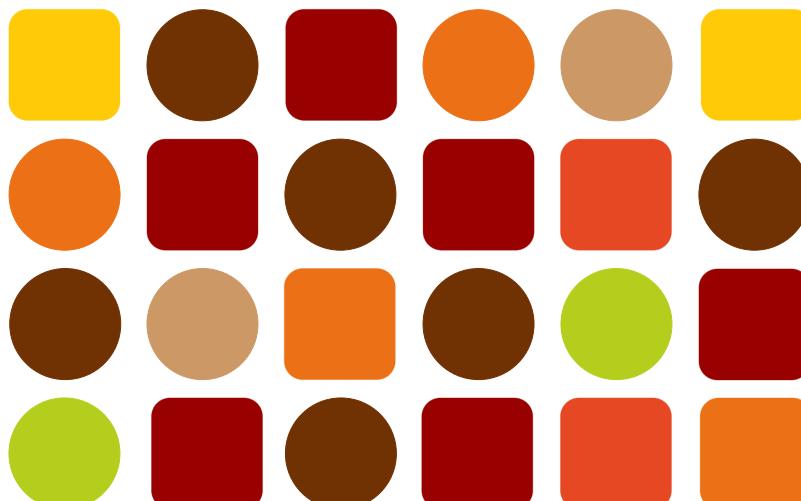
dinâmica  
ecológica

- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



- abundância
- recurso

dinâmica  
ecológica

- filtragem
- deriva ecológica
- migração
- especiação

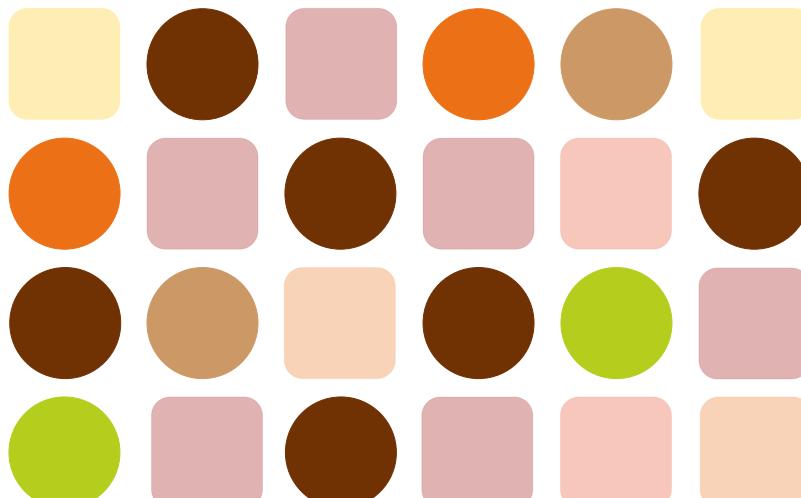
# distúrbio

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

dinâmica ecológica

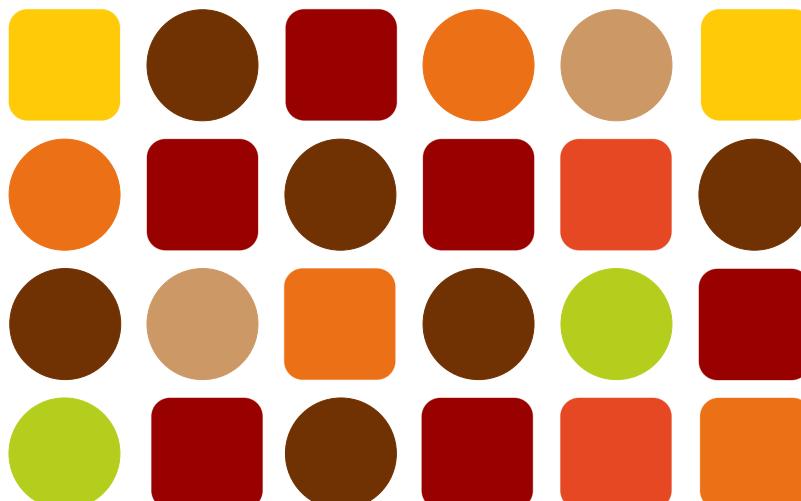


- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



- abundância
- recurso

dinâmica  
ecológica

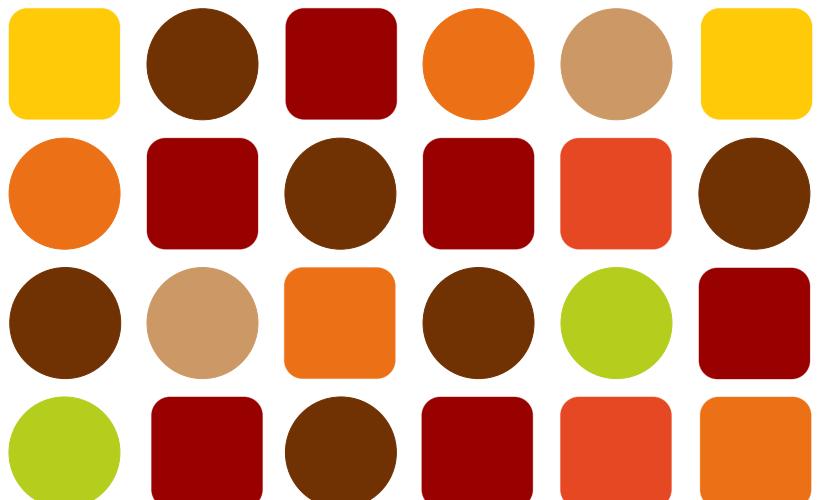
- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso



dinâmica ecológica

- filtragem
- deriva ecológica
- migração
- especiação

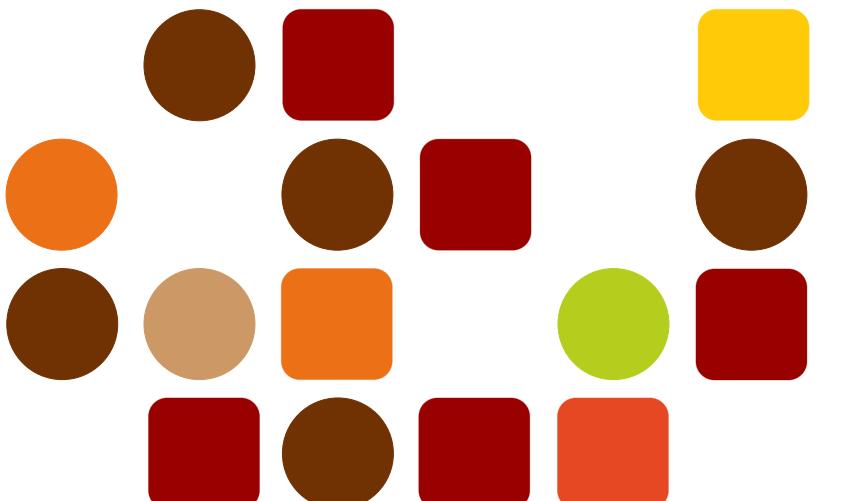
# distúrbio

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

dinâmica ecológica



- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

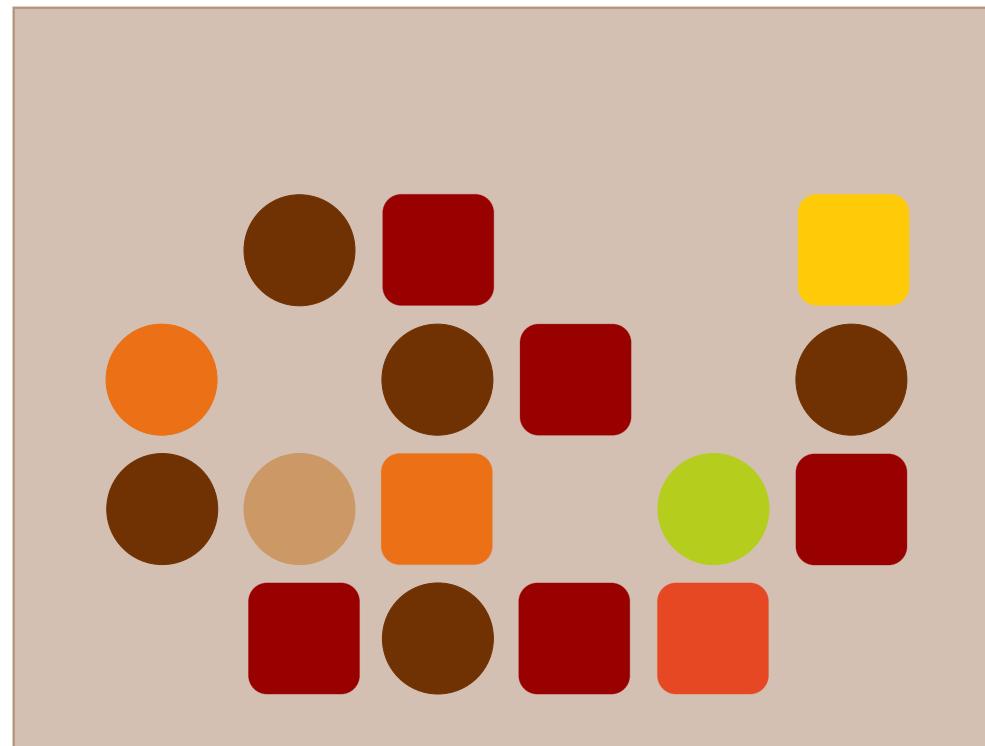
- abundância
- recurso

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

dinâmica ecológica

- filtragem
- deriva ecológica
- migração
- especiação



# distúrbio

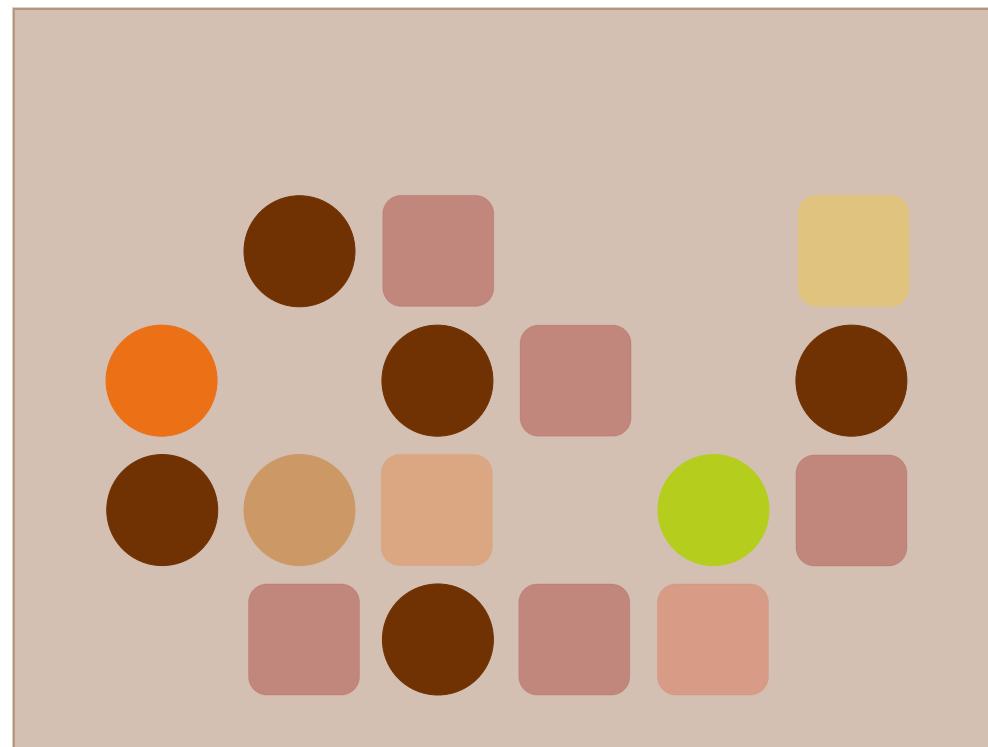
- abundância
- recurso

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

dinâmica ecológica

- filtragem
- deriva ecológica
- migração
- especiação



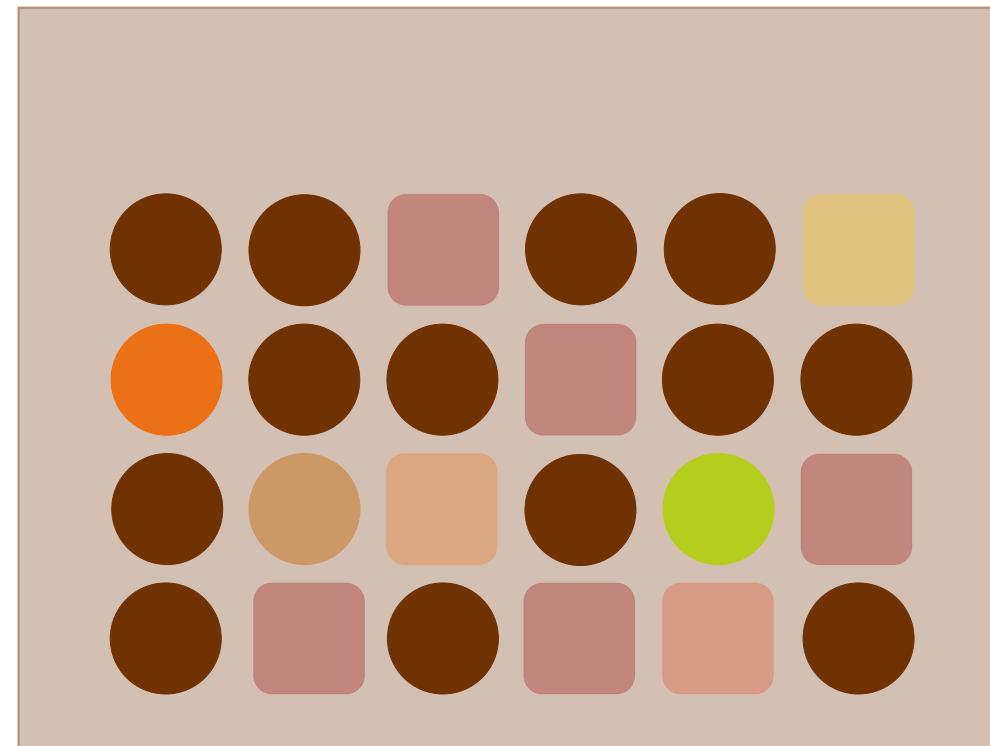
# distúrbio

- abundância
- recurso

dinâmica evolutiva

- **seleção**
- deriva genética
- fluxo gênico
- mutação

dinâmica ecológica



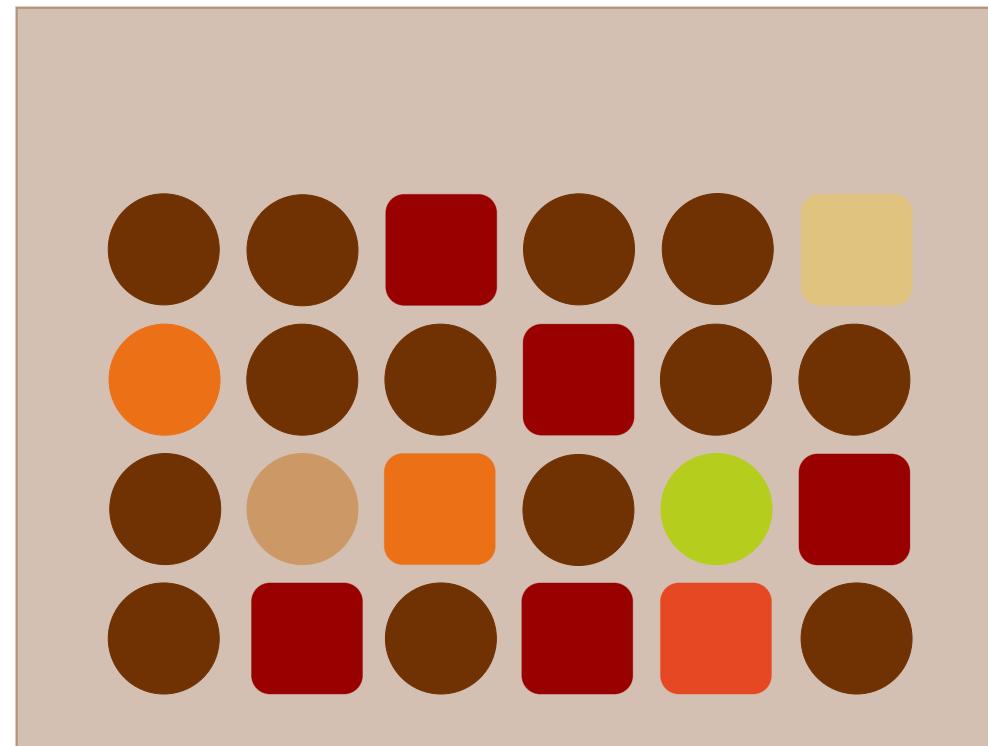
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- deriva genética
- fluxo gênico
- mutação

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

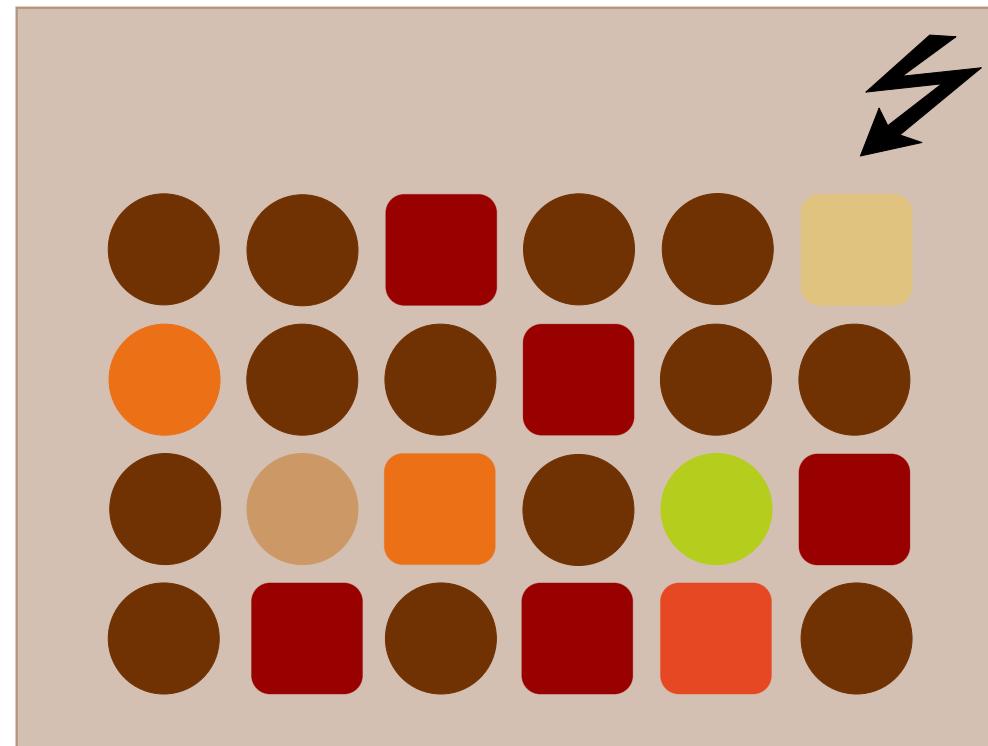
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica evolutiva

- **seleção**
- deriva genética
- fluxo gênico
- mutação

# distúrbio

- abundância
- recurso



dinâmica ecológica

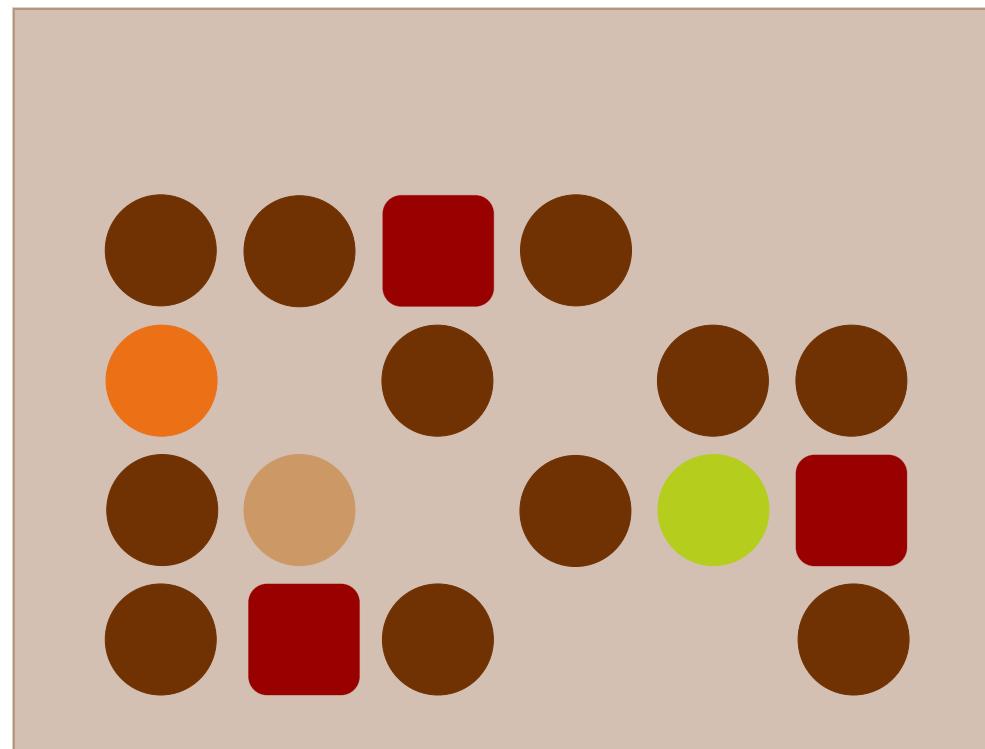
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- deriva genética
- fluxo gênico
- mutação

# distúrbio

- abundância
- recurso



dinâmica  
ecológica

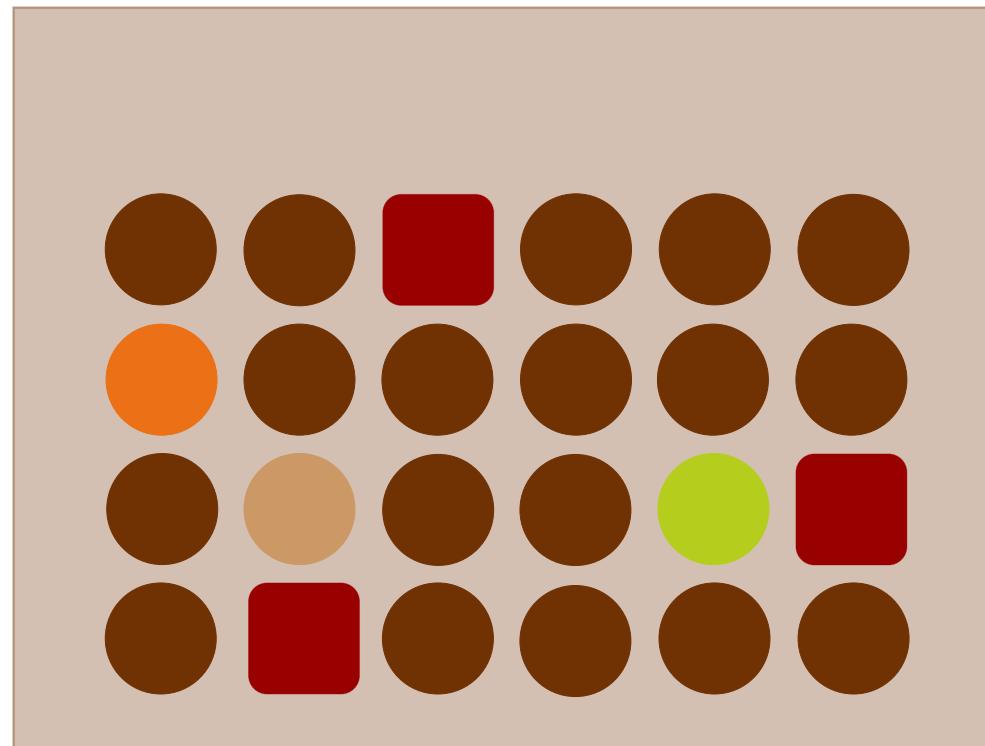
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- deriva genética
- fluxo gênico
- mutação

# distúrbio

- abundância
- recurso



dinâmica  
ecológica

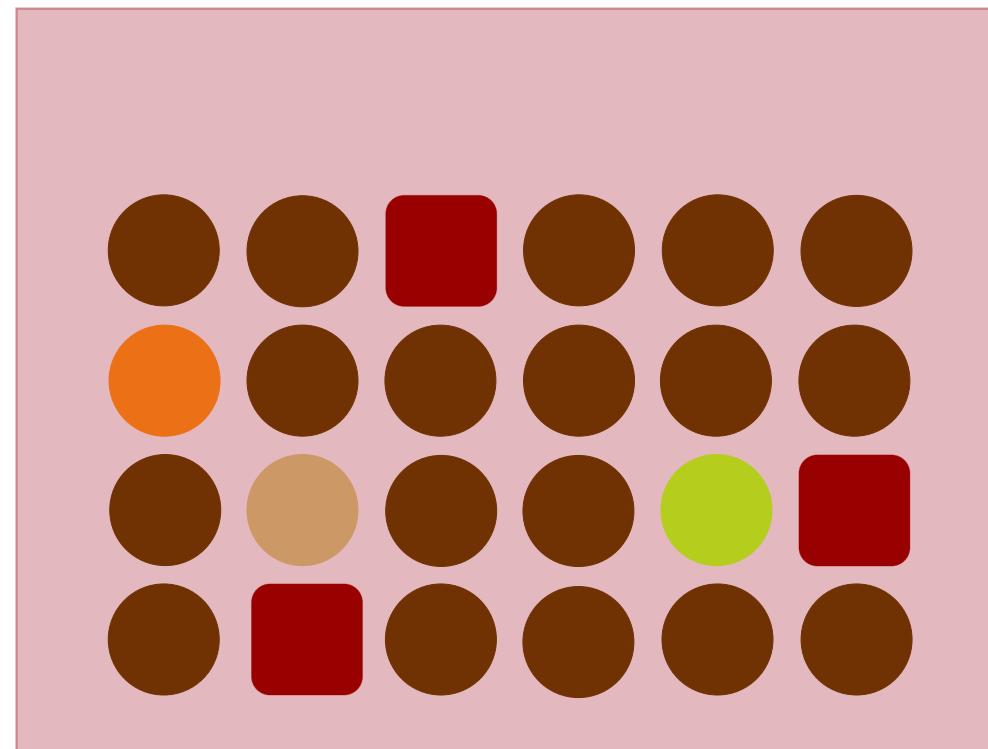
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- deriva genética
- fluxo gênico
- mutação

# distúrbio

- abundância
- recurso



dinâmica  
ecológica

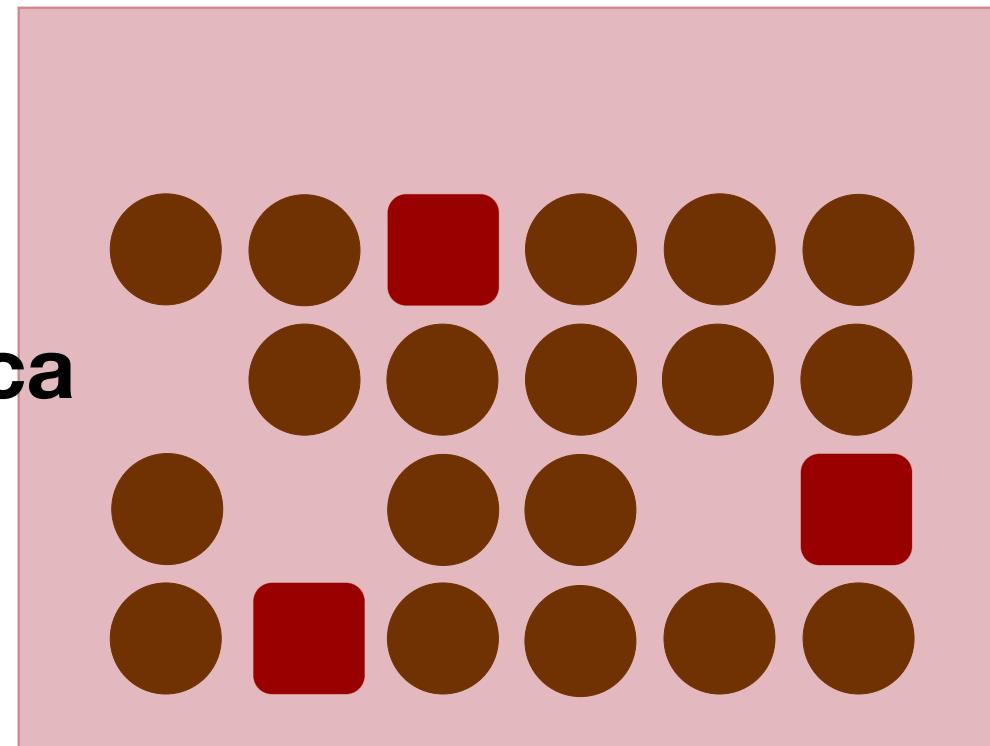
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- **deriva genética**
- fluxo gênico
- mutação

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

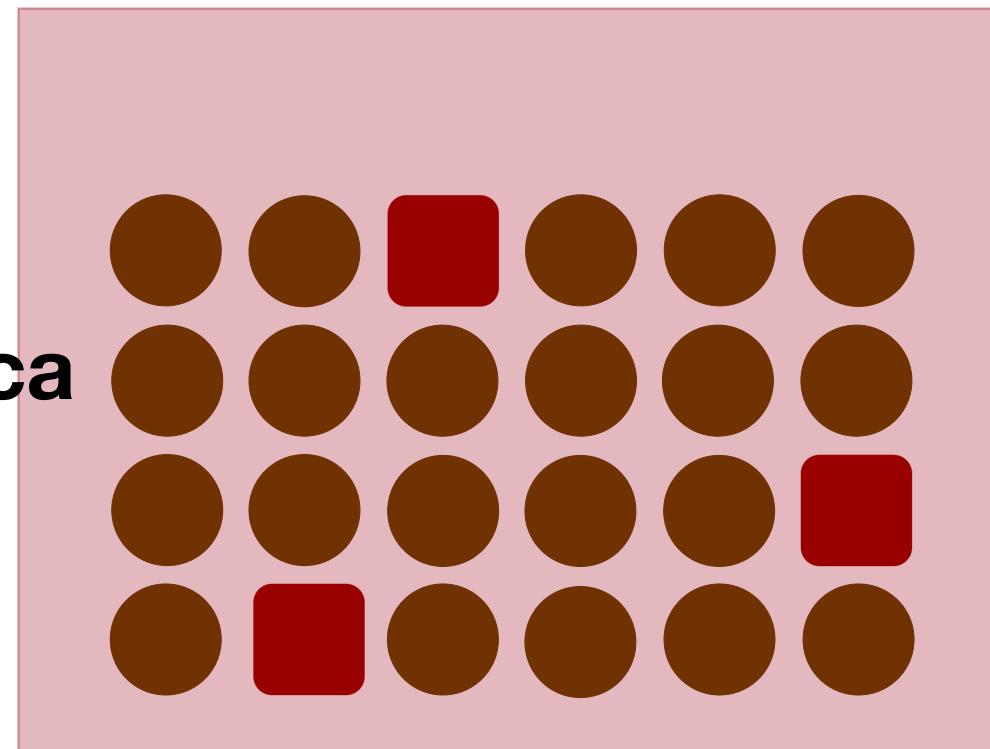
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- **deriva genética**
- fluxo gênico
- mutação

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

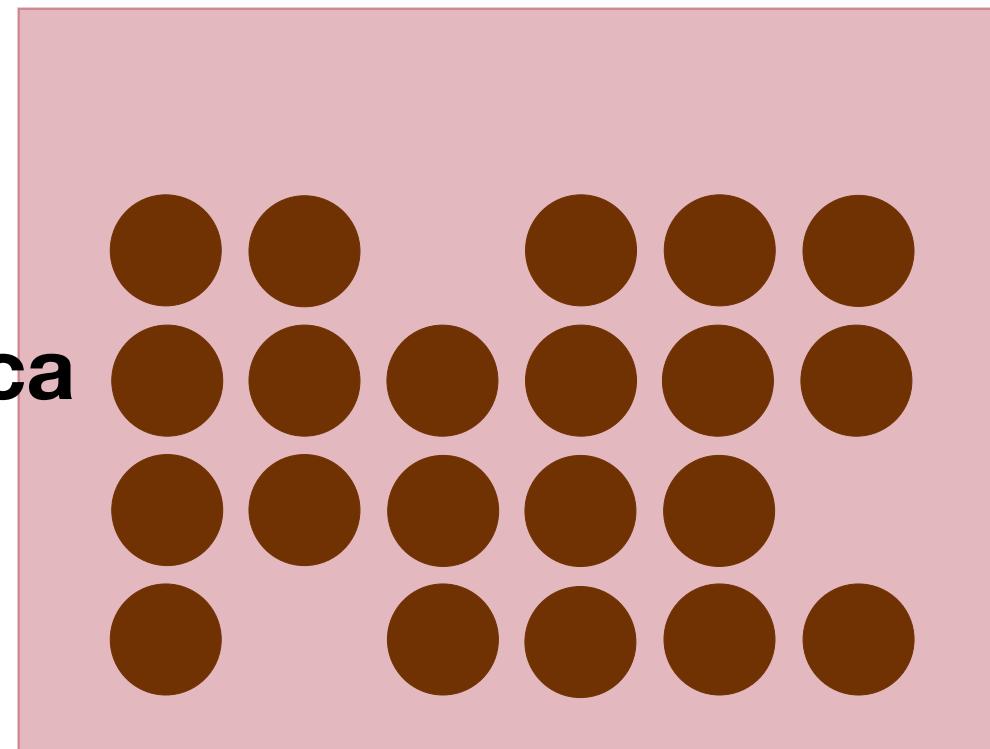
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- **deriva genética**
- fluxo gênico
- mutação

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

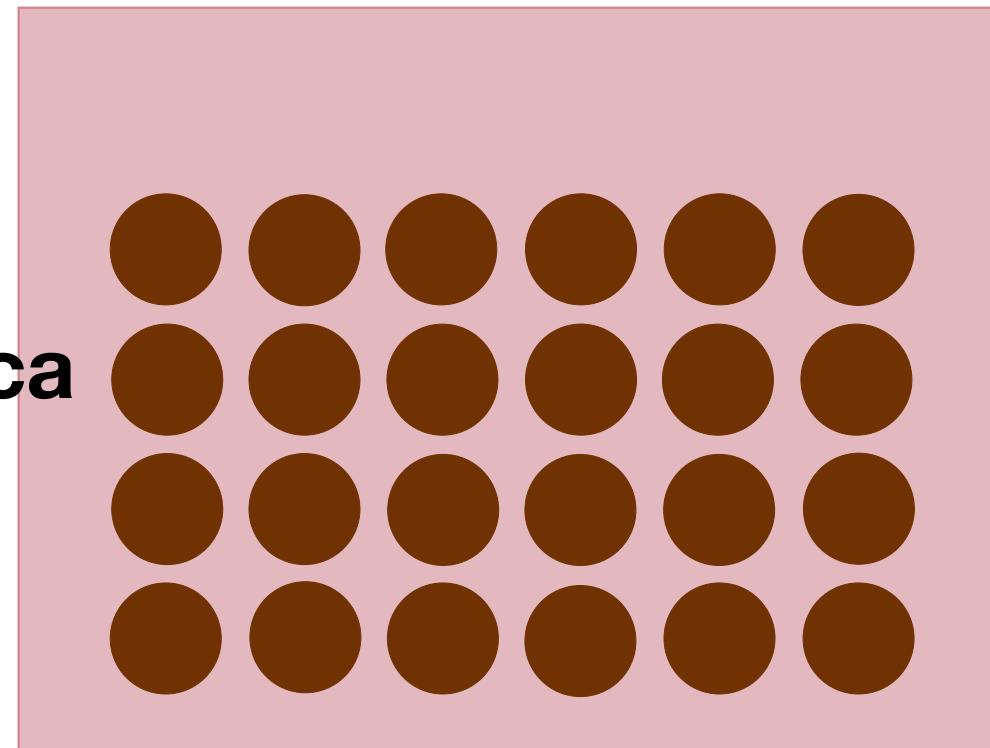
- **filtragem**
- **deriva ecológica**
- migração
- especiação

dinâmica  
evolutiva

- **seleção**
- **deriva genética**
- fluxo gênico
- mutação

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

- **filtragem**
- **deriva ecológica**
- migração
- especiação

# distúrbio

Biologia  
Evolutiva

- população
- adaptação

Ecologia de  
Comunidades

- comunidade
- exclusão competitiva  
de populações

porém...

dinâmica  
evolutiva



dinâmica  
ecológica

porém...

dinâmica  
evolutiva



dinâmica  
eco-evolutiva

dinâmica  
ecológica

porém...

dinâmica  
evolutiva



dinâmica  
eco-evolutiva

dinâmica  
ecológica

- contextos multiespecíficos
- espécies sob evolução

logo...

dinâmica  
evolutiva



dinâmica  
eco-evolutiva

dinâmica  
ecológica

logo...

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



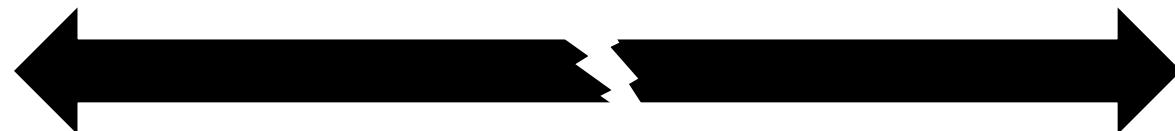
 **distúrbio**

logo...

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



 **distúrbio**

predições  
distintas e imprecisas

# Como o **distúrbio** determina

Como o **distúrbio**  determina  
as **estratégias de vida** presentes



Como o **distúrbio**  determina  
as **estratégias de vida** presentes  
  
em populações e comunidades sob **dinâmicas**

Como o **distúrbio** ⚡ determina  
as **estratégias de vida** presentes  
  
em populações e comunidades sob **dinâmicas**  
**evolutivas, ecológicas** e **eco-evolutivas?**



# modelo baseado em indivíduo

# modelo baseado em indivíduo



# modelo baseado em indivíduo

***parâmetros***

# modelo baseado em indivíduo



***parâmetros***

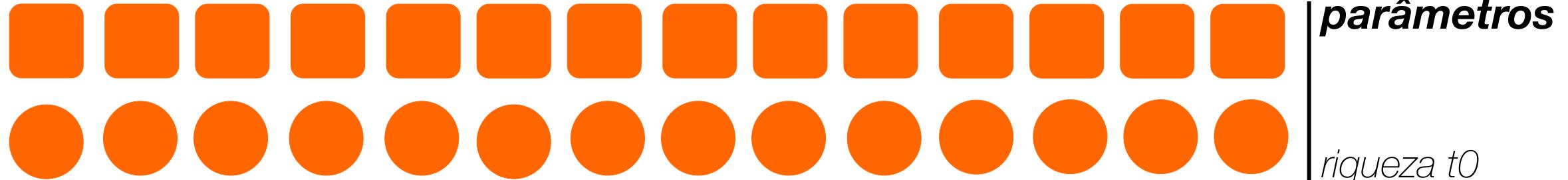
# modelo baseado em indivíduo



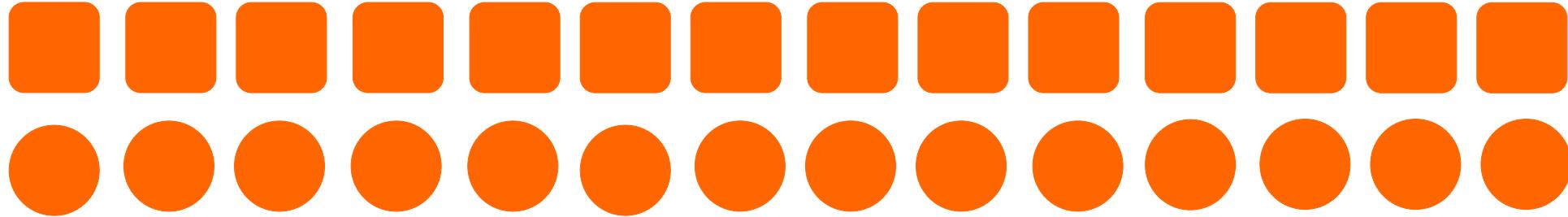
**parâmetros**

*riqueza  $t_0$*

# modelo baseado em indivíduo



# modelo baseado em indivíduo

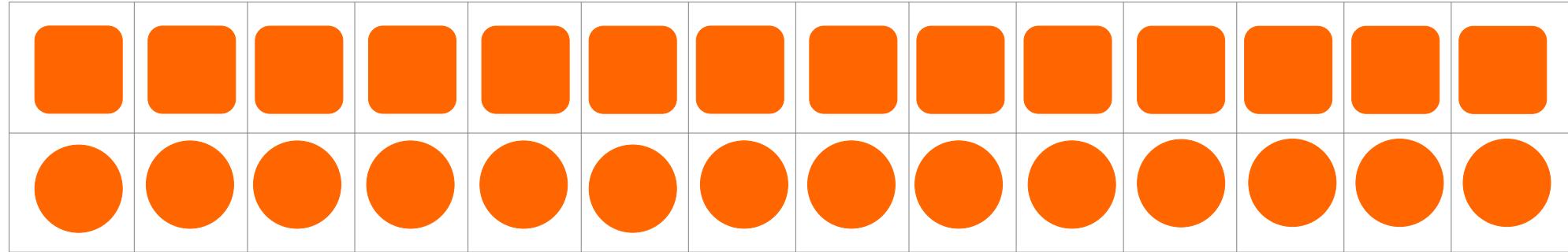


**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo

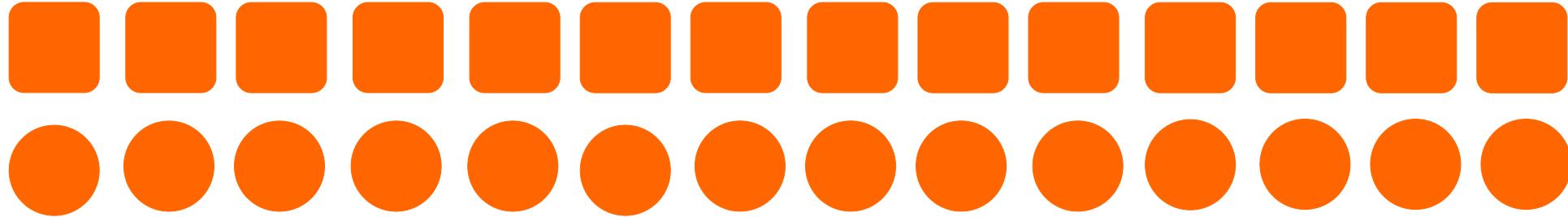


**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo

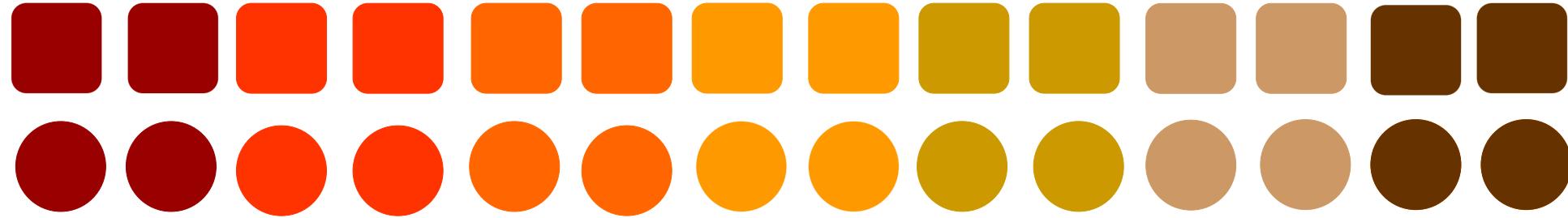


**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo



**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo



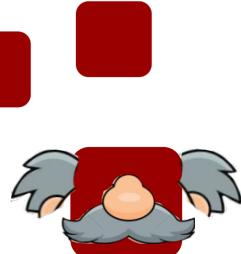
# modelo baseado em indivíduo



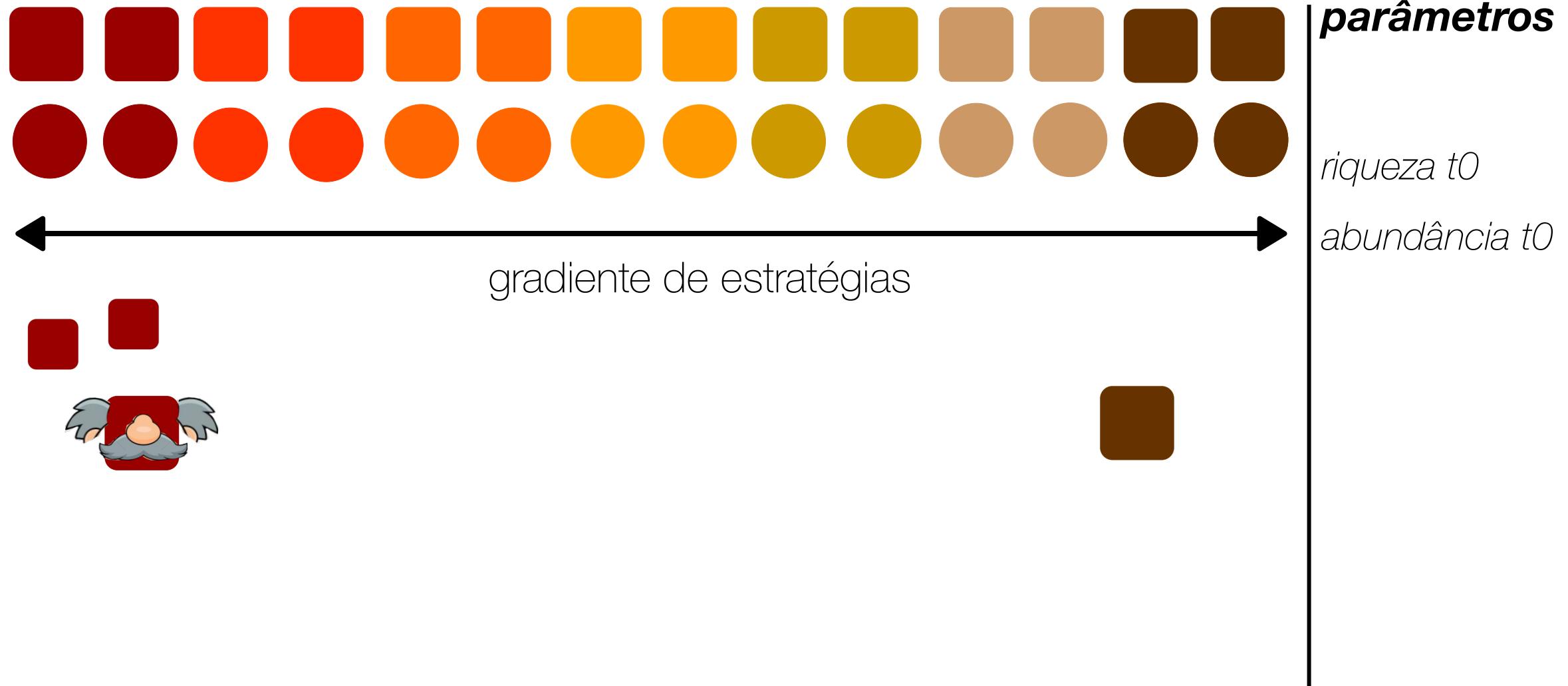
# modelo baseado em indivíduo



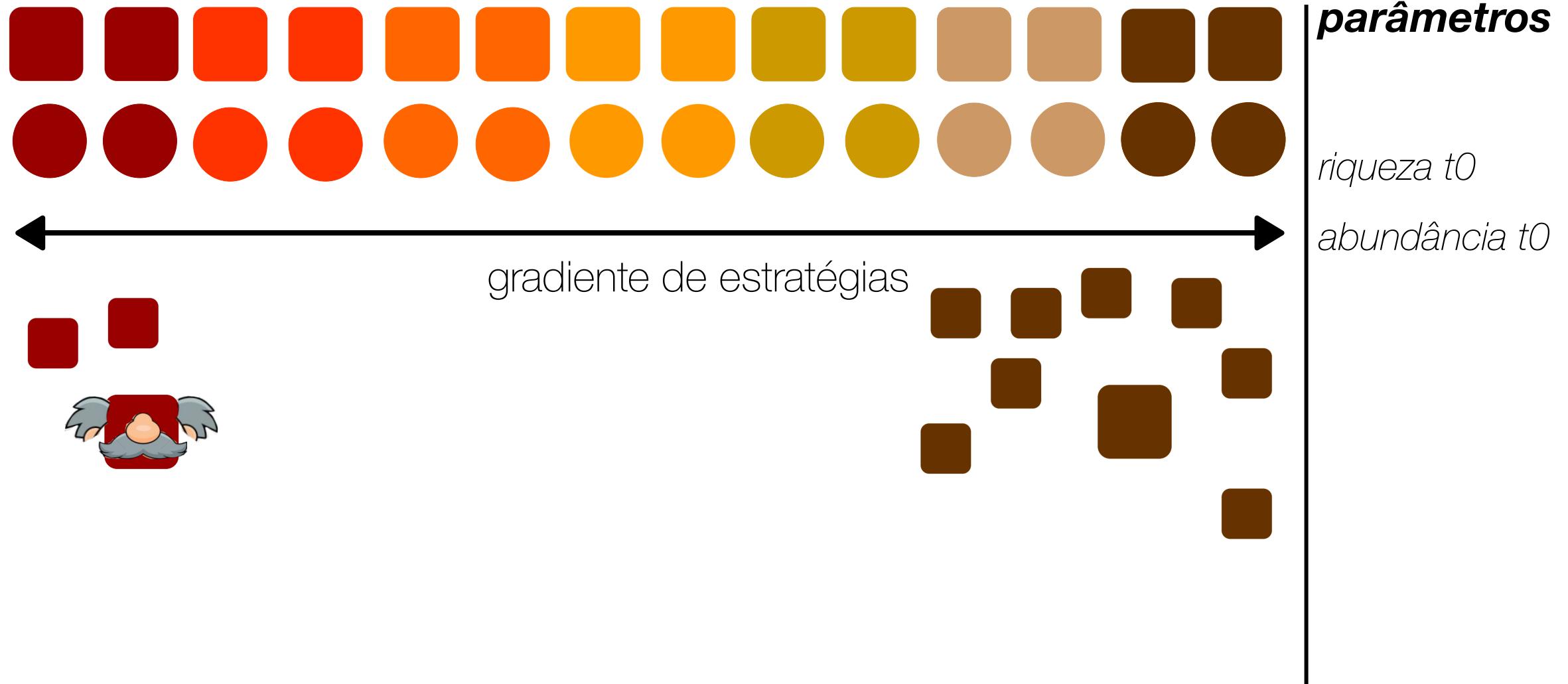
# modelo baseado em indivíduo



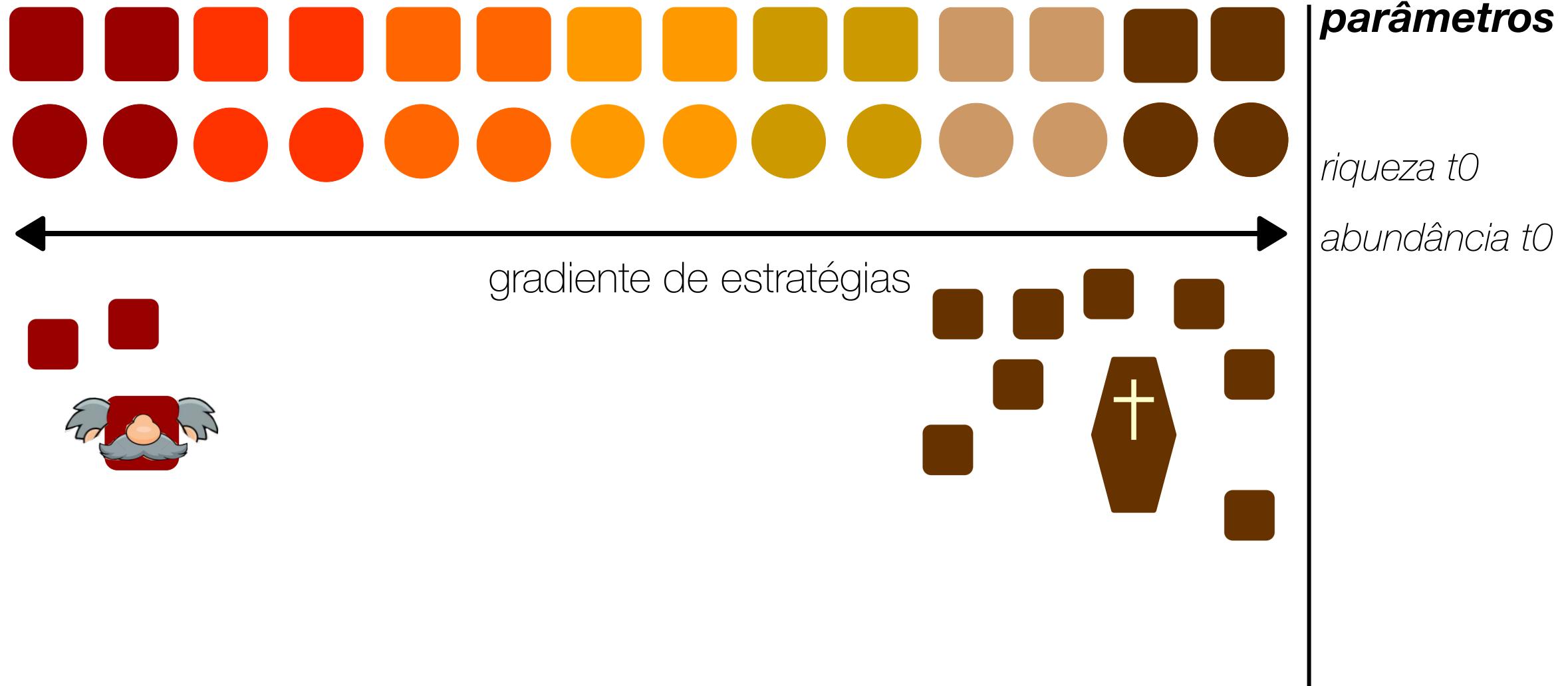
# modelo baseado em indivíduo



# modelo baseado em indivíduo



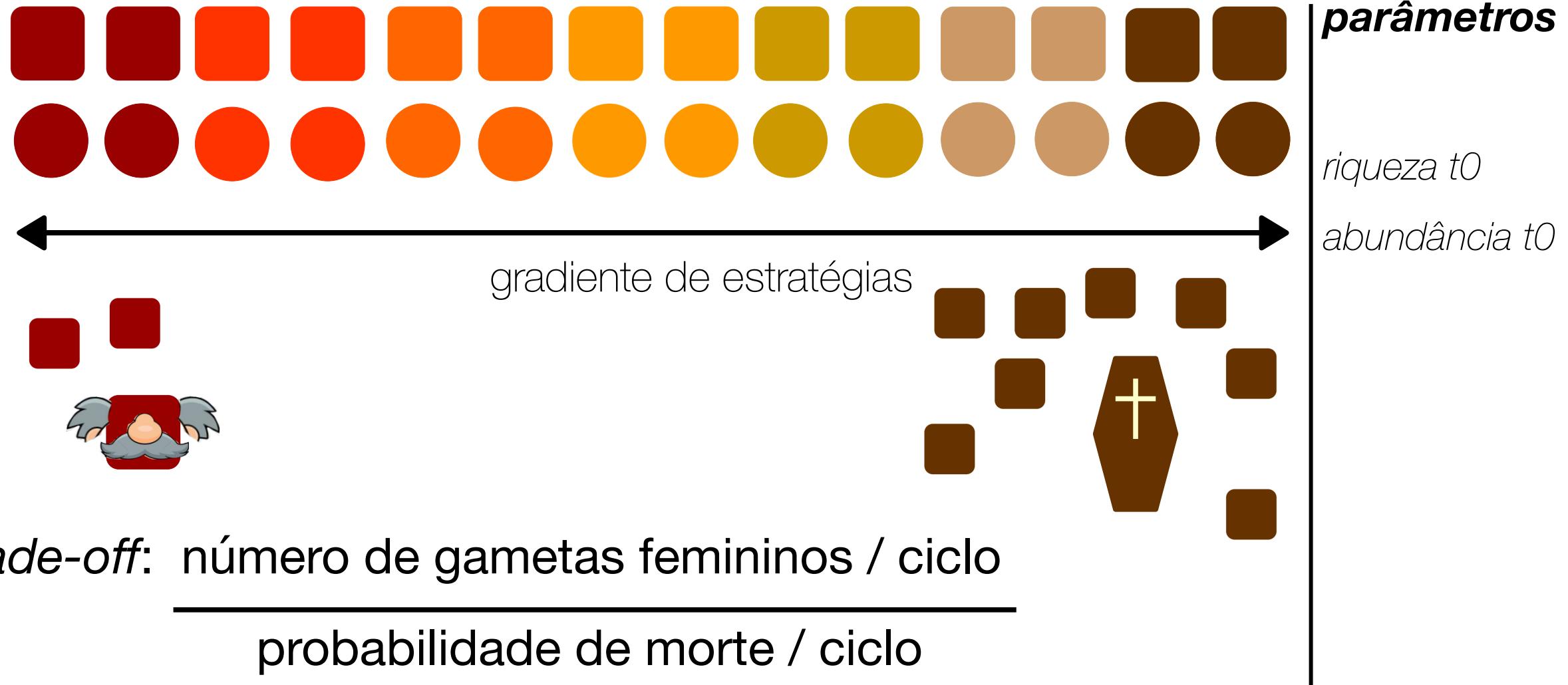
# modelo baseado em indivíduo



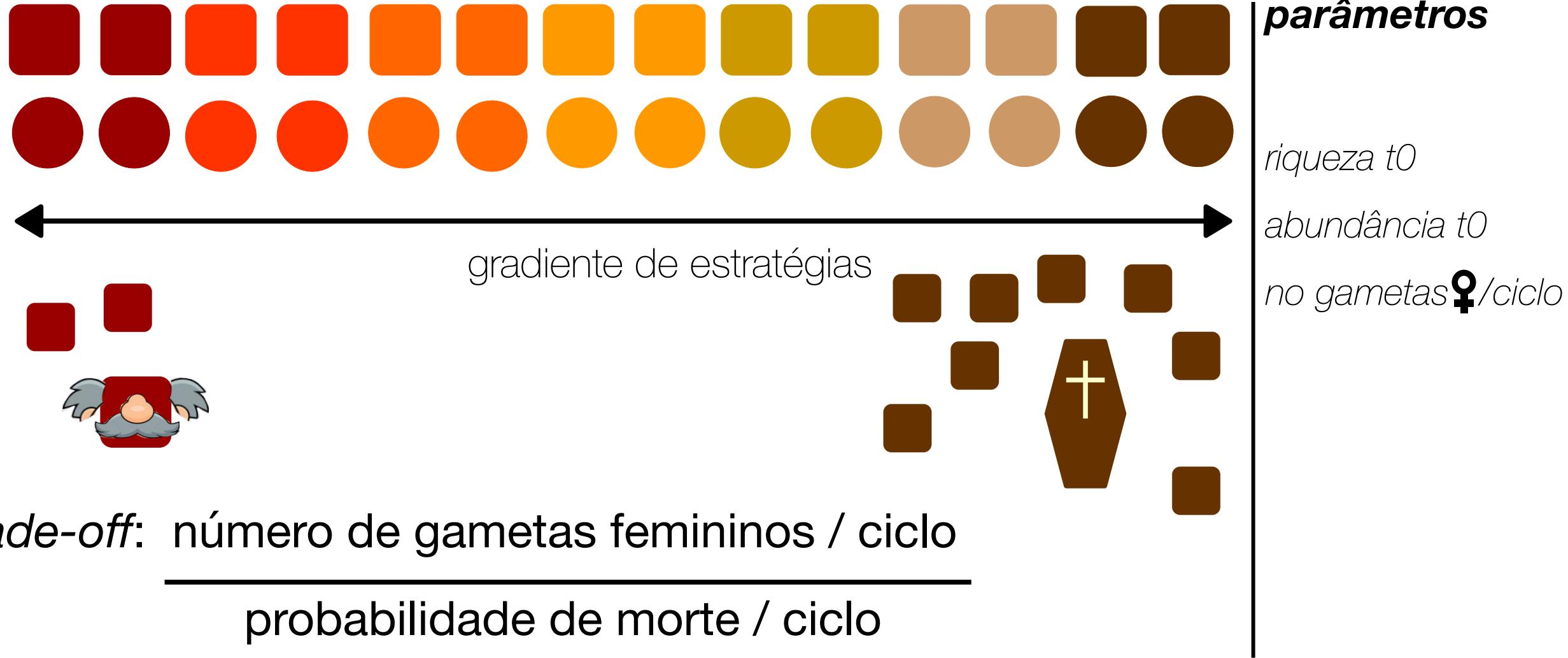
# modelo baseado em indivíduo



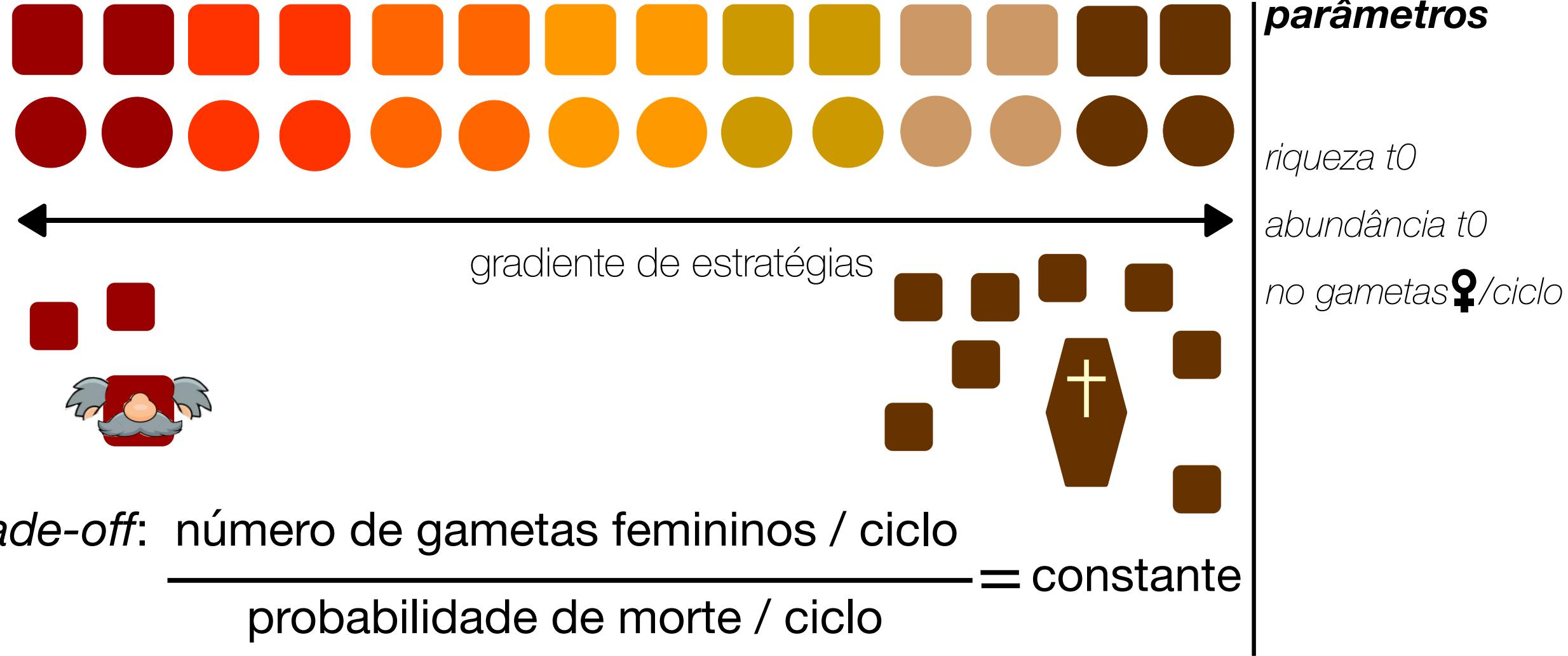
# modelo baseado em indivíduo



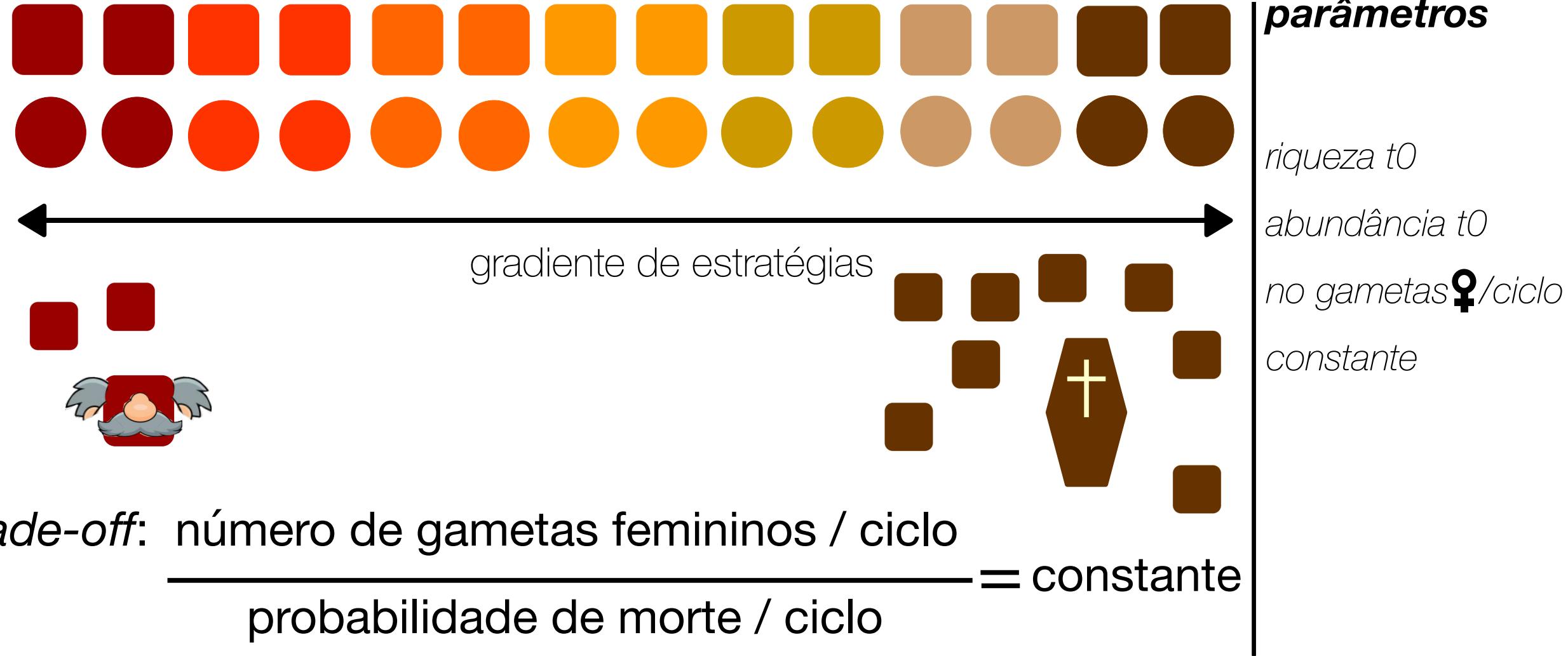
# modelo baseado em indivíduo

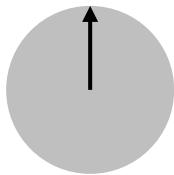


# modelo baseado em indivíduo

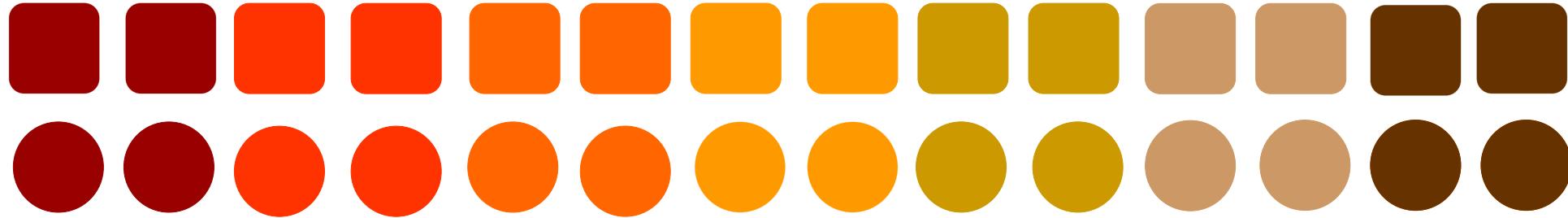


# modelo baseado em indivíduo





# modelo baseado em indivíduo



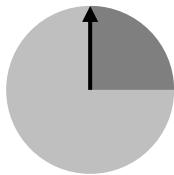
## **parâmetros**

*riqueza  $t_0$*

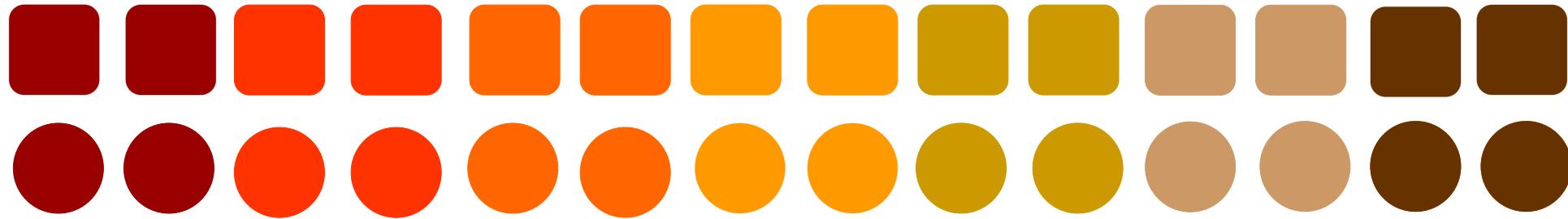
*abundância  $t_0$*

*no gametas ♀/ciclo*

*constante*



# modelo baseado em indivíduo



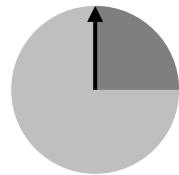
## **parâmetros**

*riqueza  $t_0$*

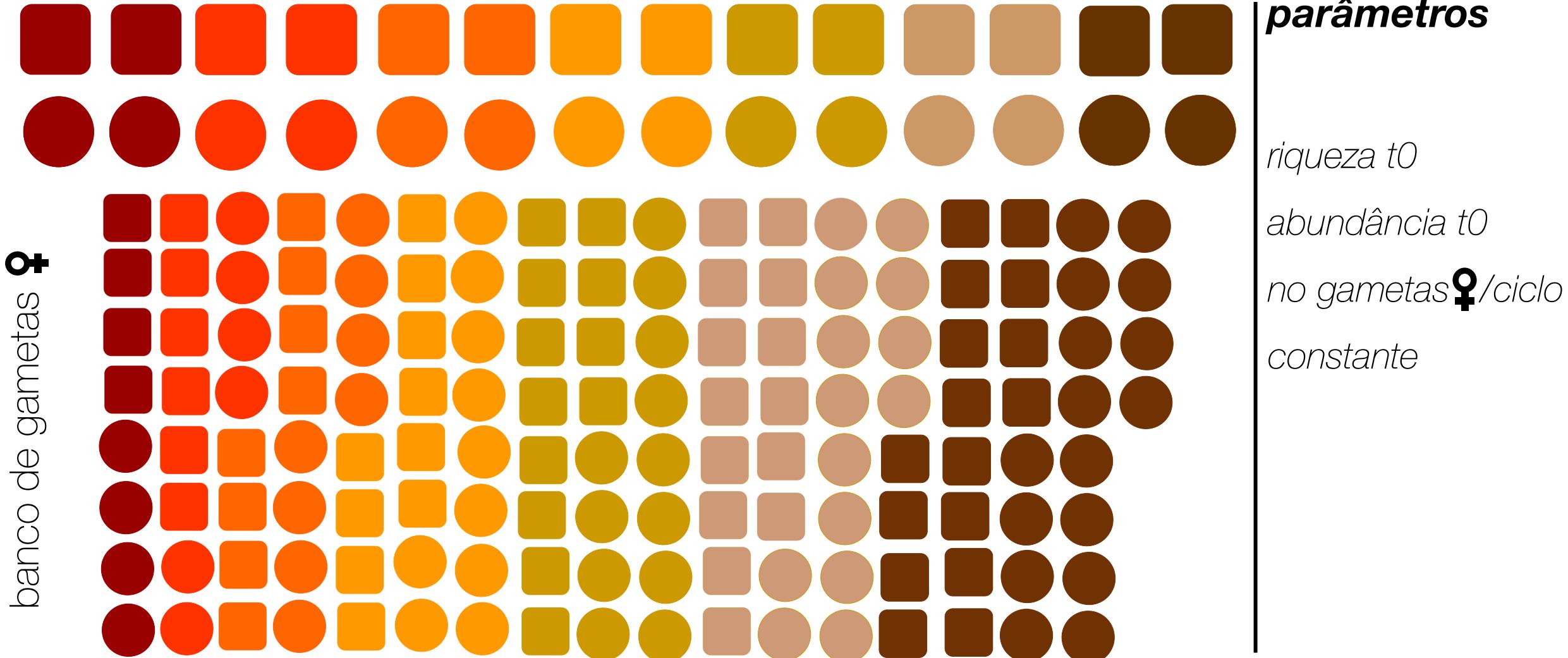
*abundância  $t_0$*

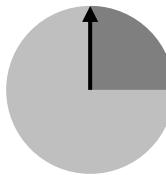
*no gametas ♀/ciclo*

*constante*

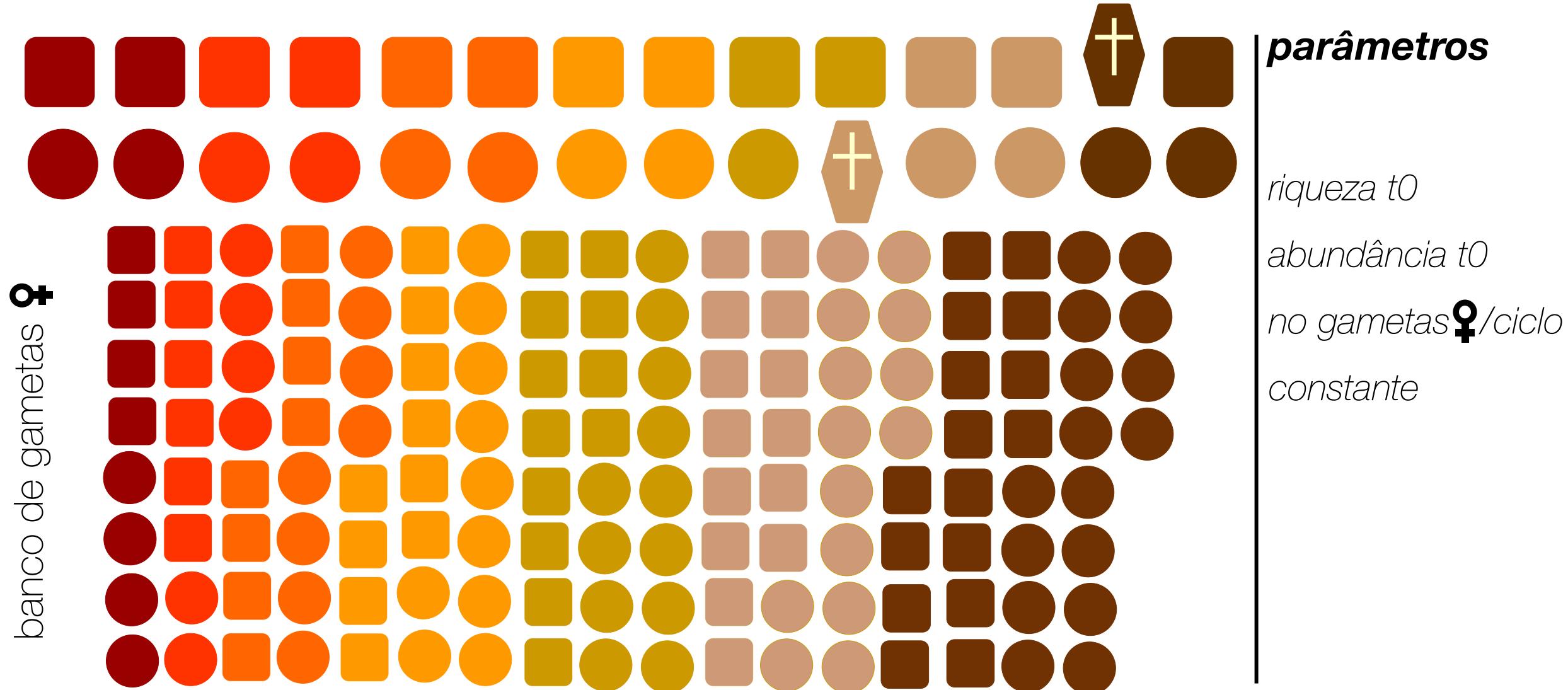


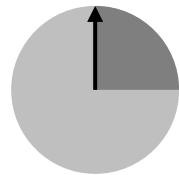
# modelo baseado em indivíduo



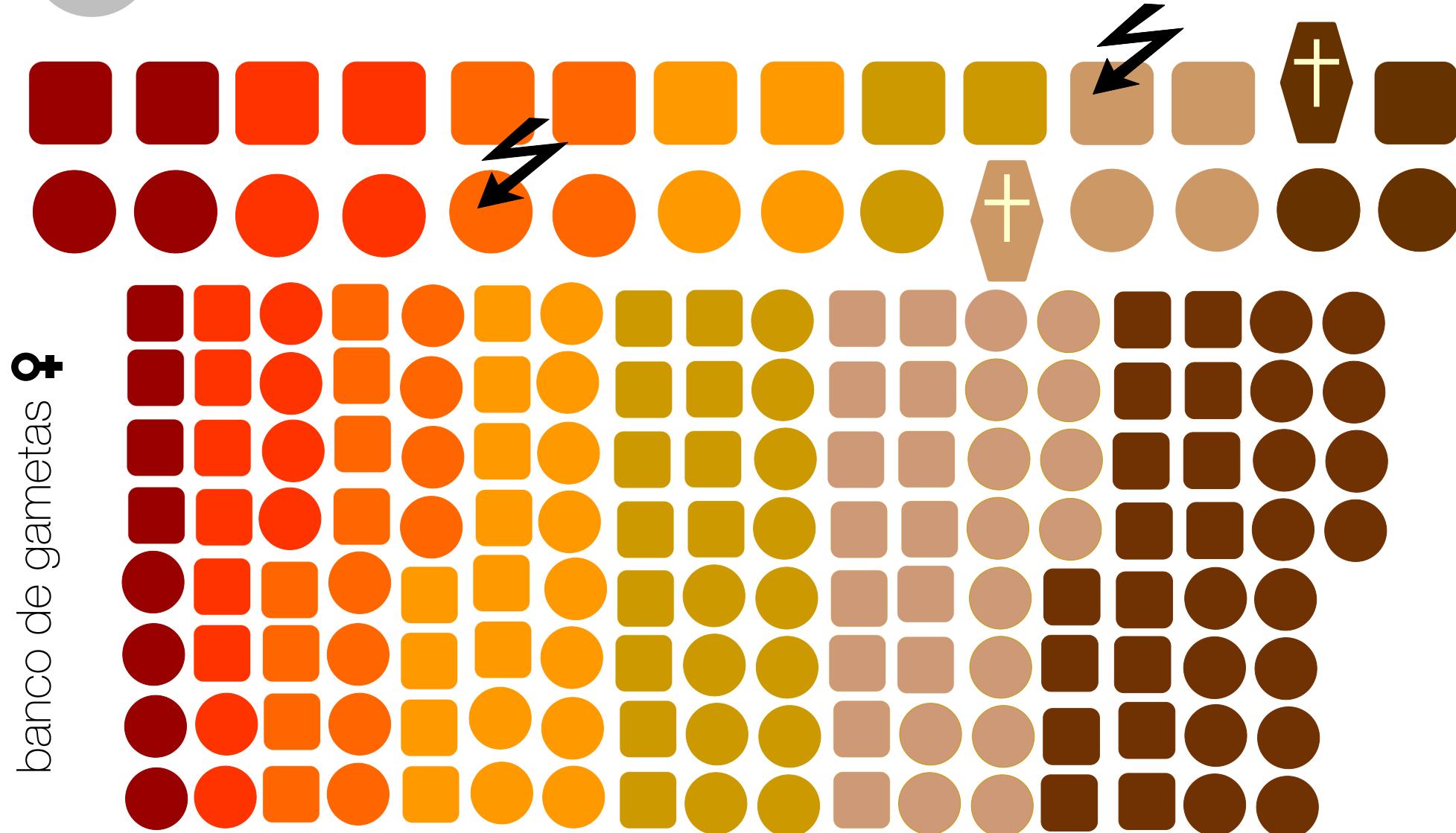


# modelo baseado em indivíduo





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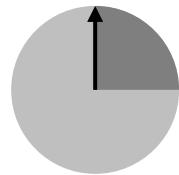
## parâmetros

riqueza  $t_0$

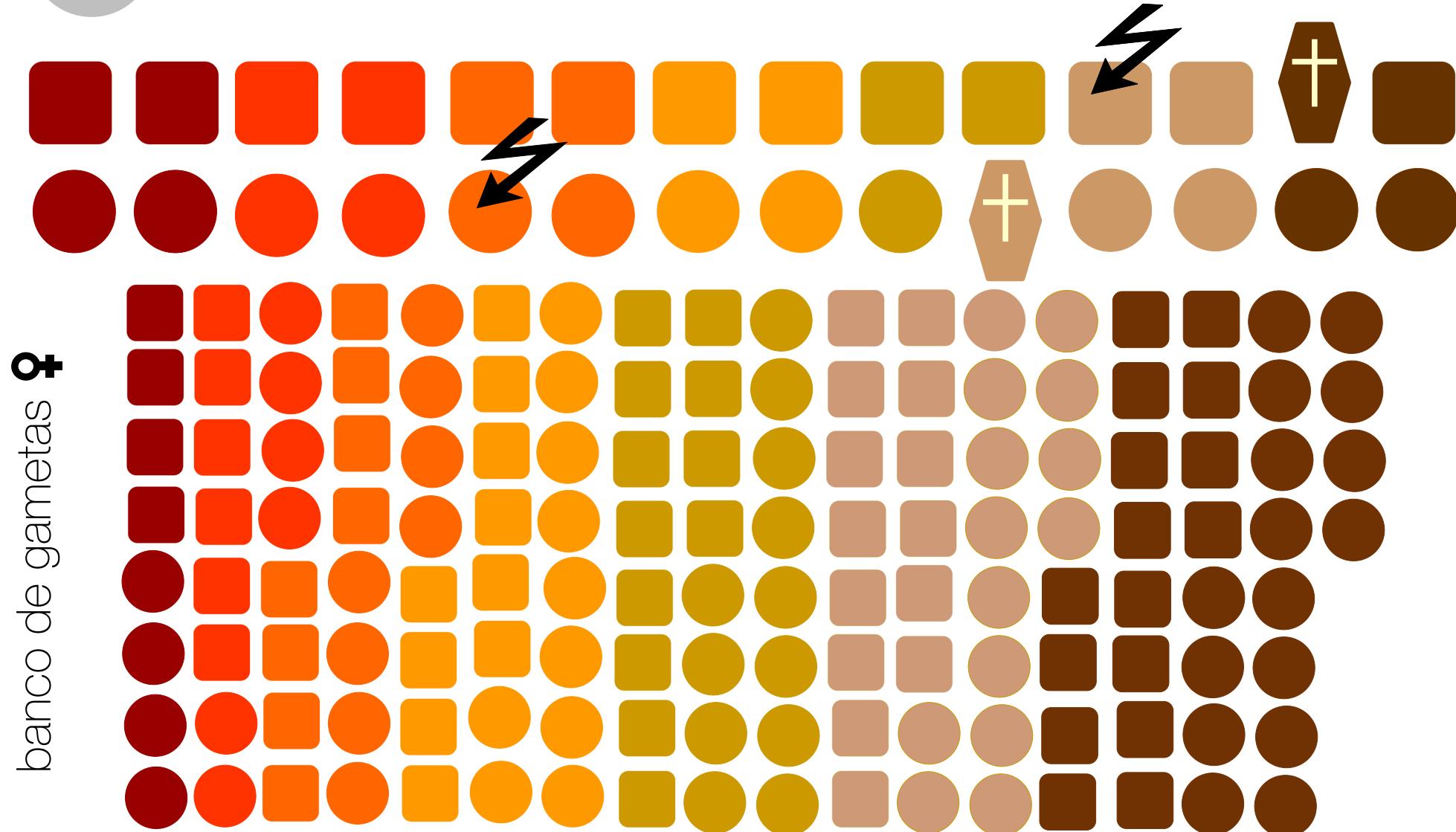
abundância  $t_0$

no gametas ♀/ciclo

constante



# modelo baseado em indivíduo



## parâmetros

riqueza  $t_0$

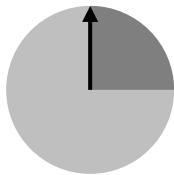
abundância  $t_0$

no gametas ♀/ciclo

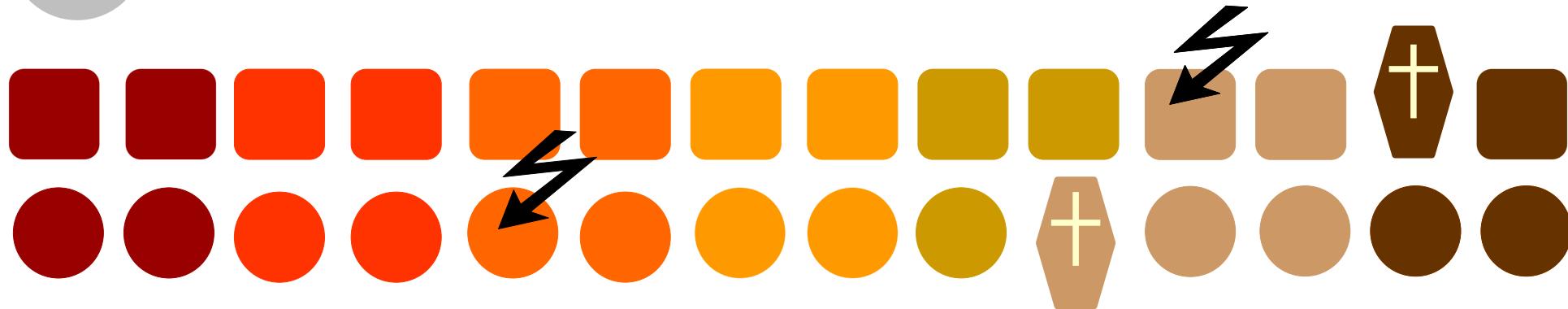
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

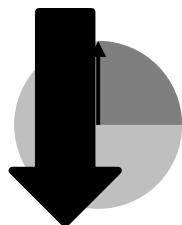
abundância  $t_0$

no gametas ♀/ciclo

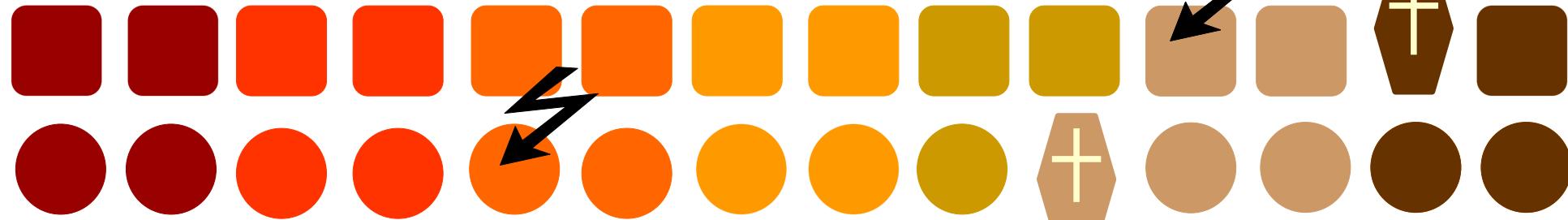
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

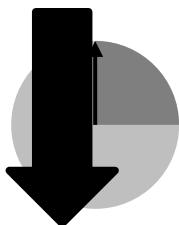
abundância  $t_0$

no gametas ♀/ciclo

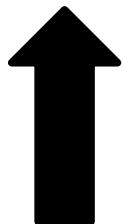
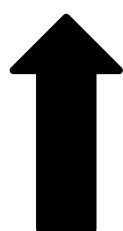
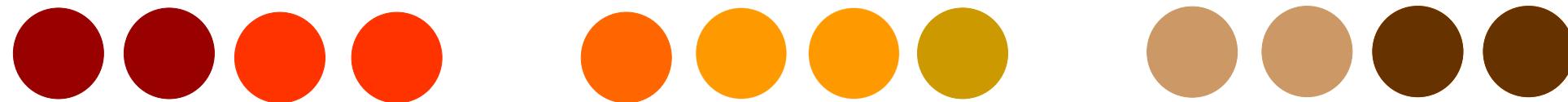
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

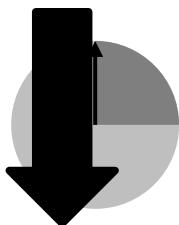
abundância  $t_0$

no gametas ♀/ciclo

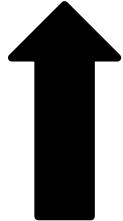
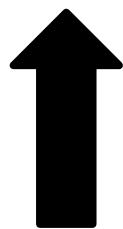
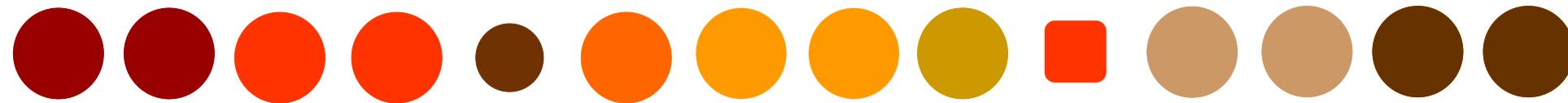
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

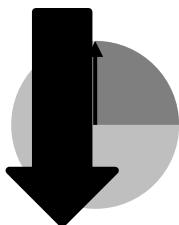
abundância  $t_0$

no gametas ♀/ciclo

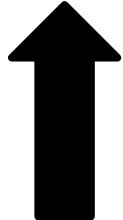
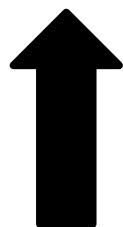
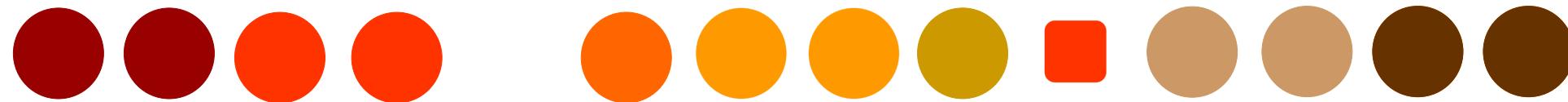
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

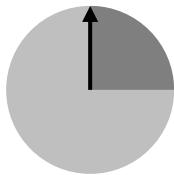
abundância  $t_0$

no gametas ♀/ciclo

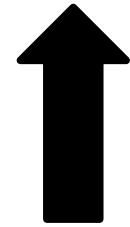
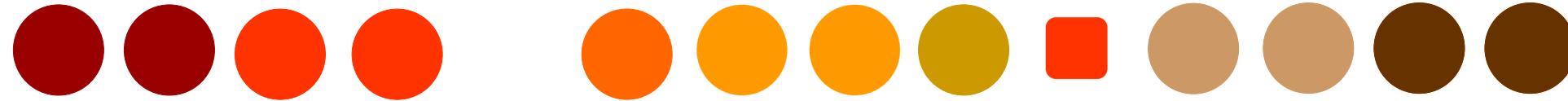
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

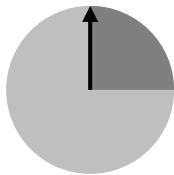
abundância  $t_0$

no gametas ♀/ciclo

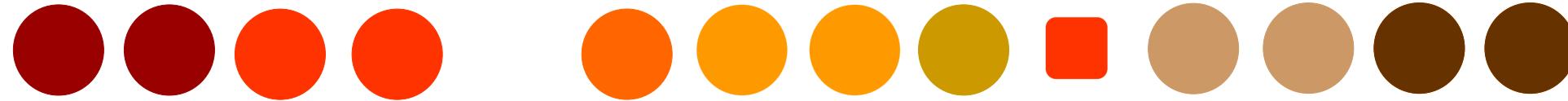
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

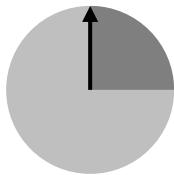
abundância  $t_0$

no gametas ♀/ciclo

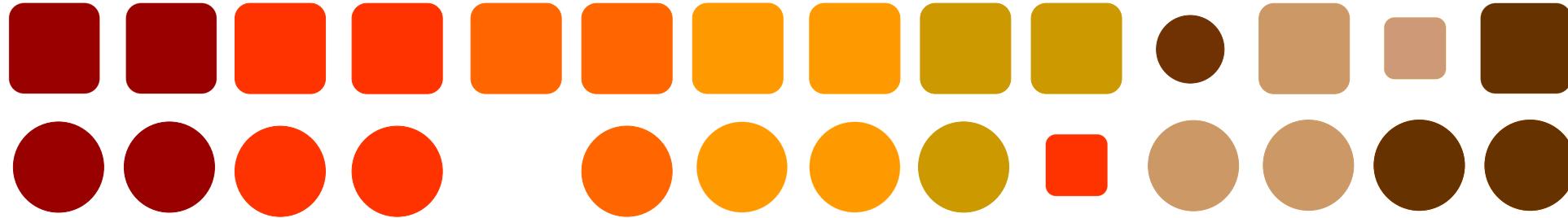
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

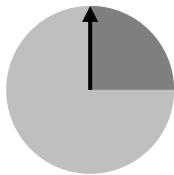
no gametas ♀/ciclo

constante

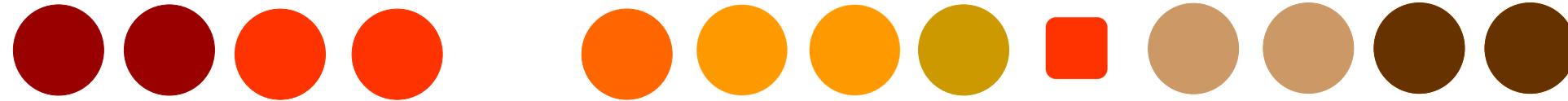
no distúrbios

% morta/distúrbio

$$\frac{\bullet + \bullet}{2}$$



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

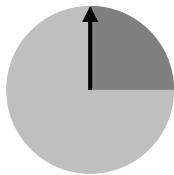
abundância  $t_0$

no gametas ♀/ciclo

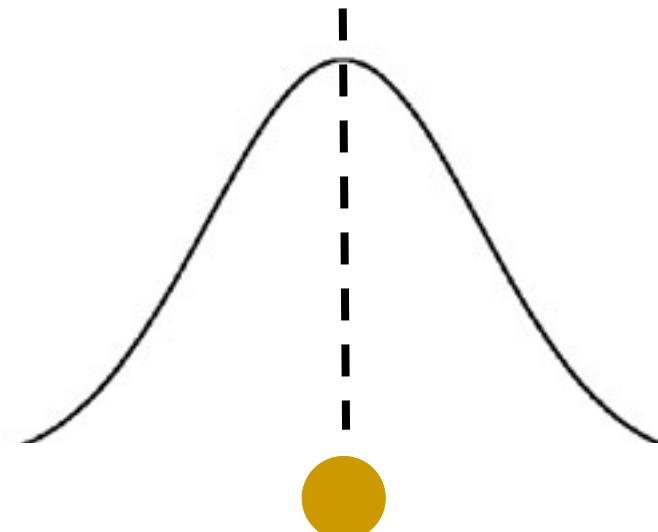
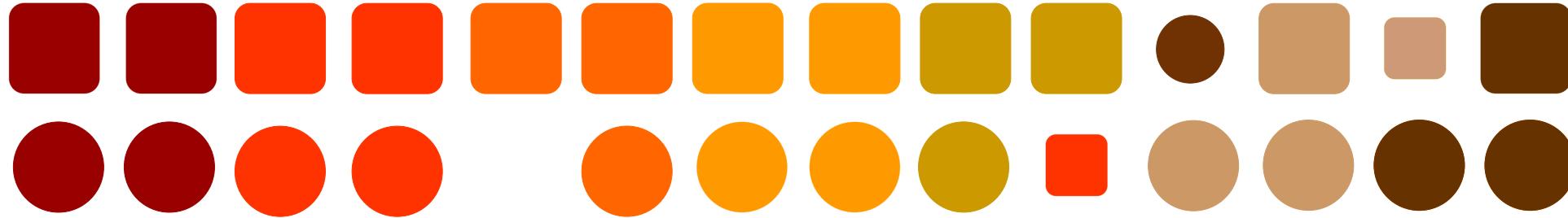
constante

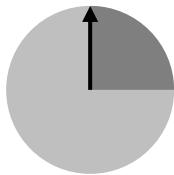
no distúrbios

% morta/distúrbio

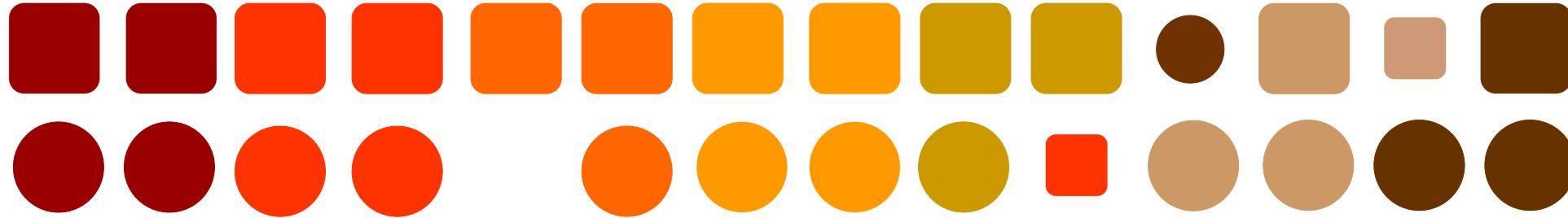


# modelo baseado em indivíduo





# modelo baseado em indivíduo



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riqueza  $t_0$

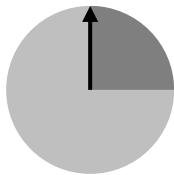
abundância  $t_0$

no gametas ♀/ciclo

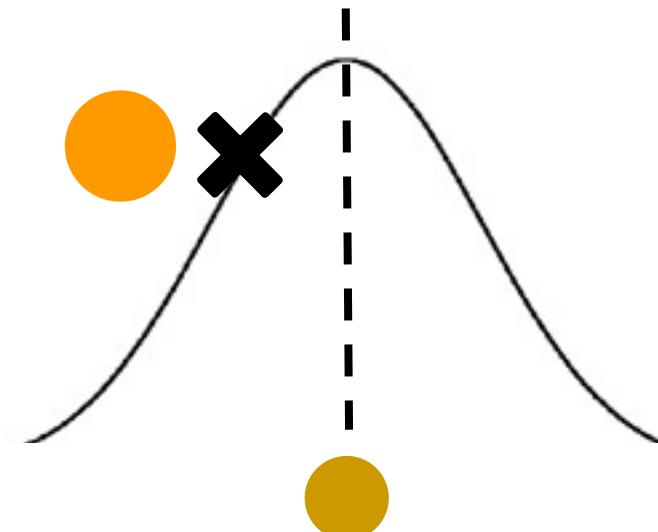
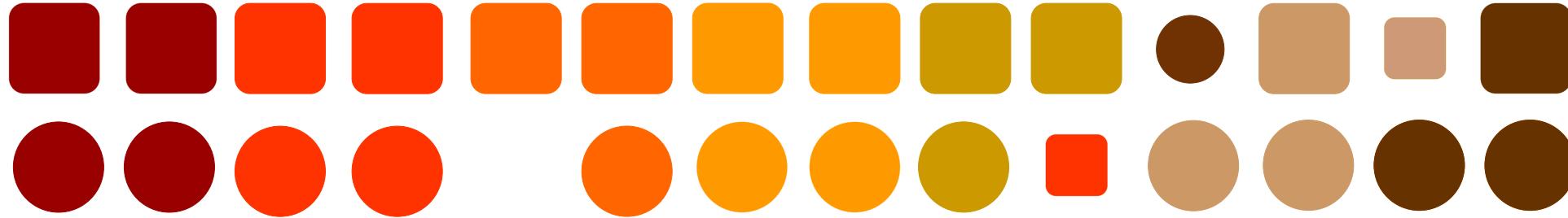
constante

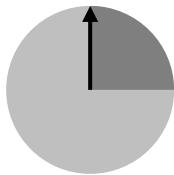
no distúrbios

% morta/distúrbio

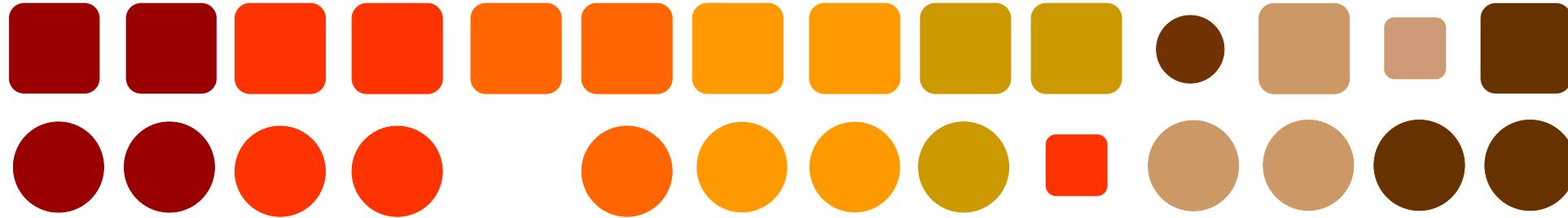


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## **parâmetros**

riqueza  $t_0$

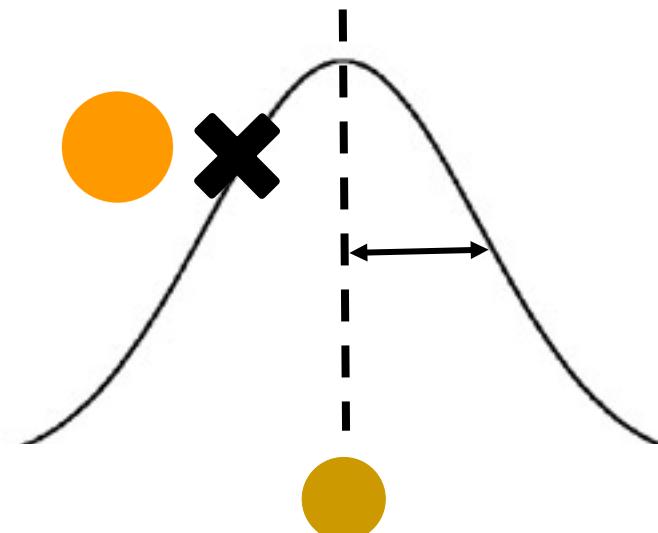
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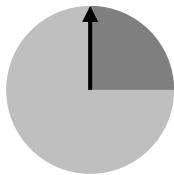
no gametas ♀/ciclo

constante

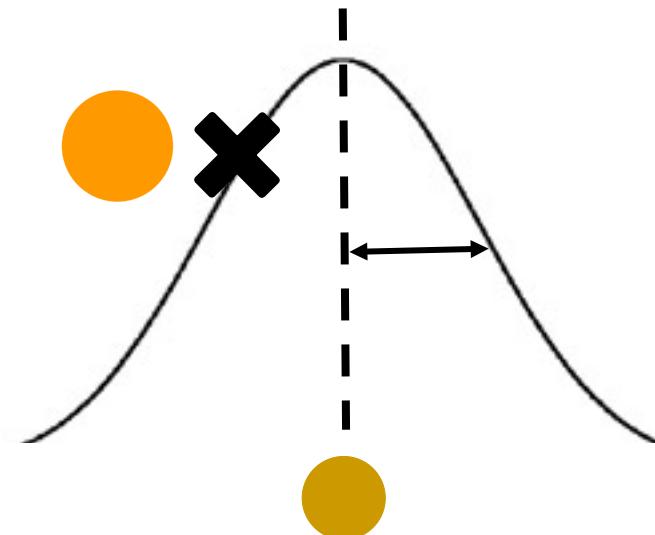
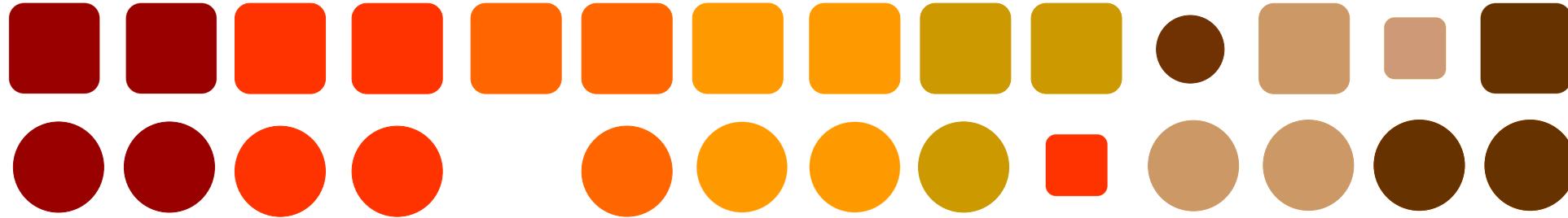
no distúrbios

% morta/distúrbio





# modelo baseado em indivíduo



**parâmetros**

riqueza  $t_0$

abundância  $t_0$

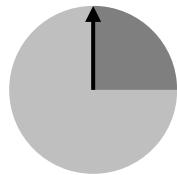
no gametas ♀/ciclo

constante

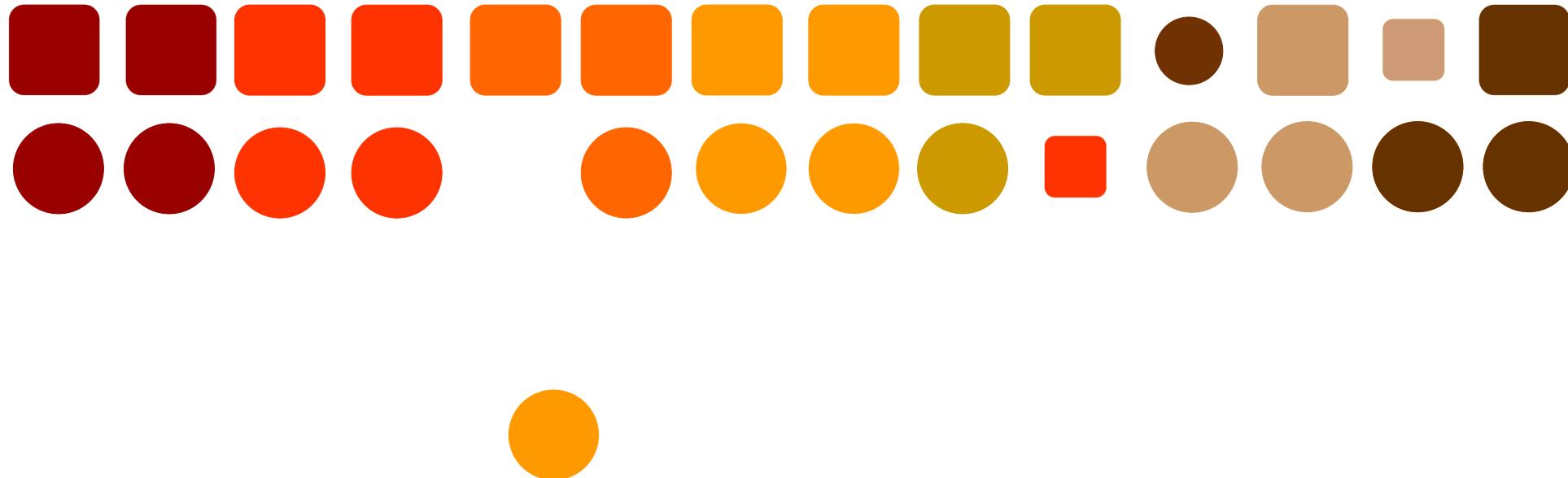
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

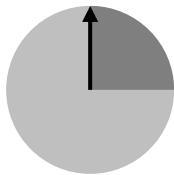
no gametas ♀/ciclo

constante

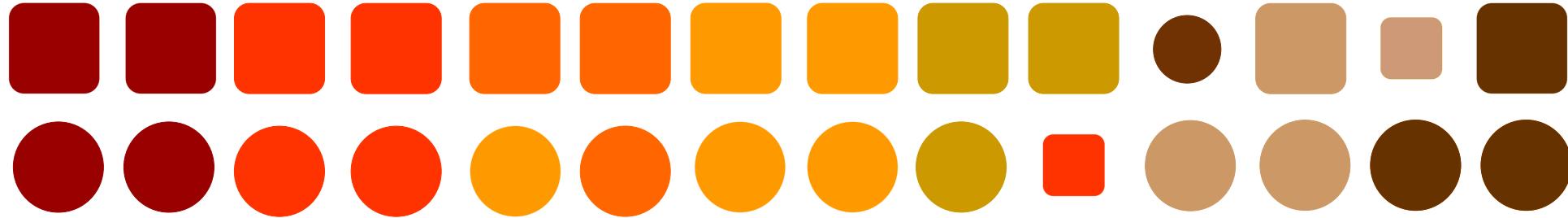
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

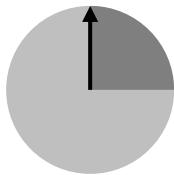
no gametas ♀/ciclo

constante

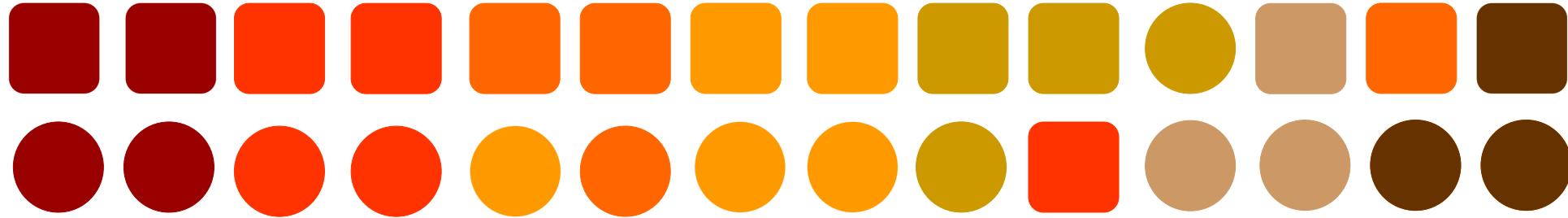
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

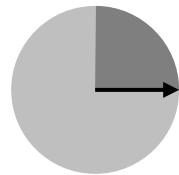
no gametas ♀/ciclo

constante

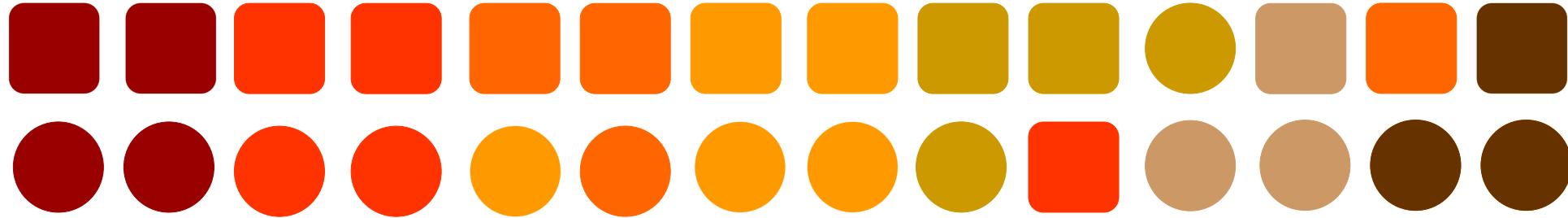
no distúrbios

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taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

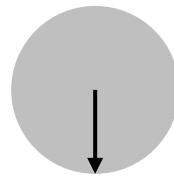
no gametas ♀/ciclo

constante

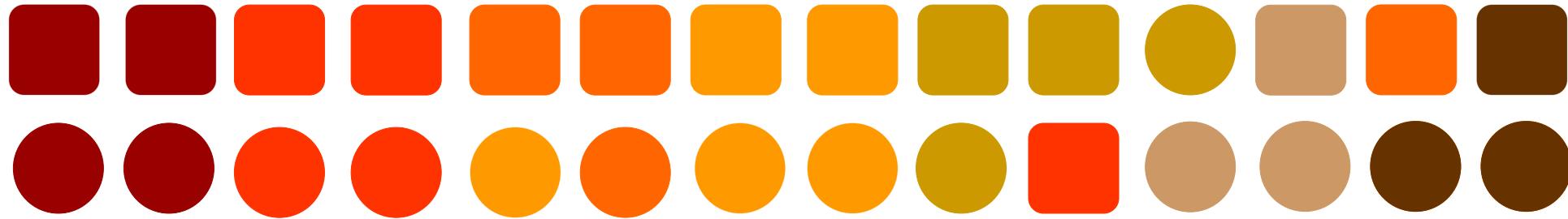
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

no gametas ♀/ciclo

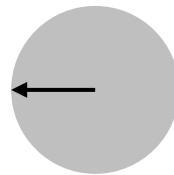
constante

no distúrbios

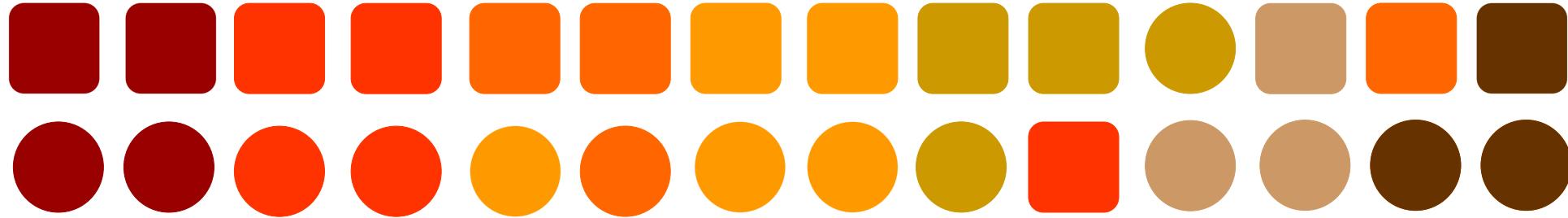
% morta/distúrbio

taxa de mutação

no tempos



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

no gametas ♀/ciclo

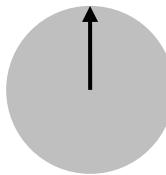
constante

no distúrbios

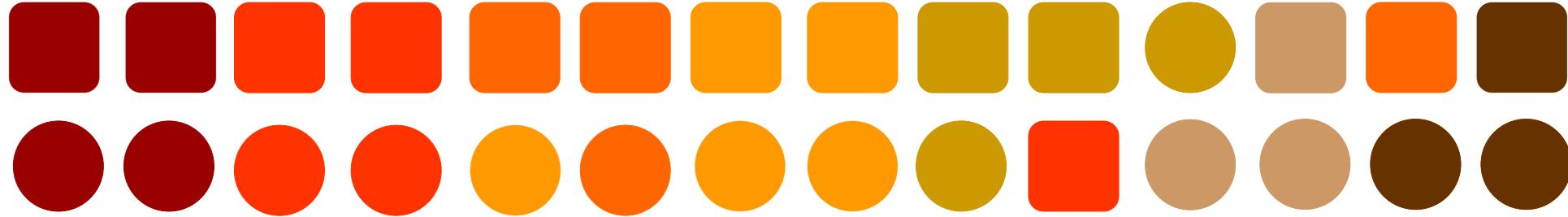
% morta/distúrbio

taxa de mutação

no tempos



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

no gametas ♀/ciclo

constante

no distúrbios

% morta/distúrbio

taxa de mutação

no tempos

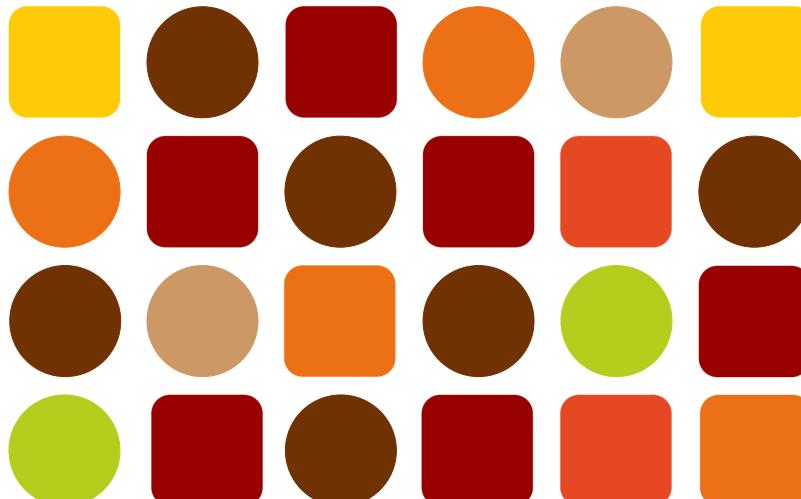


# processos possíveis

# processos possíveis

dinâmica  
evolutiva

- **seleção**
- **deriva genética**
- fluxo gênico
- **mutação**



dinâmica  
ecológica

- **filtragem**
- **deriva ecológica**
- migração
- especiação



# cenários simulados



# cenários simulados

**evolutivo**

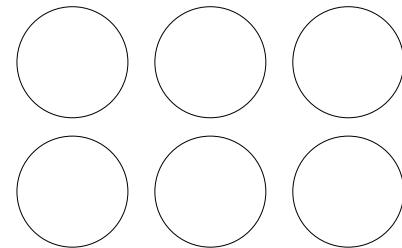
**ecológico**

**eco-evolutivo**



# cenários simulados

**evolutivo**

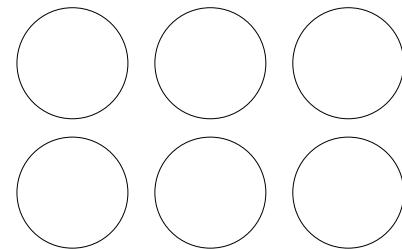


**ecológico**

**eco-evolutivo**

# cenários simulados

**evolutivo**



**ecológico**

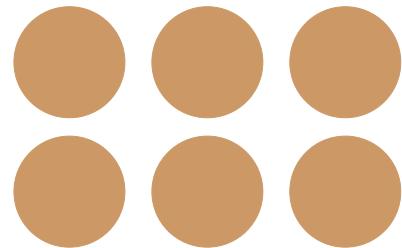
**eco-evolutivo**

1 espécie



# cenários simulados

**evolutivo**



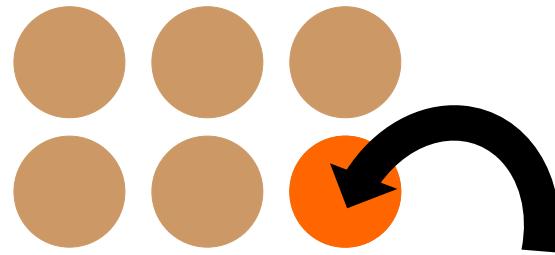
1 espécie

**ecológico**

**eco-evolutivo**

# cenários simulados

**evolutivo**



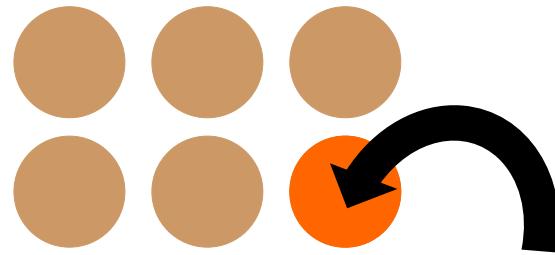
1 espécie

**ecológico**

**eco-evolutivo**

# cenários simulados

**evolutivo**



1 espécie

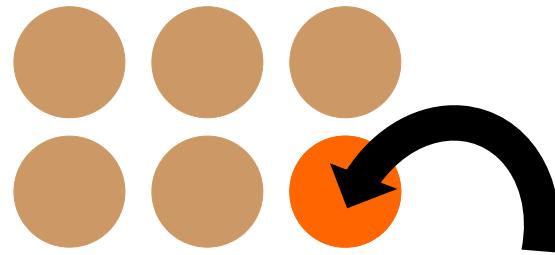
mutação > 0

**ecológico**

**eco-evolutivo**

# cenários simulados

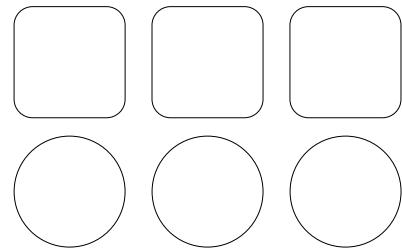
**evolutivo**



1 espécie

mutação > 0

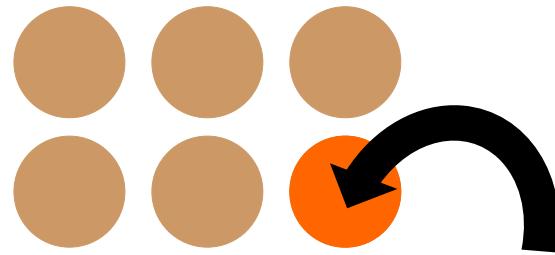
**ecológico**



**eco-evolutivo**

# cenários simulados

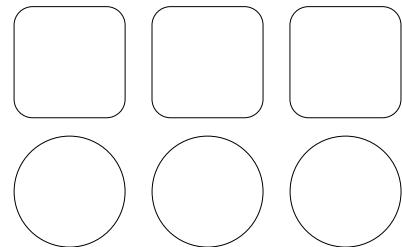
**evolutivo**



1 espécie

mutação > 0

**ecológico**

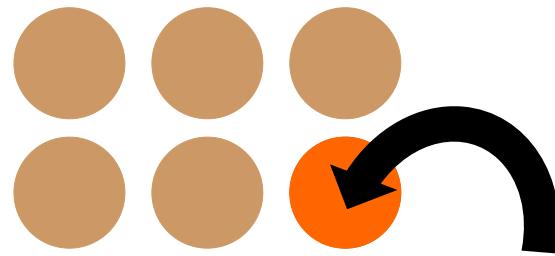


+ 1 espécie

**eco-evolutivo**

# cenários simulados

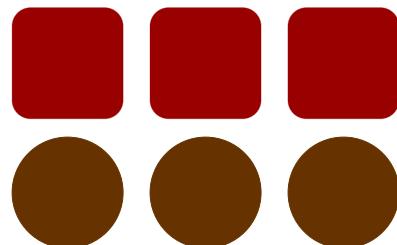
**evolutivo**



1 espécie

mutação > 0

**ecológico**

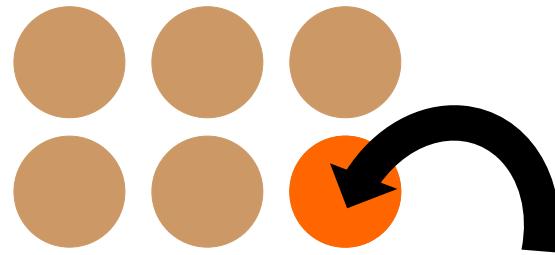


+ 1 espécie

**eco-evolutivo**

# cenários simulados

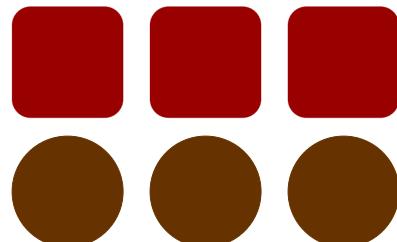
## evolutivo



1 espécie

mutação > 0

## ecológico



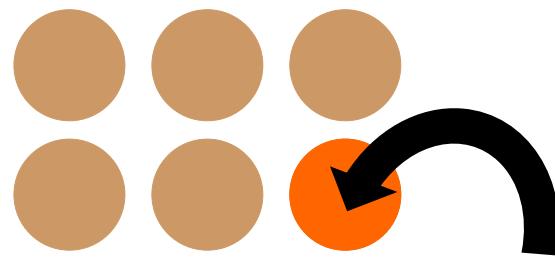
+ 1 espécie

mutação = 0

## eco-evolutivo

# cenários simulados

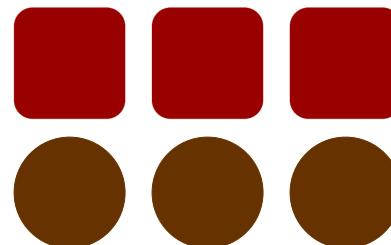
## evolutivo



1 espécie

mutação > 0

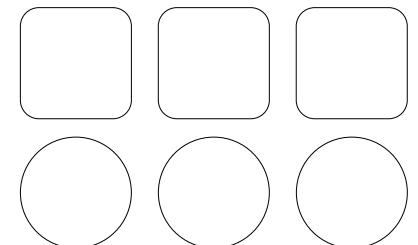
## ecológico



+ 1 espécie

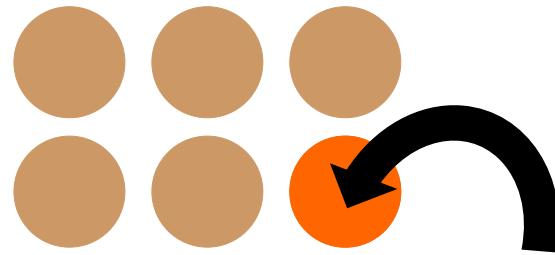
mutação = 0

## eco-evolutivo



# cenários simulados

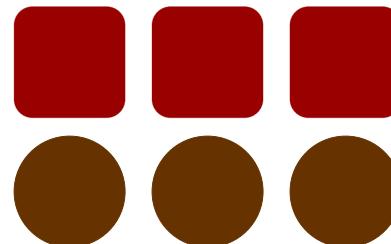
## evolutivo



1 espécie

mutação > 0

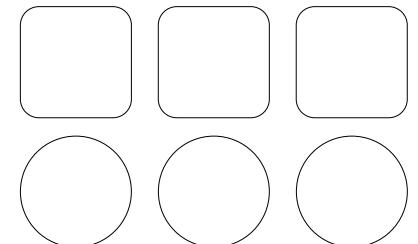
## ecológico



+ 1 espécie

mutação = 0

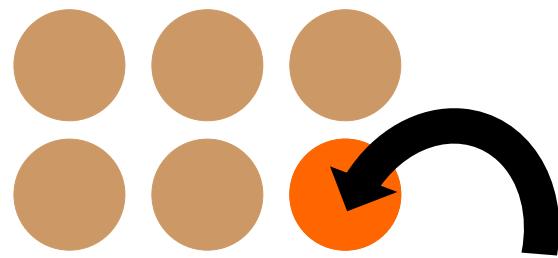
## eco-evolutivo



+ 1 espécie

# cenários simulados

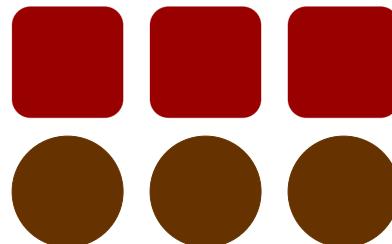
## evolutivo



1 espécie

mutação > 0

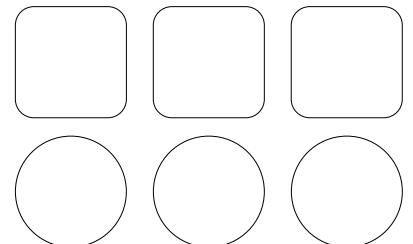
## ecológico



+ 1 espécie

mutação = 0

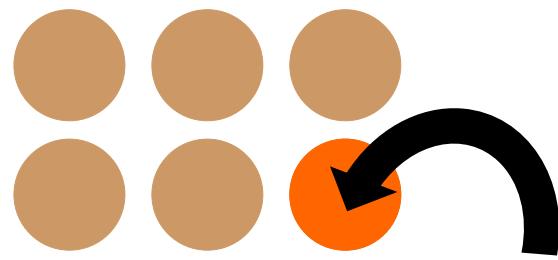
## eco-evolutivo



+ 1 espécie

# cenários simulados

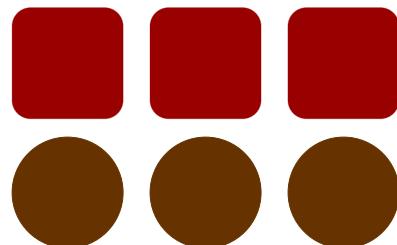
## evolutivo



1 espécie

mutação > 0

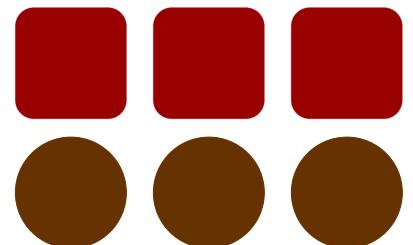
## ecológico



+ 1 espécie

mutação = 0

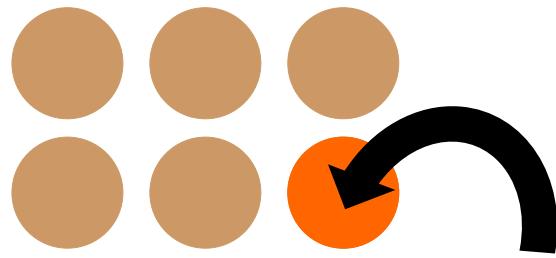
## eco-evolutivo



+ 1 espécie

# cenários simulados

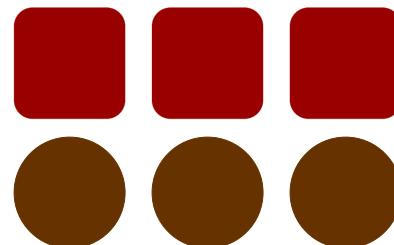
## evolutivo



1 espécie

mutação > 0

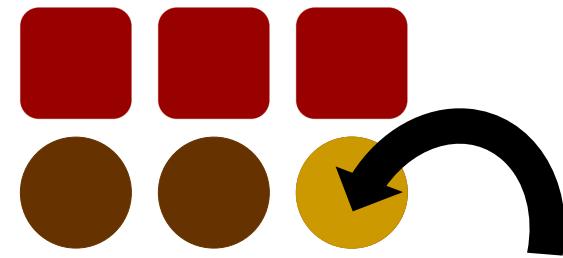
## ecológico



+ 1 espécie

mutação = 0

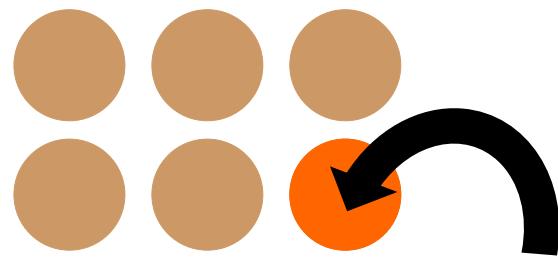
## eco-evolutivo



+ 1 espécie

# cenários simulados

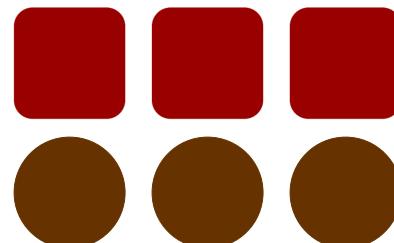
## evolutivo



1 espécie

mutação > 0

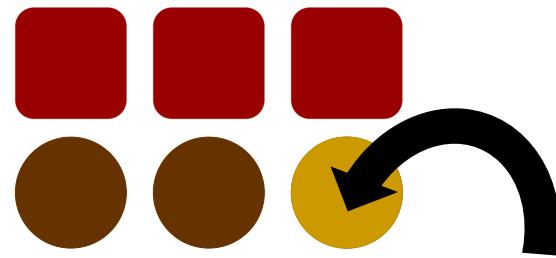
## ecológico



+ 1 espécie

mutação = 0

## eco-evolutivo

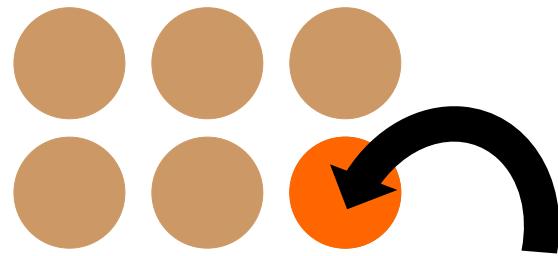


+ 1 espécie

mutação > 0

# cenários simulados

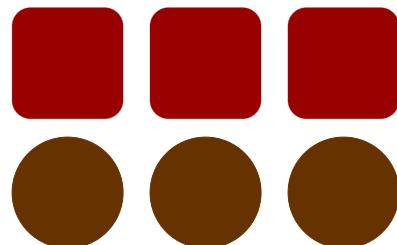
## evolutivo



1 espécie

**mutação > 0**

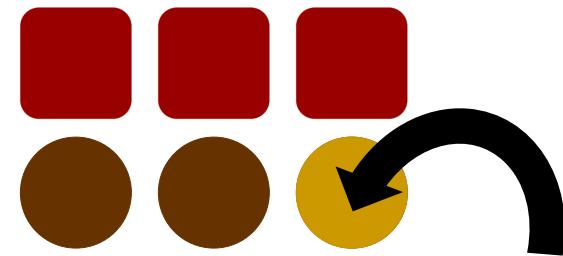
## ecológico



+ 1 espécie

mutação = 0

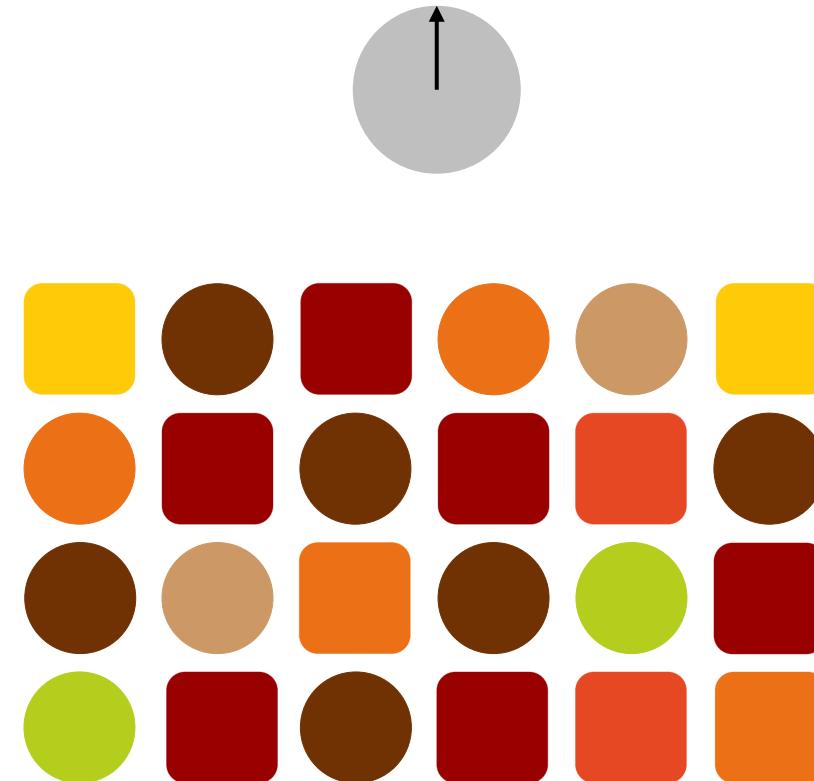
## eco-evolutivo



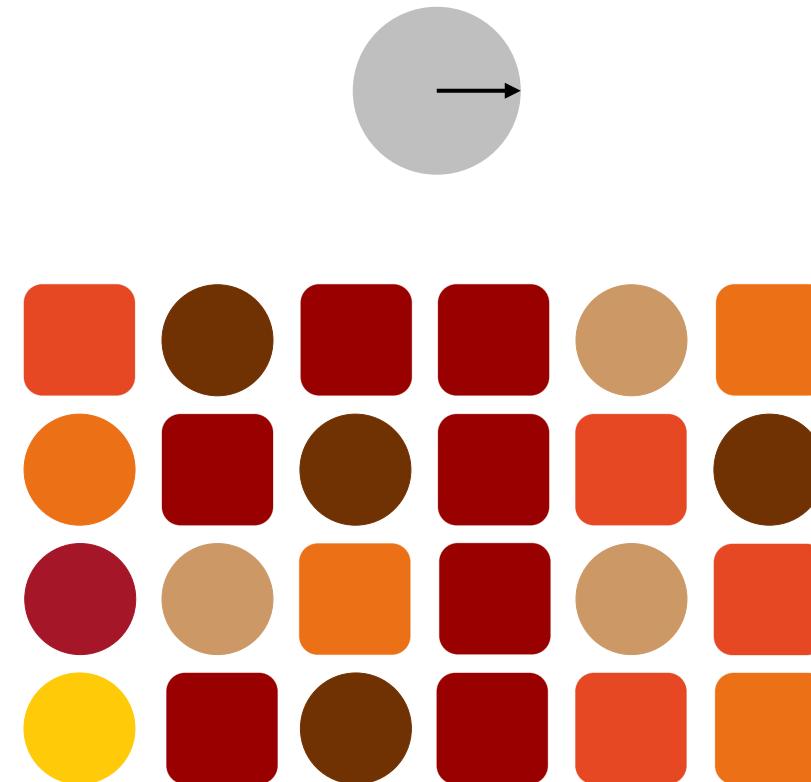
+ 1 espécie

**mutação > 0**

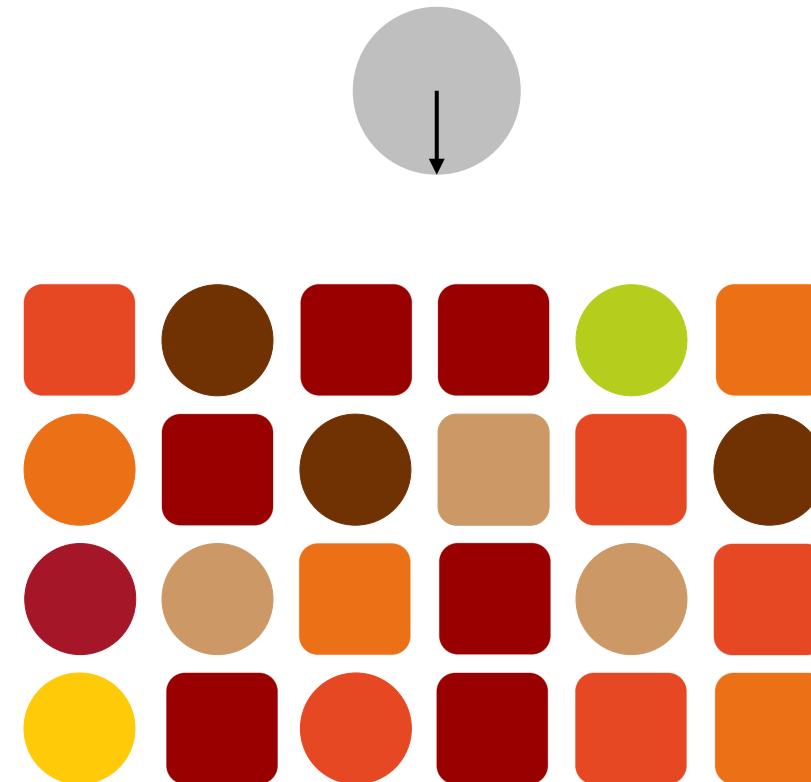
# variáveis de interesse



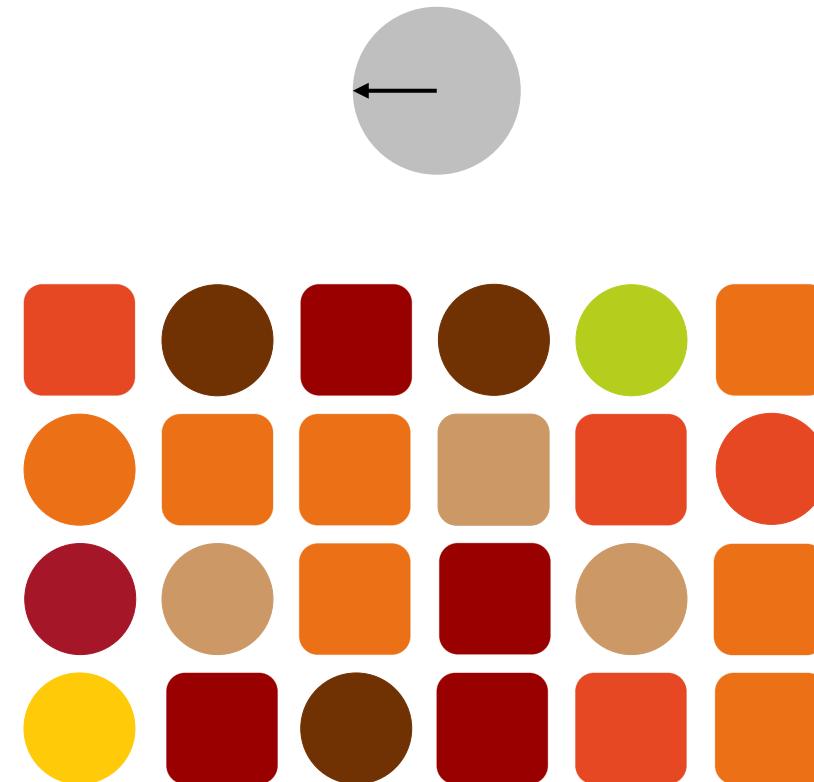
# variáveis de interesse



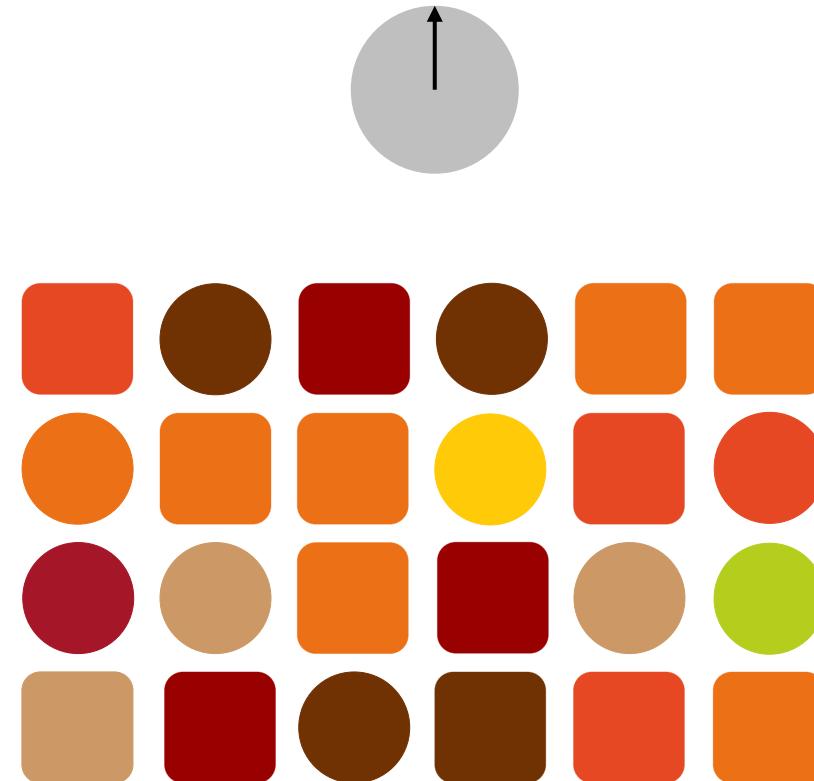
# variáveis de interesse



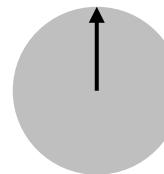
# variáveis de interesse



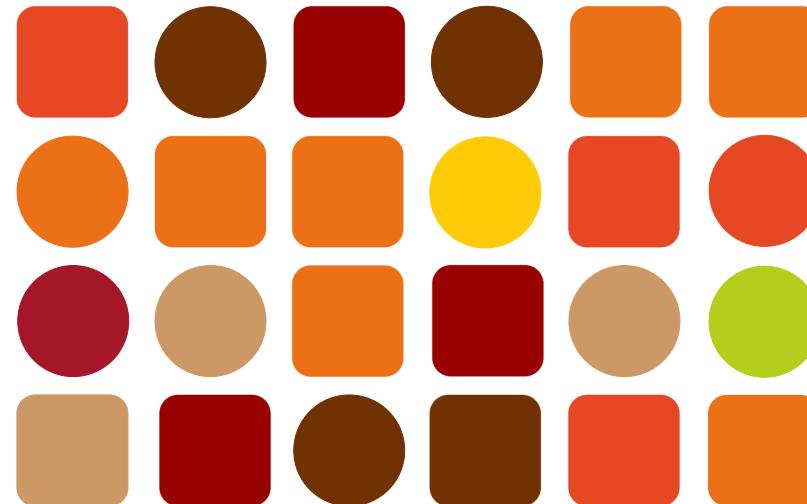
# variáveis de interesse



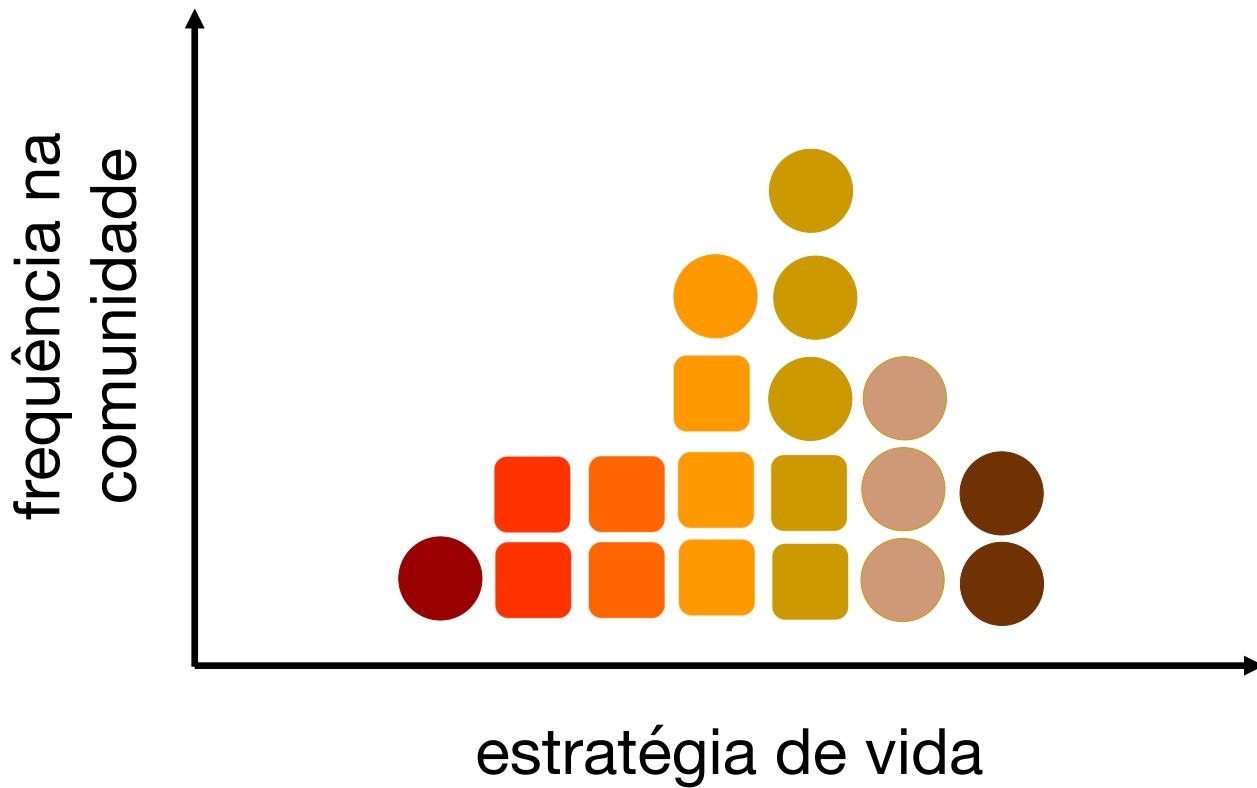
# variáveis de interesse



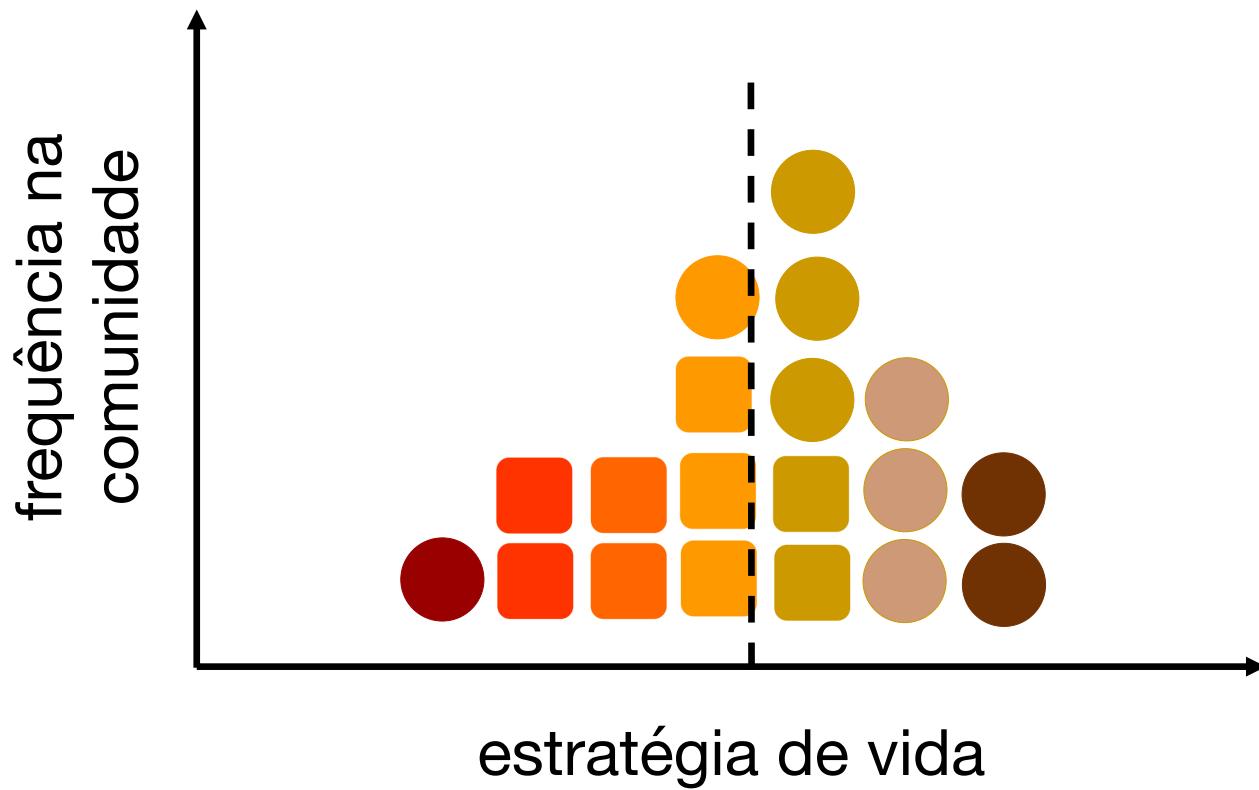
2 mil gerações



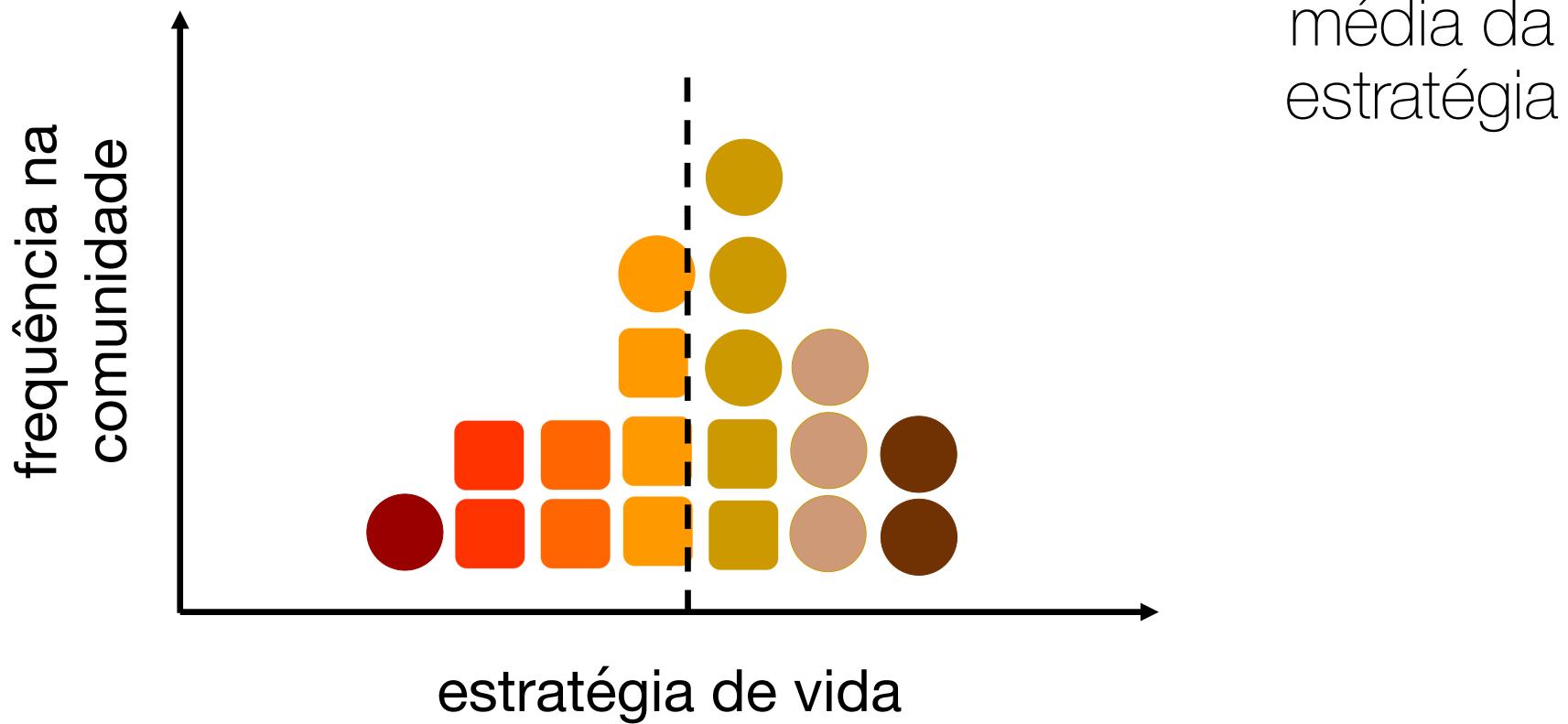
# variáveis de interesse



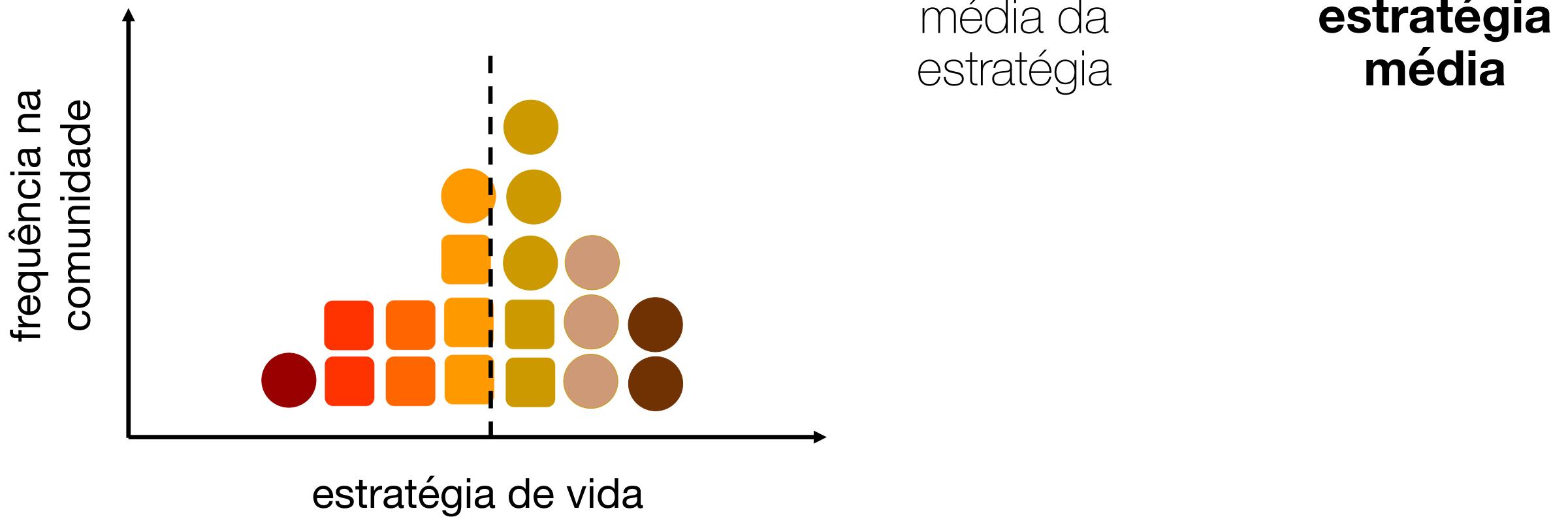
# variáveis de interesse



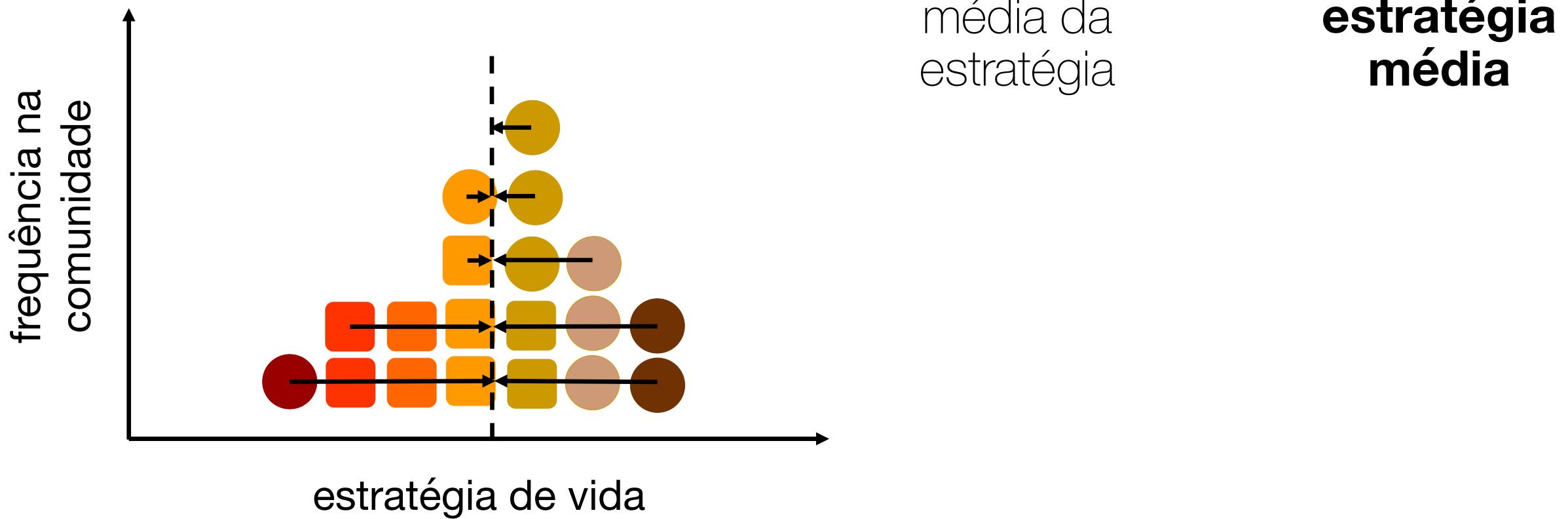
# variáveis de interesse



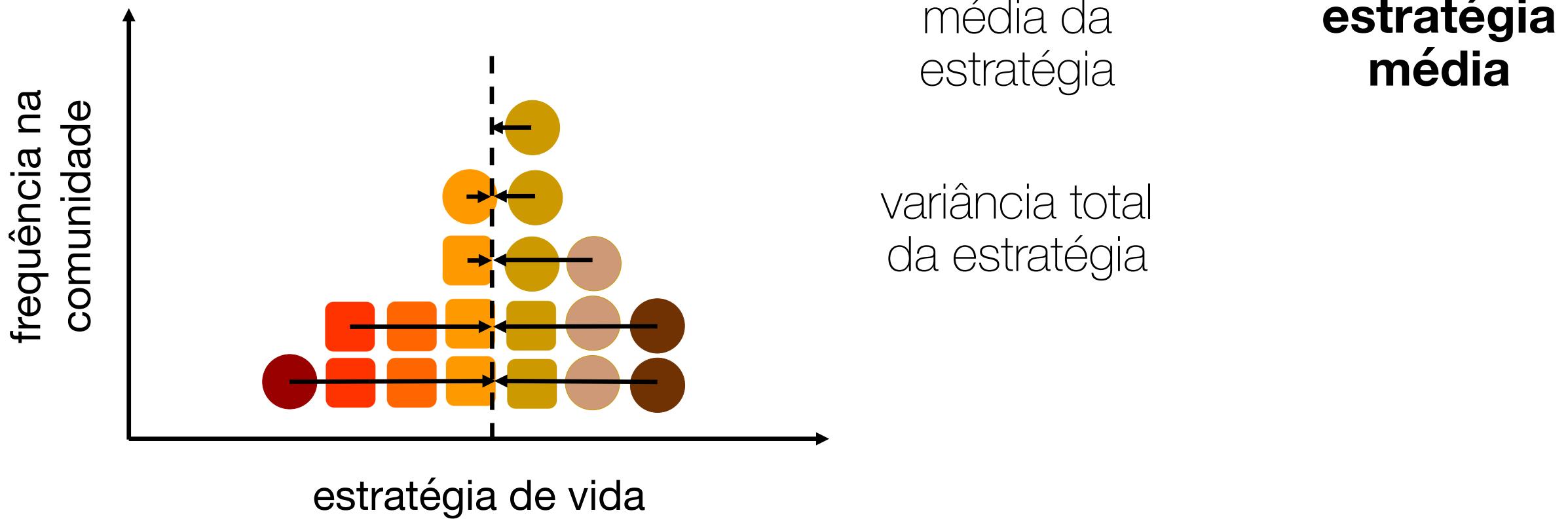
# variáveis de interesse



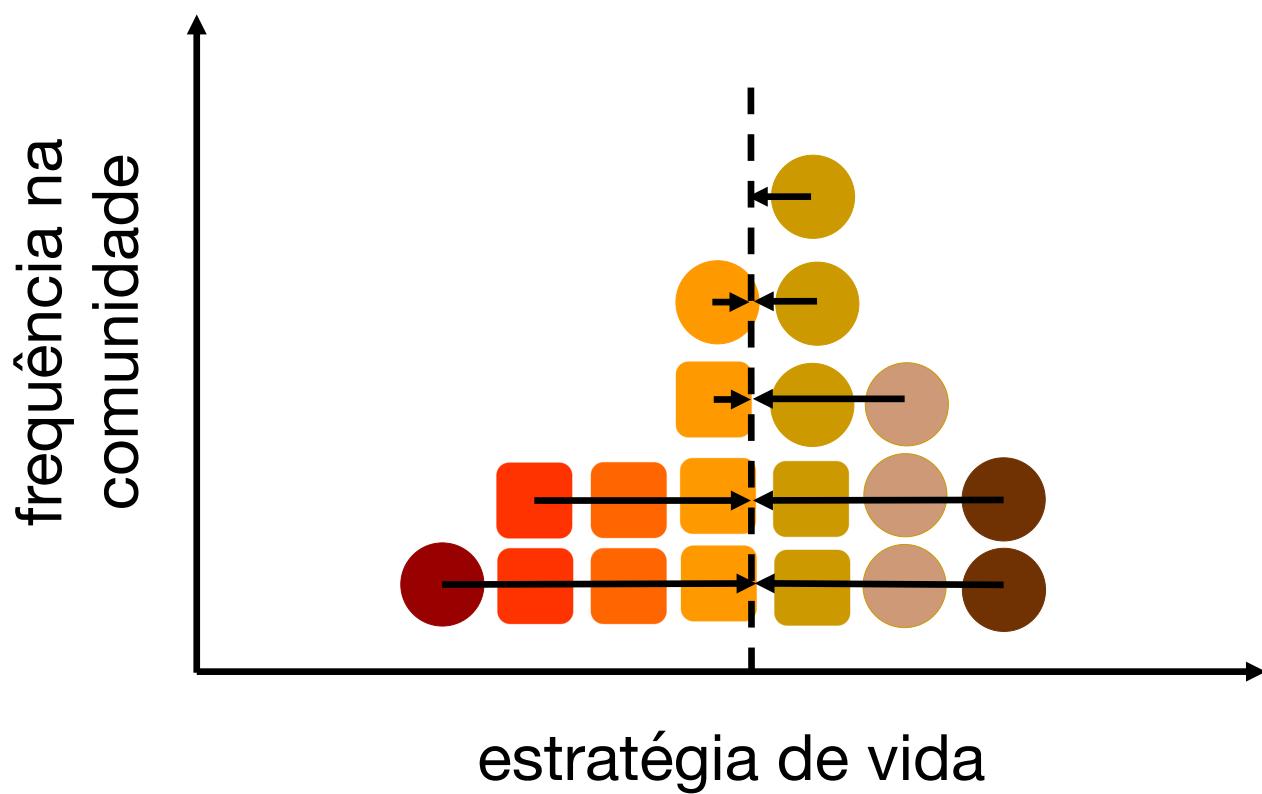
# variáveis de interesse



# variáveis de interesse



# variáveis de interesse



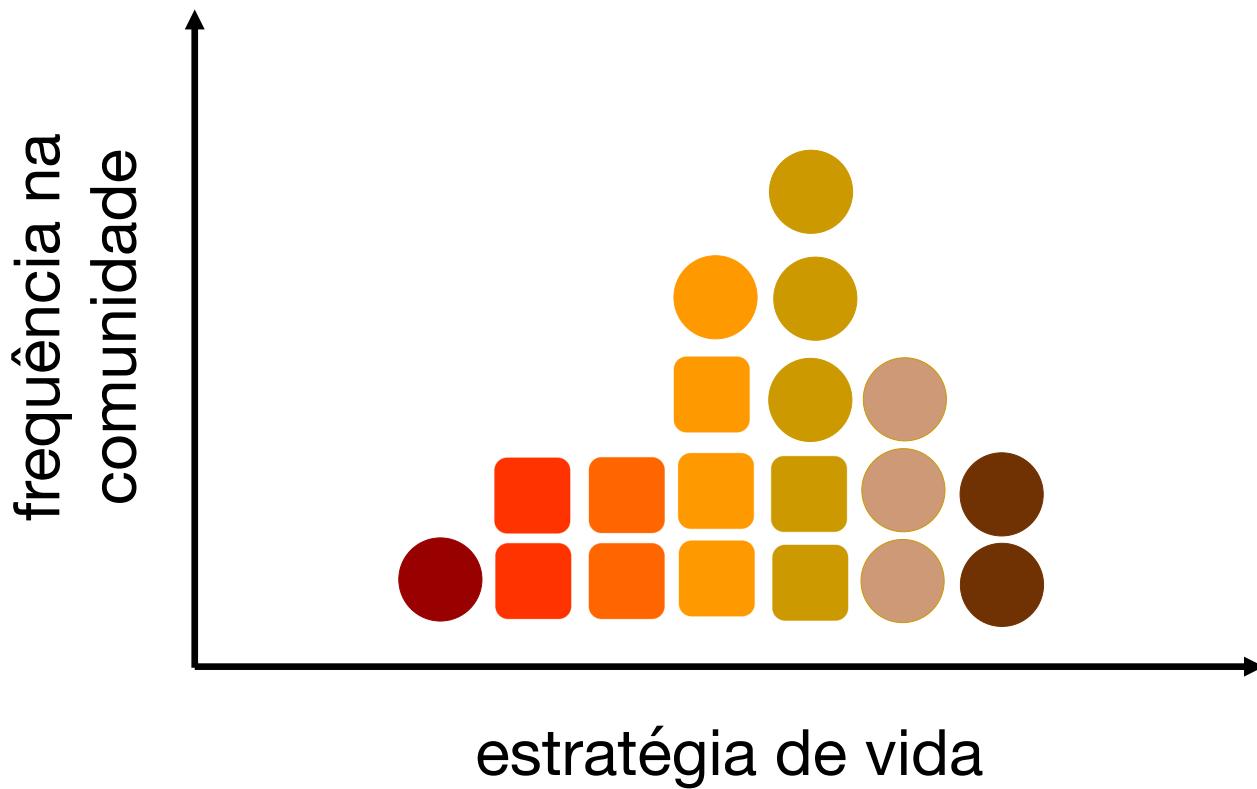
média da  
estratégia

variância total  
da estratégia

**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse

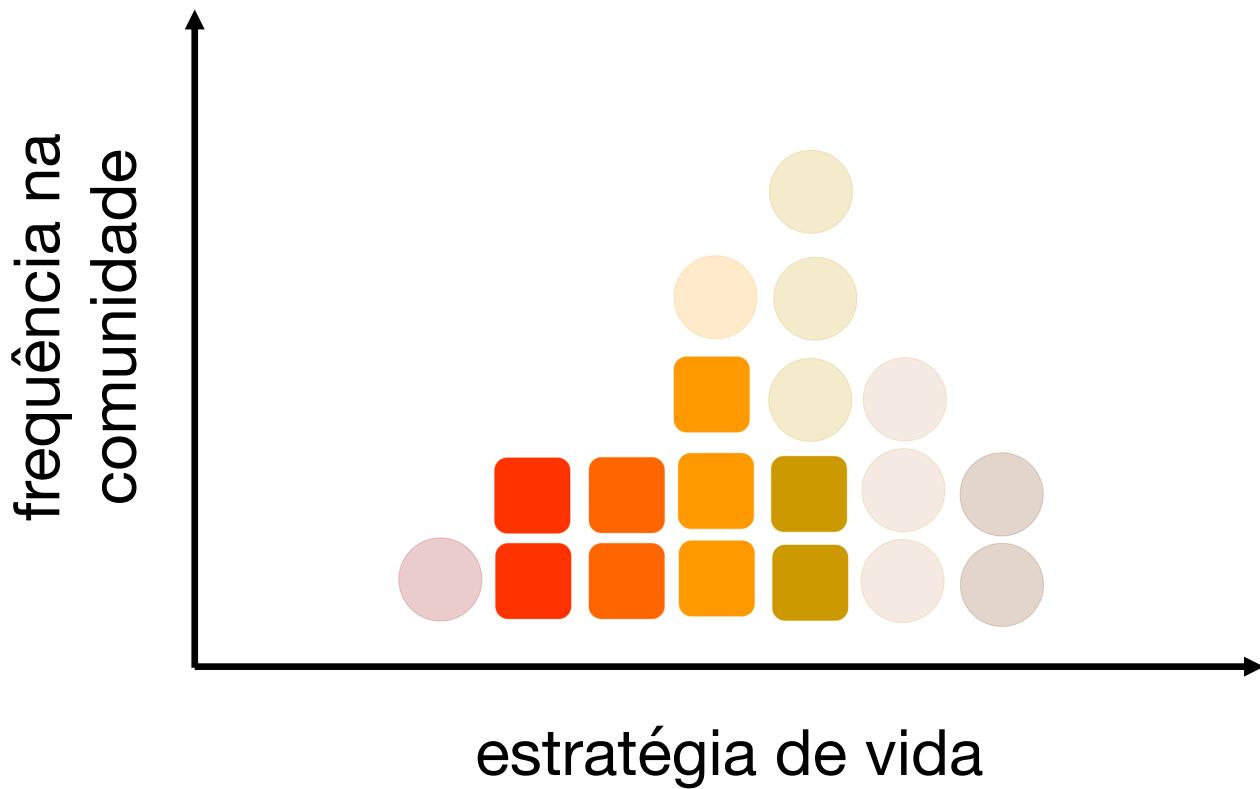


média da  
estratégia

variância total  
da estratégia

**diversidade  
de estratégias**

# variáveis de interesse



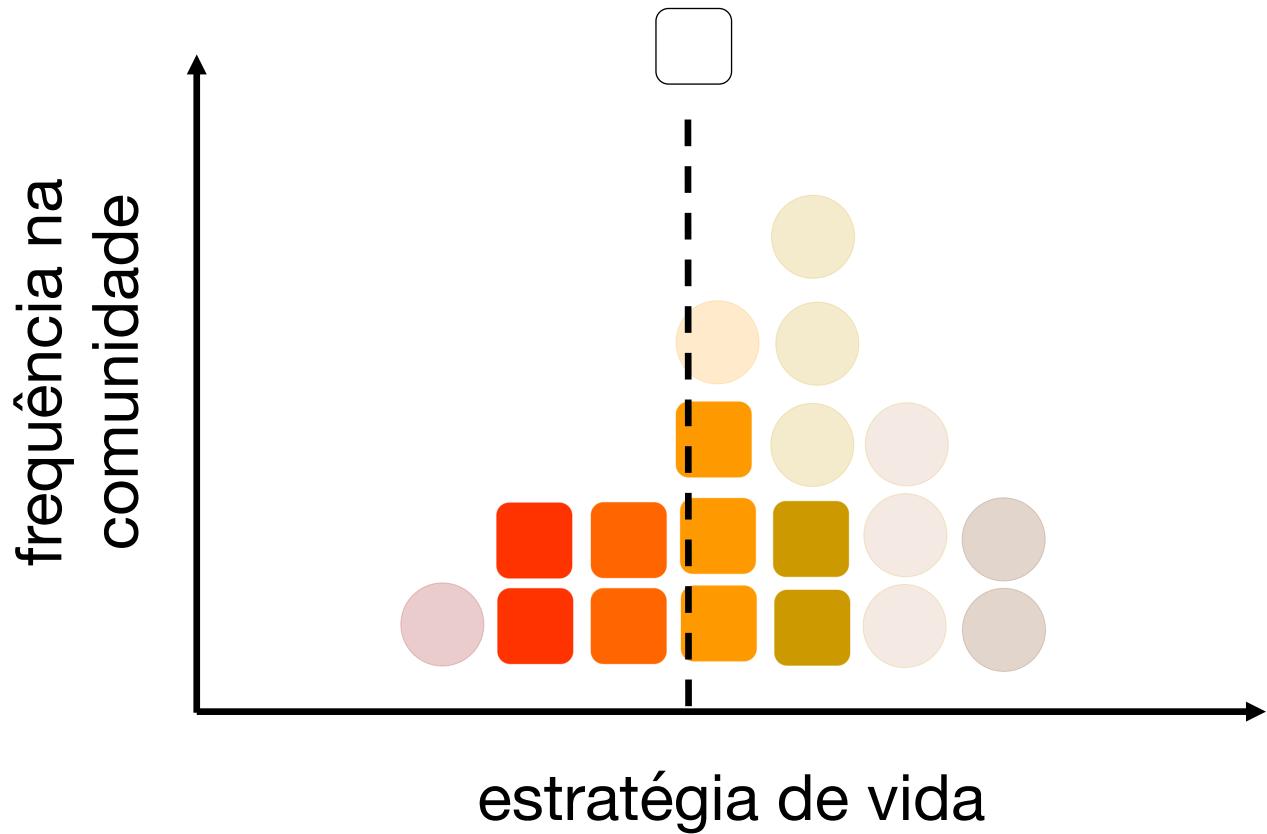
média da  
estratégia

variância total  
da estratégia

**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse



média da  
estratégia

variância total  
da estratégia

**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse

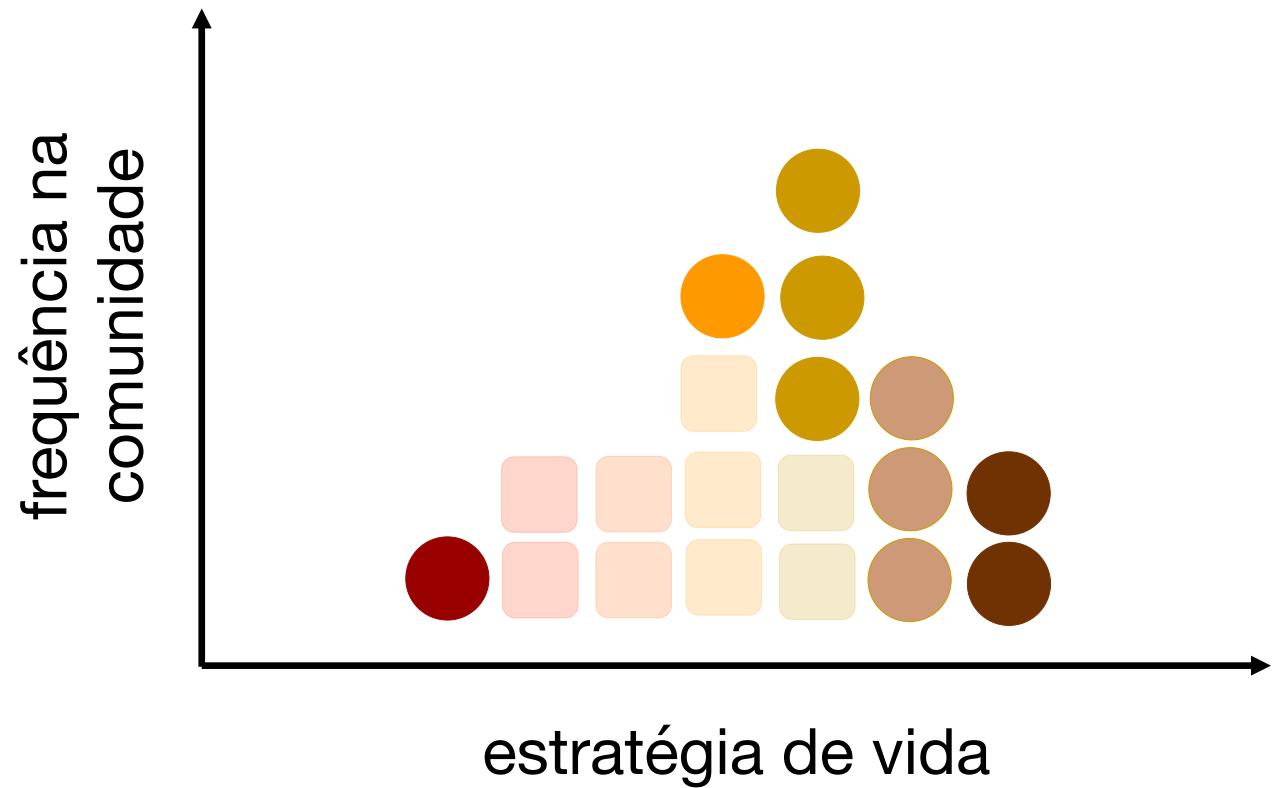


média da  
estratégia

variância total  
da estratégia

**diversidade  
de estratégias**

# variáveis de interesse

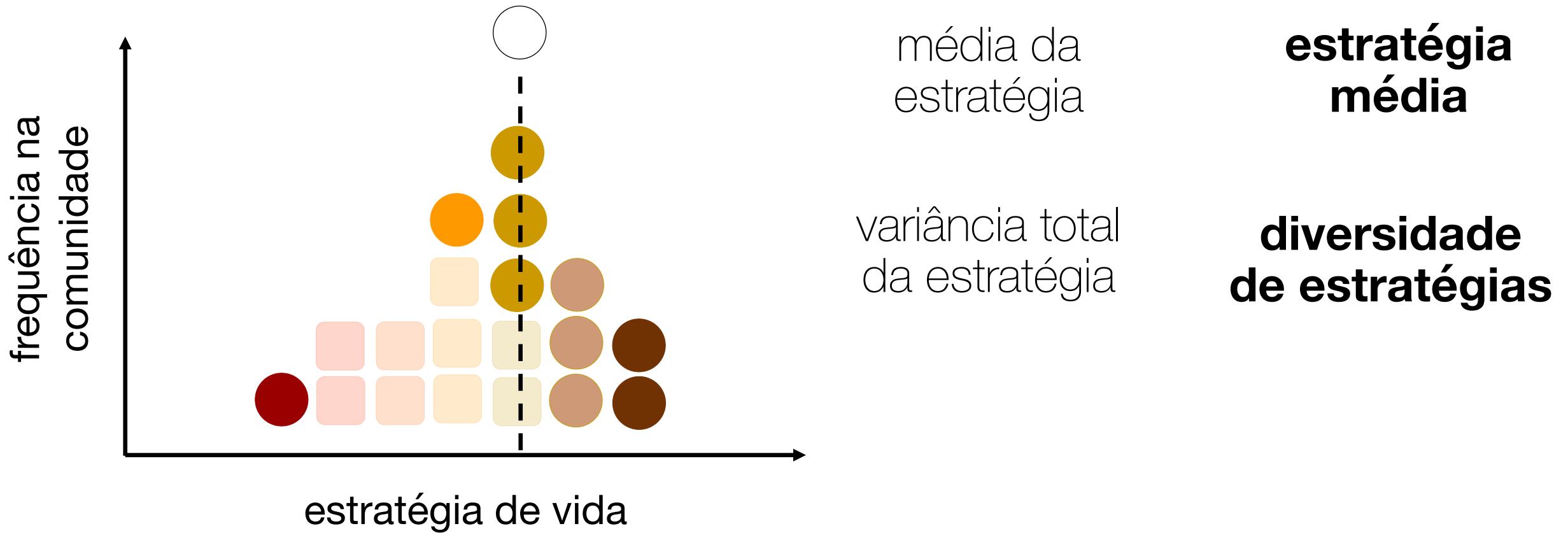


média da  
estratégia

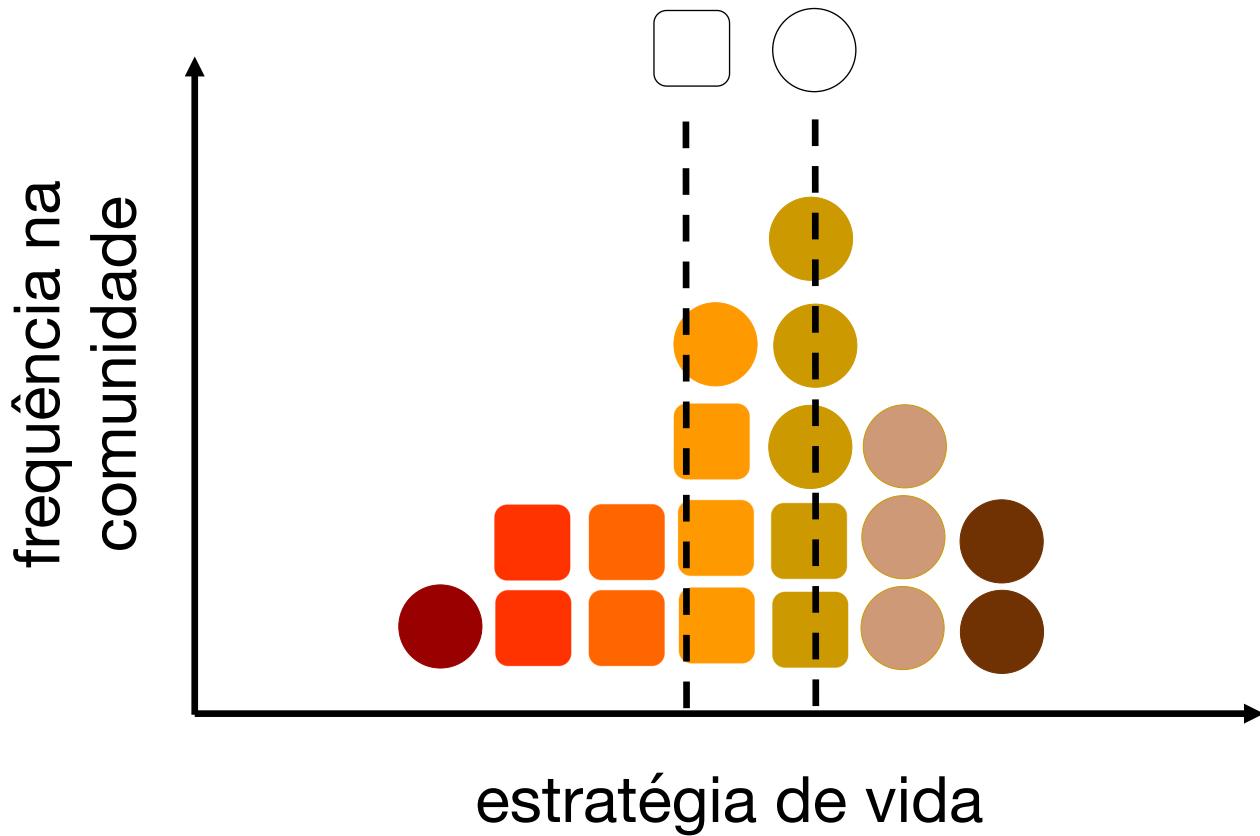
variância total  
da estratégia

**diversidade  
de estratégias**

# variáveis de interesse



# variáveis de interesse



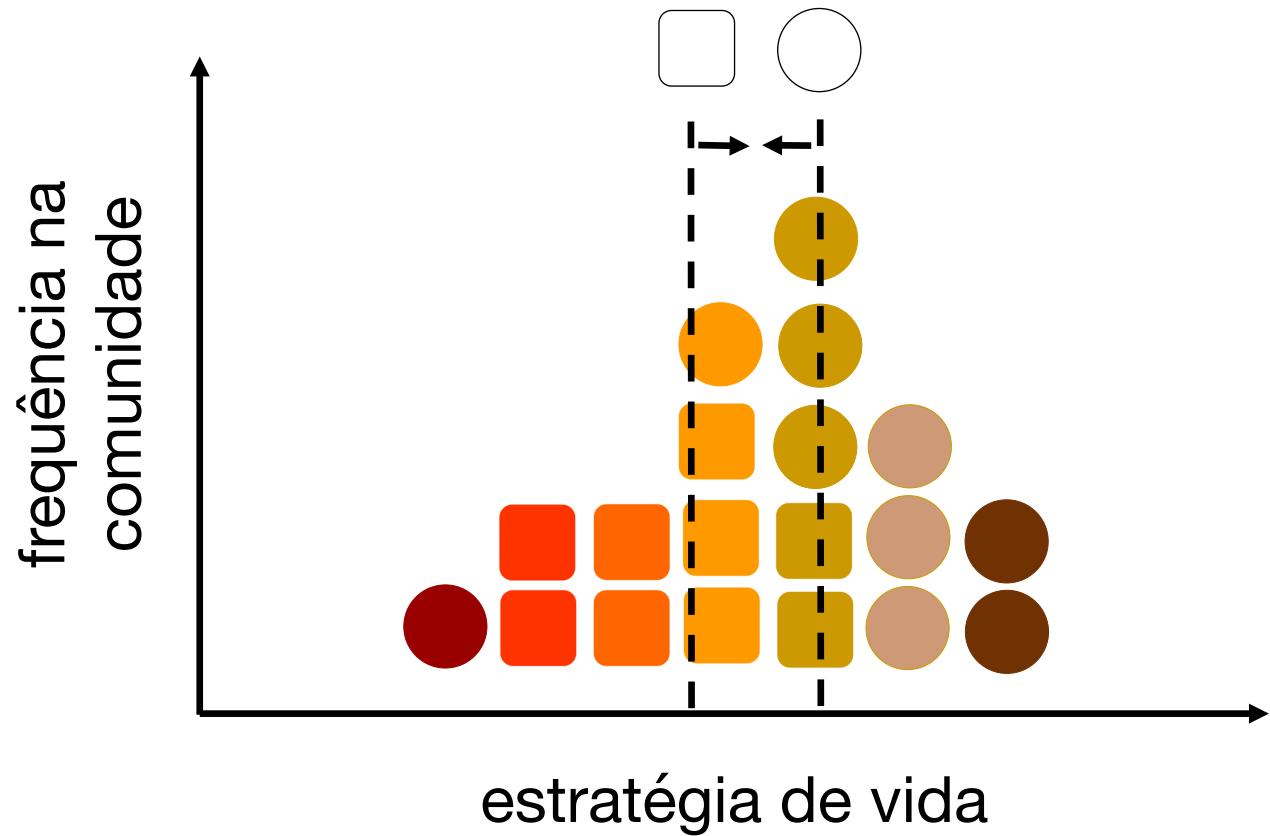
média da  
estratégia

variância total  
da estratégia

**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse



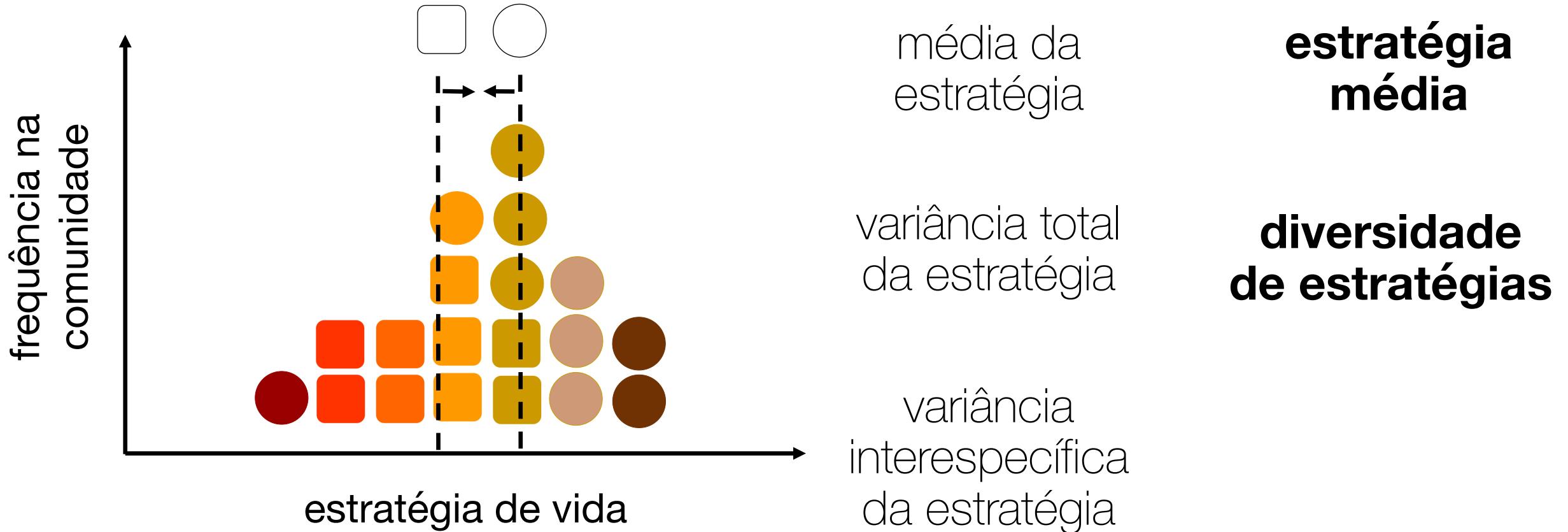
média da  
estratégia

variância total  
da estratégia

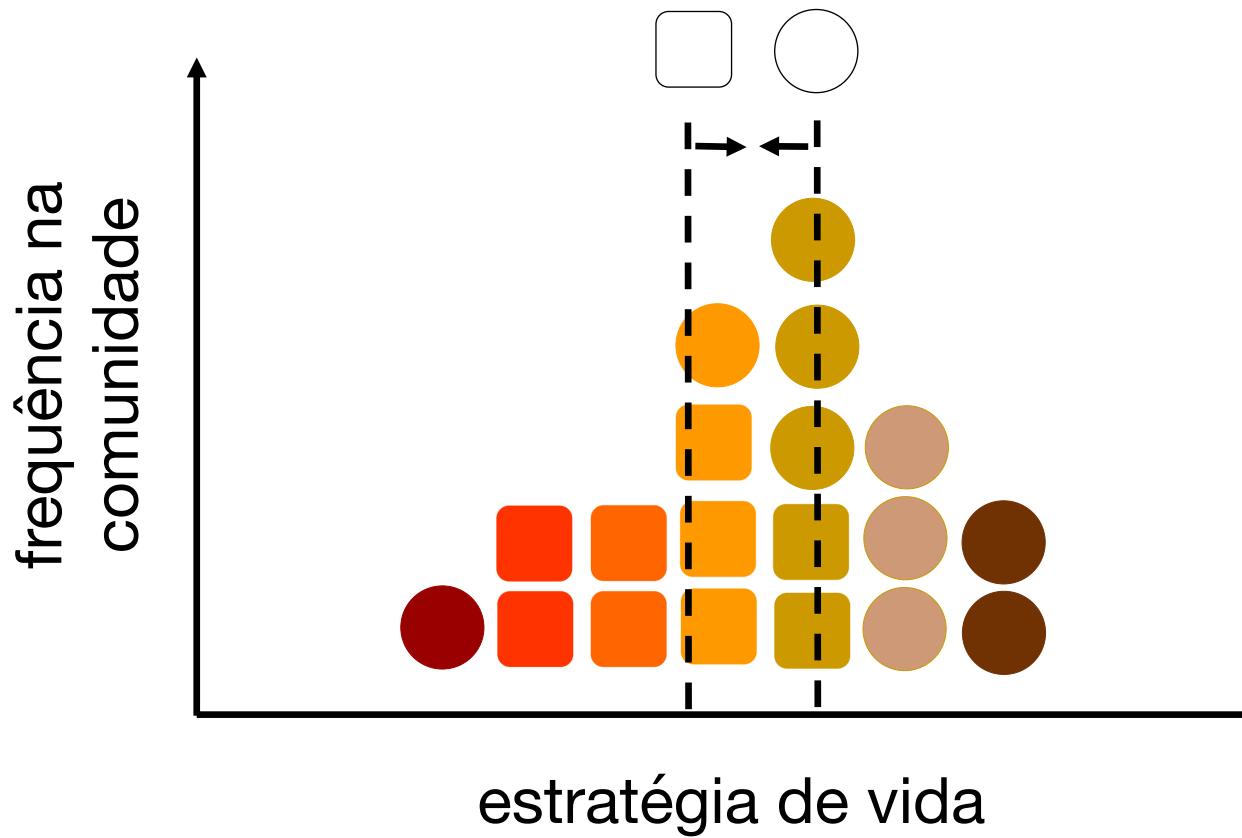
**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse



# variáveis de interesse



**estratégia média**

**diversidade de estratégias**

**heterogeneidade interespecífica de estratégias**

# variáveis de interesse



média da estratégia

variância total da estratégia

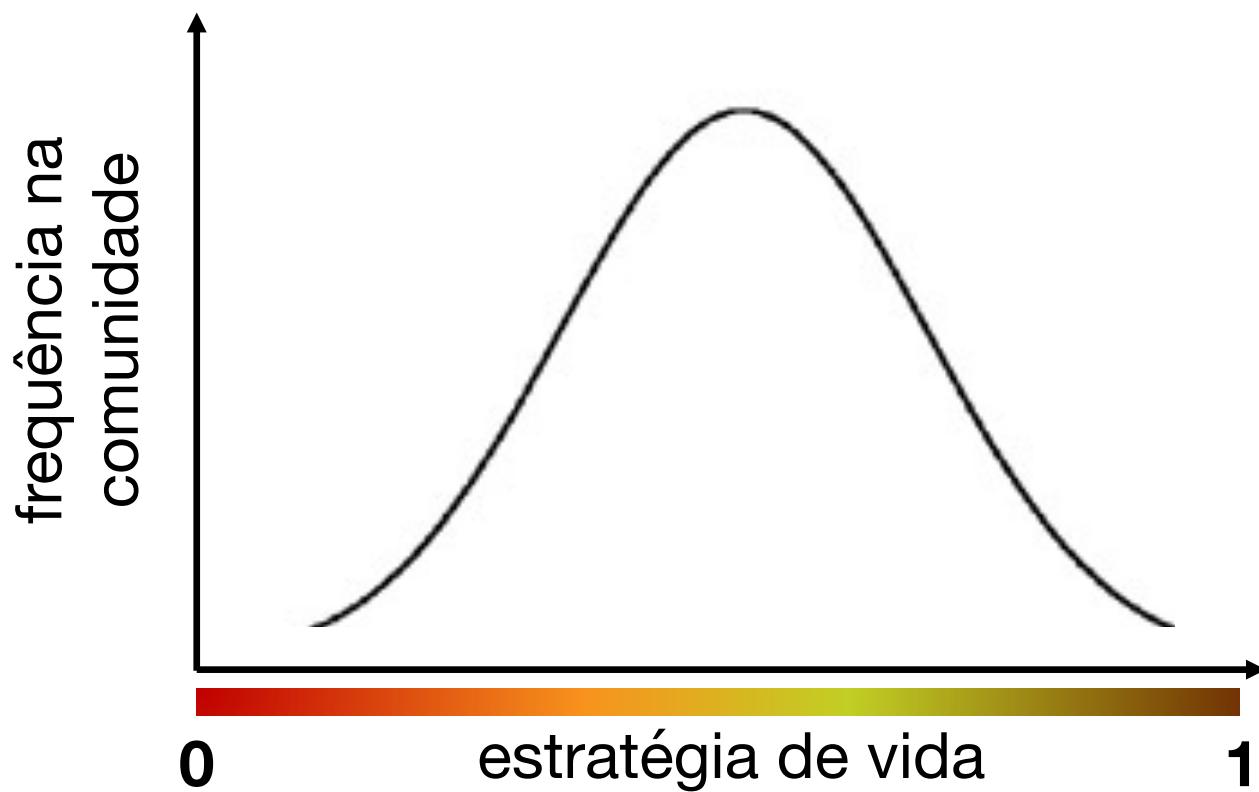
variância interespecífica da estratégia

**estratégia média**

**diversidade de estratégias**

**heterogeneidade interespecífica de estratégias**

# variáveis de interesse



média da estratégia

variância total da estratégia

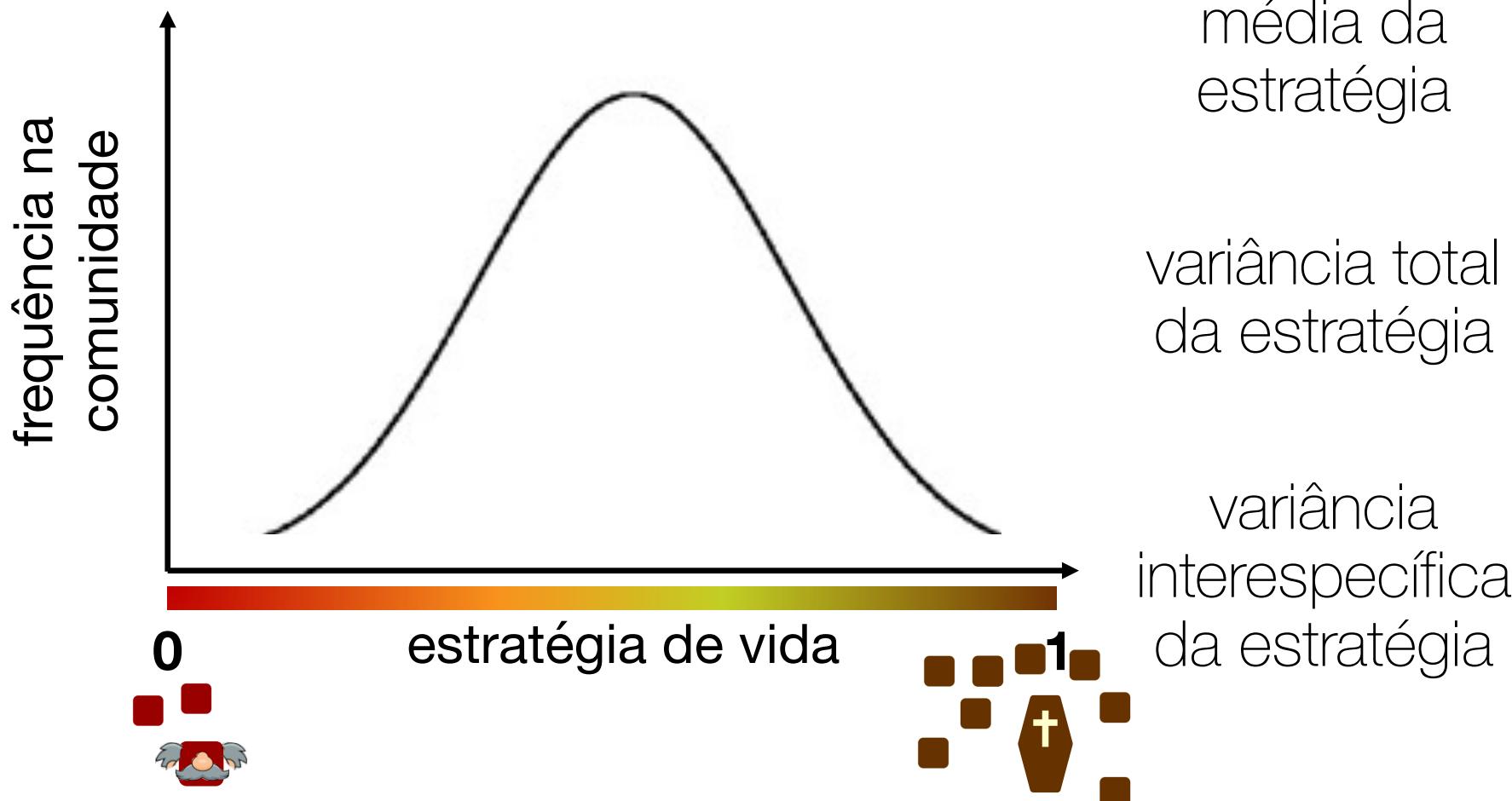
variância interespecífica da estratégia

**estratégia média**

**diversidade de estratégias**

**heterogeneidade interespecífica de estratégias**

# variáveis de interesse



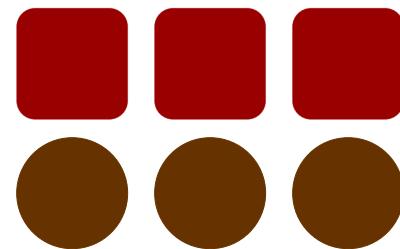
**estratégia média**

**diversidade de estratégias**

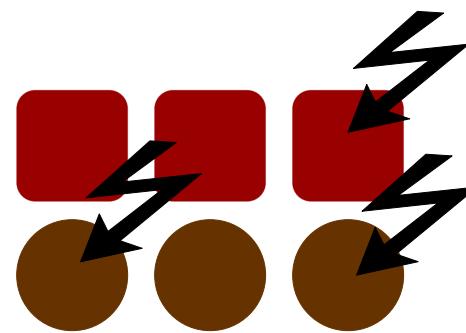
**heterogeneidade interespecífica de estratégias**

# variável preditora

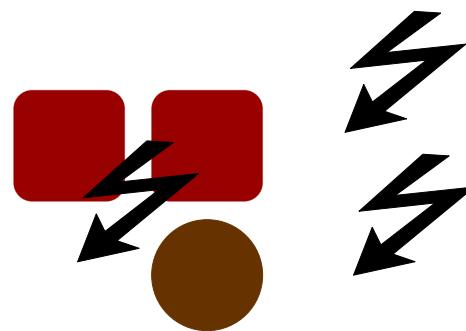
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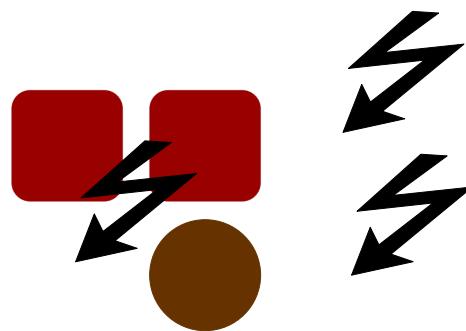
# variável preditora



# variável preditora

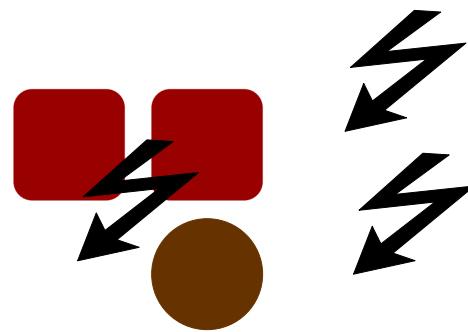


# variável preditora



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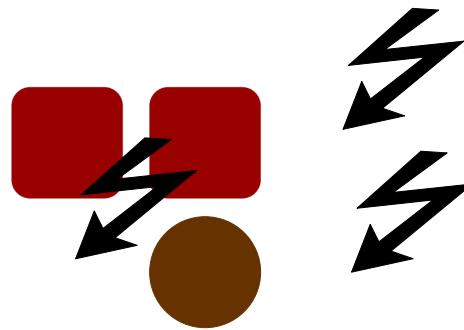
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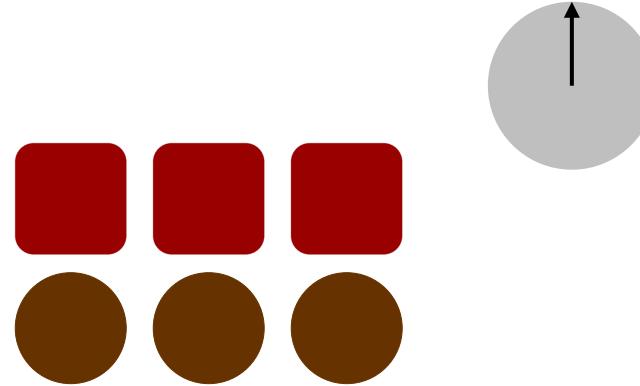
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**intensidade  
do distúrbio**

# variável preditora

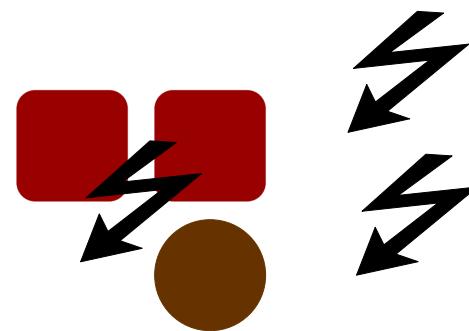


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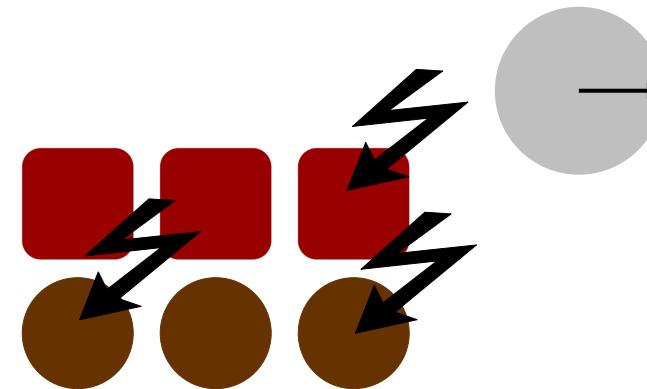


**intensidade  
do distúrbio**

# variável preditora

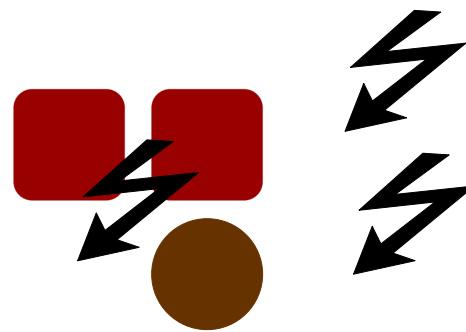


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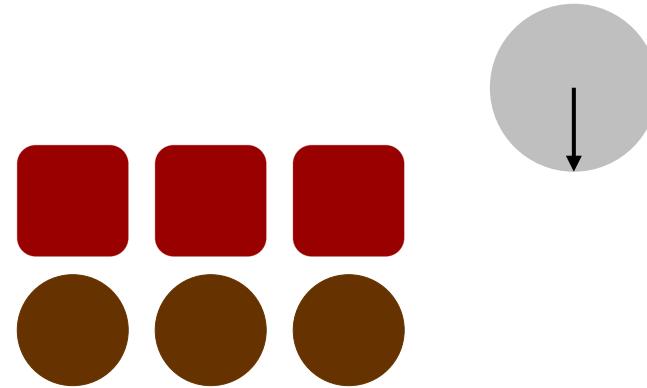


**intensidade  
do distúrbio**

# variável preditora

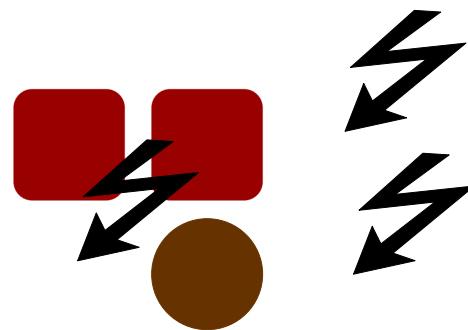


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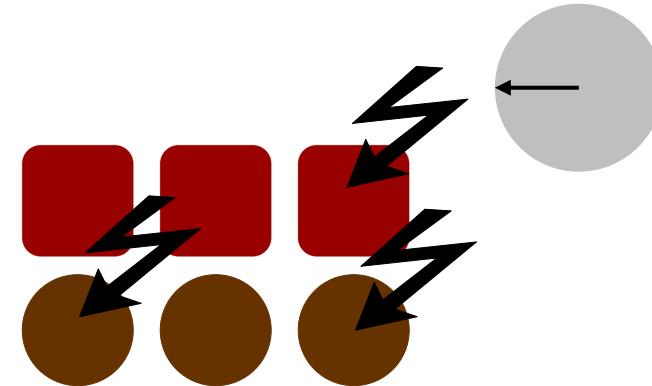


**intensidade  
do distúrbio**

# variável preditora

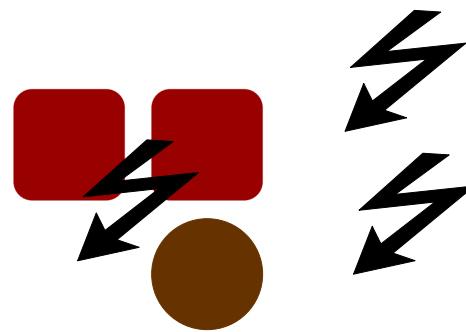


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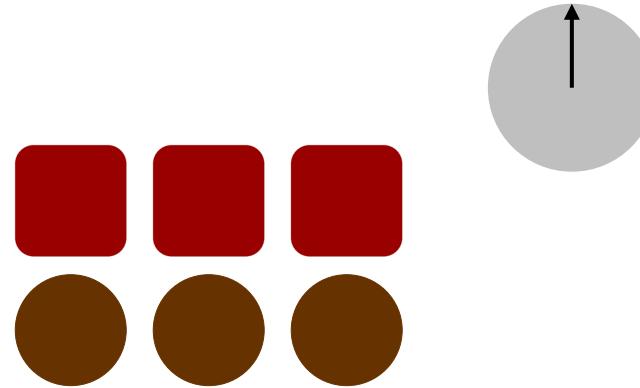


**intensidade  
do distúrbio**

# variável preditora

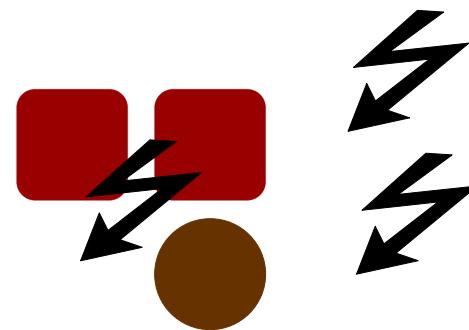


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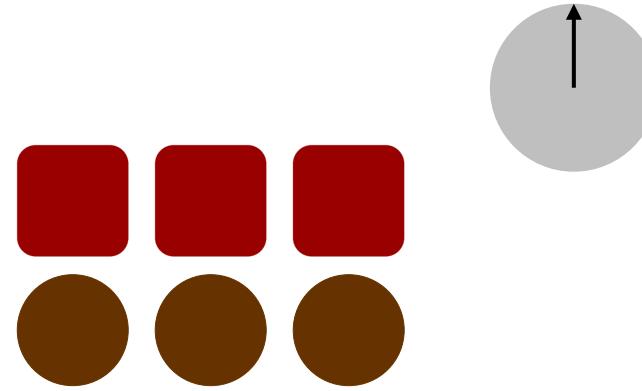
**intensidade  
do distúrbio**

# variável preditora



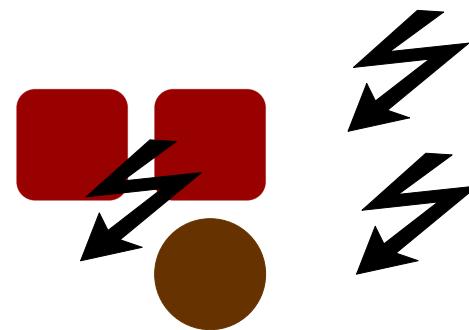
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**intensidade  
do distúrbio**



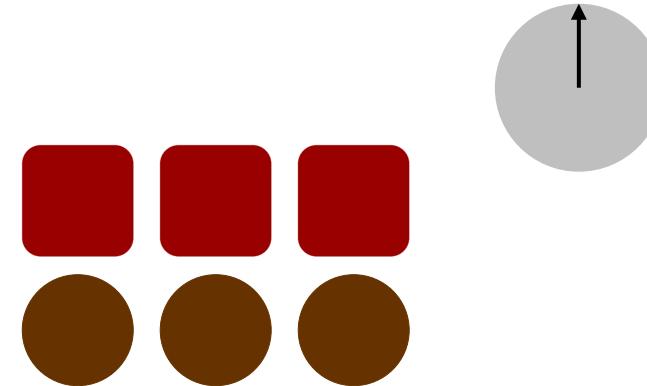
2 eventos

# variável preditora



50%

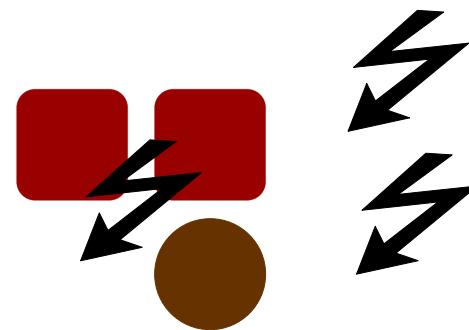
**intensidade  
do distúrbio**



2 eventos

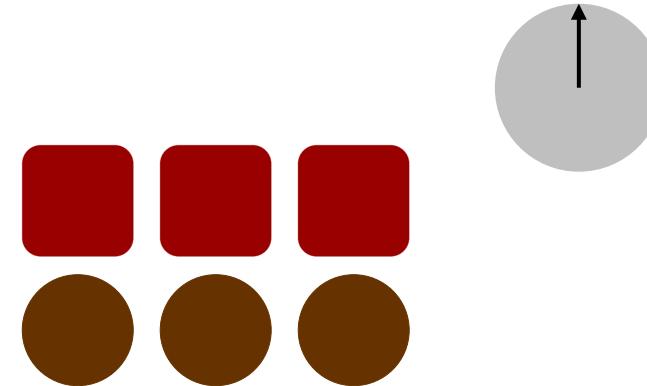
**número de  
eventos de  
distúrbio**

# variável preditora



50%

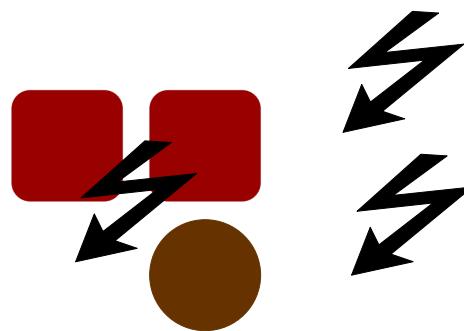
**intensidade  
do distúrbio**



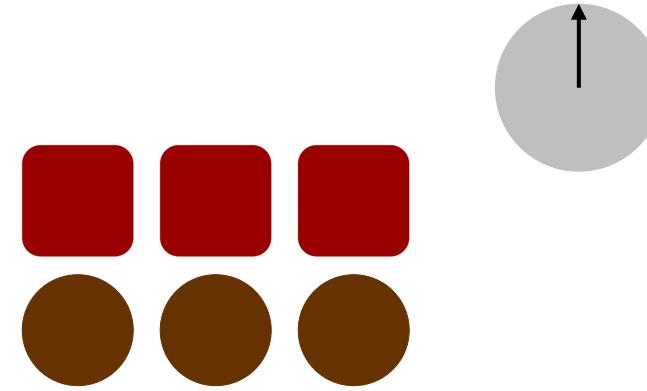
2 eventos

**número de  
eventos de  
distúrbio**

# variável preditora



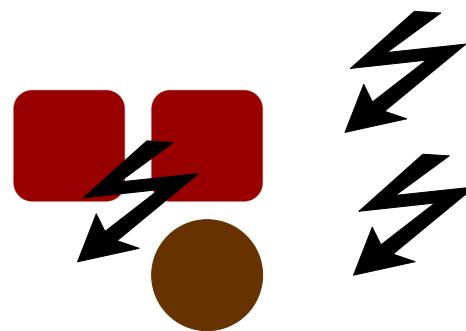
50%



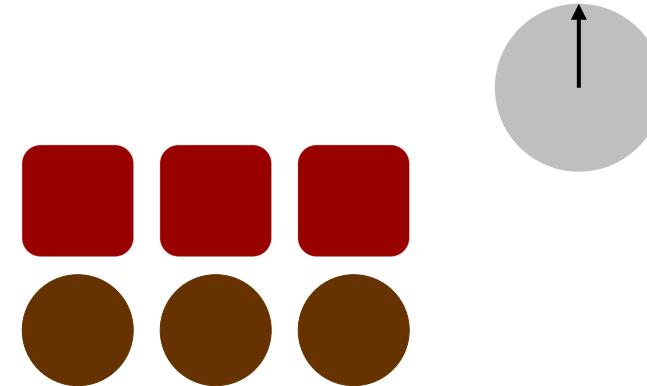
2 eventos

=

# variável preditora



50%



2 eventos

**índice de  
distúrbio**



# análise dos dados



# modelos

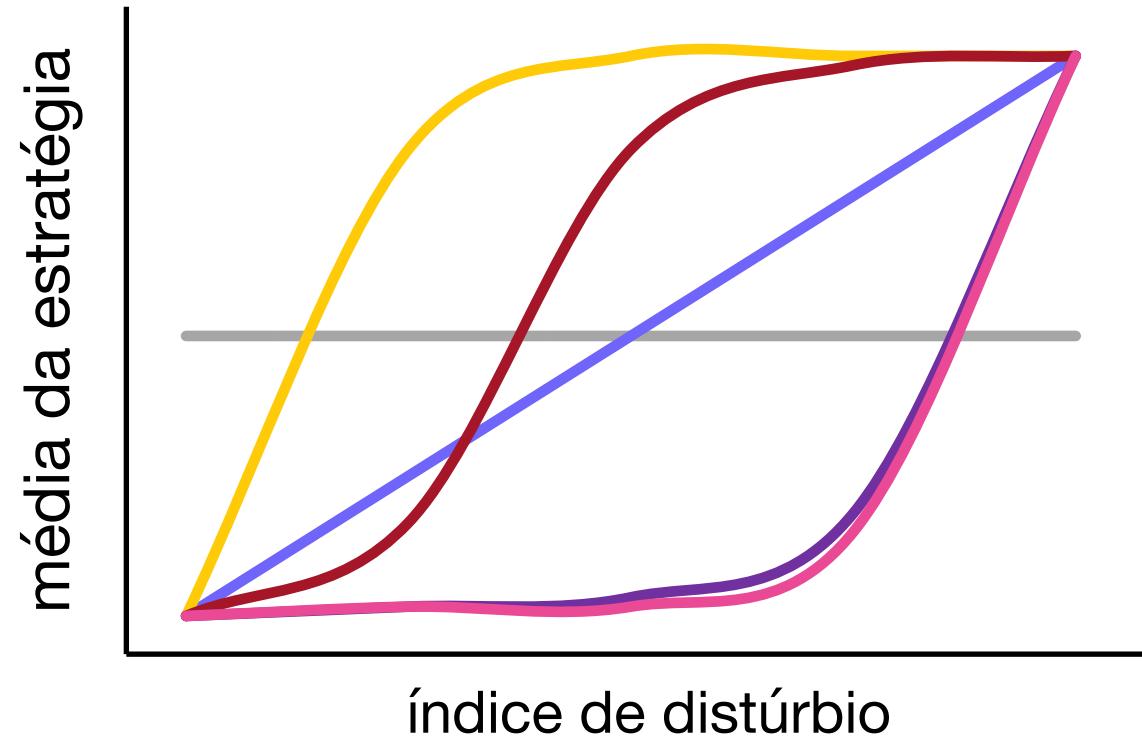
variável de interesse ~ distúrbio



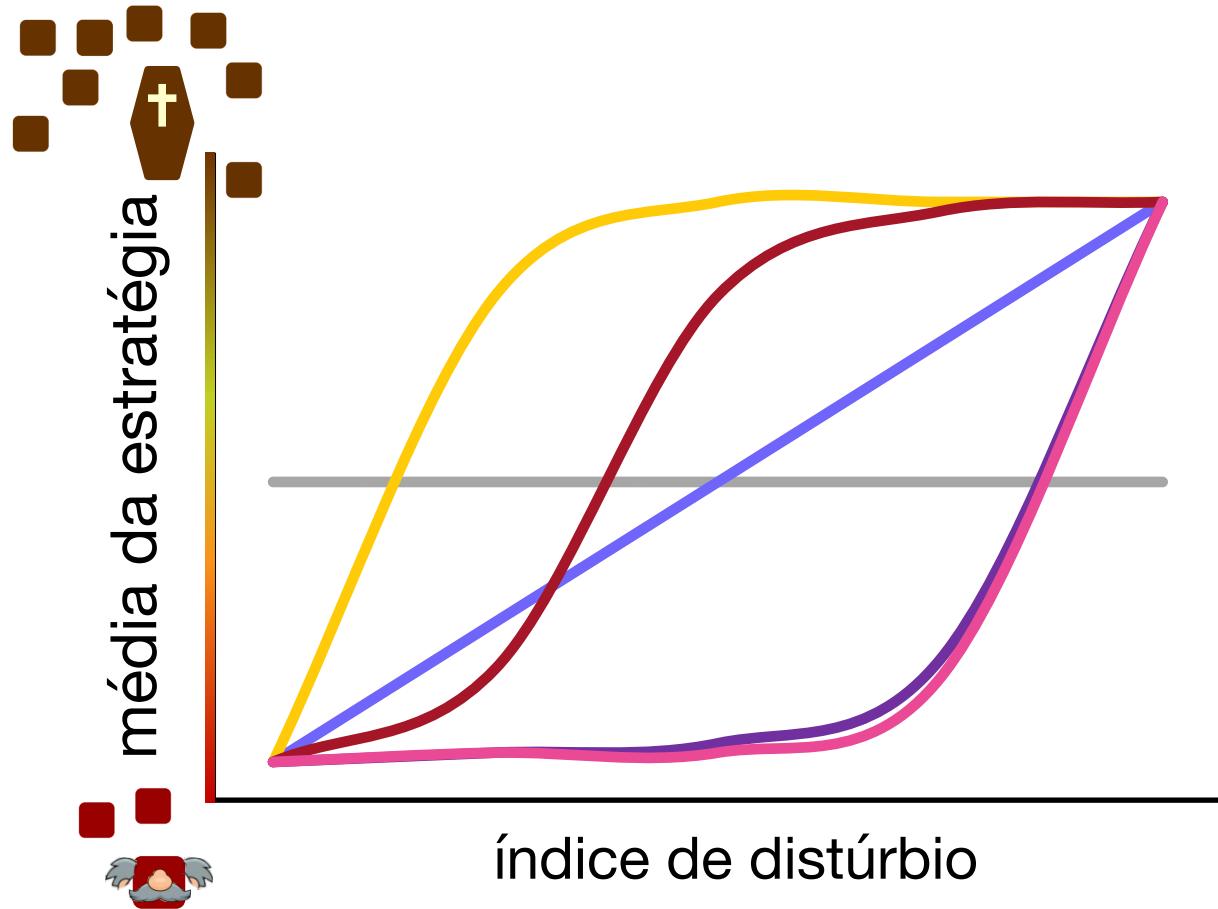
estratégia média ~ distúrbio



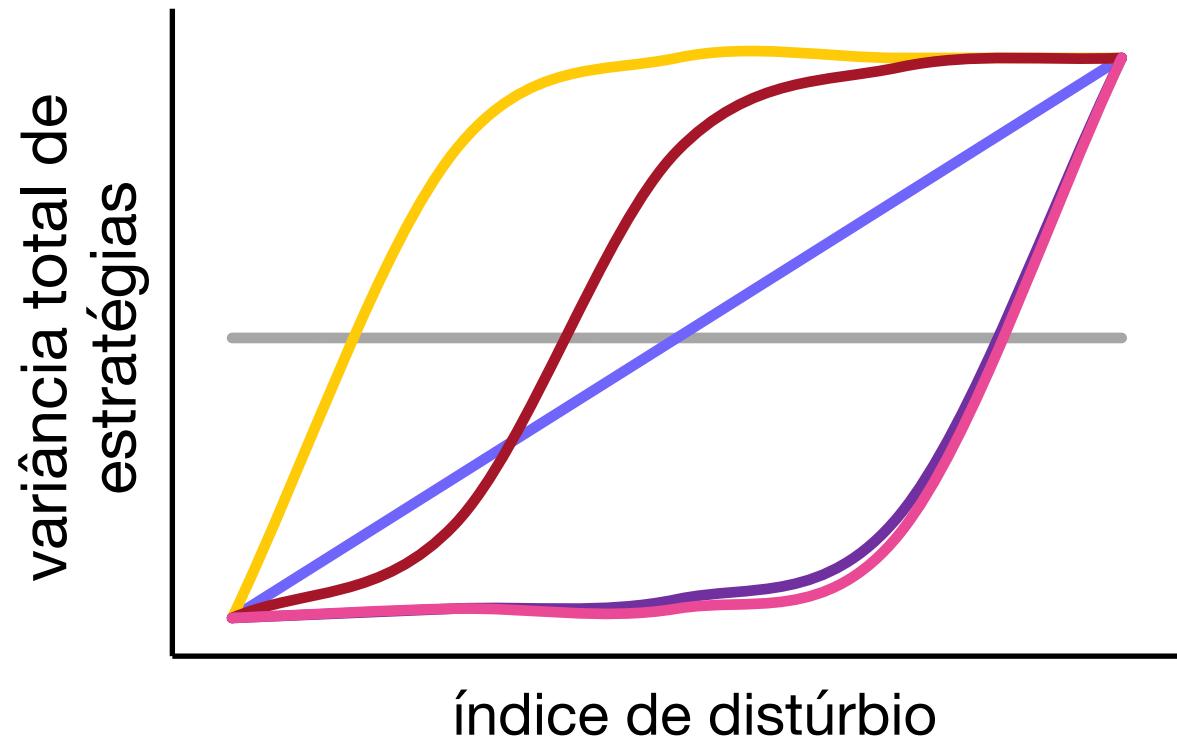
estratégia média ~ distúrbio



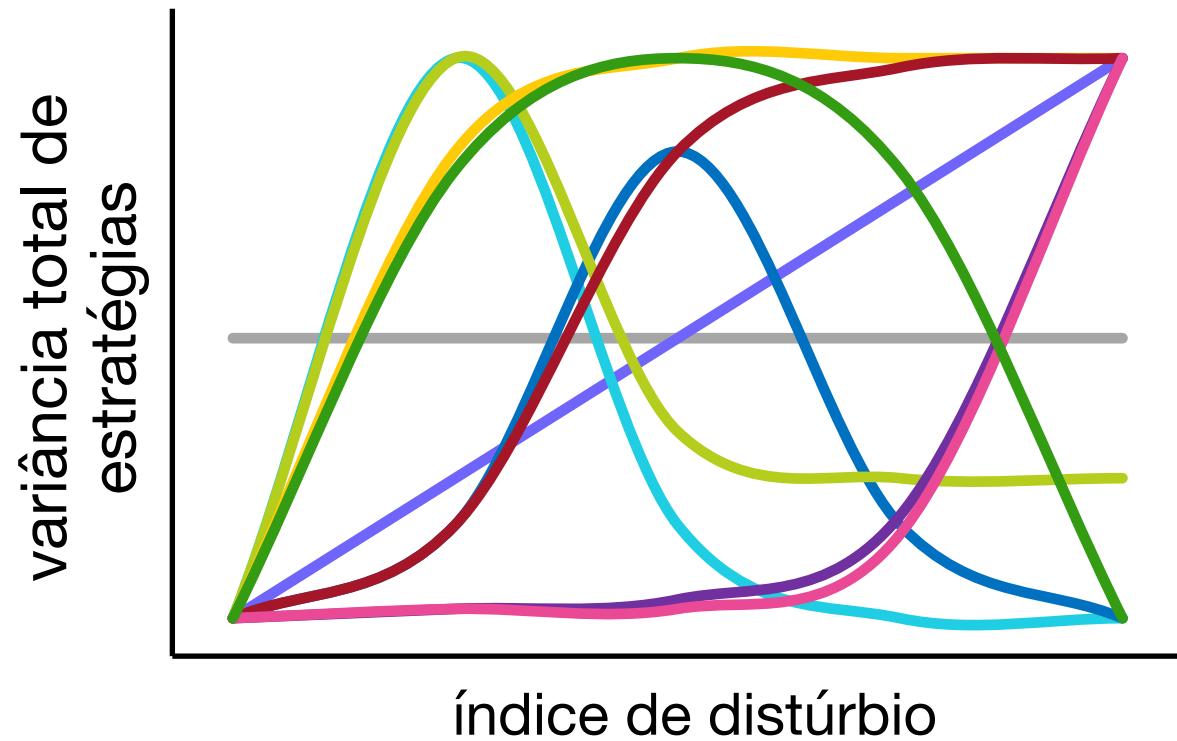
# estratégia média ~ distúrbio



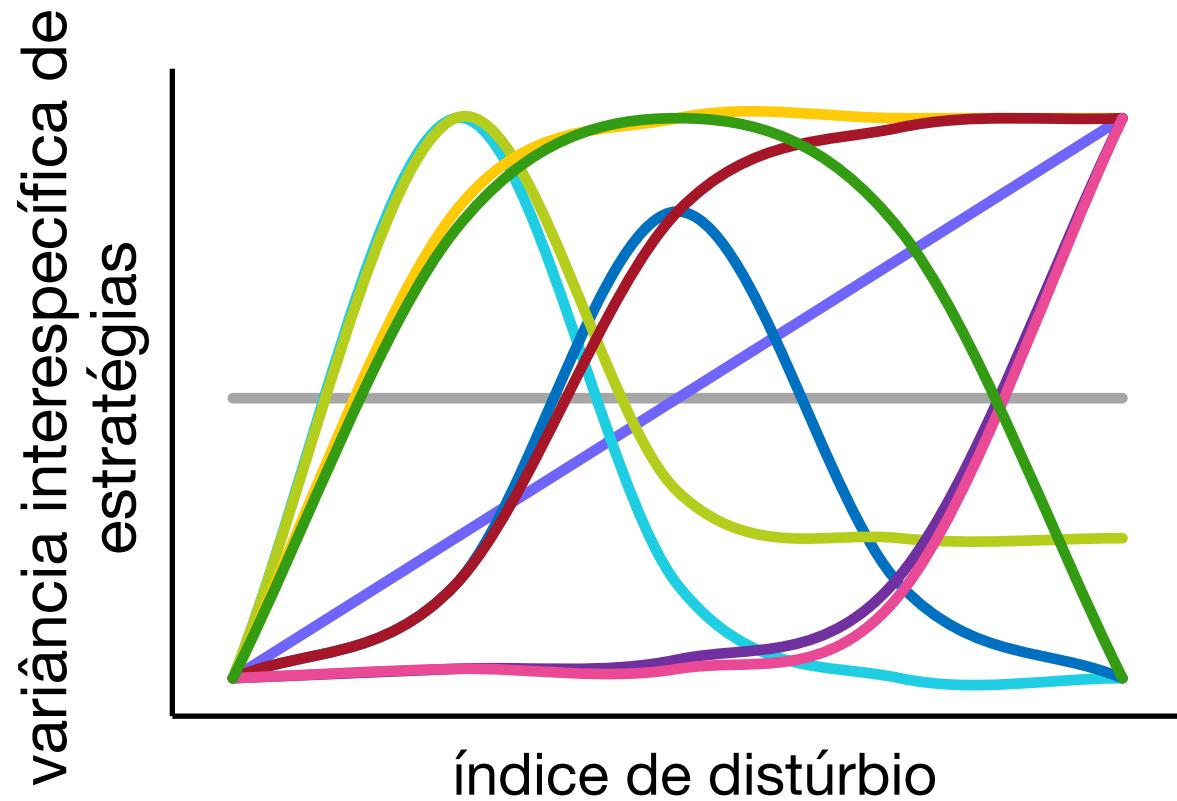
diversidade de estratégias ~ distúrbio



diversidade de estratégias ~ distúrbio



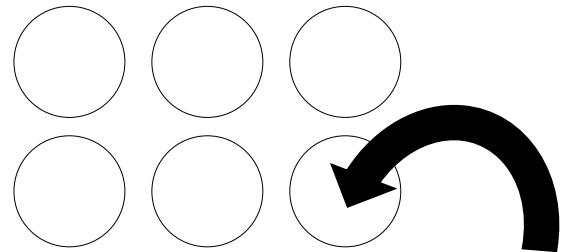
# heterogeneidade interespecífica de ~ estratéгias distúrbio





# seleção de modelos

## evolutivo

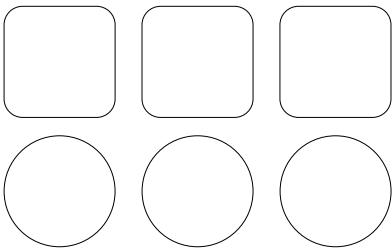


estratégia média

diversidade  
de estratégias

-

## ecológico

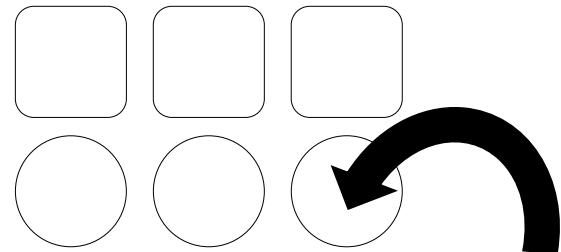


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

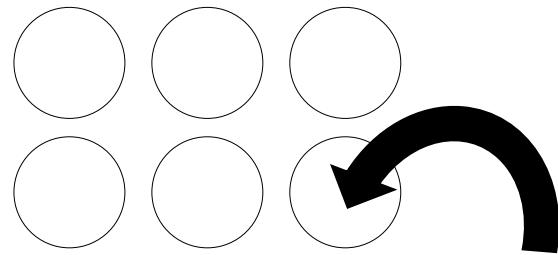


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

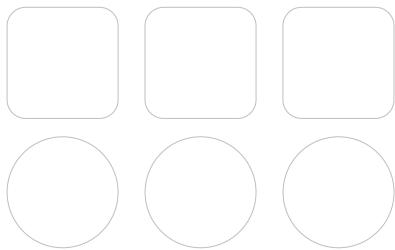


### estratégia média

diversidade  
de estratégias

-

## ecológico

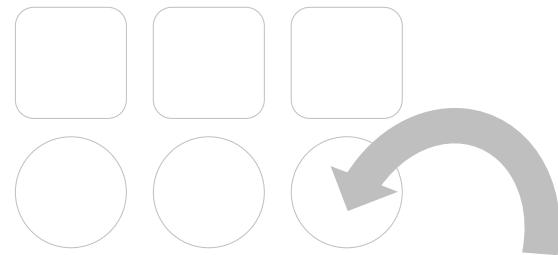


### estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

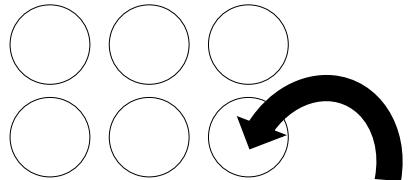


### estratégia média

diversidade  
de estratégias

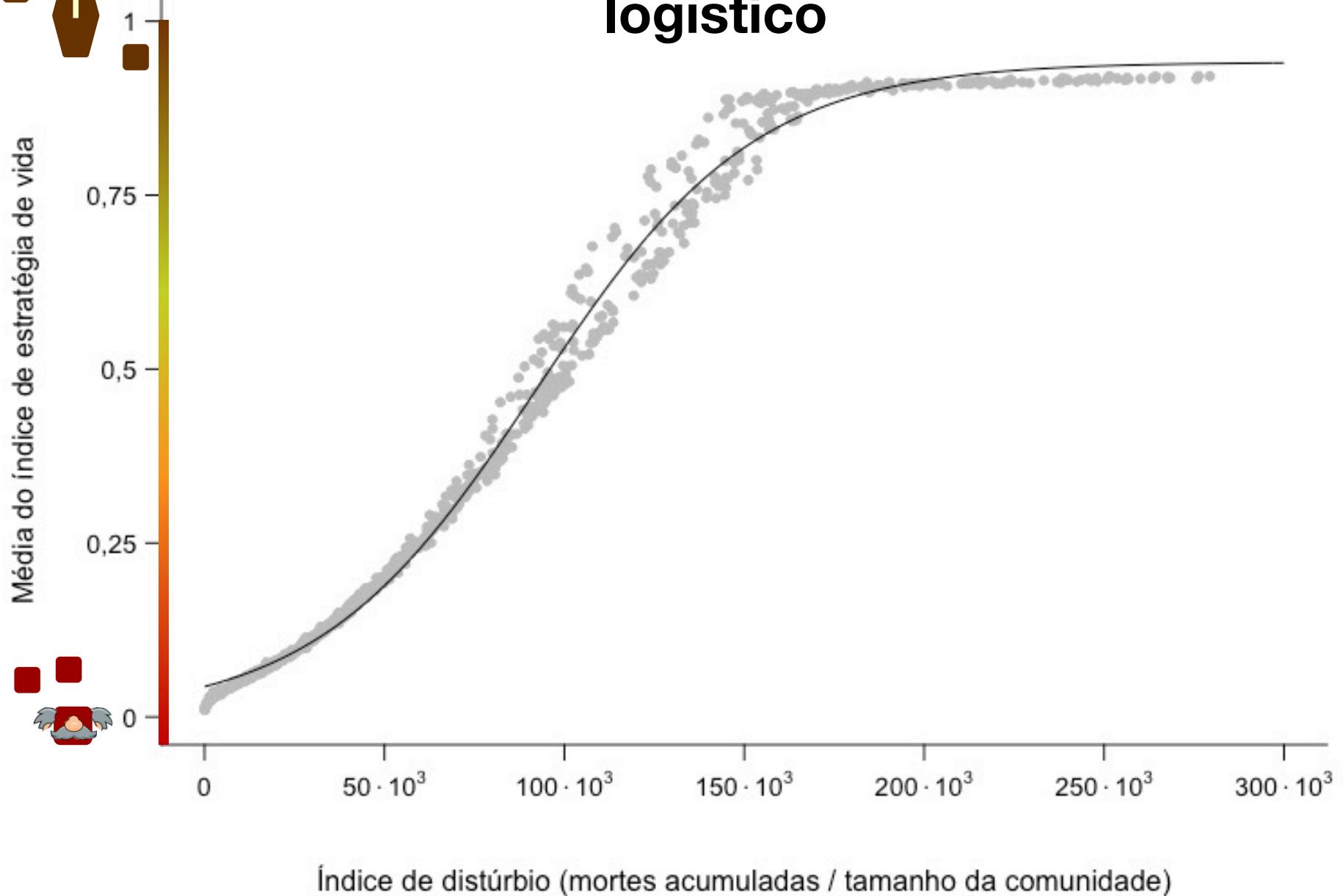
heterogeneidade  
interespecífica de  
estratégias

# estratégia média



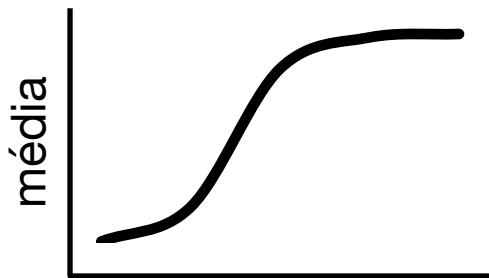
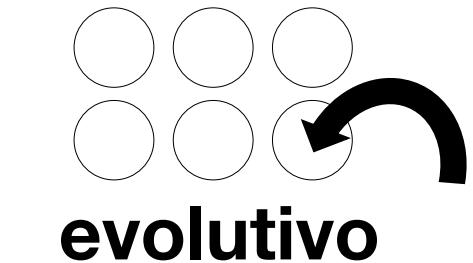
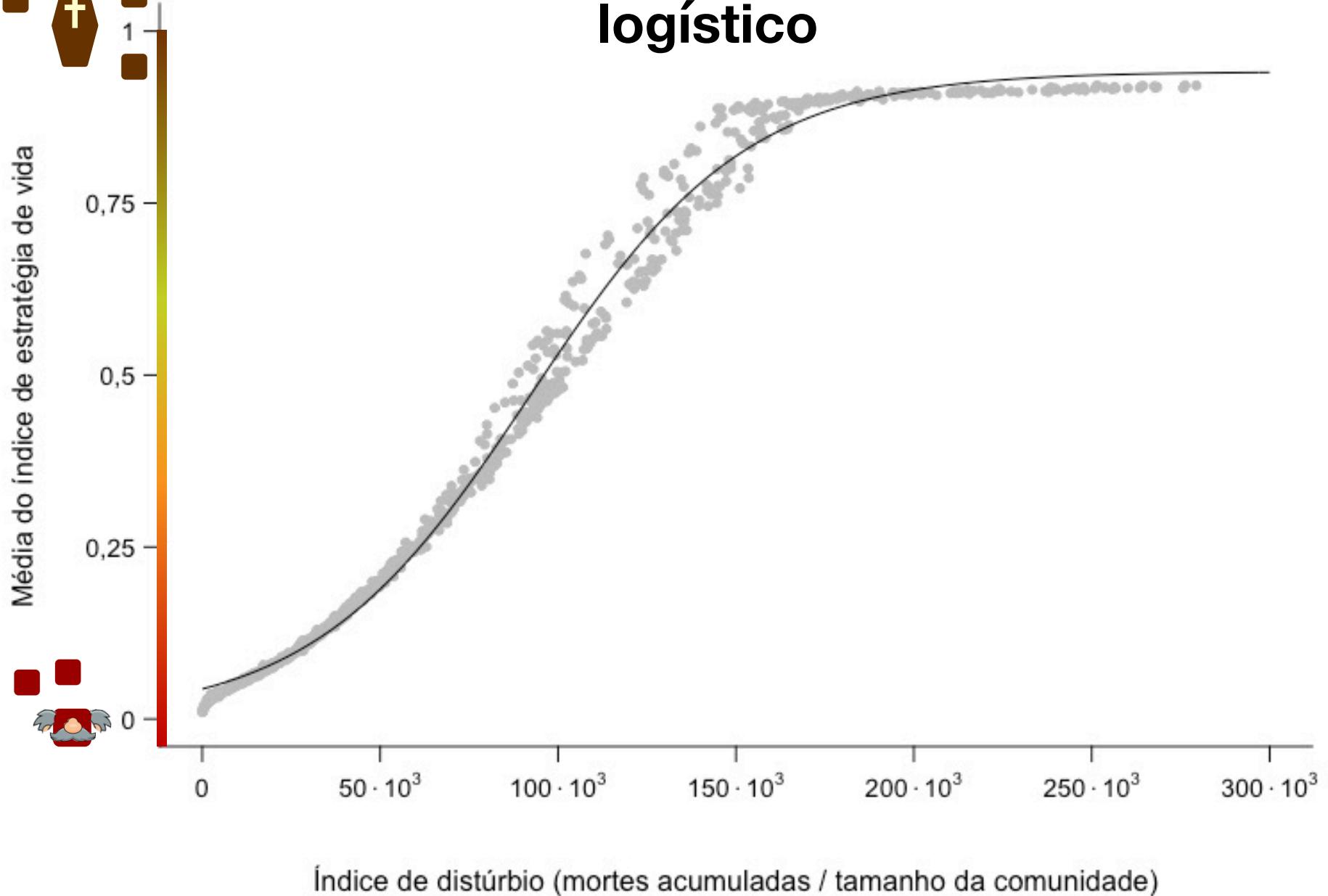
**evolutivo**

# estratégia média logístico



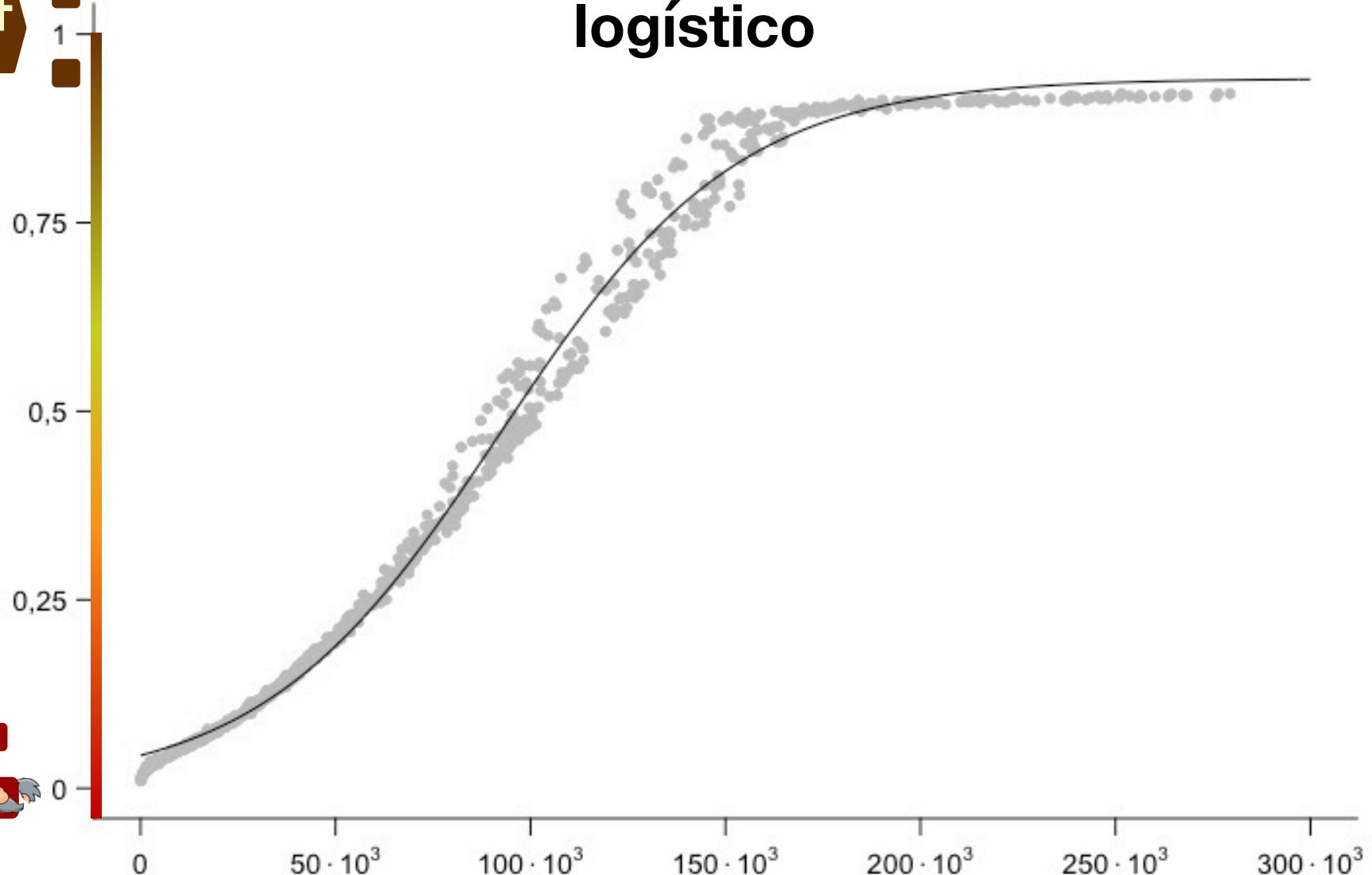
evolutivo

# estratégia média logístico

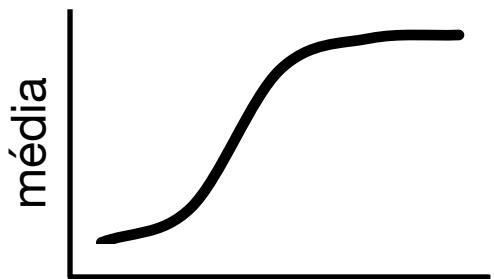
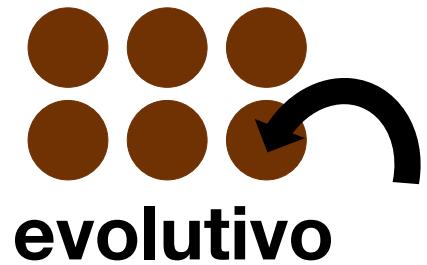


# estratégia média logístico

Média do índice de estratégia de vida

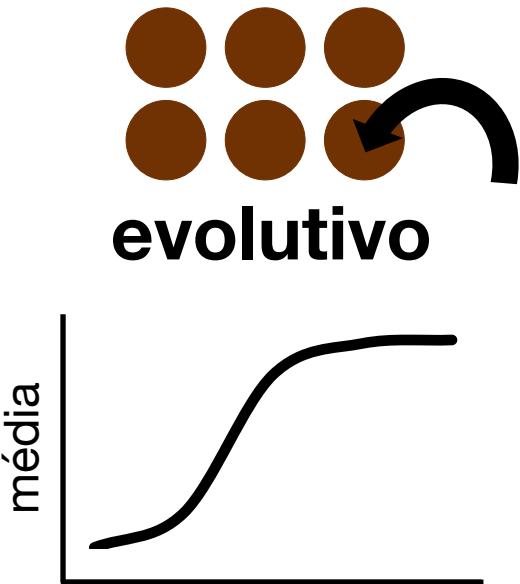


Índice de distúrbio (mortes acumuladas / tamanho da comunidade)



# seleção natural

- variação herdável
- componente da aptidão



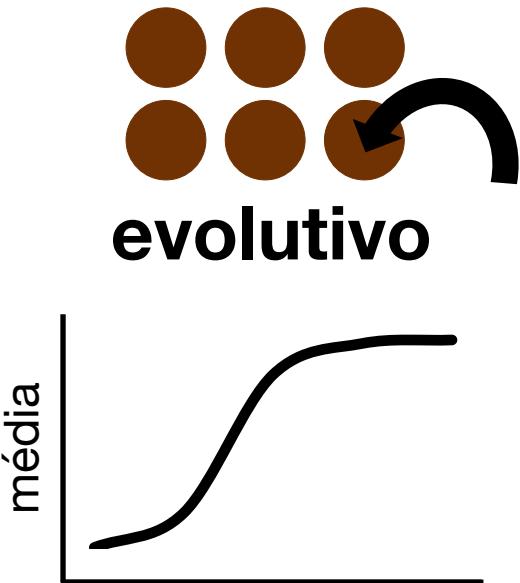
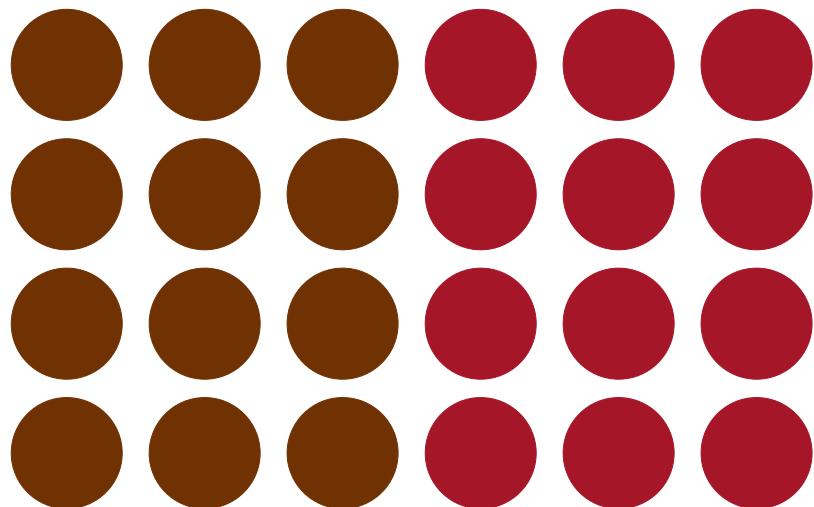
# seleção natural

- variação herdável
- componente da aptidão

banco

x 96

x 24



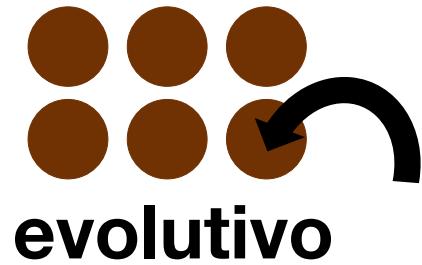
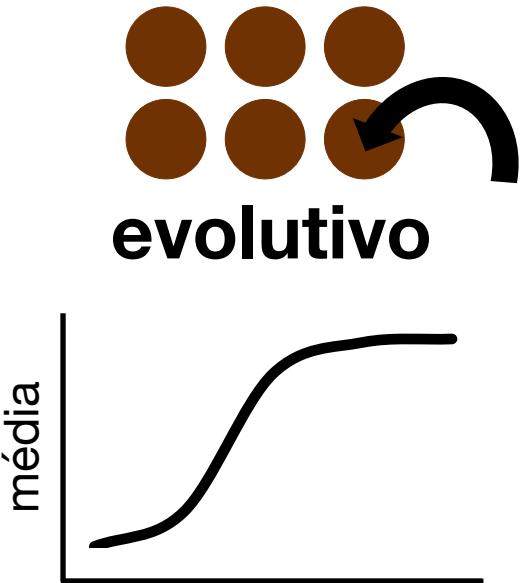
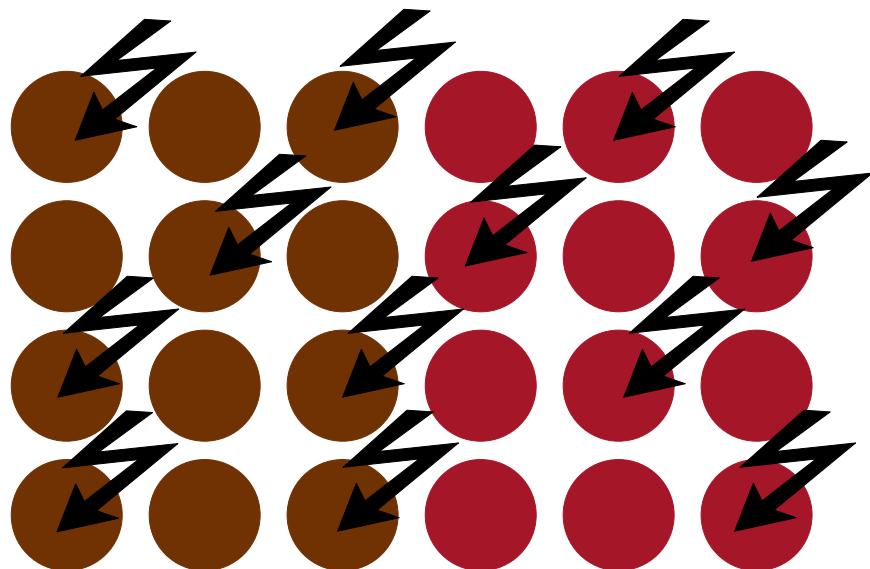
# seleção natural

- variação herdável
- componente da aptidão

banco

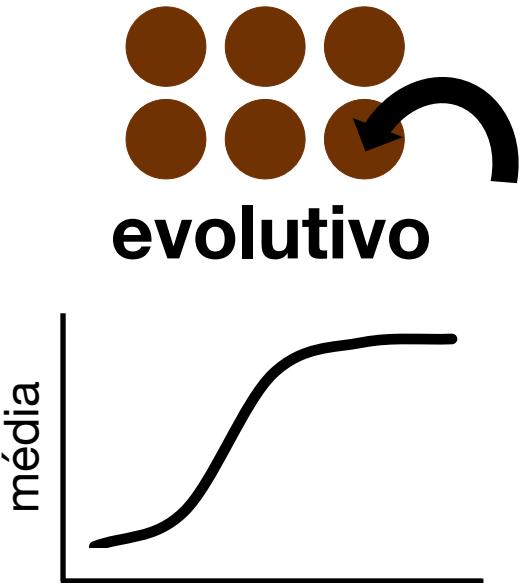
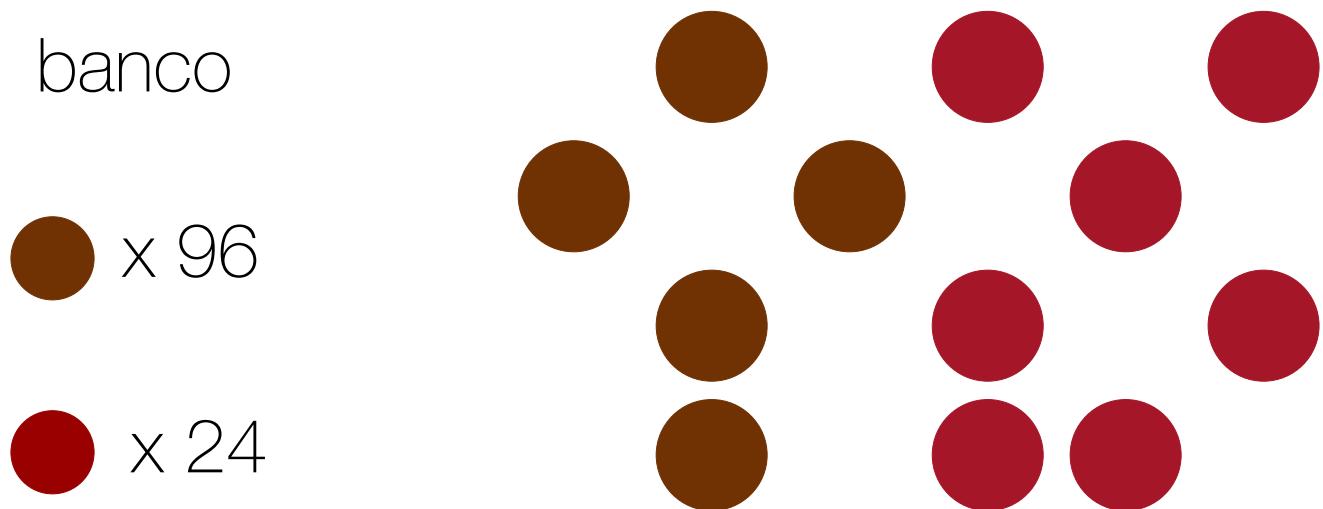
● x 96

● x 24

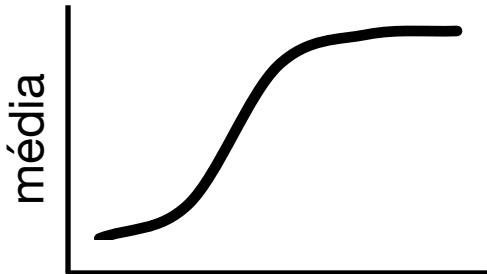


# seleção natural

- variação herdável
- componente da aptidão

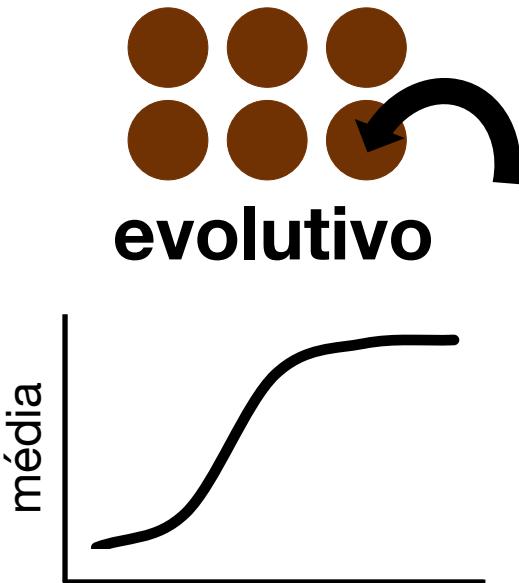
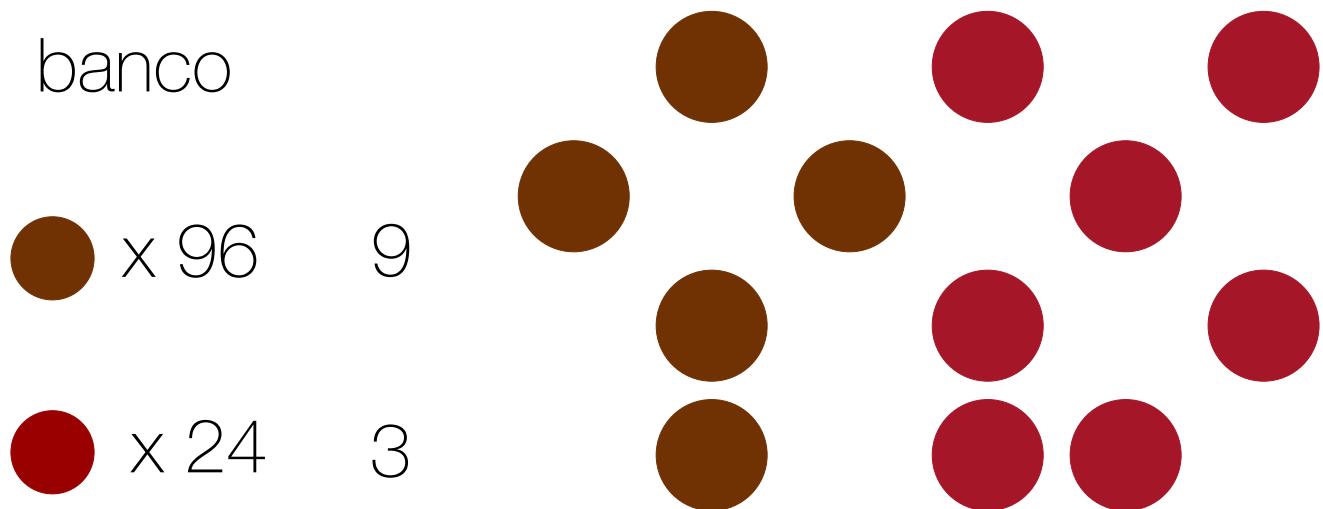


evolutivo



# seleção natural

- variação herdável
- componente da aptidão



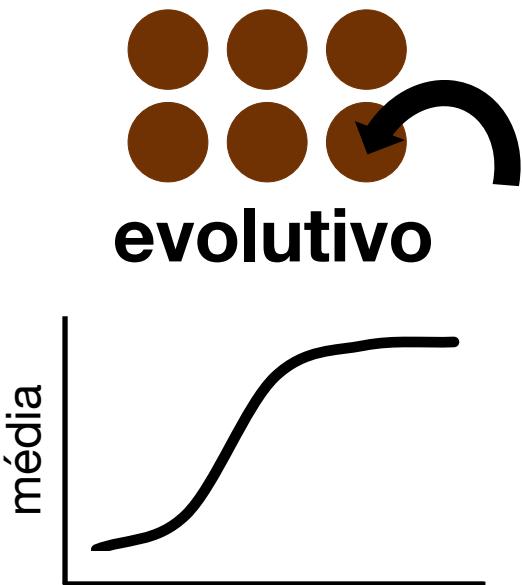
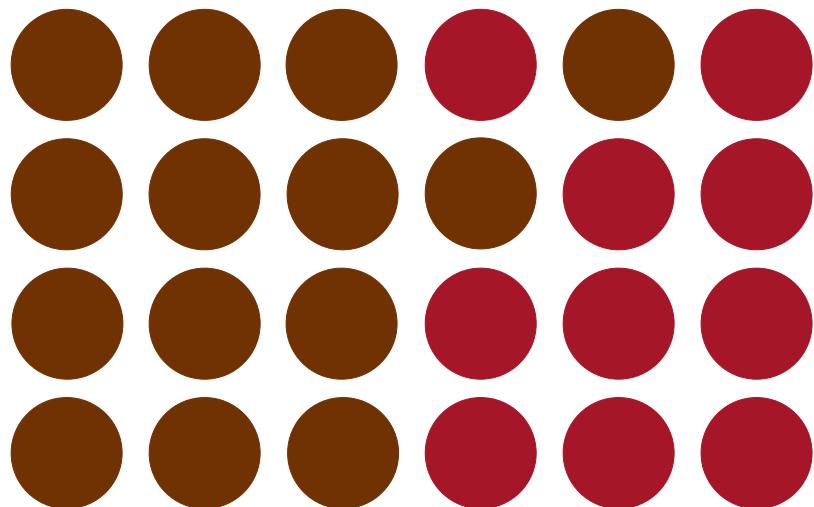
# seleção natural

- variação herdável
- componente da aptidão

banco

x 112

x 20



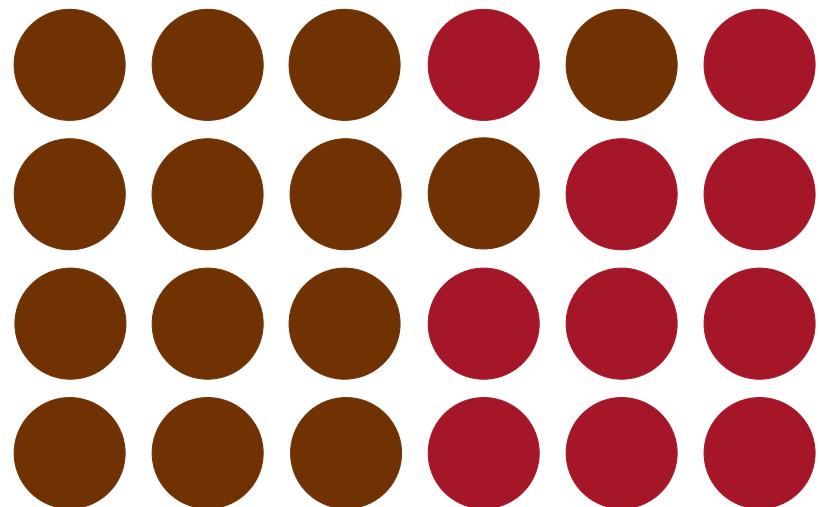
# seleção natural

- variação herdável
- componente da aptidão

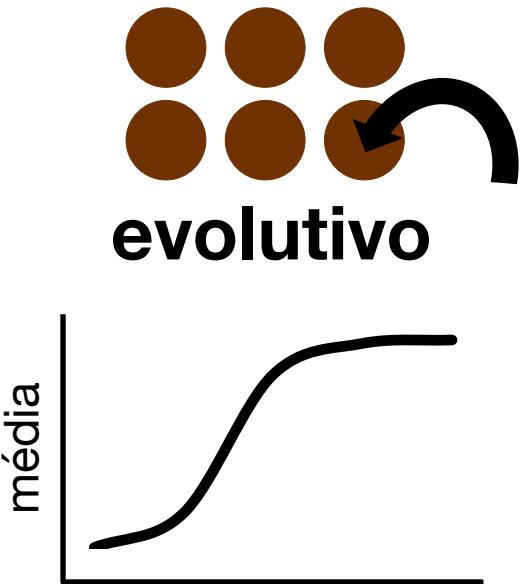
banco

● x 112

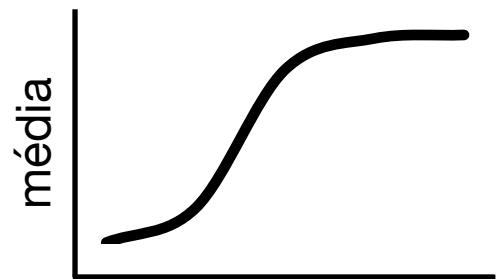
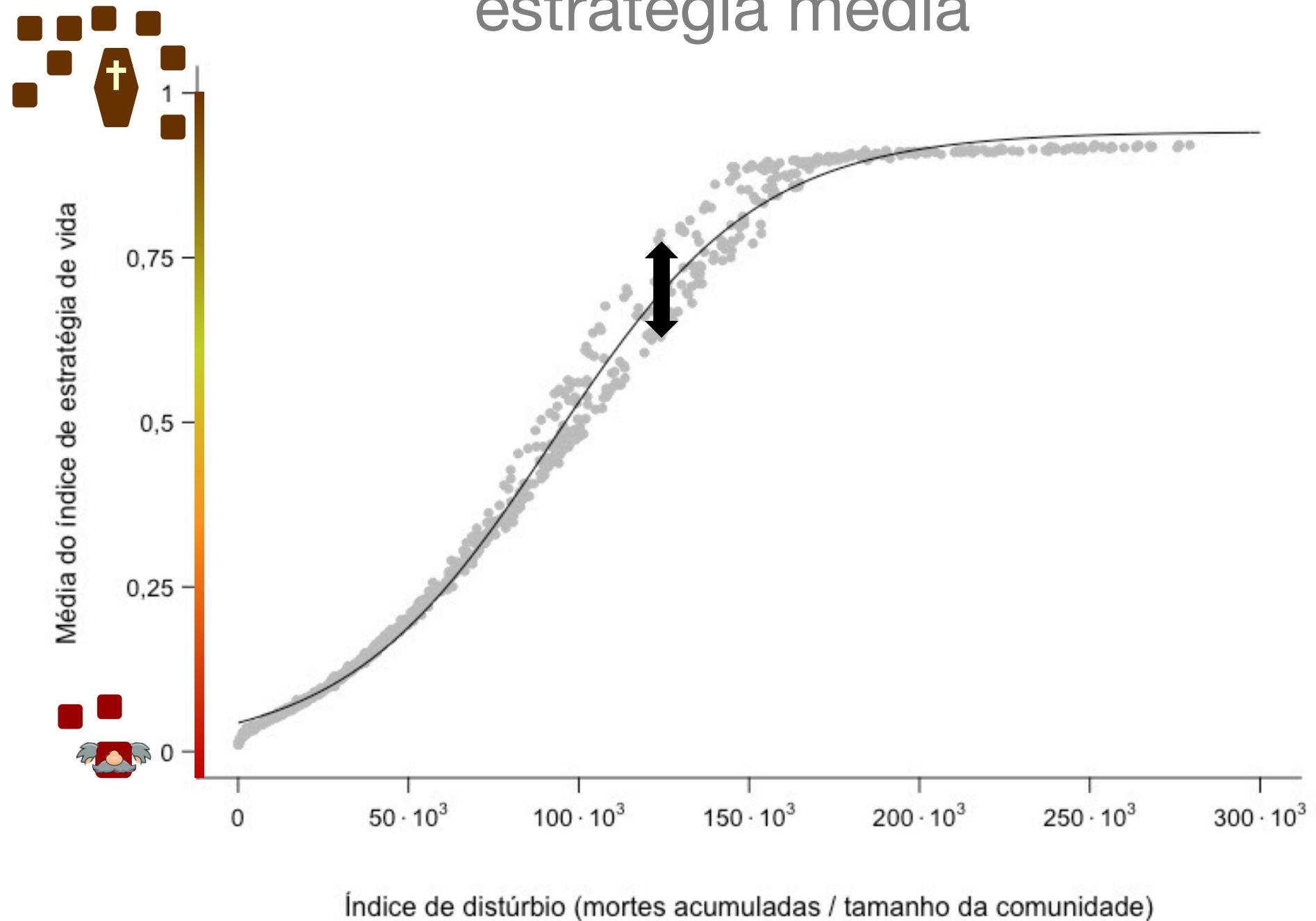
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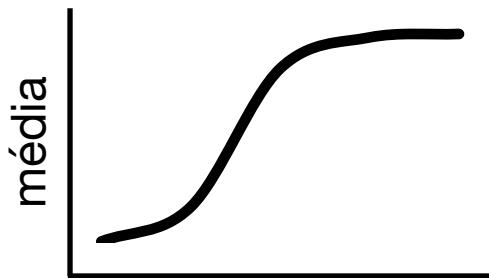
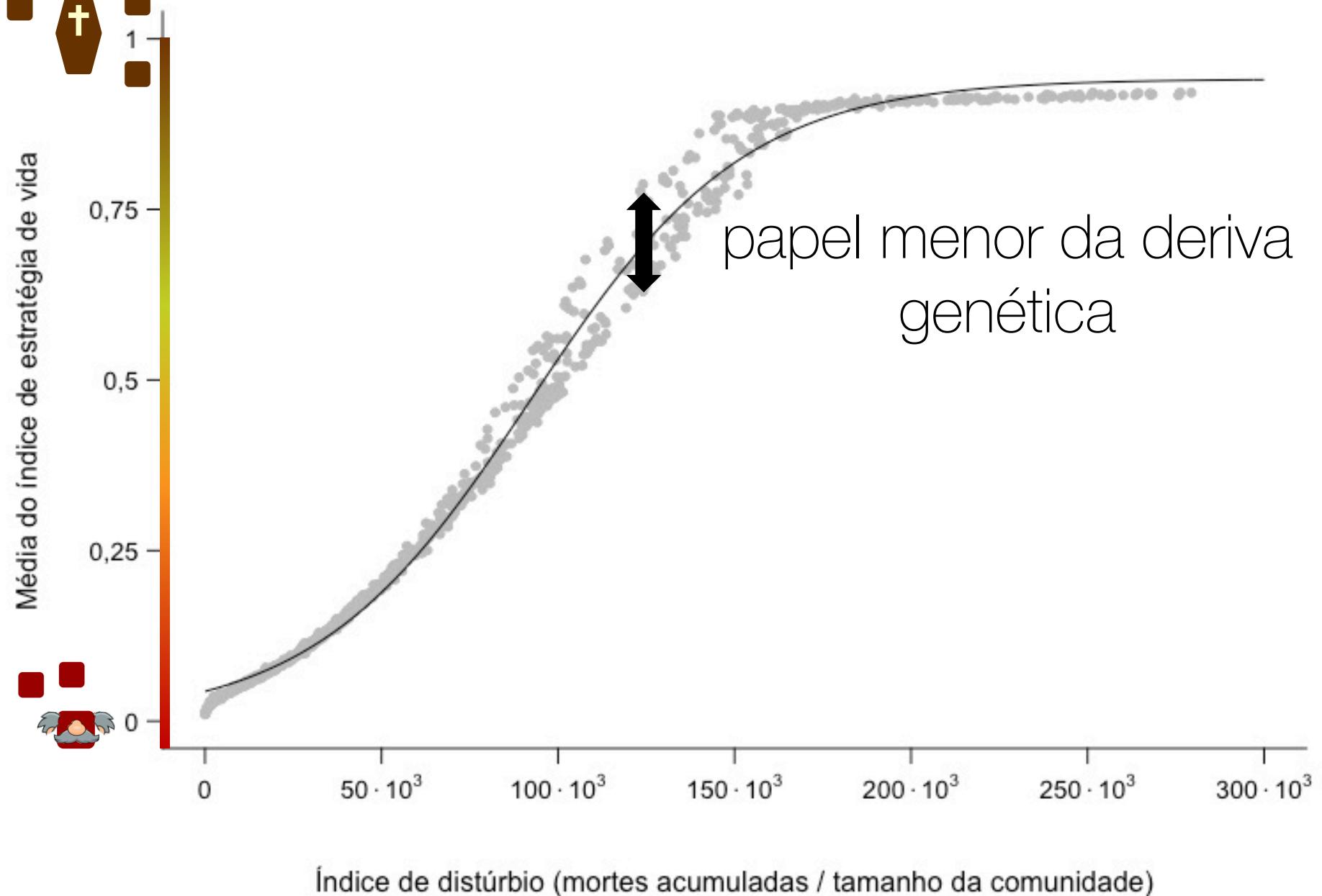
estratégia de maior fecundidade mais apta



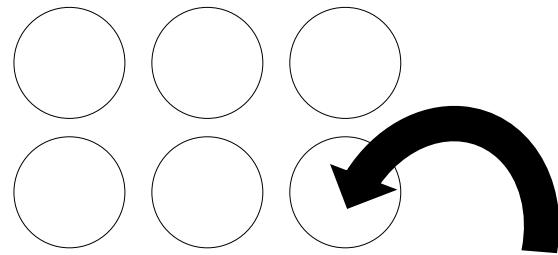
# estratégia média



# estratégia média



## evolutivo

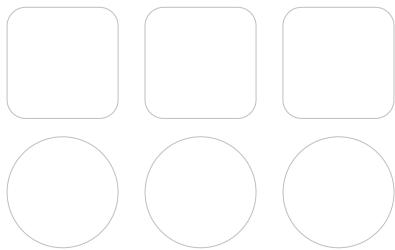


### estratégia média

diversidade  
de estratégias

-

## ecológico

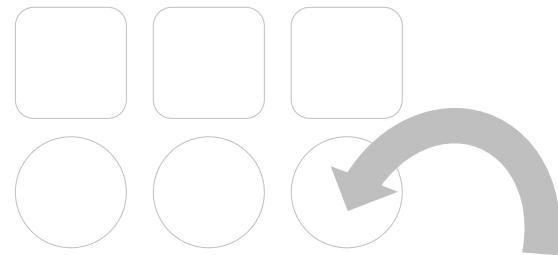


### estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

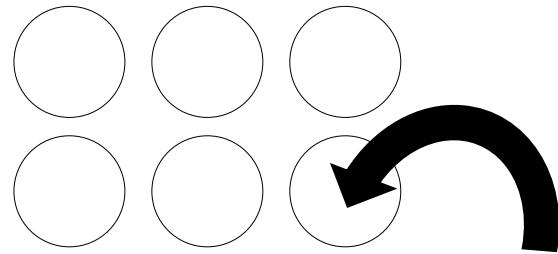


### estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

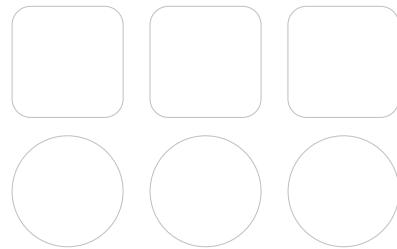


estratégia média

diversidade  
de estratégias

-

## ecológico

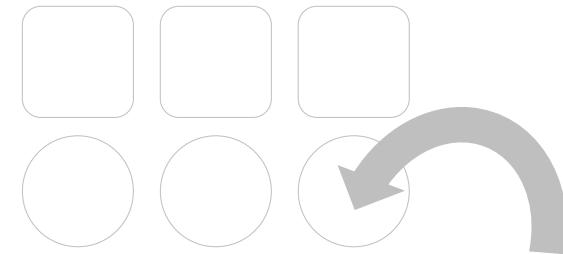


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

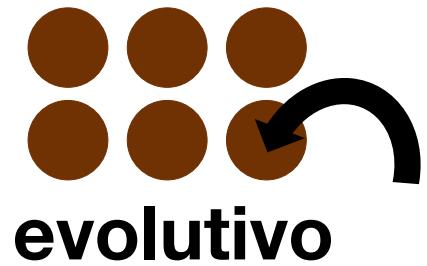


estratégia média

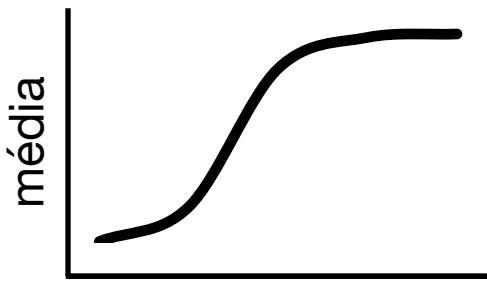
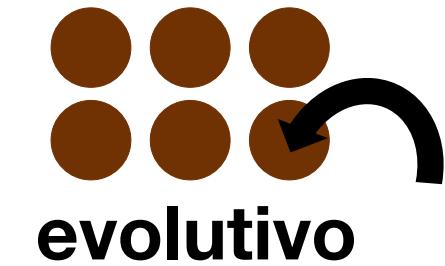
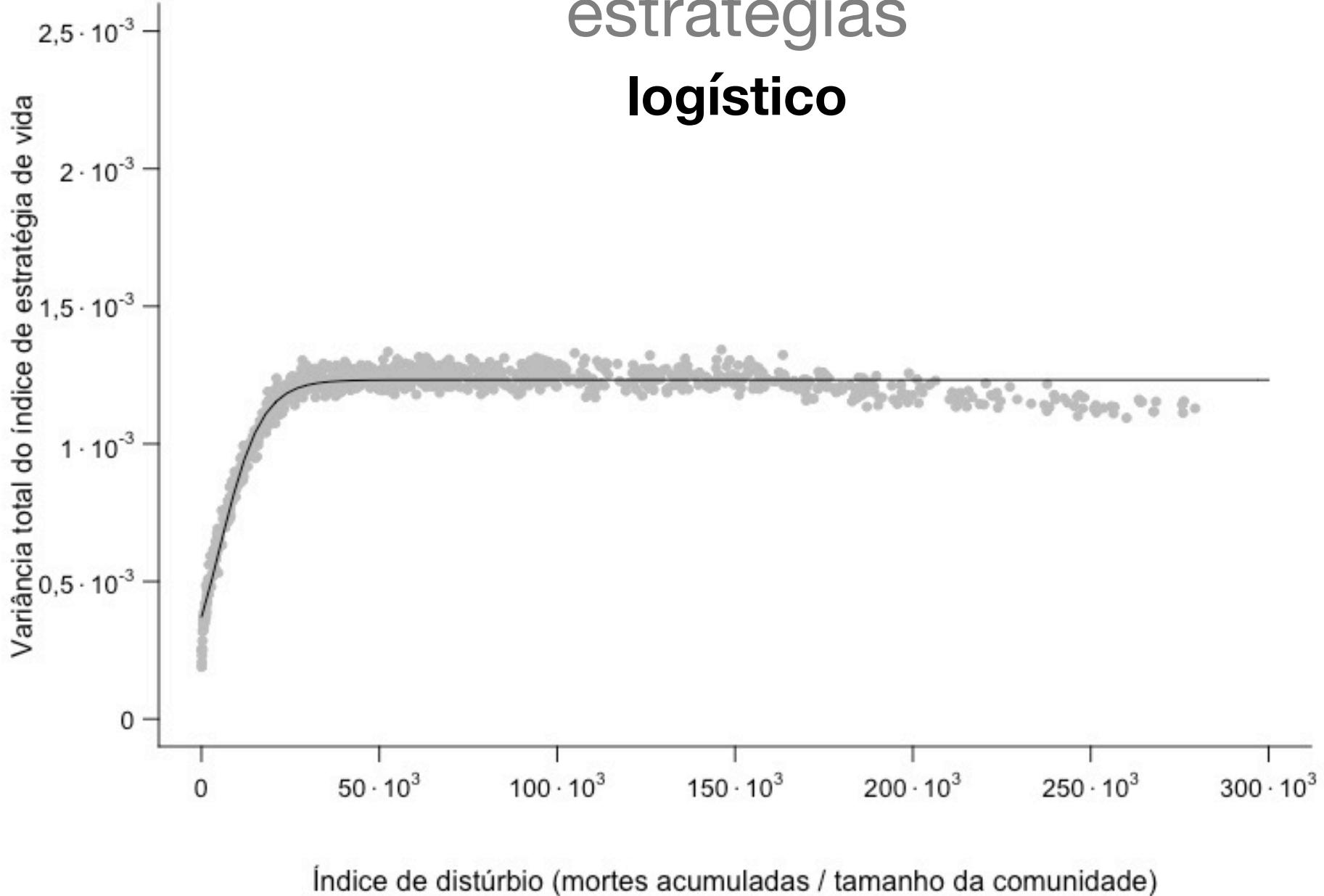
diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

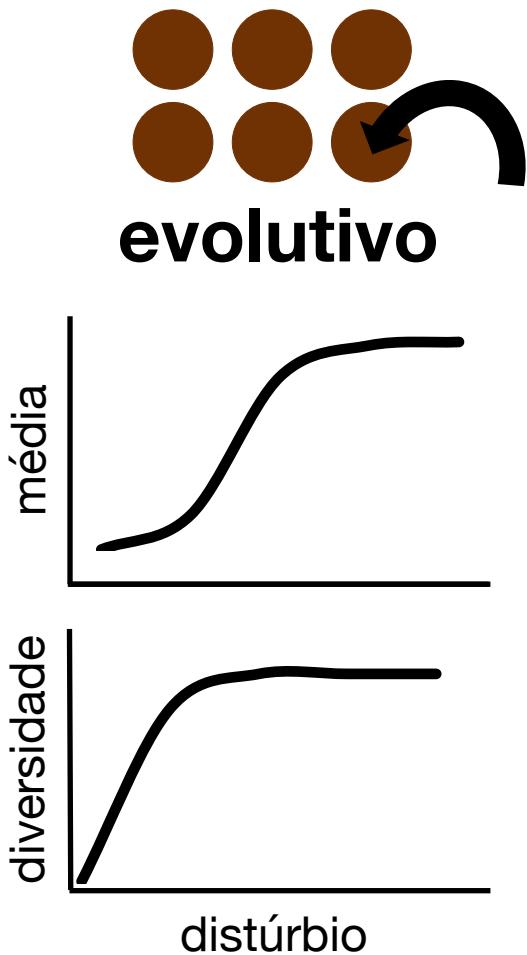
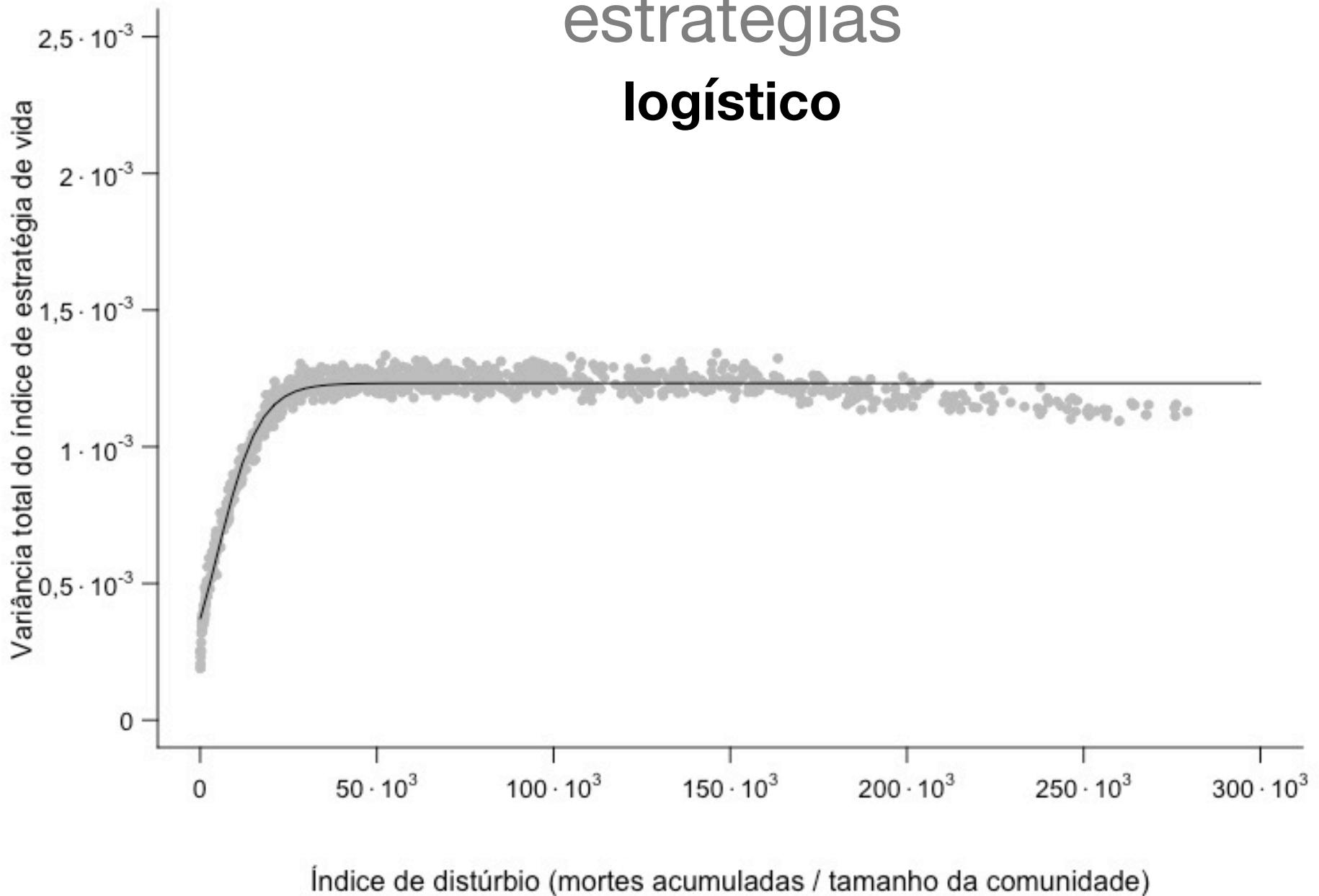
# diversidade de estratégias



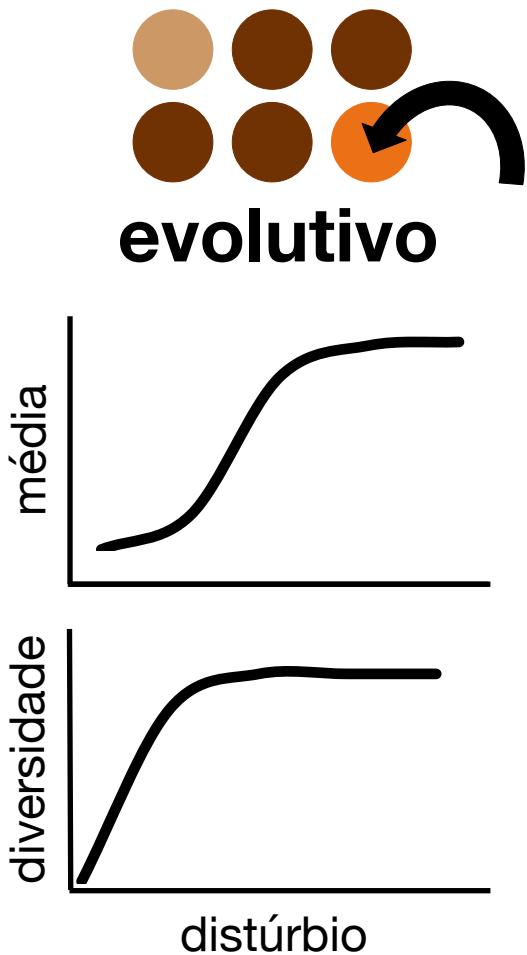
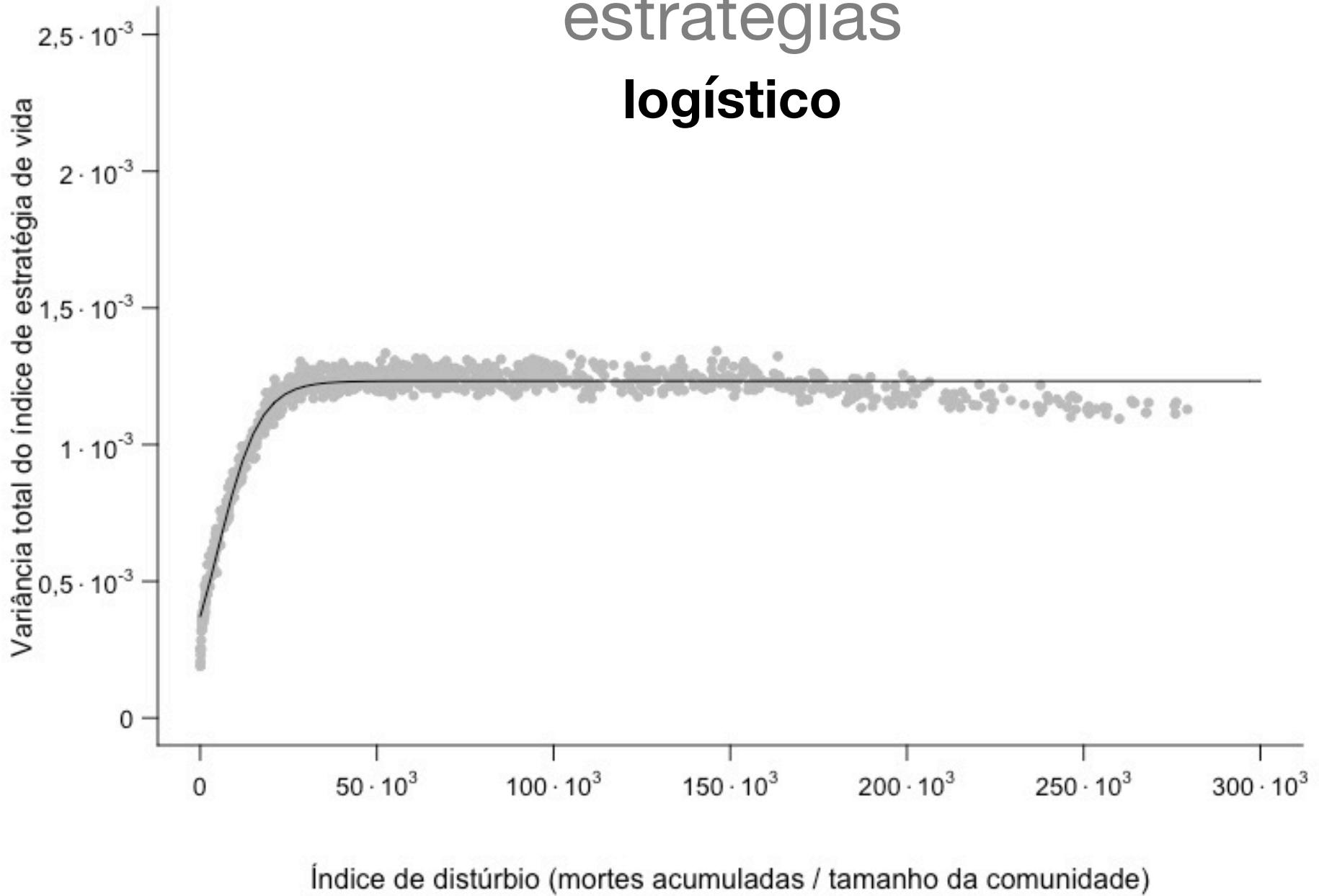
# diversidade de estratégias **logístico**



# diversidade de estratégias **logístico**



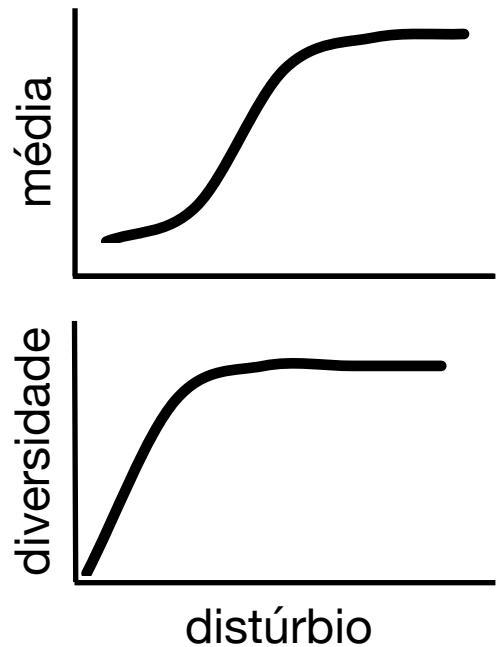
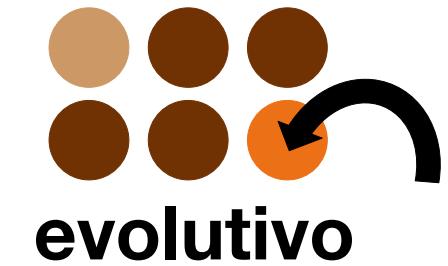
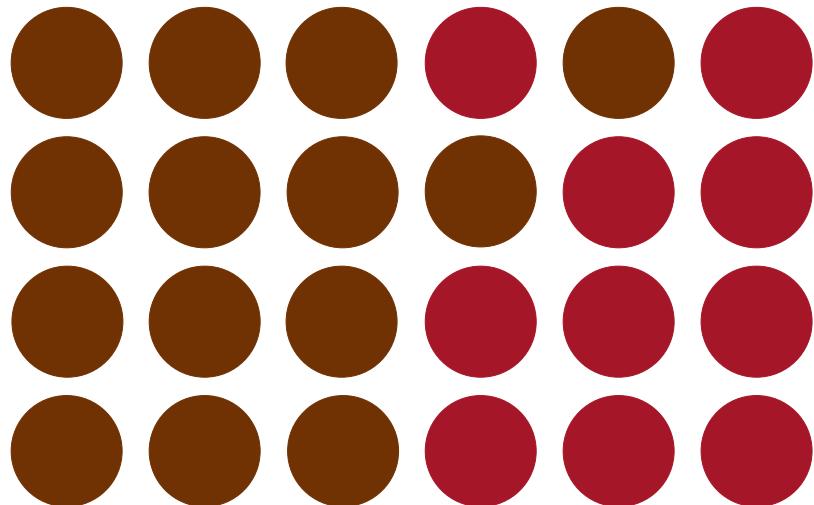
# diversidade de estratégias **logístico**



banco

● x 112

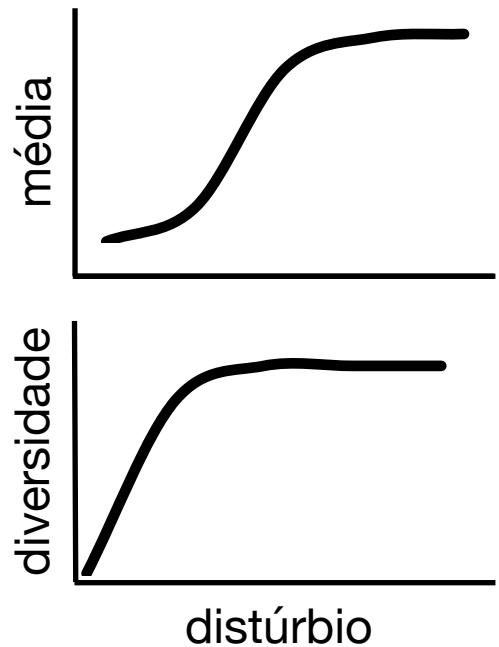
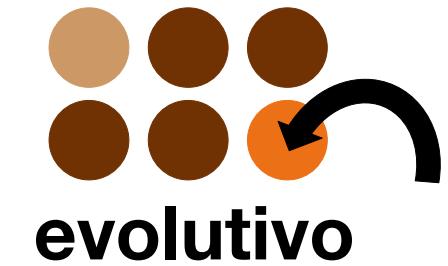
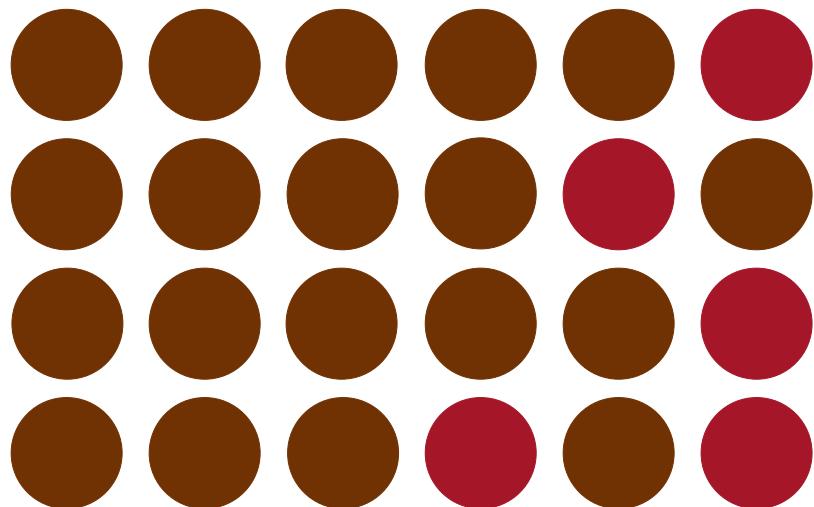
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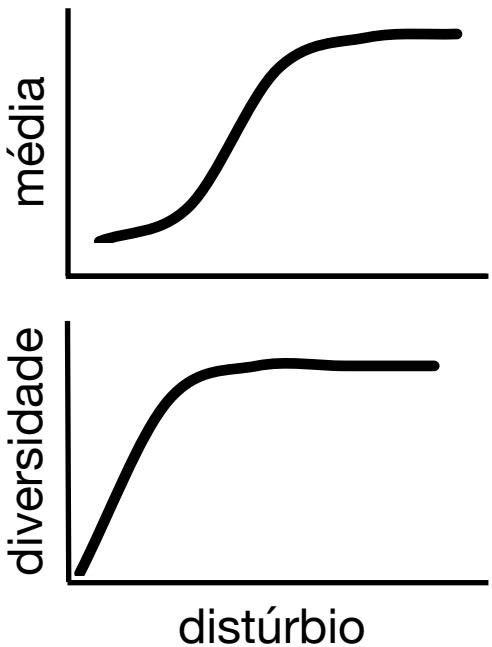
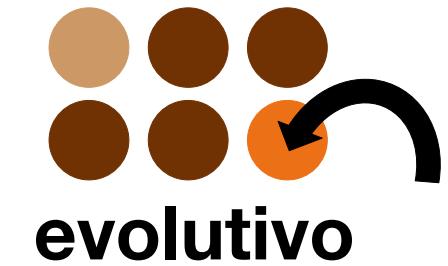
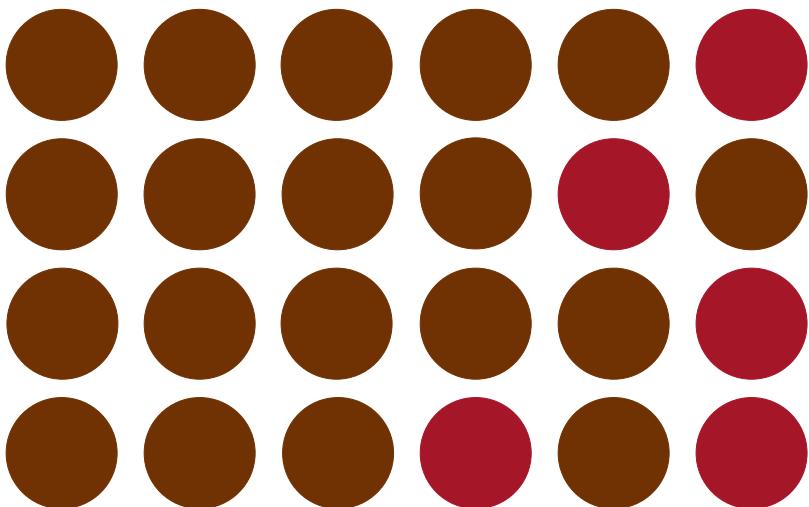
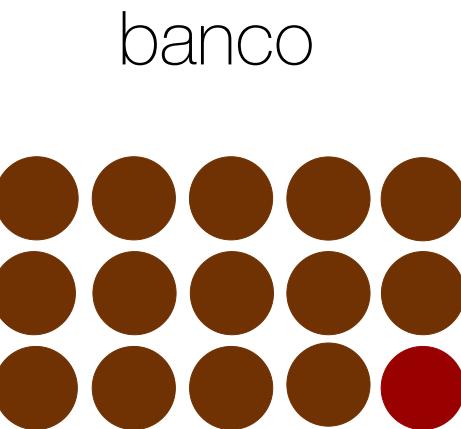


banco

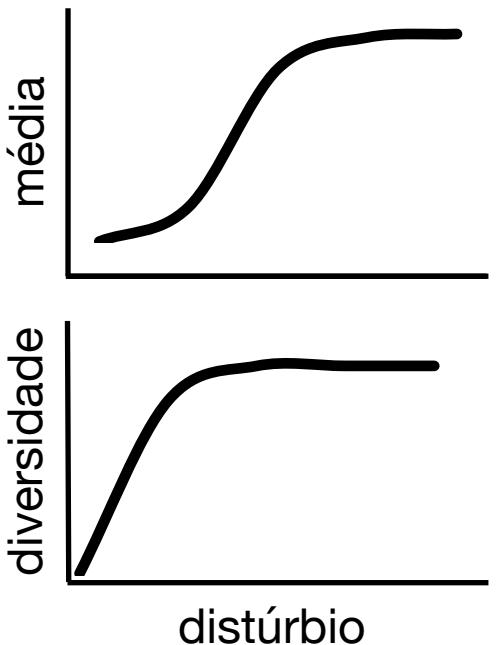
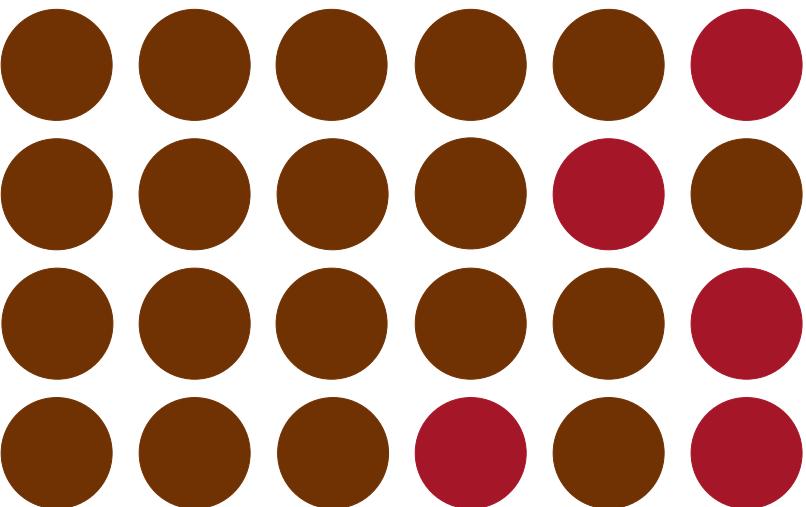
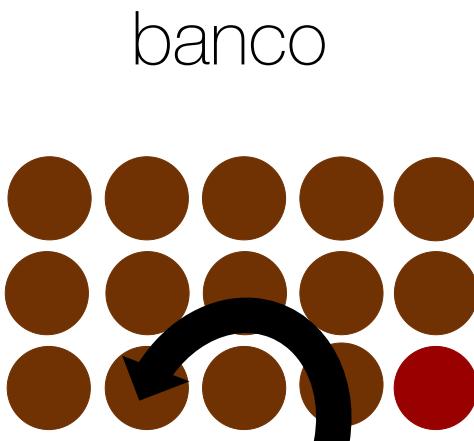
● x 152

● x 10



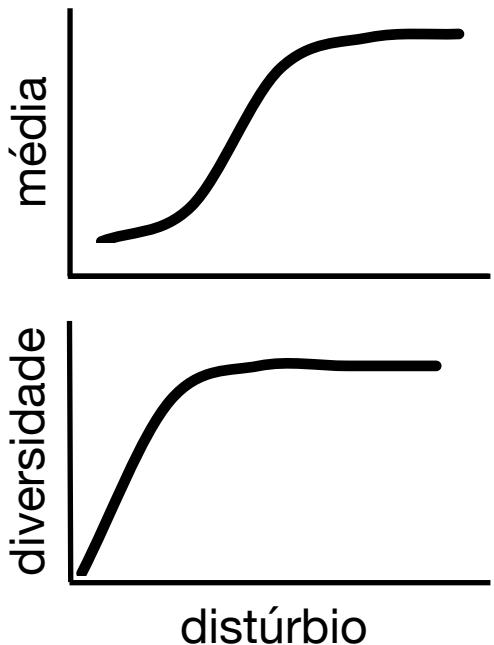
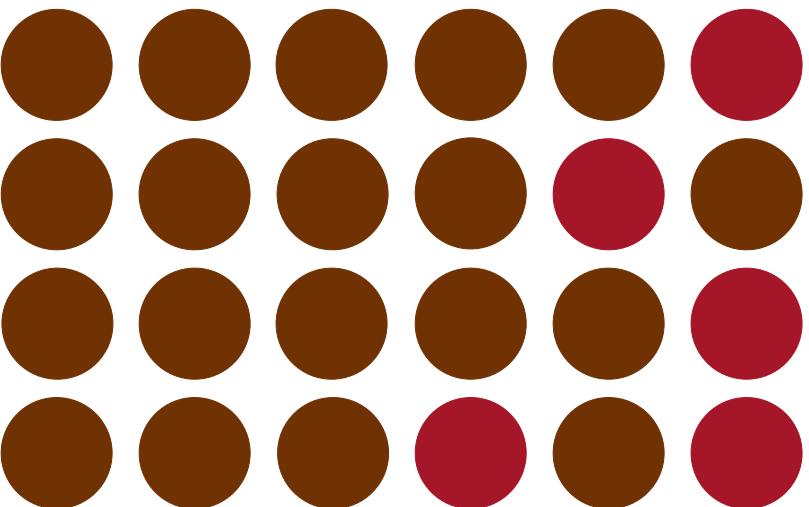
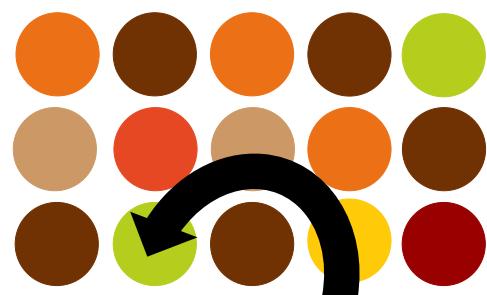


# mutação



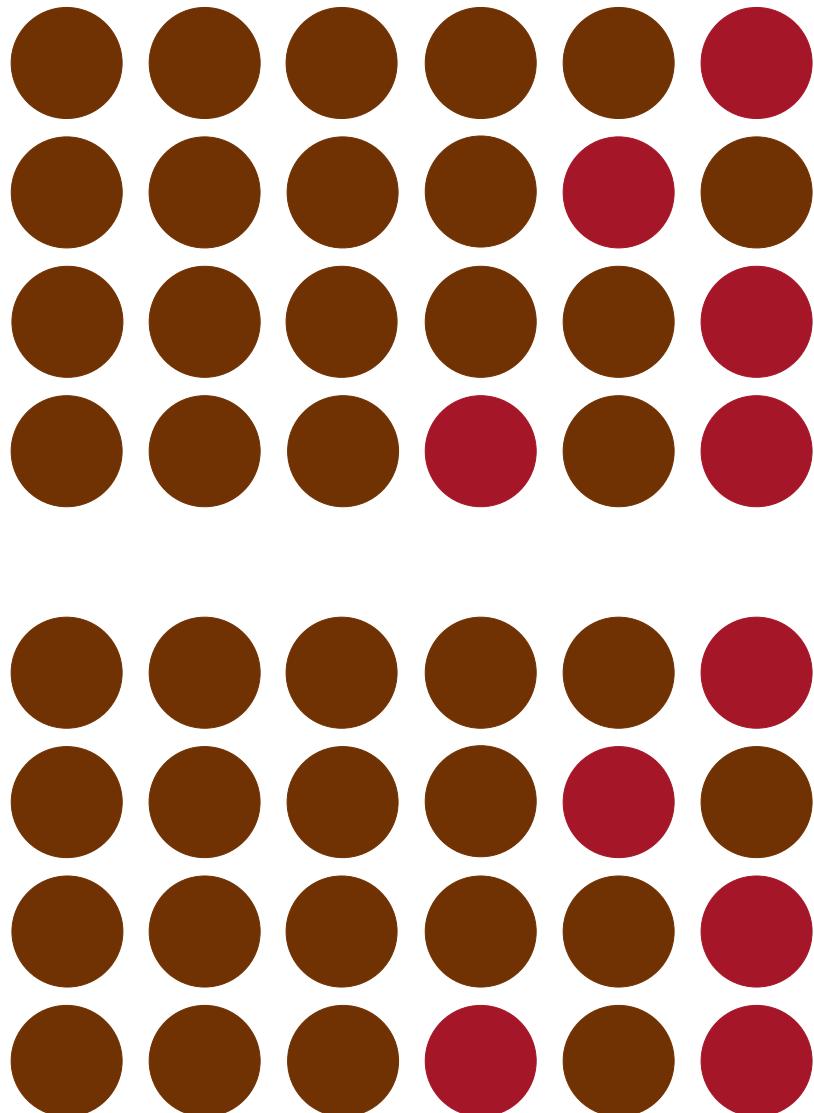
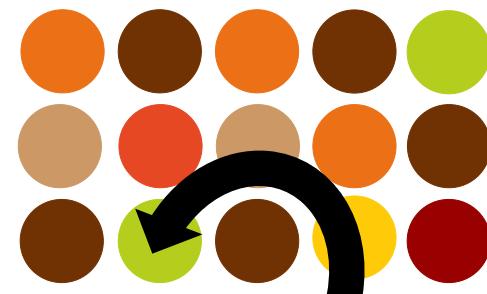
# mutação

banco



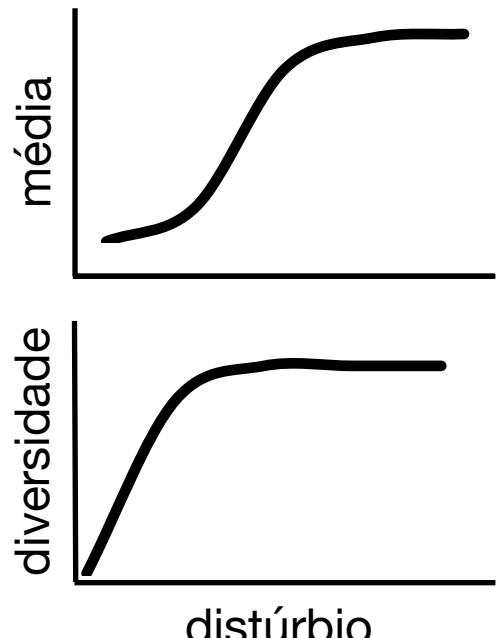
# mutação

banco

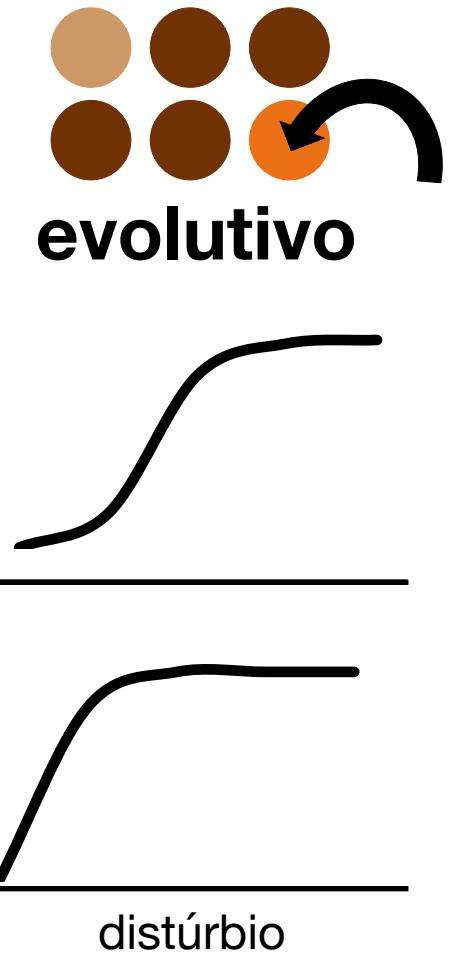
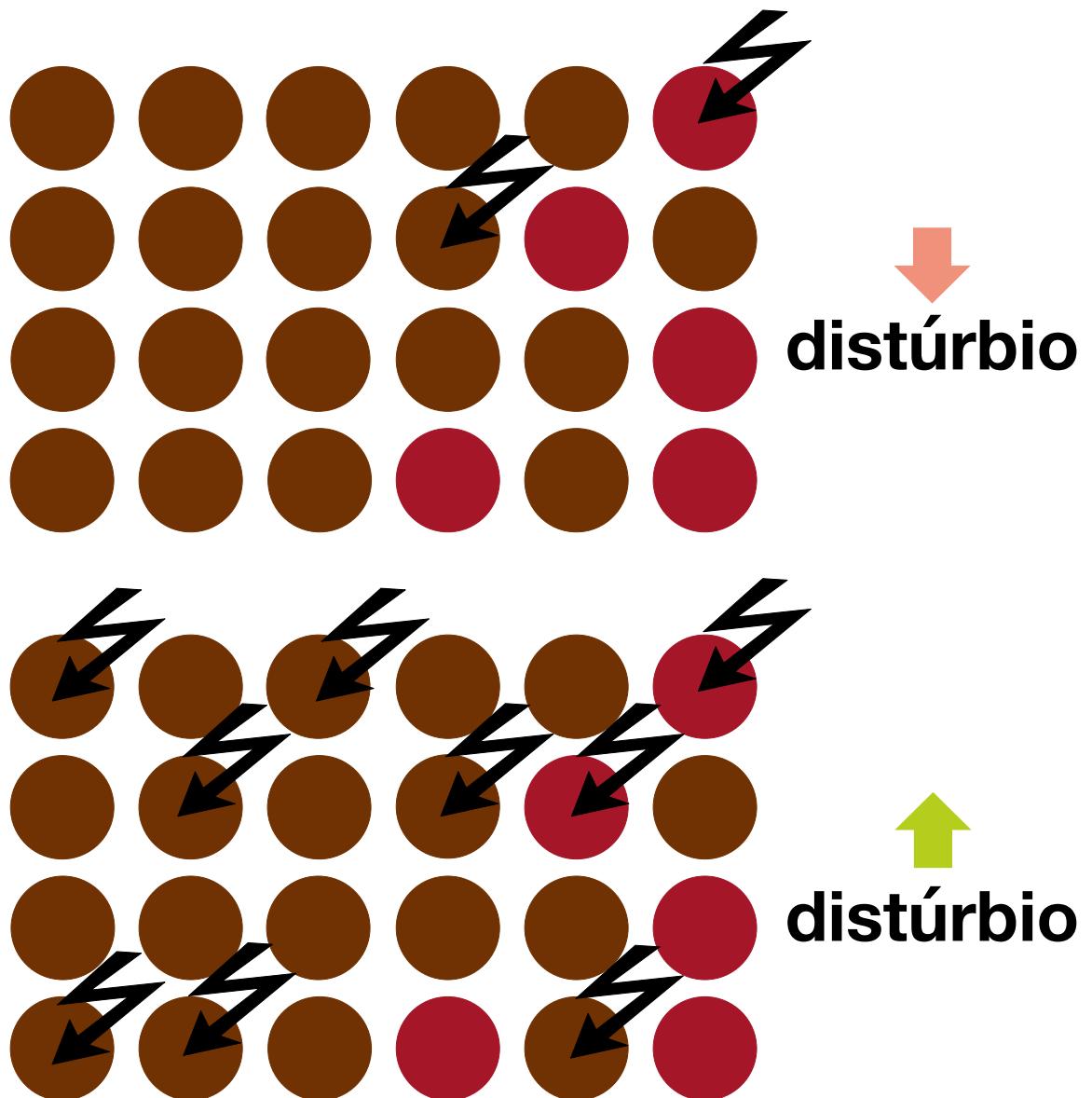


distúrbio

distúrbio

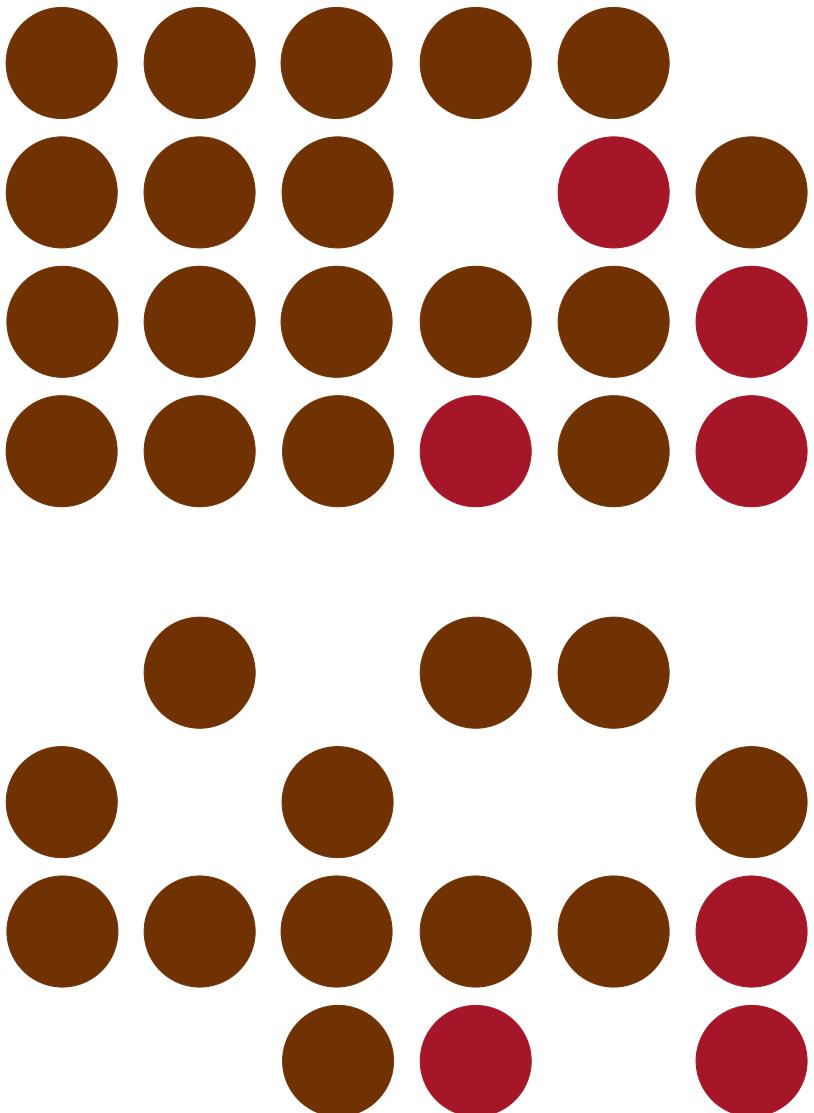
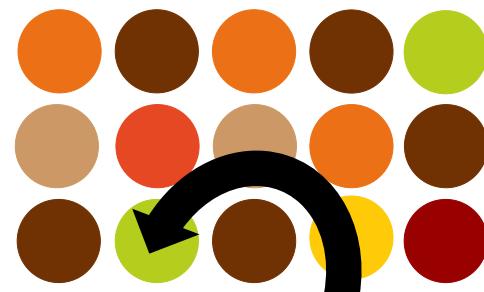


# mutação



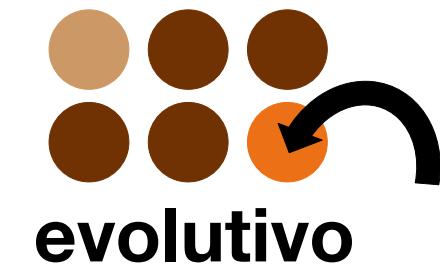
# mutação

banco

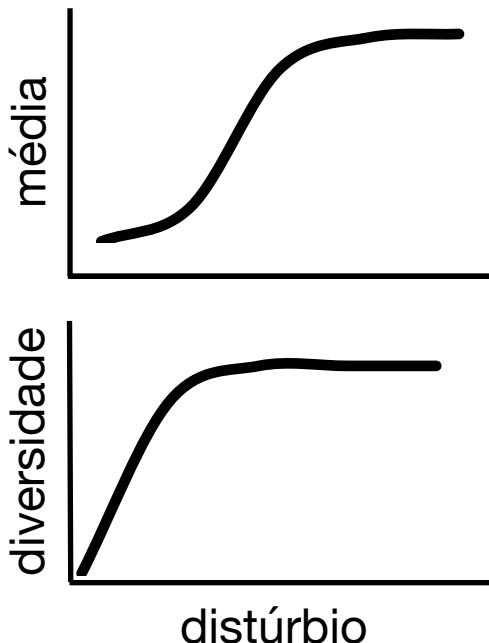


distúrbio

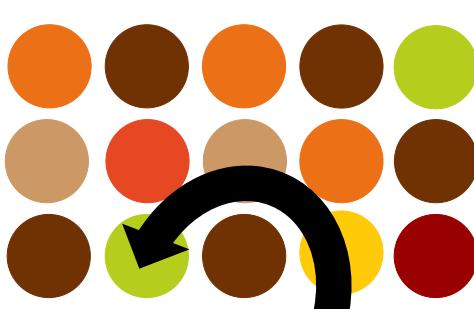
distúrbio



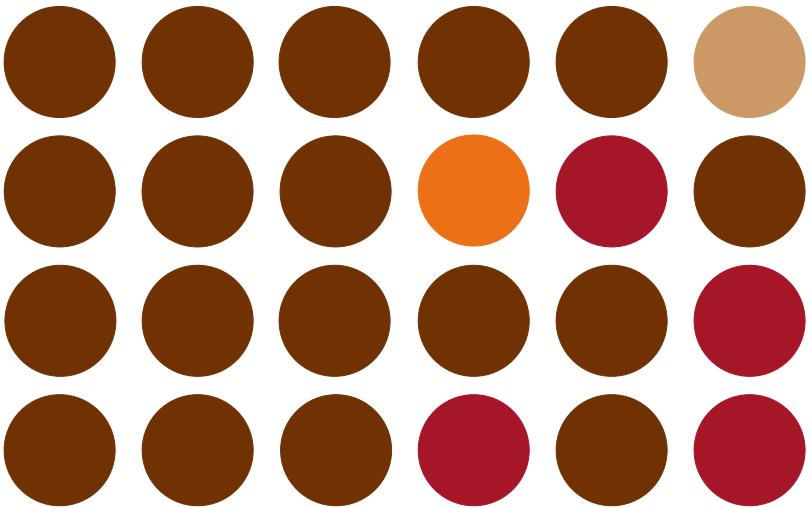
evolutivo



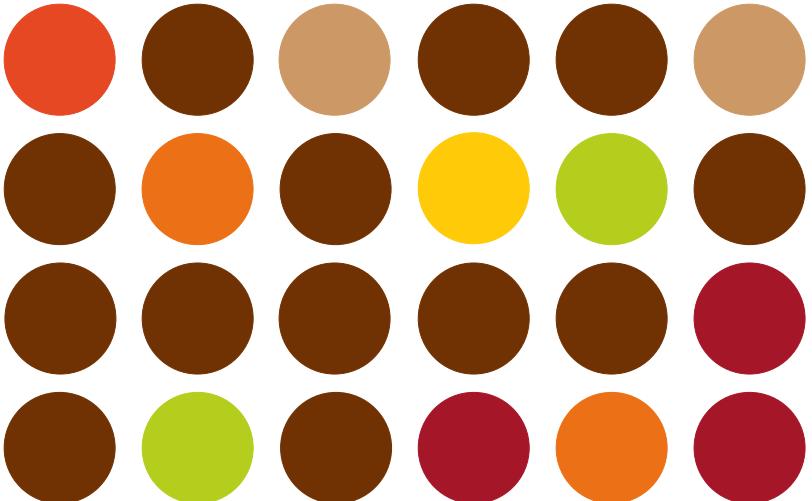
# mutação + amostragem



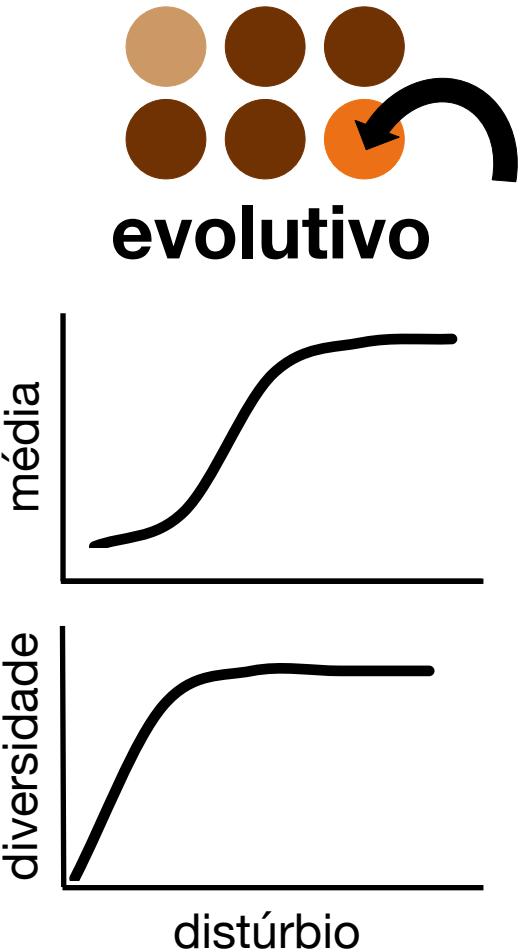
banco



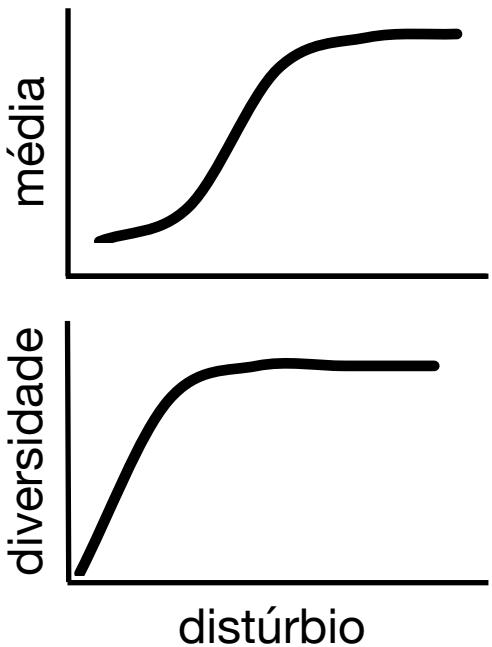
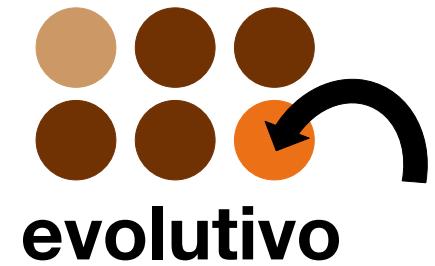
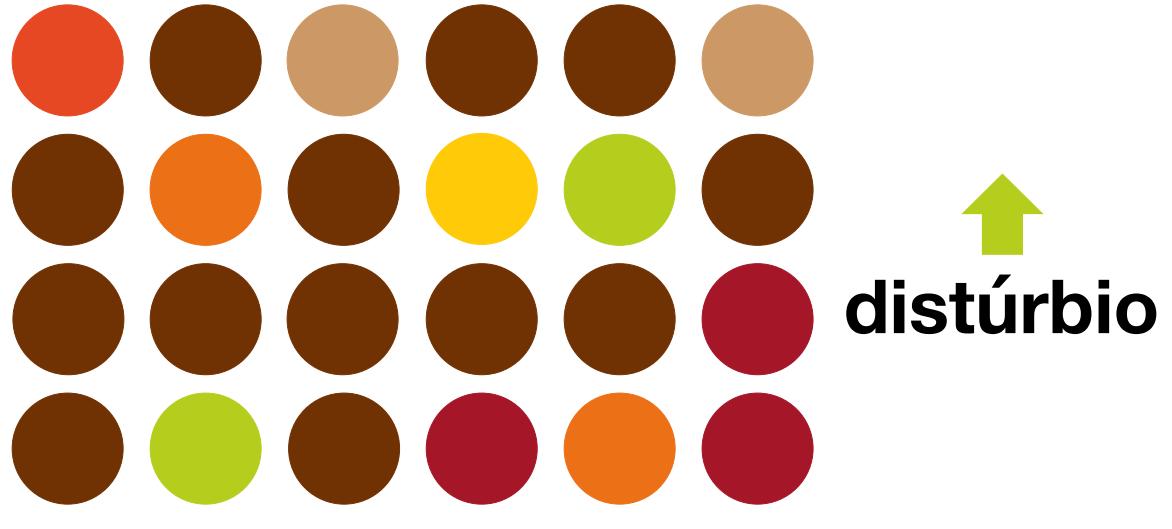
distúrbio



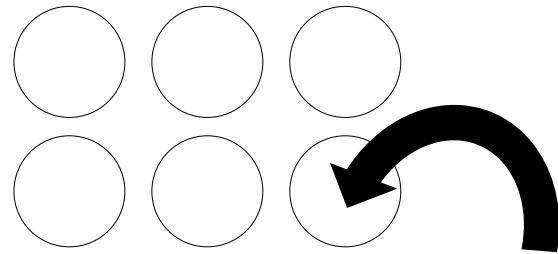
distúrbio



# mutação + amostragem



## evolutivo

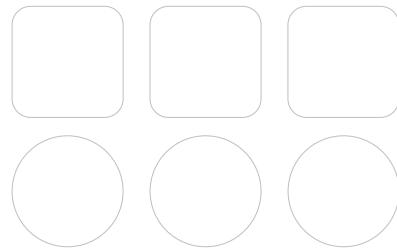


estratégia média

diversidade  
de estratégias

-

## ecológico

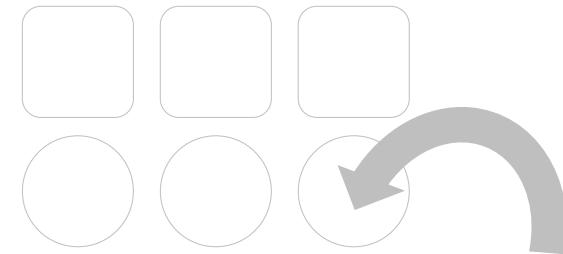


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

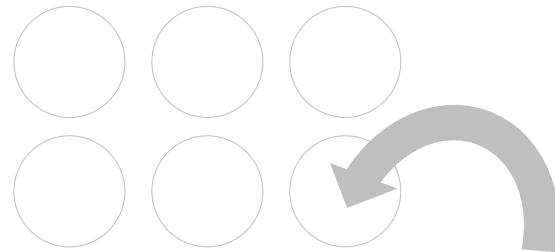


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

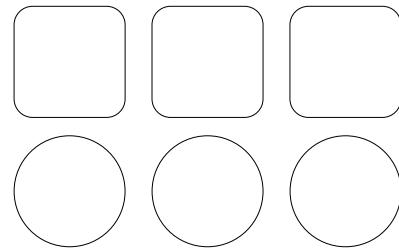


estratégia média

diversidade  
de estratégias

-

## ecológico

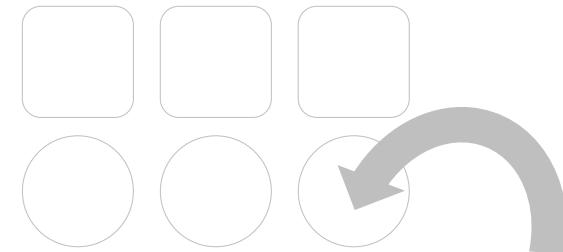


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo



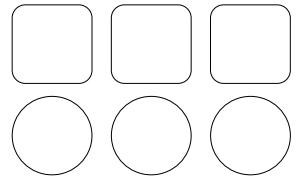
estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias



# estratégia média



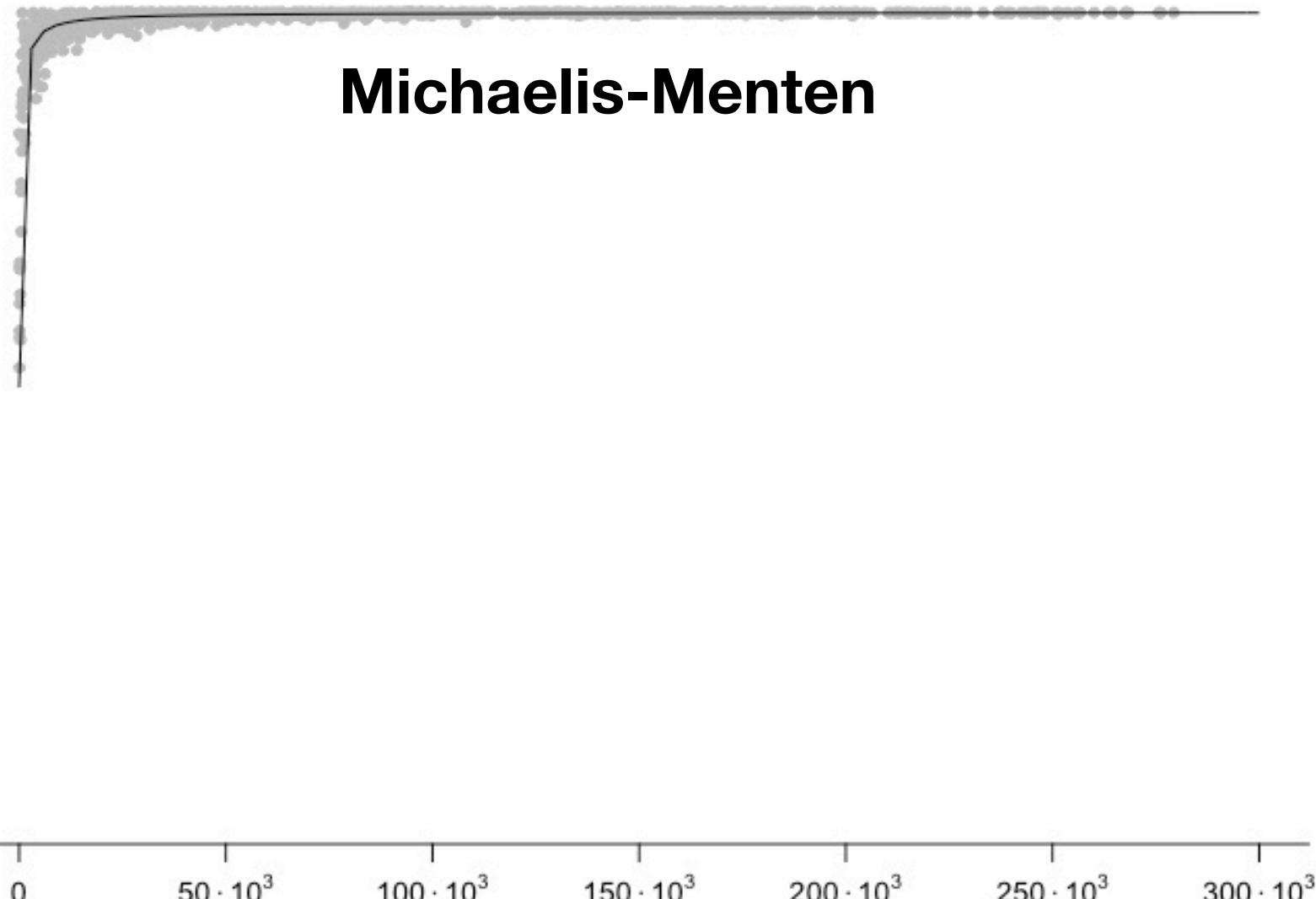
**ecológico**

# estratégia média

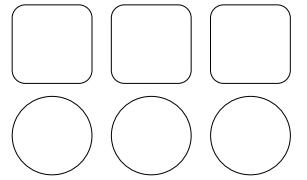
**Michaelis-Menten**

Média do índice de estratégia de vida

1  
0,75  
0,5  
0,25  
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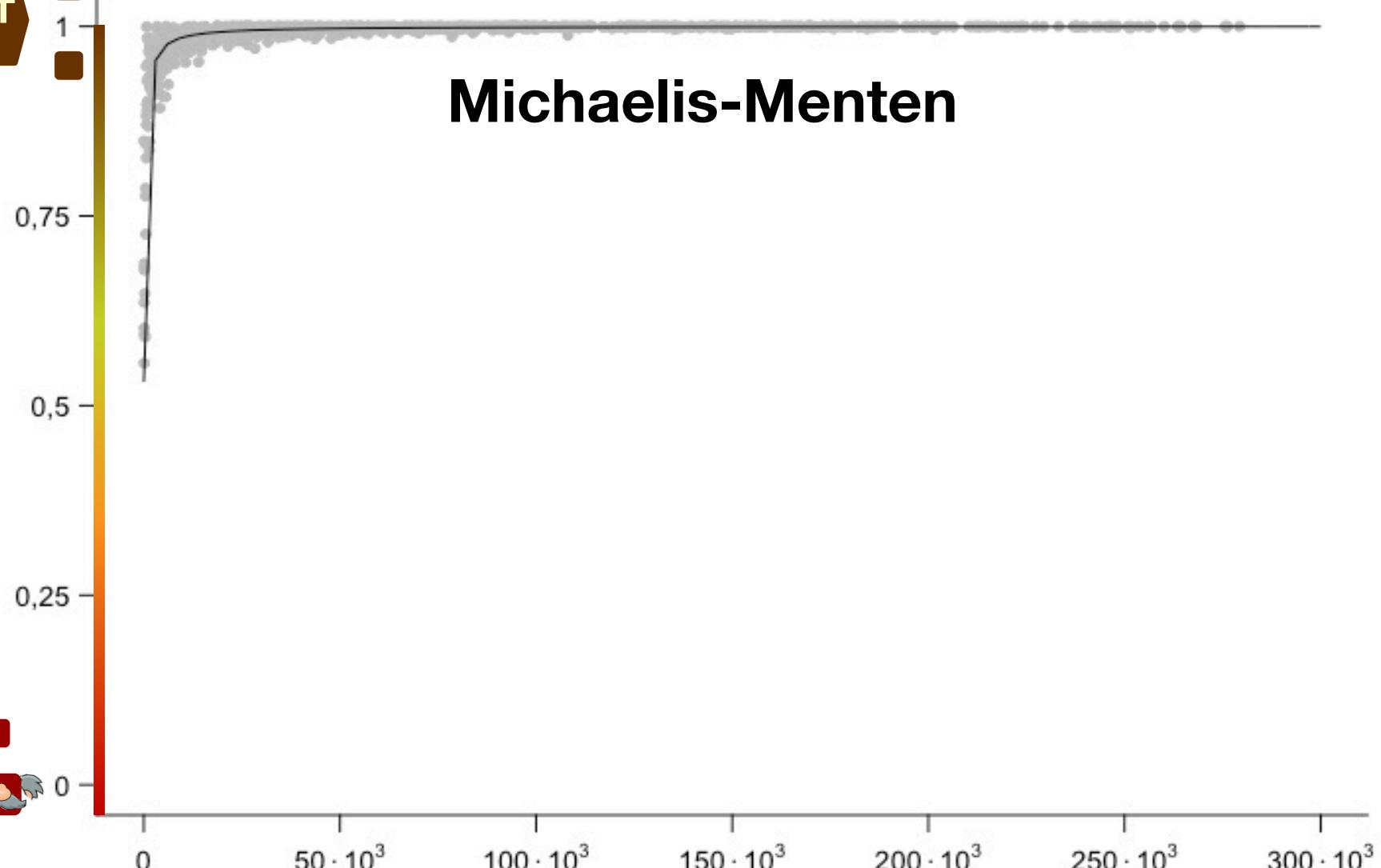
Índice de distúrbio (mortes acumuladas / tamanho da comunidade)



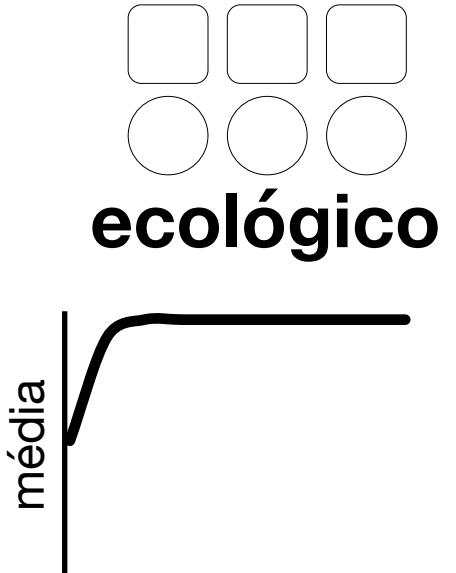
**ecológico**

# estratégia média

Média do índice de estratégia de vida

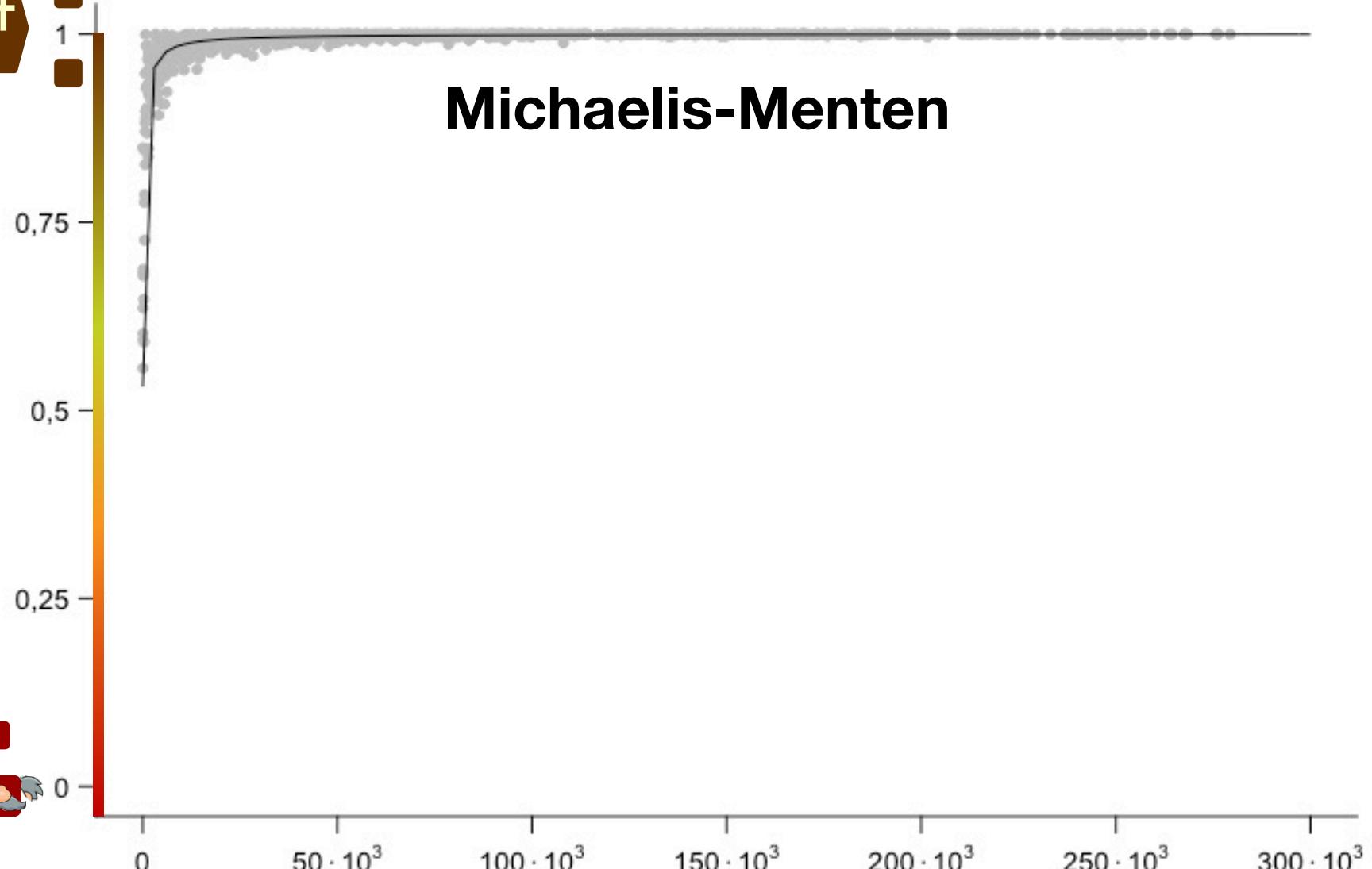


**Michaelis-Menten**

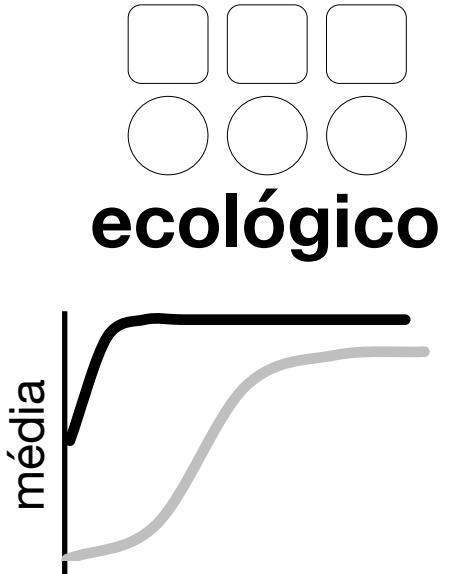


# estratégia média

Média do índice de estratégia de vida



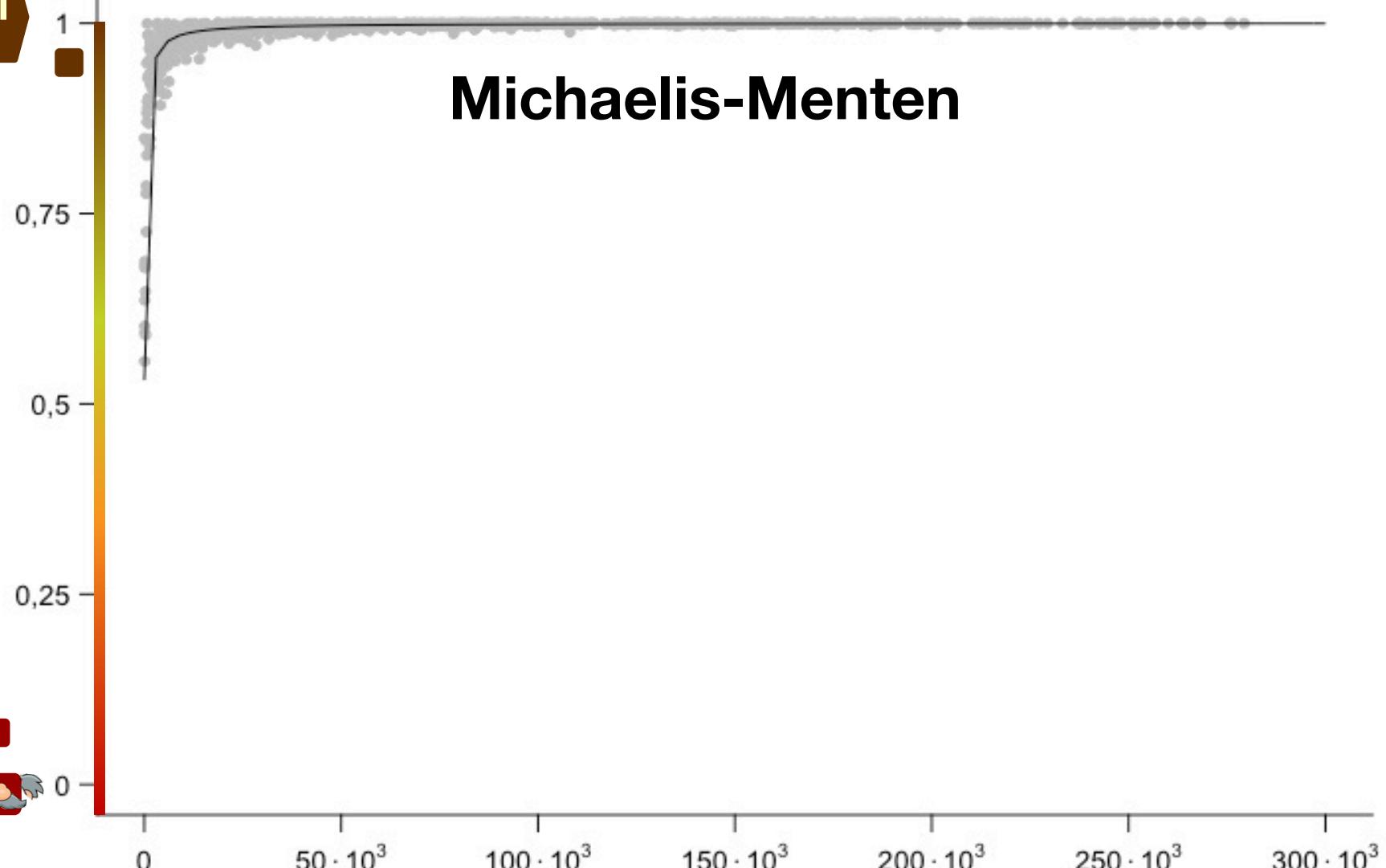
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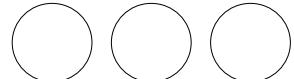
Índice de distúrbio (mortes acumuladas / tamanho da comunidade)

# estratégia média

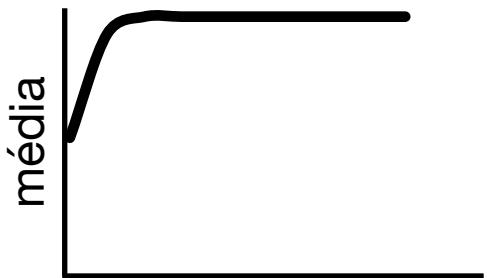
Média do índice de estratégia de vida



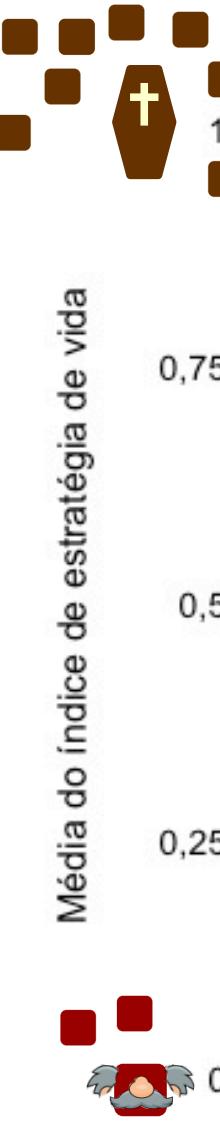
## Michaelis-Menten



**ecológico**

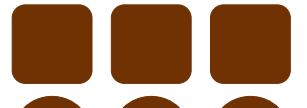
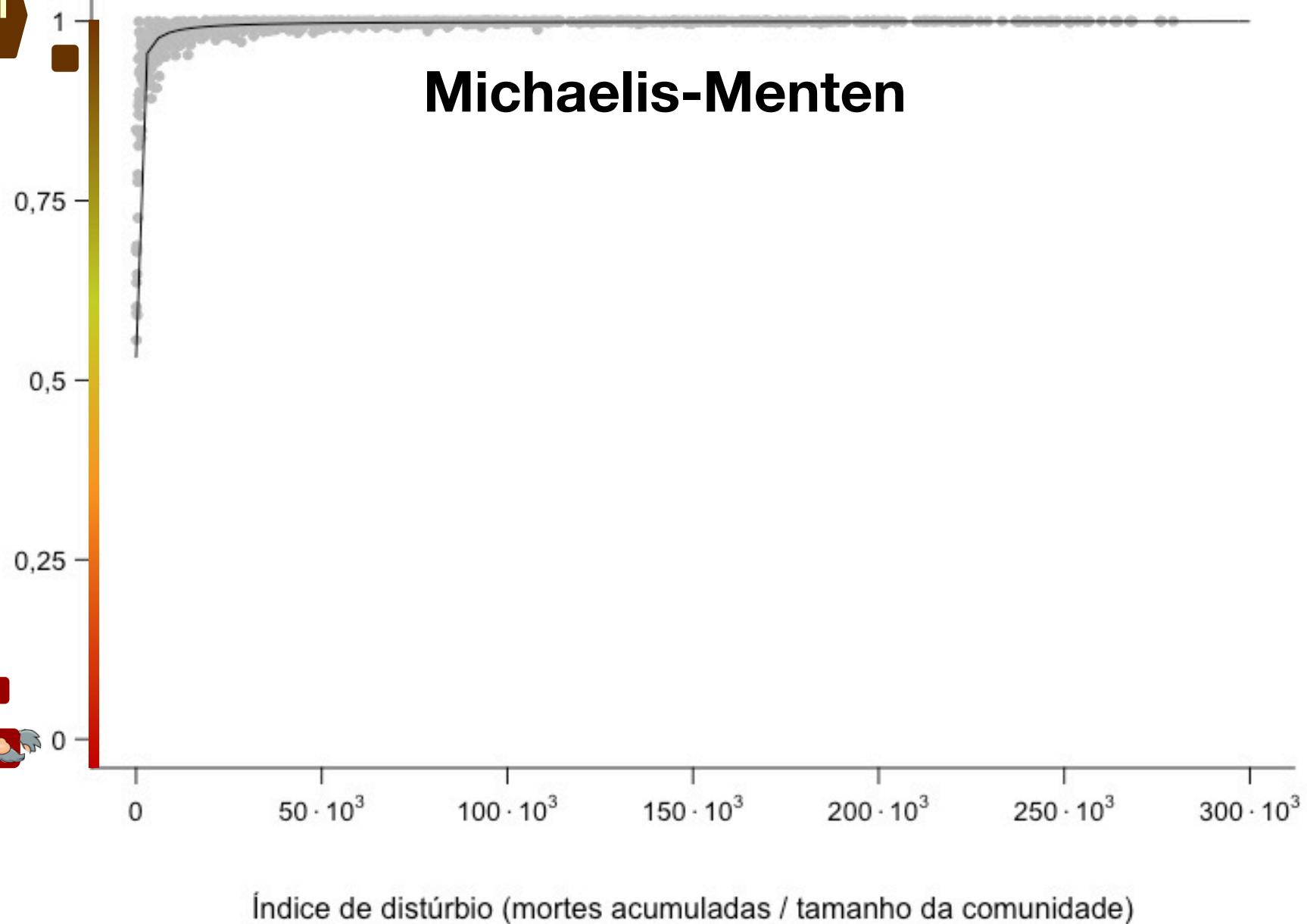


média

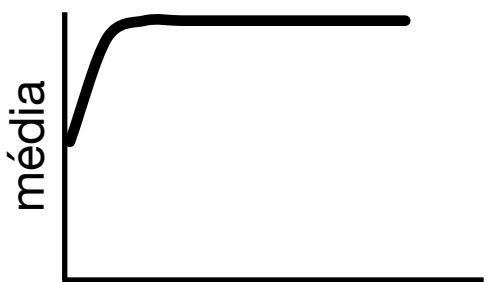


# estratégia média

Média do índice de estratégia de vida



ecológico

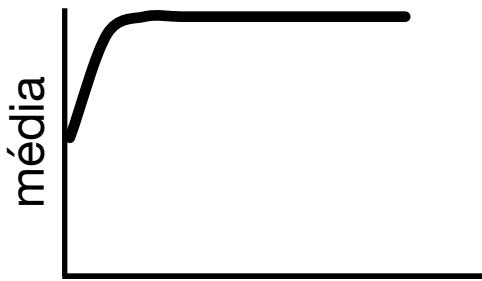
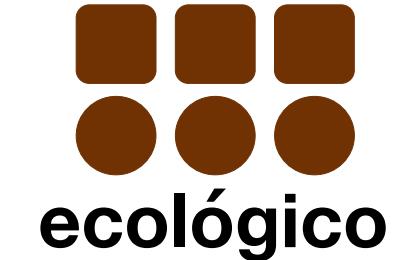
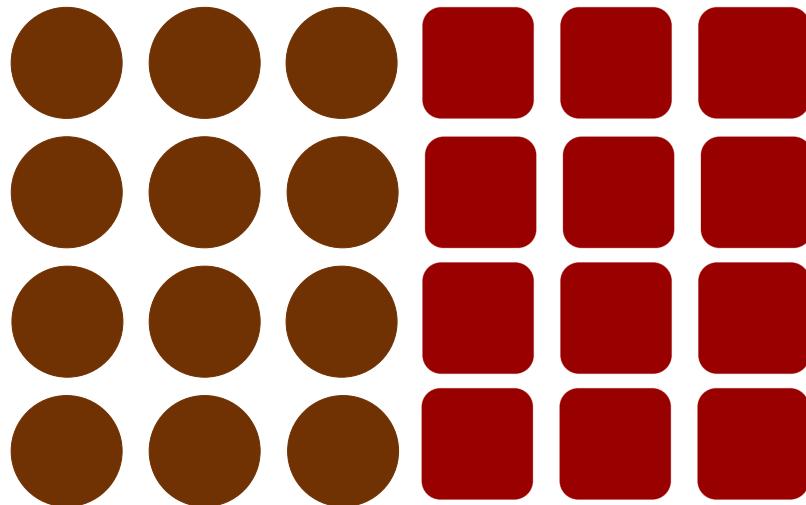


# exclusão competitiva de espécies

banco

x 96

x 24

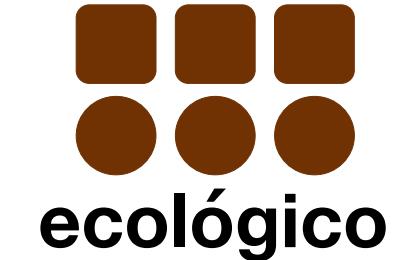
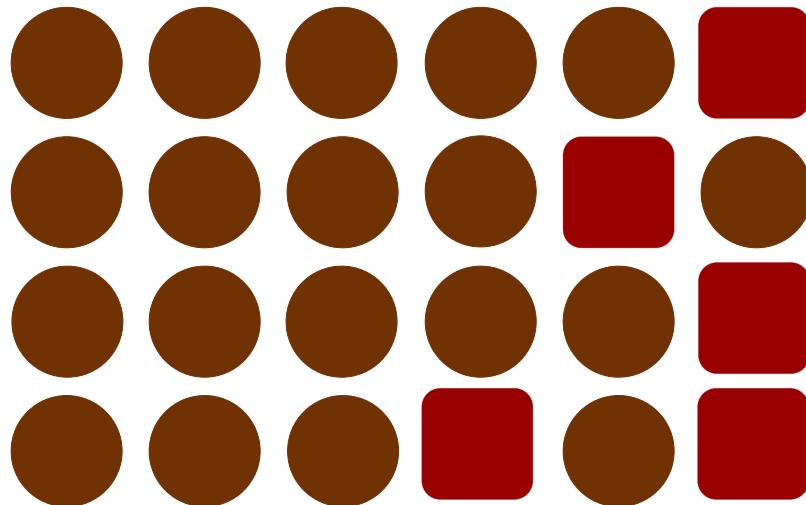


# exclusão competitiva de espécies

banco

● x 152

■ x 10

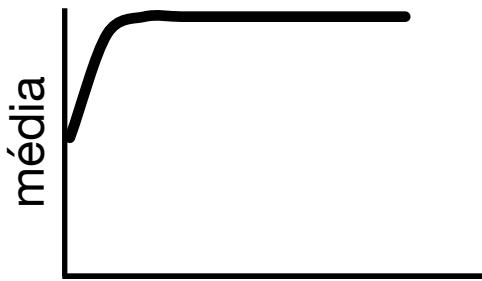
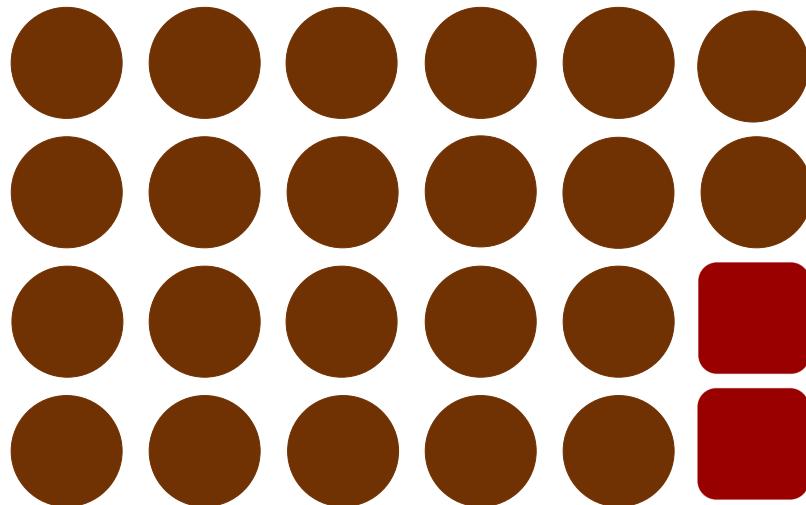


# exclusão competitiva de espécies

banco

● x 176

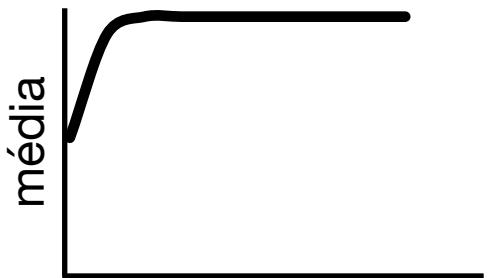
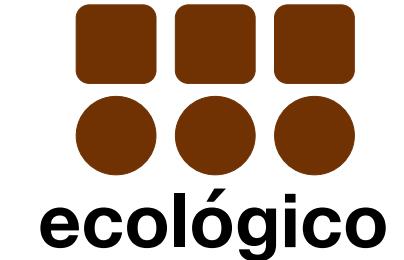
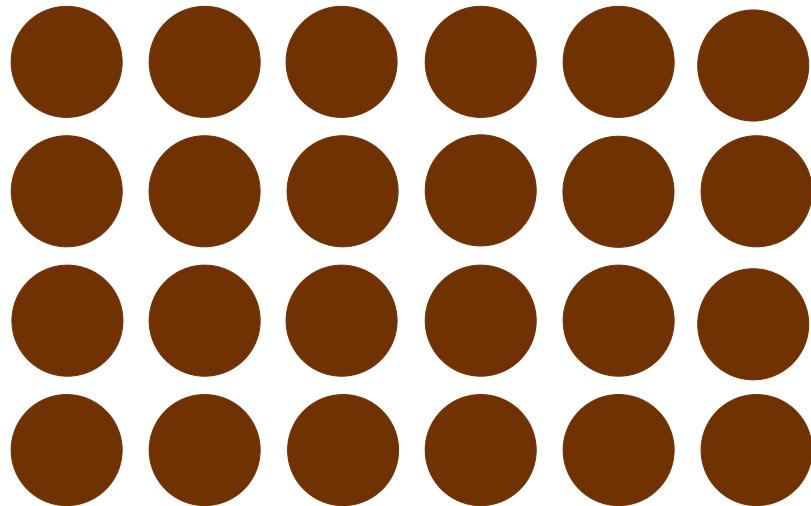
■ x 4



# exclusão competitiva de espécies

banco

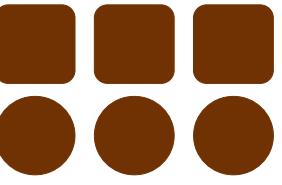
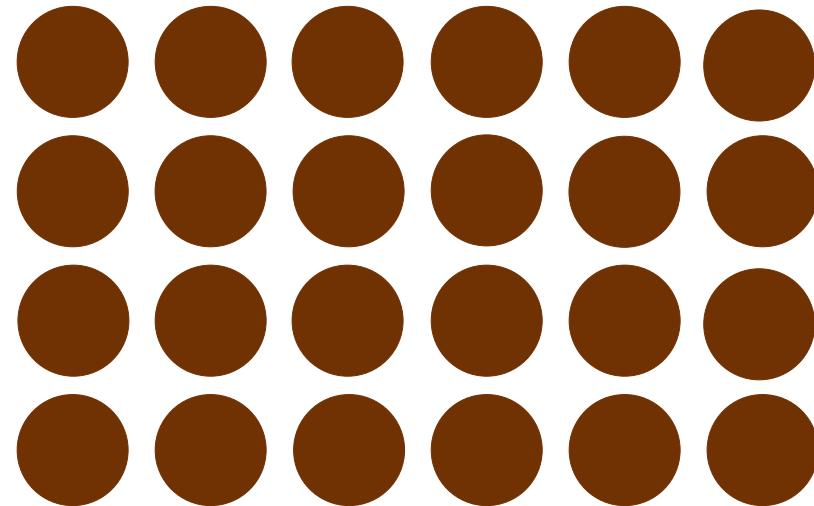
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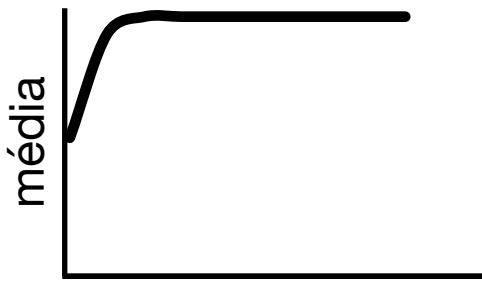
# exclusão competitiva de espécies

banco

● x 176

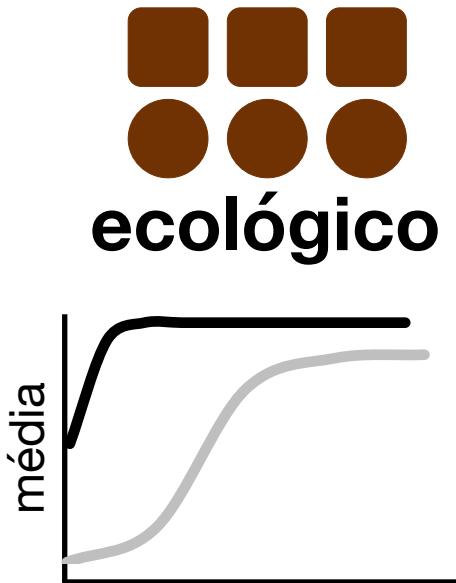
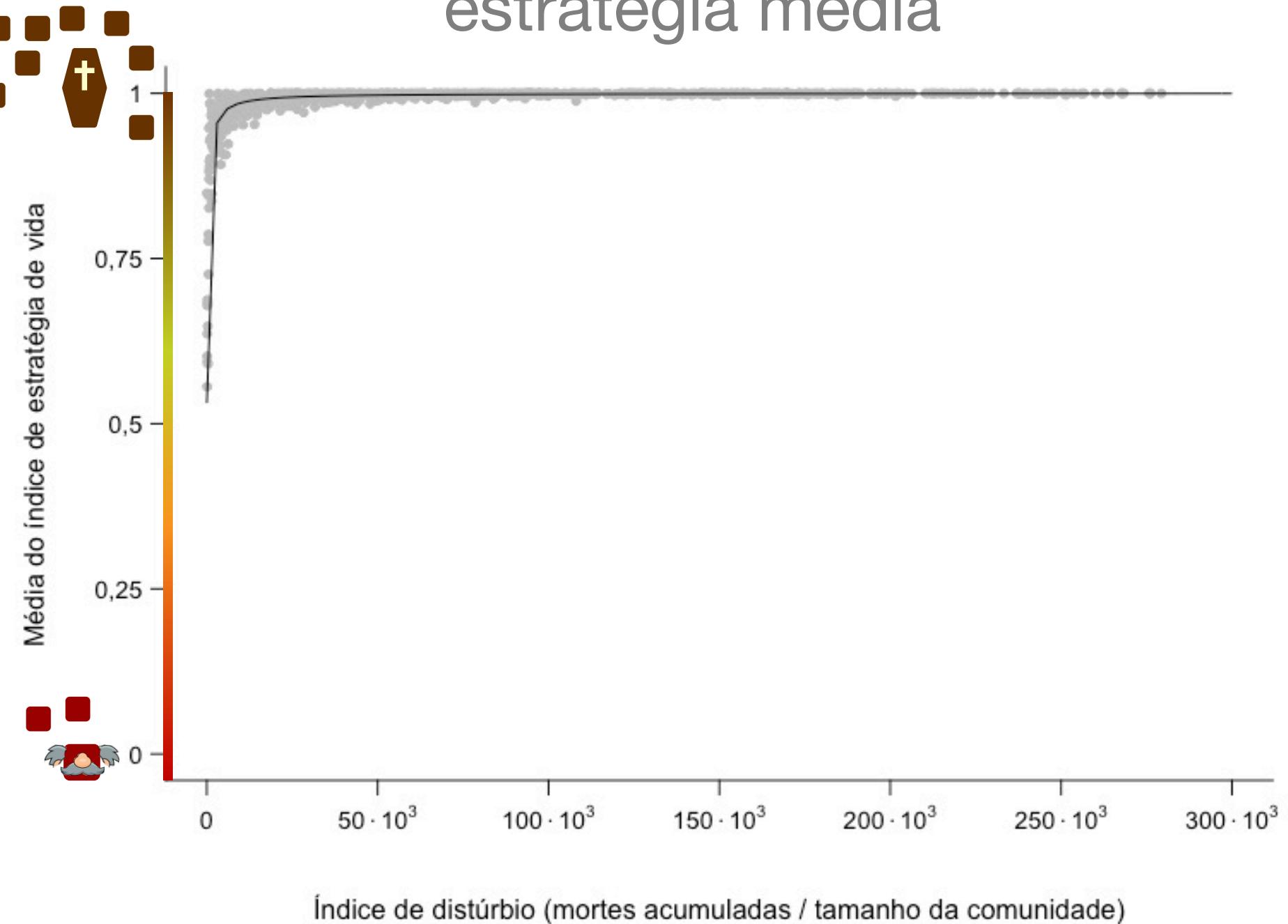


**ecológico**



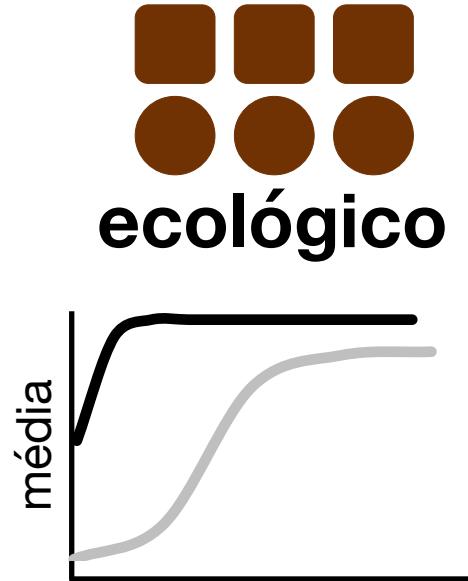
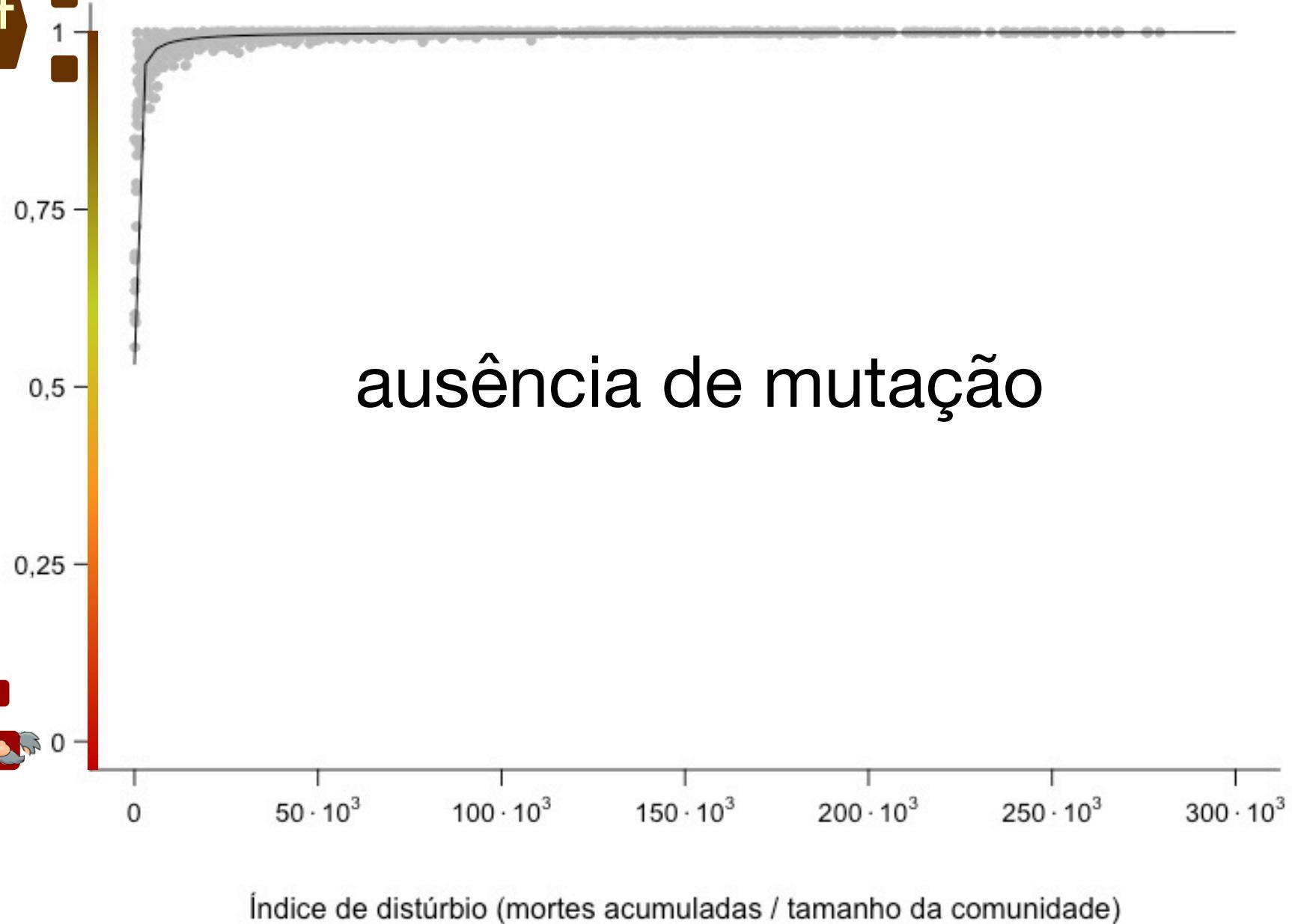
estratégia de maior fecundidade melhor competidora

# estratégia média

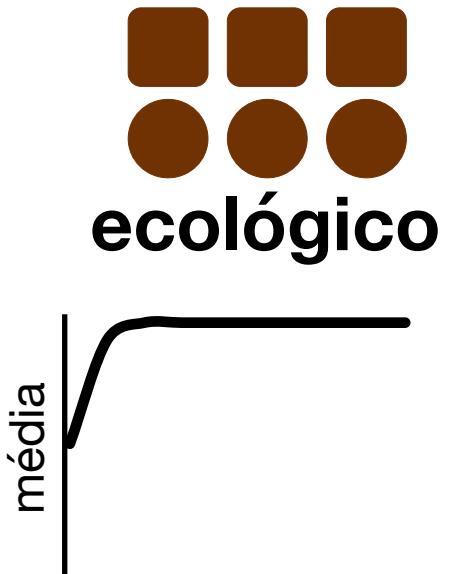
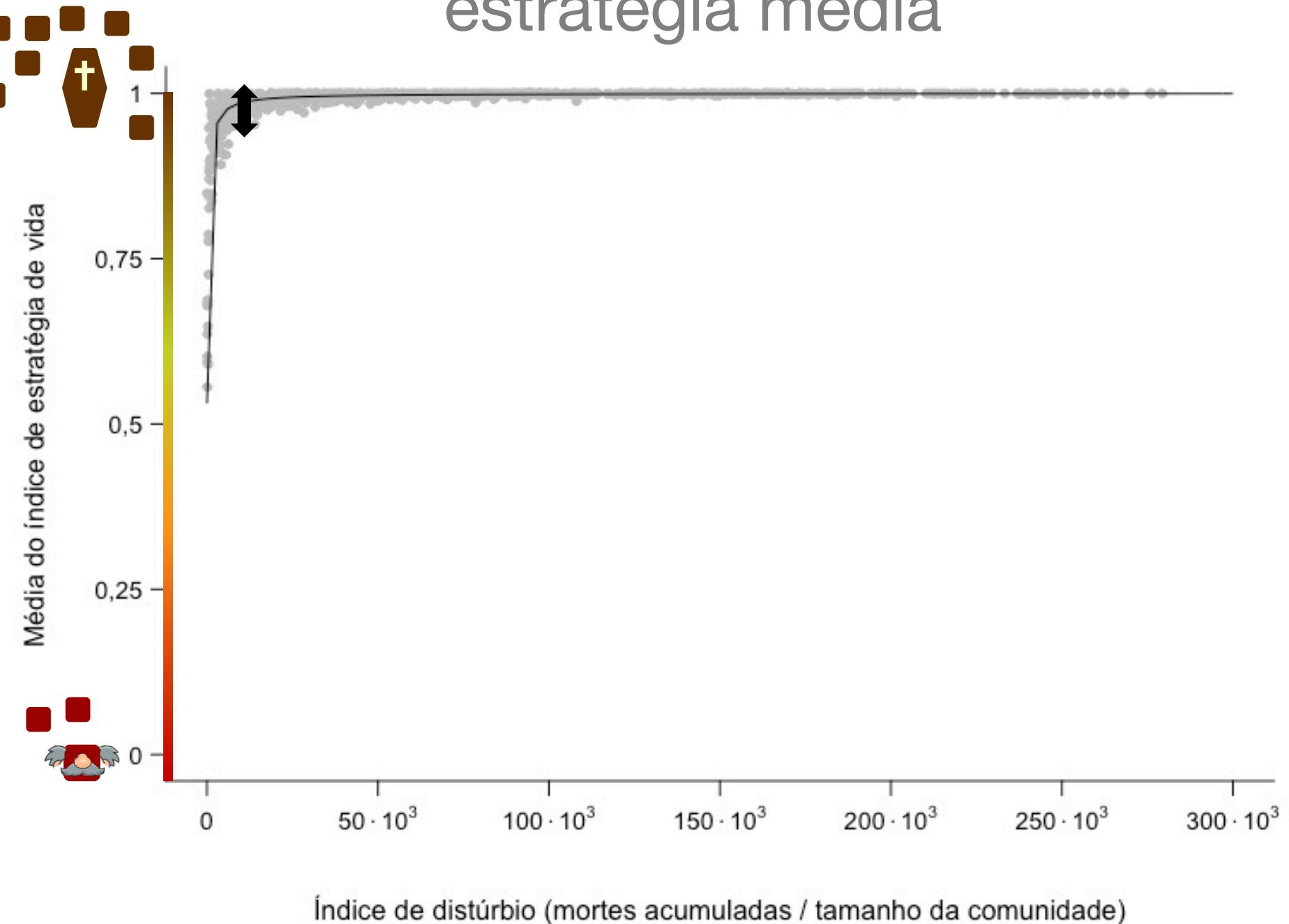


# estratégia média

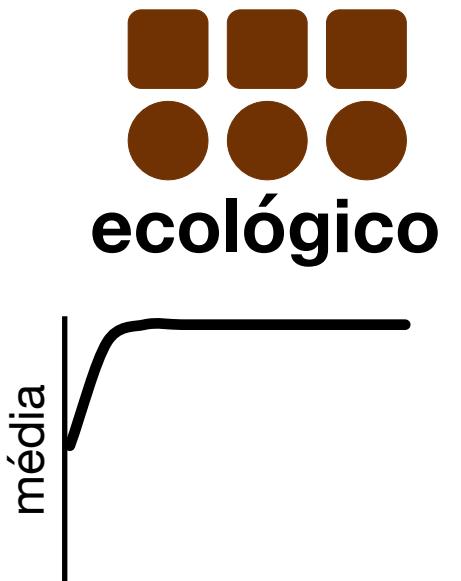
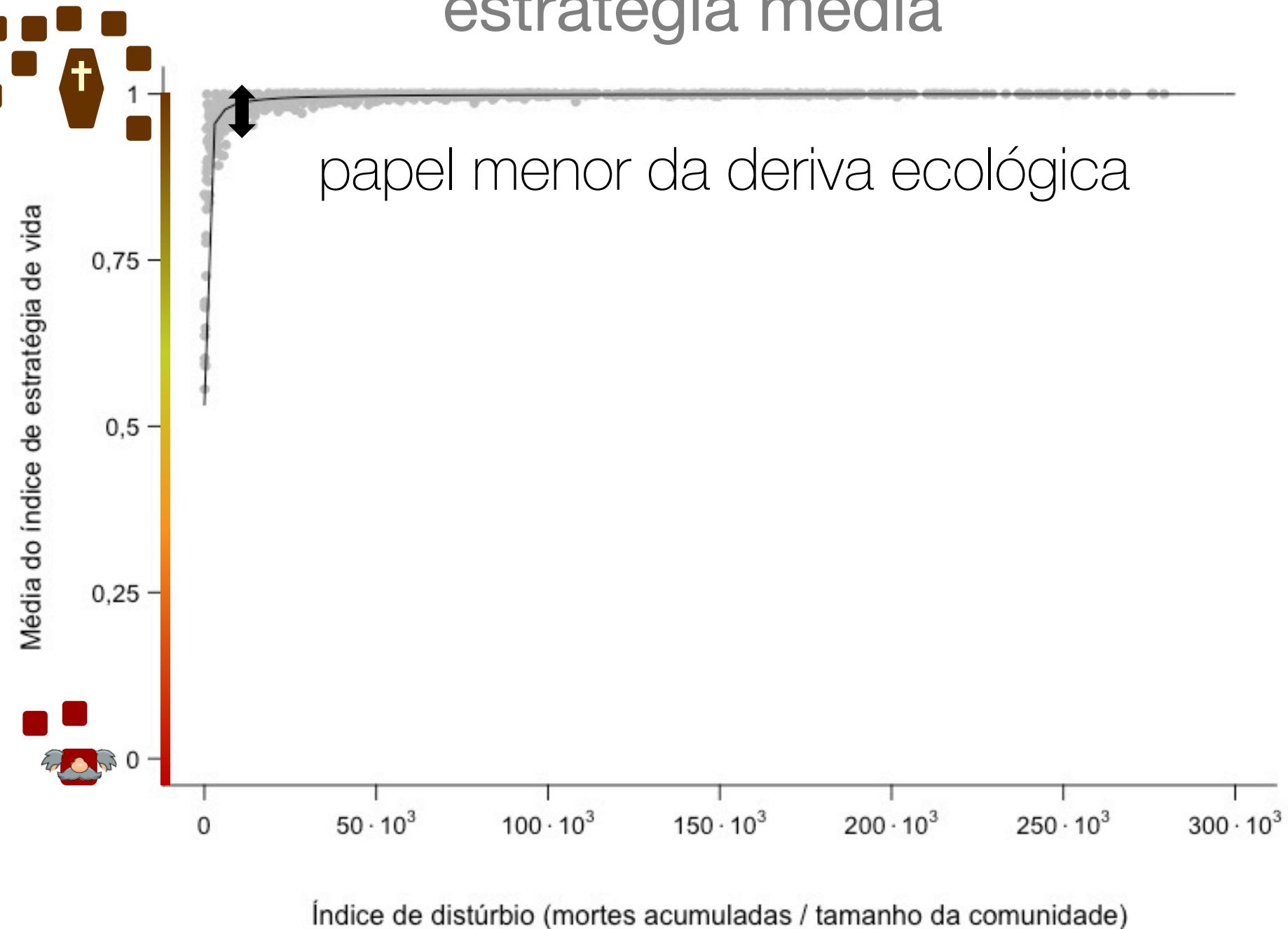
Média do índice de estratégia de vida



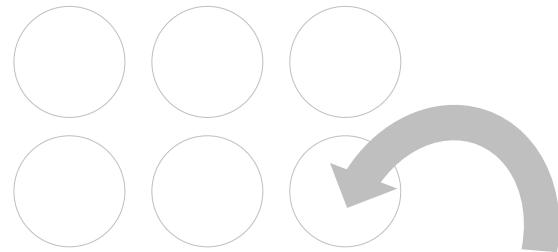
# estratégia média



# estratégia média



## evolutivo

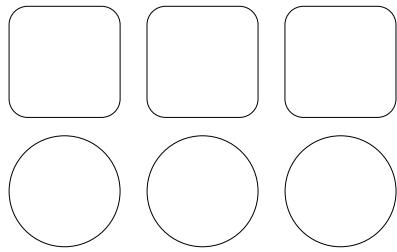


estratégia média

diversidade  
de estratégias

-

## ecológico

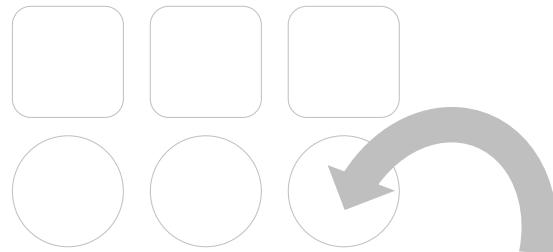


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

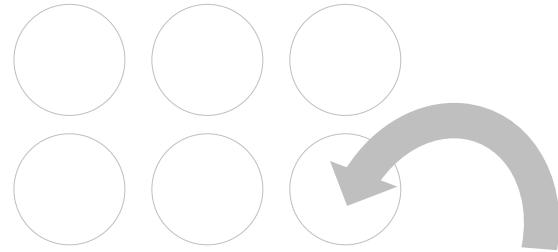


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

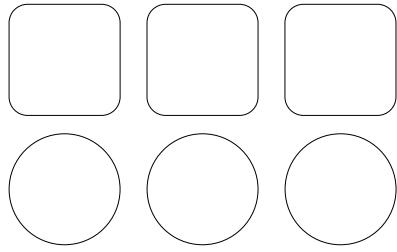


estratégia média

diversidade  
de estratégias

-

## ecológico

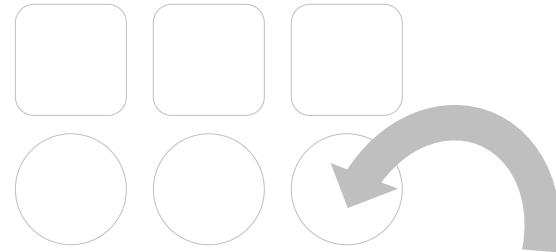


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo



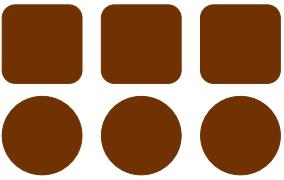
estratégia média

diversidade  
de estratégias

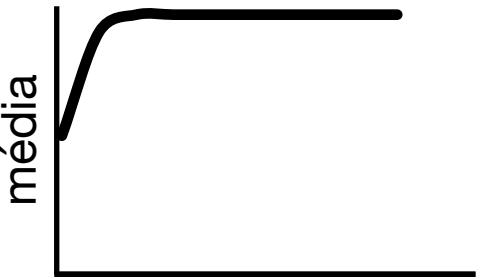
heterogeneidade  
interespecífica de  
estratégias



# diversidade de estratégias

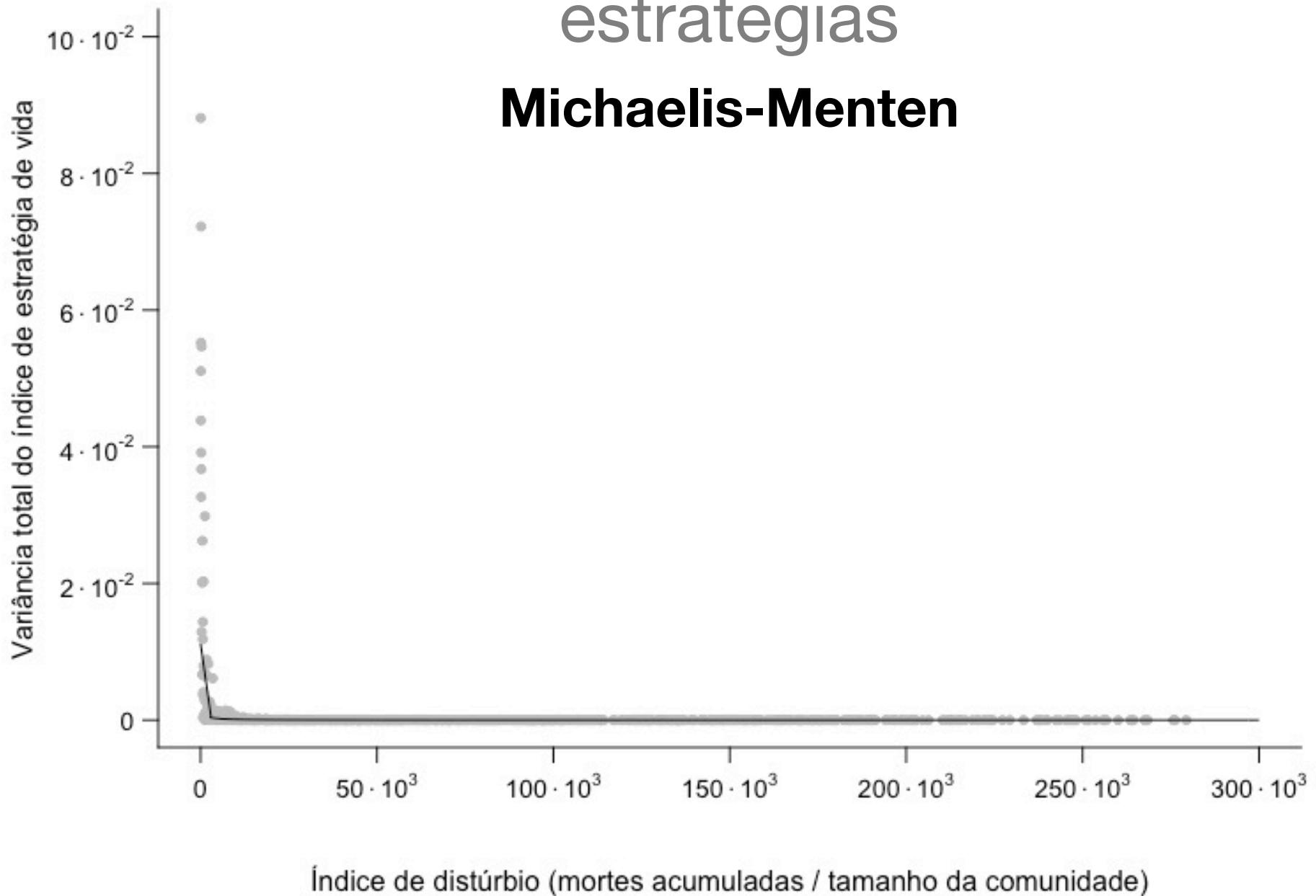


**ecológico**



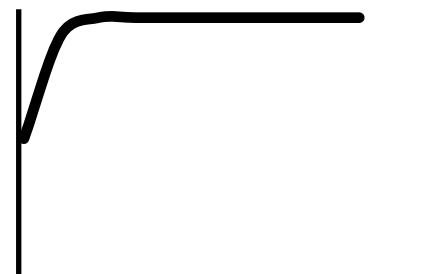
# diversidade de estratégias

## Michaelis-Menten



ecológico

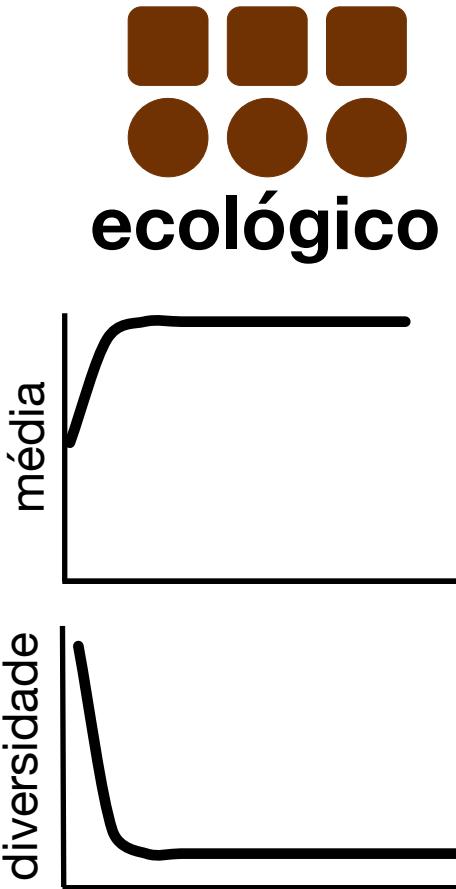
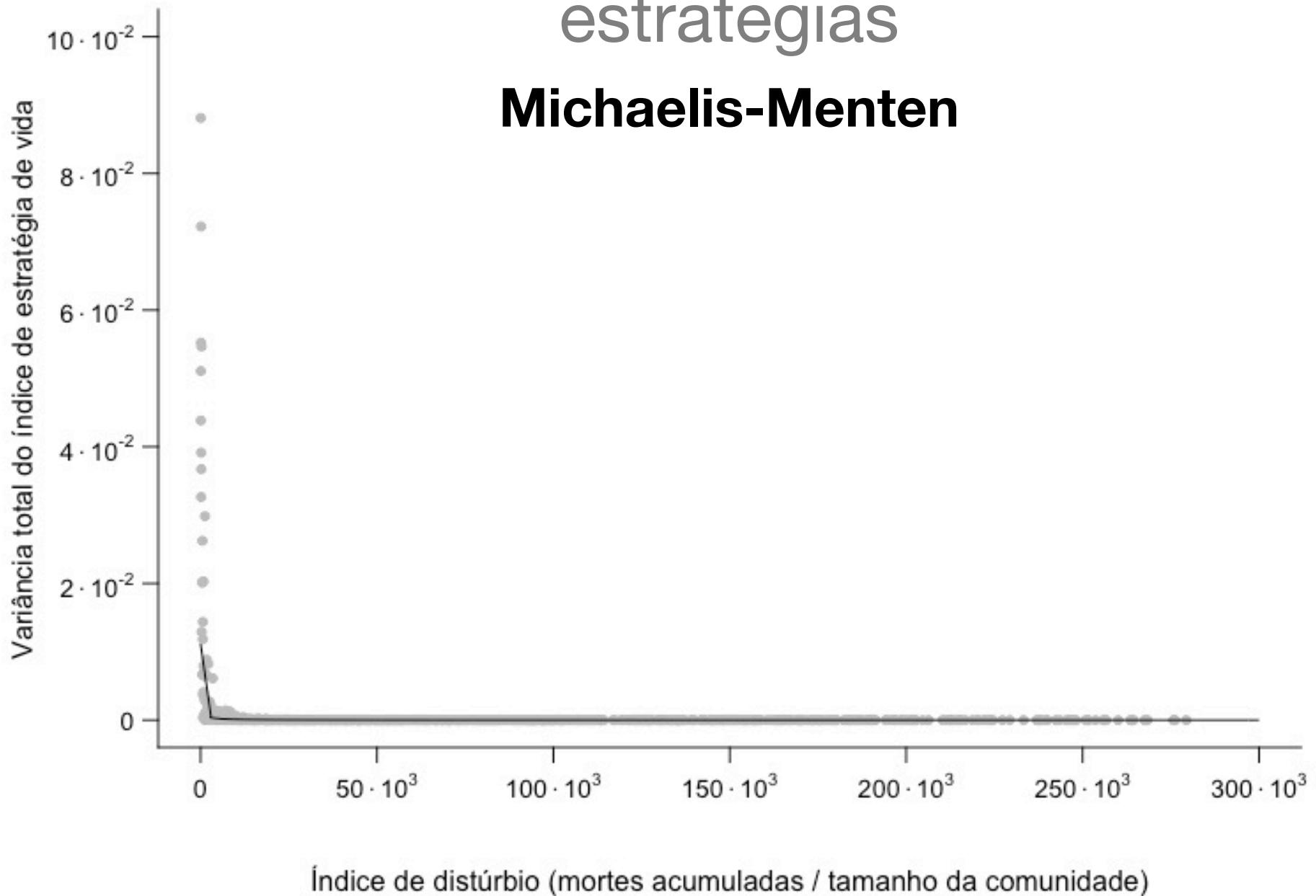
média



Índice de distúrbio (mortes acumuladas / tamanho da comunidade)

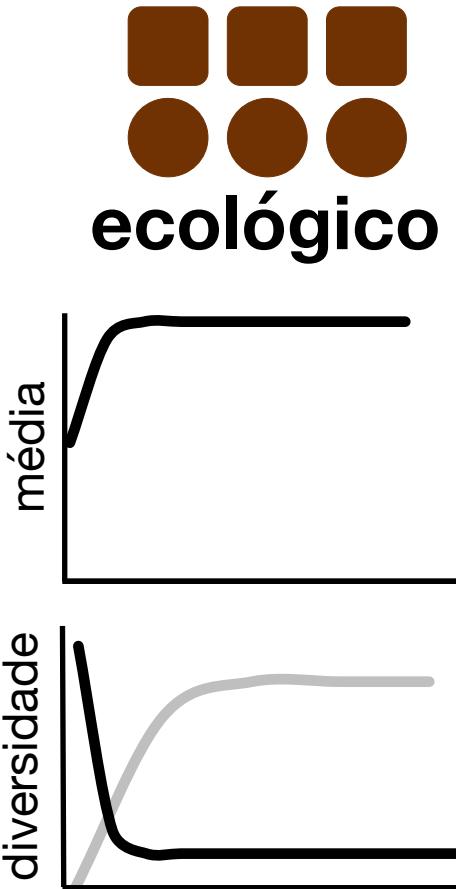
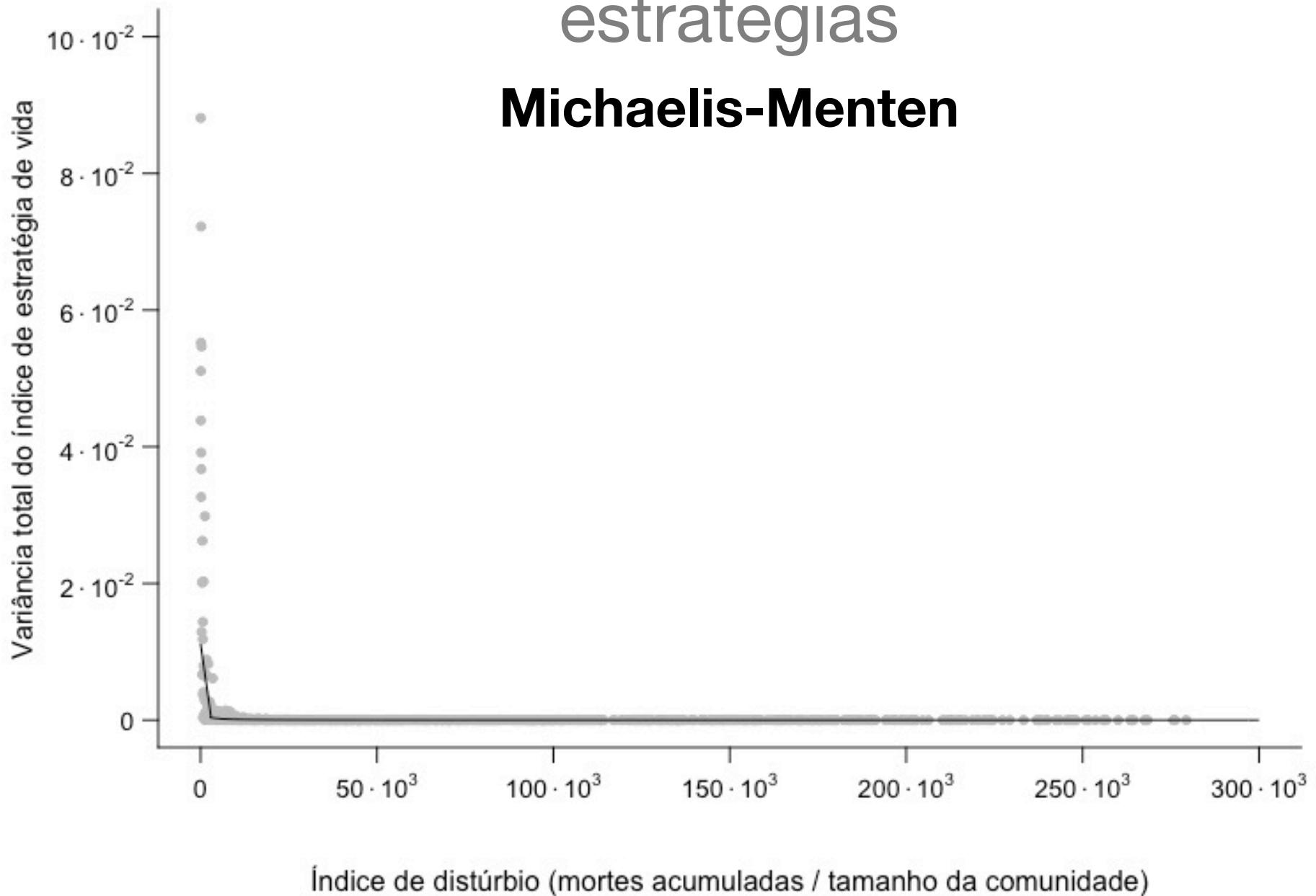
# diversidade de estratégias

## Michaelis-Menten



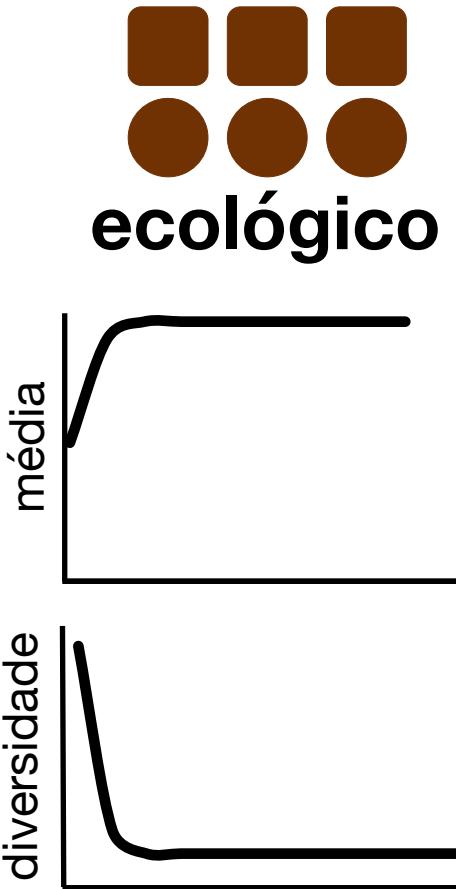
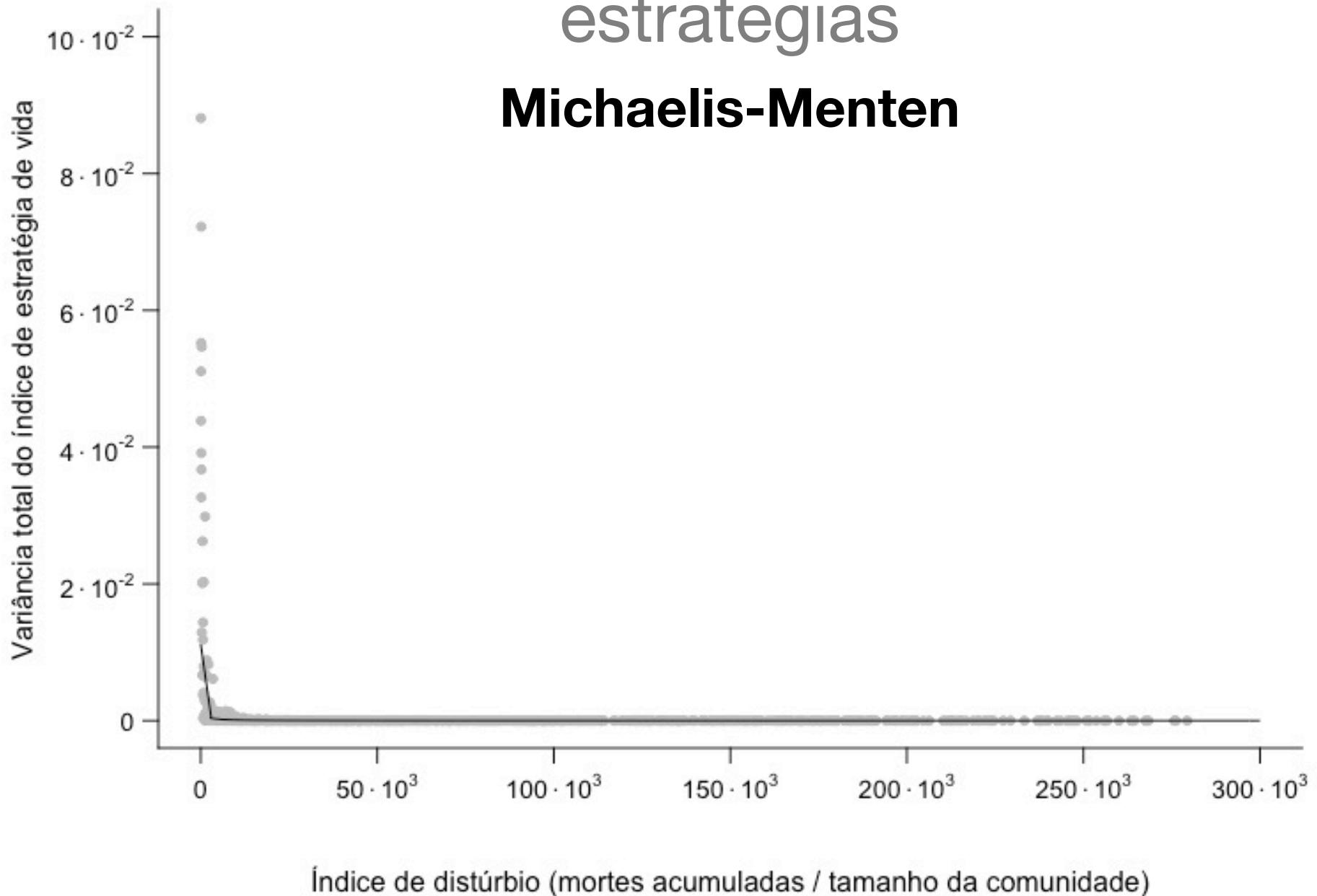
# diversidade de estratégias

## Michaelis-Menten

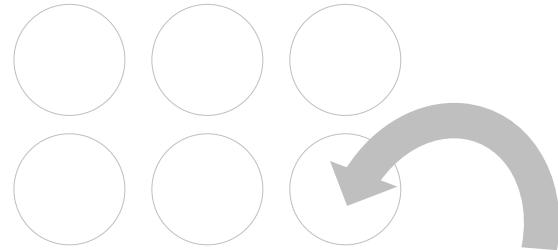


# diversidade de estratégias

## Michaelis-Menten



## evolutivo

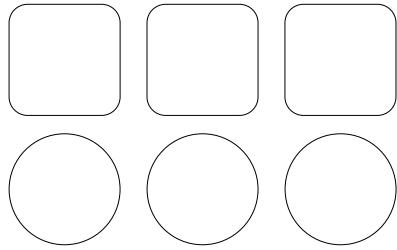


estratégia média

diversidade  
de estratégias

-

## ecológico

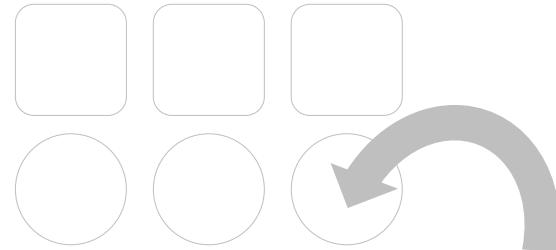


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

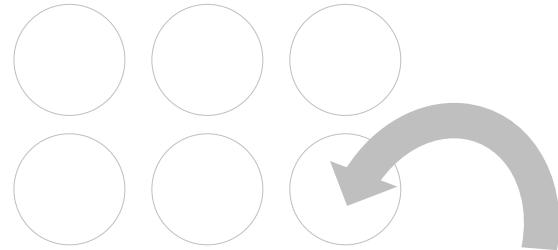


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

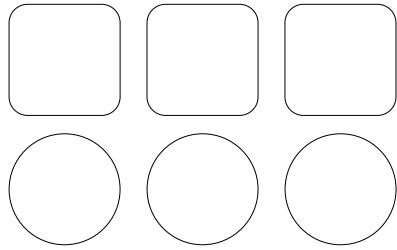


estratégia média

diversidade  
de estratégias

-

## ecológico

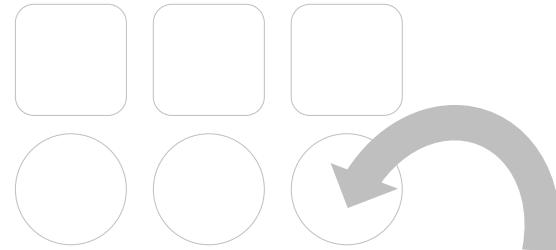


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

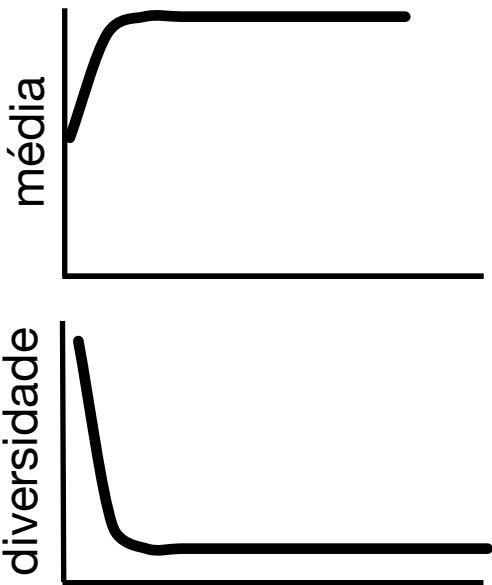
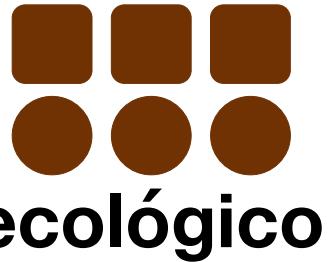


estratégia média

diversidade  
de estratégias

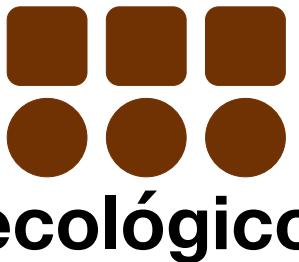
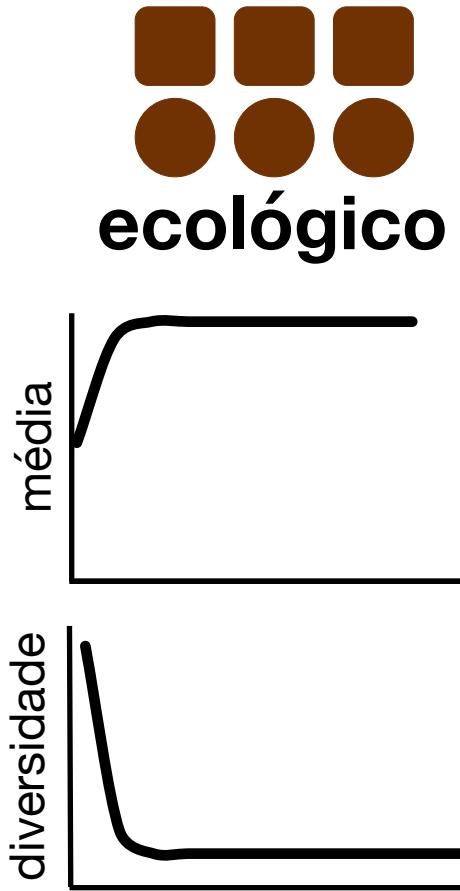
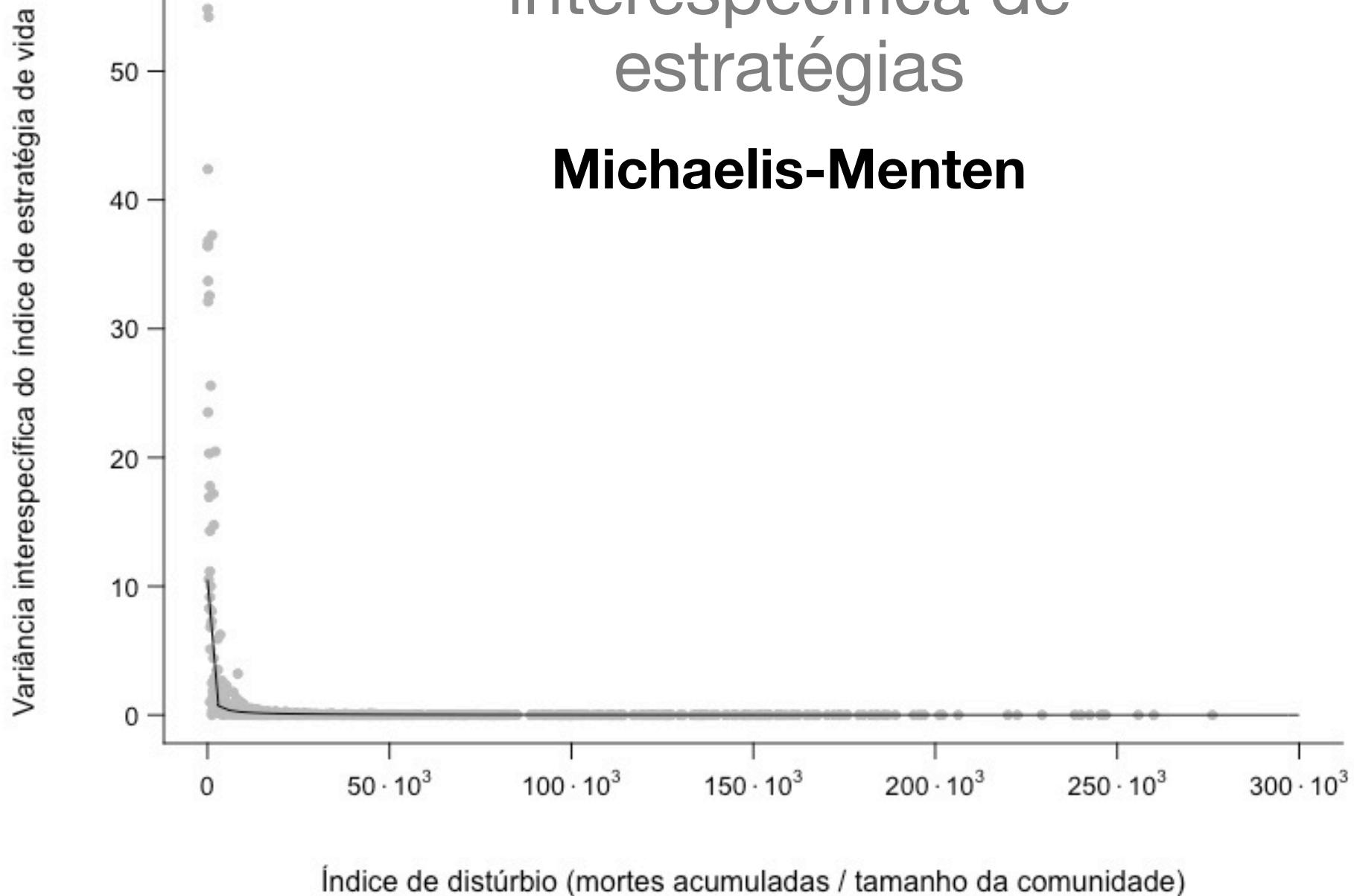
heterogeneidade  
interespecífica de  
estratégias

# heterogeneidade interespecífica de estratégias



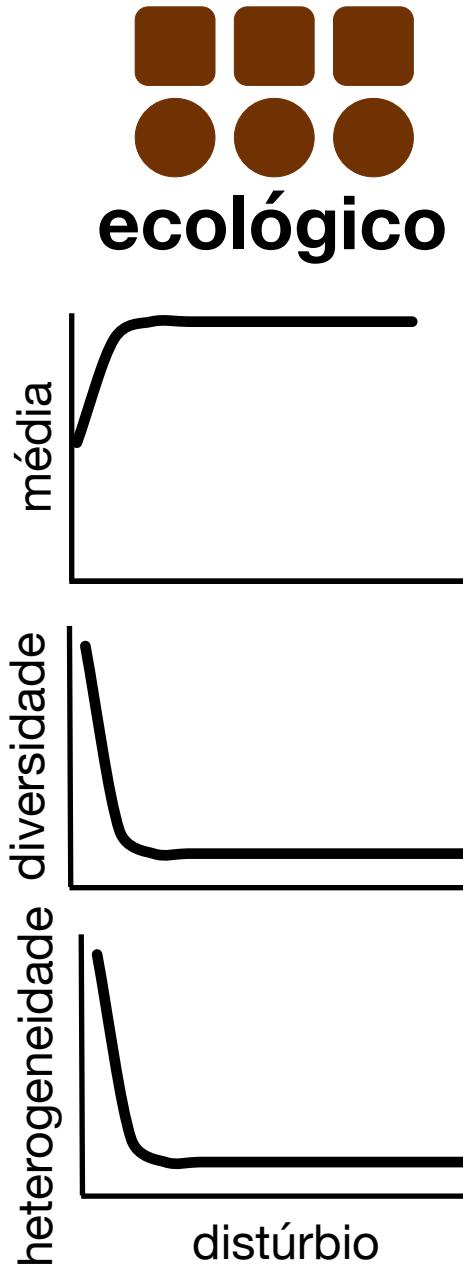
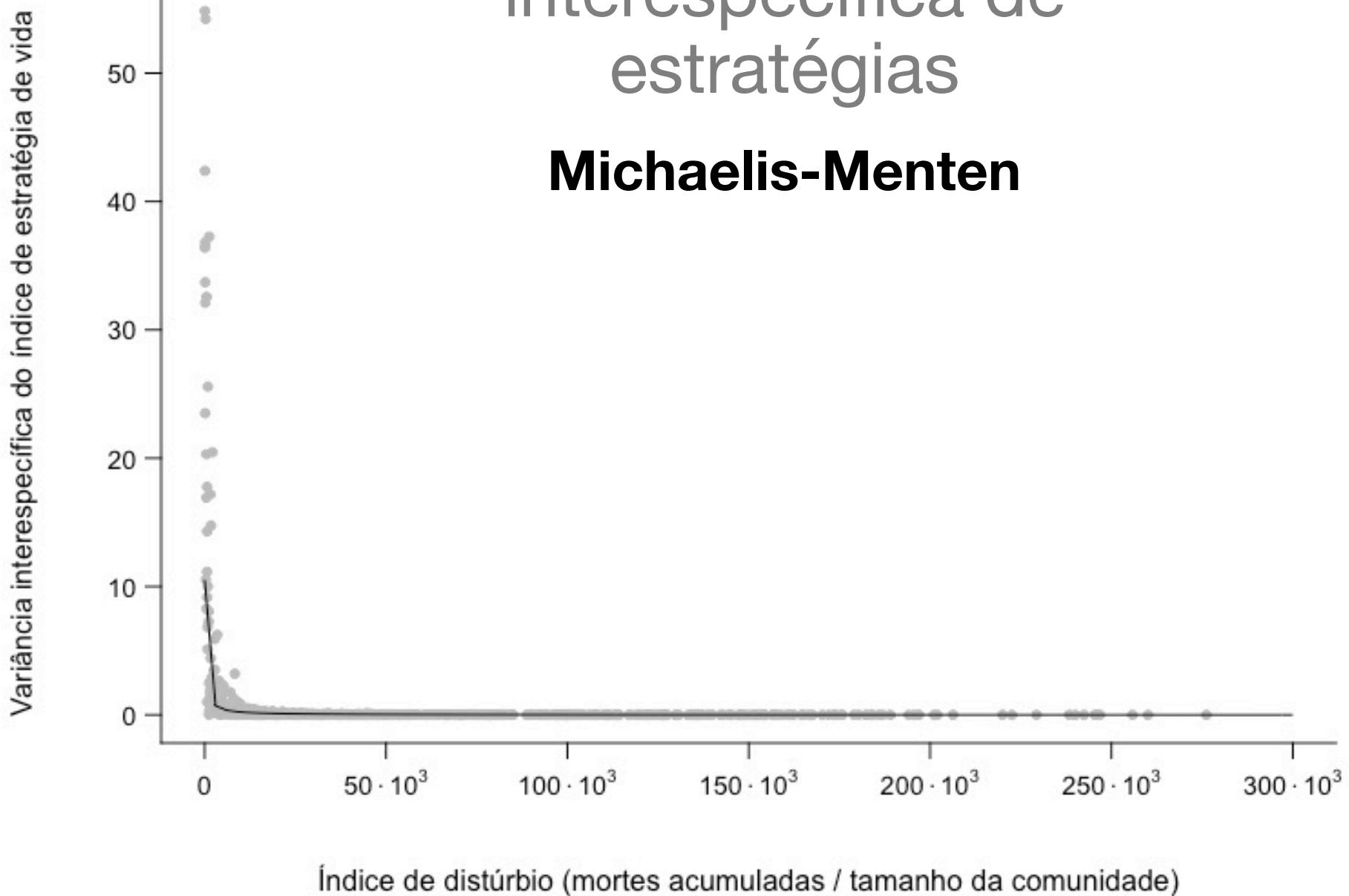
# heterogeneidade interespecífica de estratégias

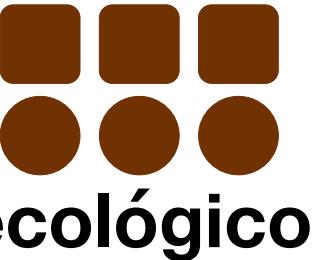
## Michaelis-Menten



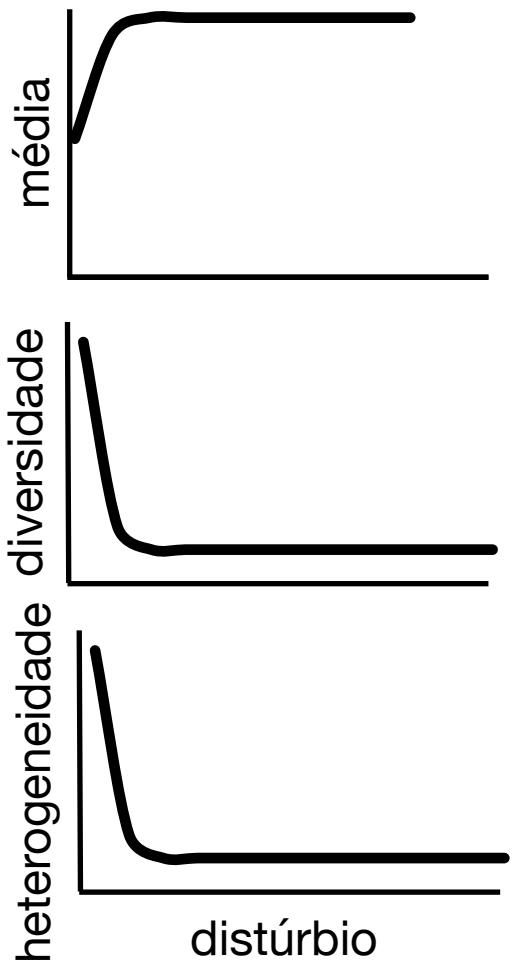
# heterogeneidade interespecífica de estratégias

## Michaelis-Menten

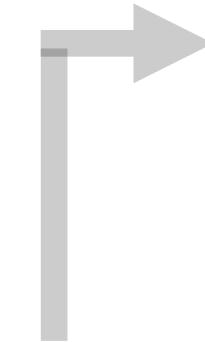




 distúrbio

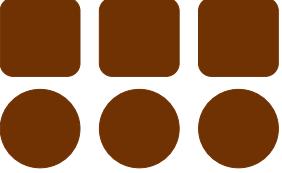


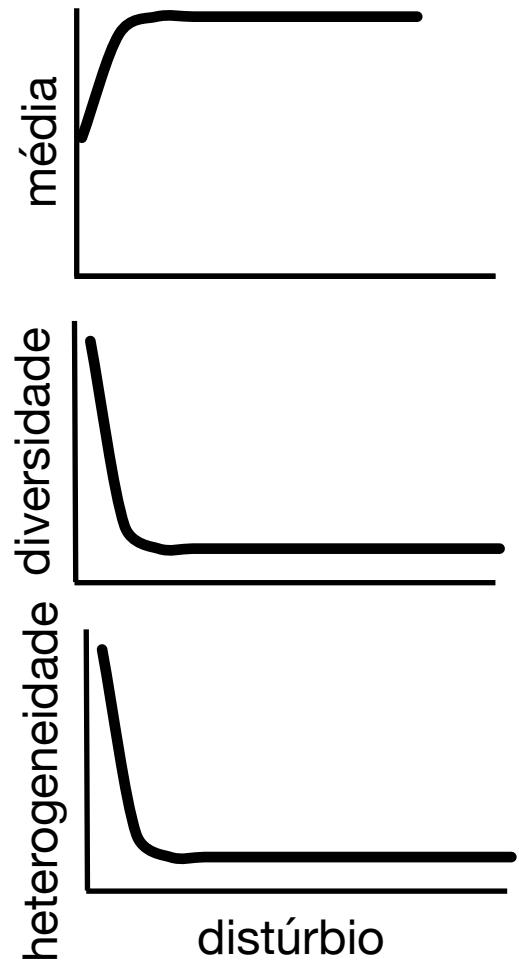
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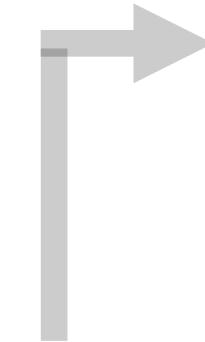
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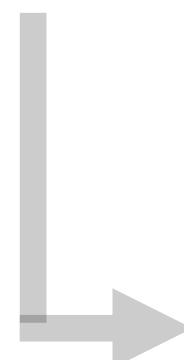
  
**ecológico**



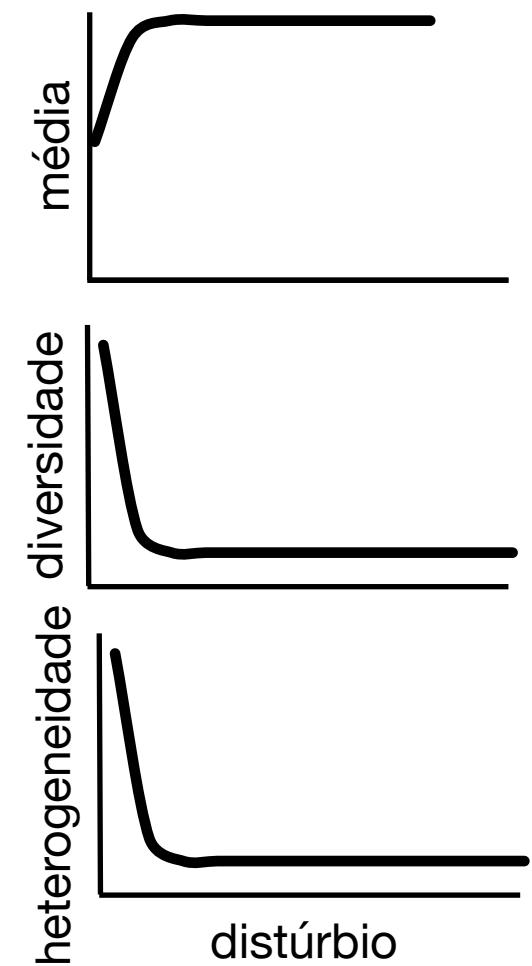
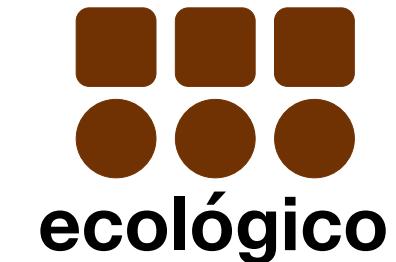
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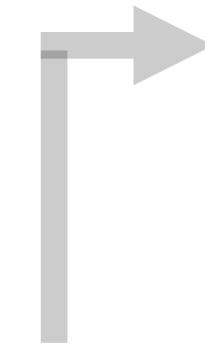
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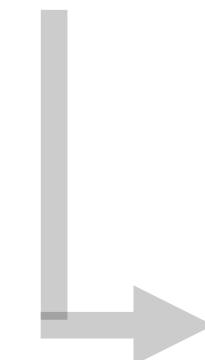
**redução**



**extinção**

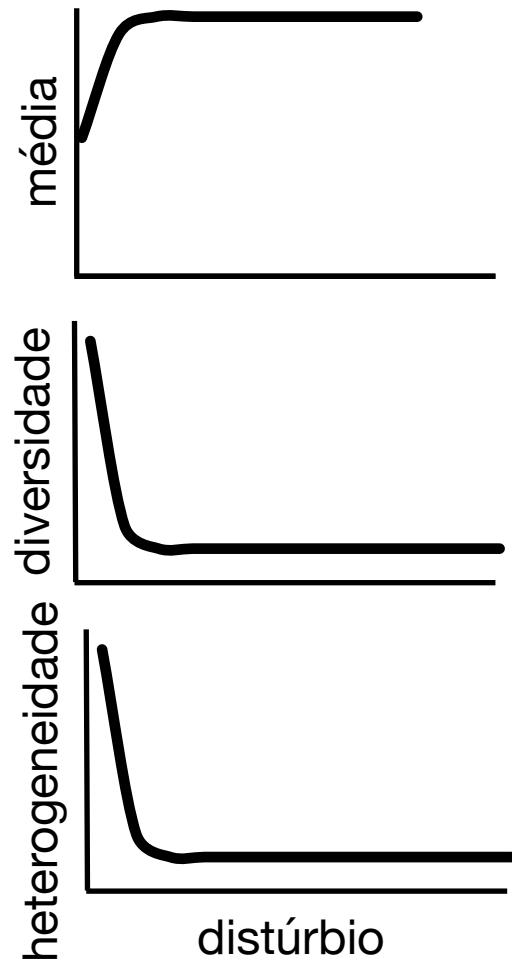
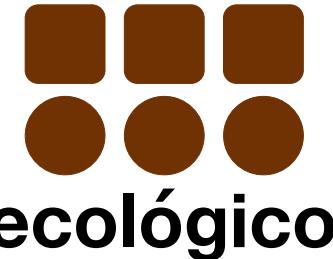


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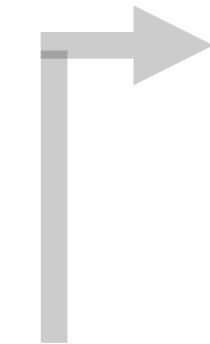


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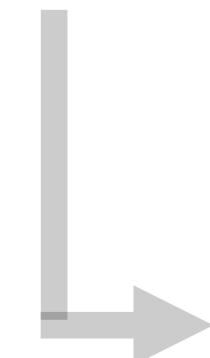
**exclusão competitiva**



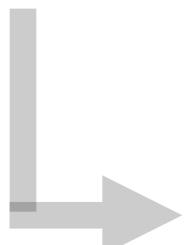
**extinção**



**distúrbio**



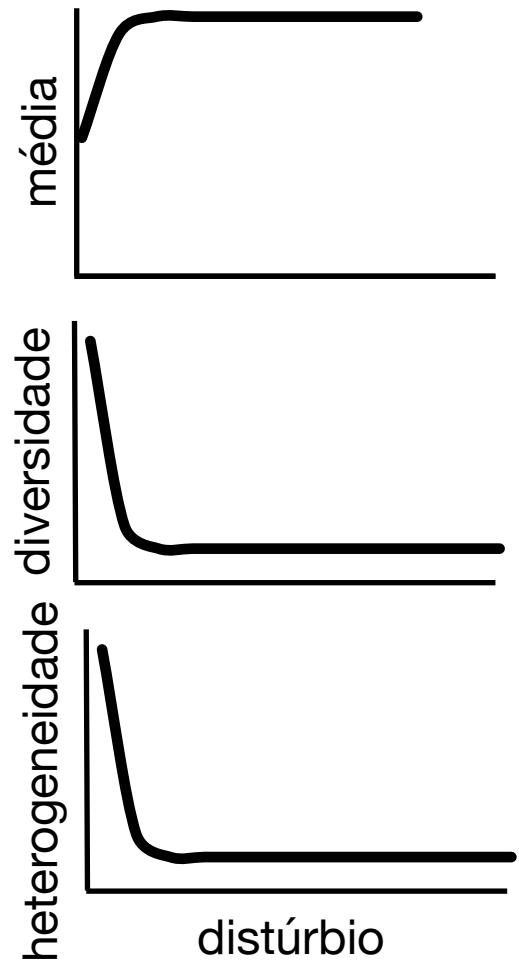
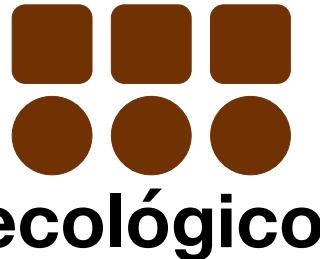
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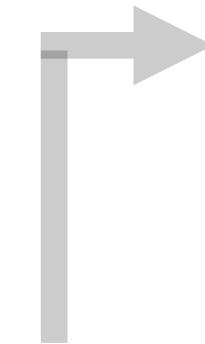
**deriva ecológica**

**exclusão competitiva**

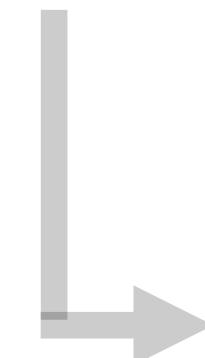
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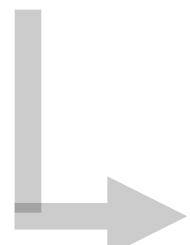
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**distúrbio**



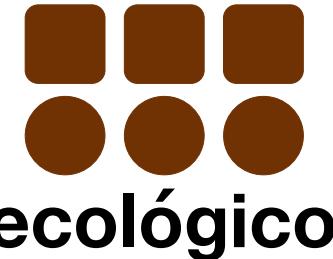
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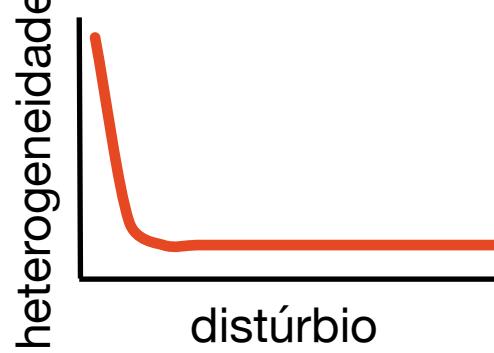
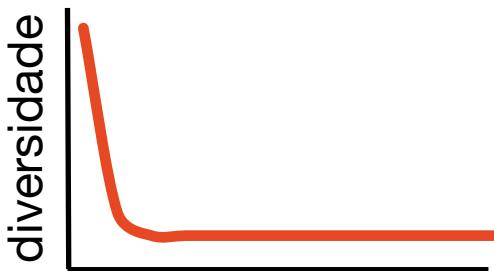
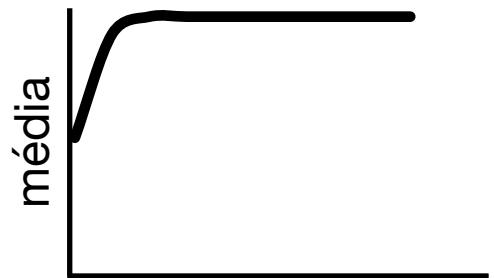
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**exclusão competitiva**

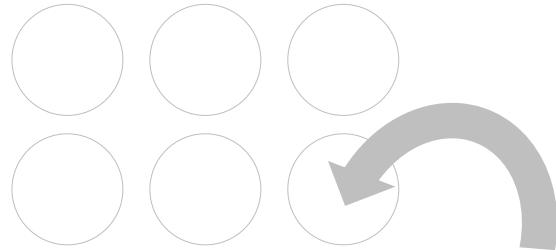
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**ecológico**



## evolutivo

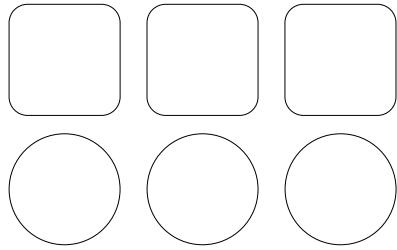


estratégia média

diversidade  
de estratégias

-

## ecológico

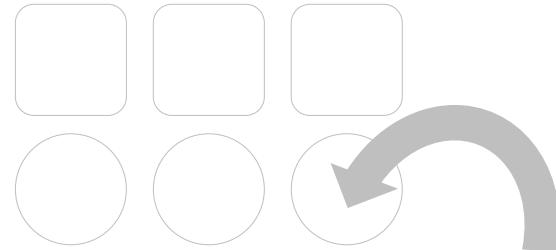


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

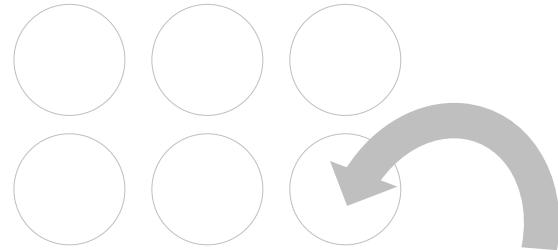


estratégia média

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heterogeneidade  
interespecífica de  
estratégias

## evolutivo

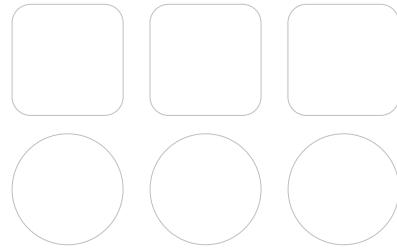


estratégia média

diversidade  
de estratégias

-

## ecológico

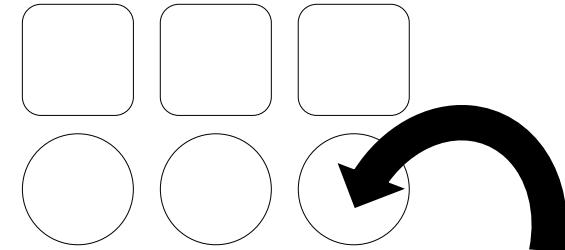


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo



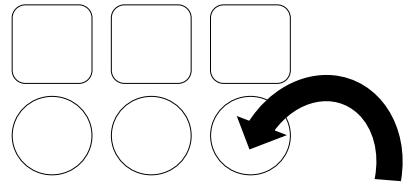
estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

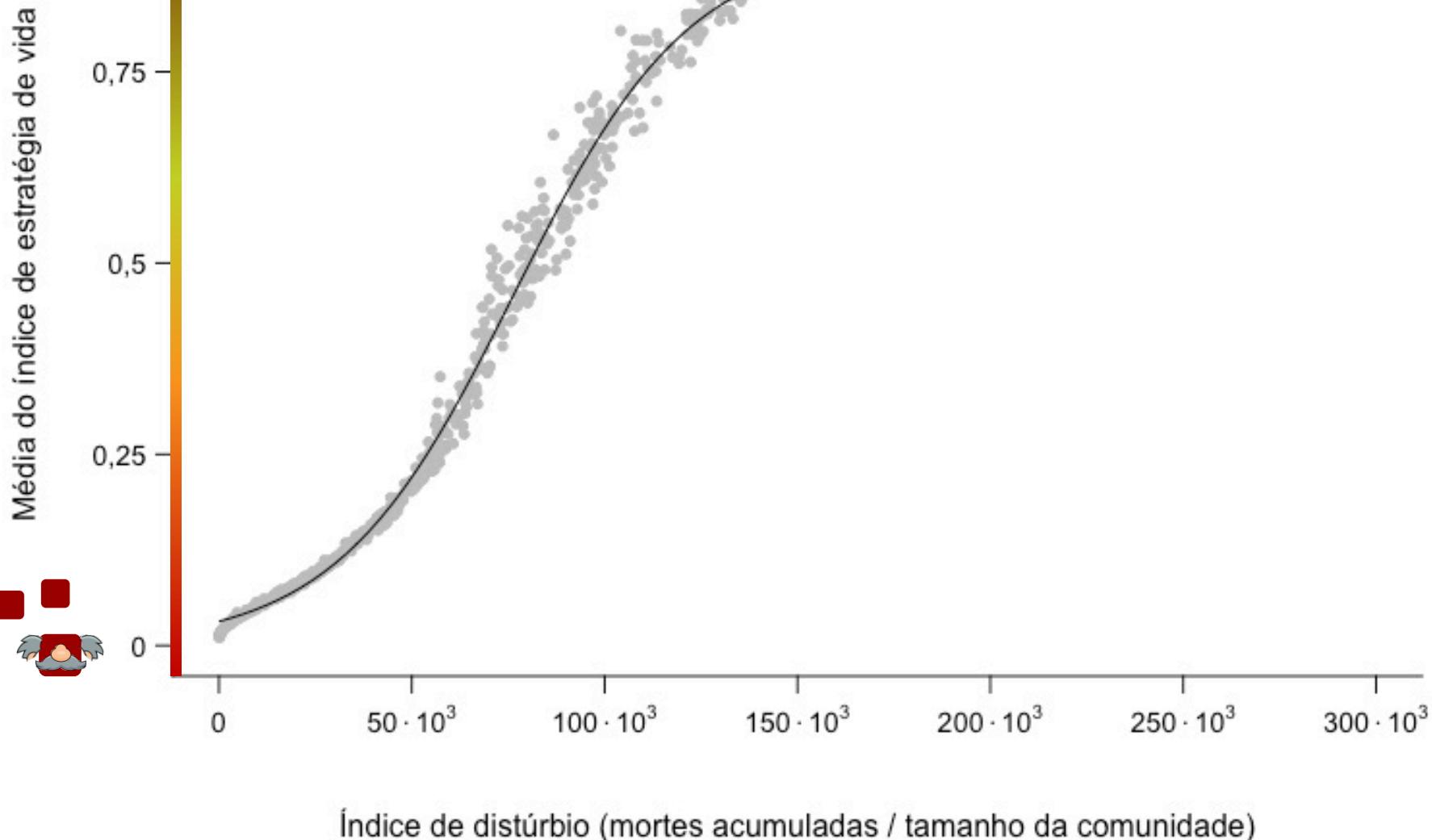


# estratégia média

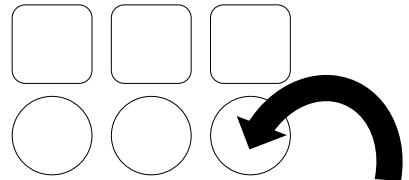


**eco-evolutivo**

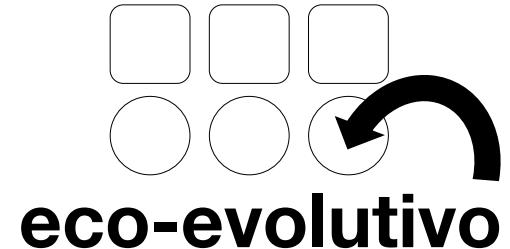
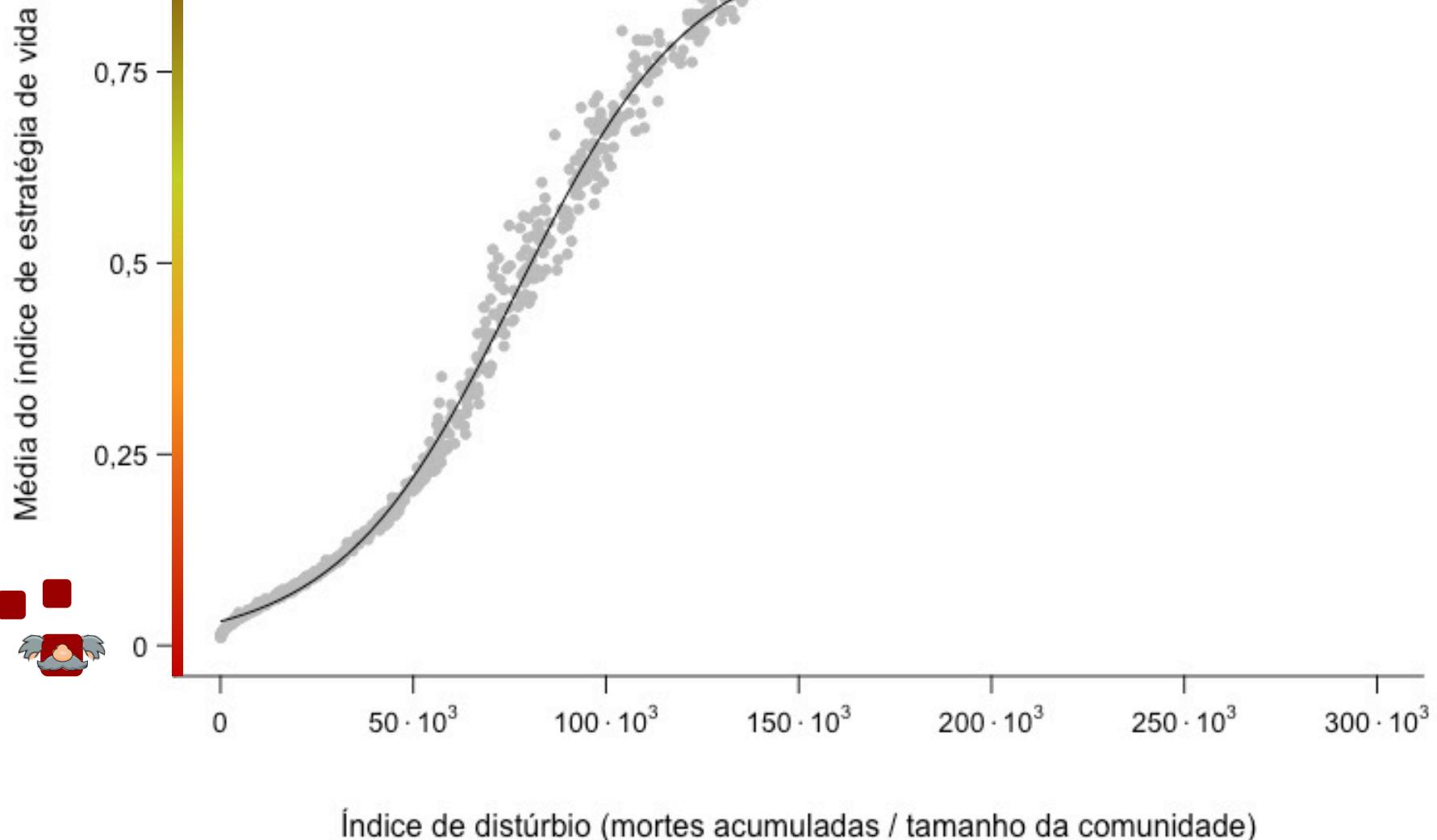
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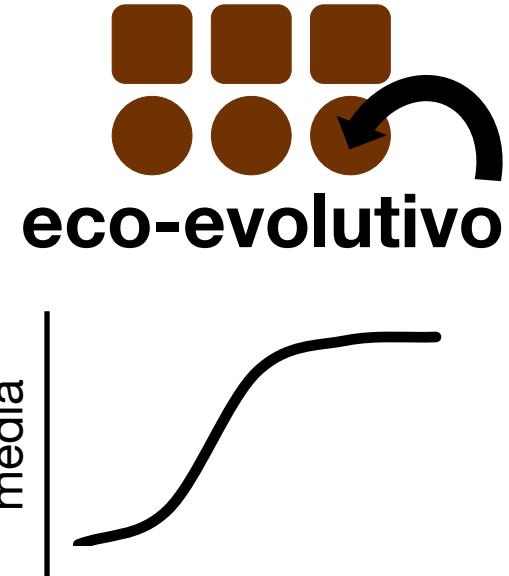
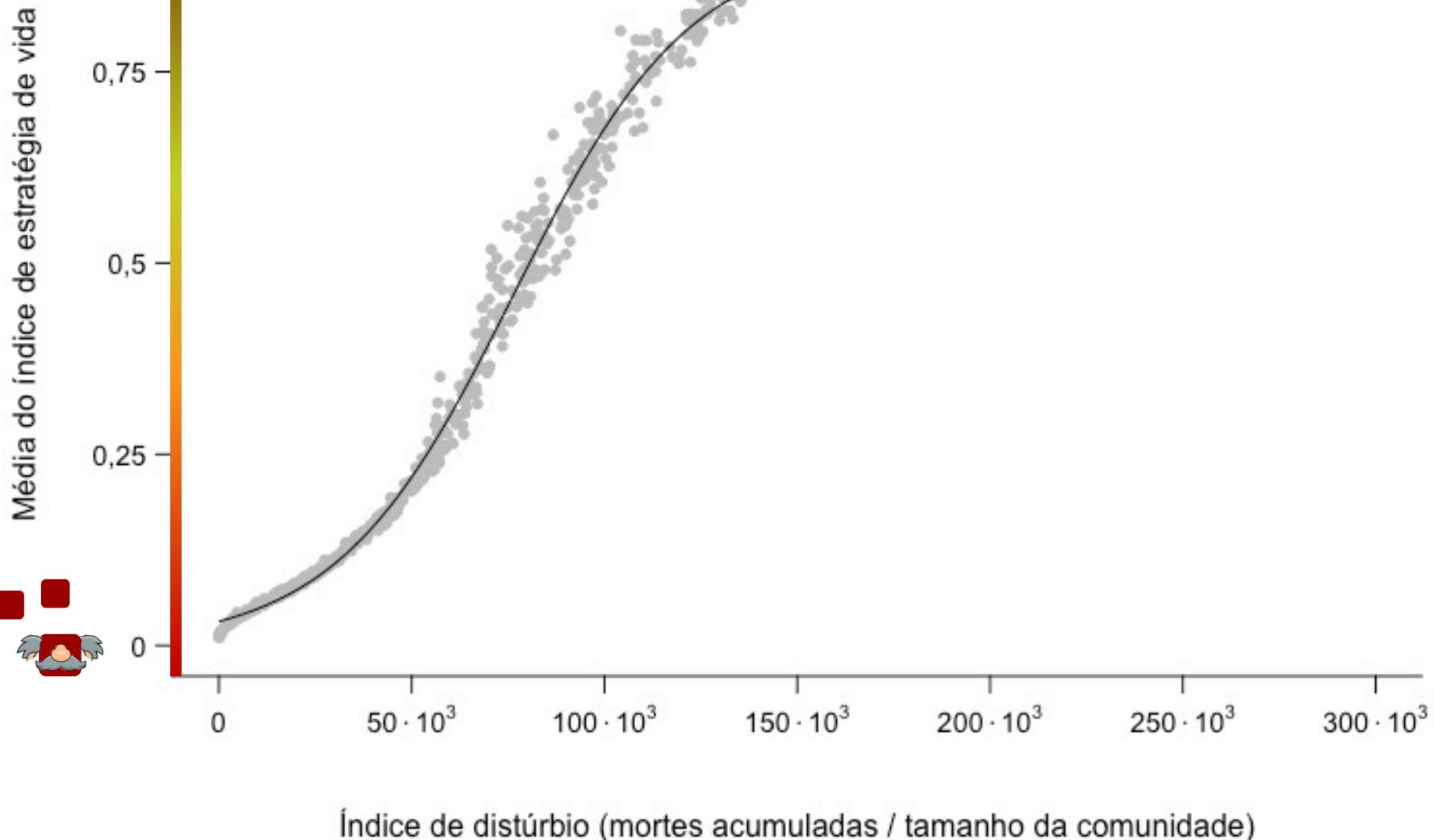
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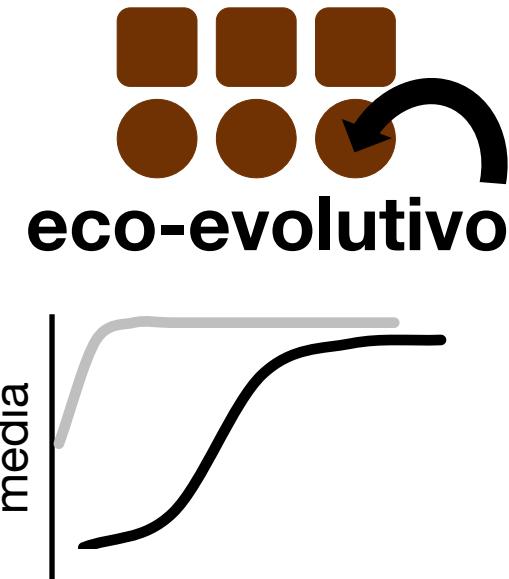
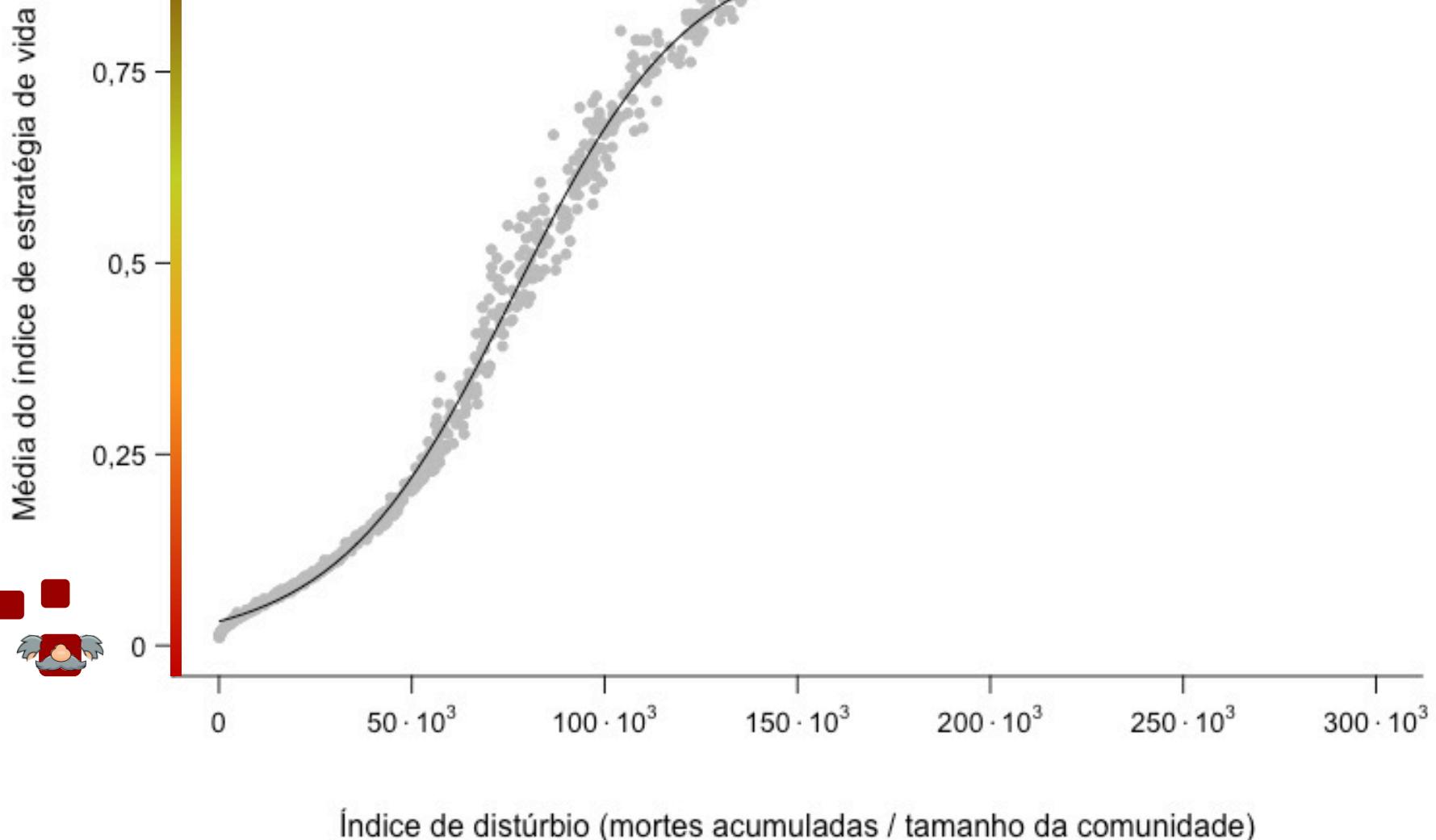
# estratégia média logístico



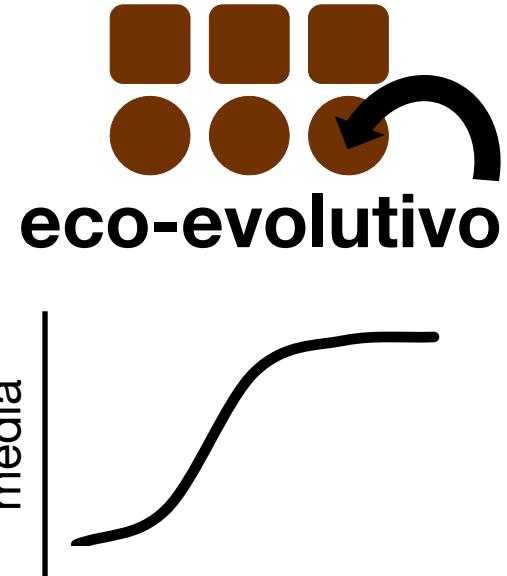
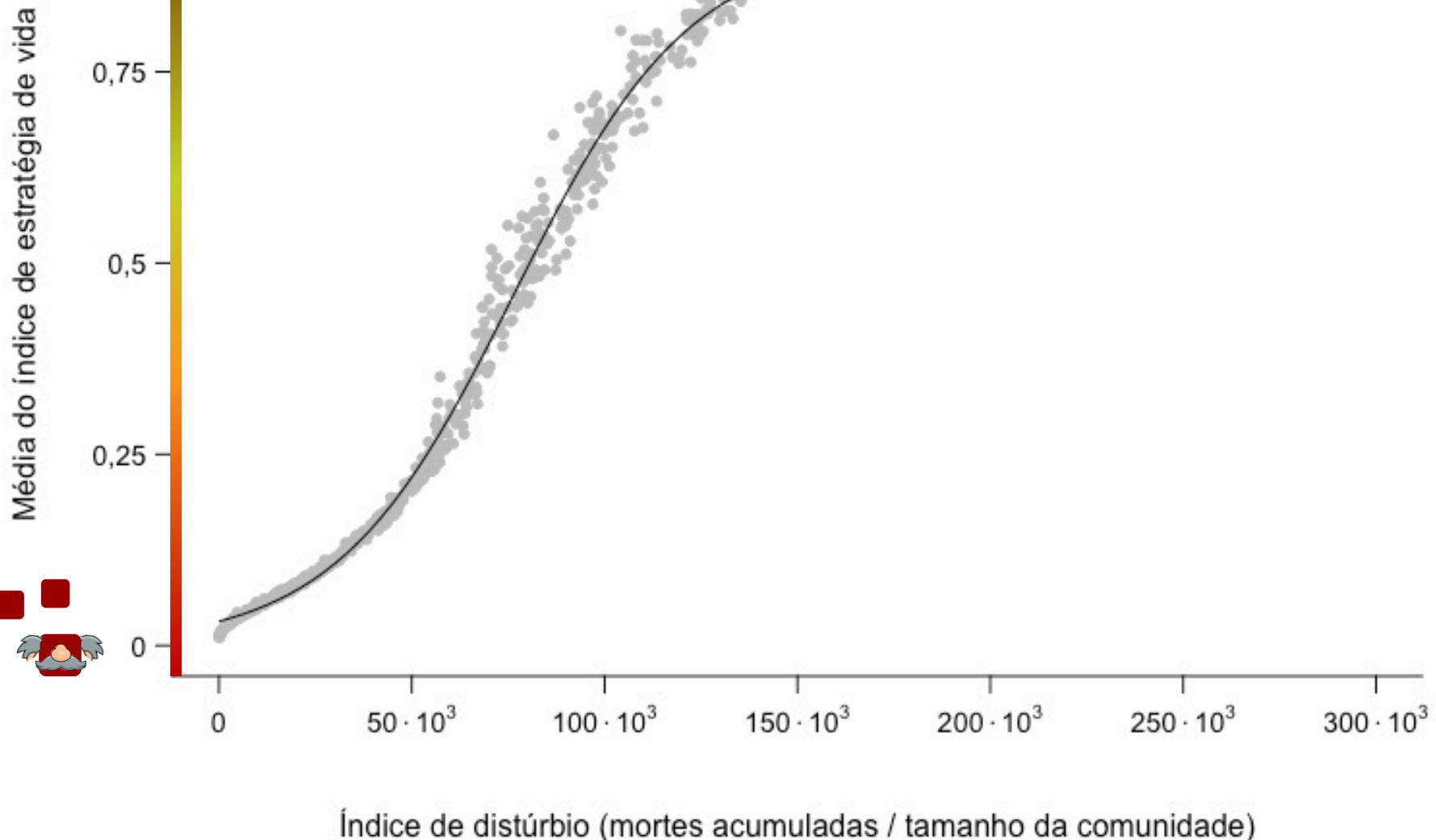
# estratégia média logístico



# estratégia média logístico



# estratégia média logístico



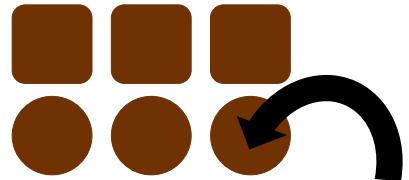
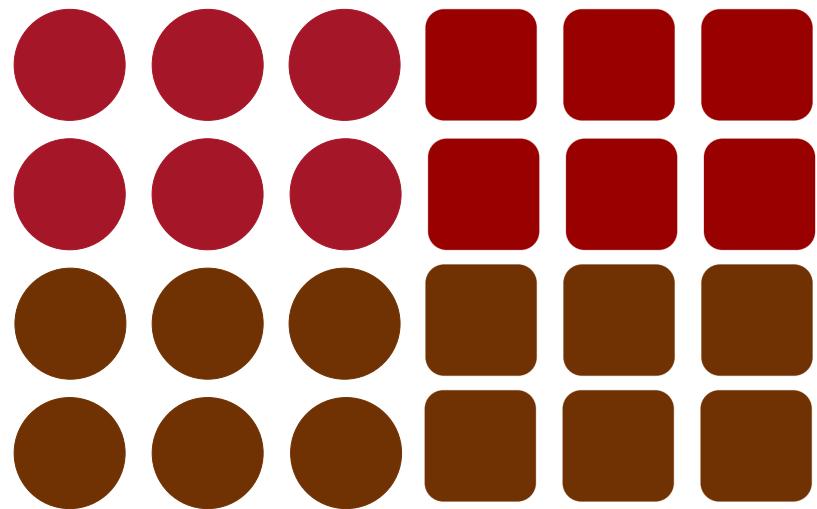
banco

x 48

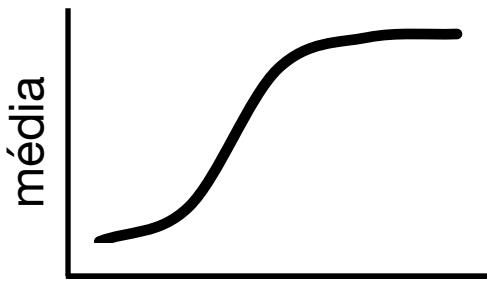
x 12

x 48

x 12



**eco-evolutivo**



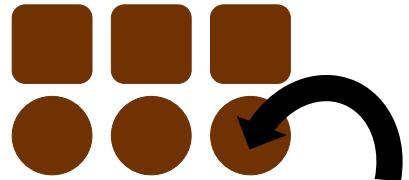
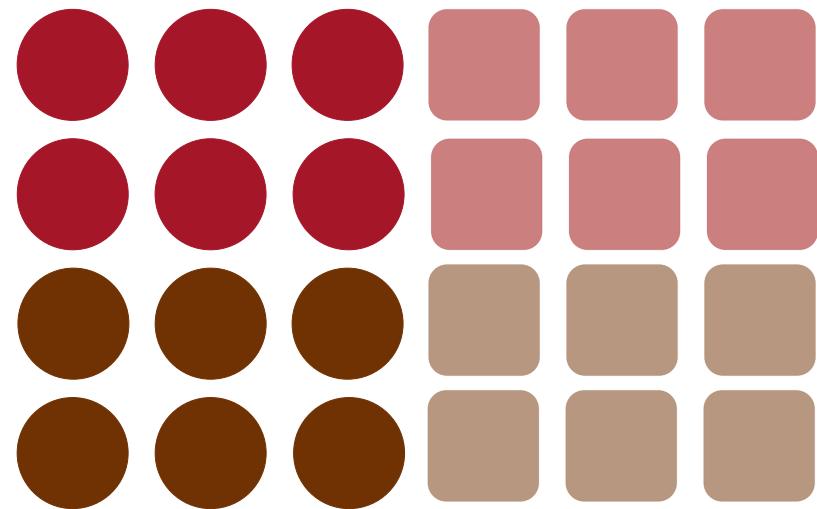
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x 48

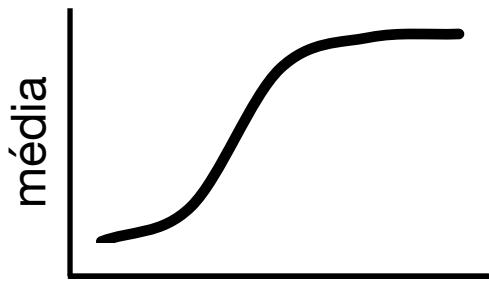
x 12

x 48

x 12



**eco-evolutivo**



# seleção natural

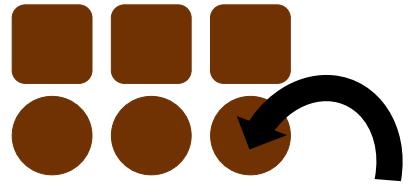
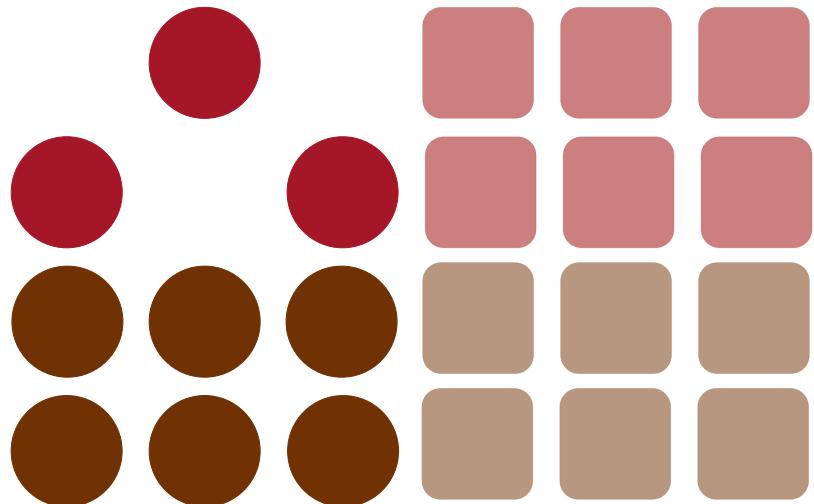
banco

x 48

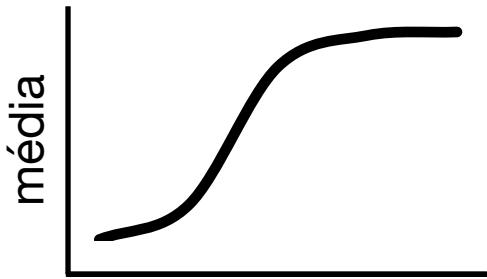
x 12

x 48

x 12



**eco-evolutivo**



# seleção natural

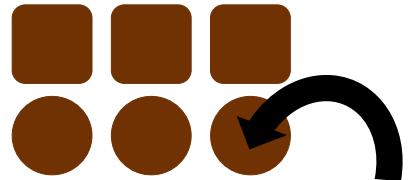
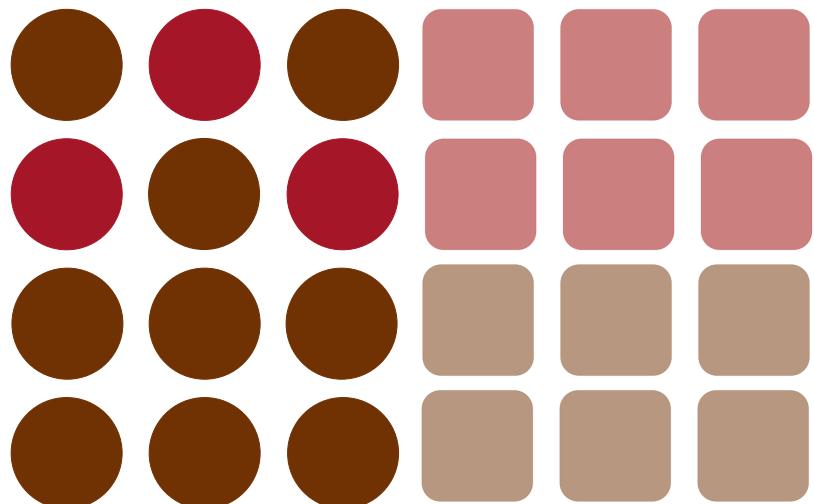
banco

x 72

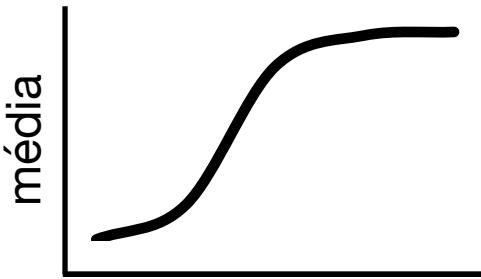
x 6

x 48

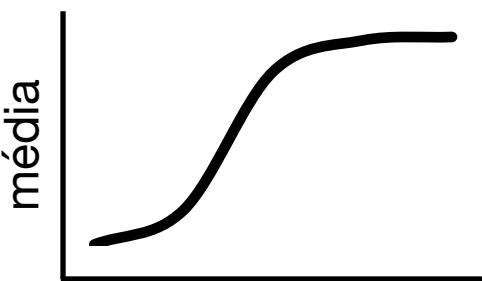
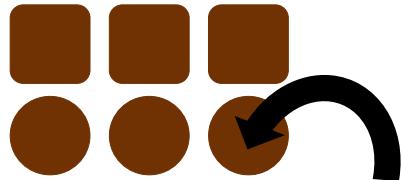
x 12



**eco-evolutivo**



# seleção natural + exclusão competitiva de espécies



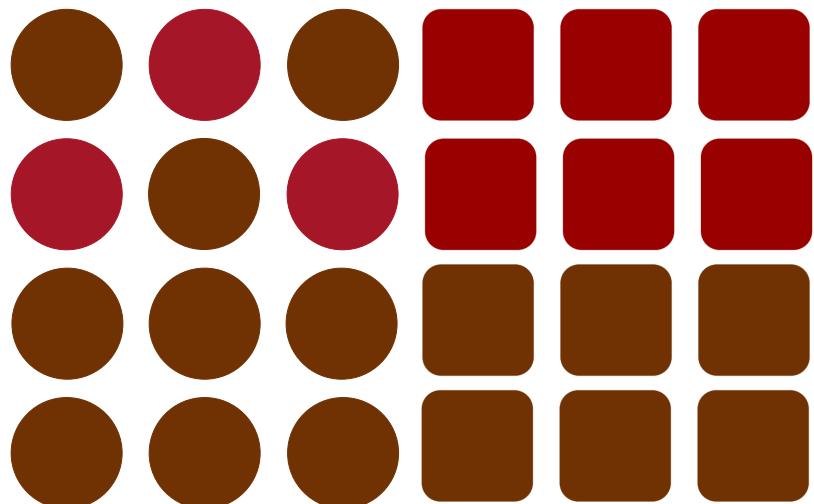
banco

x 72

x 6

x 48

x 12



# seleção natural + exclusão competitiva de espécies

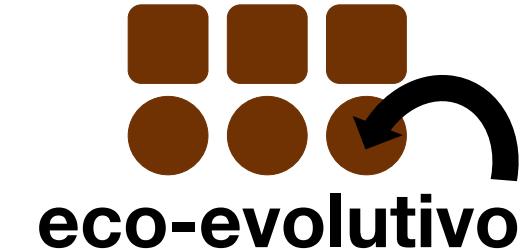
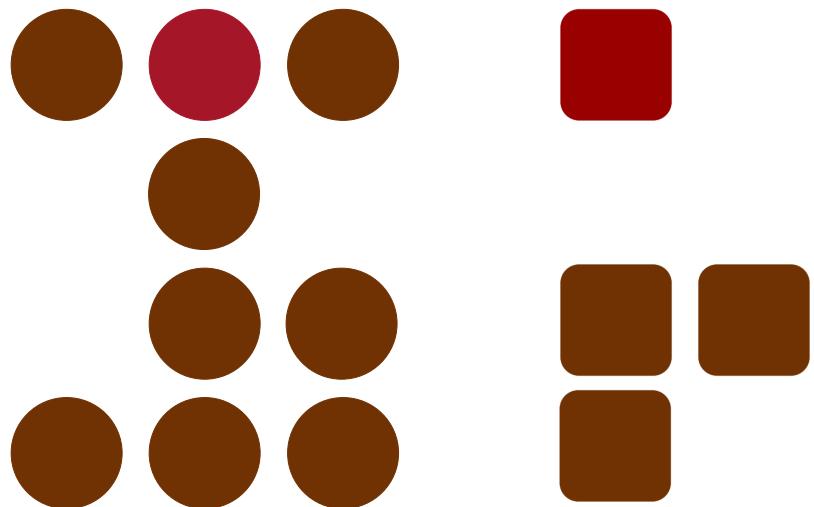
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x 72

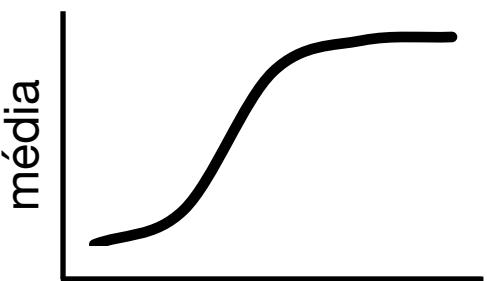
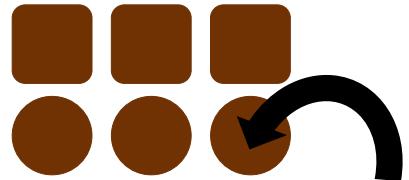
x 6

x 48

x 12



# seleção natural + exclusão competitiva de espécies



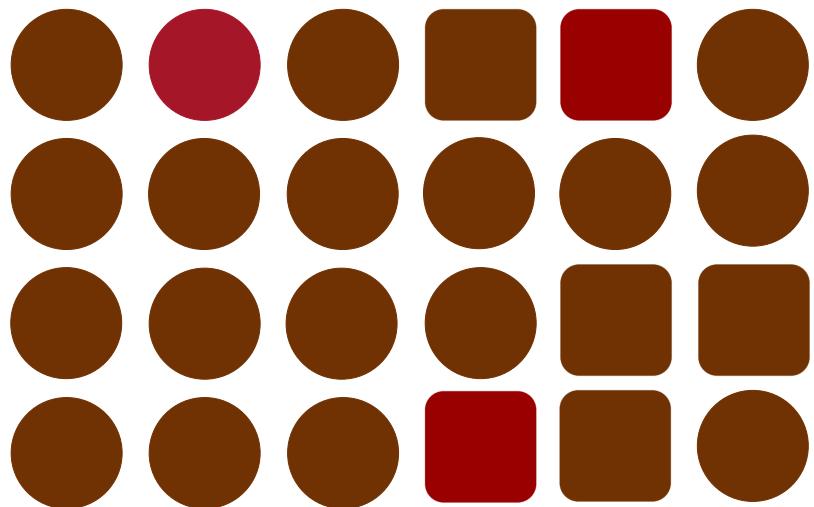
banco

● x 136

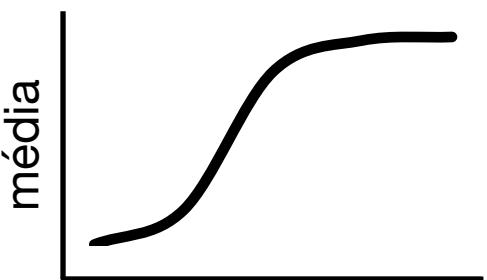
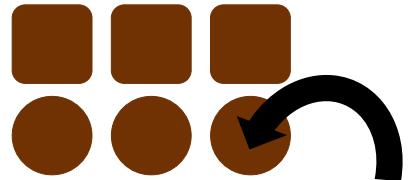
● x 2

■ x 32

■ x 4



# seleção natural + exclusão competitiva de espécies



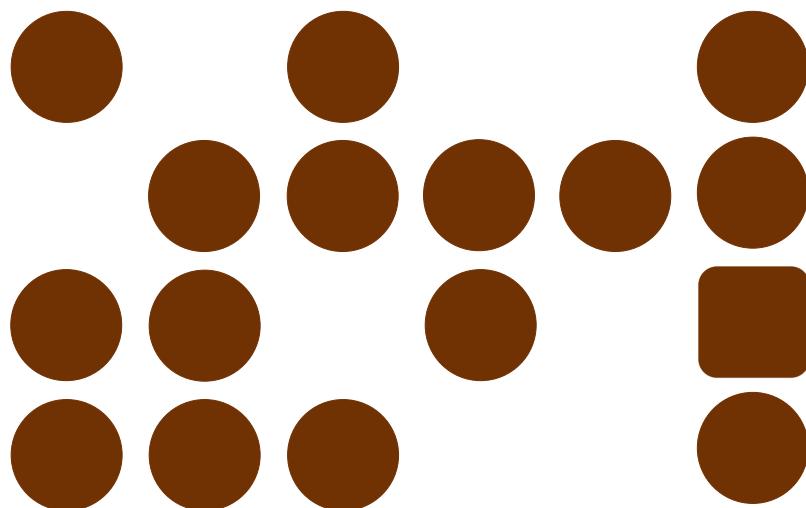
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● x 136

● x 2

■ x 32

■ x 4

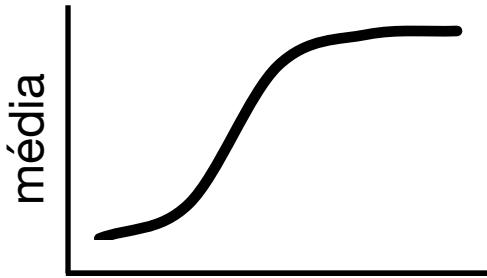
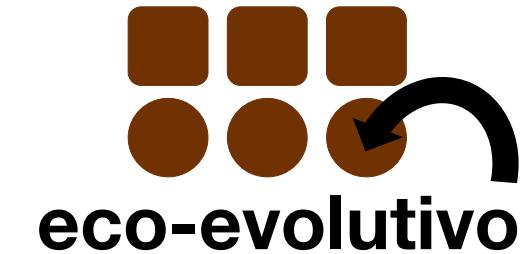
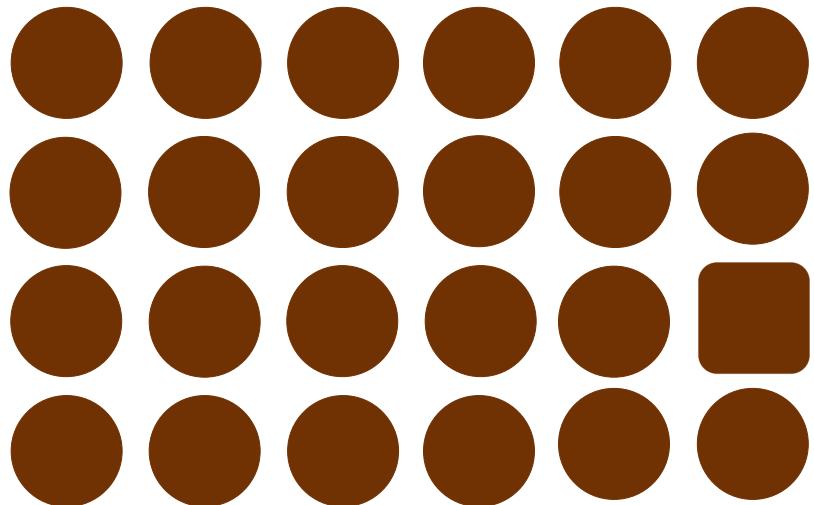


# seleção natural + exclusão competitiva de espécies

banco

● x 184

■ x 8

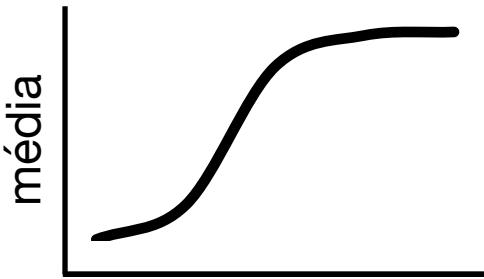
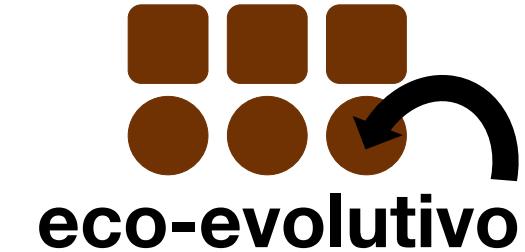
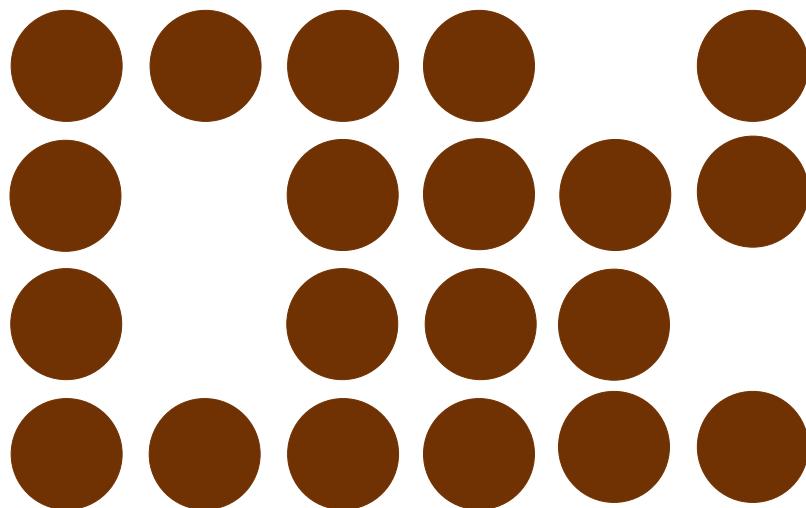


# seleção natural + exclusão competitiva de espécies

banco

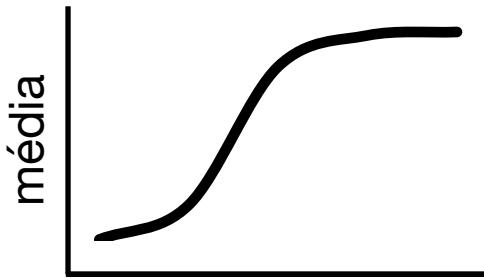
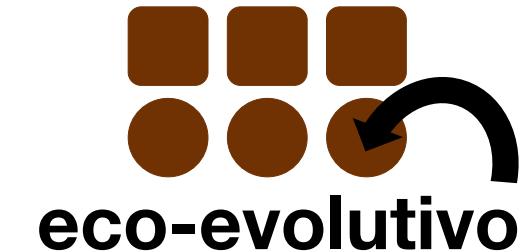
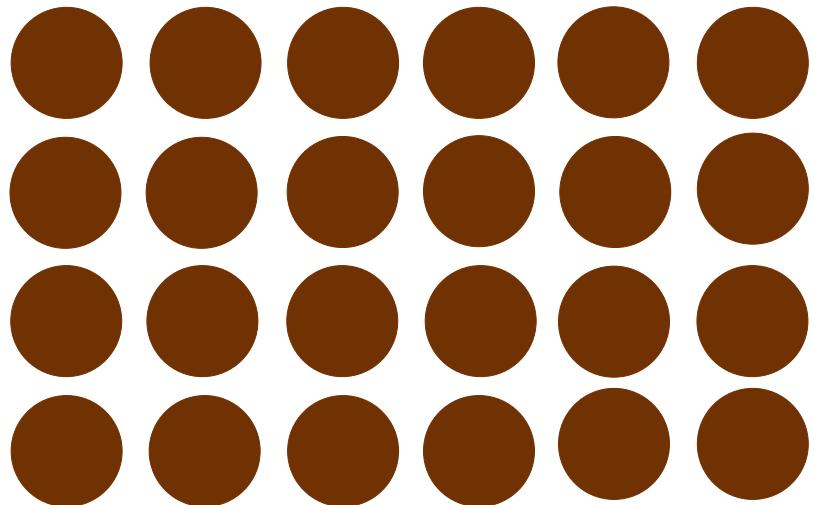
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■ x 8

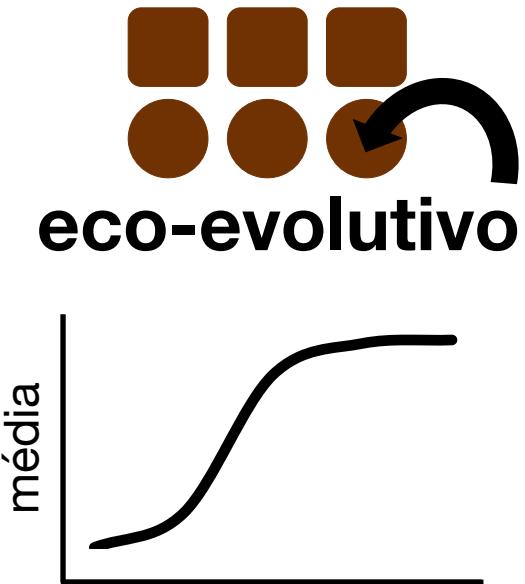
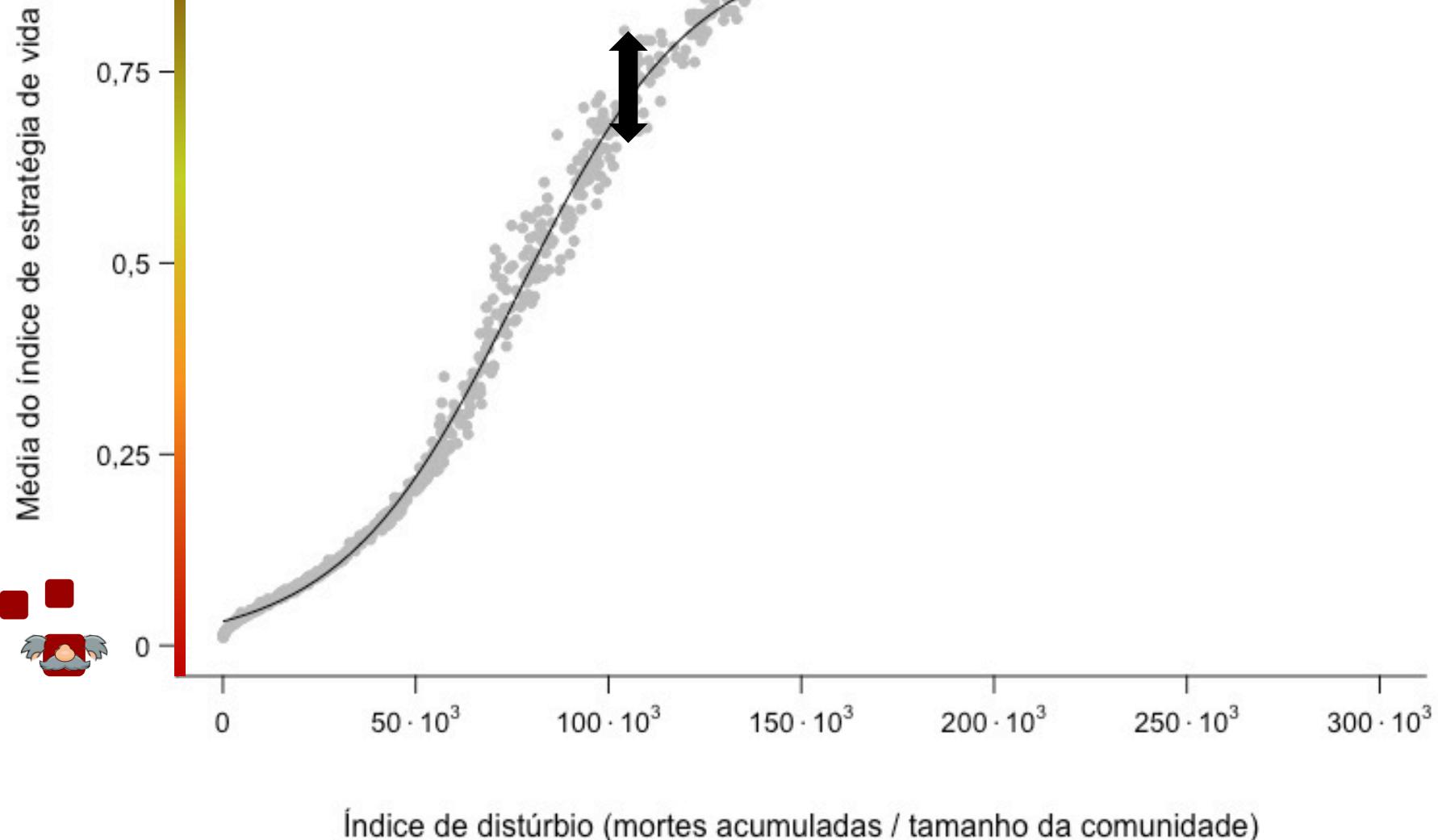


# seleção natural + exclusão competitiva de espécies

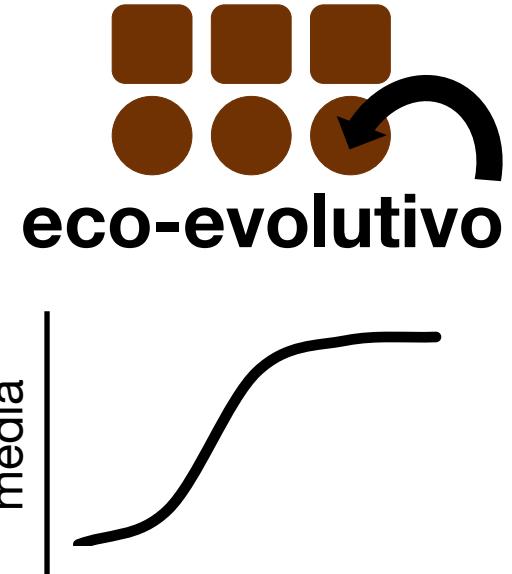
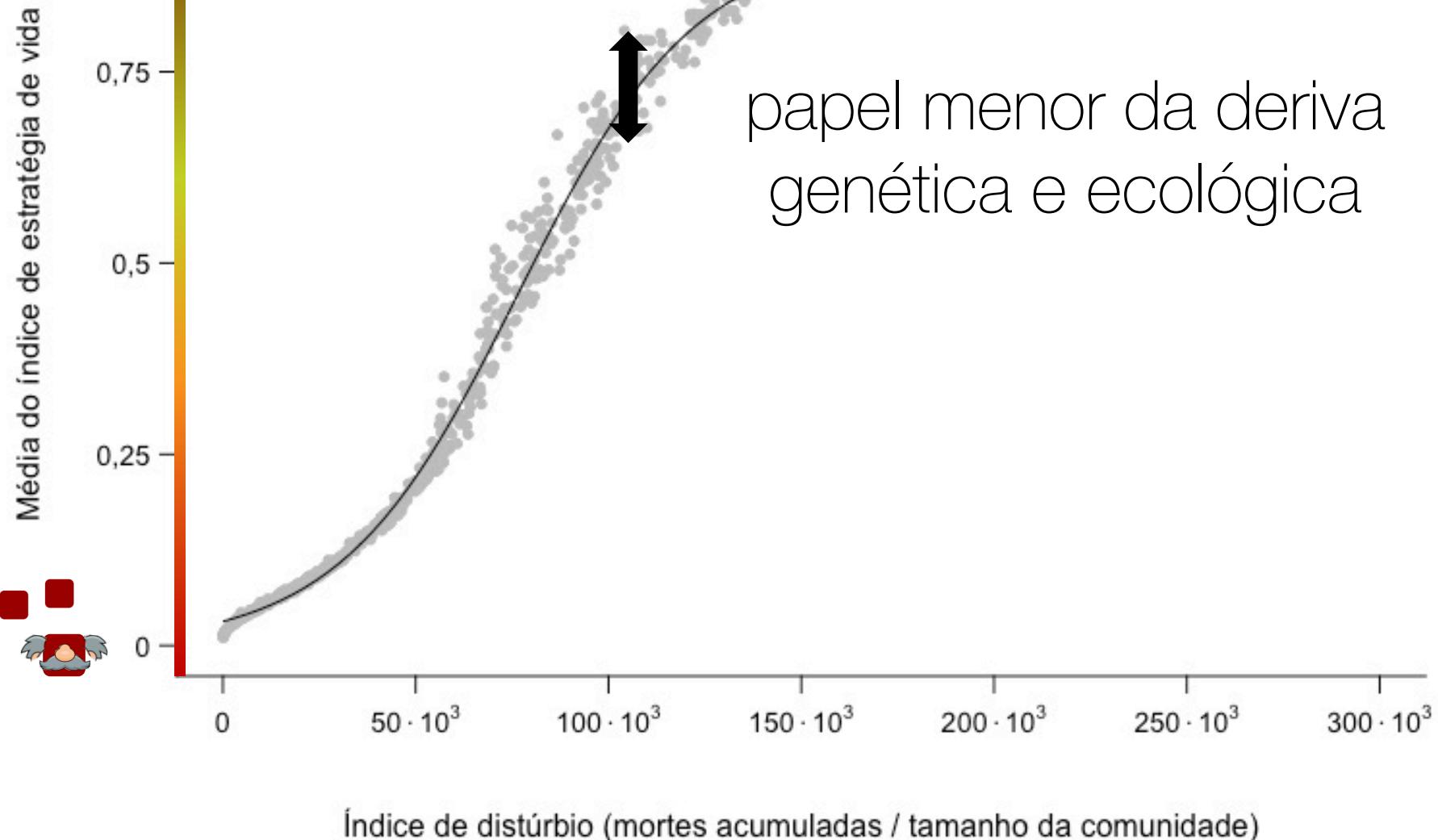
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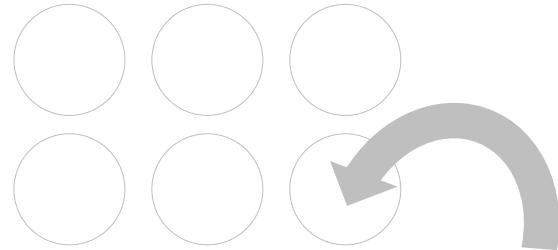
# estratégia média



# estratégia média



## evolutivo

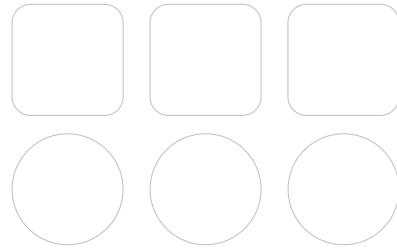


estratégia média

diversidade  
de estratégias

-

## ecológico

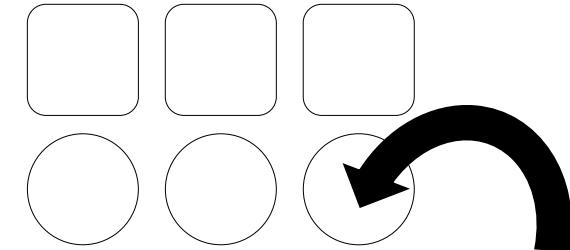


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

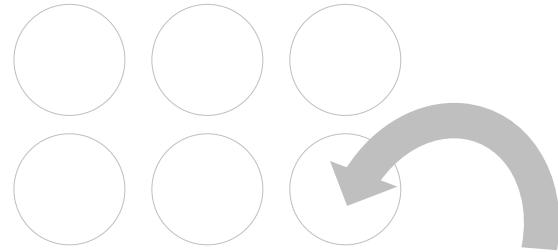


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

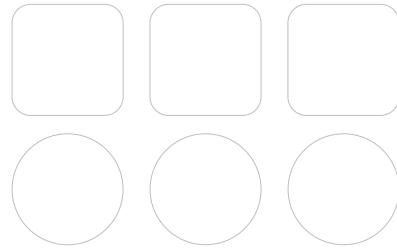


estratégia média

diversidade  
de estratégias

-

## ecológico

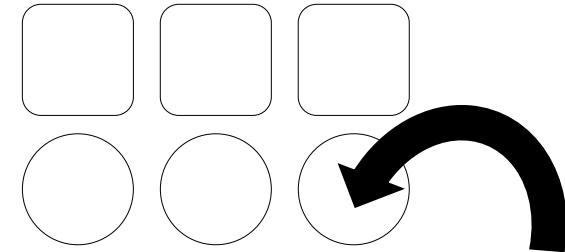


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

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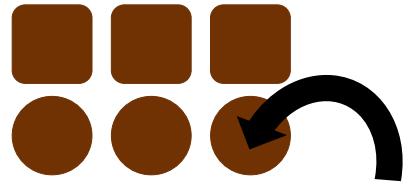


estratégia média

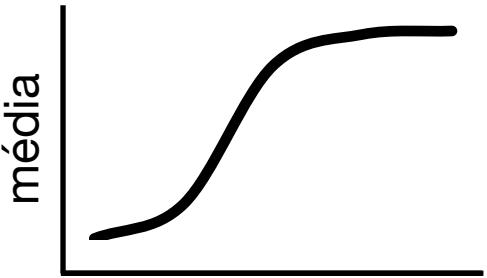
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de estratégias

heterogeneidade  
interespecífica de  
estratégias

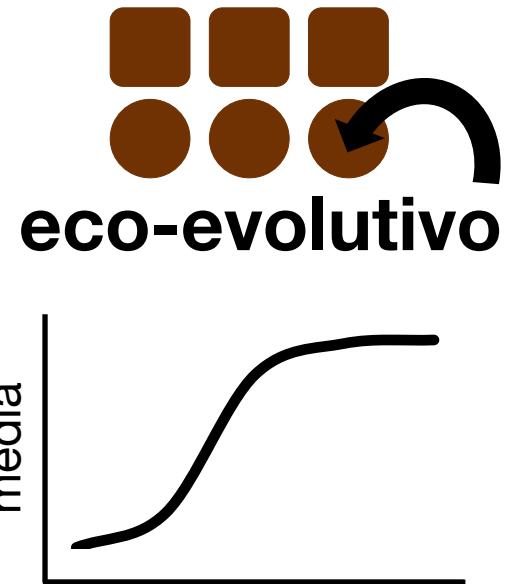
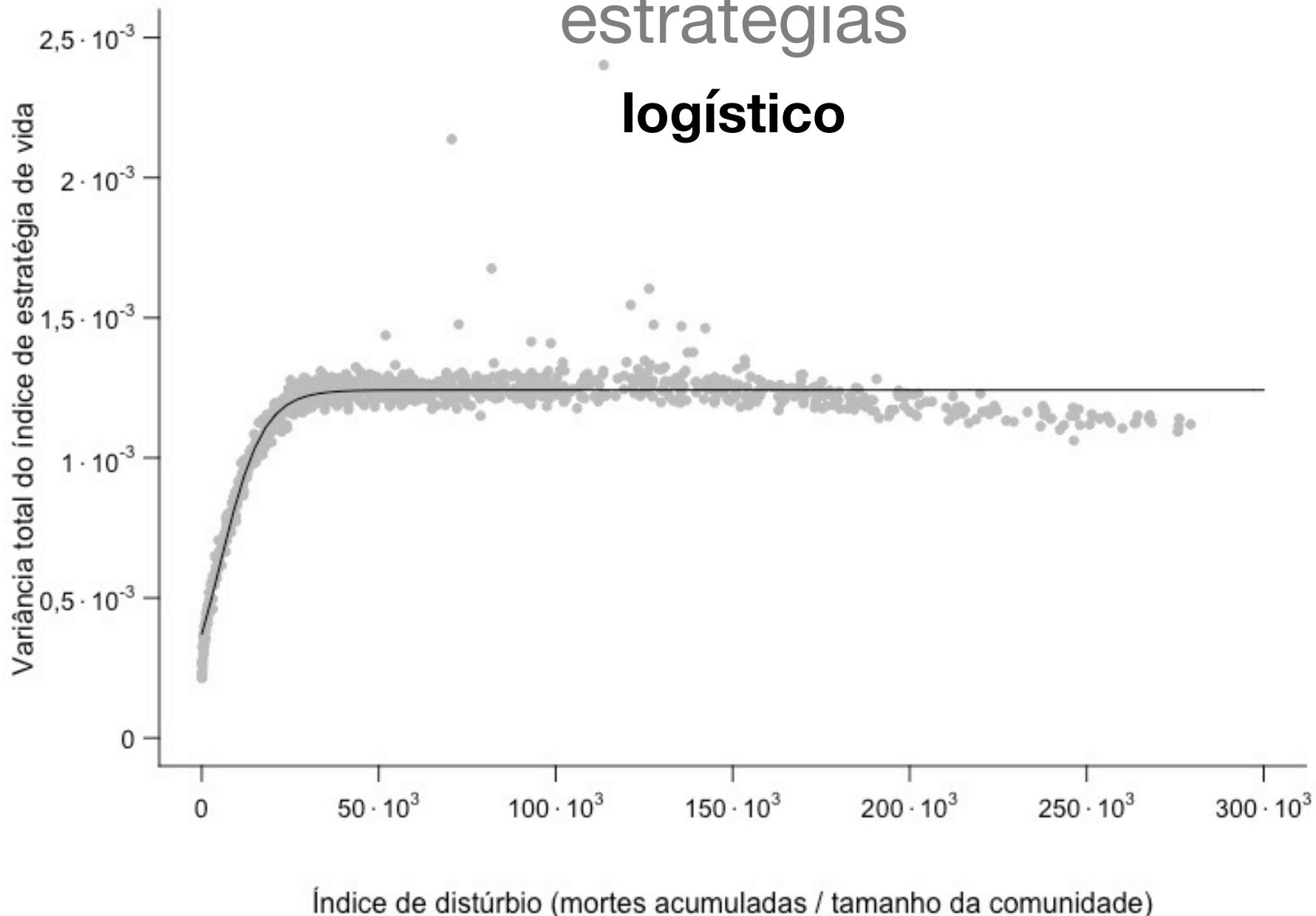
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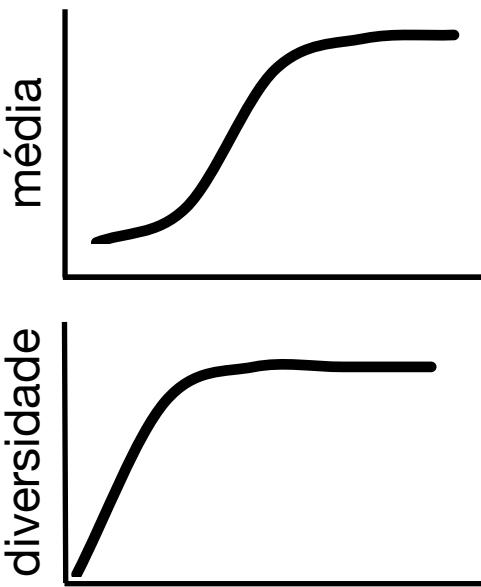
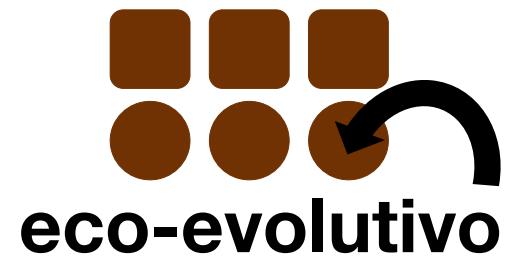
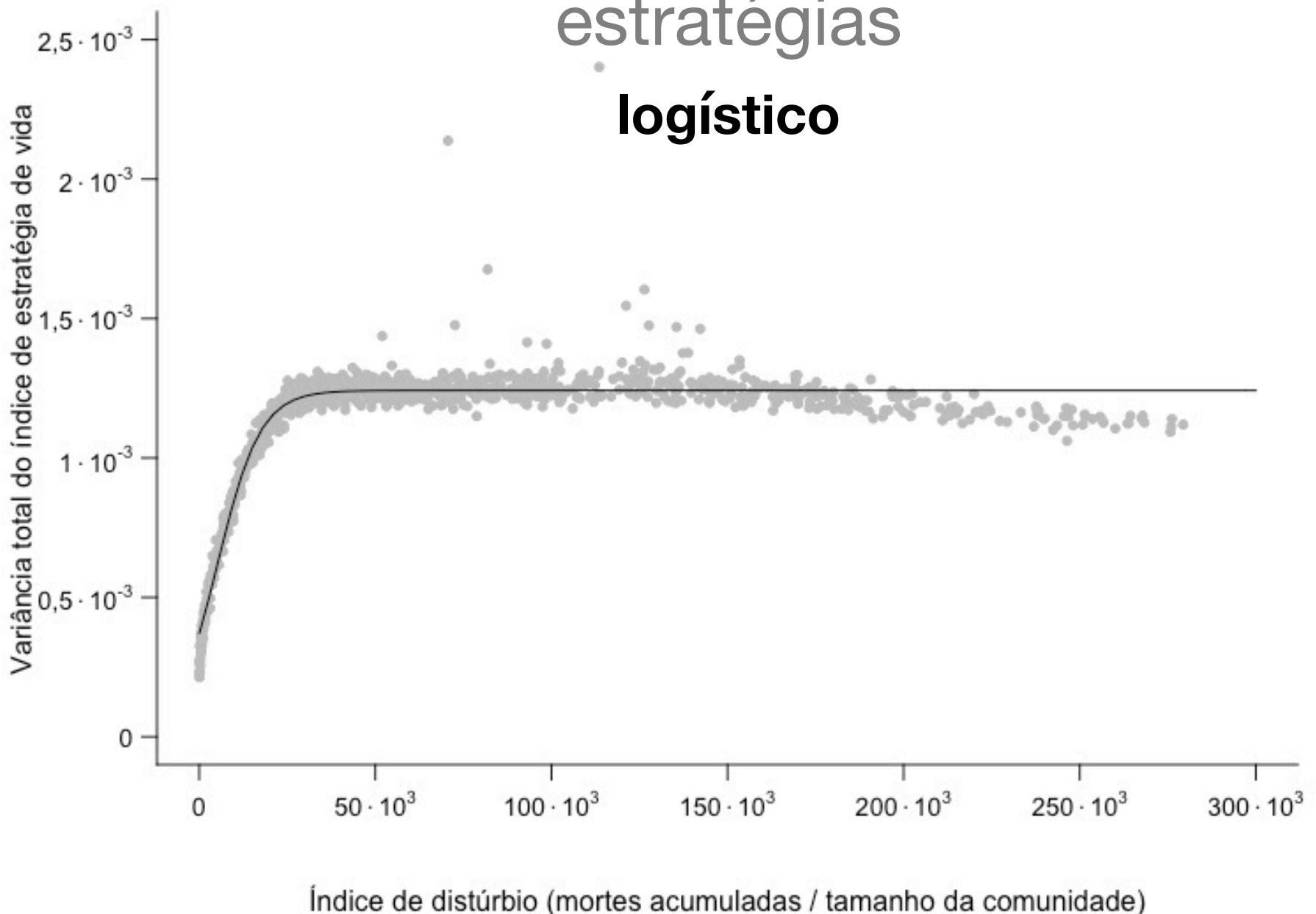
**eco-evolutivo**



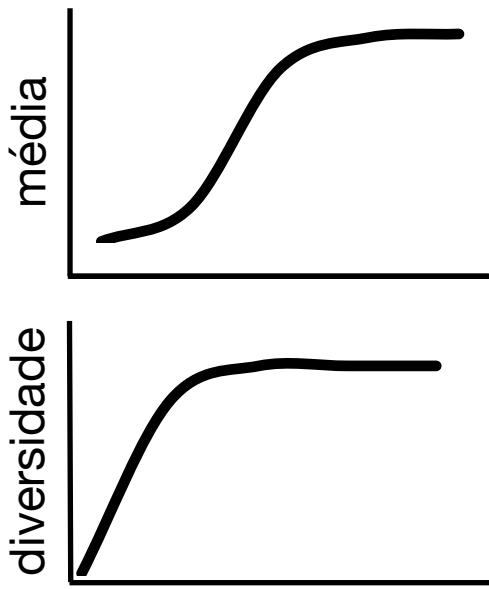
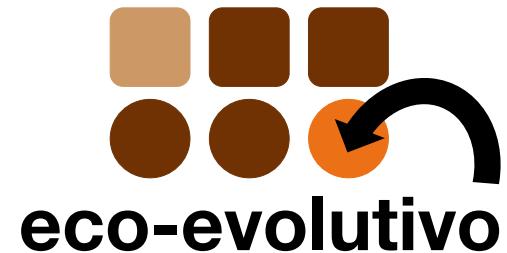
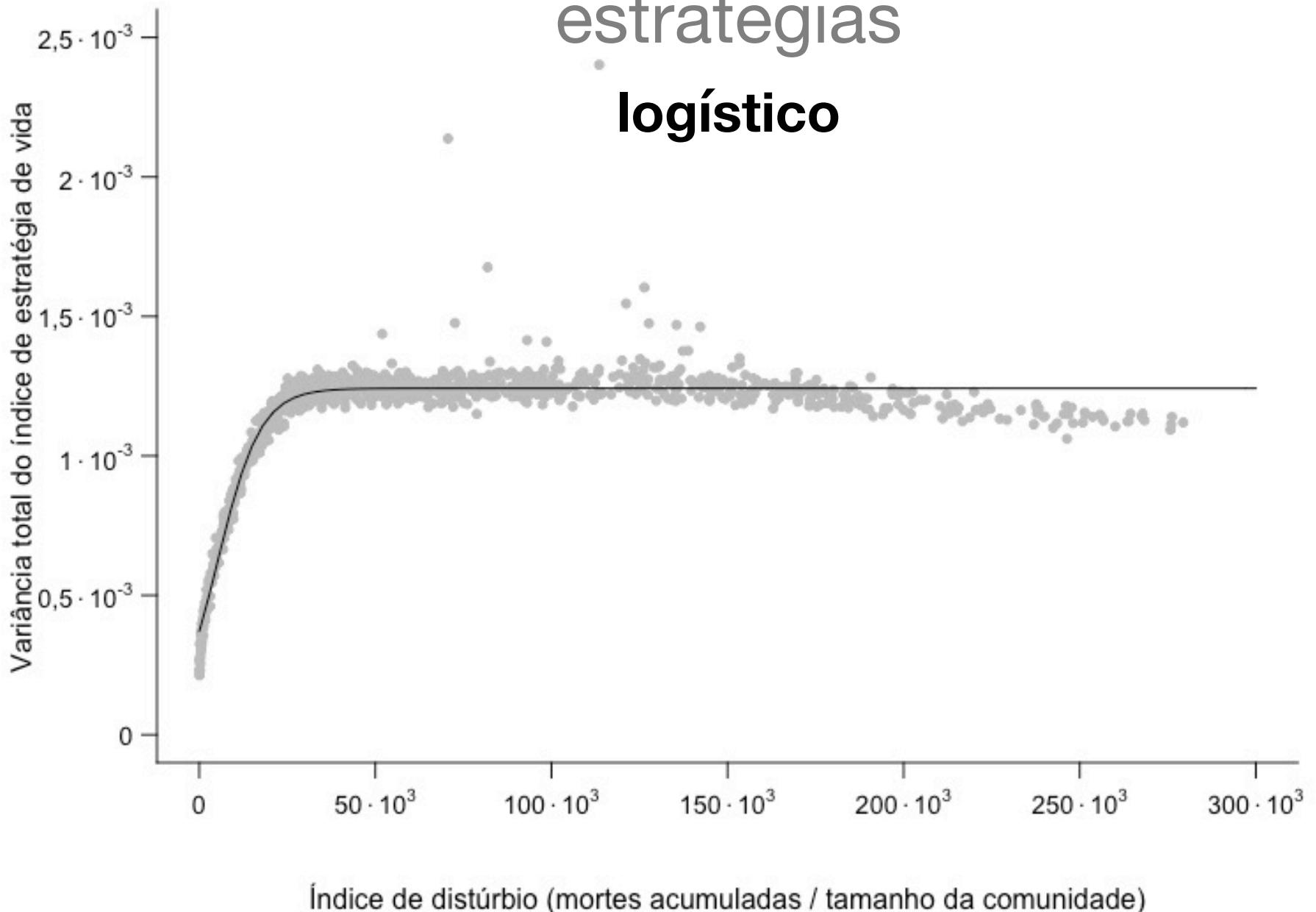
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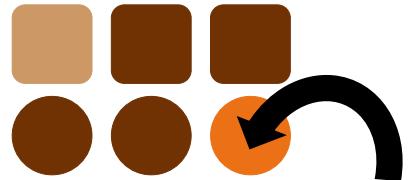
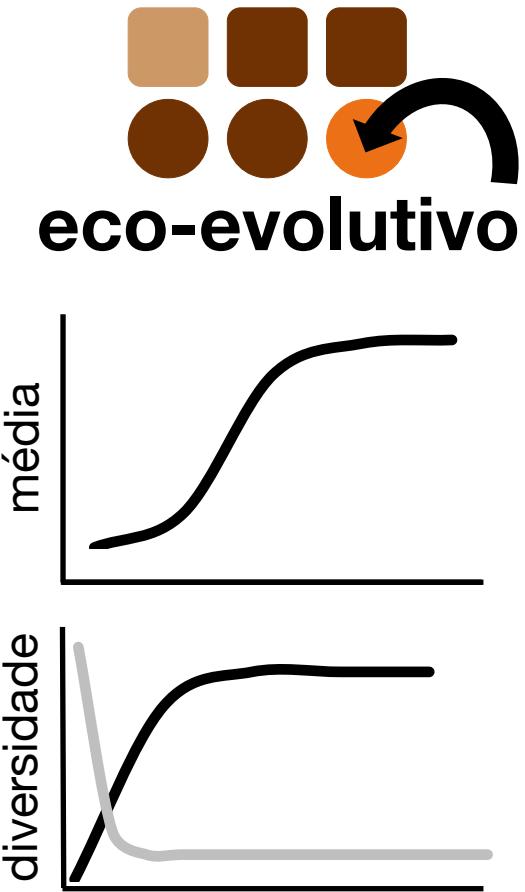
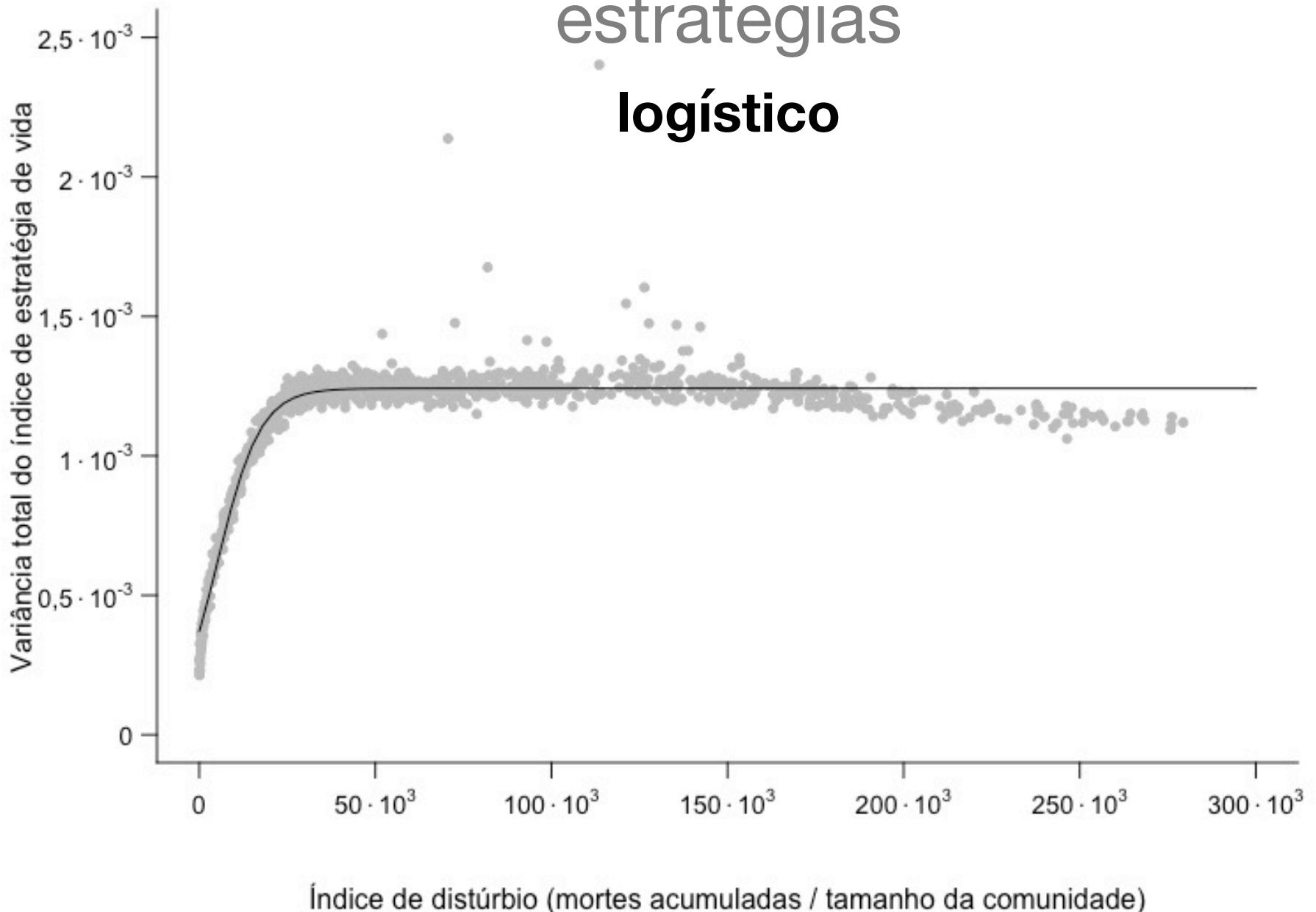
# diversidade de estratégias **logístico**



# diversidade de estratégias logístico

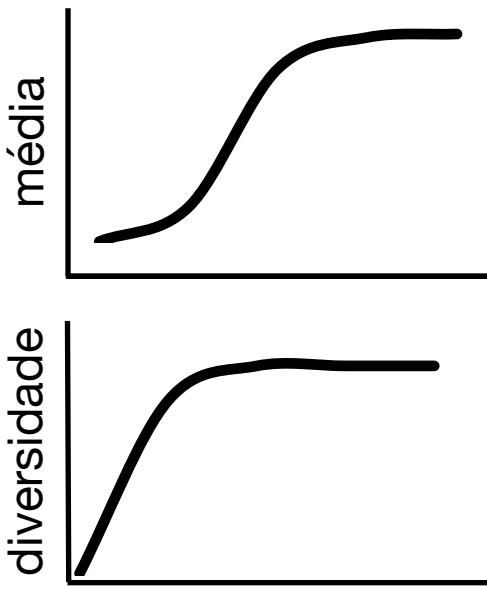
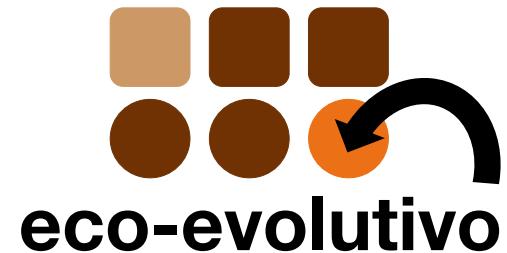
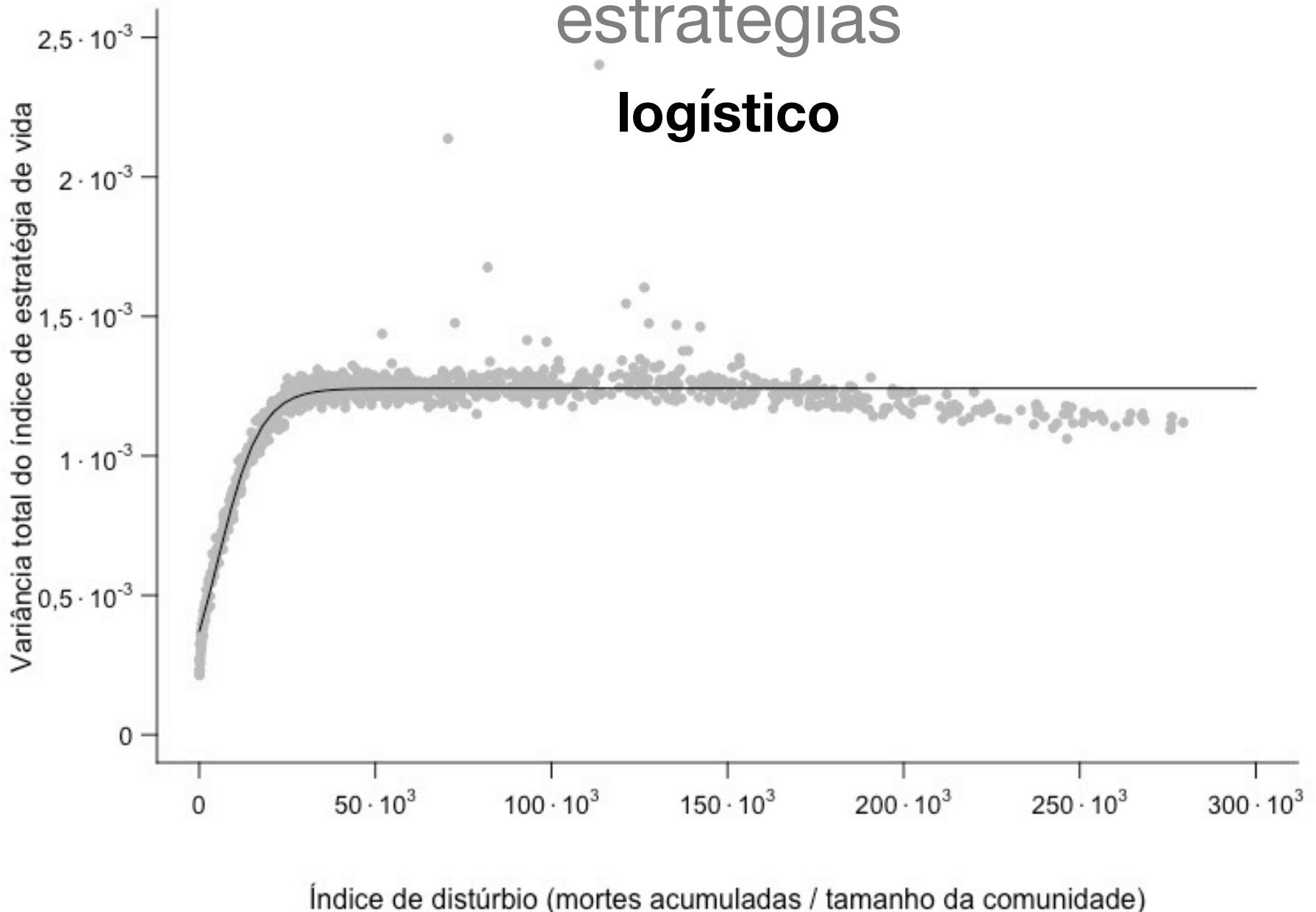


# diversidade de estratégias logístico

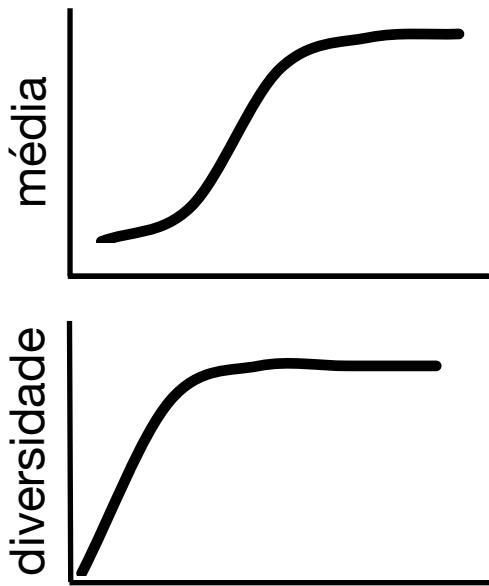
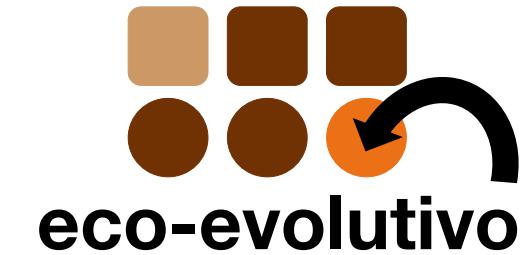
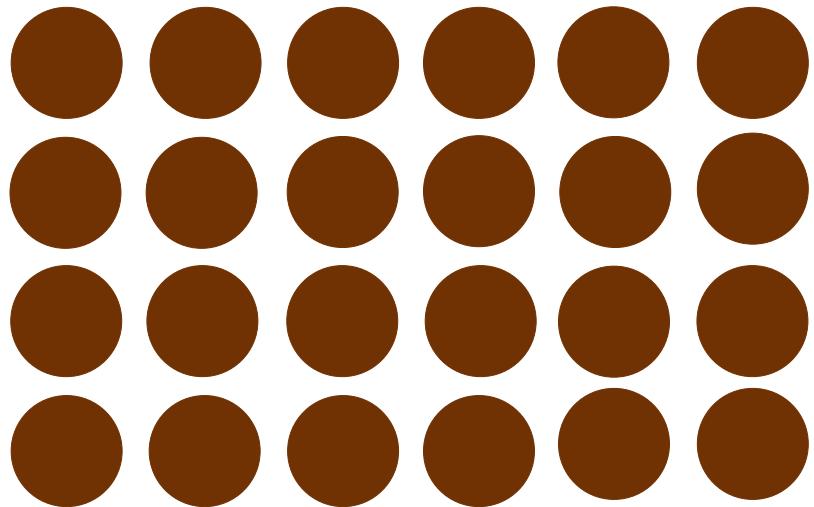


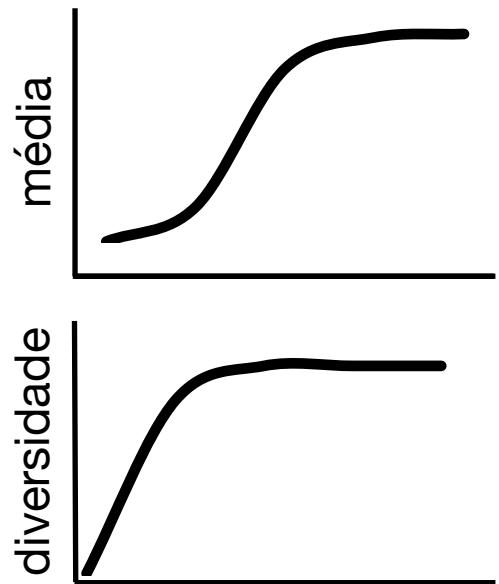
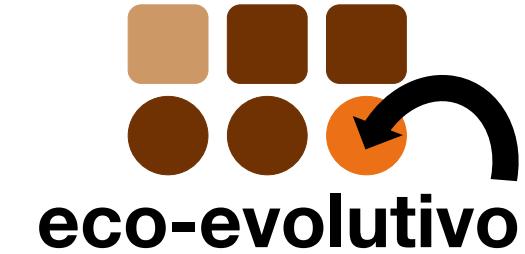
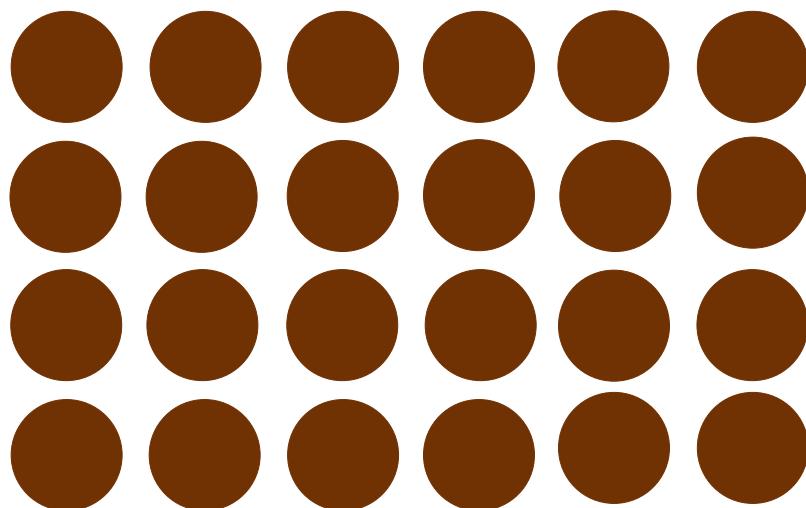
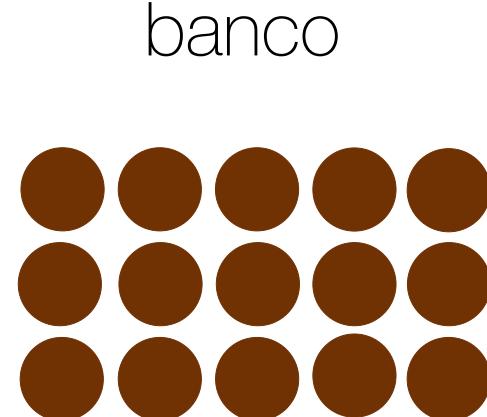
**eco-evolutivo**

# diversidade de estratégias logístico

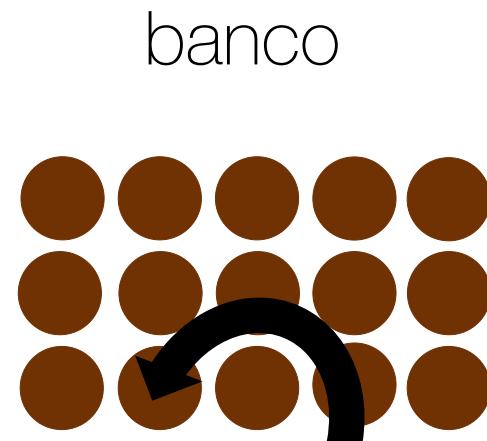


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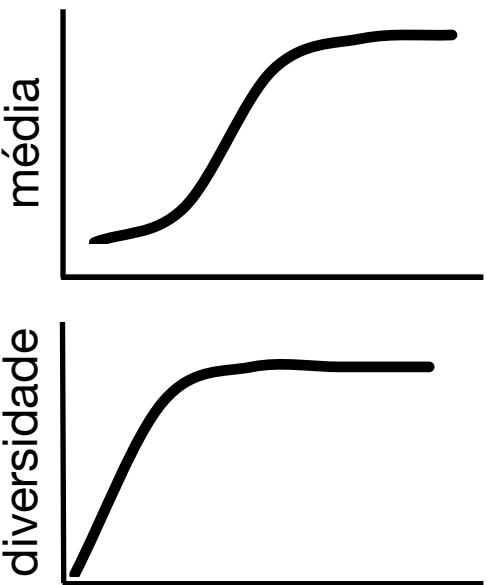
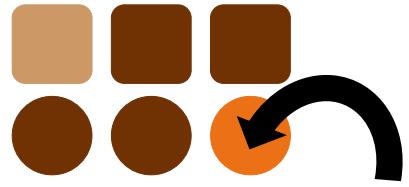
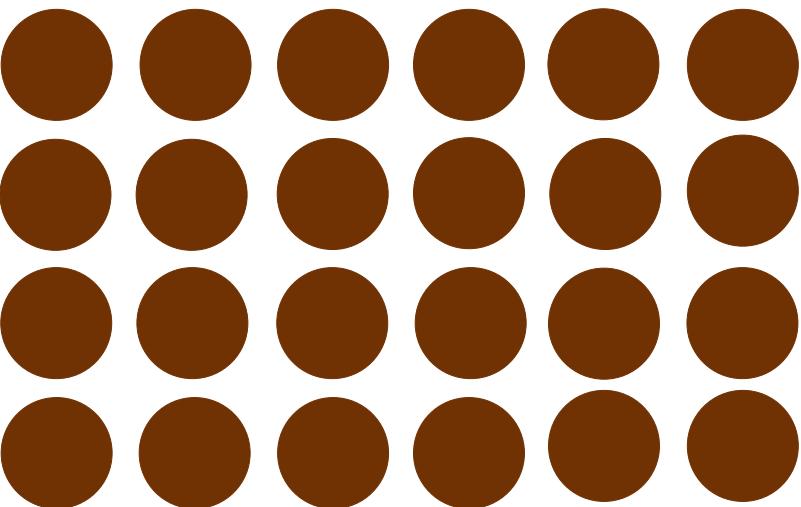




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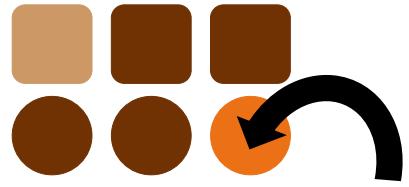
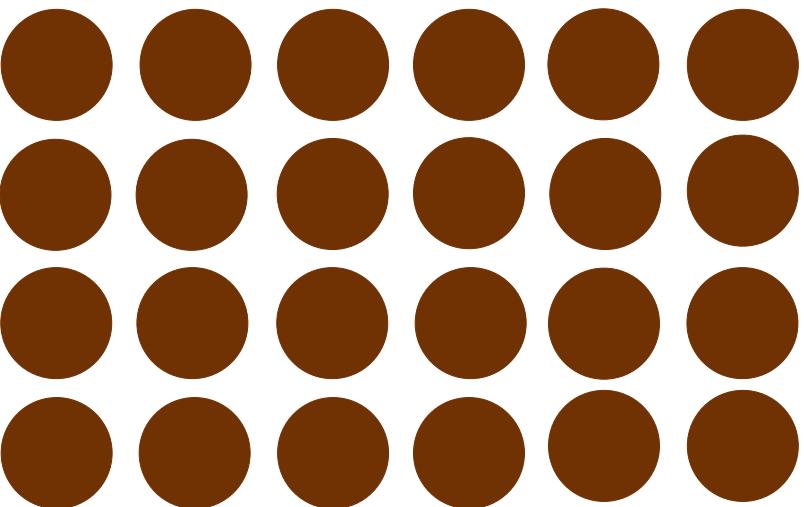
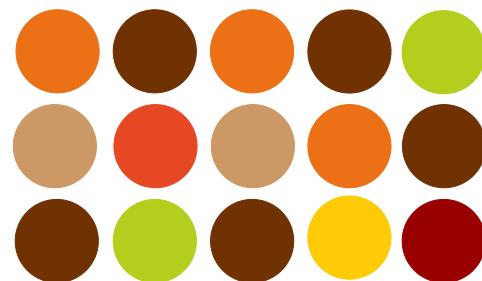


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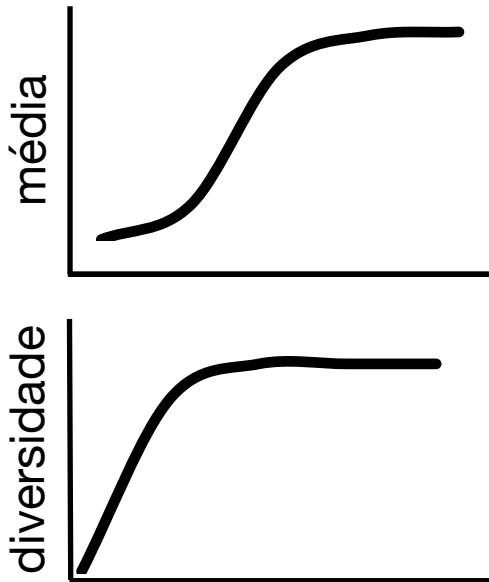


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banco

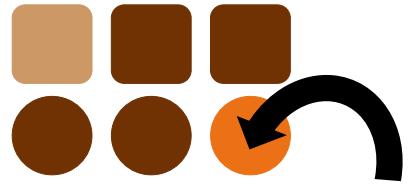
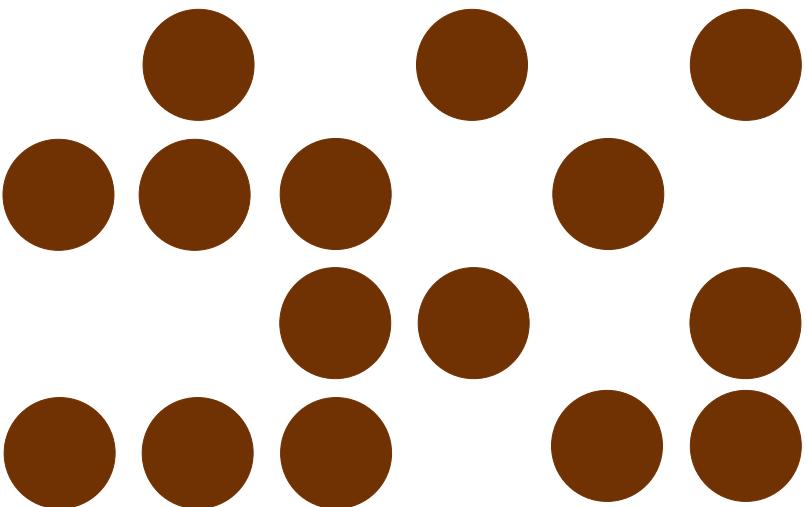
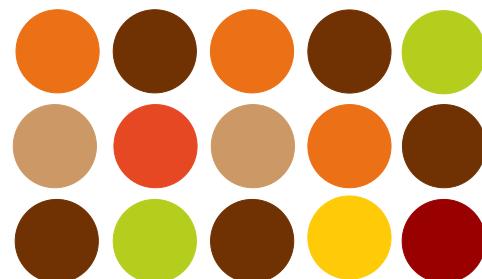


**eco-evolutivo**

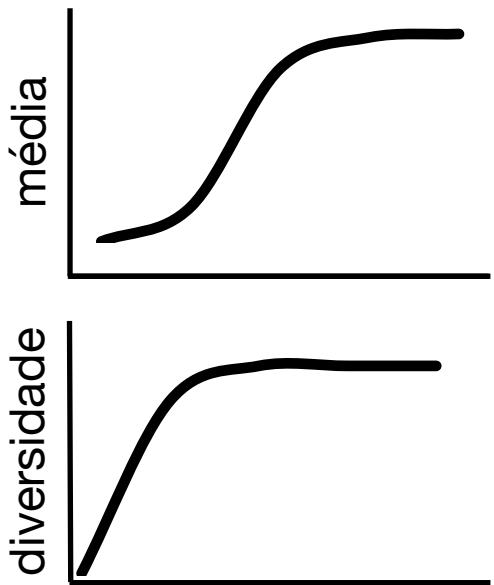


# mutação

banco

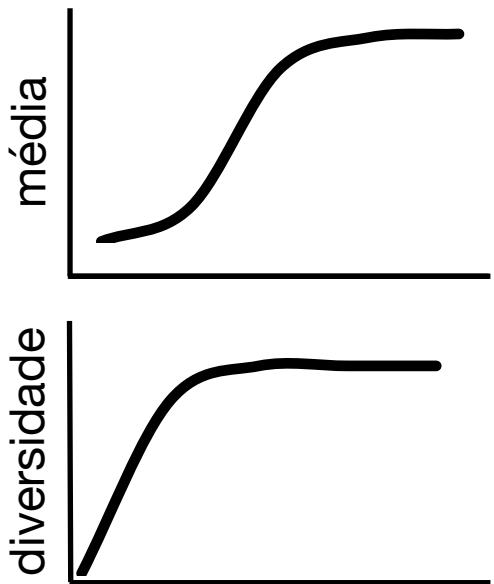
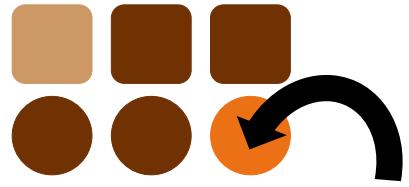
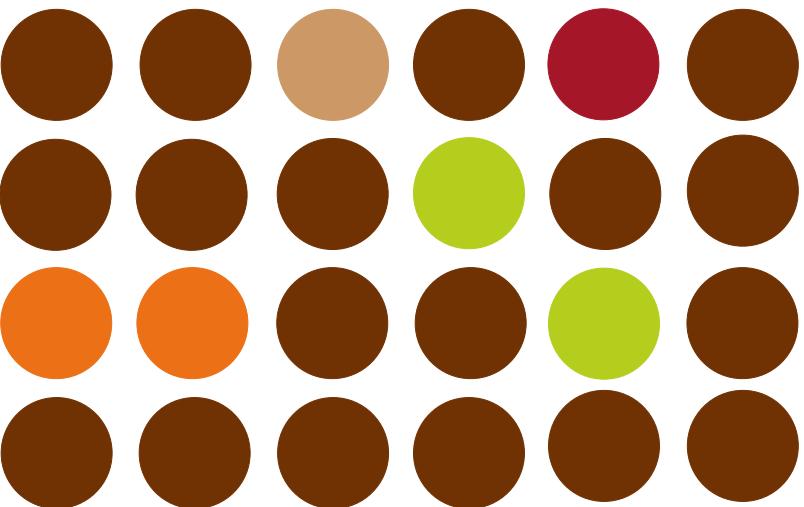
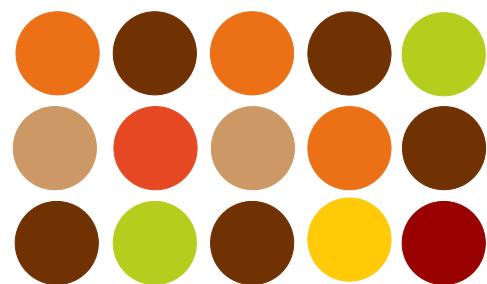


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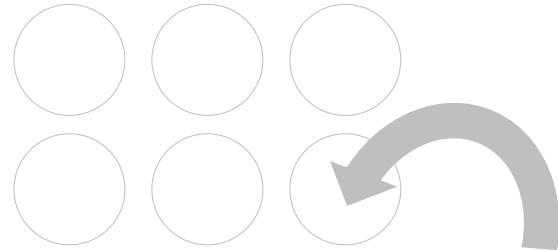


# mutação + amostragem

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## evolutivo

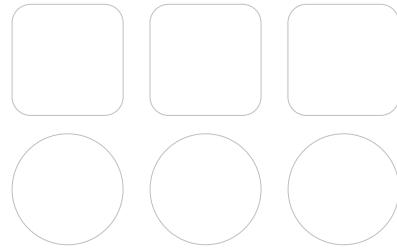


estratégia média

diversidade  
de estratégias

-

## ecológico

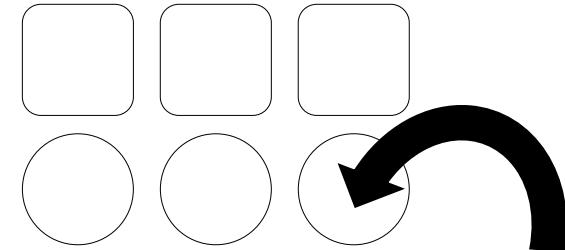


estratégia média

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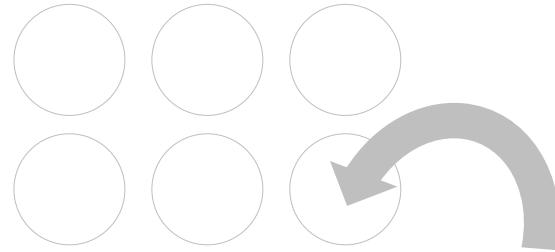


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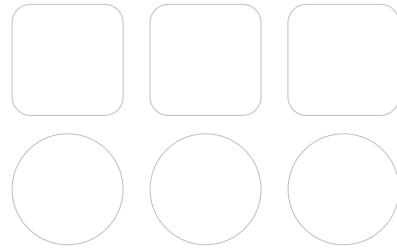


estratégia média

diversidade  
de estratégias

-

## ecológico

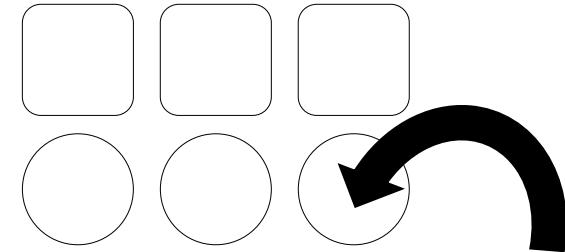


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diversidade  
de estratégias

heterogeneidade  
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estratégias

## eco-evolutivo

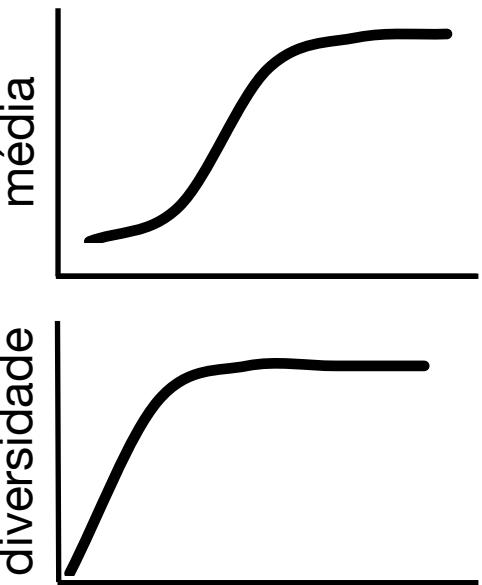
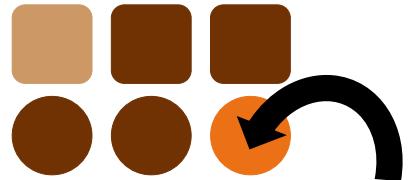


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diversidade  
de estratégias

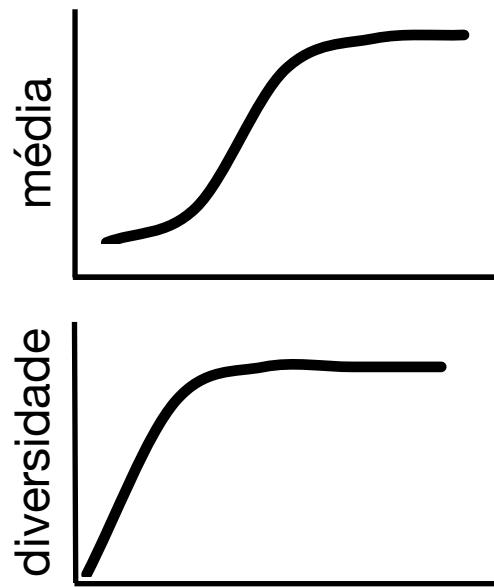
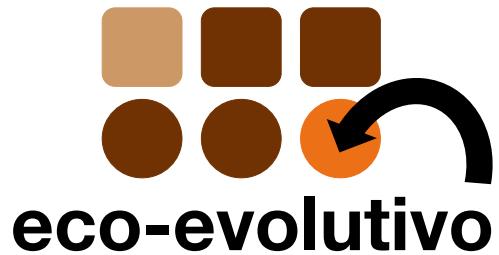
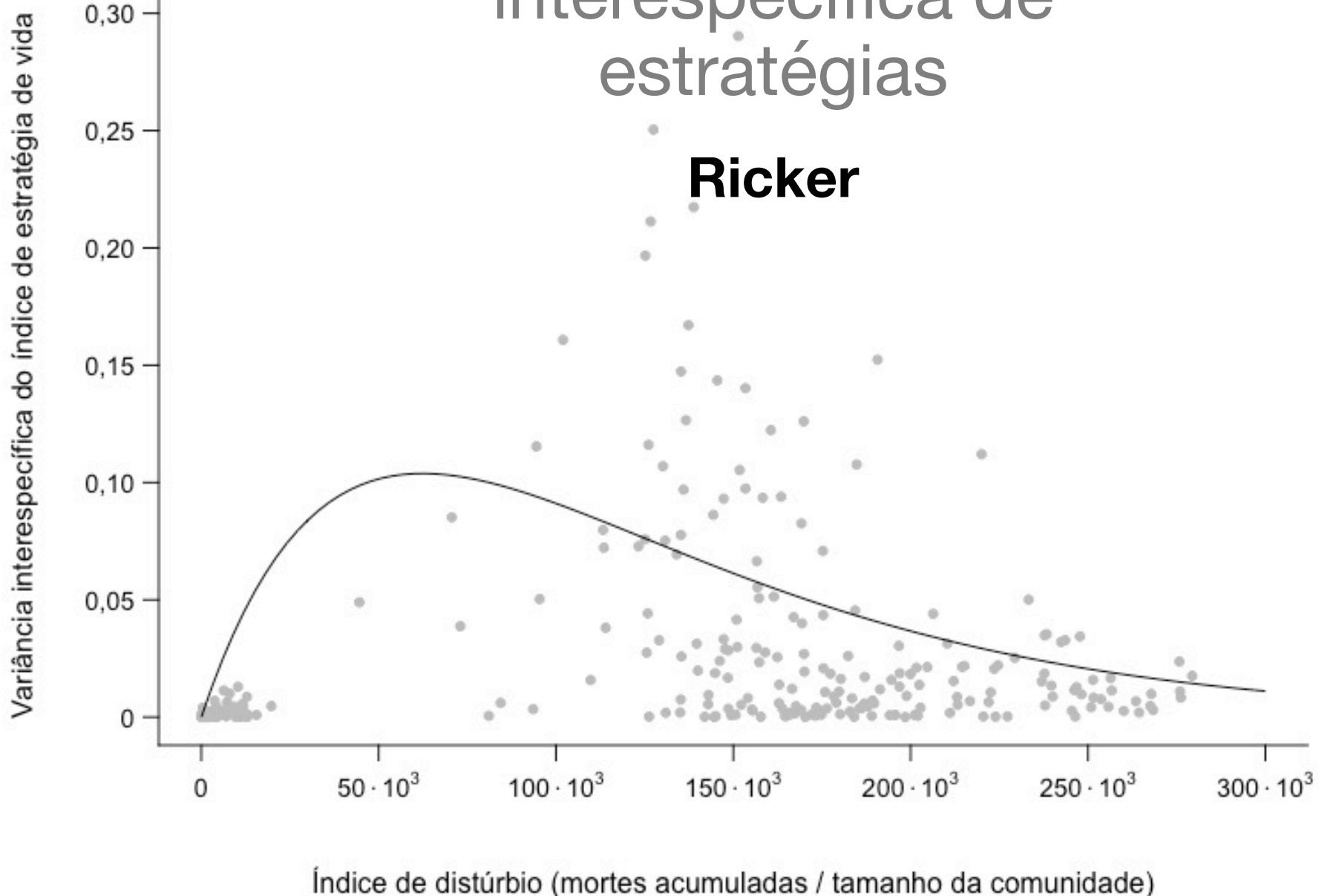
heterogeneidade  
interespecífica de  
estratégias

# heterogeneidade interespecífica de estratégias



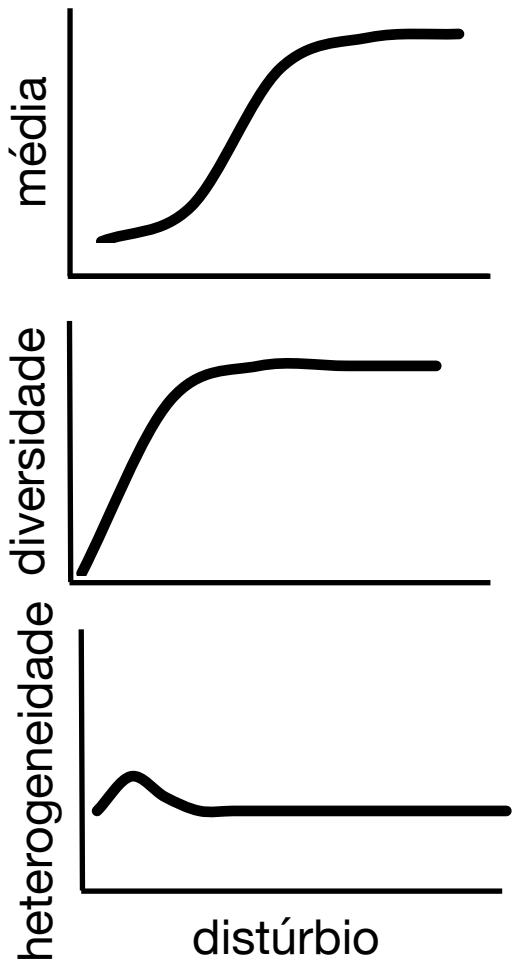
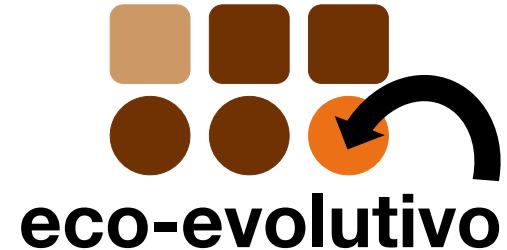
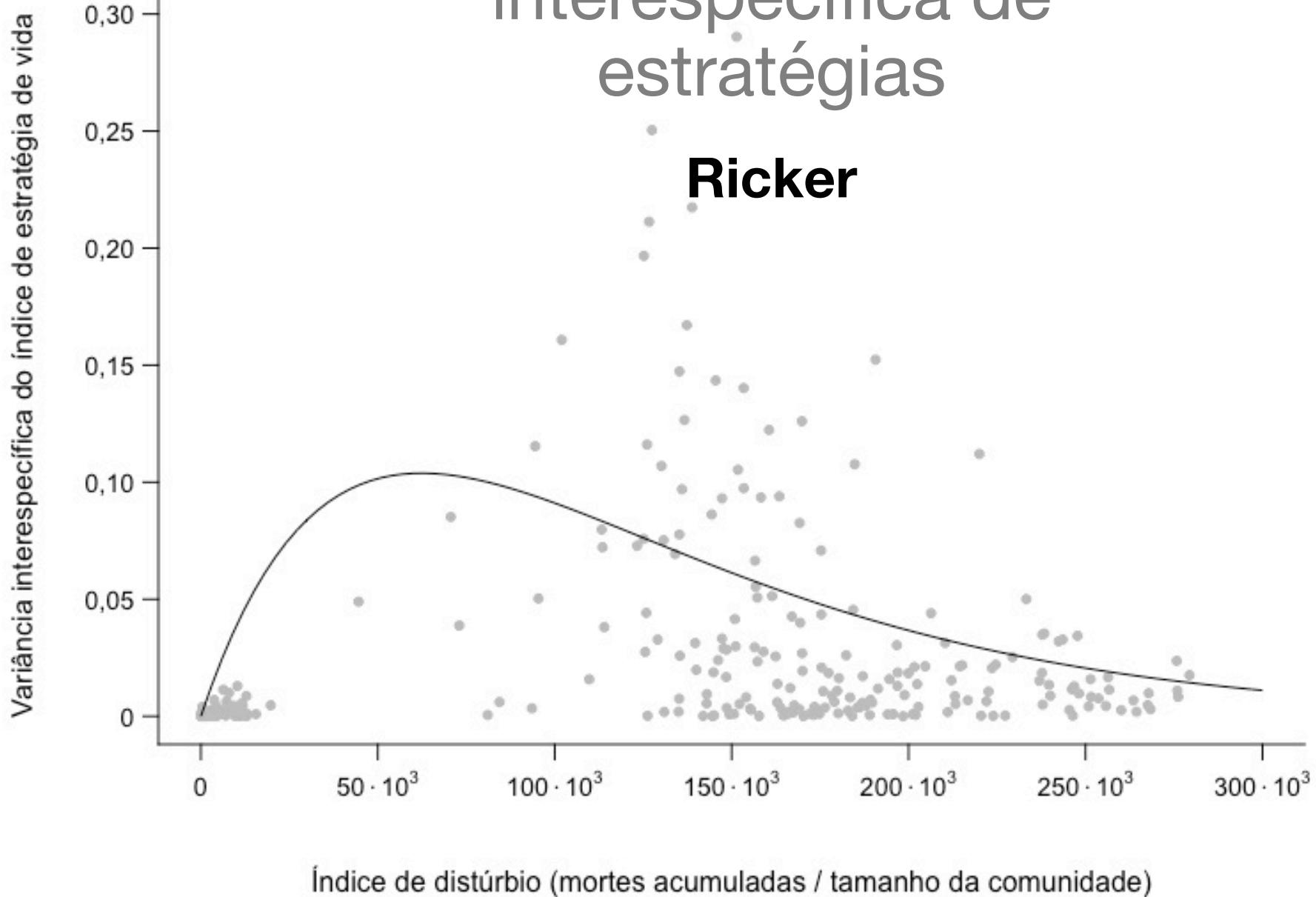
# heterogeneidade interespecífica de estratégias

Ricker



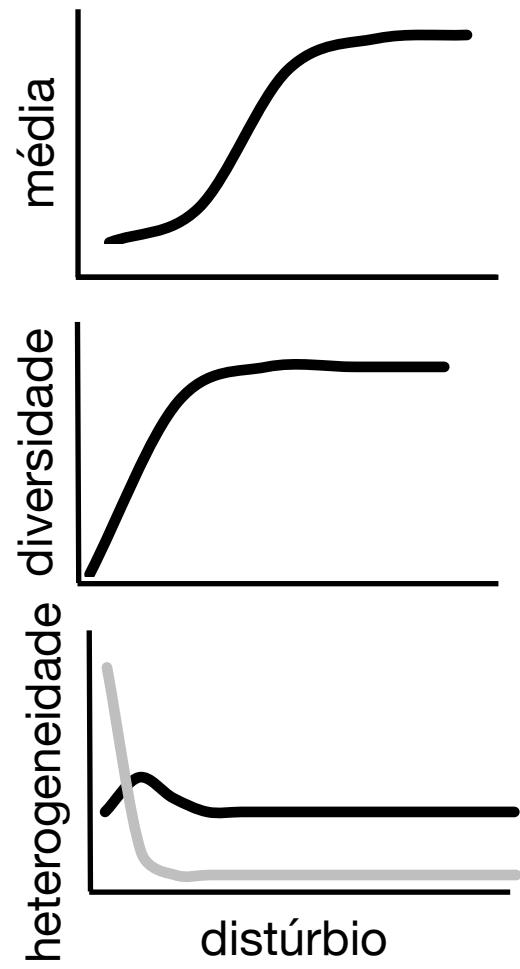
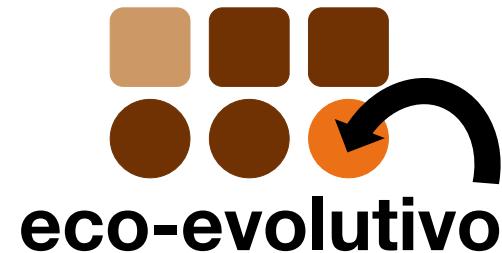
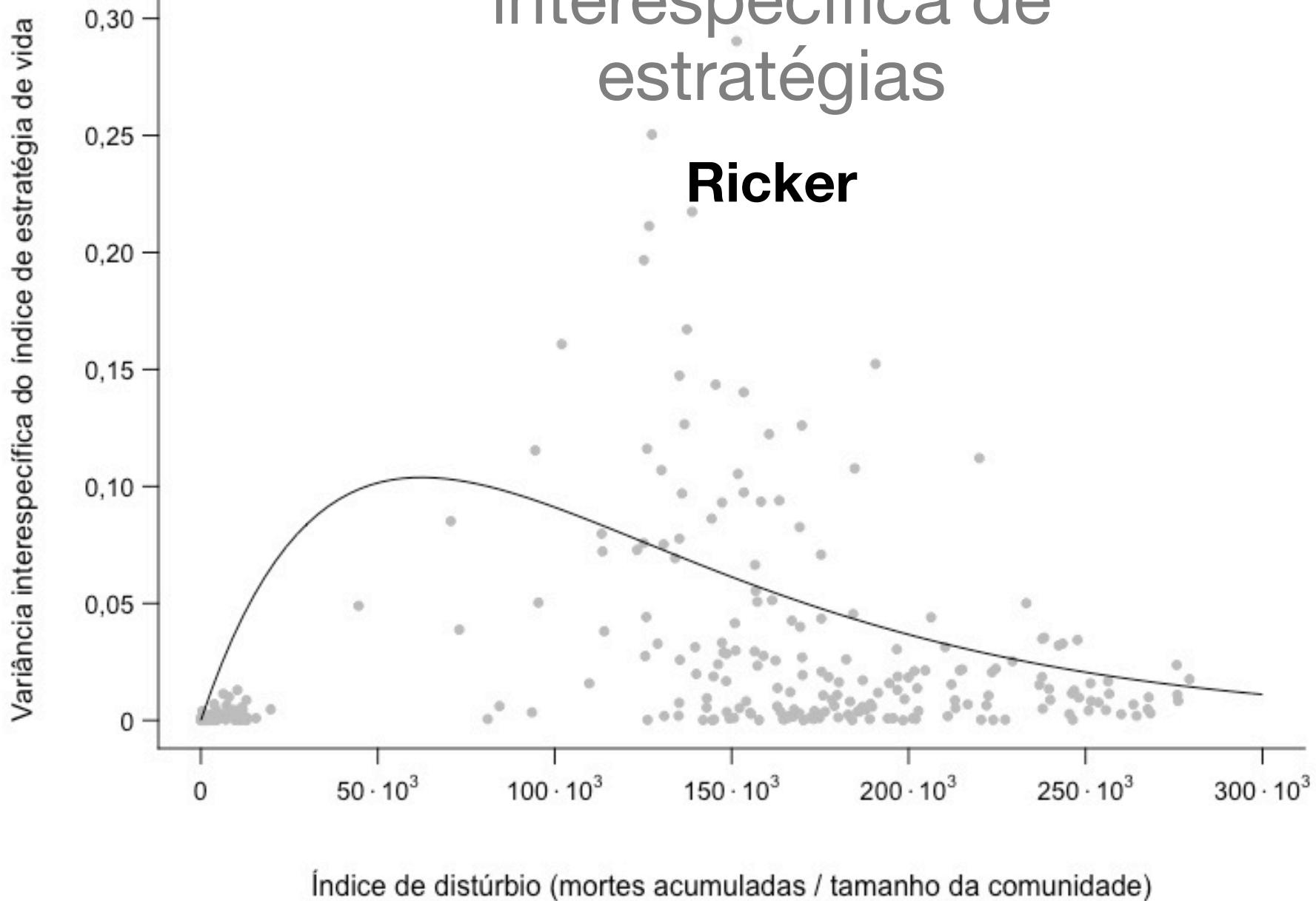
# heterogeneidade interespecífica de estratégias

Ricker



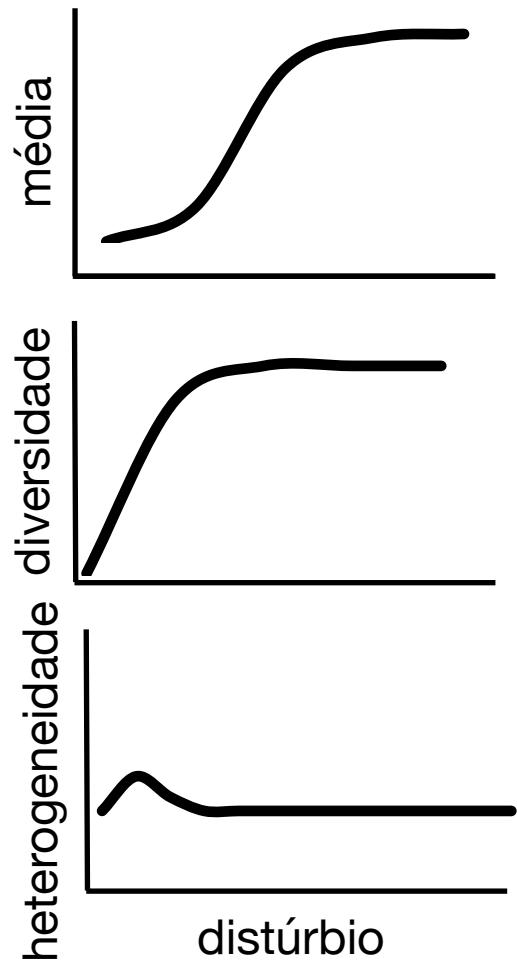
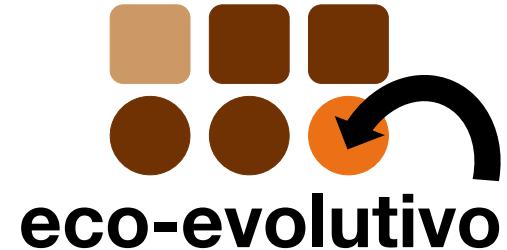
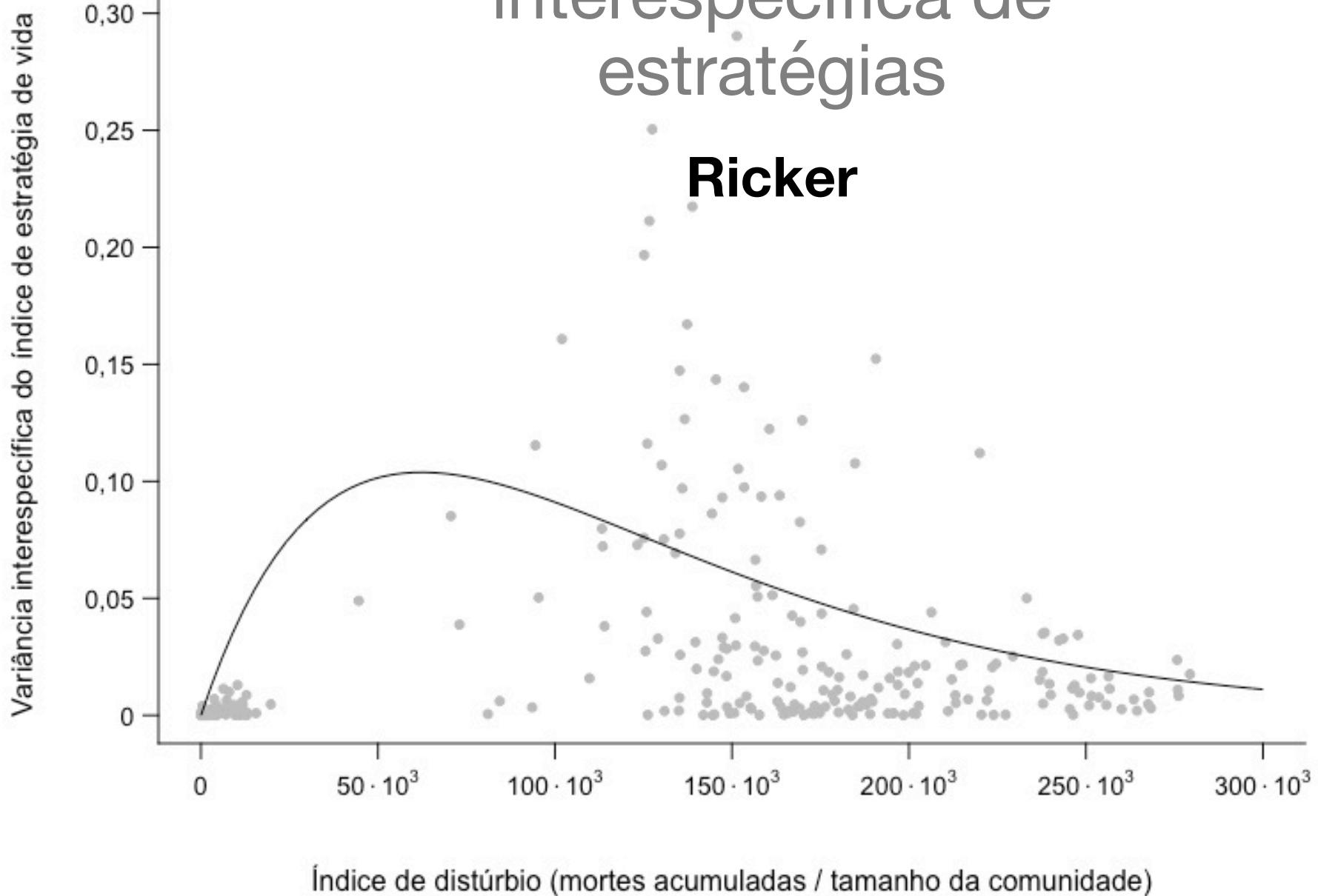
# heterogeneidade interespecífica de estratégias

Ricker



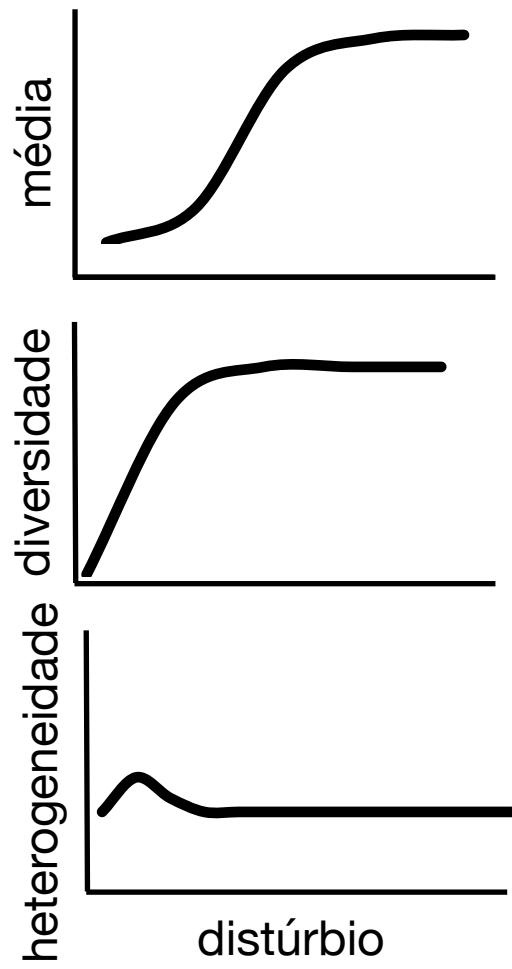
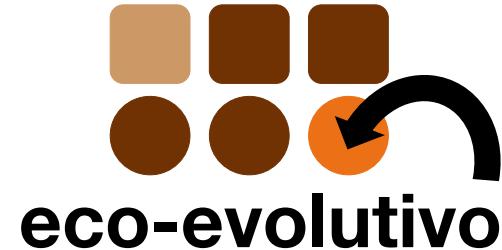
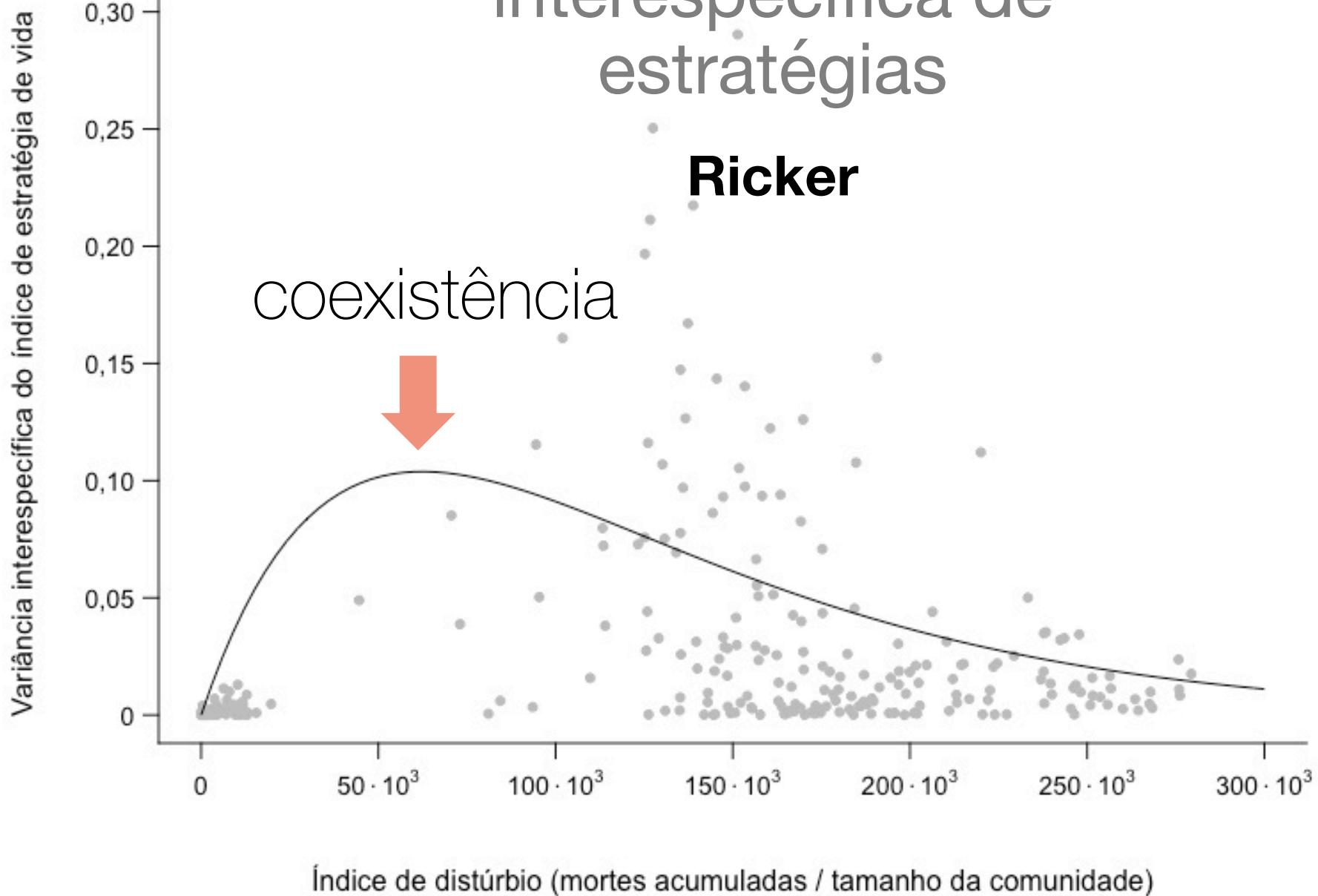
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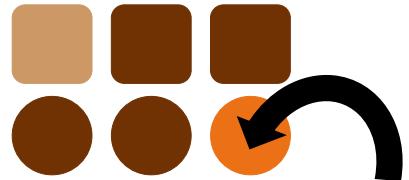


# heterogeneidade interespecífica de estratégias

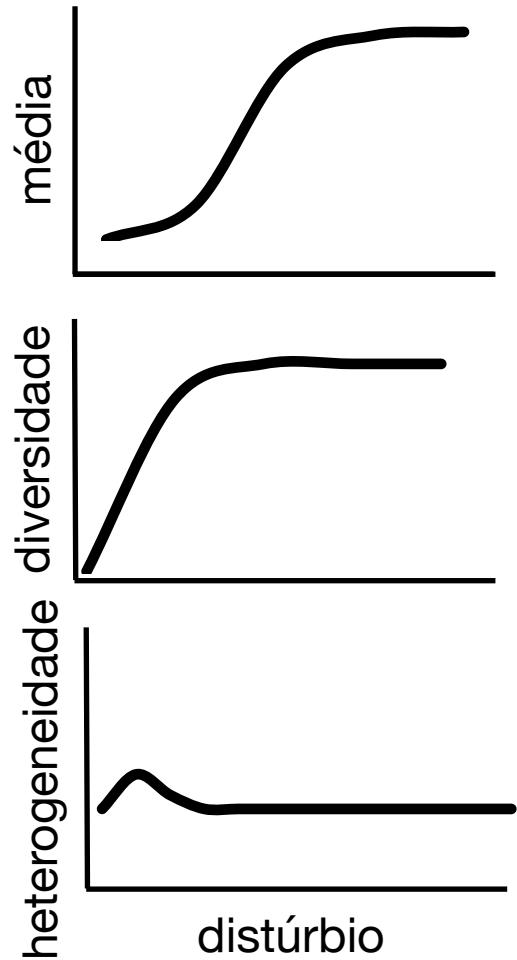
Ricker



# coexistência de estratégias mediada pelo distúrbio

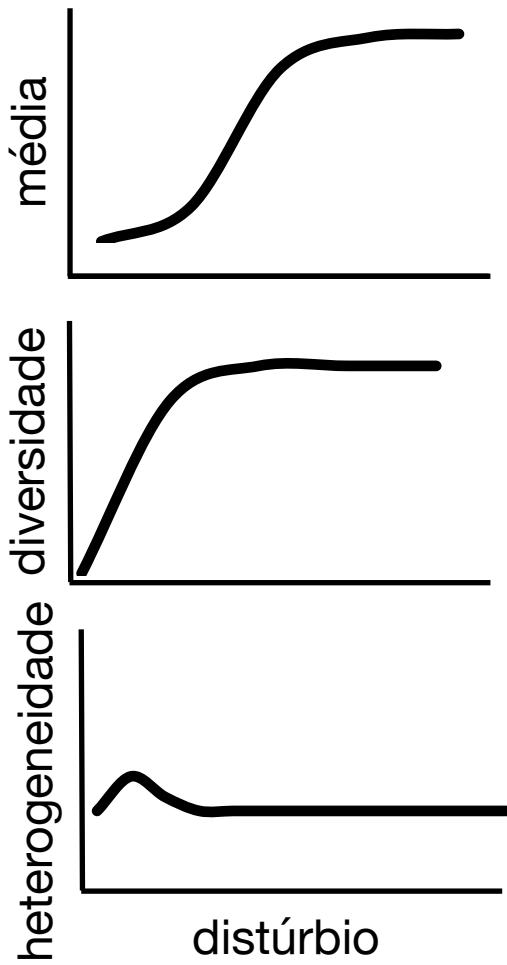
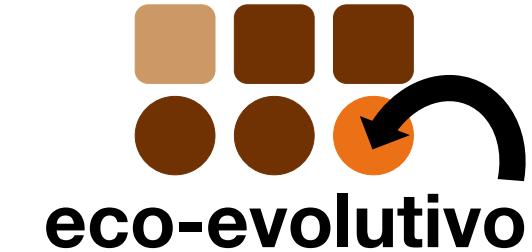
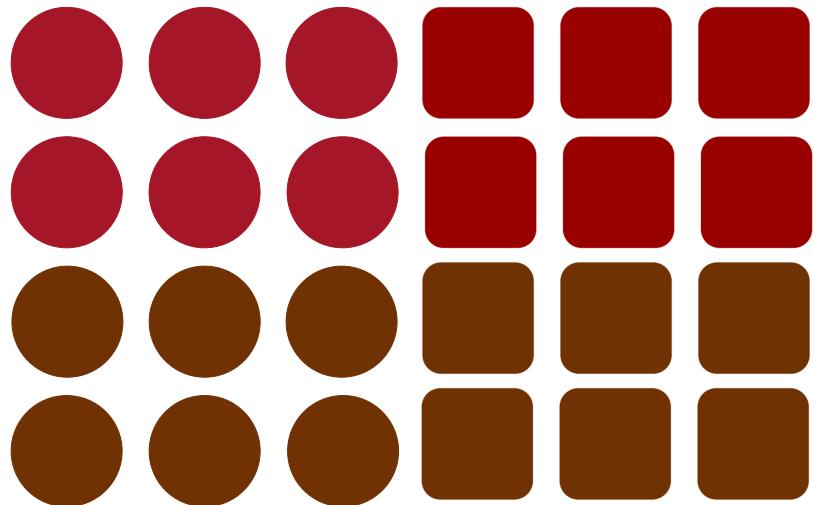


**eco-evolutivo**



# coexistência de estratégias mediada pelo distúrbio

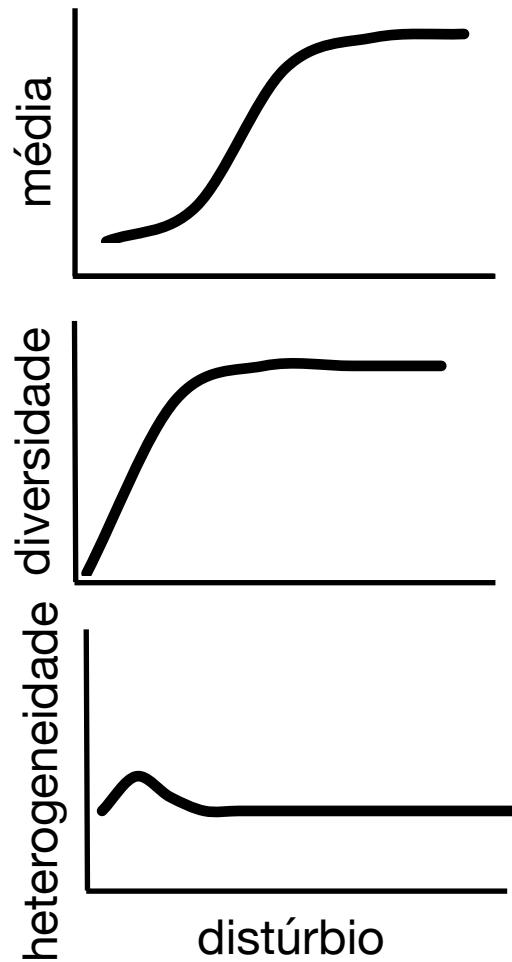
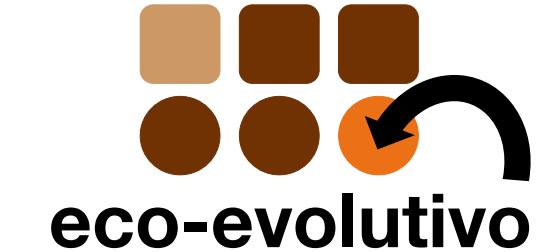
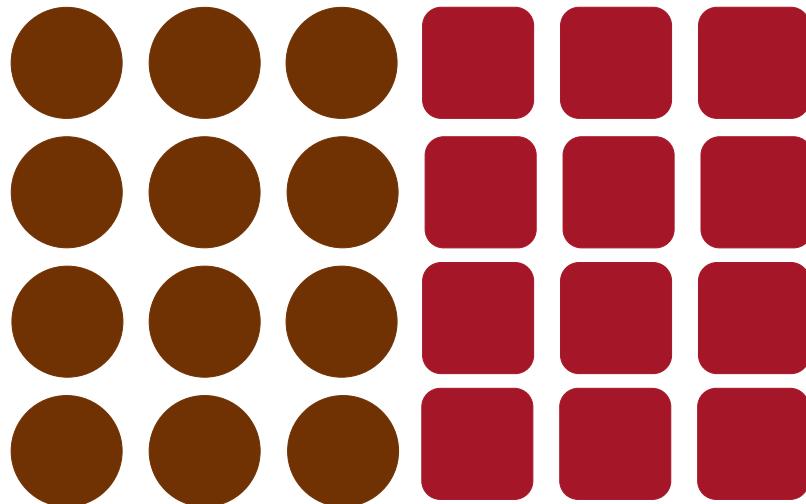
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- x 12
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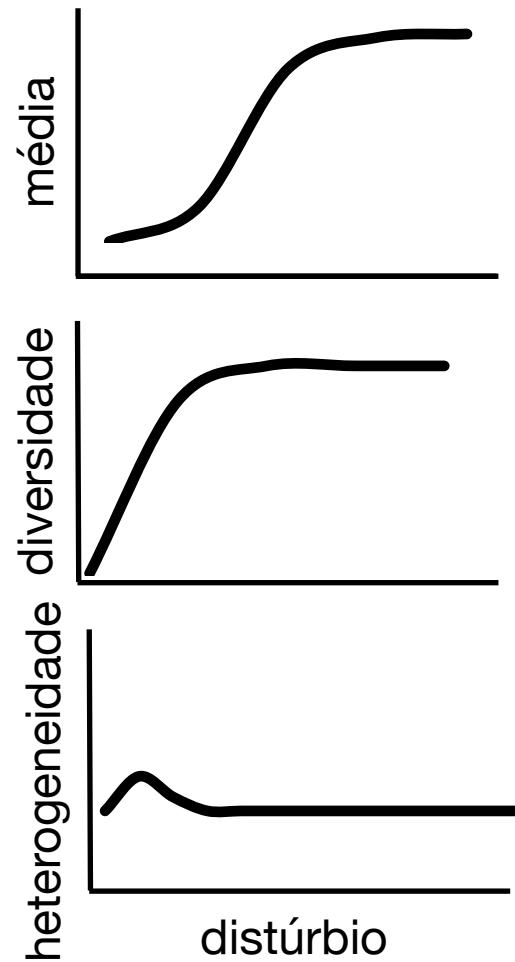
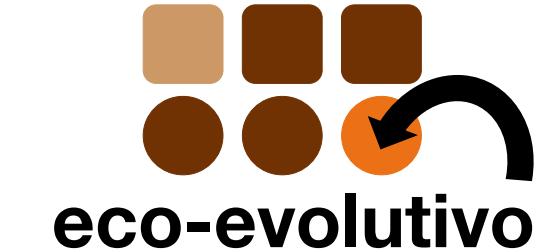
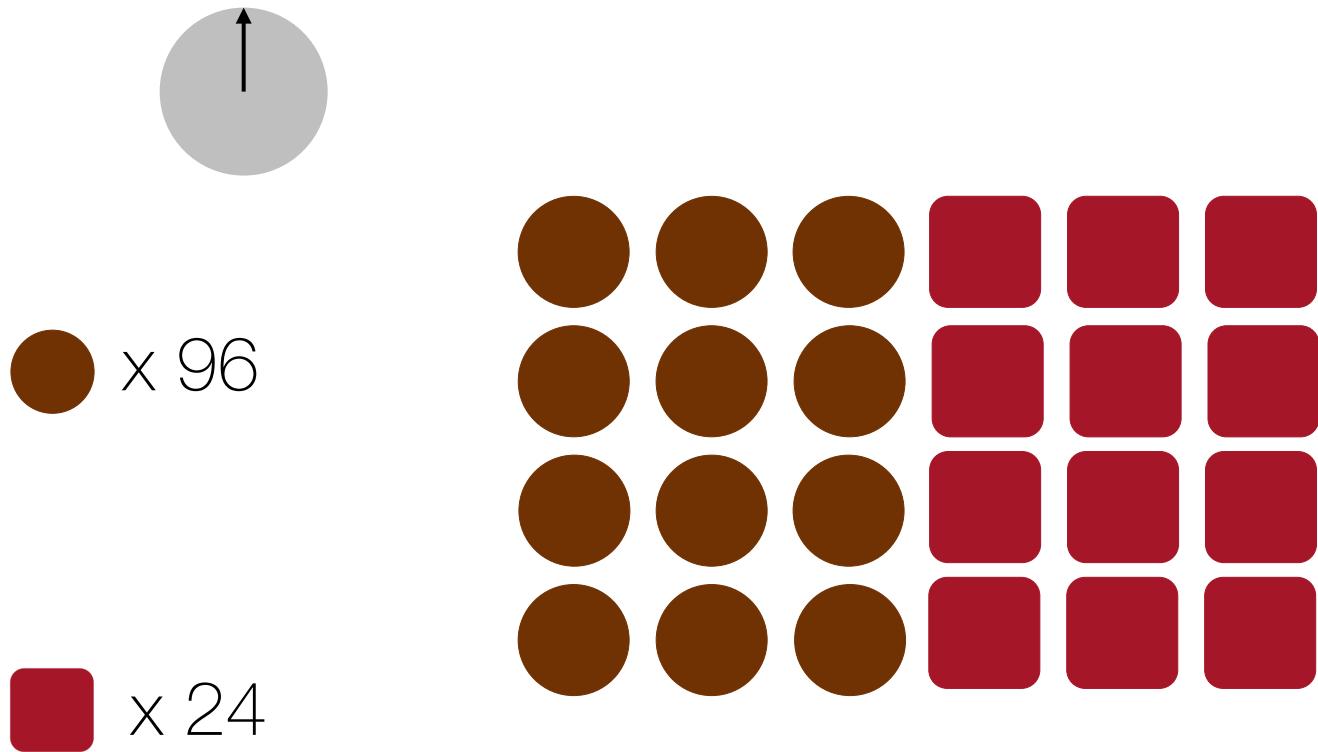
# coexistência de estratégias mediada pelo distúrbio

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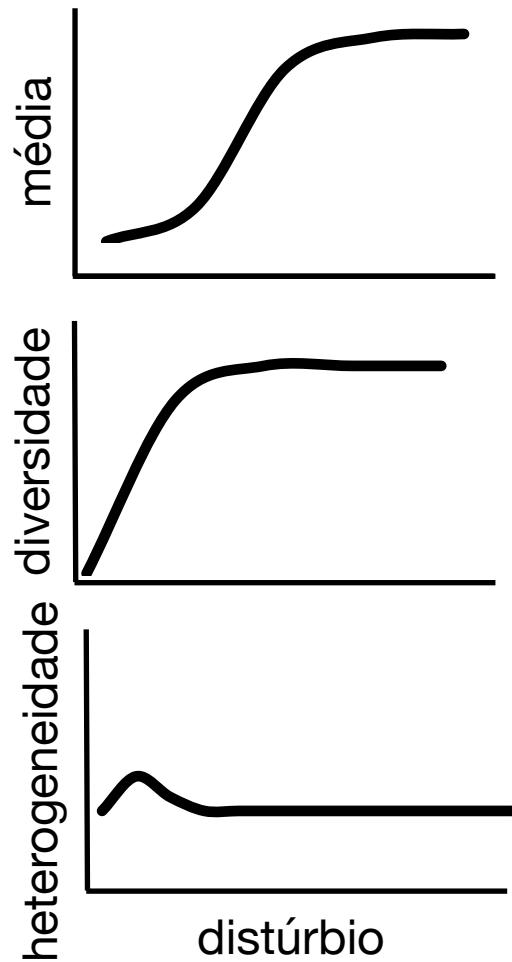
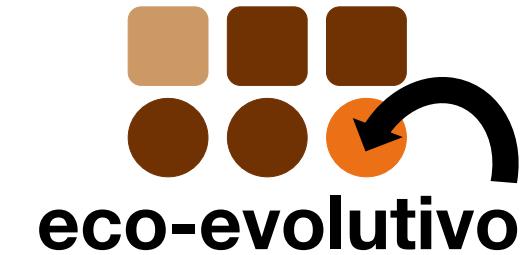
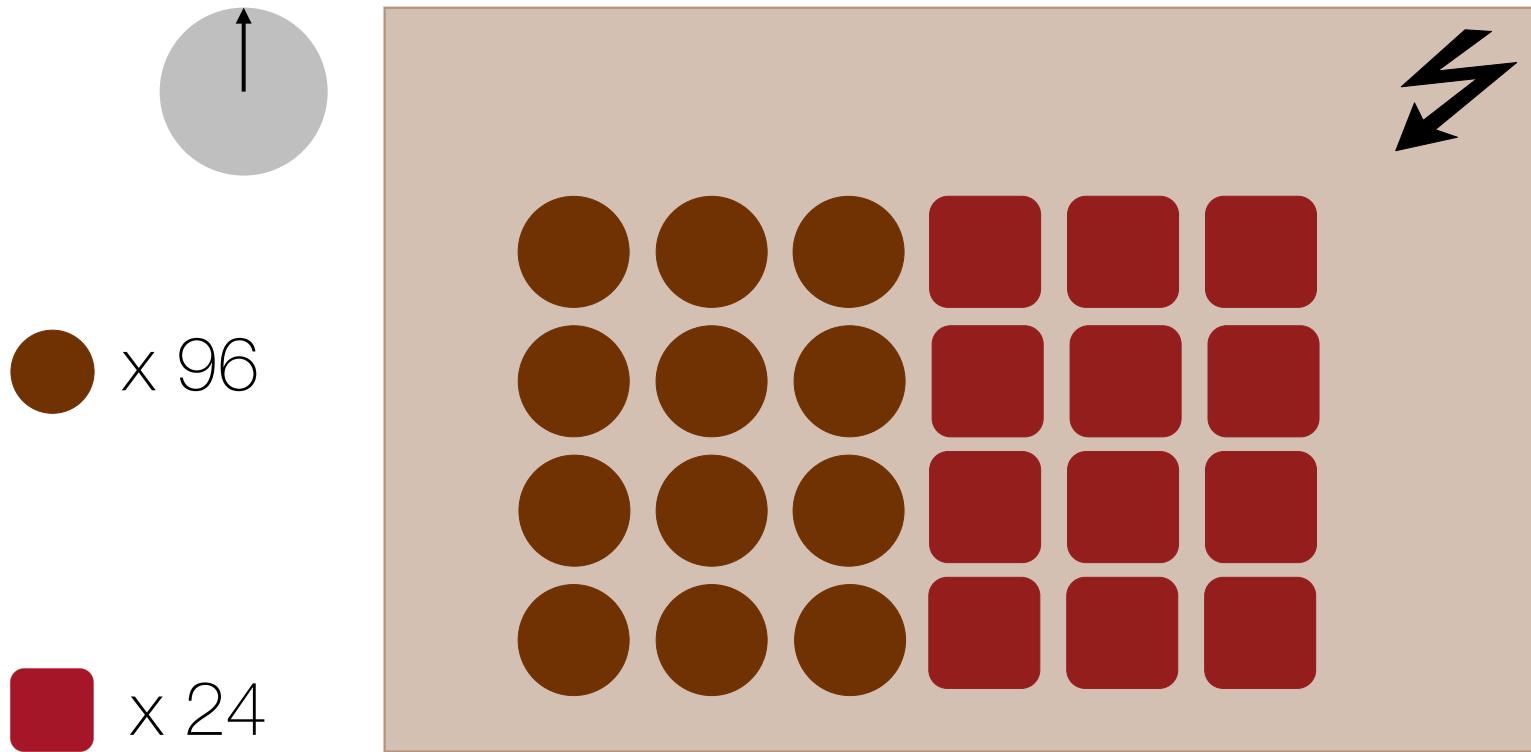
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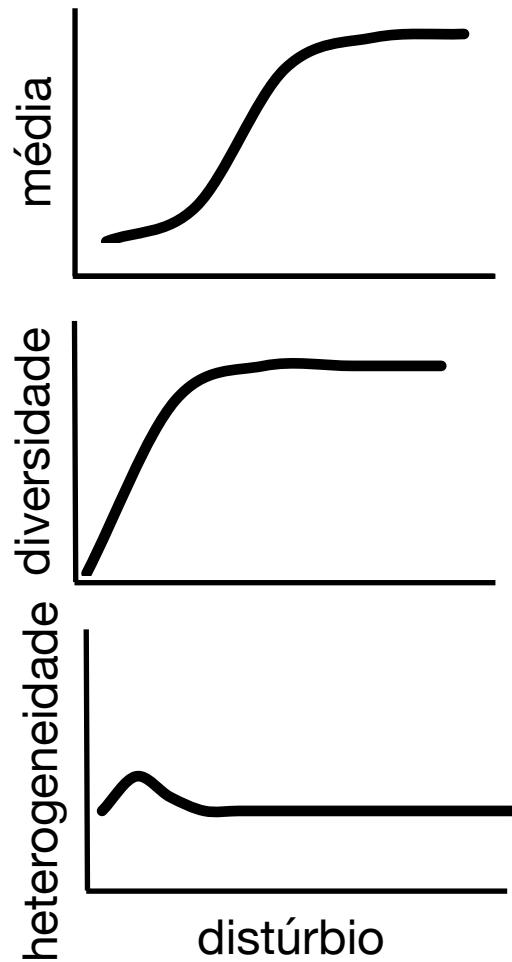
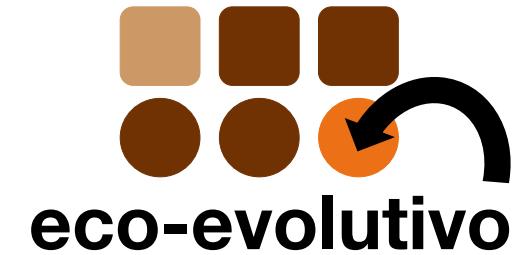
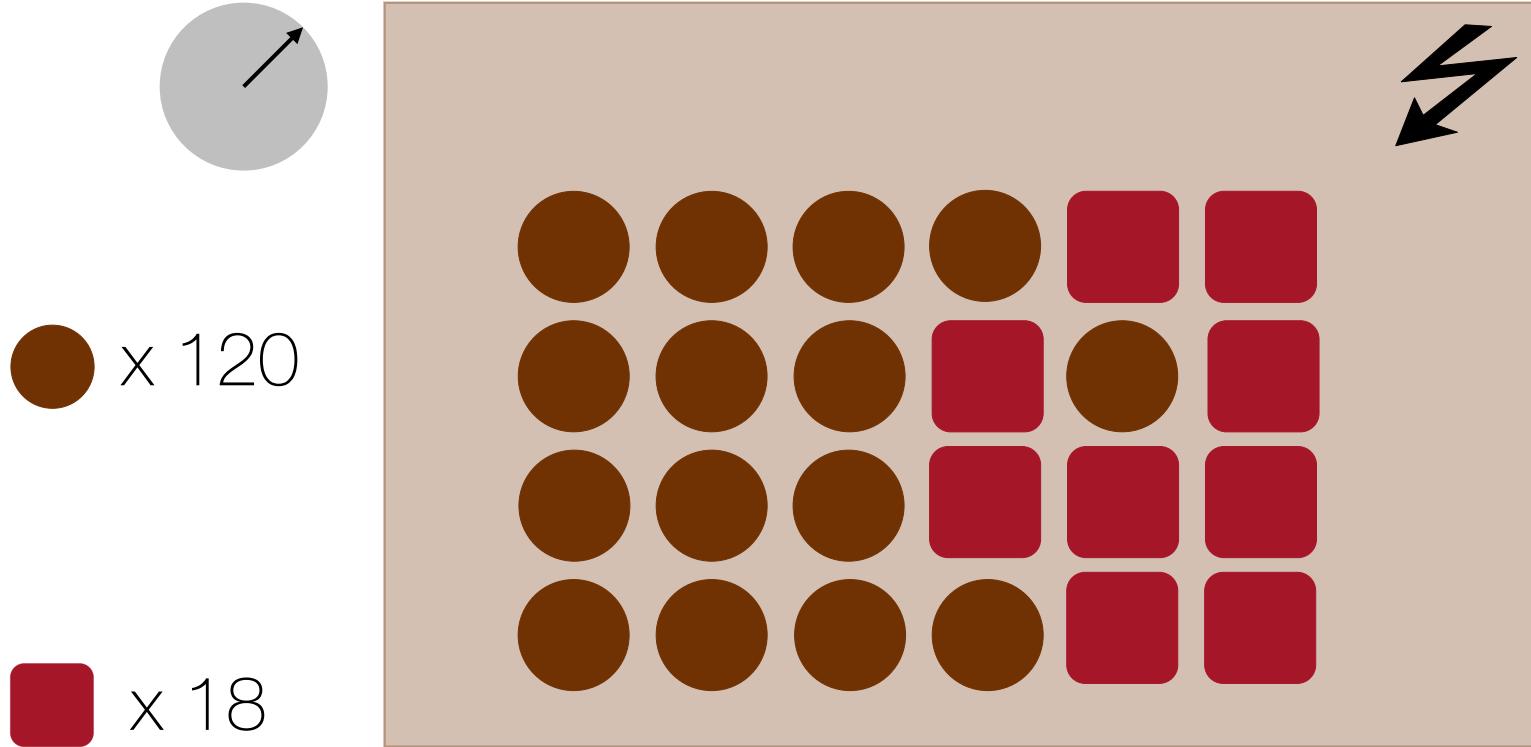
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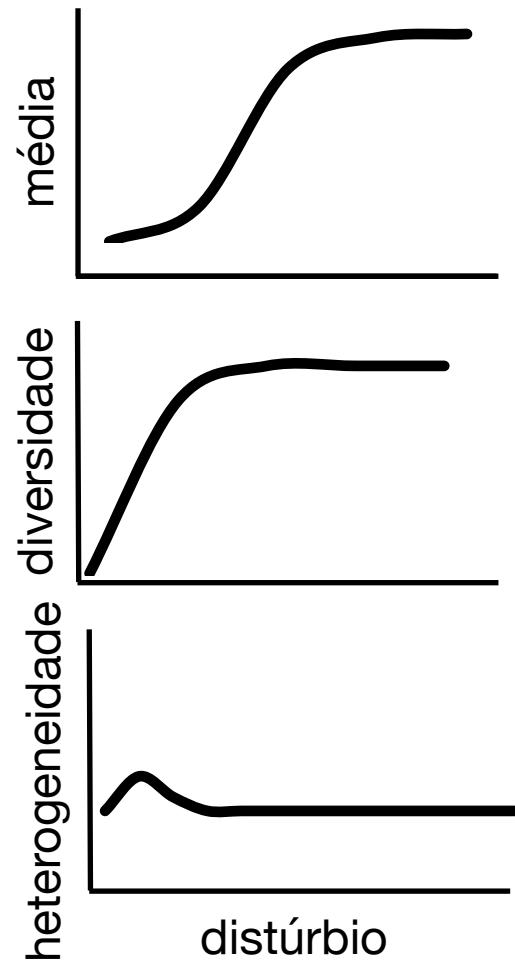
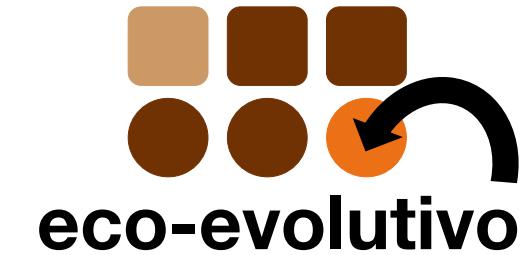
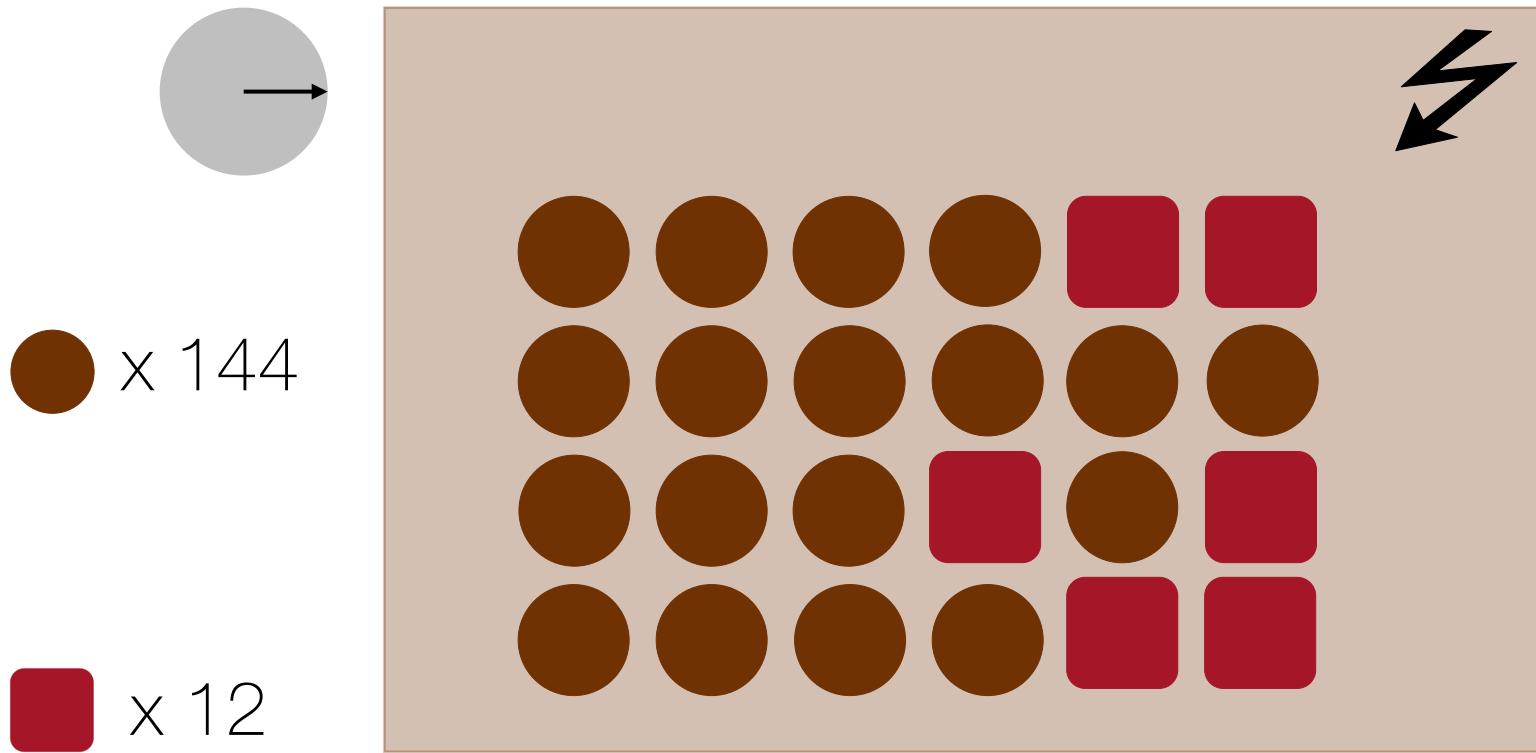
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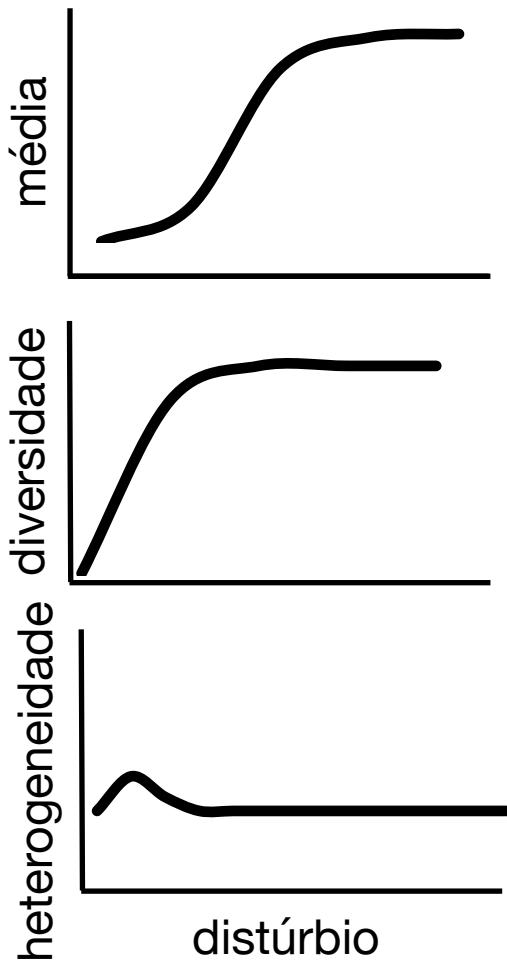
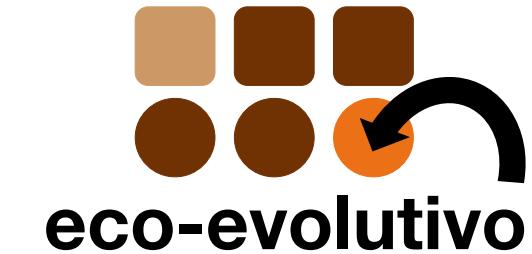
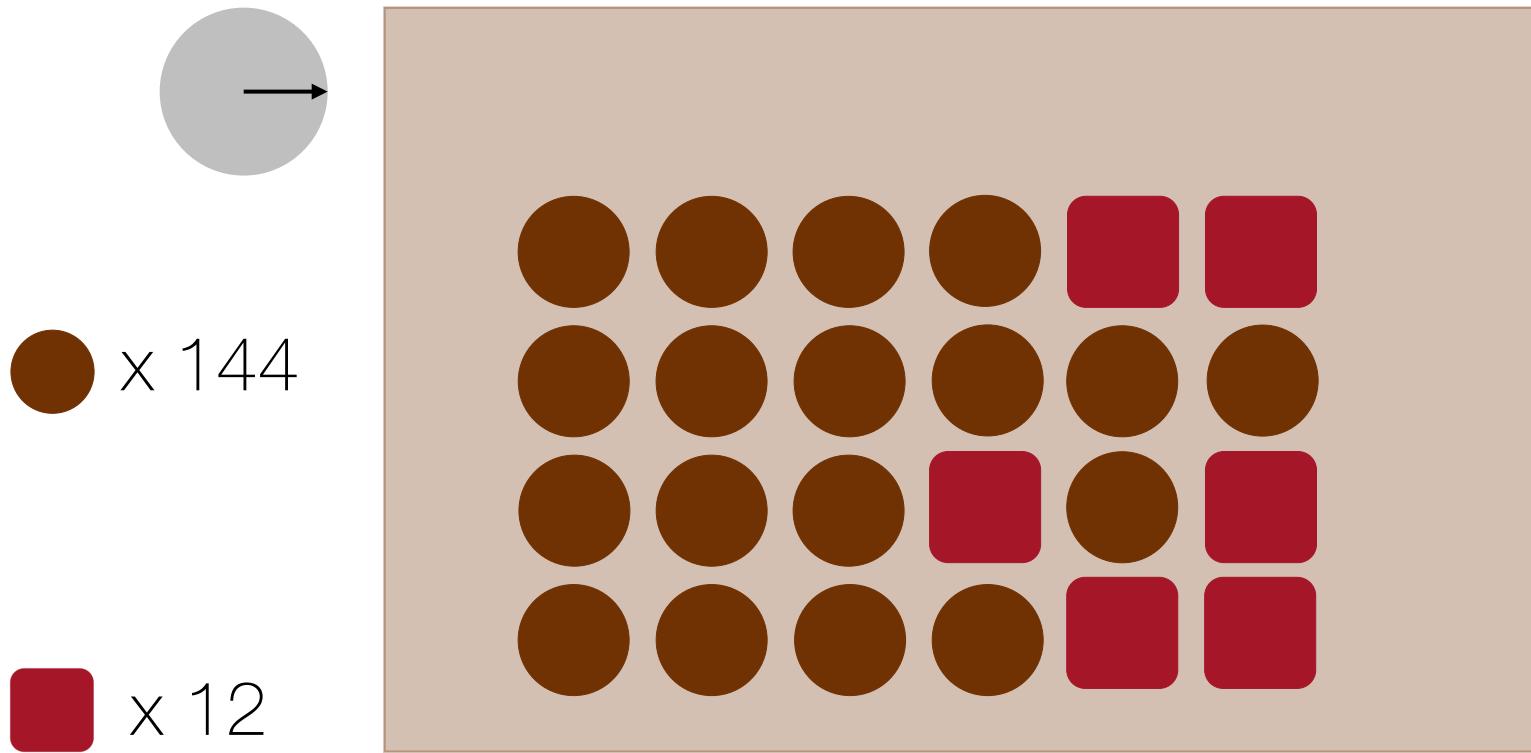
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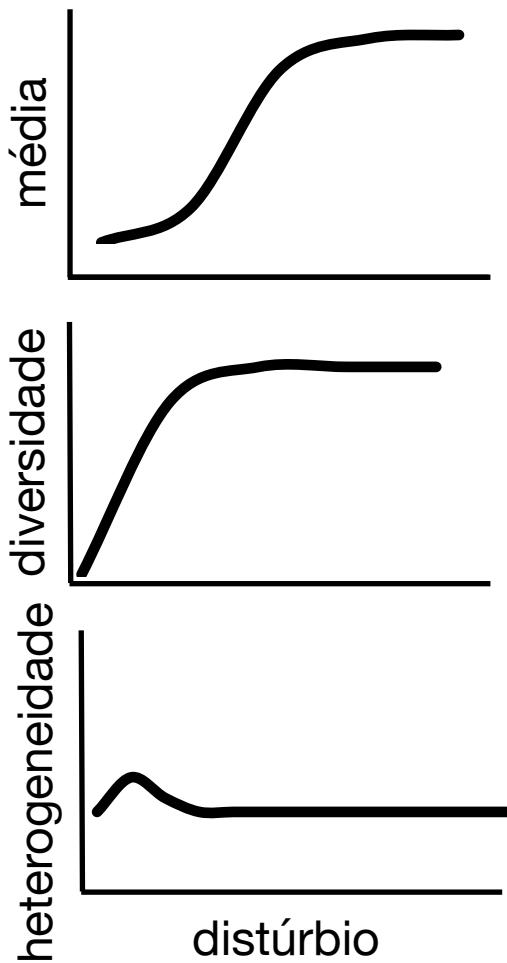
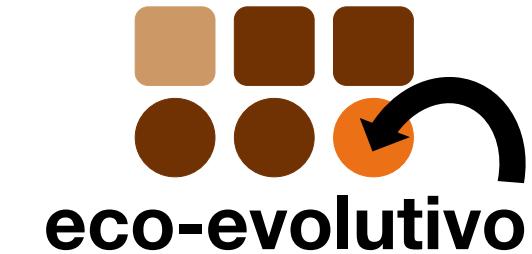
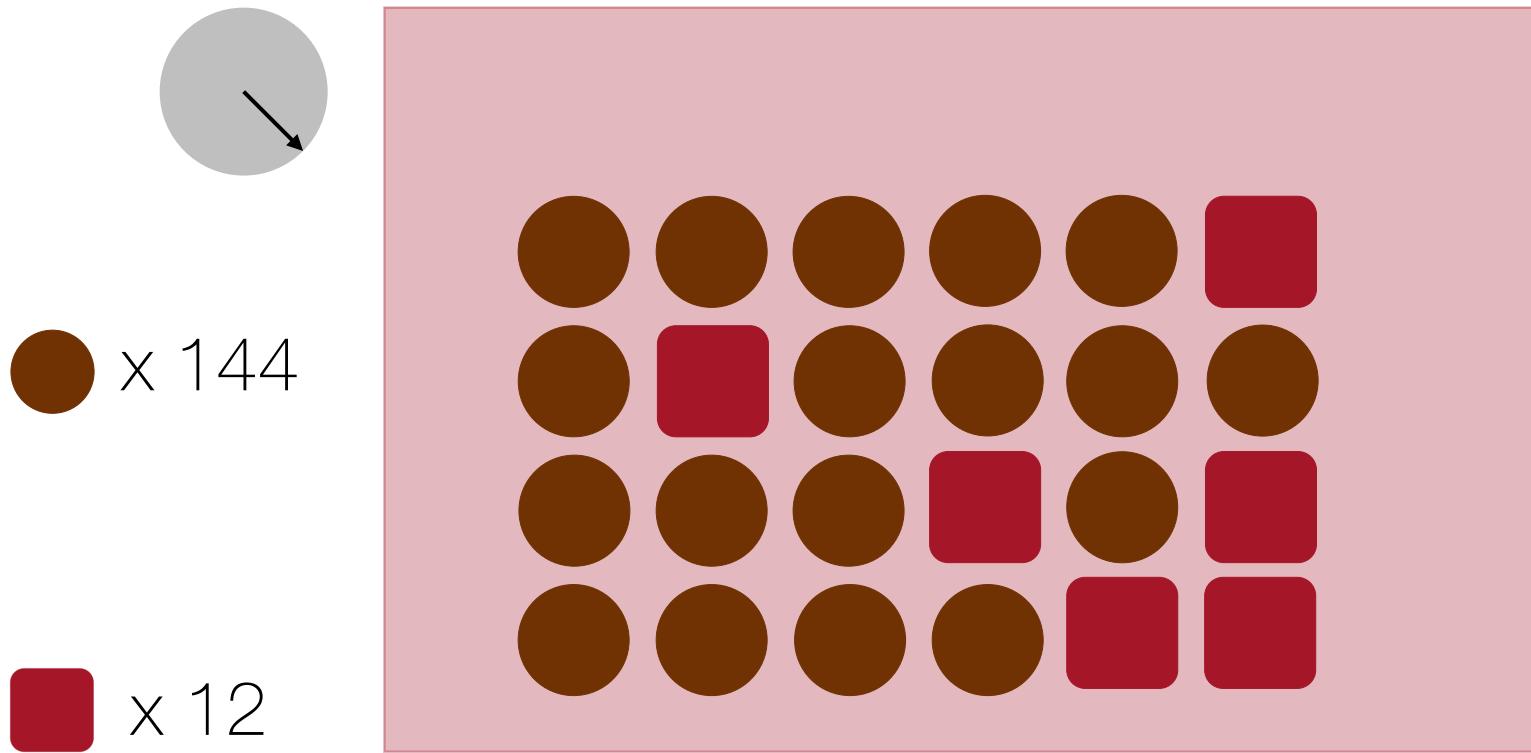
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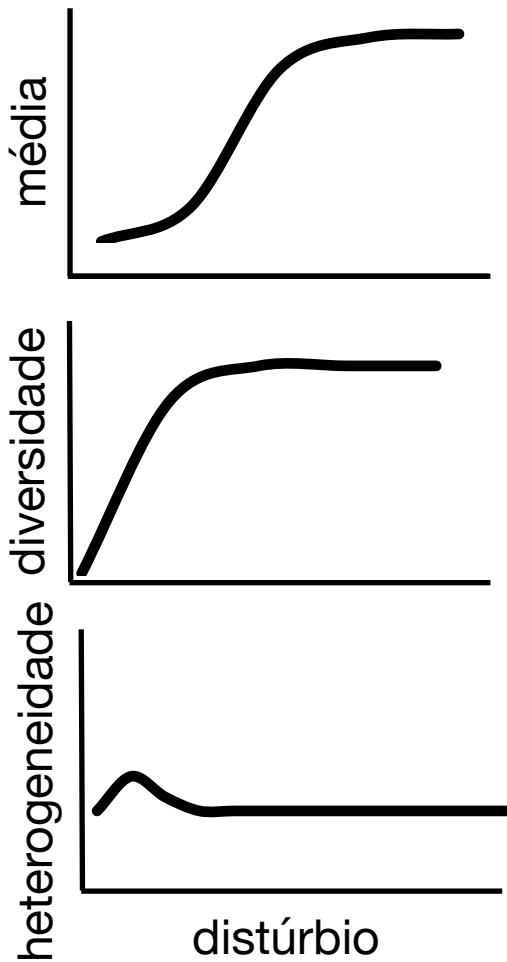
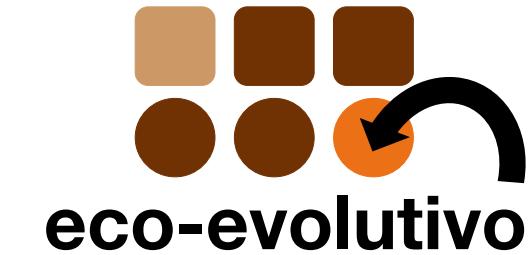
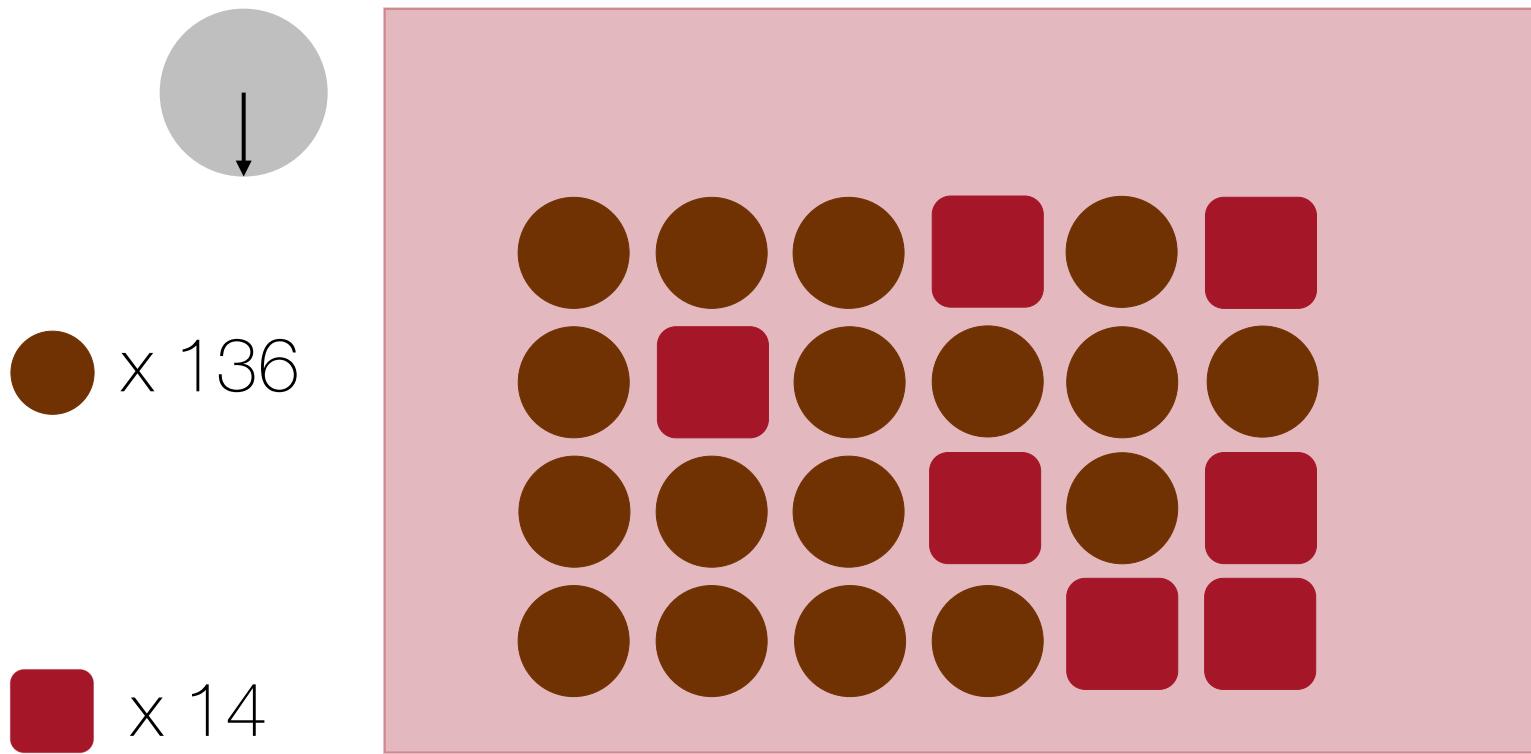
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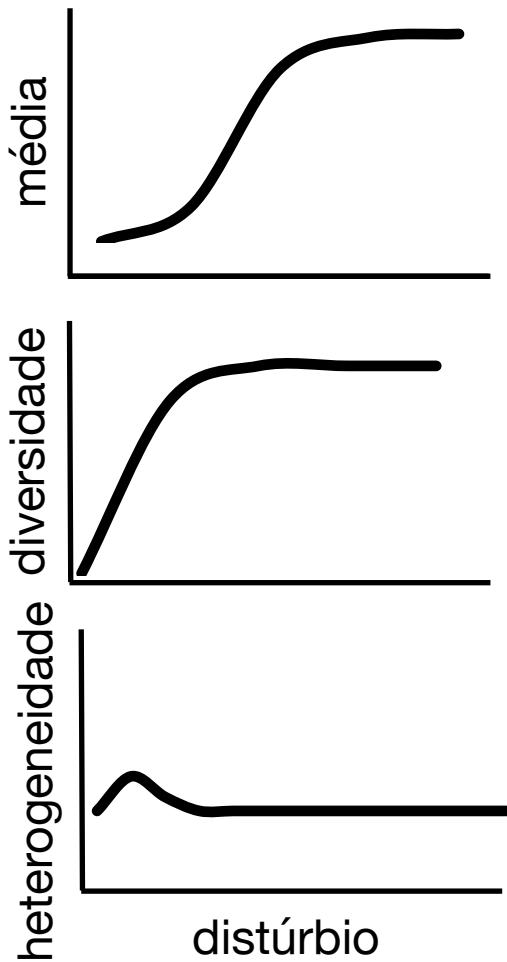
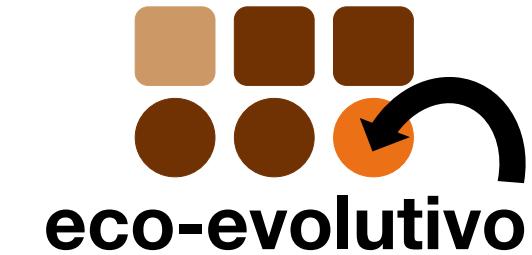
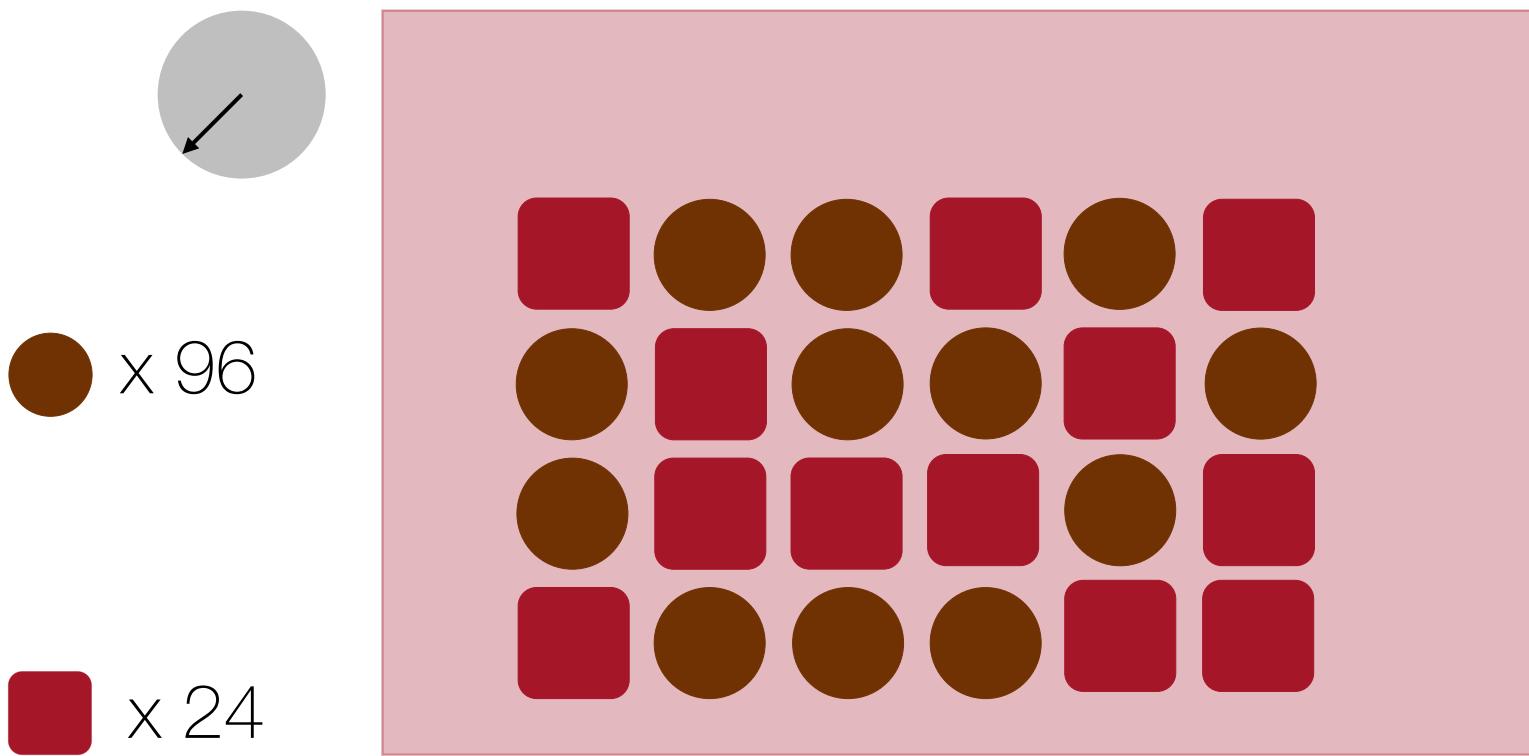
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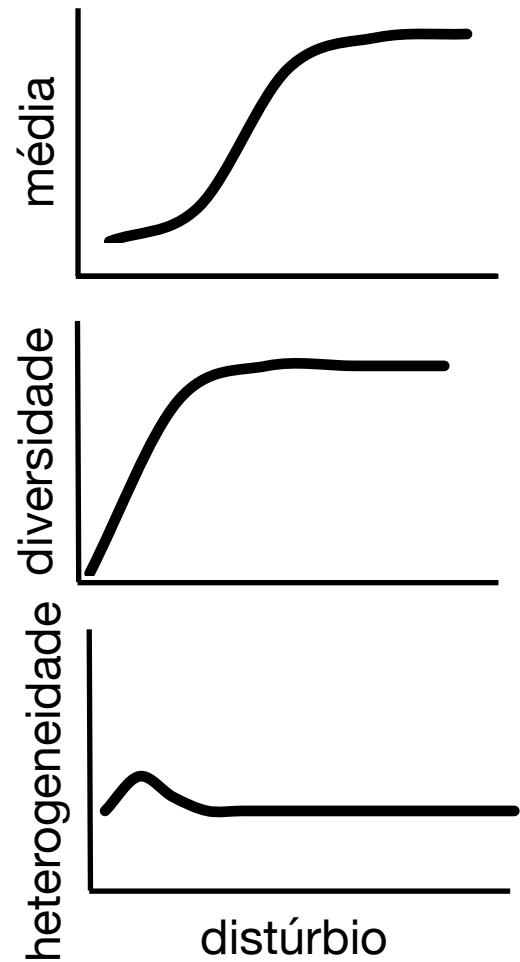
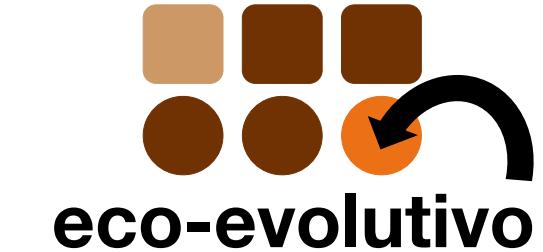
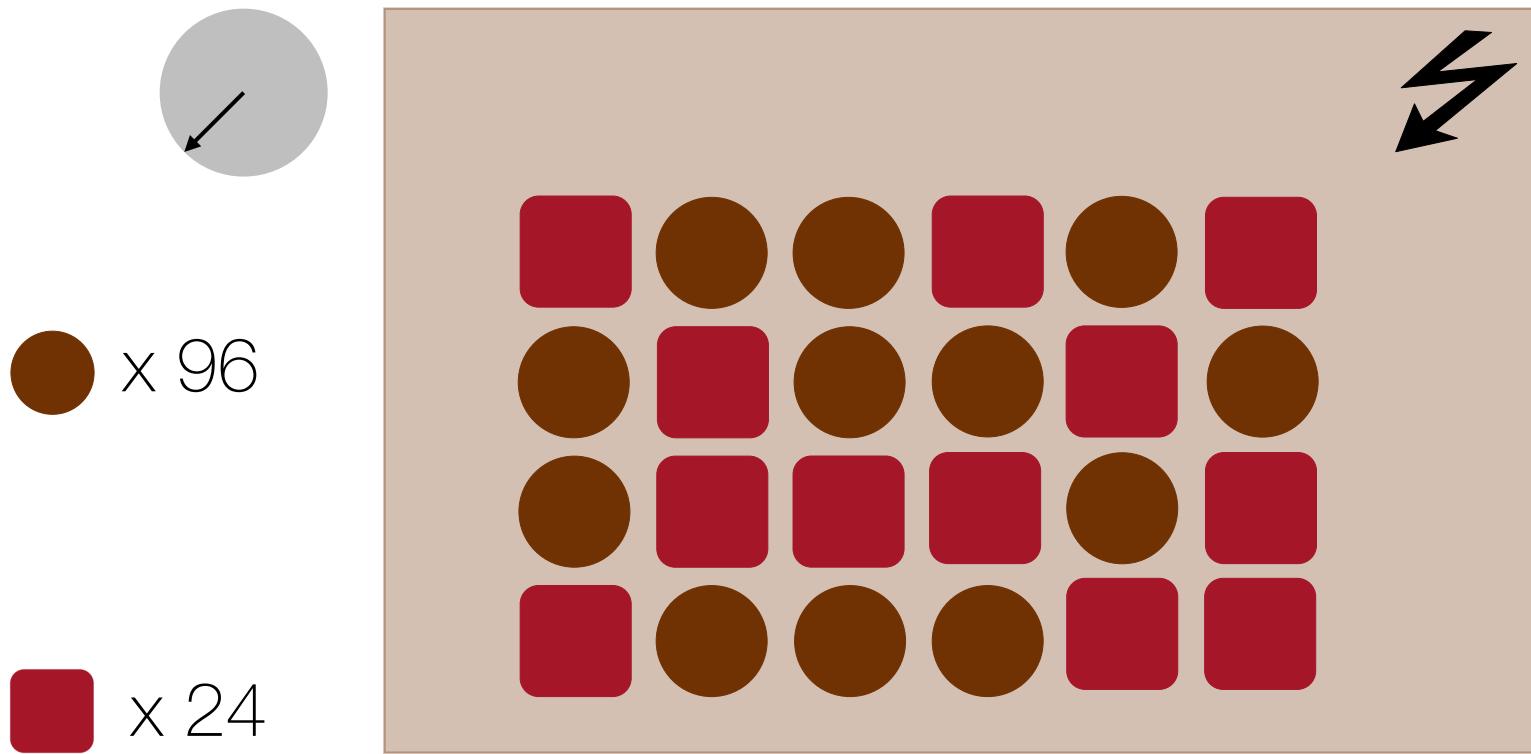
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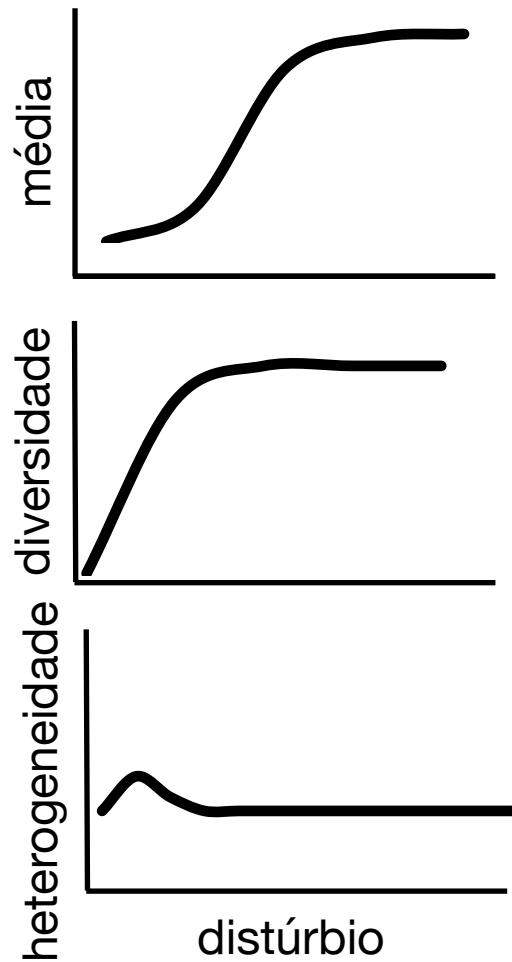
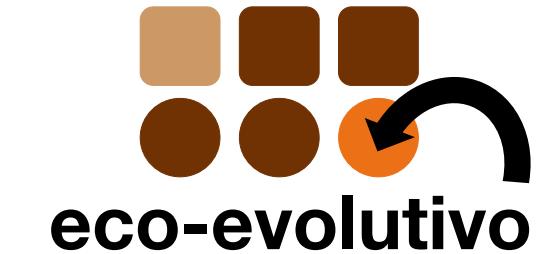
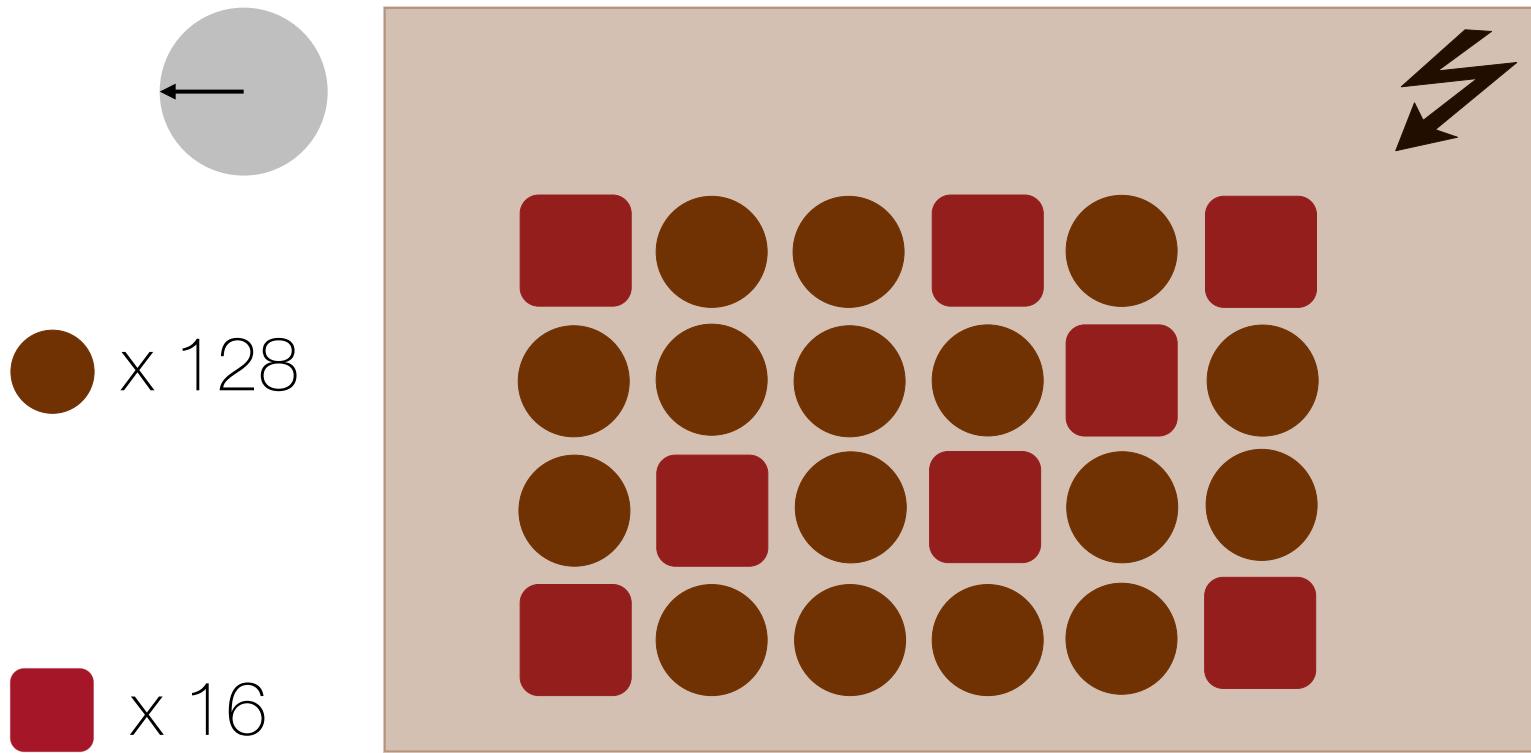
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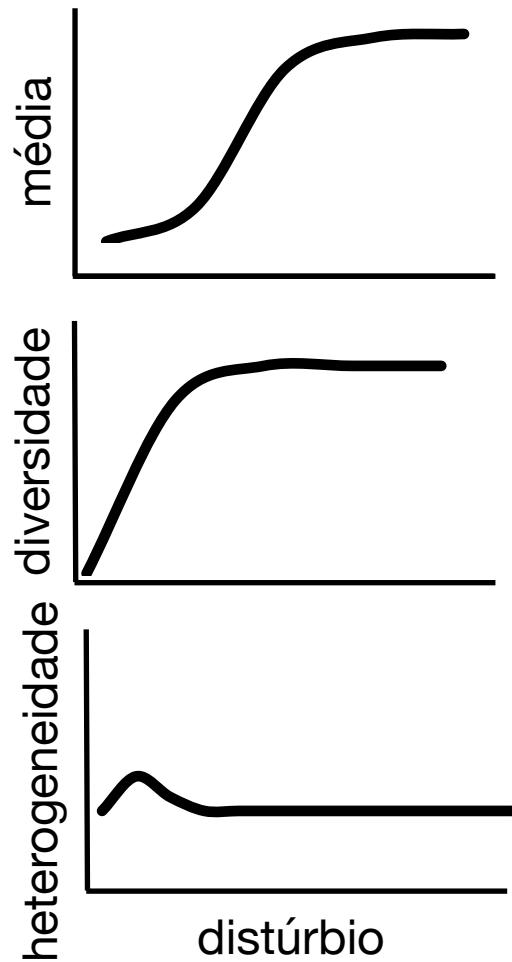
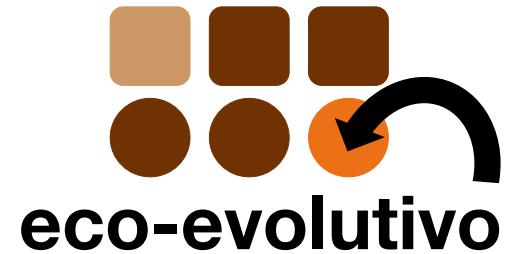
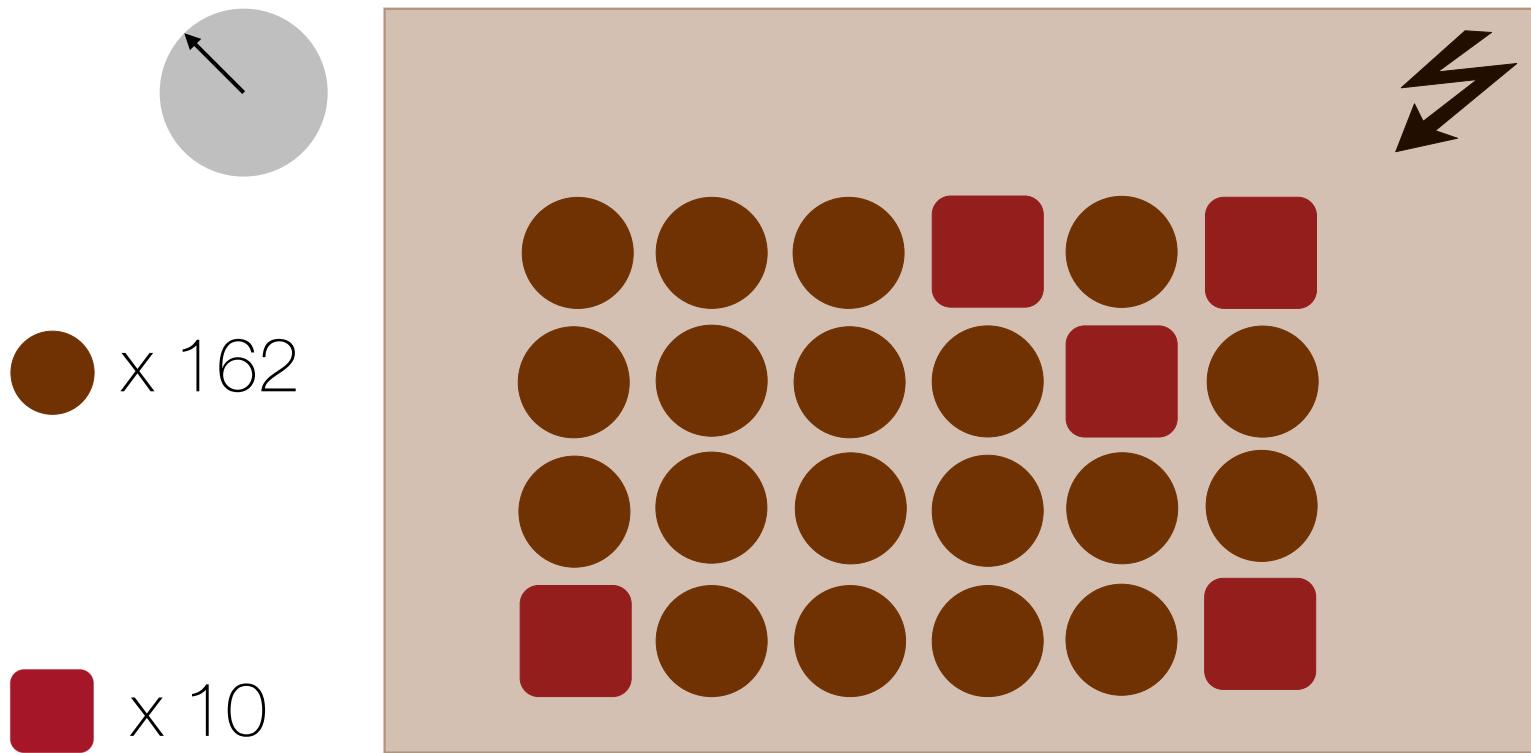
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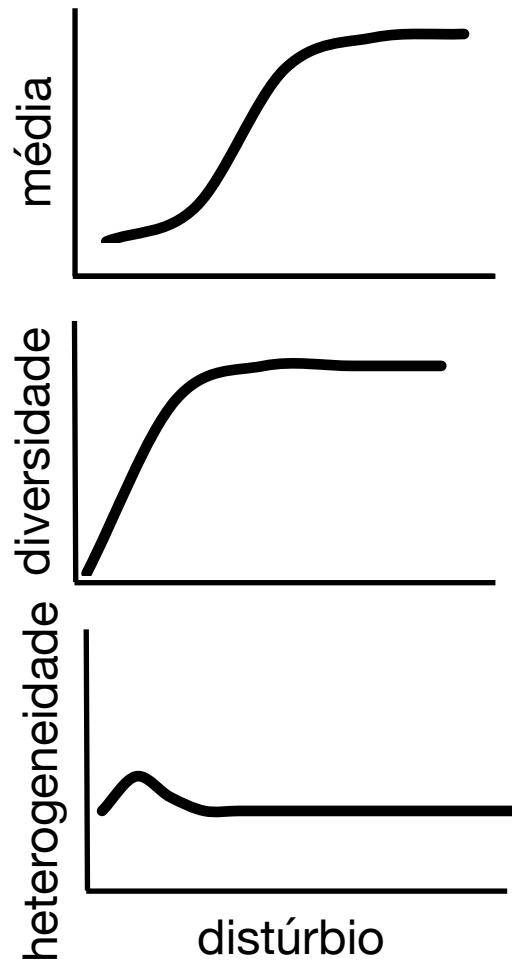
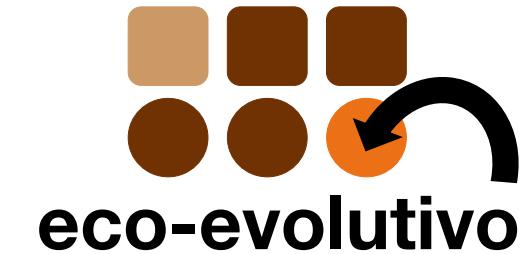
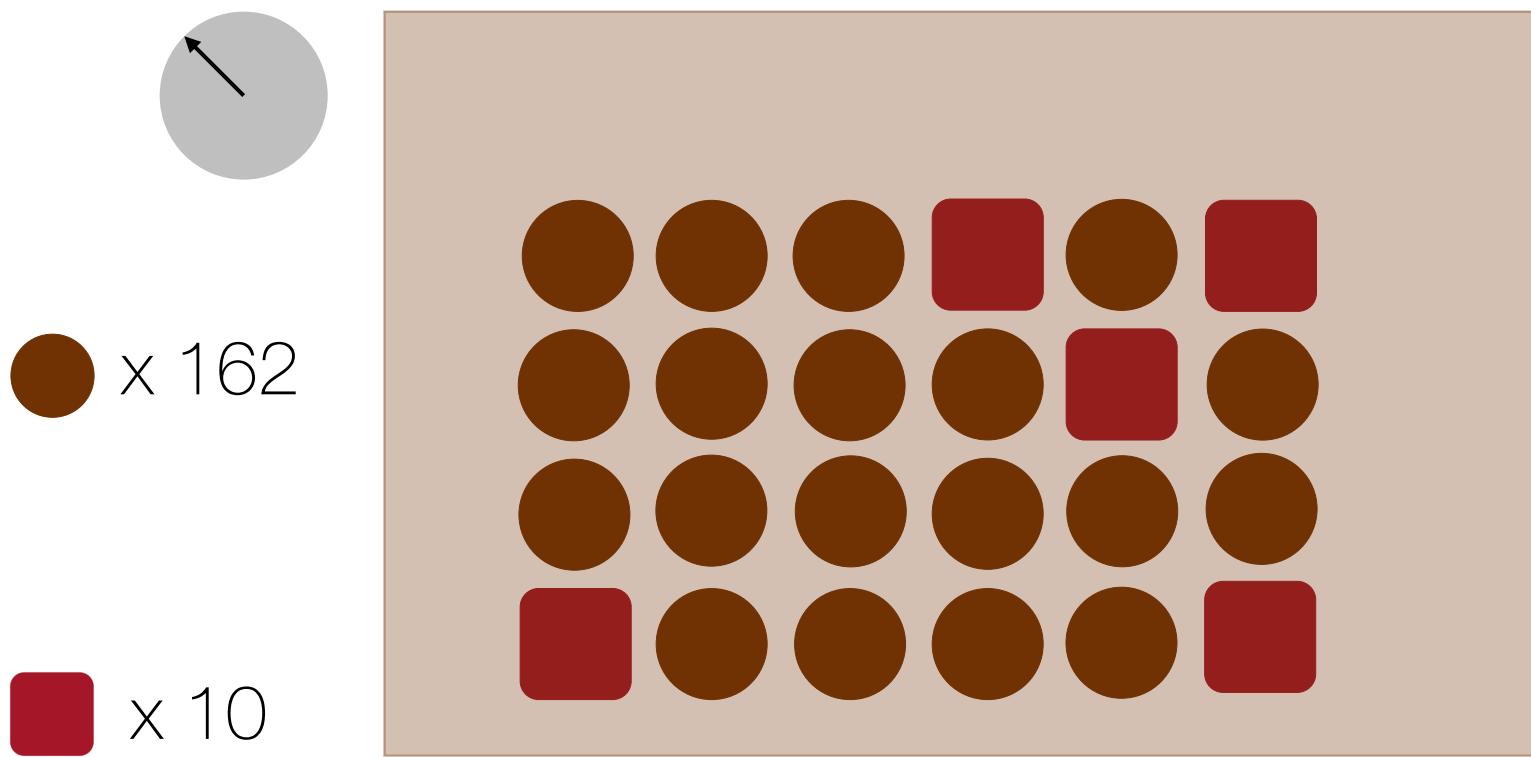
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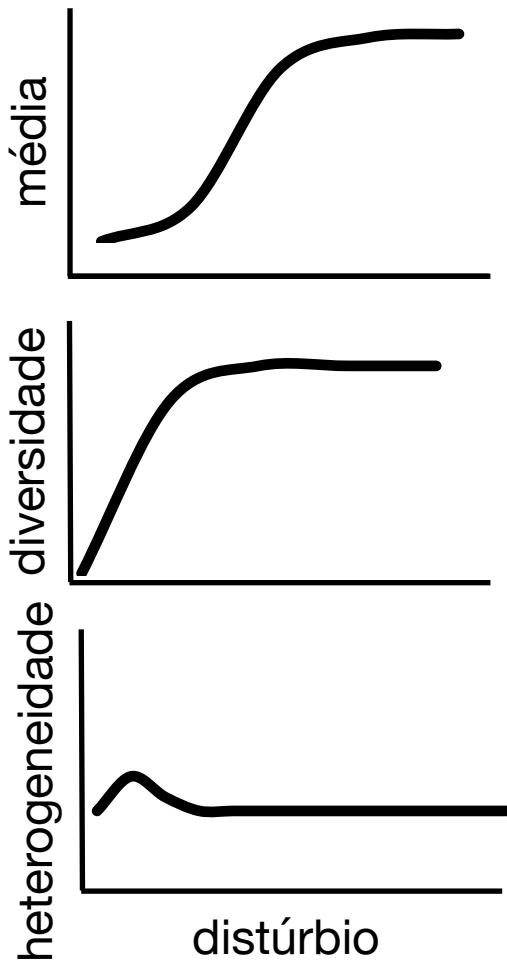
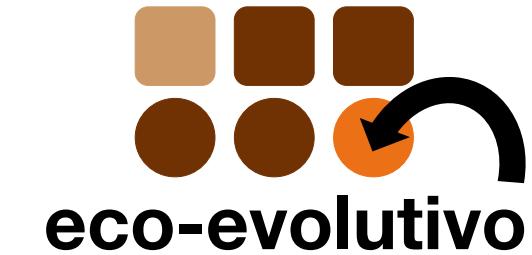
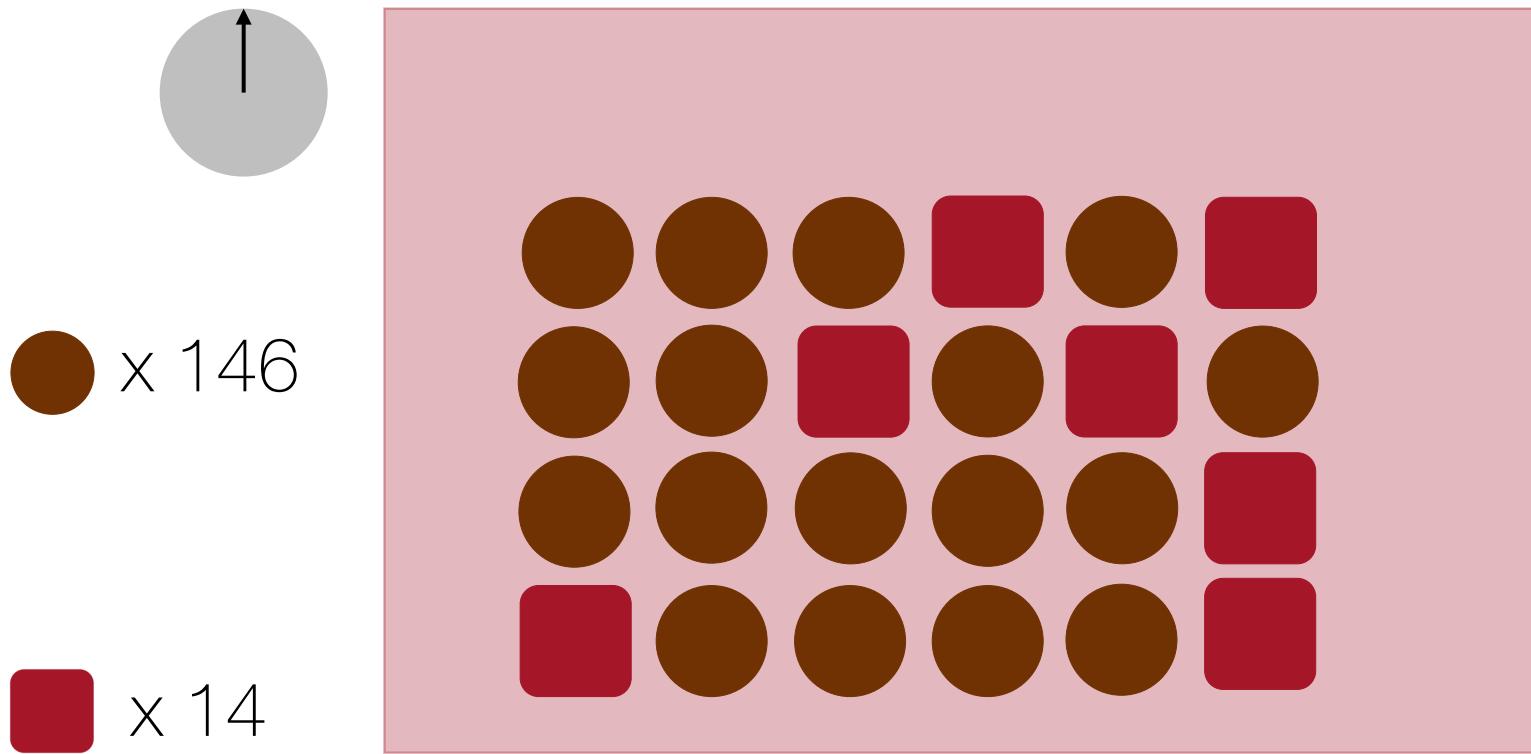
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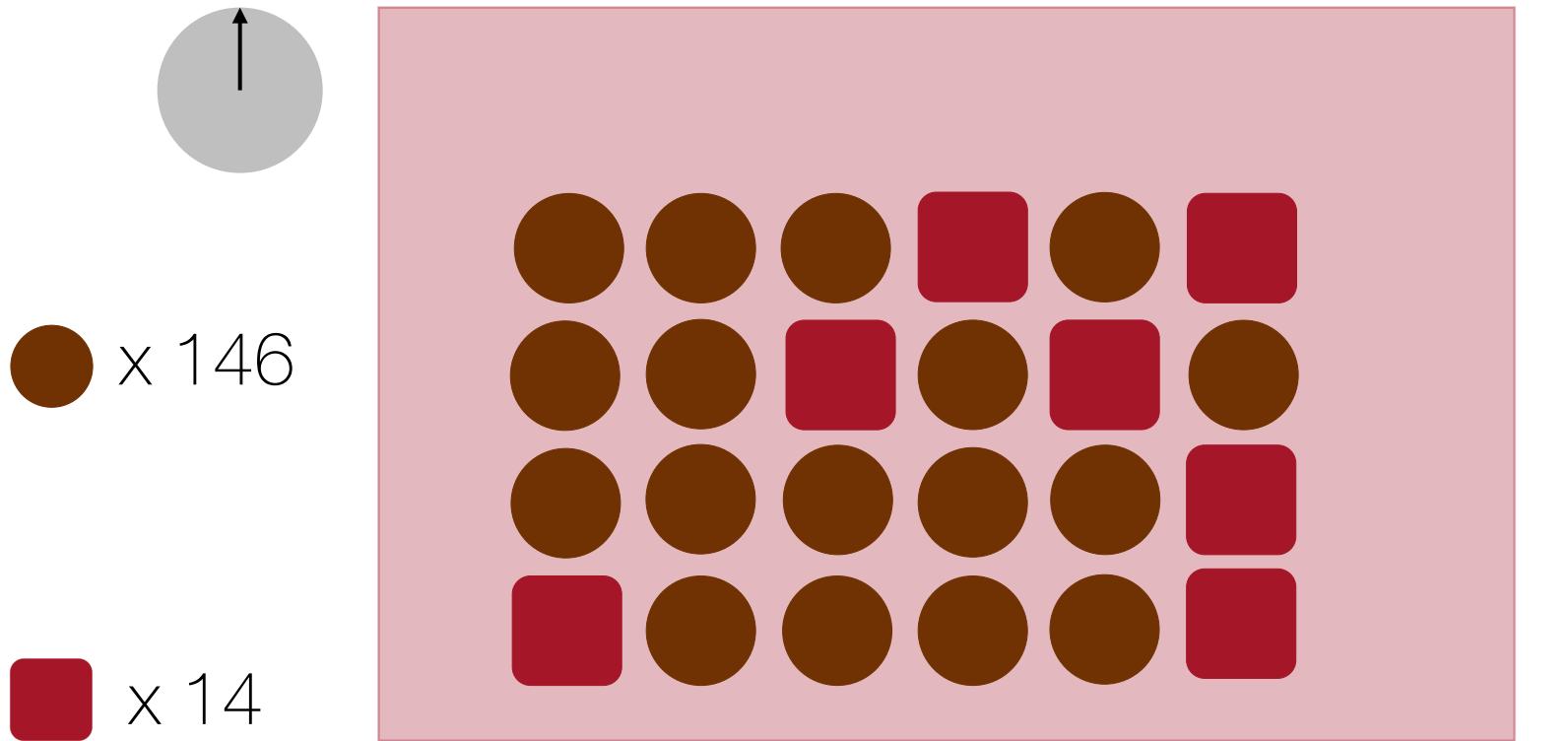
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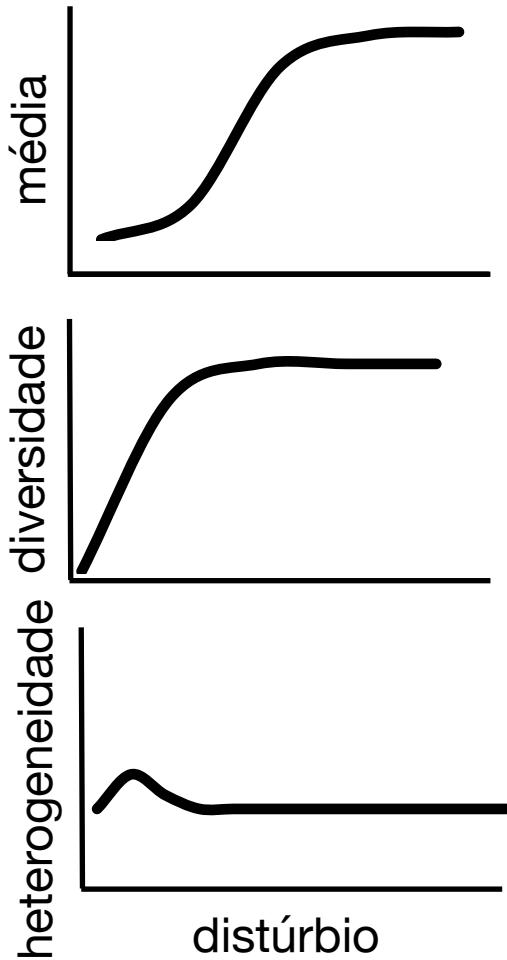
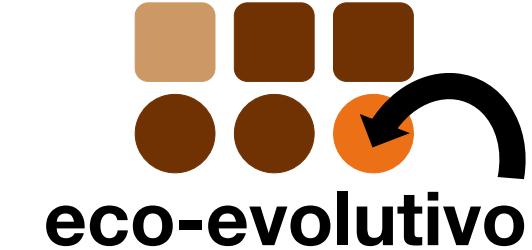
# coexistência de estratégias mediada pelo distúrbio



# coexistência de estratégias mediada pelo distúrbio

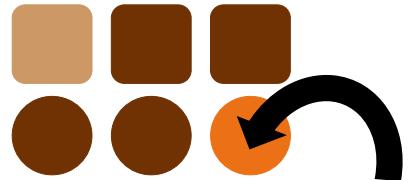


coexistência de especialistas

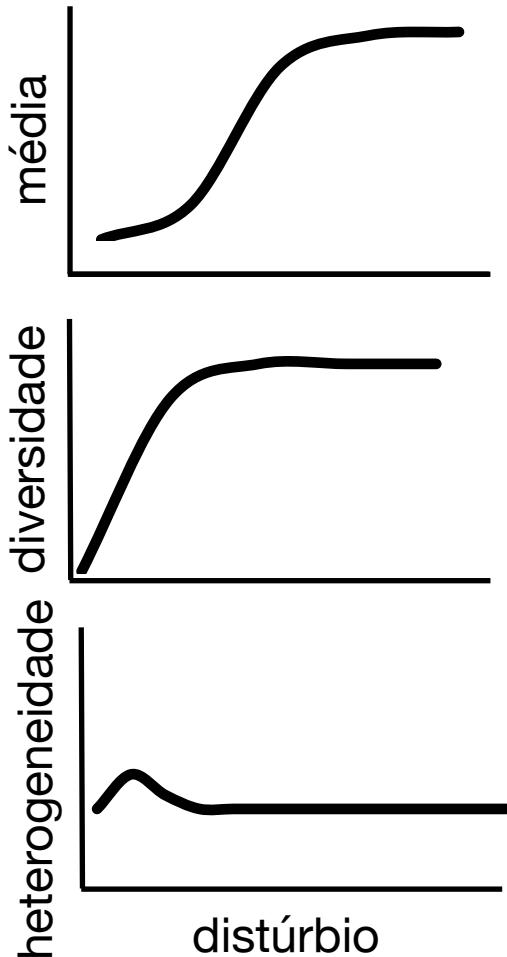


# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo

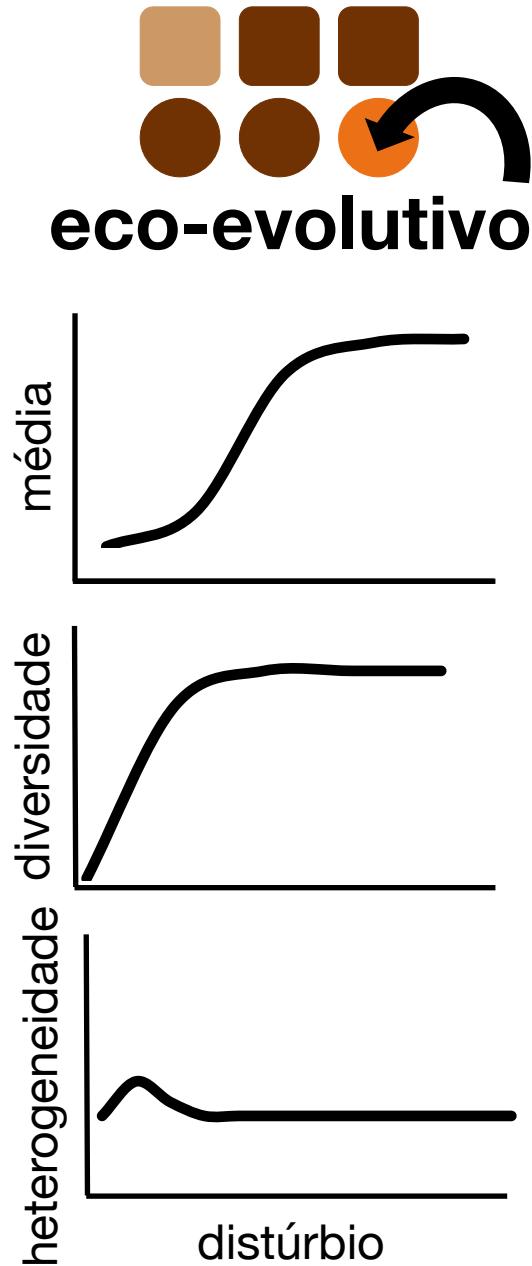
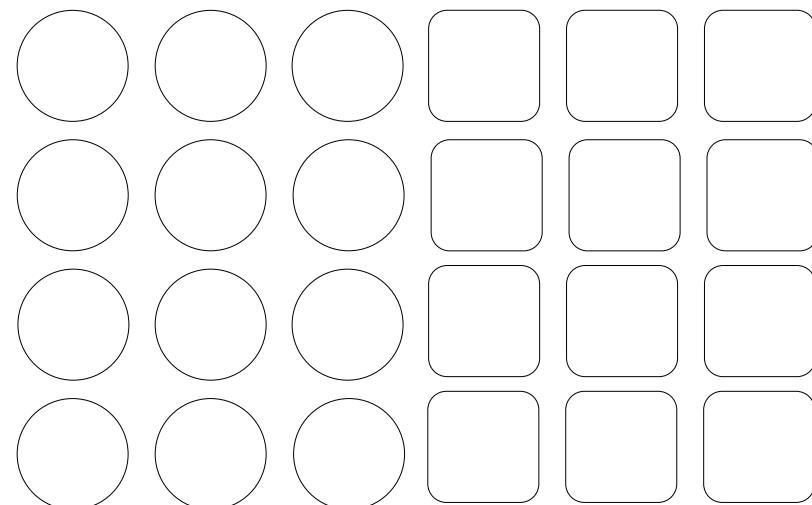


**eco-evolutivo**



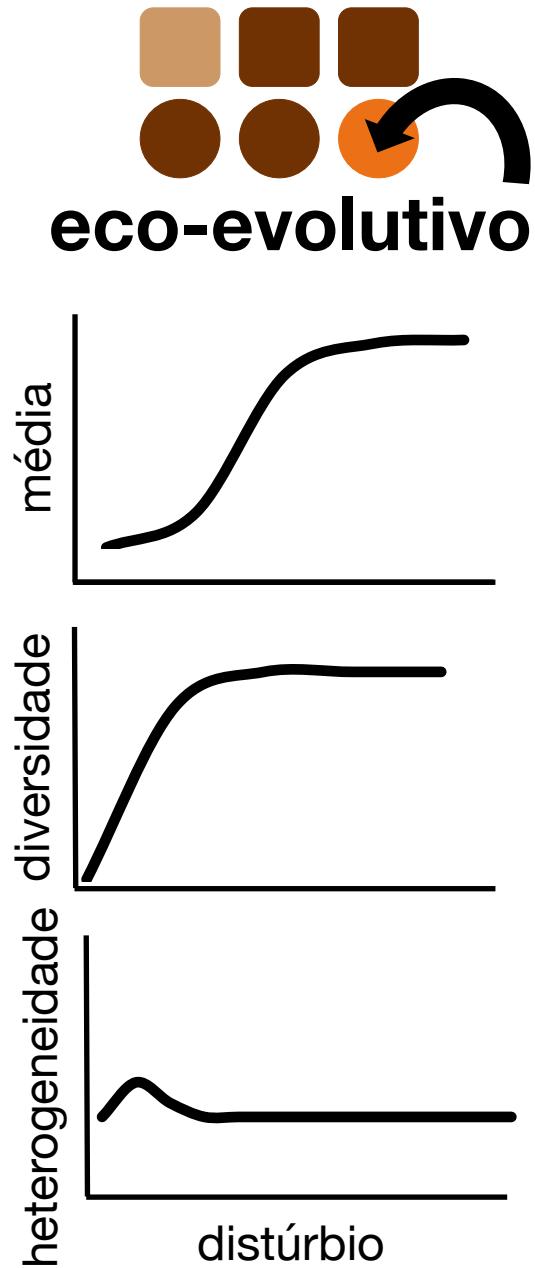
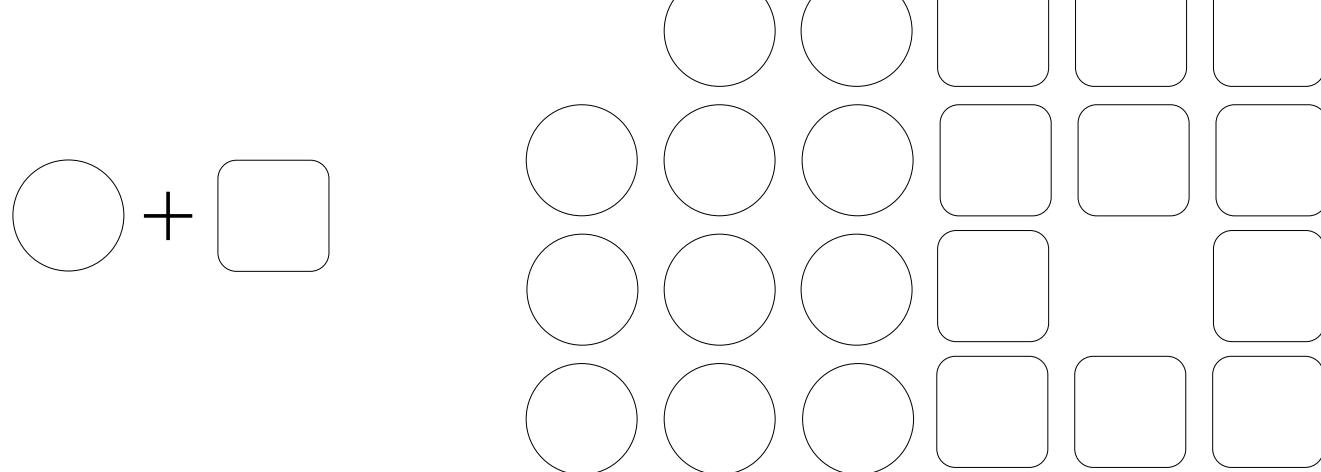
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cenário eco-evolutivo = isolamento reprodutivo



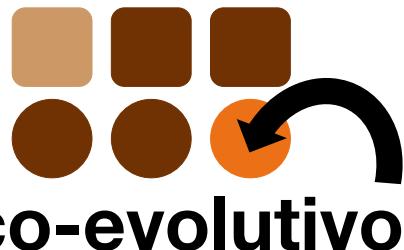
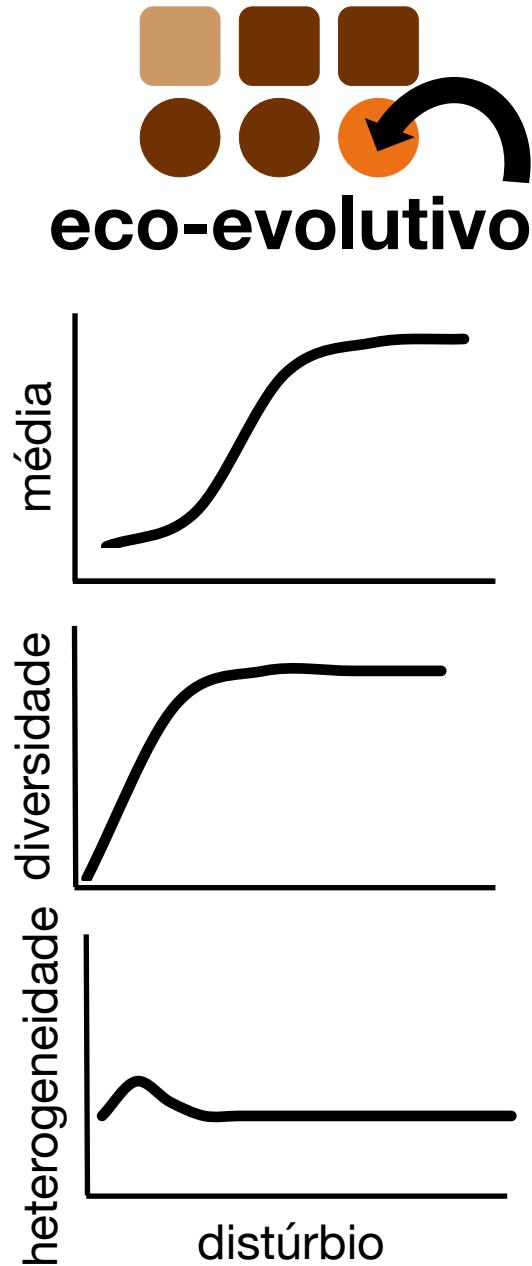
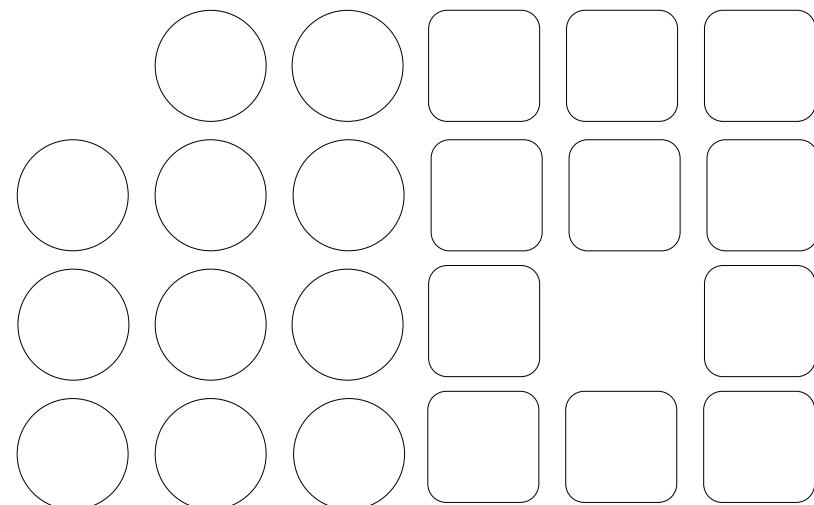
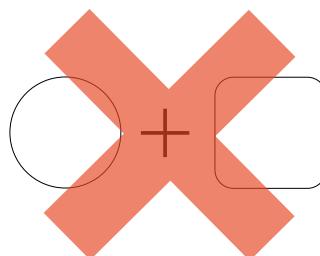
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = isolamento reprodutivo



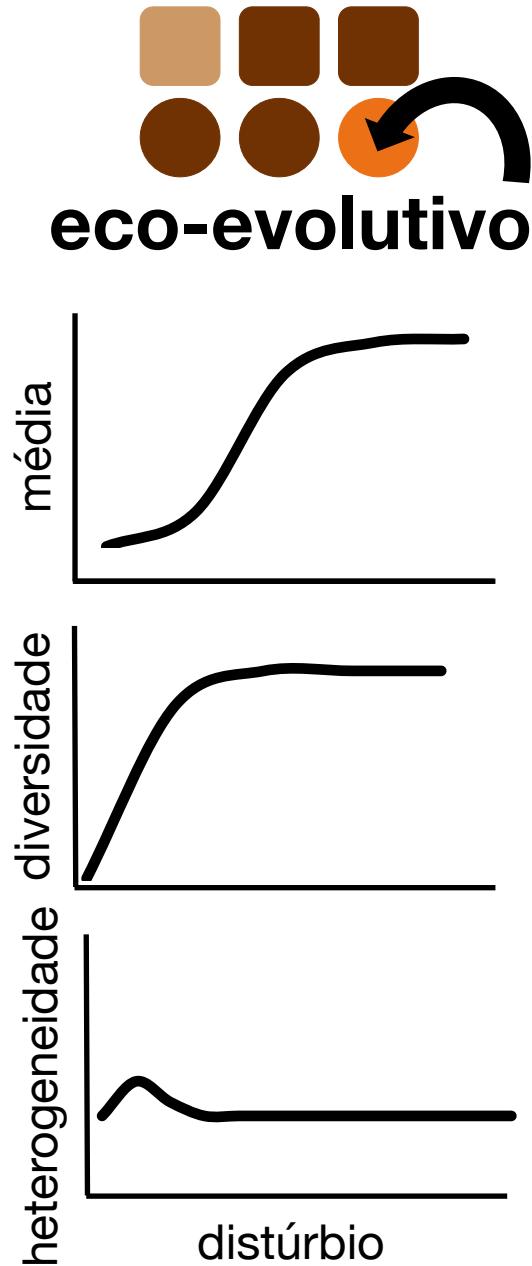
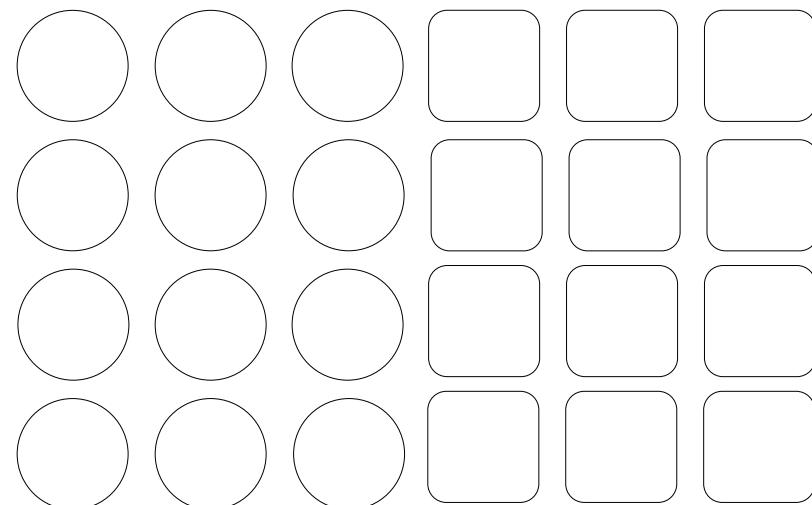
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = isolamento reprodutivo



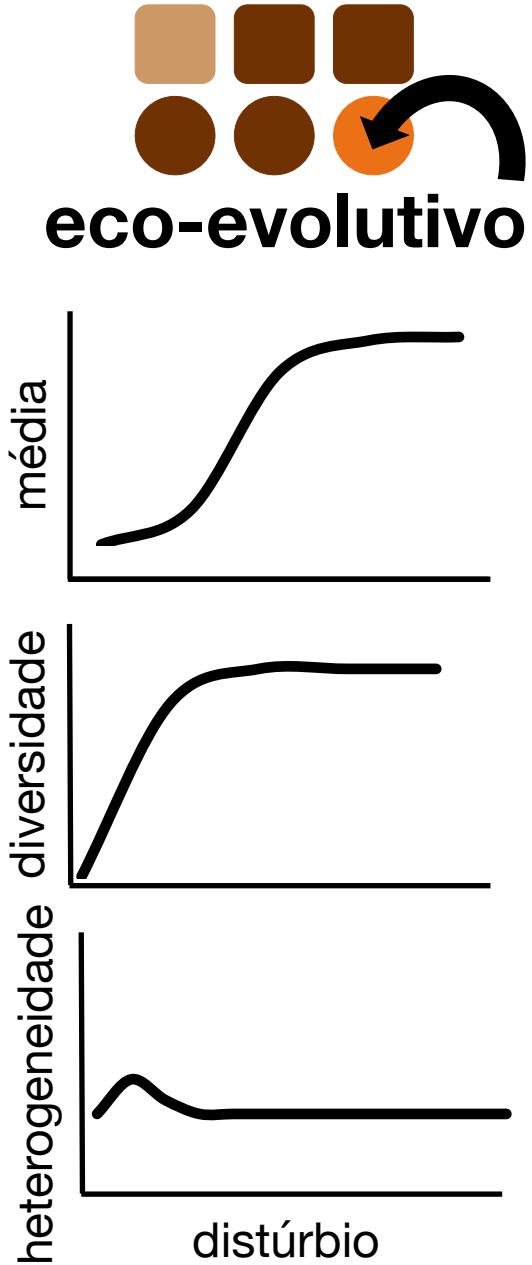
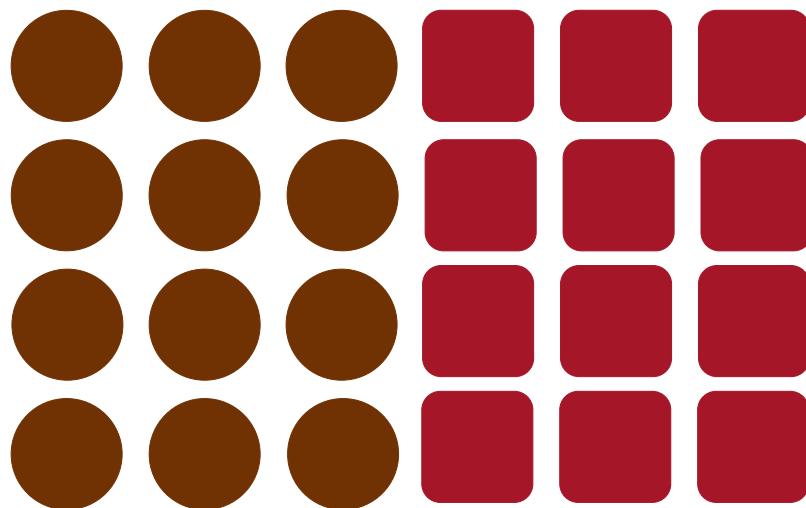
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = isolamento reprodutivo



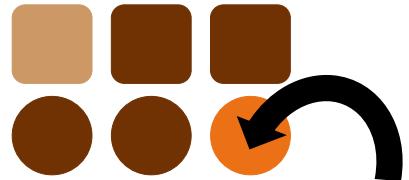
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = isolamento reprodutivo

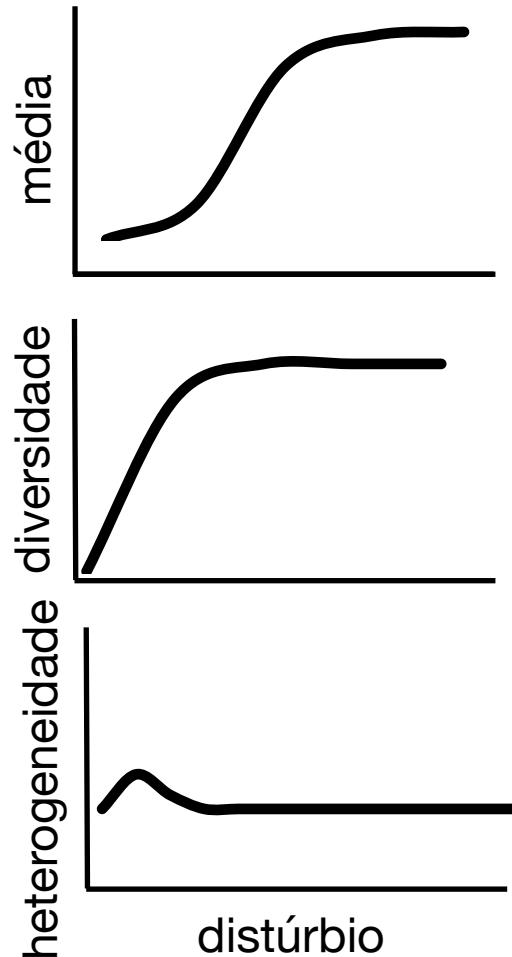


# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação

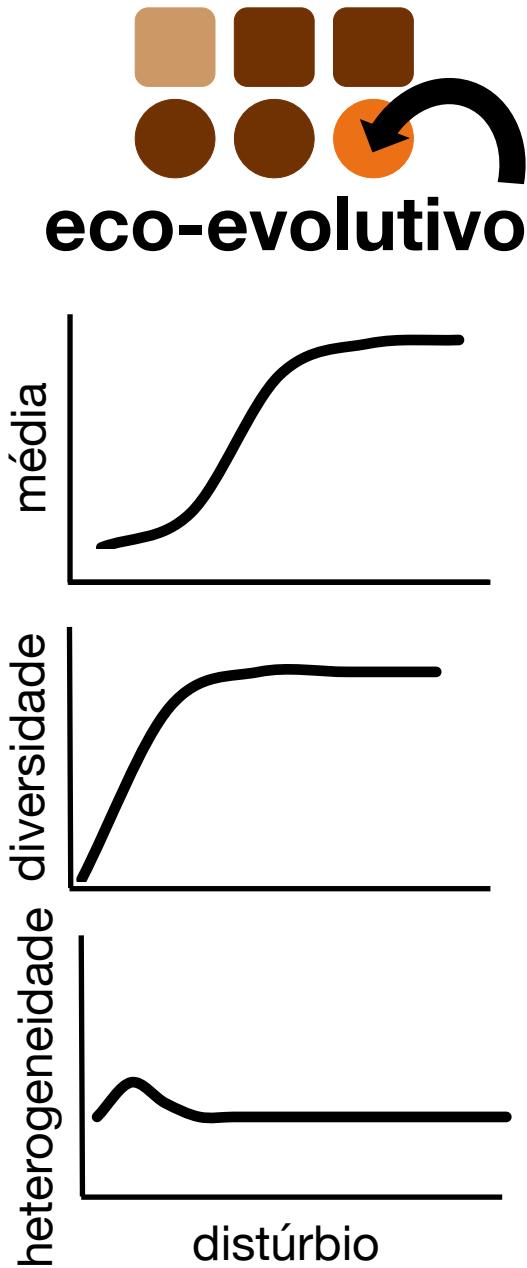
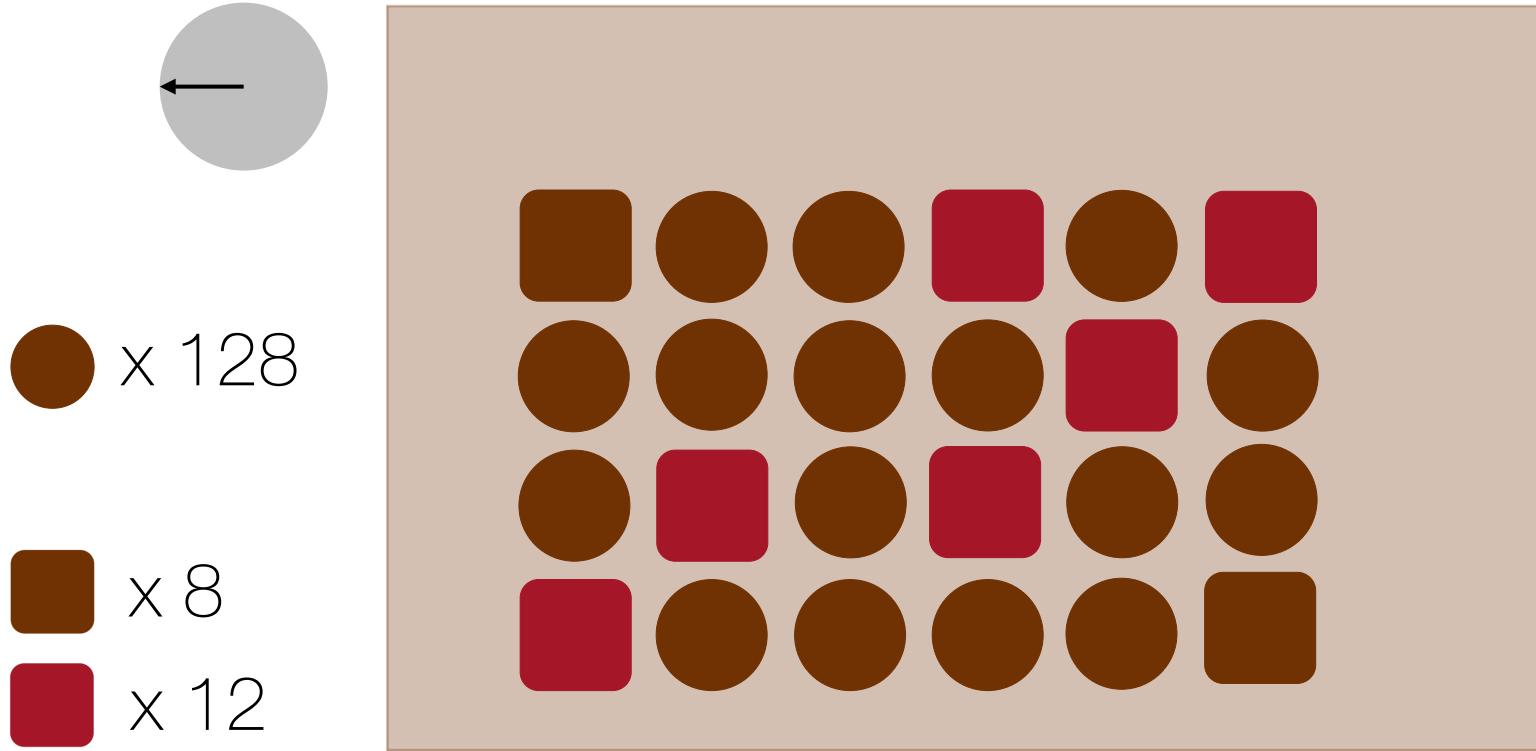


**eco-evolutivo**



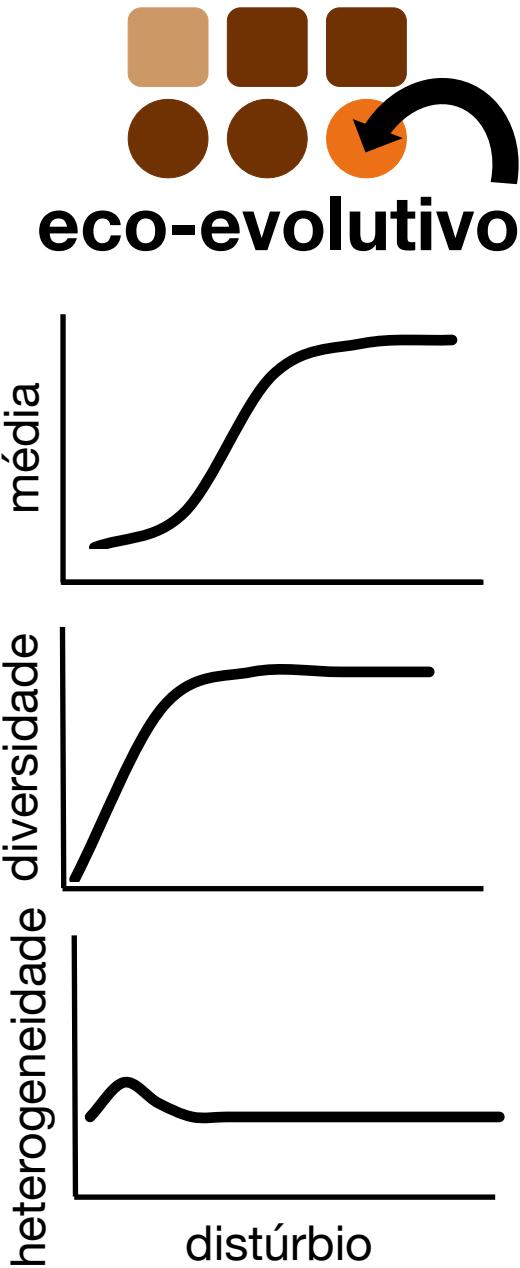
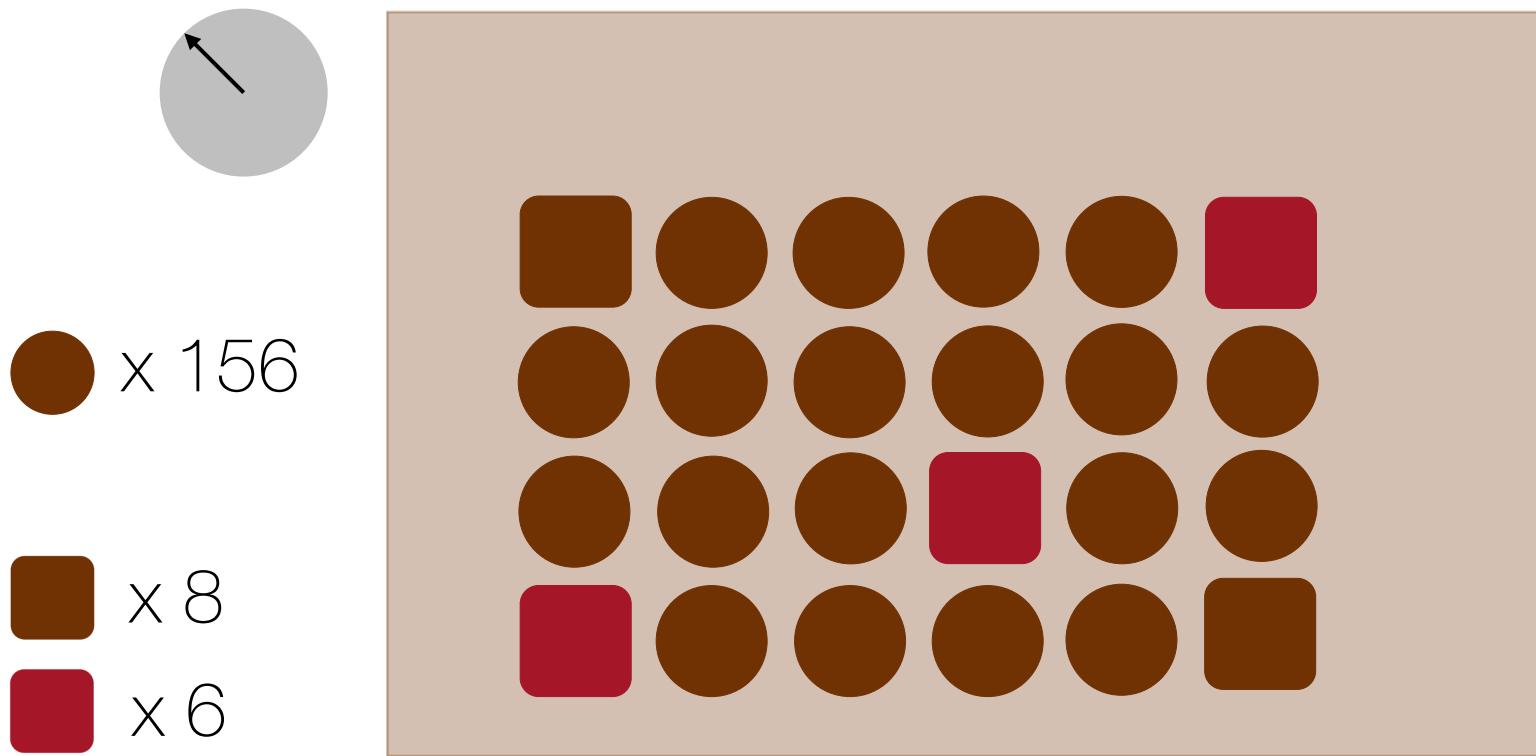
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



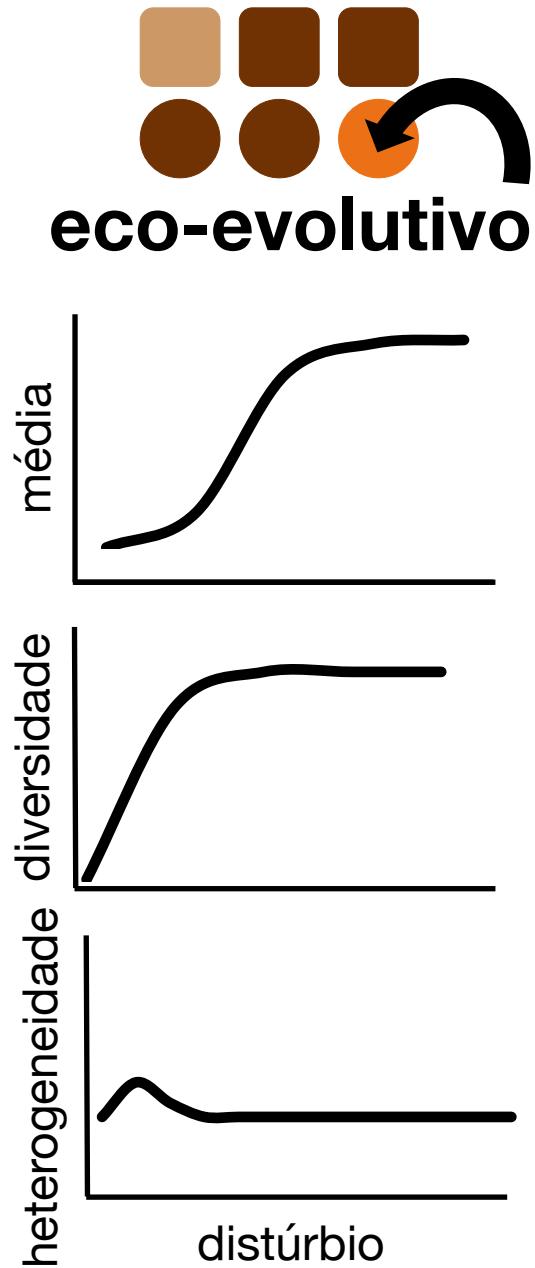
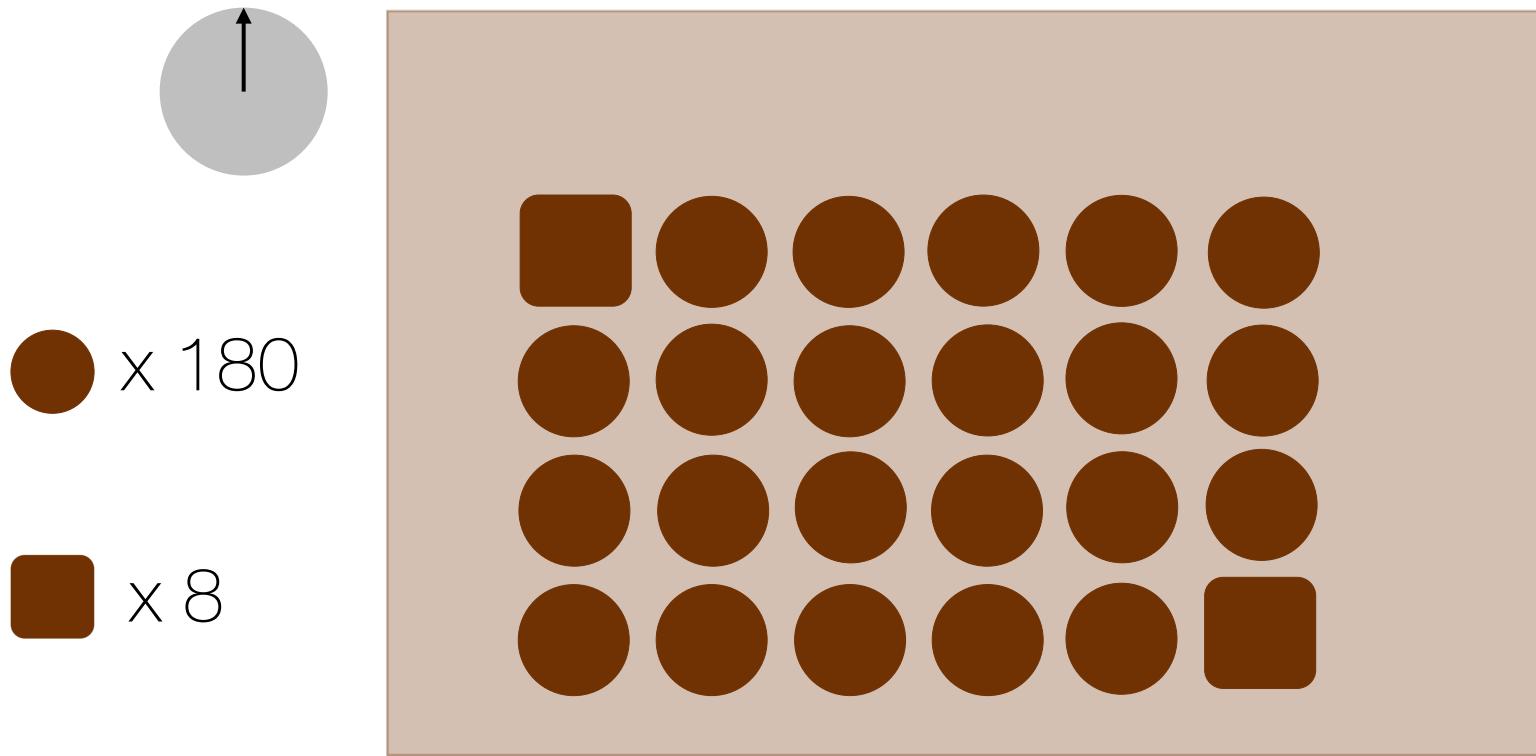
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



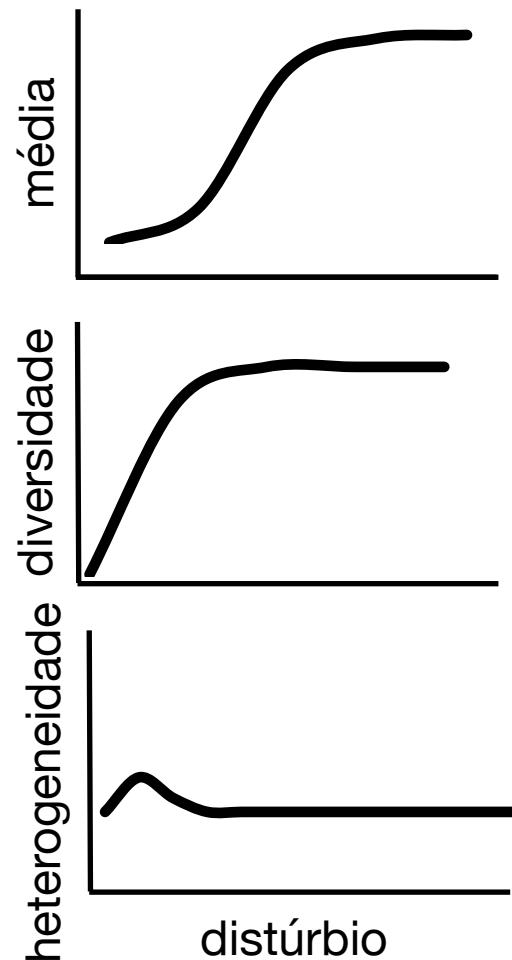
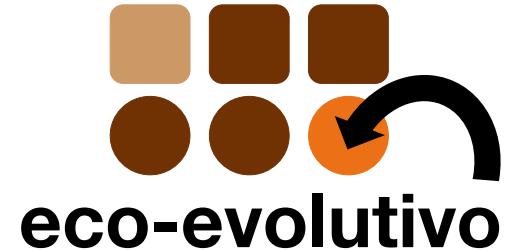
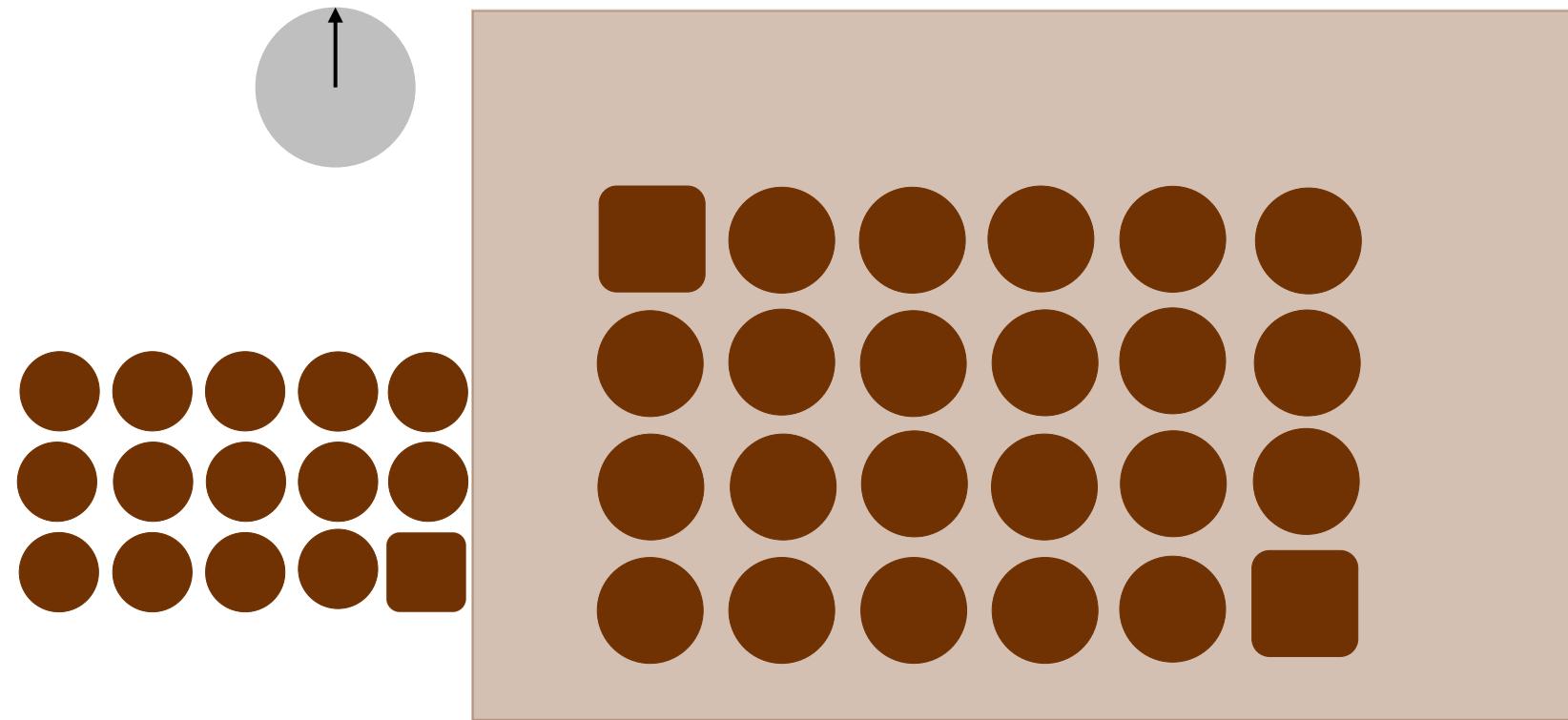
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cenário eco-evolutivo = mutação



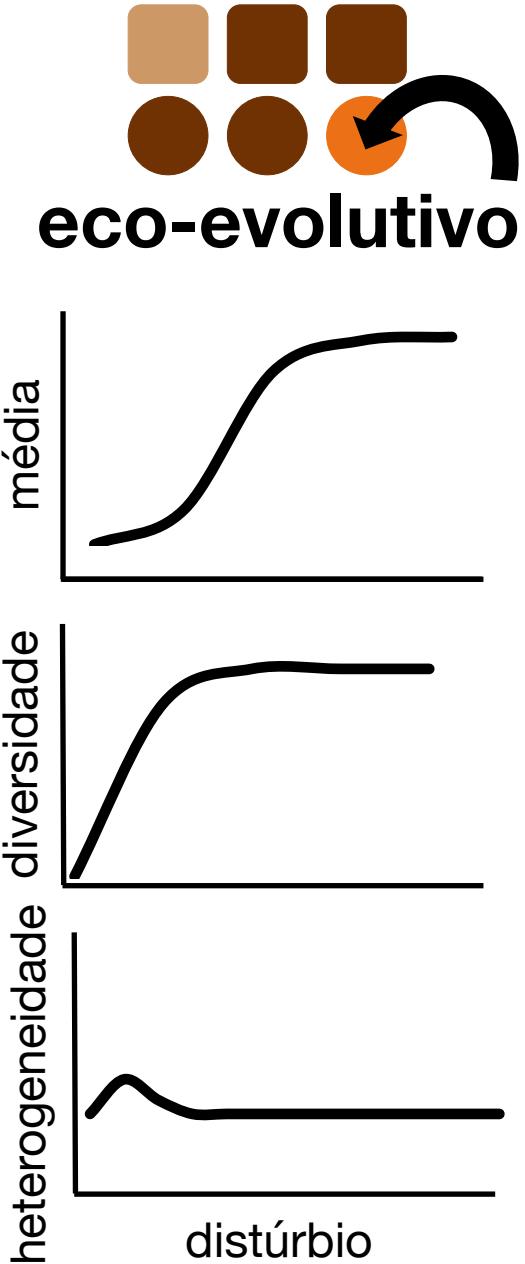
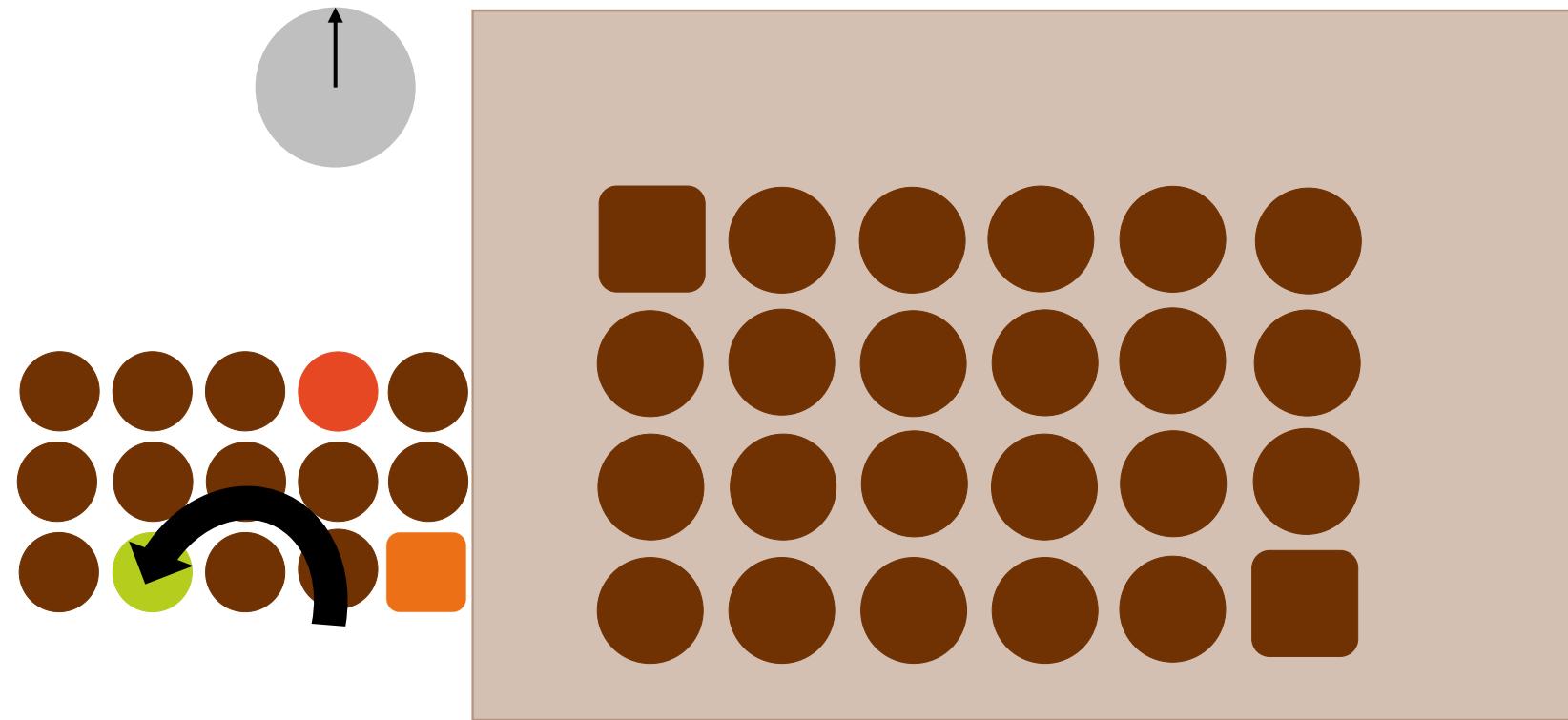
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cenário eco-evolutivo = mutação



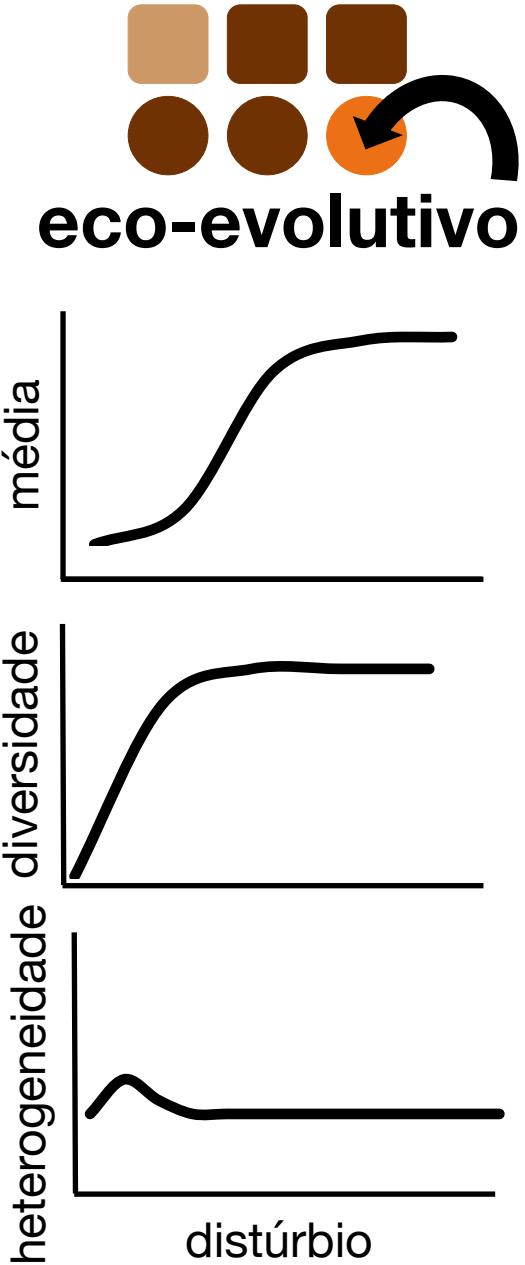
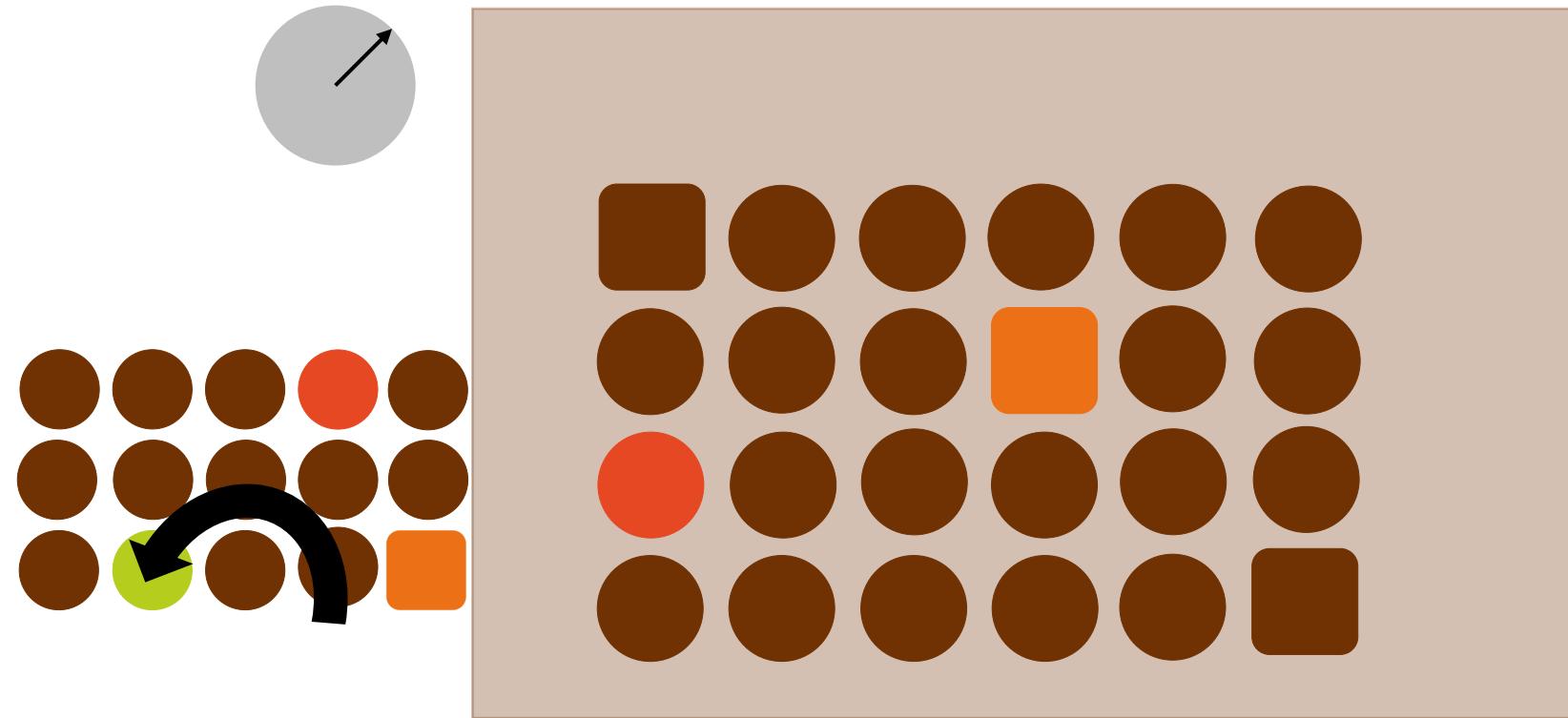
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



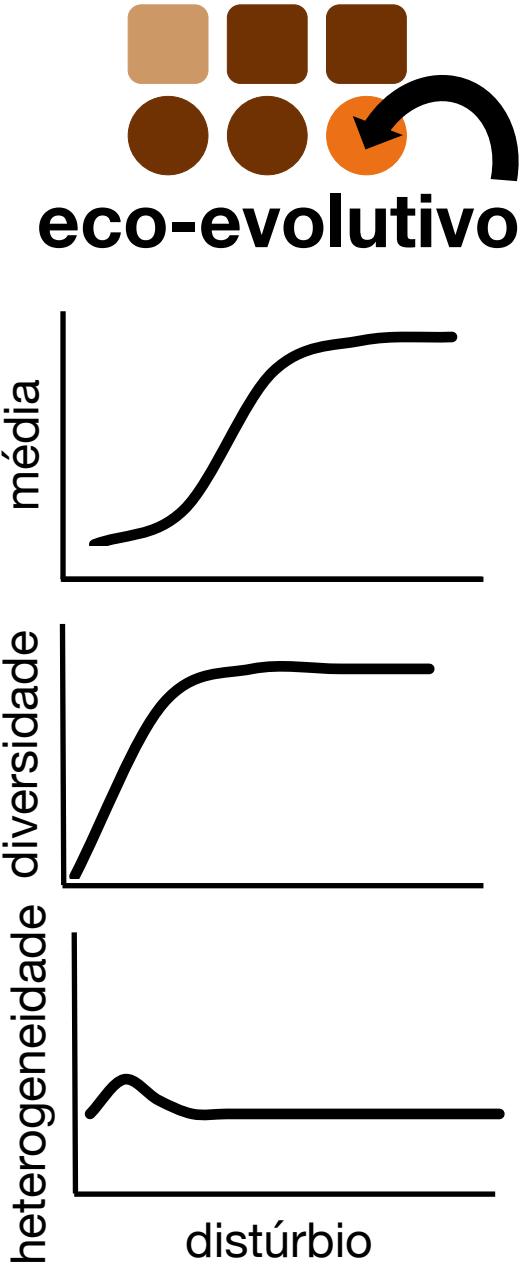
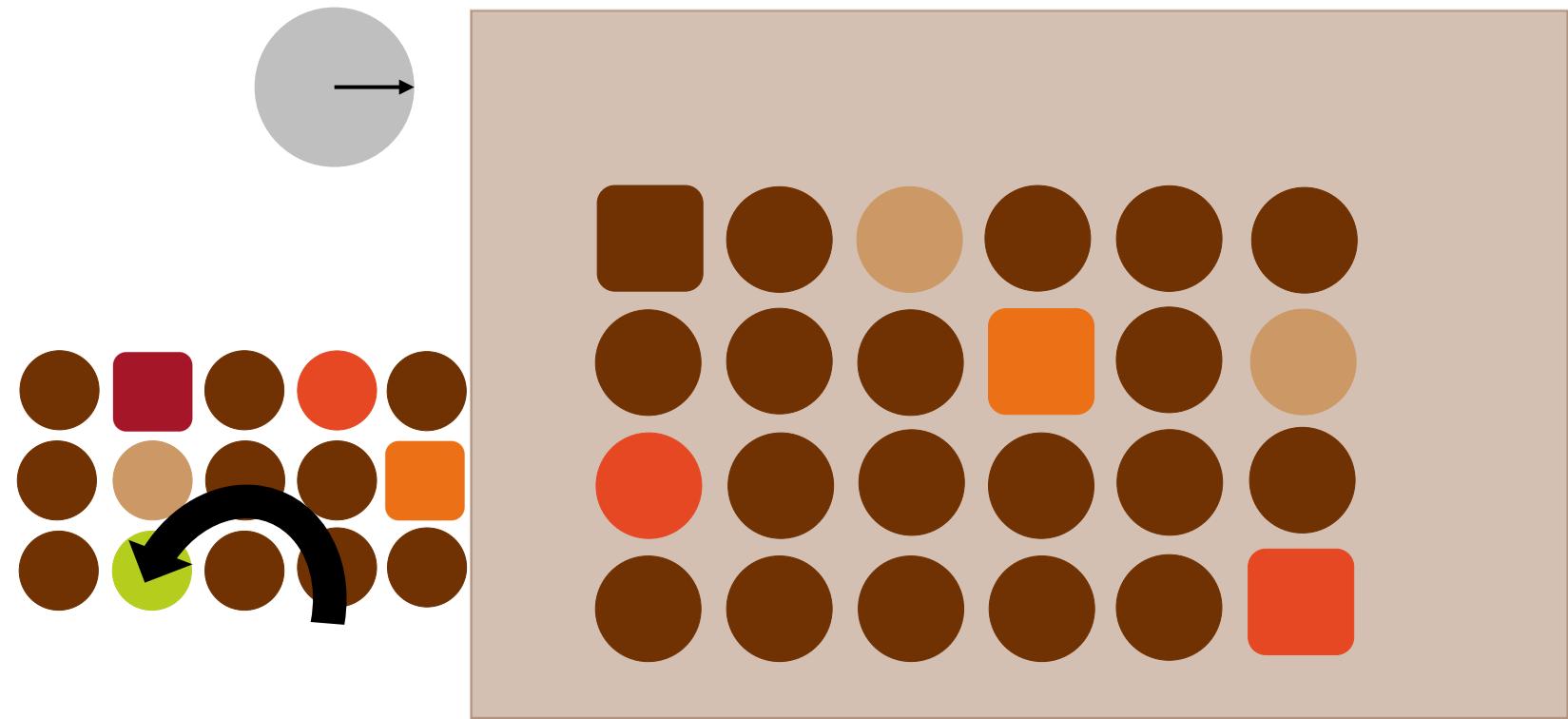
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



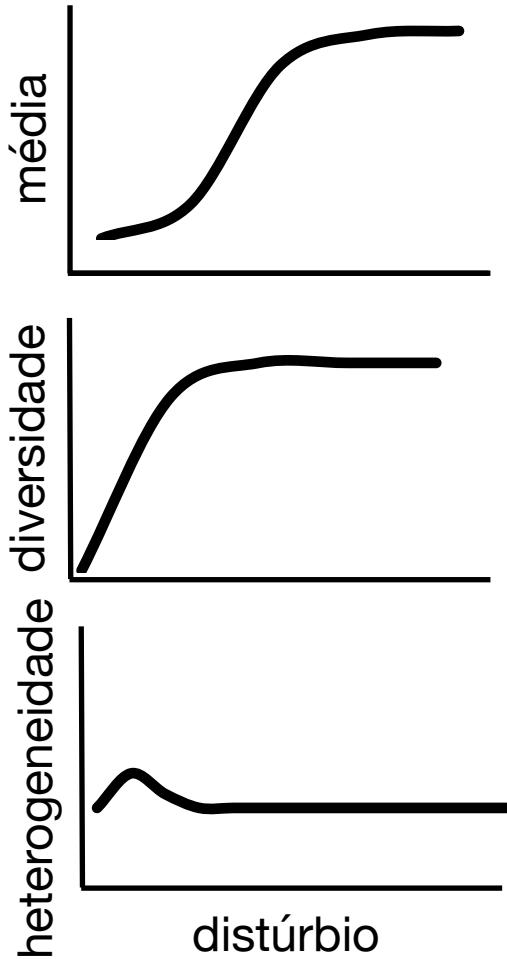
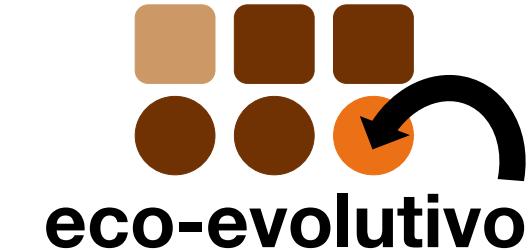
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



# coexistência de estratégias mediada pelo distúrbio

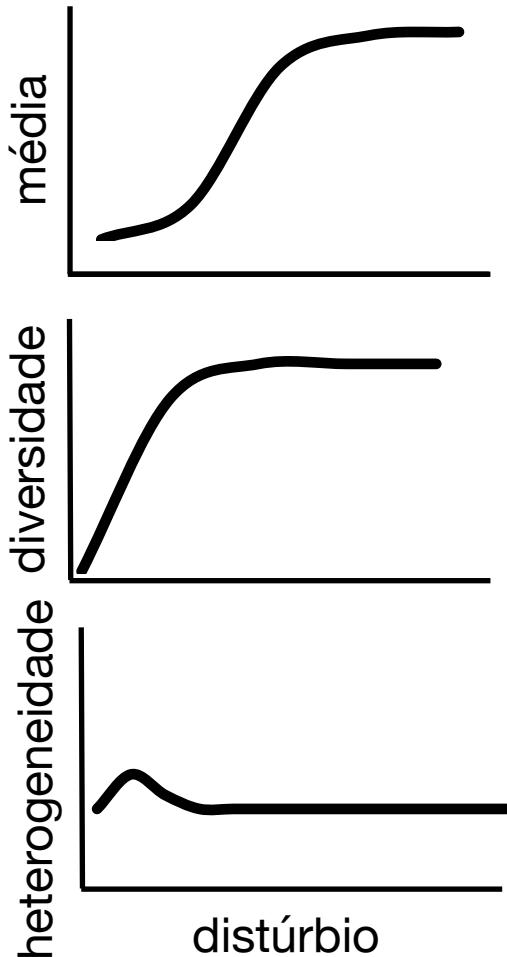
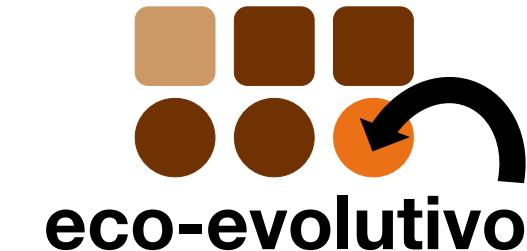
*storage effect:*



# coexistência de estratégias mediada pelo distúrbio

*storage effect:*

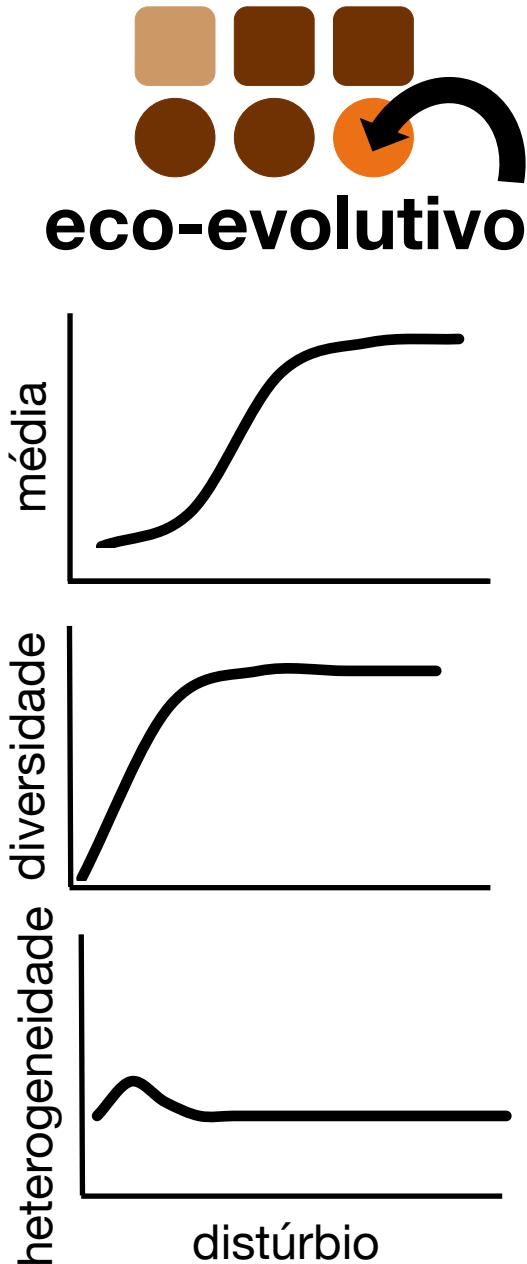
- diferença na resposta ao ambiente



# coexistência de estratégias mediada pelo distúrbio

*storage effect:*

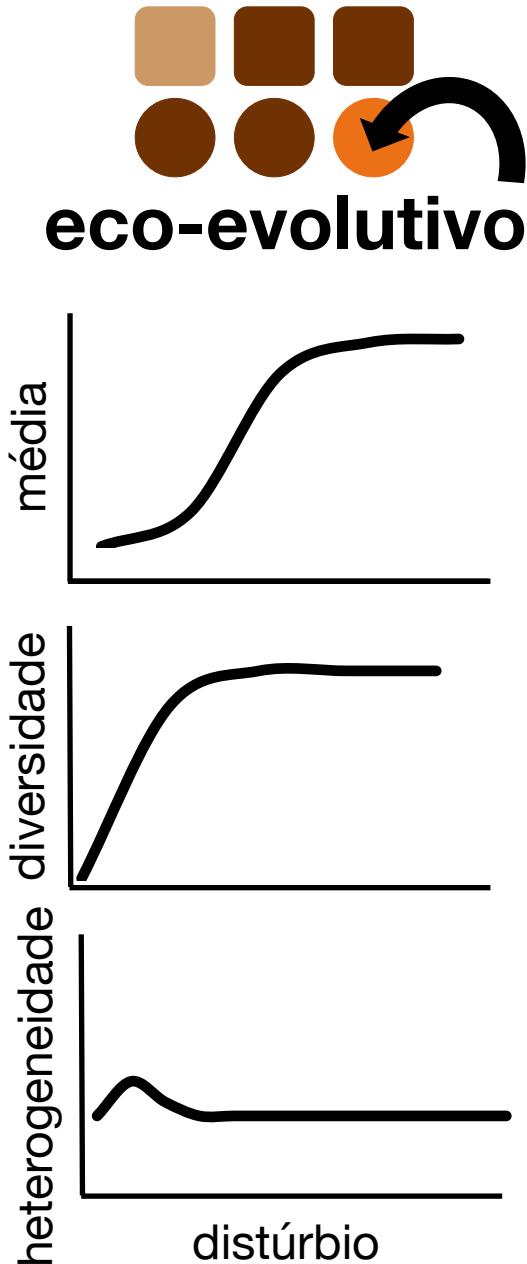
- diferença na reposita ao ambiente
- crescimento populacional tamponado



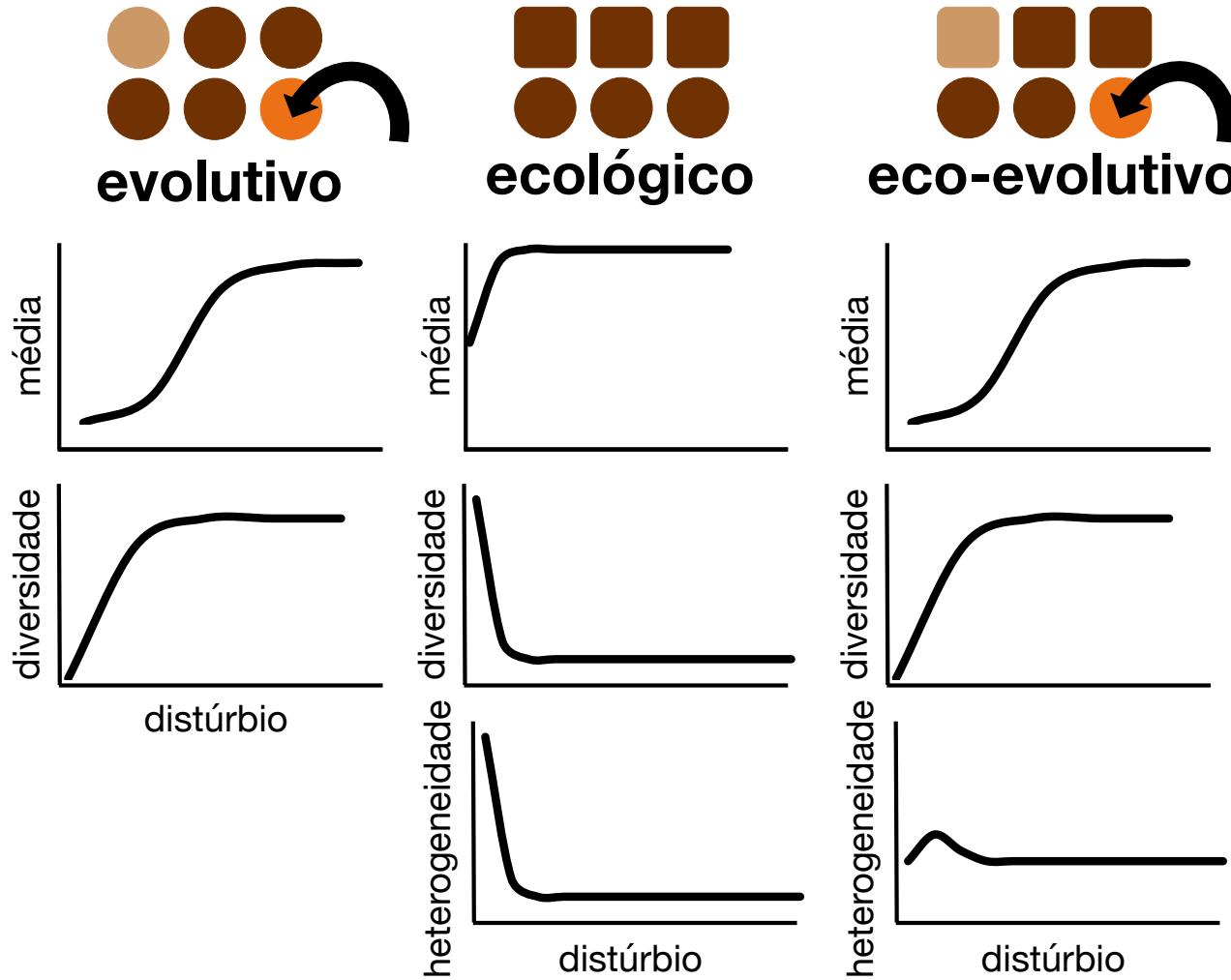
# coexistência de estratégias mediada pelo distúrbio

*storage effect:*

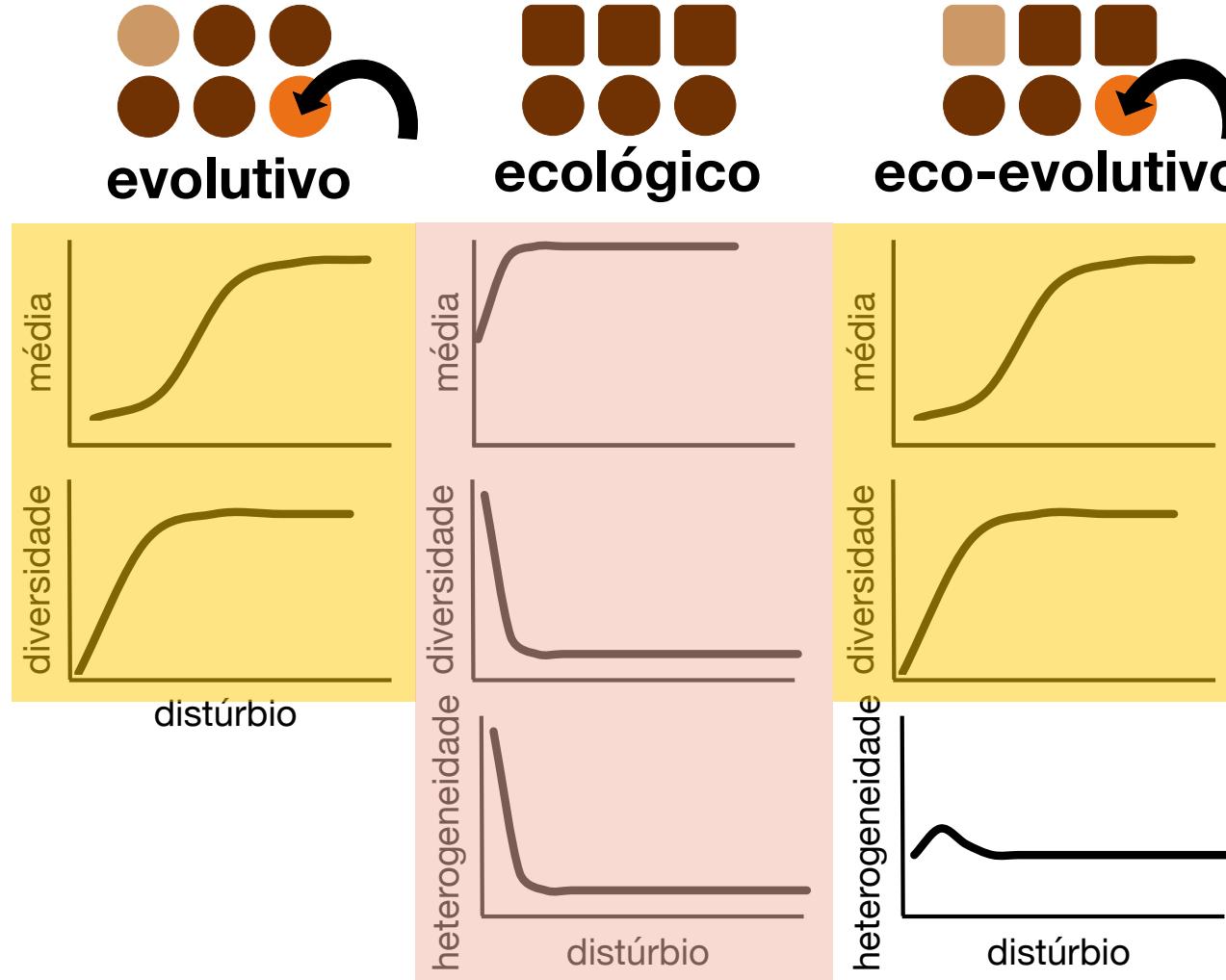
- diferença na reposta ao ambiente  
(= isolamento reprodutivo das espécies)
- crescimento populacional tamponado  
(= mutação)



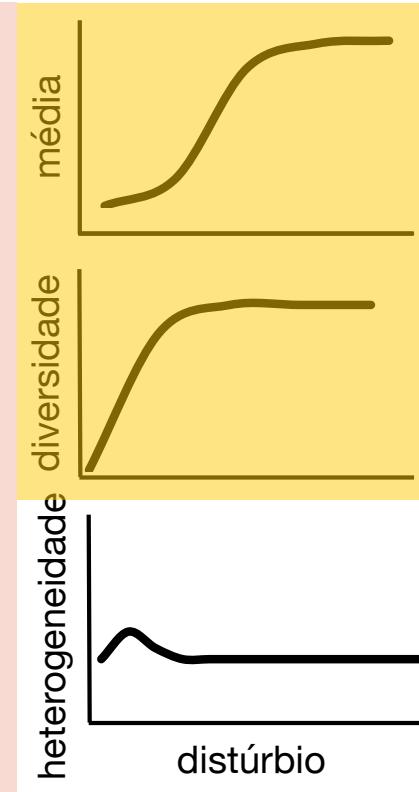
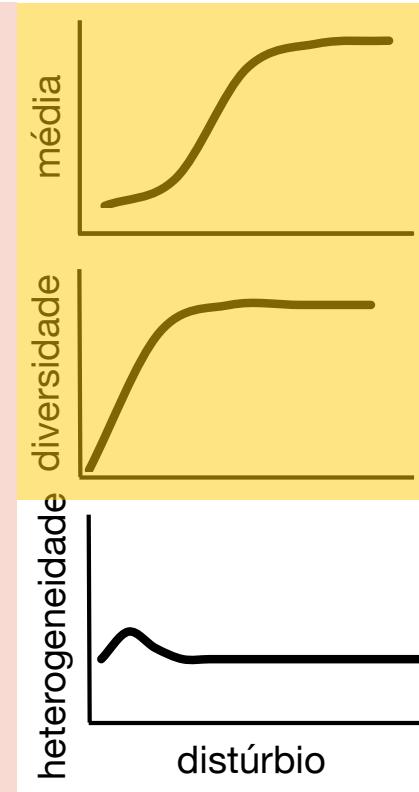
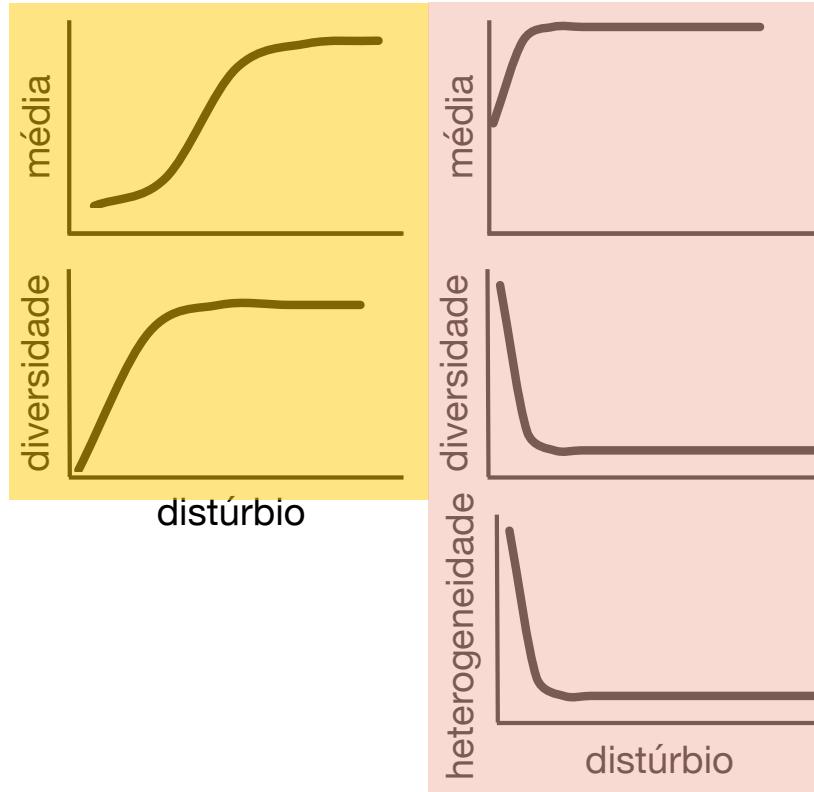
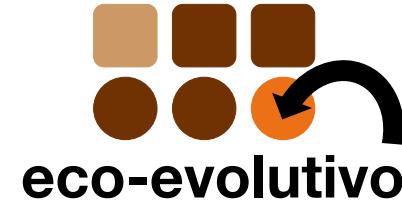
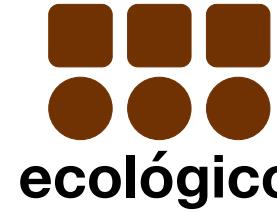
# cenários



# cenários

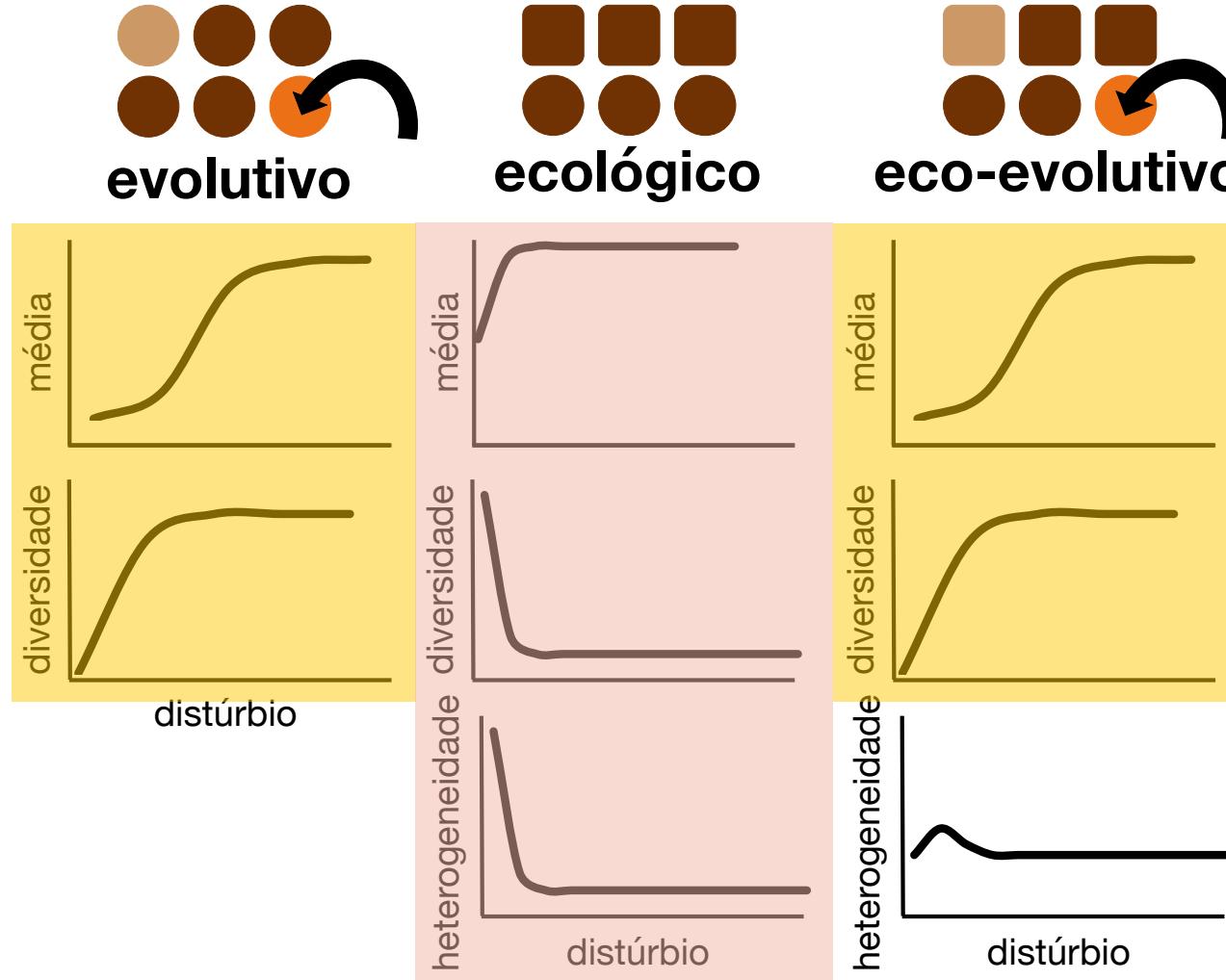


# cenários



# mutação

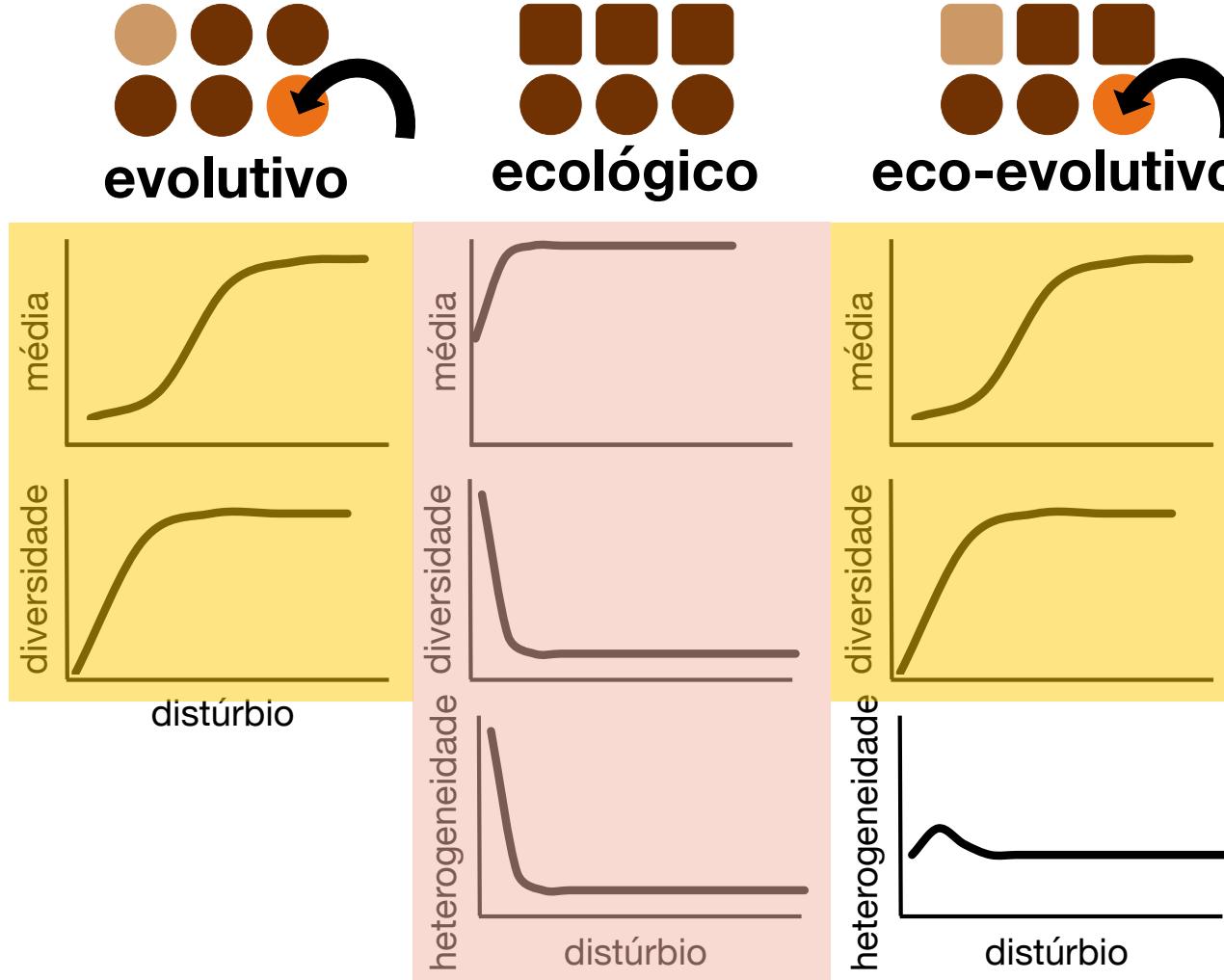
# cenários



# mutação

- é o único processo de entrada de variação (vs. exclusão competitiva e seleção e vs. deriva)

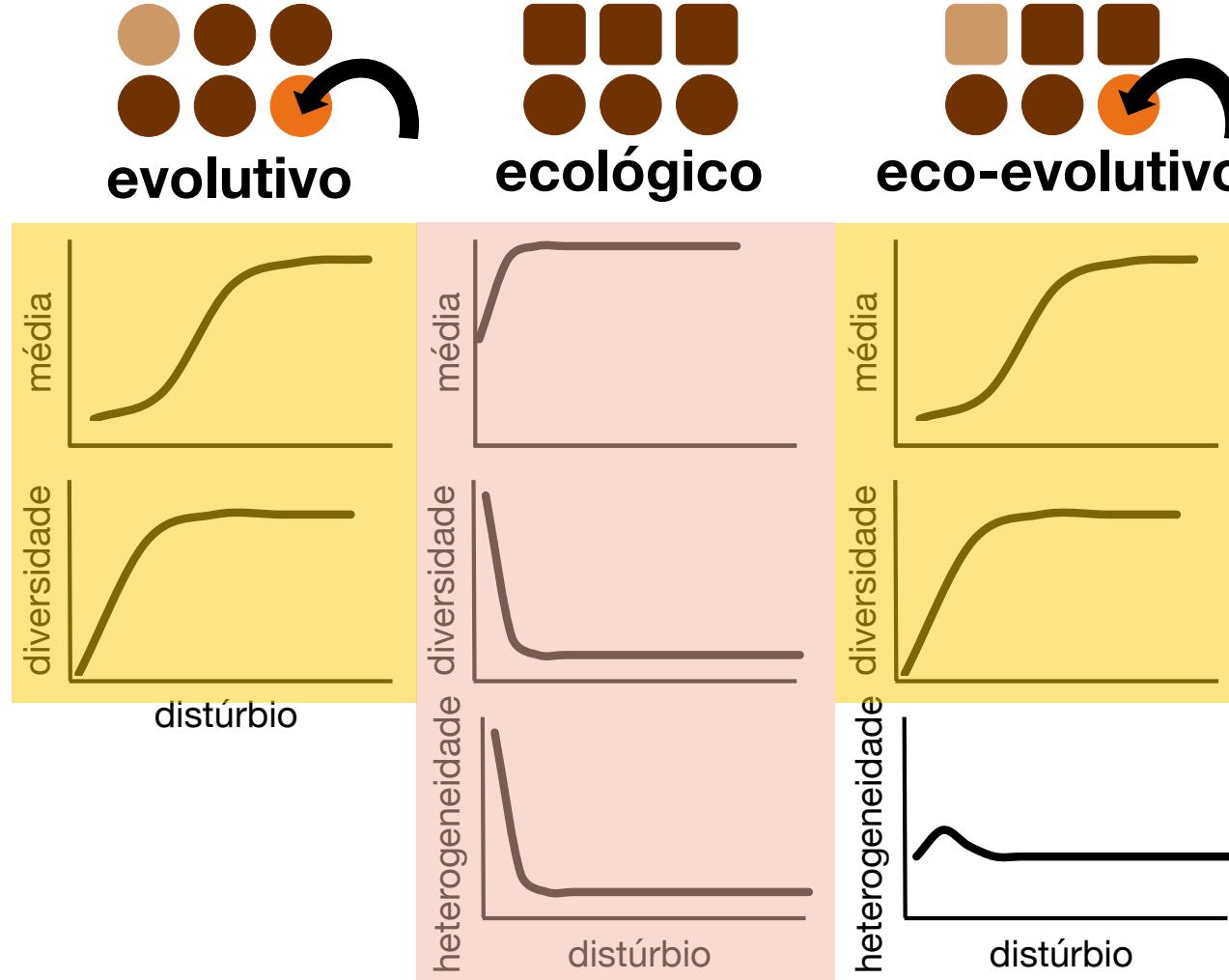
# cenários



# mutação

- é o único processo de entrada de variação (vs. exclusão competitiva e seleção e vs. deriva)
- cria novas estratégias e pode resgatar estratégias extintas ou quase extintas

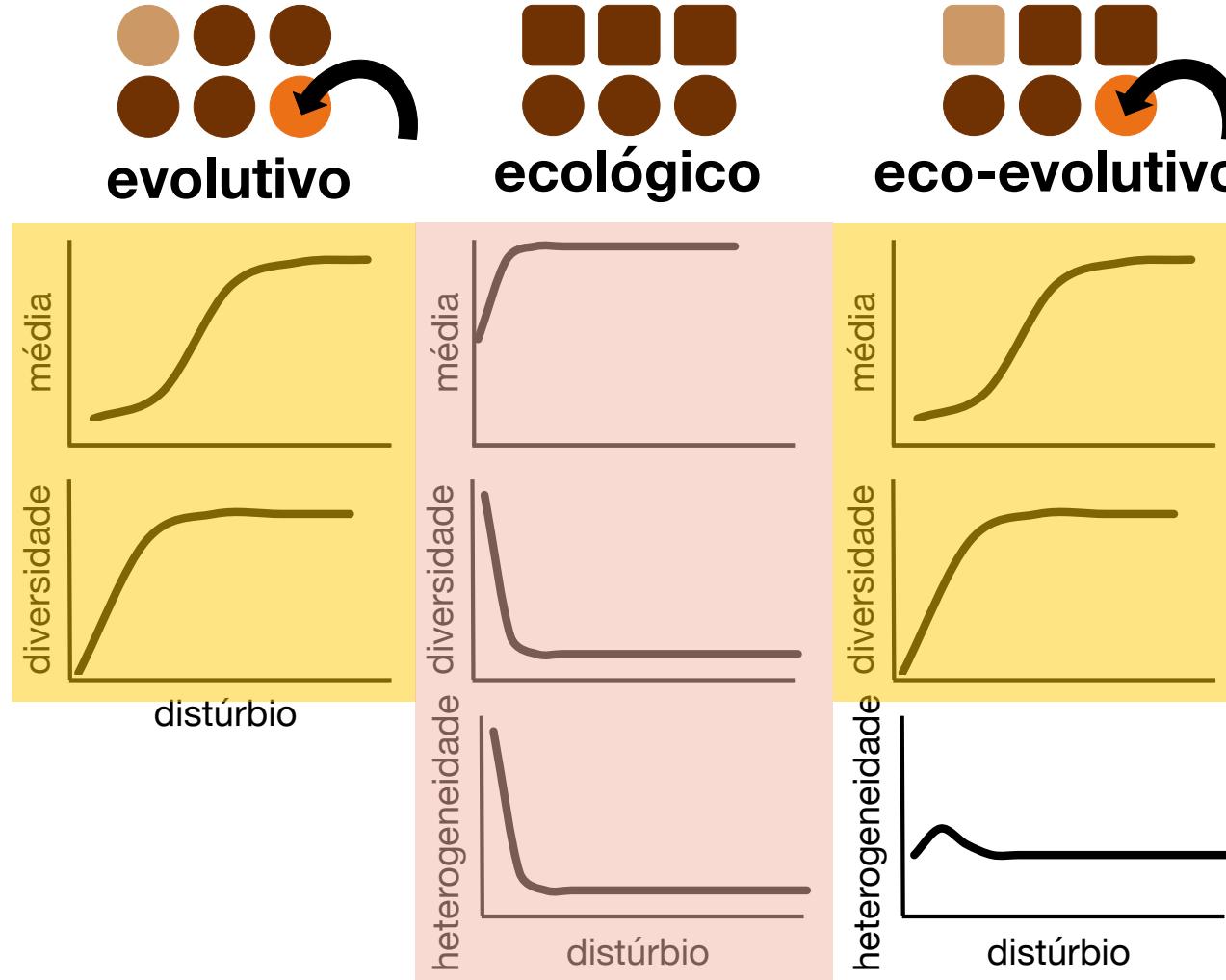
# cenários



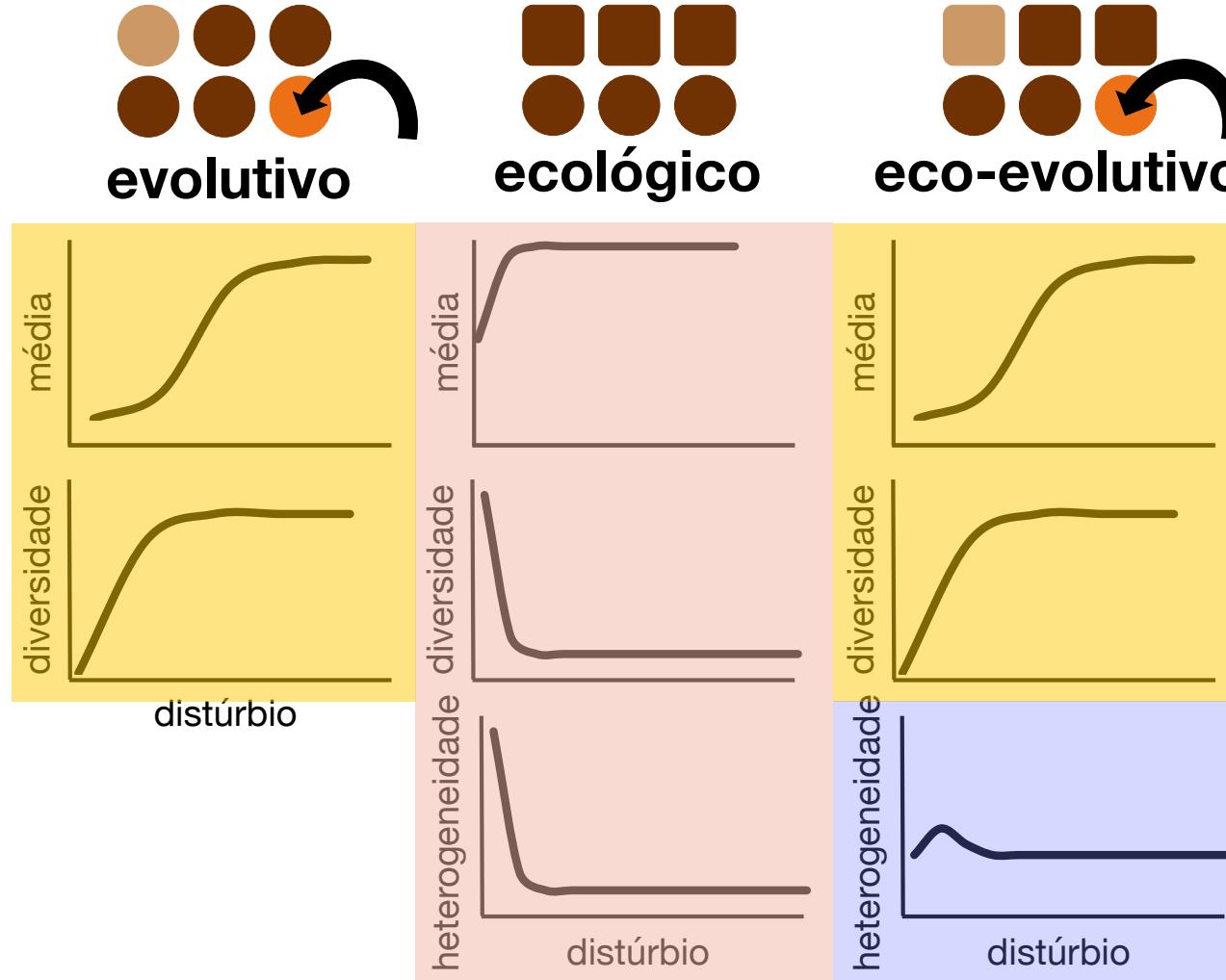
# mutação

- é o único processo de entrada de variação (vs. exclusão competitiva e seleção e vs. deriva)
- cria novas estratégias e pode resgatar estratégias extintas ou quase extintas
- permite resposta contínua às pressões variadas ao longo do tempo

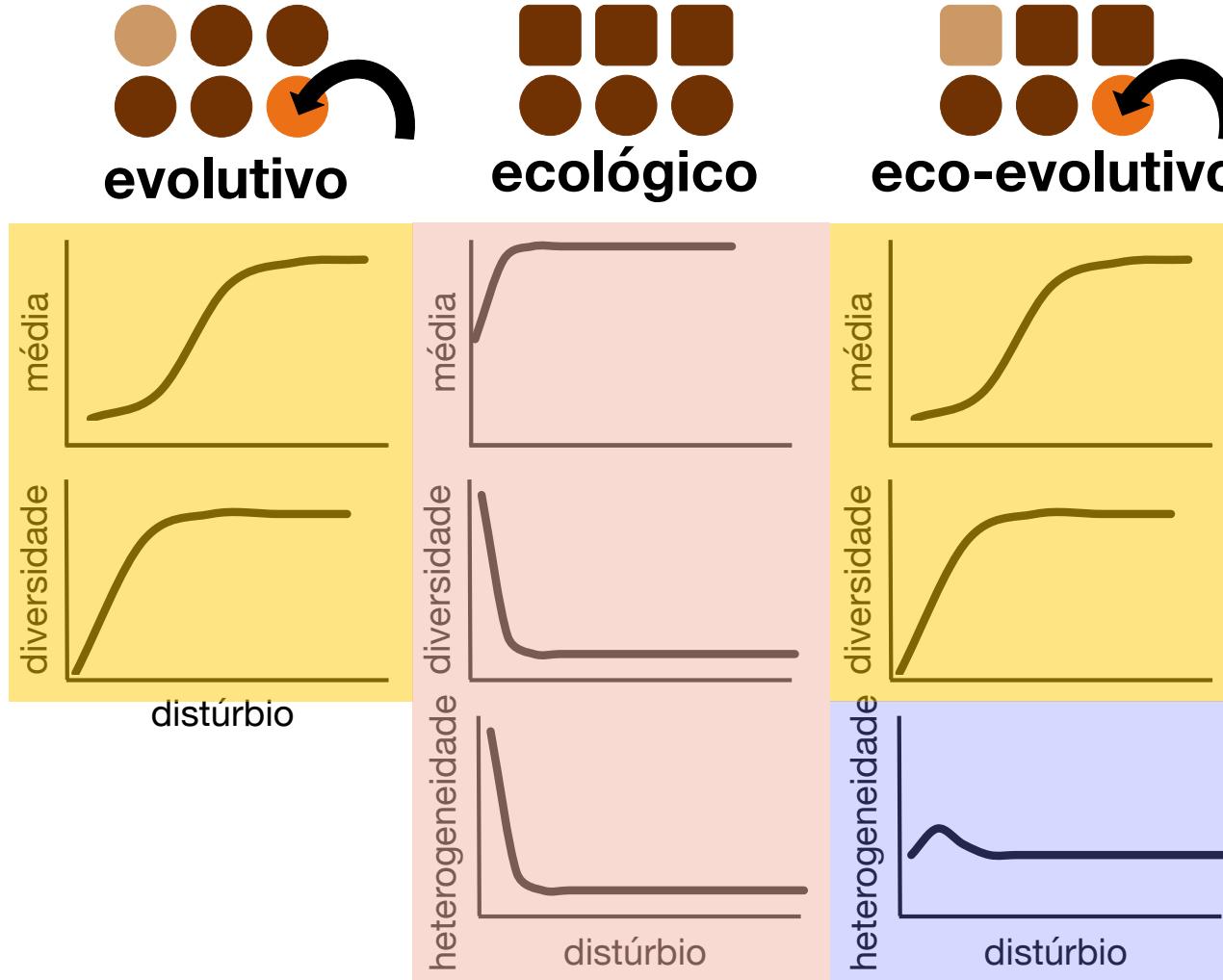
# cenários



# cenários

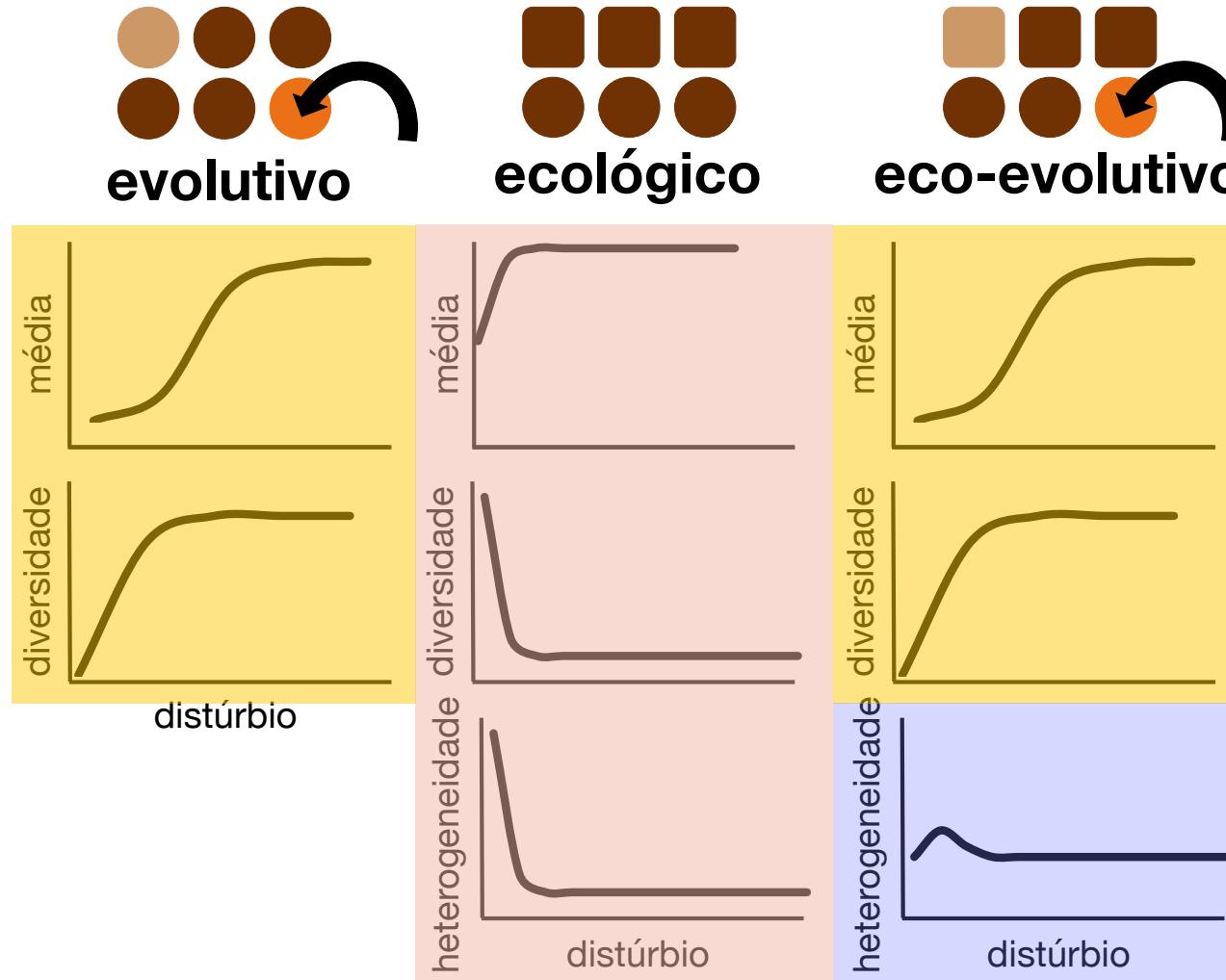


# cenários



# interação eco-evo

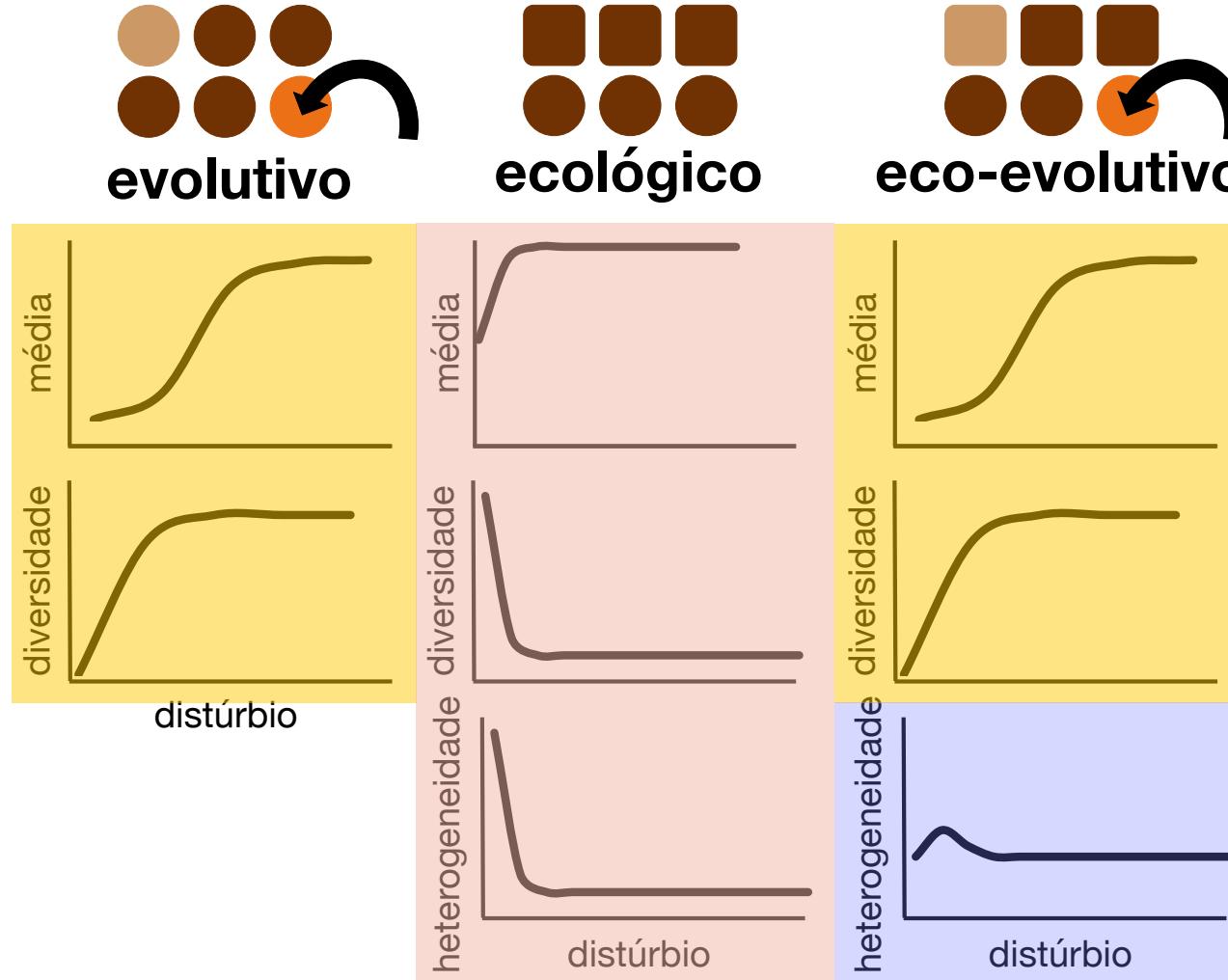
# cenários



# interação eco-evo

- entrada de variação por mutação
- competição entre linhagens isoladas (espécies diferentes)

# cenários



# interação eco-evo

- entrada de variação por mutação
- competição entre linhagens isoladas (espécies diferentes)
- coexistência de estratégias distintas mediadas por distúrbio

## Ecologia

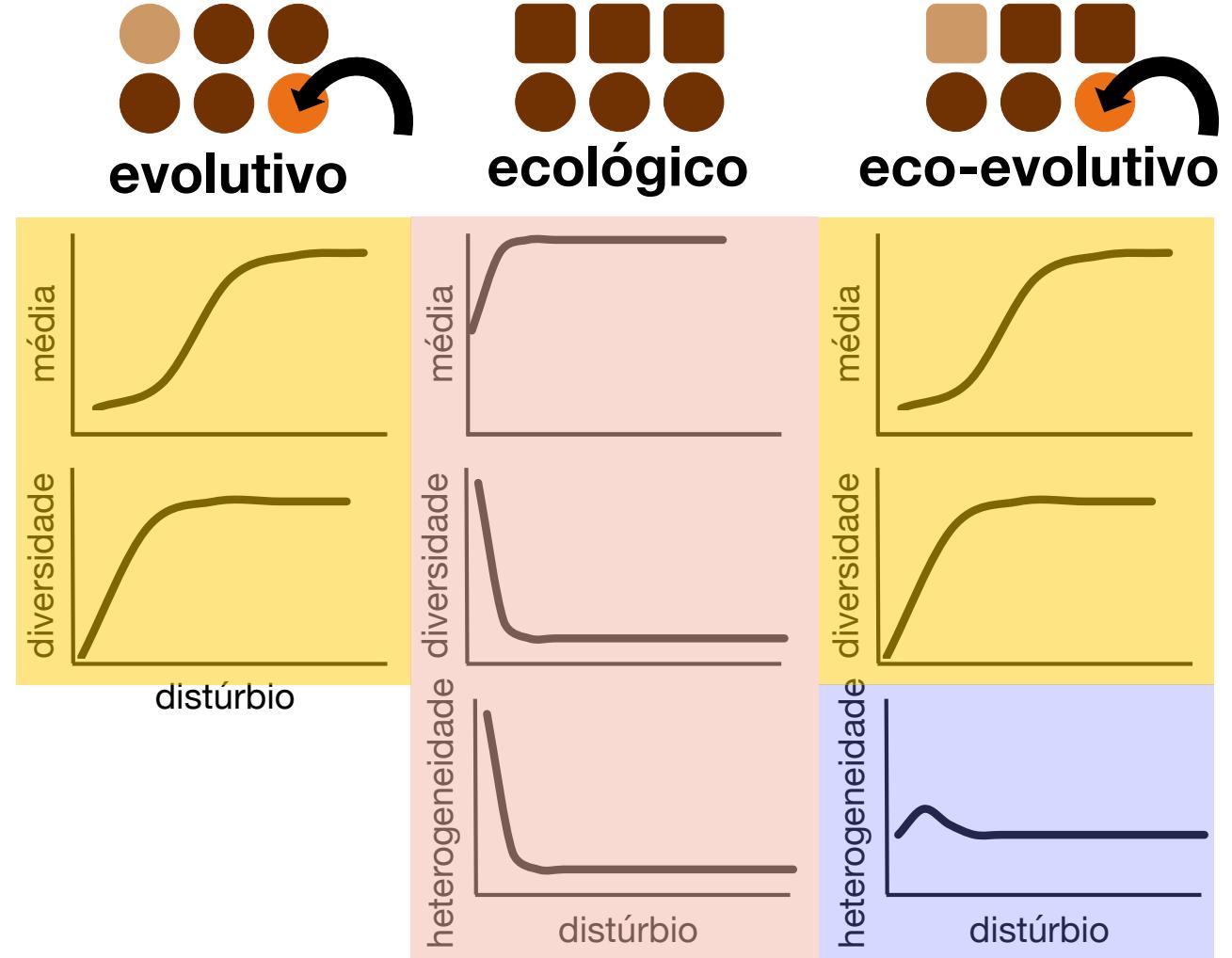
- desconsidera adaptação
- possíveis consequências:
  - gerar previsões erradas quanto à diversidade
  - relacionar padrões a processos equivocados

ainda assim...

## Ecologia

- desconsidera adaptação
- possíveis consequências:
  - gerar previsões erradas quanto à diversidade
  - relacionar padrões a processos equivocados

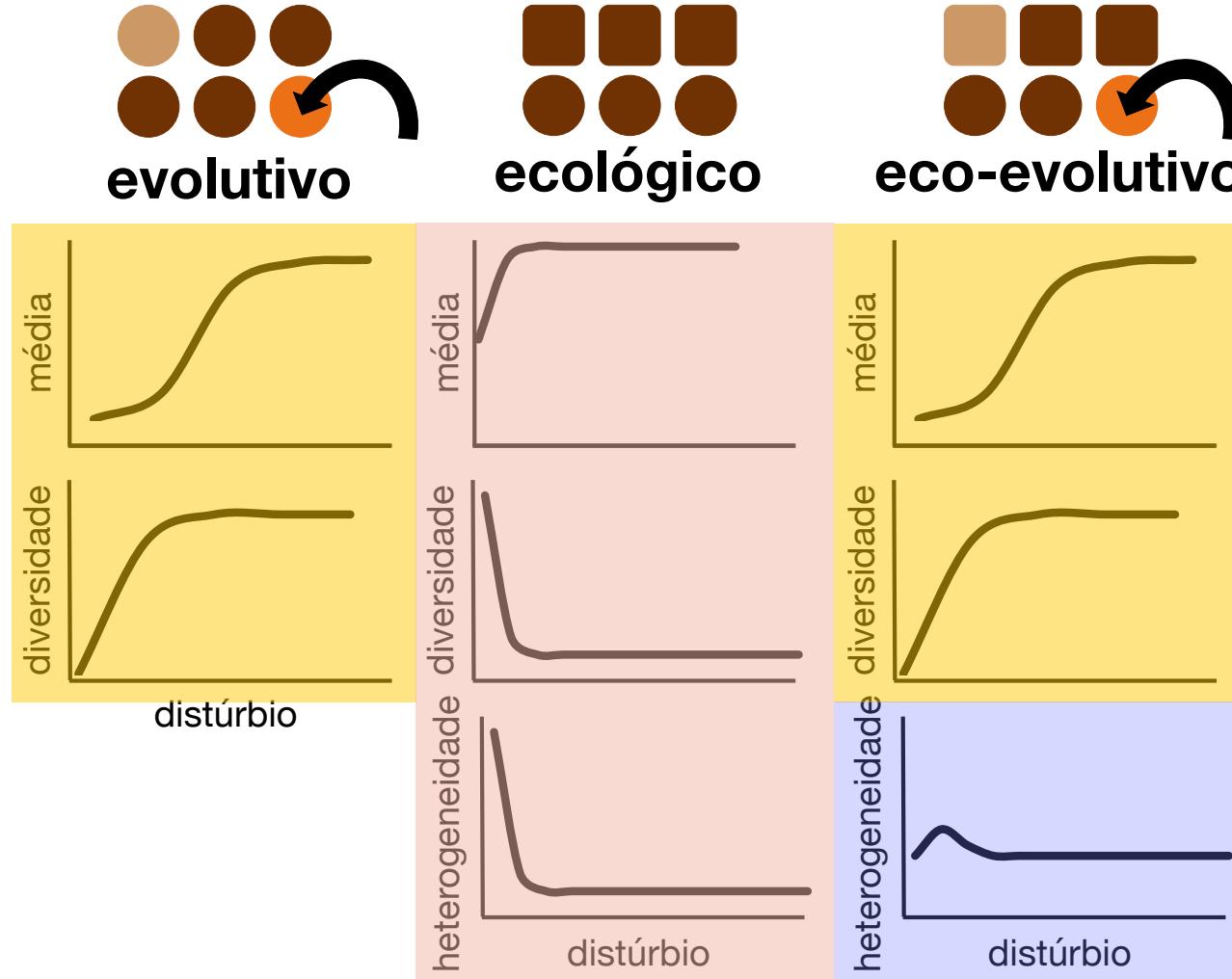
## cenários



## Biologia Evolutiva

- desconsidera contexto multiespecífico
- possíveis consequências:
  - não acessar padrões que emergem em escalas maiores
  - desconsiderar a importância de interações interespecíficas

## cenários



## Biologia Evolutiva

- desconsidera contexto multiespecífico
- possíveis consequências:
  - não acessar padrões que emergem em escalas maiores
  - desconsiderar a importância de interações interespecíficas

# conclusões

- 
- 
-

# conclusões

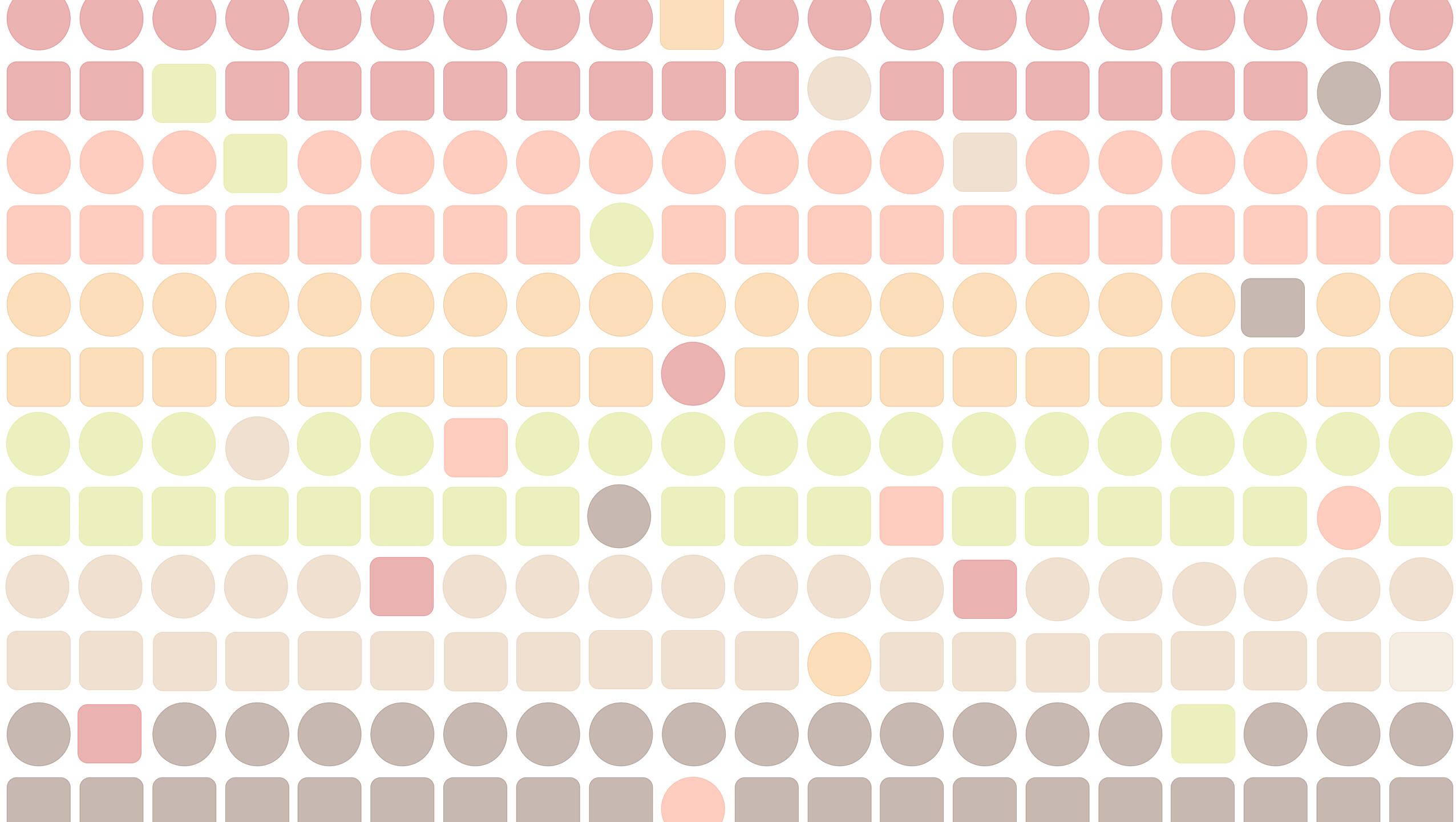
- efeito do **distúrbio** é diferente comparando dinâmicas **ecológicas** e **evolutivas**
- 
-

# conclusões

- efeito do **distúrbio** é diferente comparando dinâmicas **ecológicas** e **evolutivas**
- há padrões que emergem apenas em dinâmicas **eco-evolutivas**
-

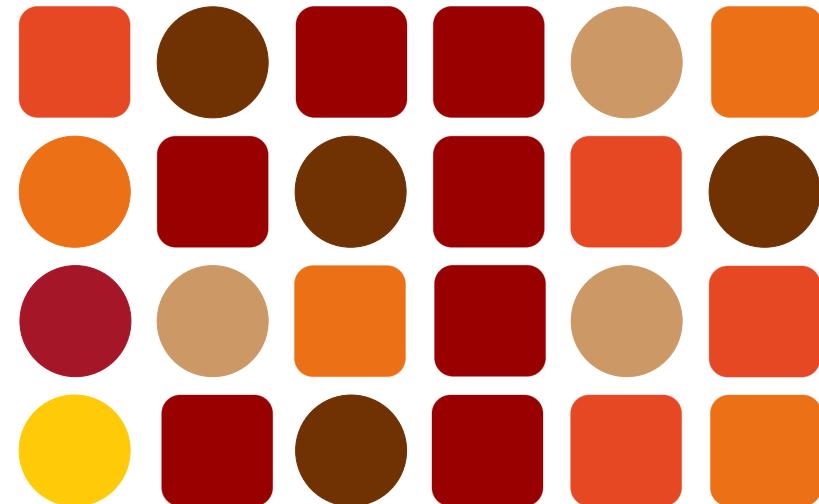
# conclusões

- efeito do **distúrbio** é diferente comparando dinâmicas **ecológicas** e **evolutivas**
- há padrões que emergem apenas em dinâmicas **eco-evolutivas**
- o **distúrbio** deve ser estudado em dinâmicas **eco-evolutivas**



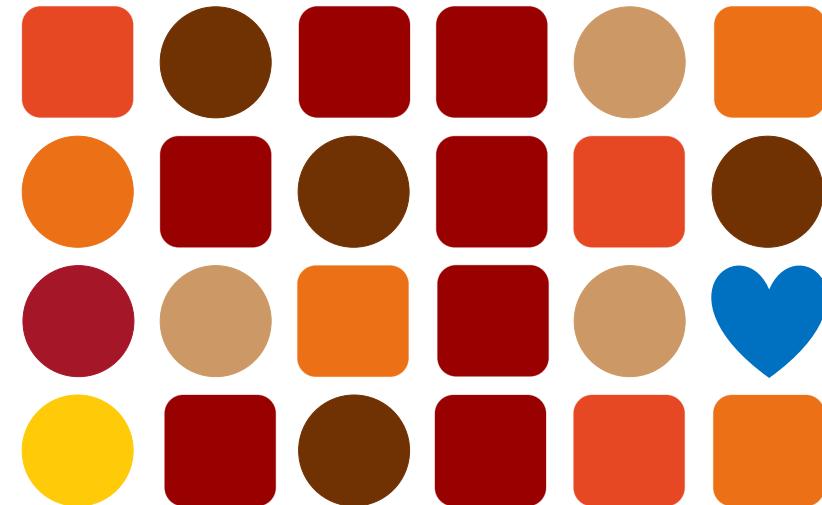
agradecimentos ❤️❤️❤️

# obrigada!



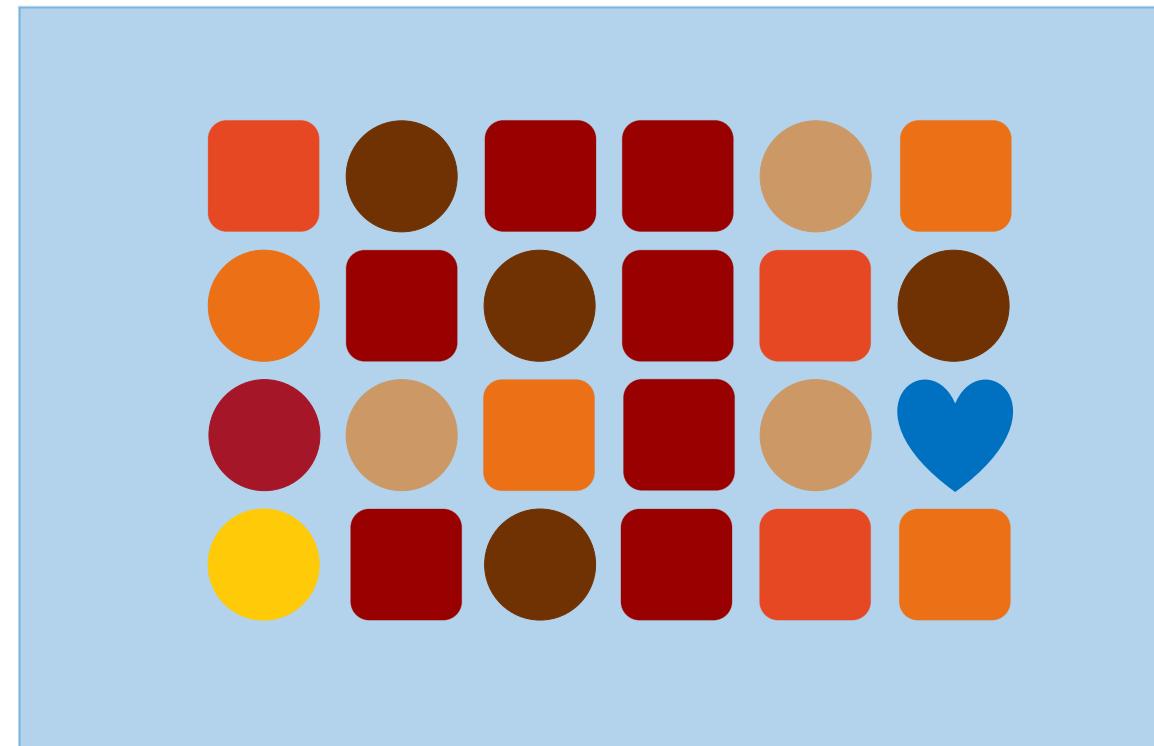
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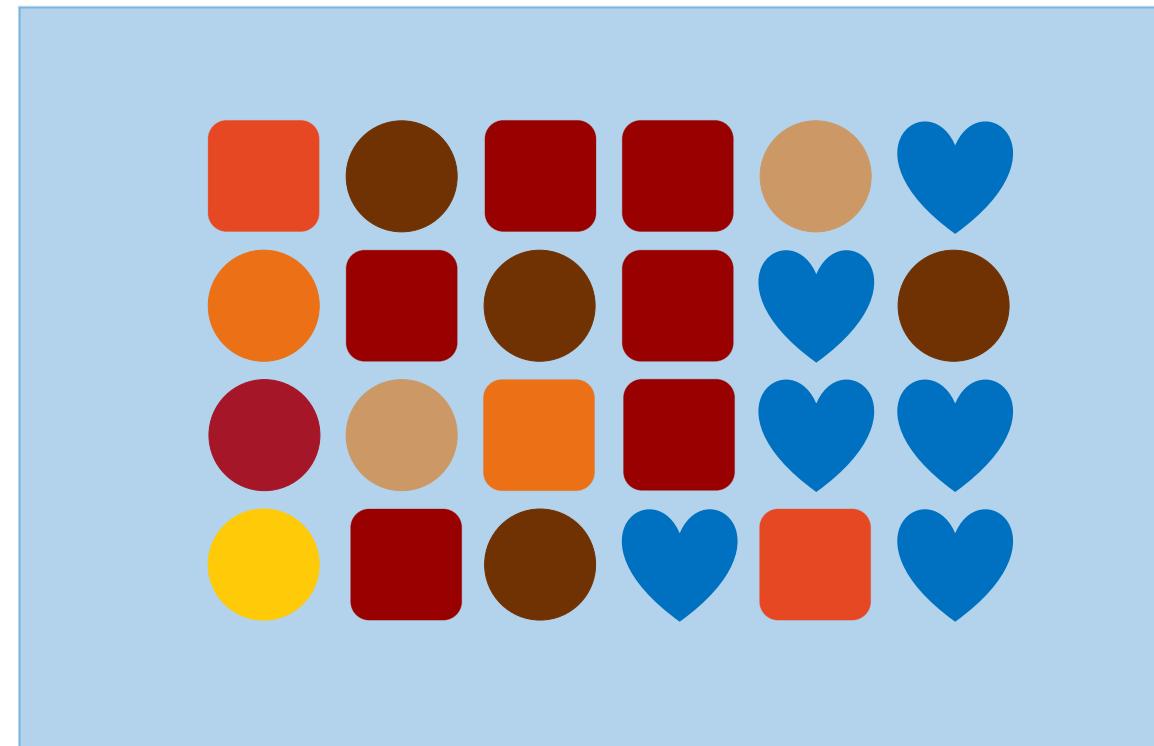
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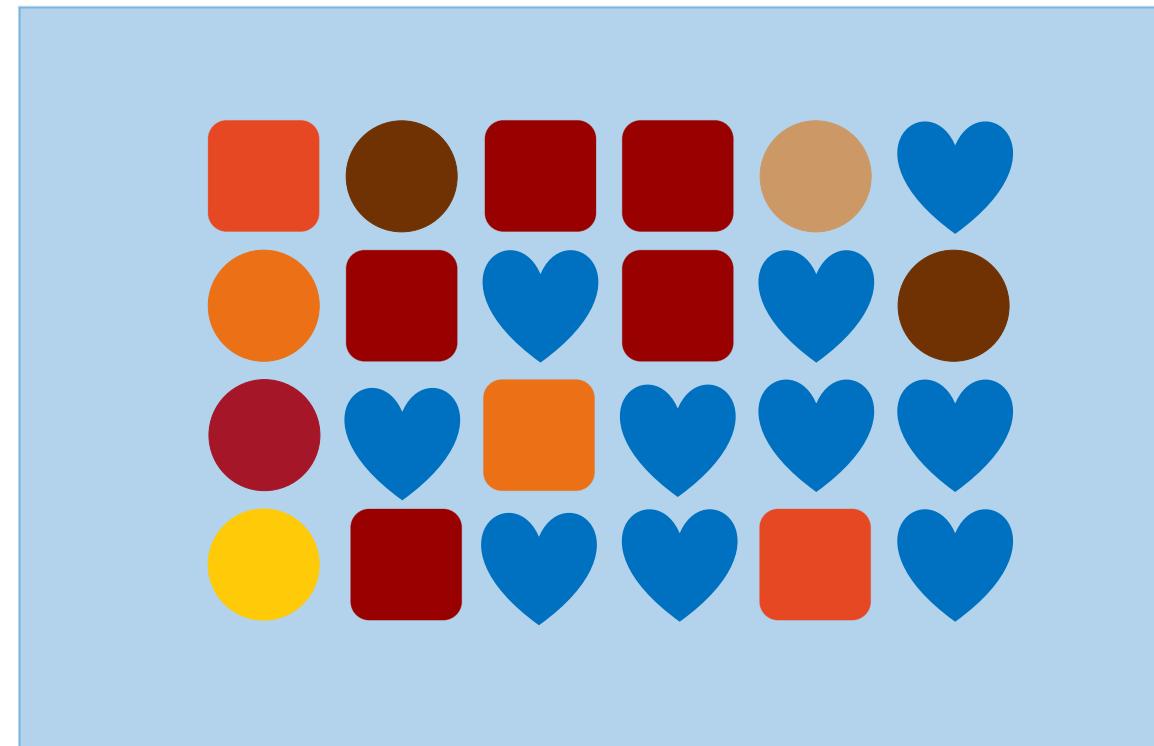
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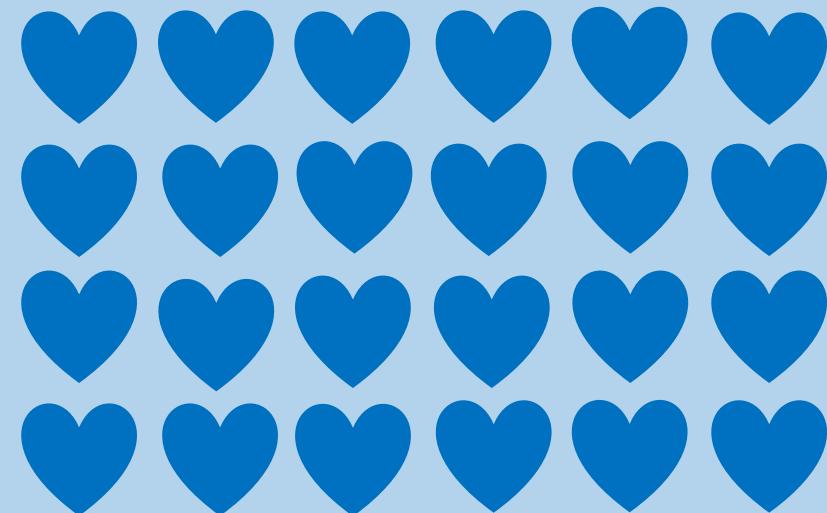
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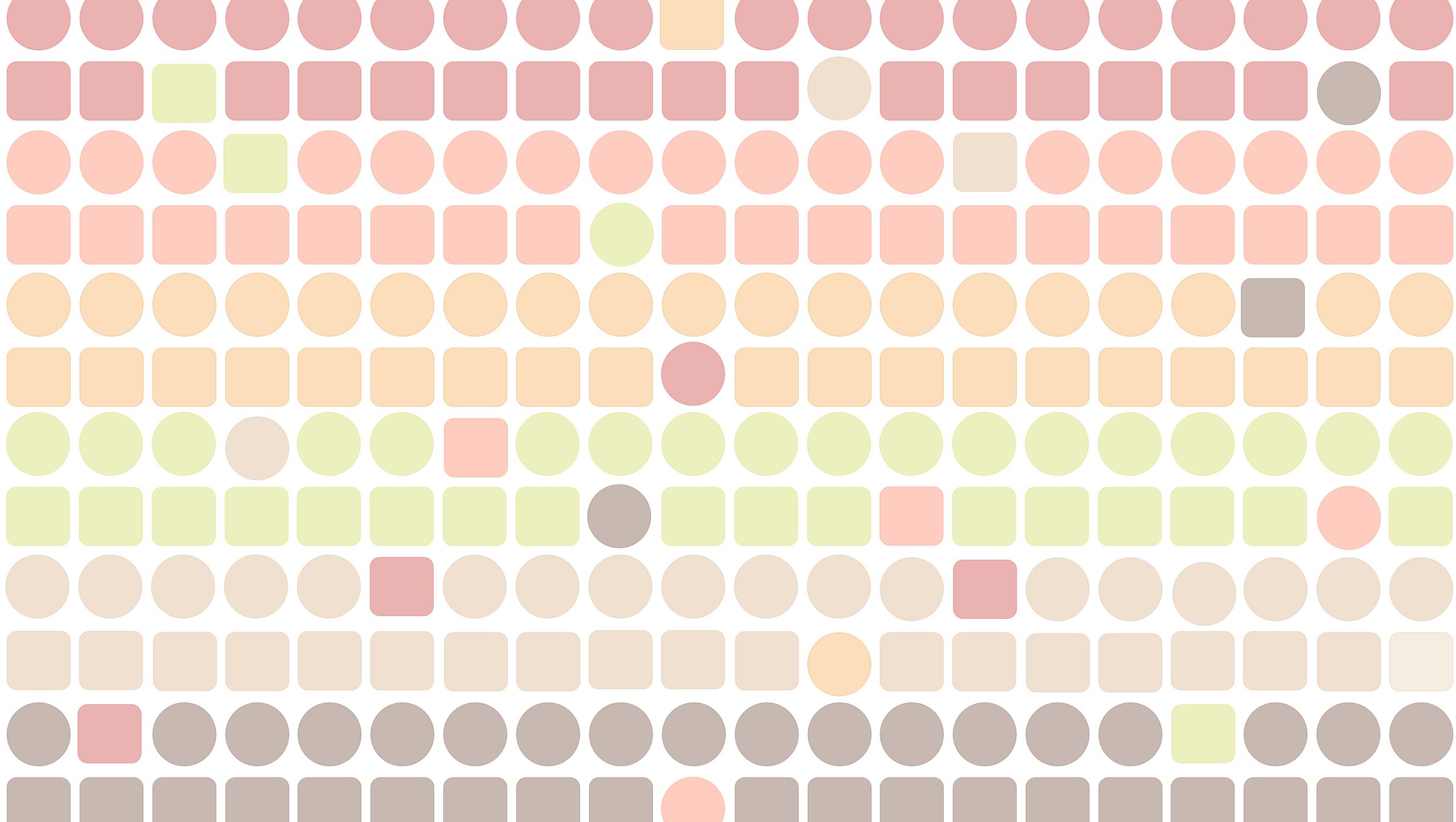
# obrigada!



agradecimentos ❤️❤️❤️

**obrigada!**

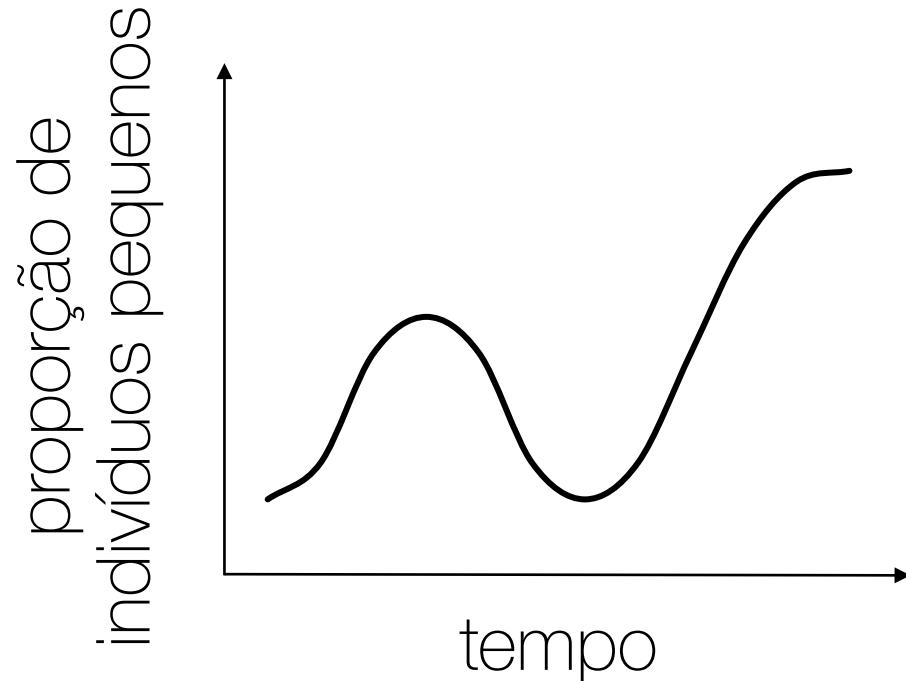




# atributo

dinâmica  
evolutiva

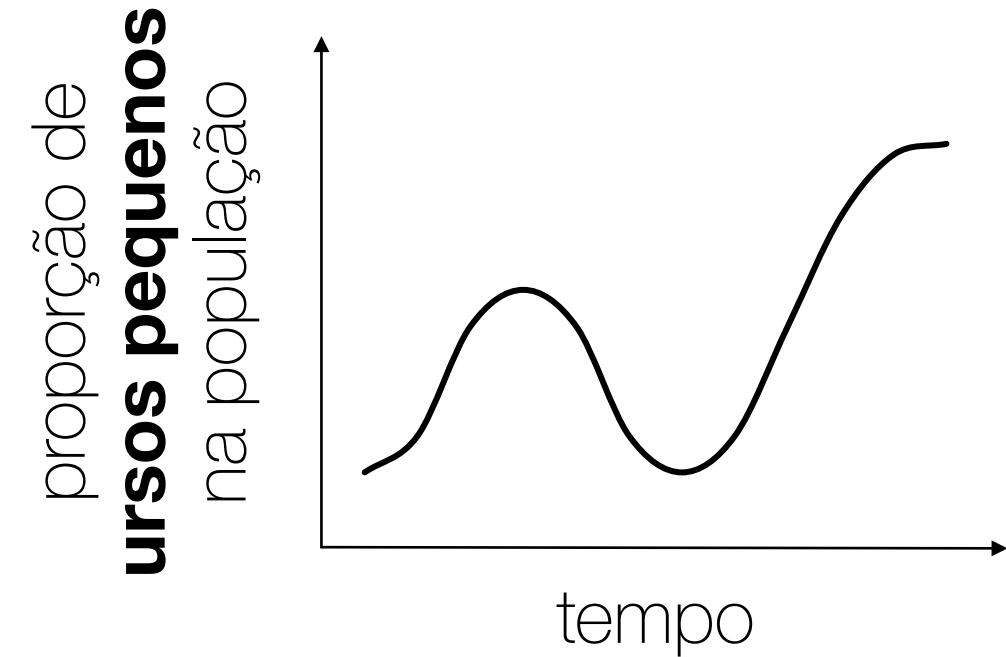
dinâmica  
ecológica



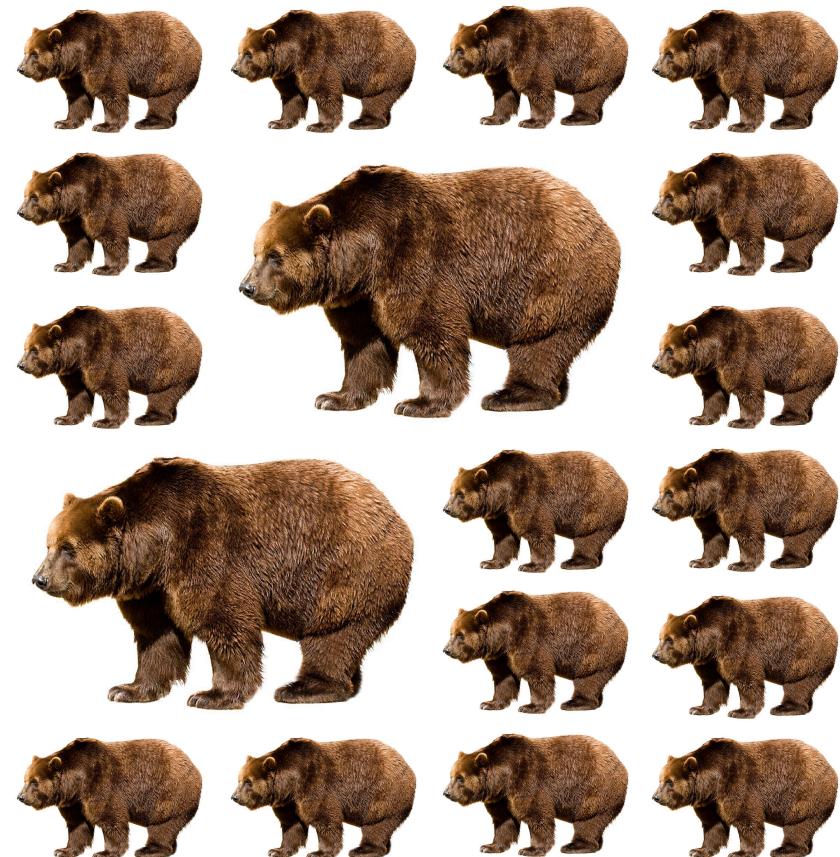
# atributo

dinâmica  
evolutiva

dinâmica  
ecológica



dinâmica  
evolutiva



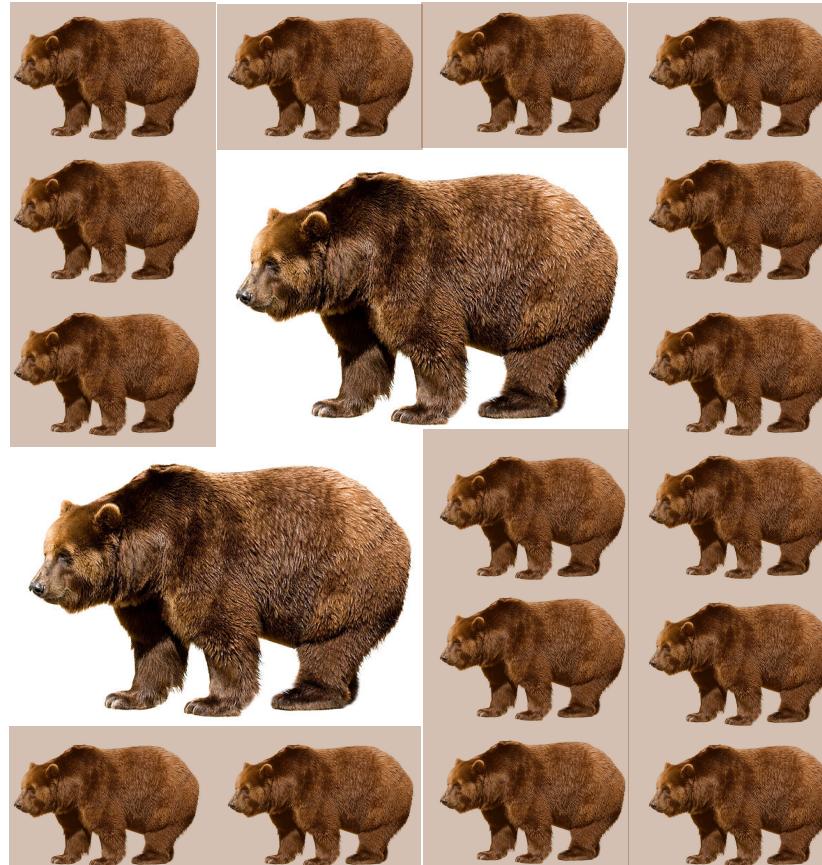
# atributo

dinâmica  
ecológica

dinâmica  
evolutiva

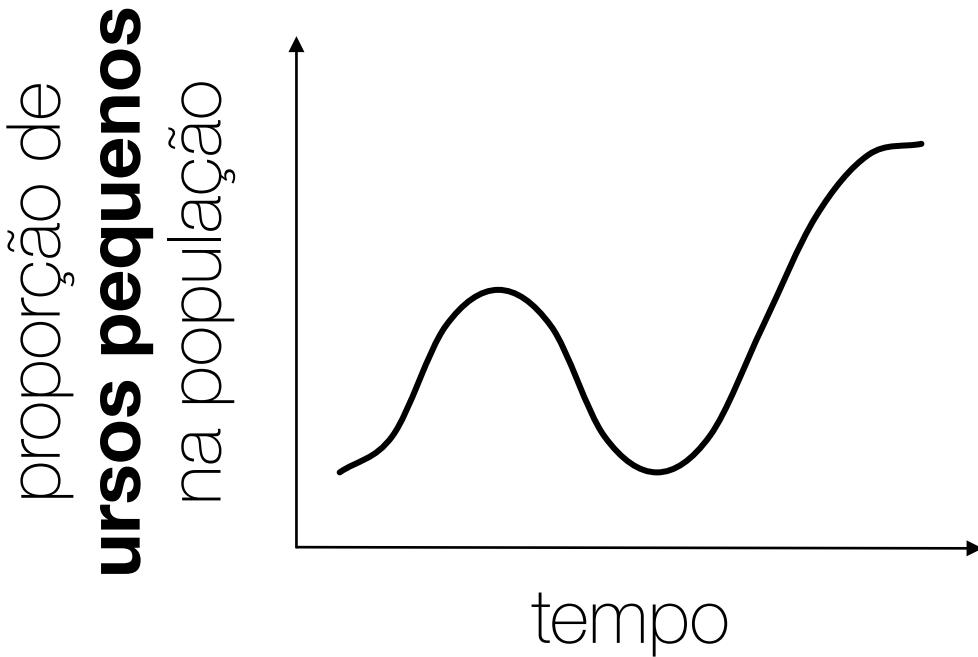
# atributo

dinâmica  
ecológica

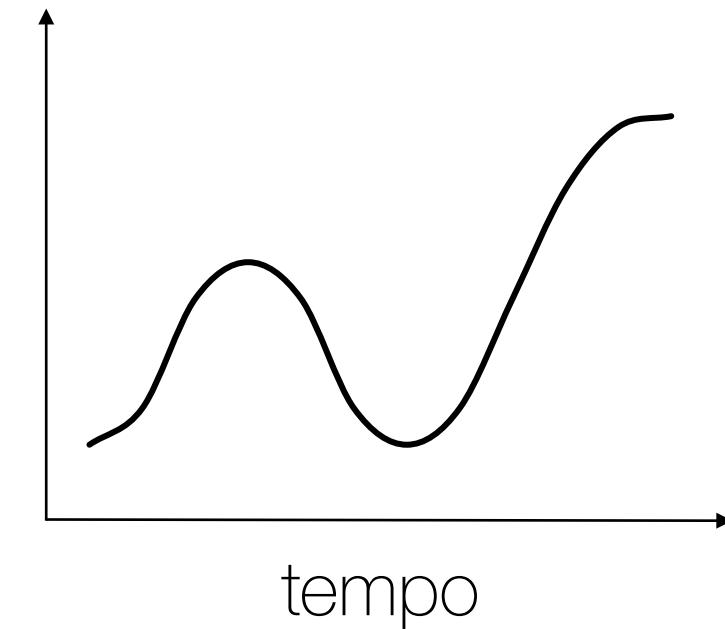


## atributo

dinâmica  
evolutiva



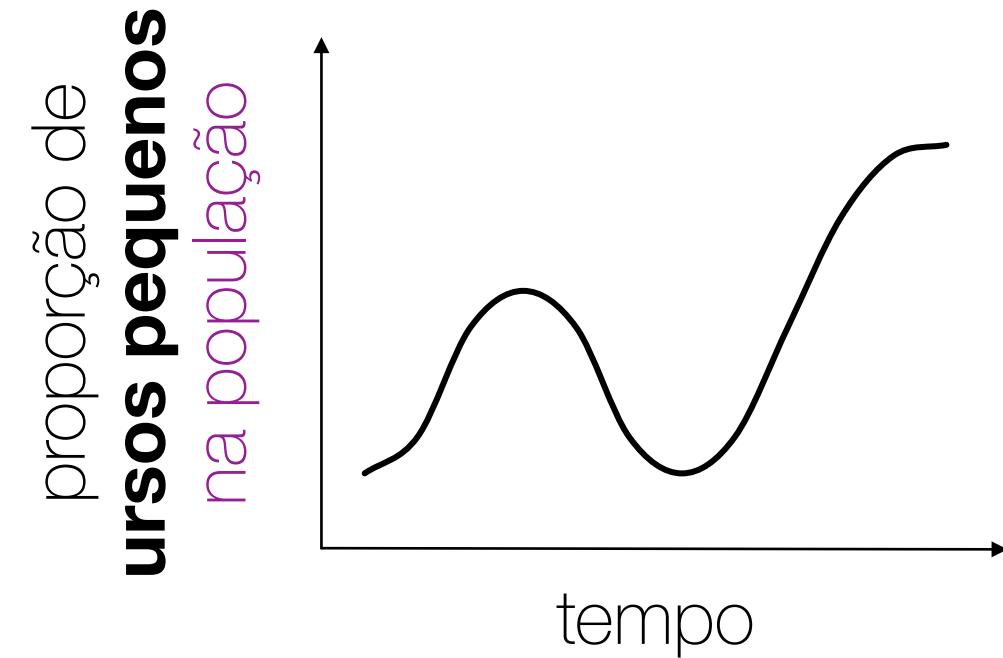
proporção de  
indivíduos pequenos



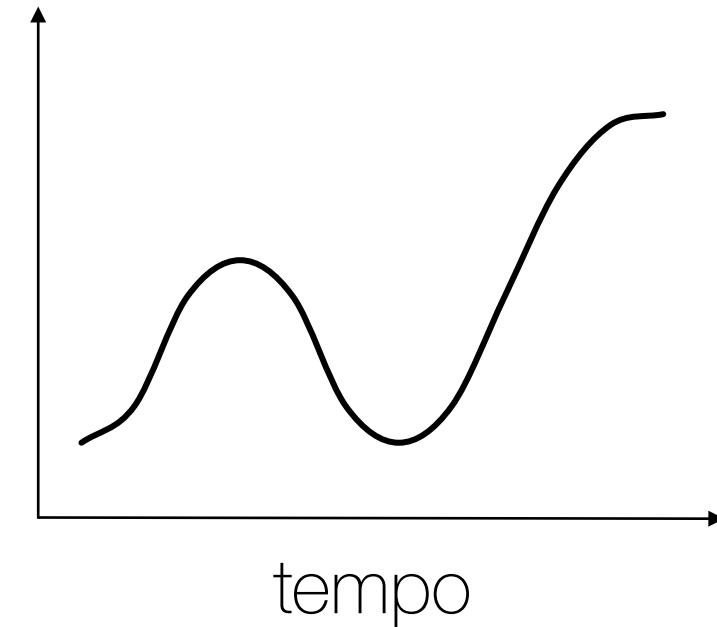
dinâmica  
ecológica

## atributo

dinâmica  
evolutiva

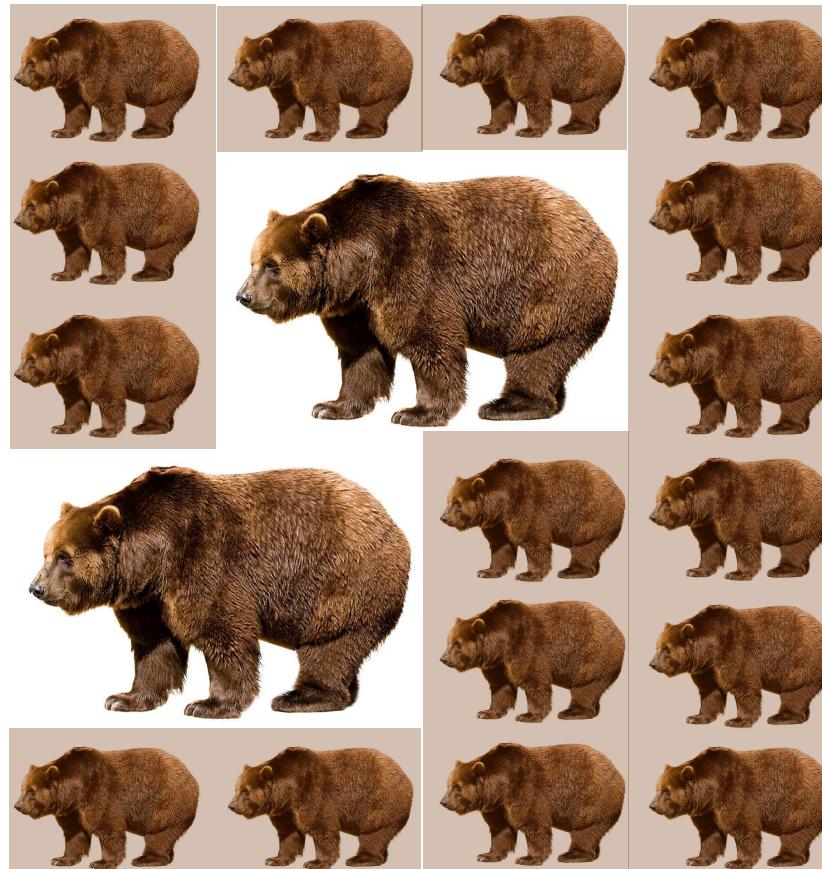


proporção de  
ursos pequenos  
na comunidade

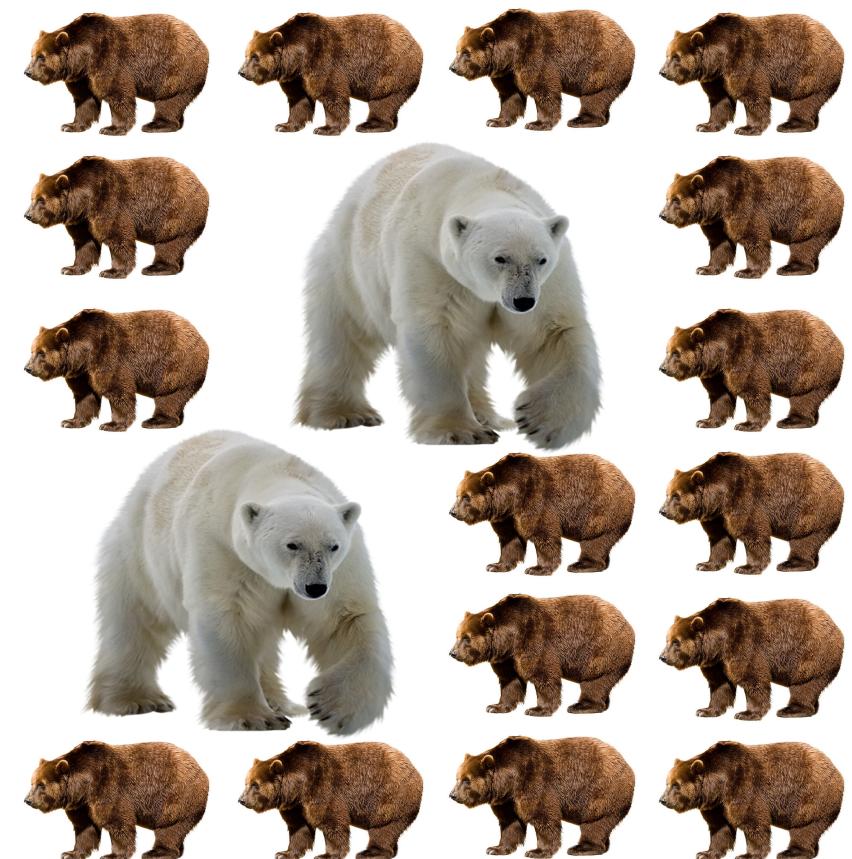


dinâmica  
ecológica

## dinâmica evolutiva



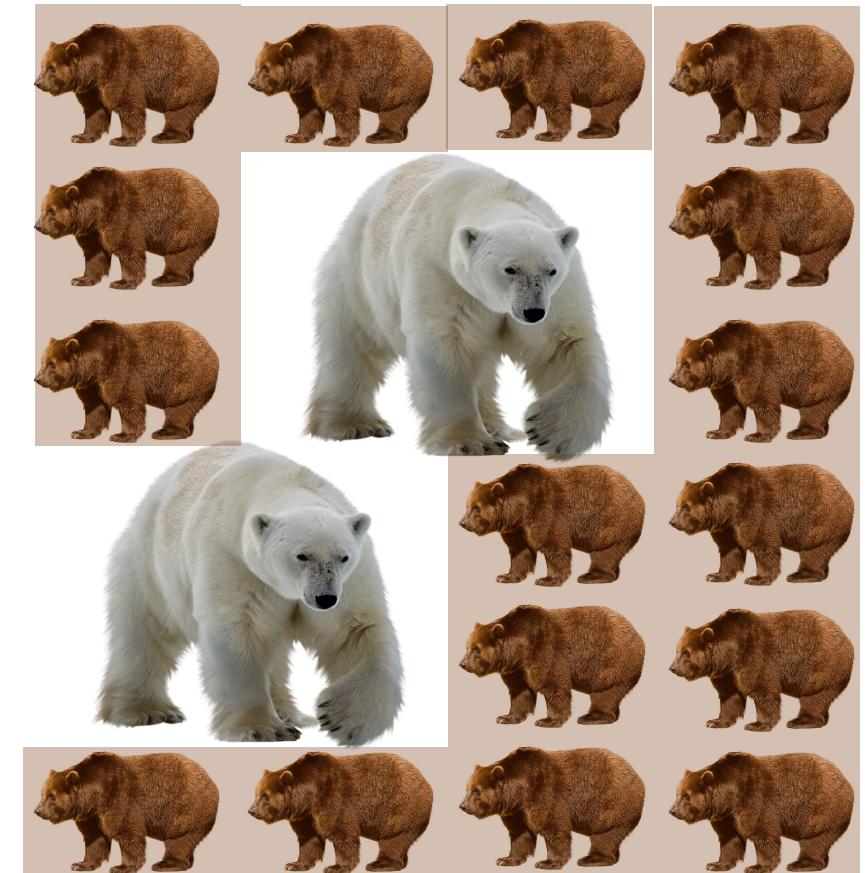
## dinâmica ecológica



# dinâmica evolutiva



# dinâmica ecológica



dinâmica  
evolutiva

dinâmica  
eco-evolutiva

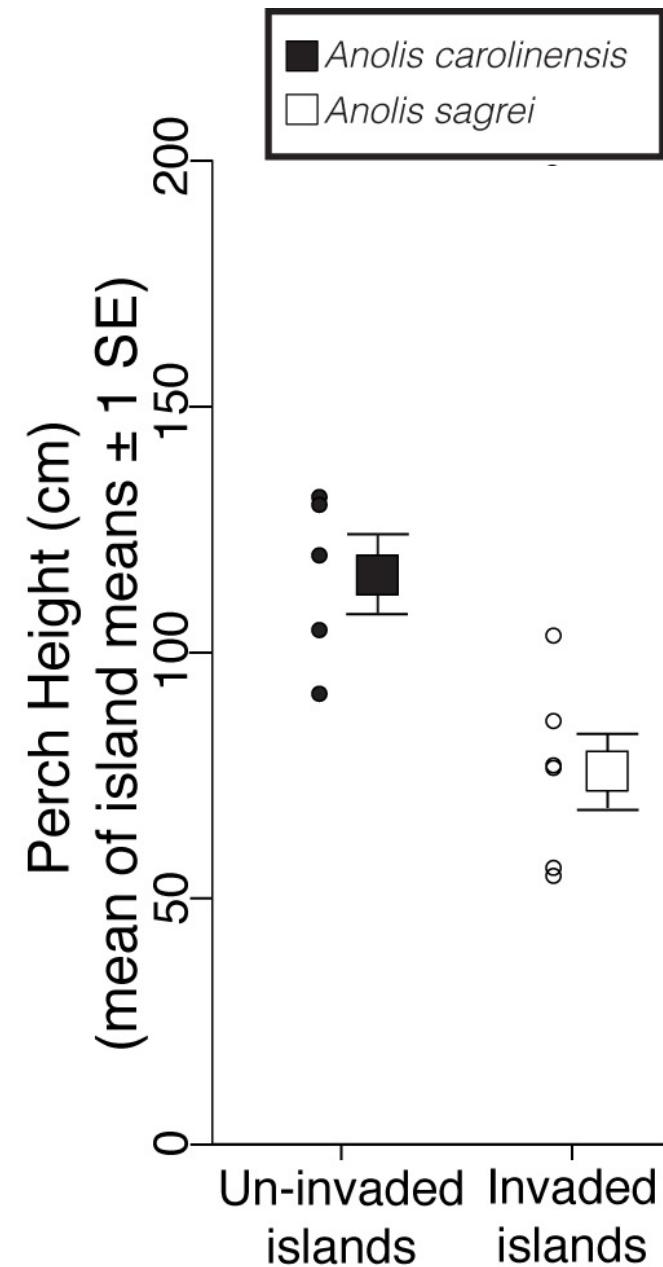
dinâmica  
ecológica



logo...



logo...



logo...

