

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

**DINÂMICAS ECOLÓGICAS E EVOLUTIVAS**

**Luísa Novara Monclar Gonçalves**

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

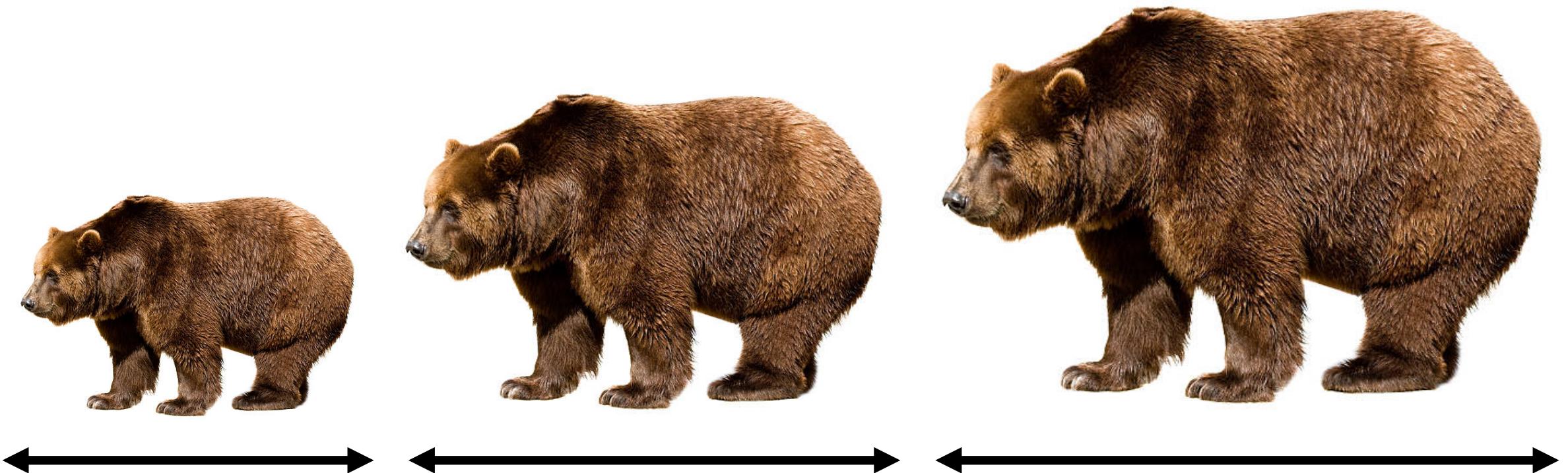
**COORIENTADOR: Prof. Dr. Paulo Inácio Prado**

# atributo

# atributo



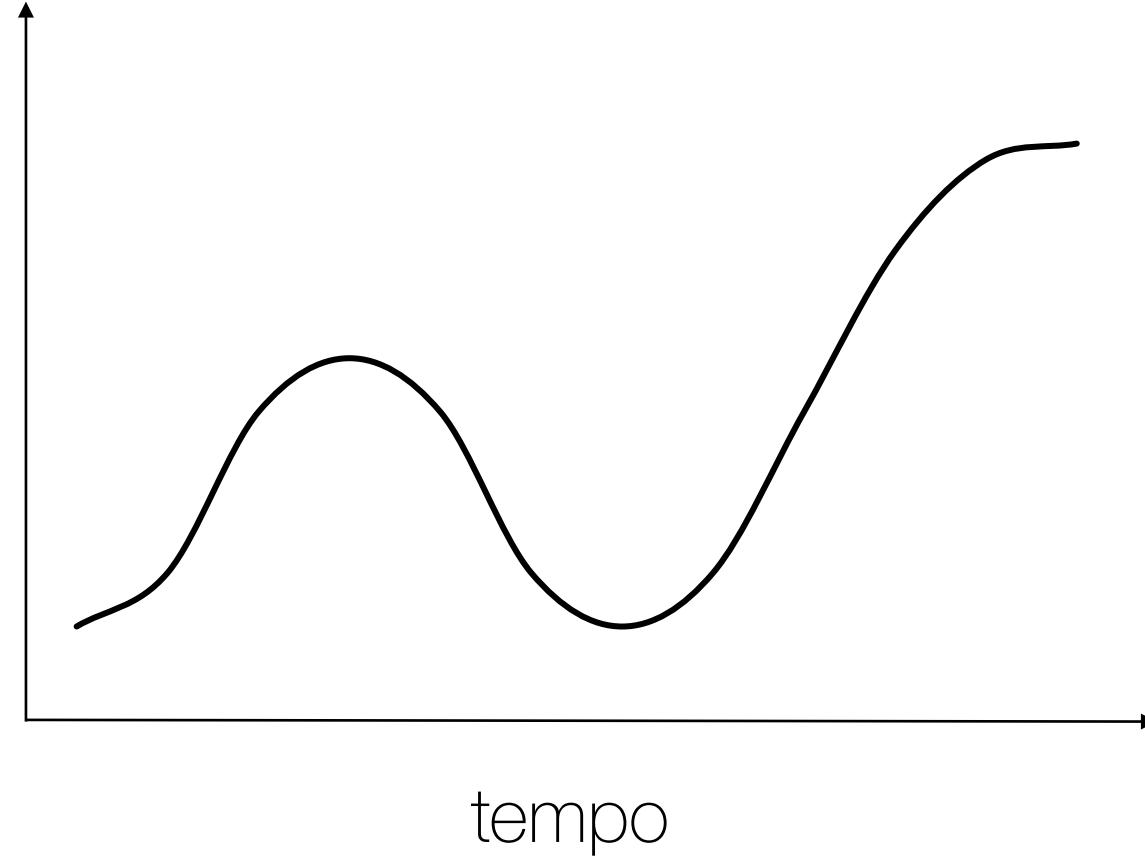
# atributo



estados do atributo

# atributo

proporção de  
indivíduos grandes



dinâmica  
evolutiva

# atributo

dinâmica  
ecológica

dinâmica  
evolutiva

## atributo

dinâmica  
ecológica

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

dinâmica  
evolutiva

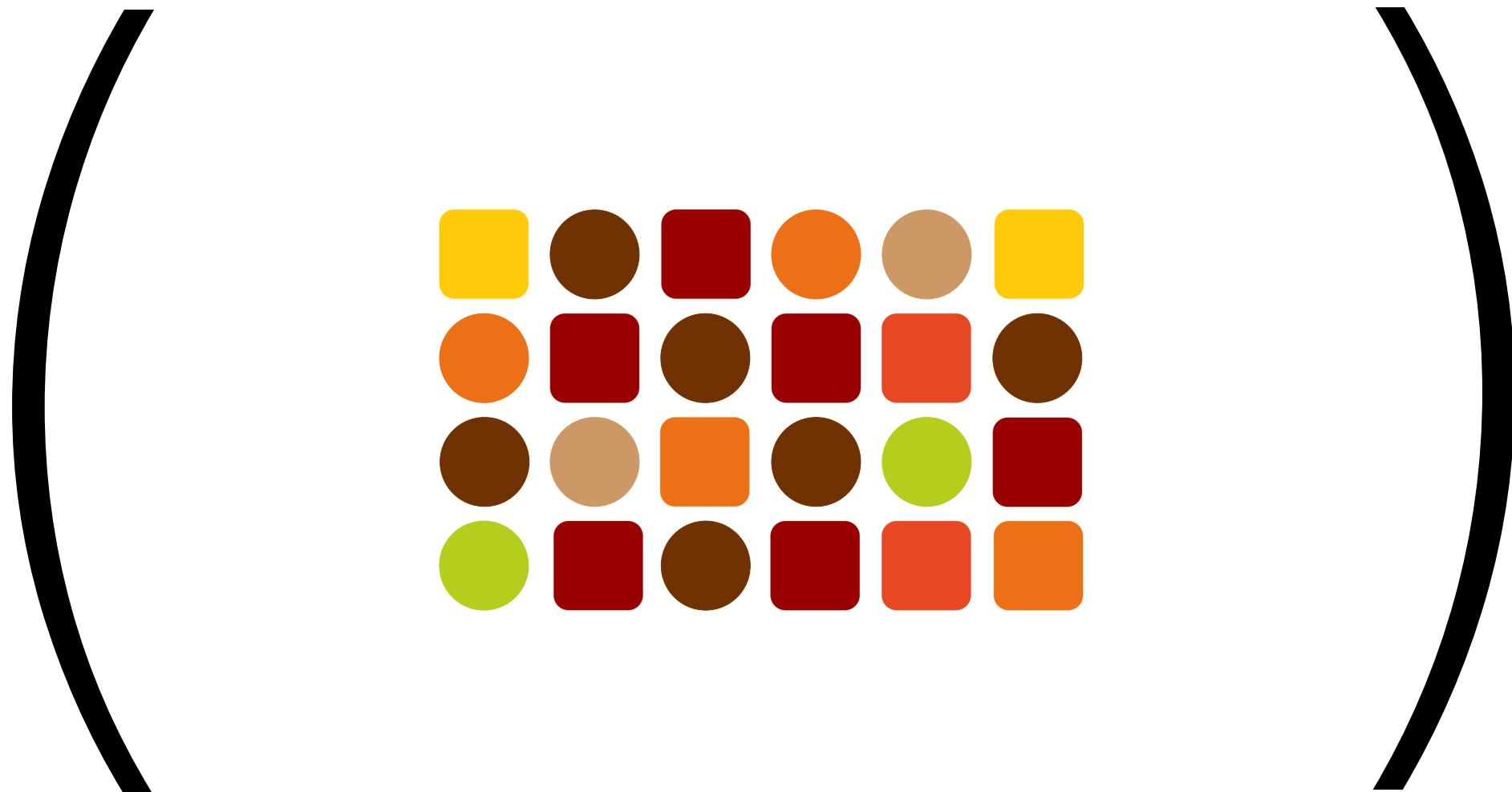
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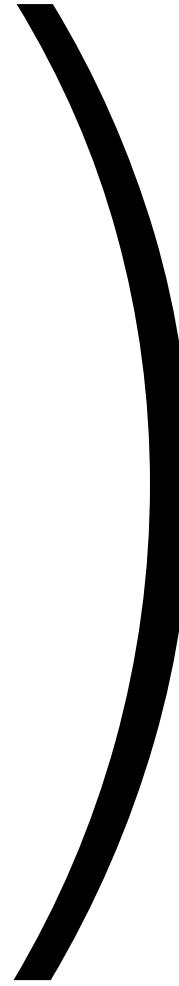
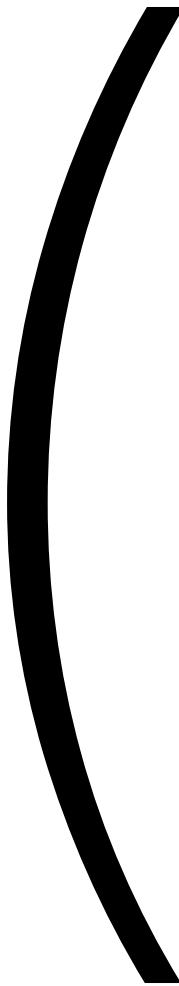
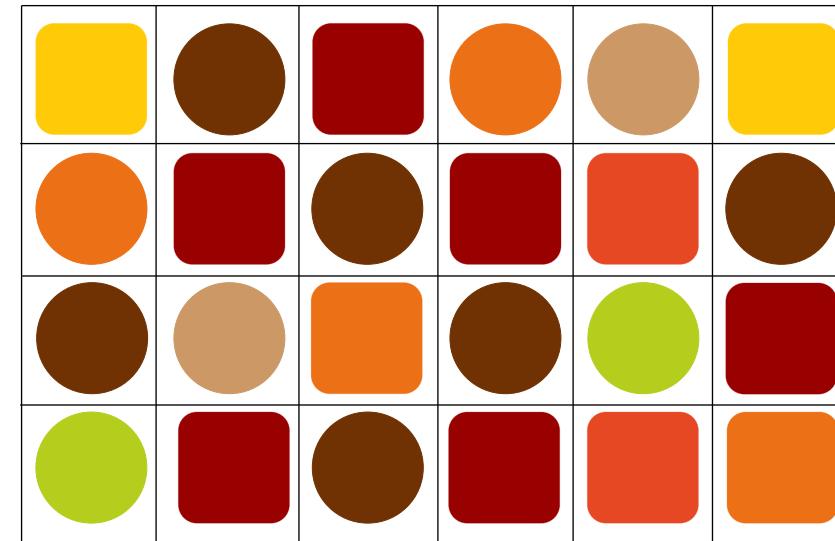
mudanças na frequência  
de um **atributo** na  
**população**  
a partir de alterações na  
**frequência relativa**  
**dos alelos**

dinâmica  
ecológica

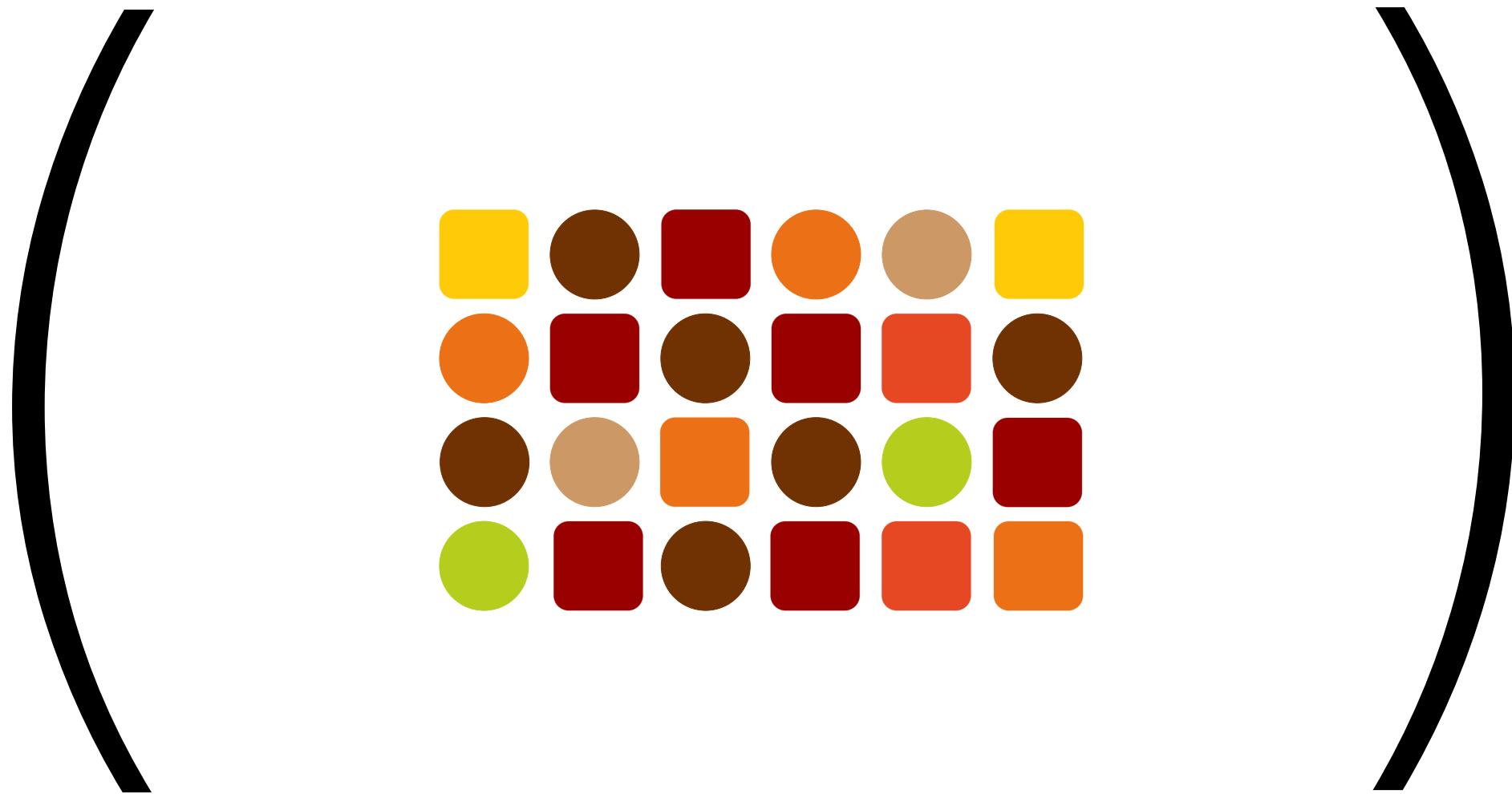
mudanças na frequência  
de um **atributo** na  
**comunidade**  
a partir de alterações na  
**frequência relativa**  
**das espécies**

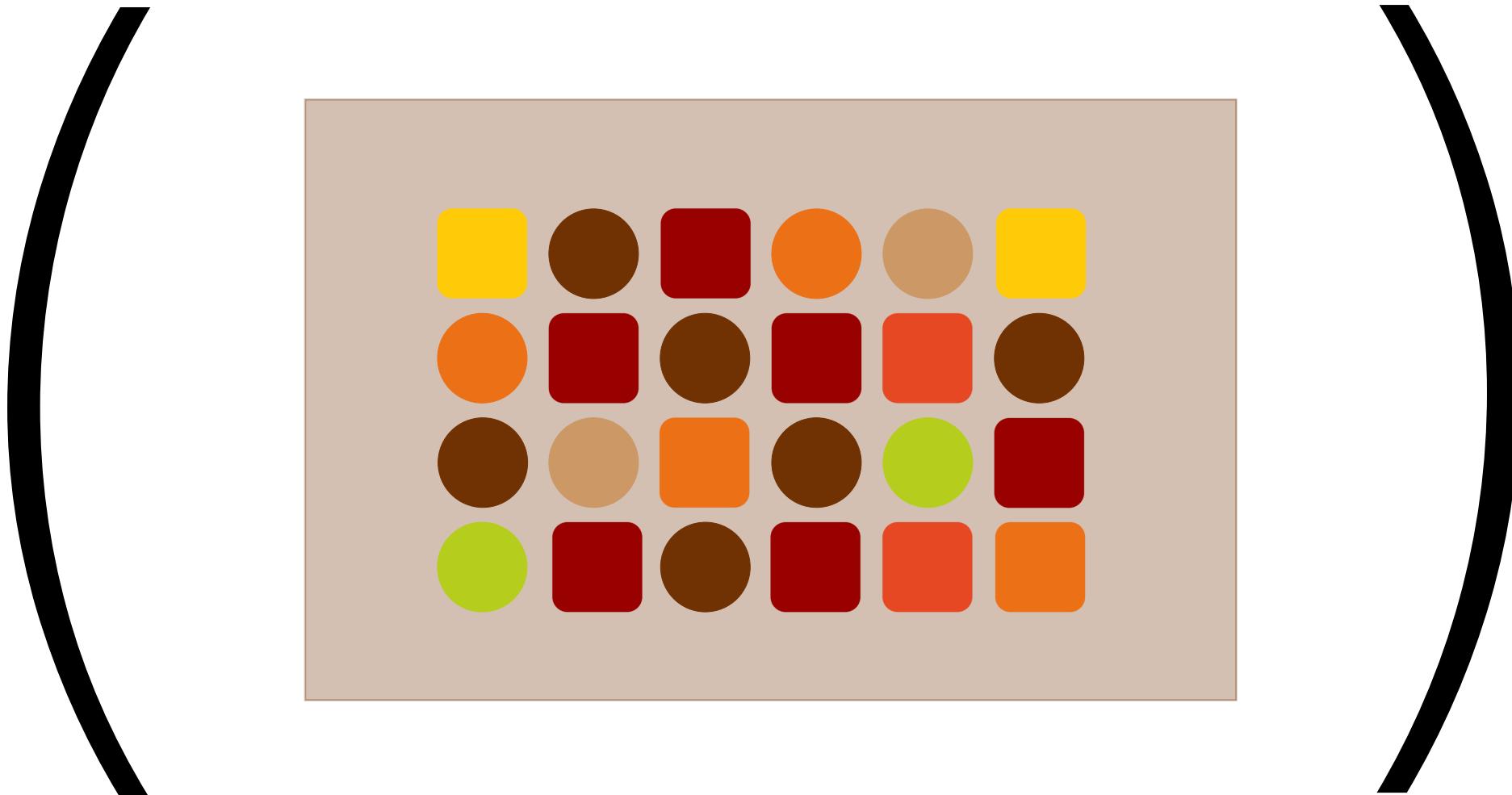












## dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

## dinâmica ecológica

## dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

## dinâmica ecológica

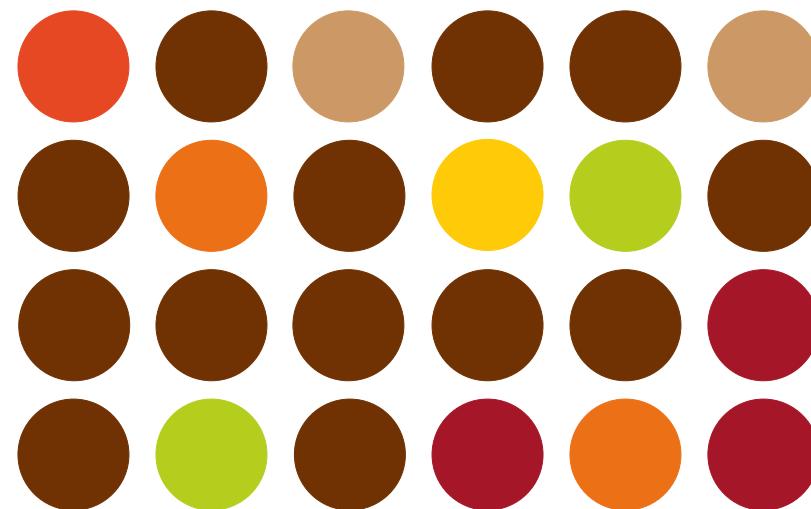
- filtragem ecológica
- deriva ecológica
- migração
- especiação

# dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

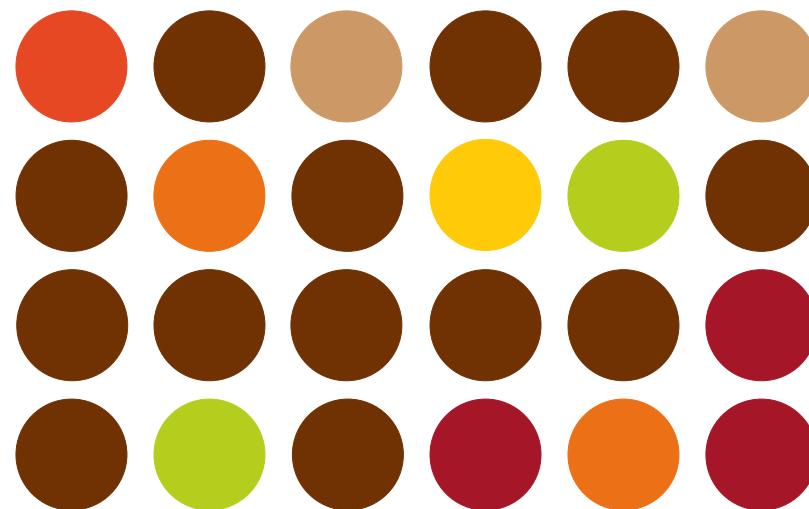
# dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



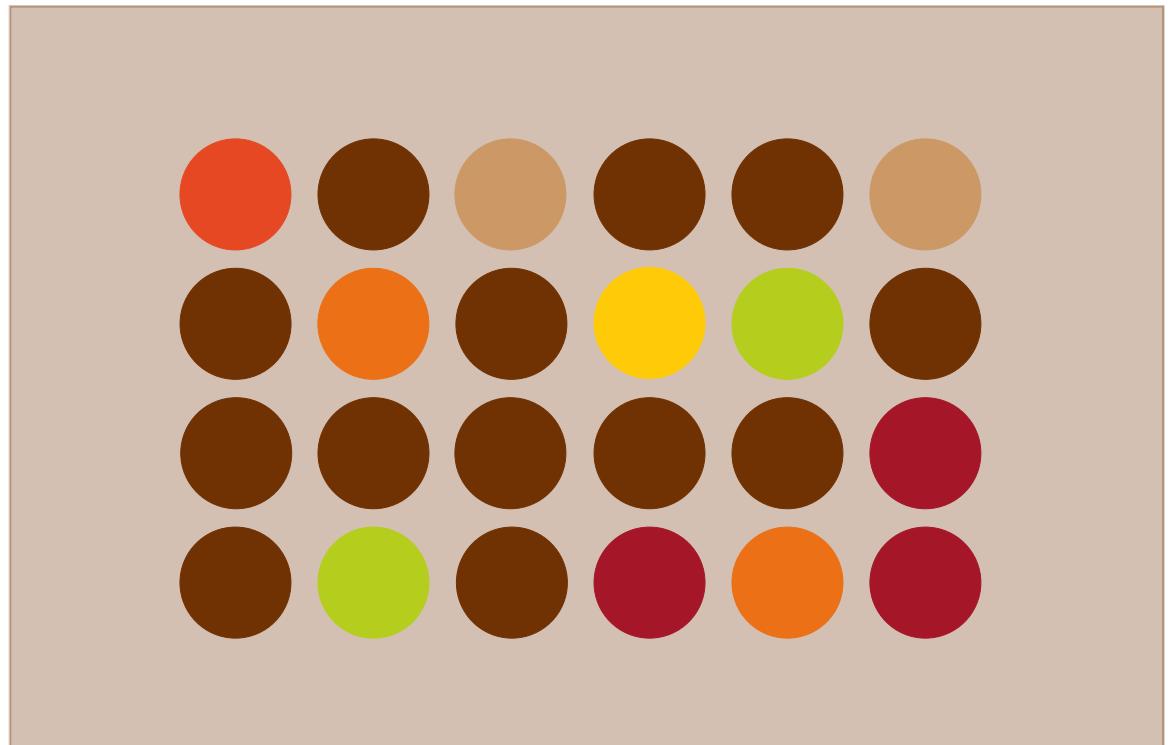
# dinâmica evolutiva

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



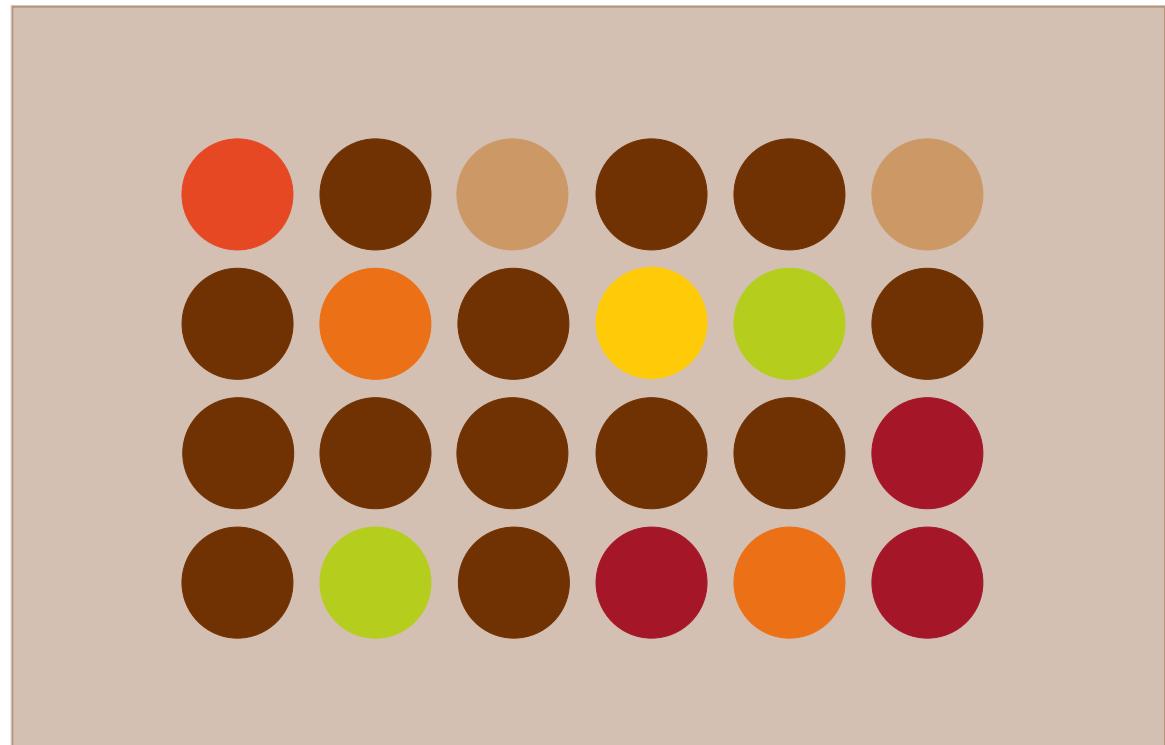
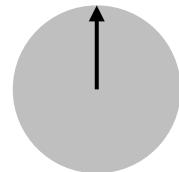
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- **seleção**
- deriva genética
- fluxo gênico
- mutação



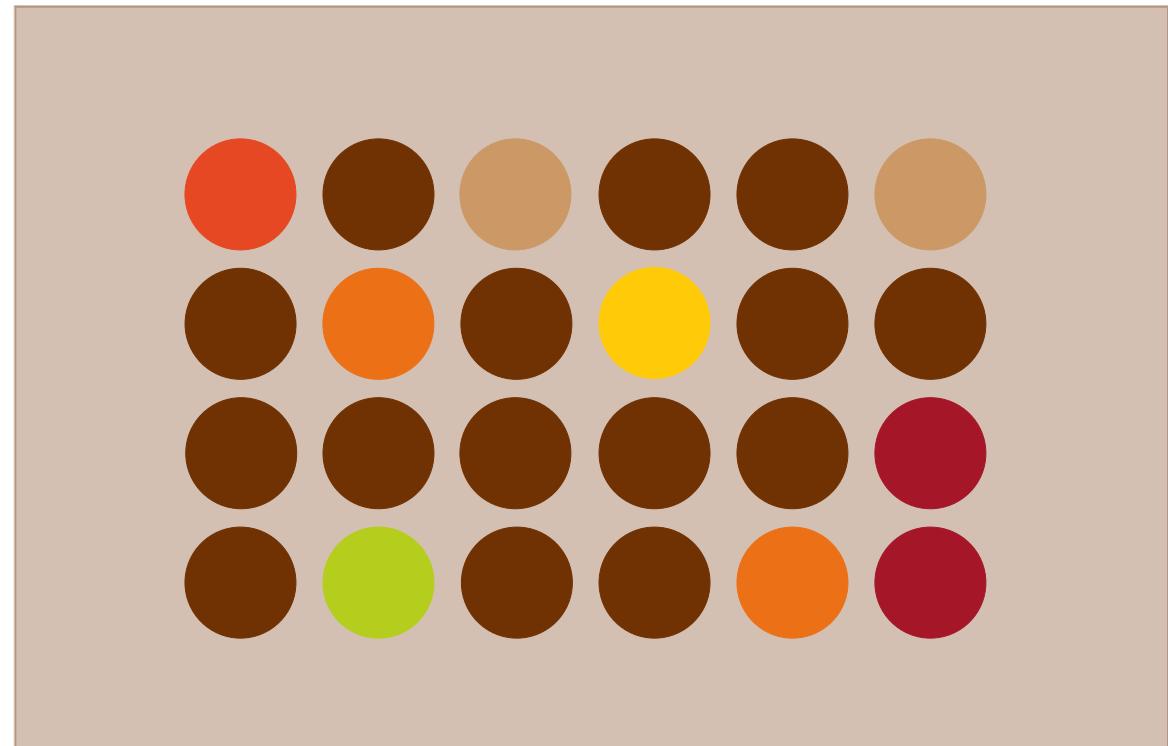
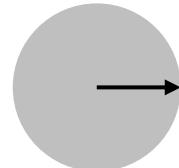
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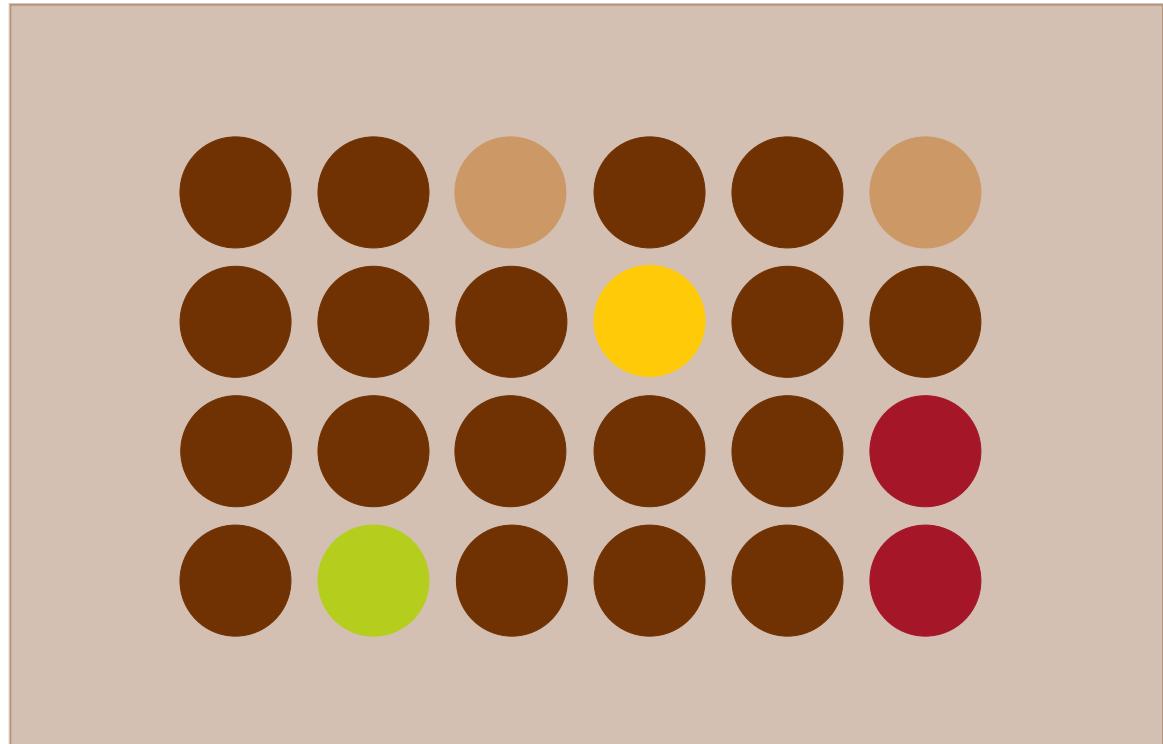
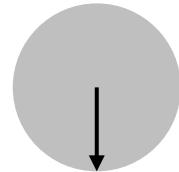
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- **seleção**
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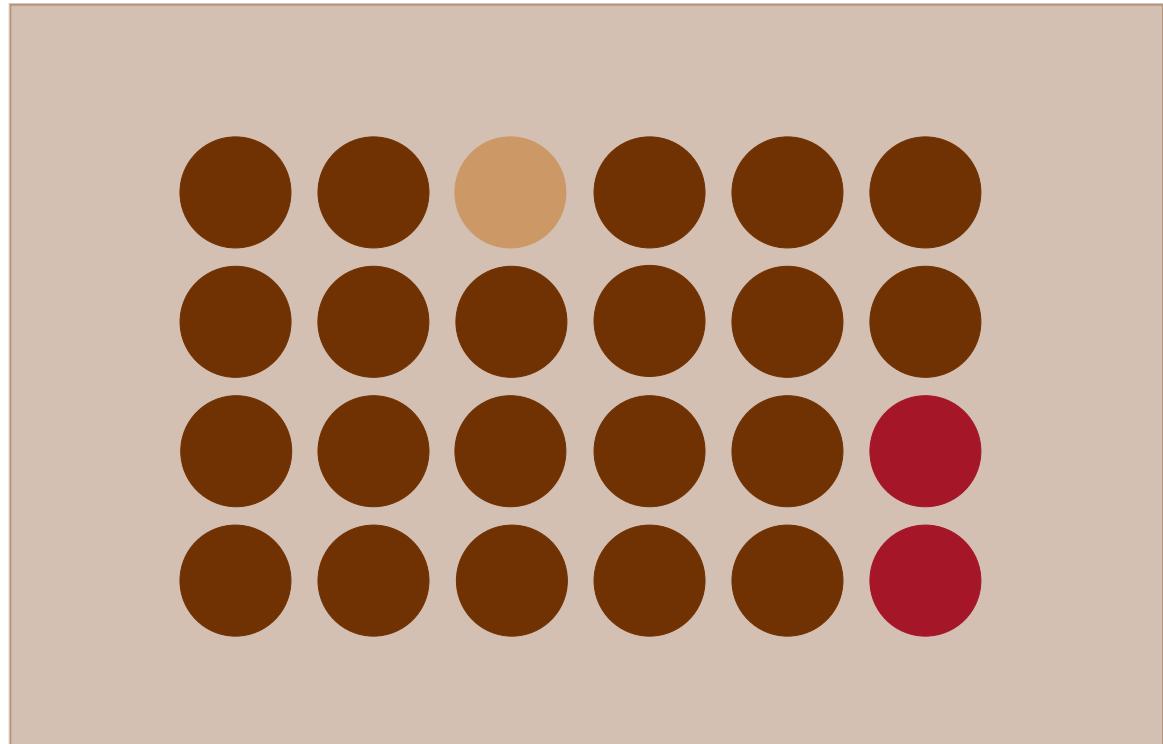
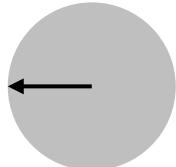
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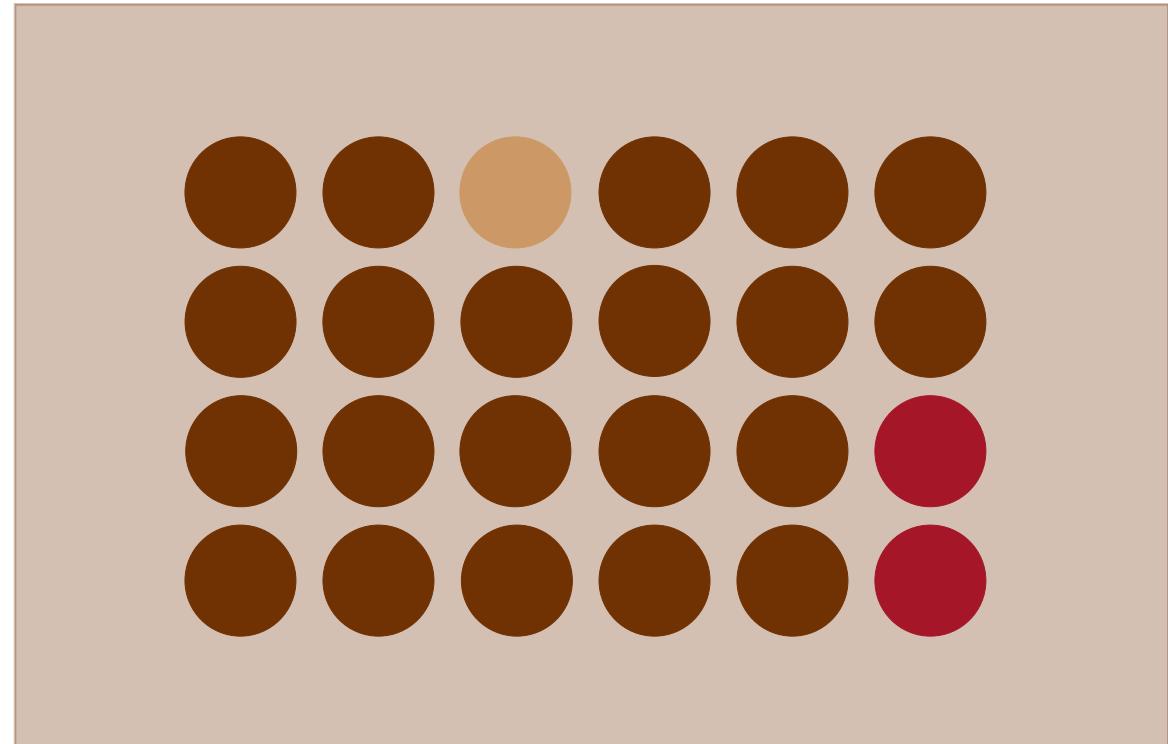
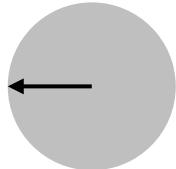
# dinâmica evolutiva

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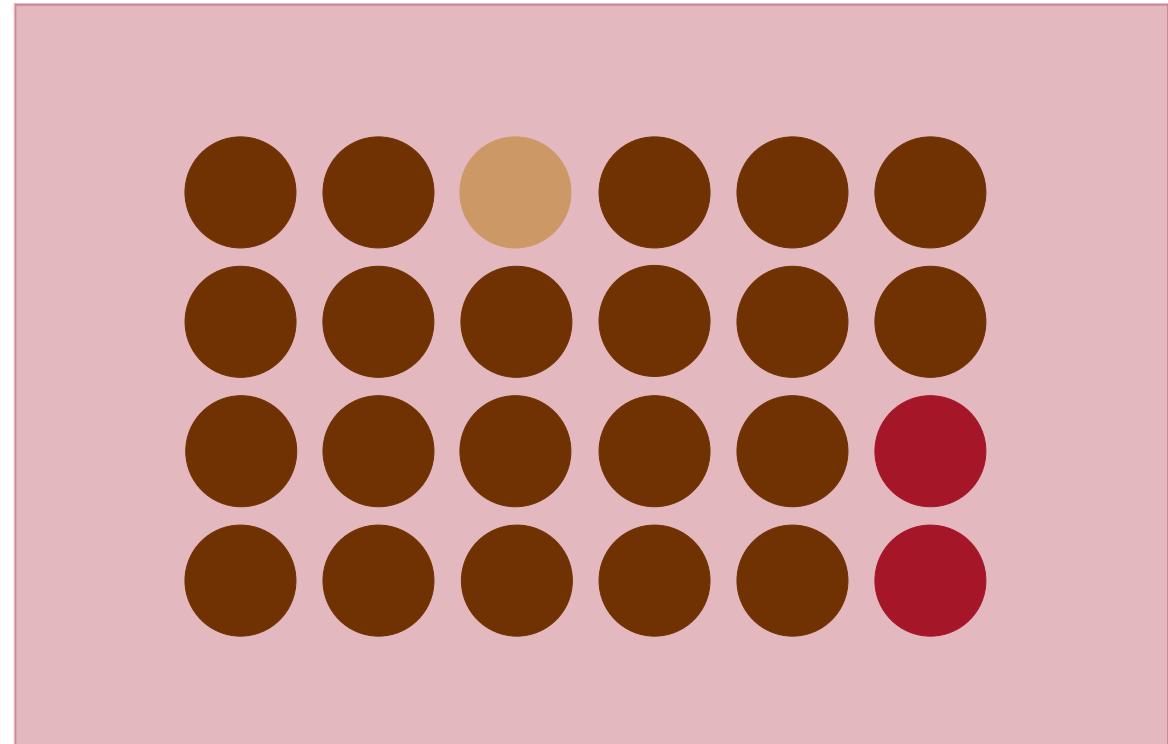
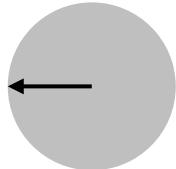
# dinâmica evolutiva

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



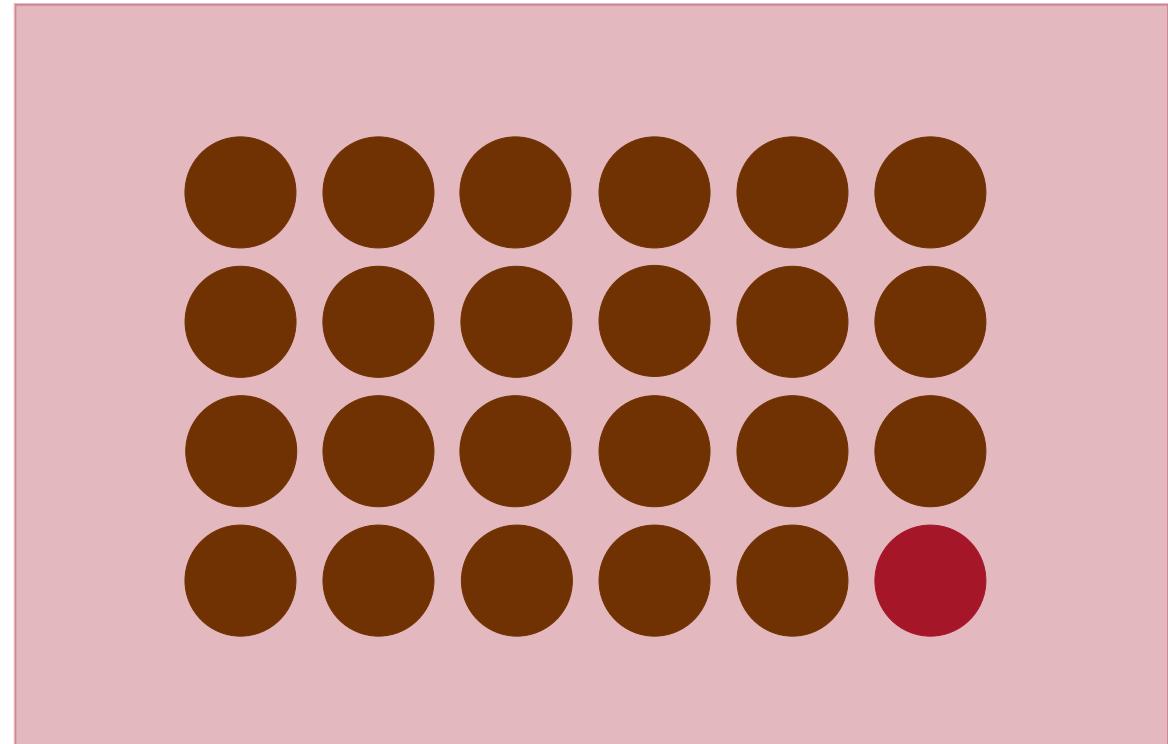
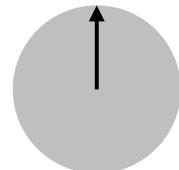
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- **deriva genética**
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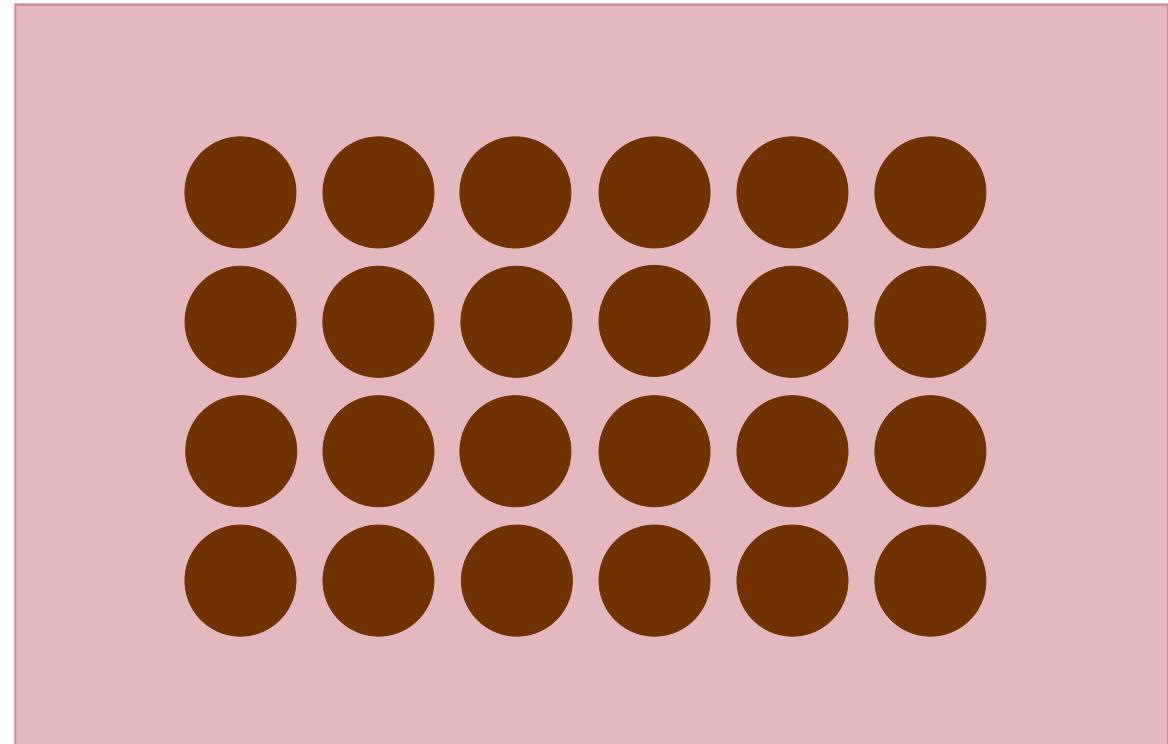
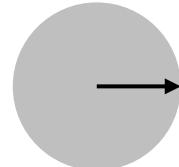
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- **deriva genética**
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- mutação



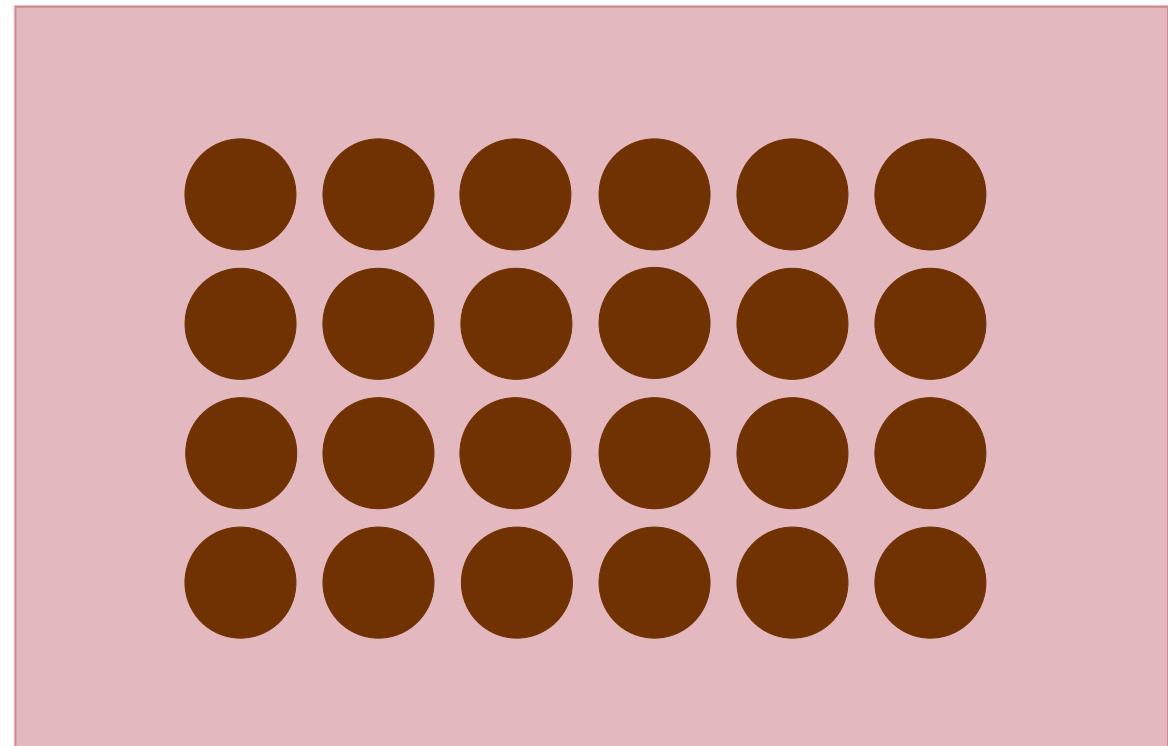
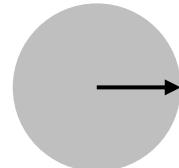
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- **deriva genética**
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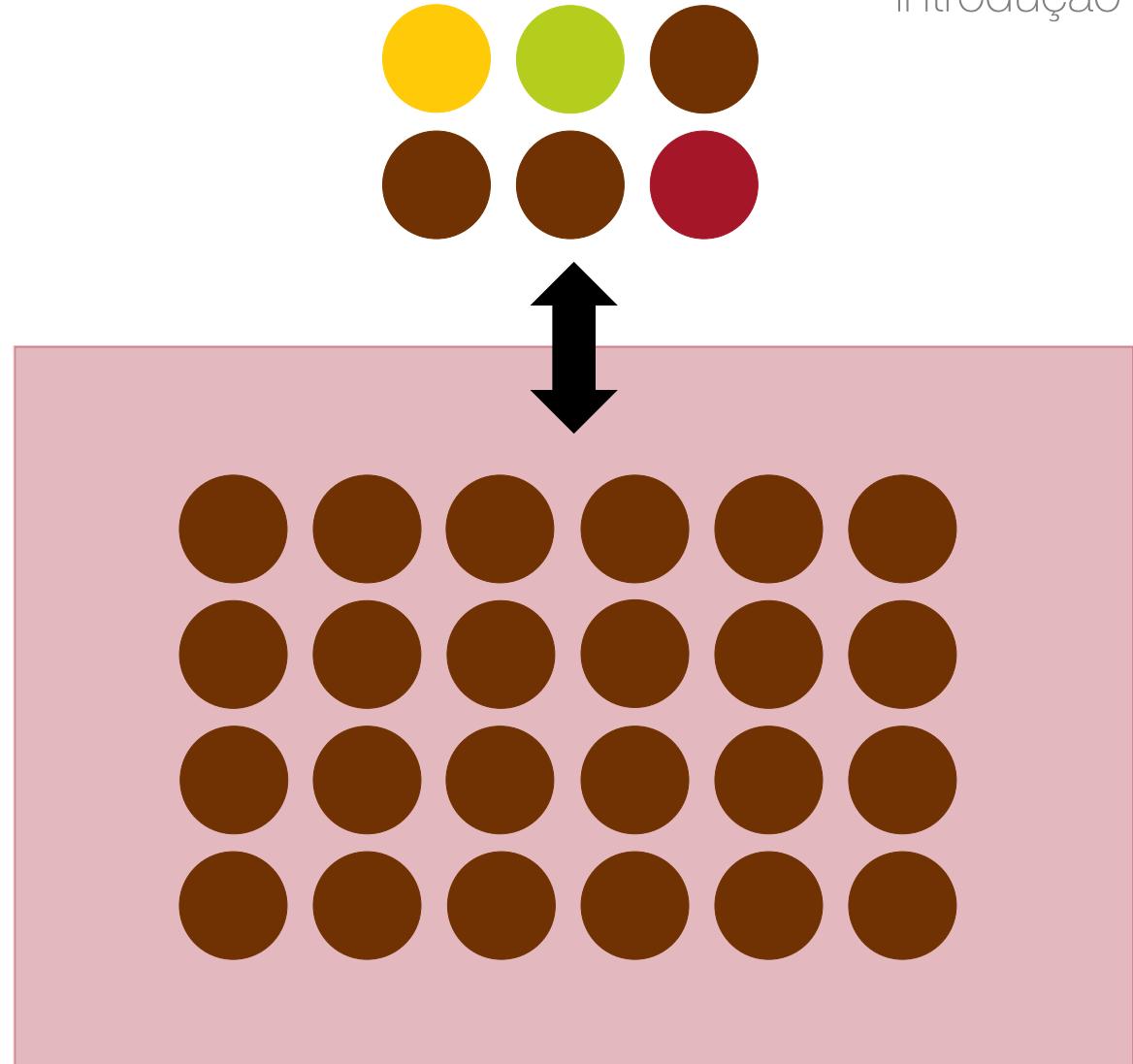
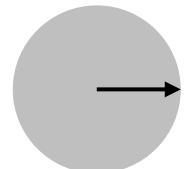
# dinâmica evolutiva

- seleção
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- **fluxo gênico**
- mutação



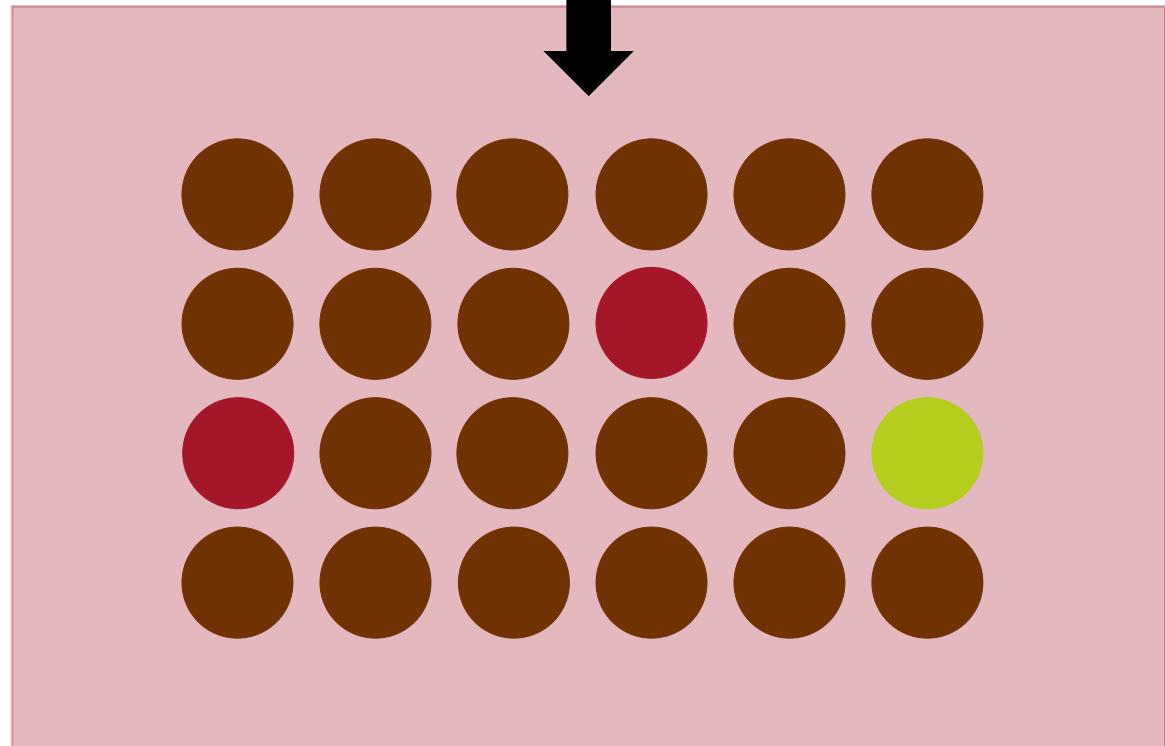
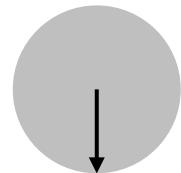
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- seleção
- deriva genética
- **fluxo gênico**
- mutação



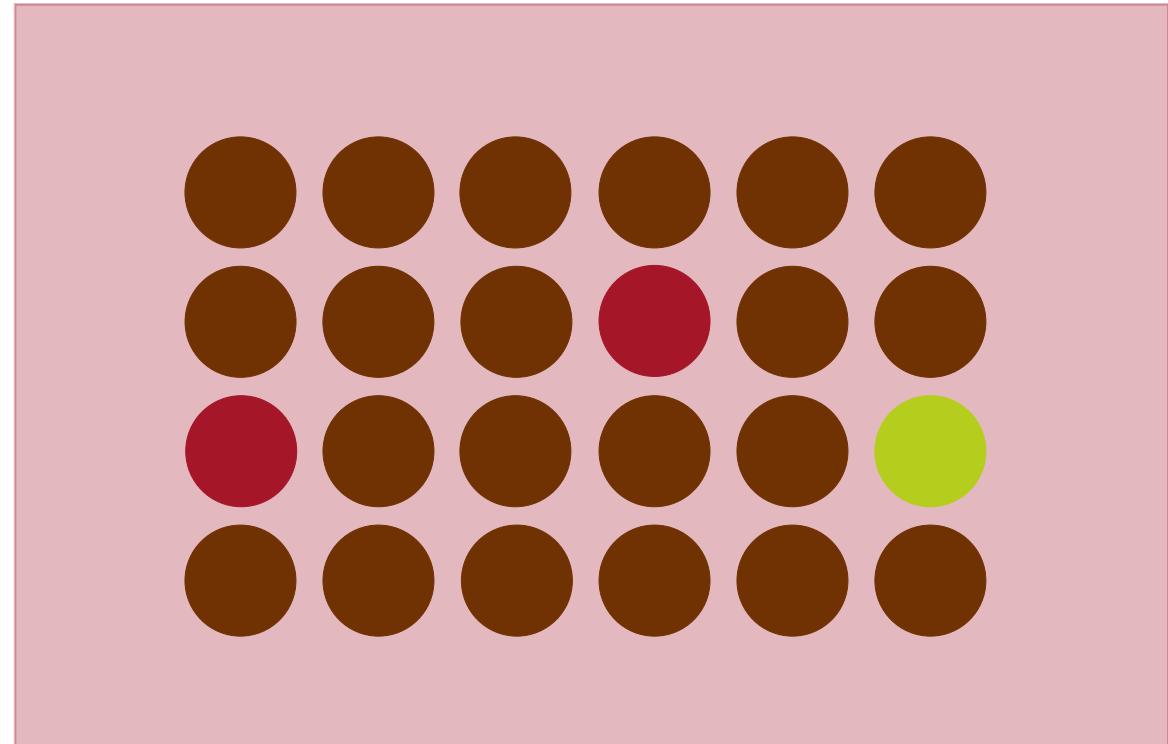
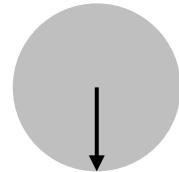
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- seleção
- deriva genética
- **fluxo gênico**
- mutação



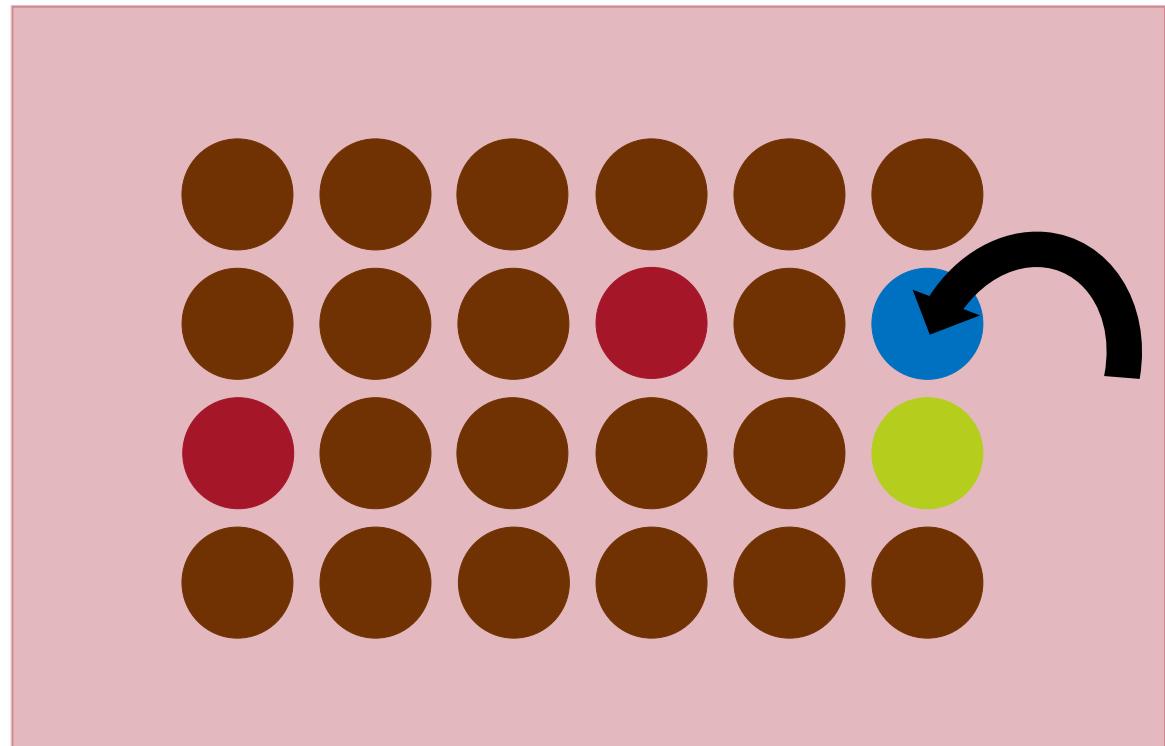
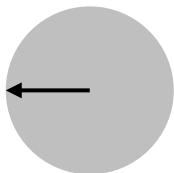
# dinâmica evolutiva

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



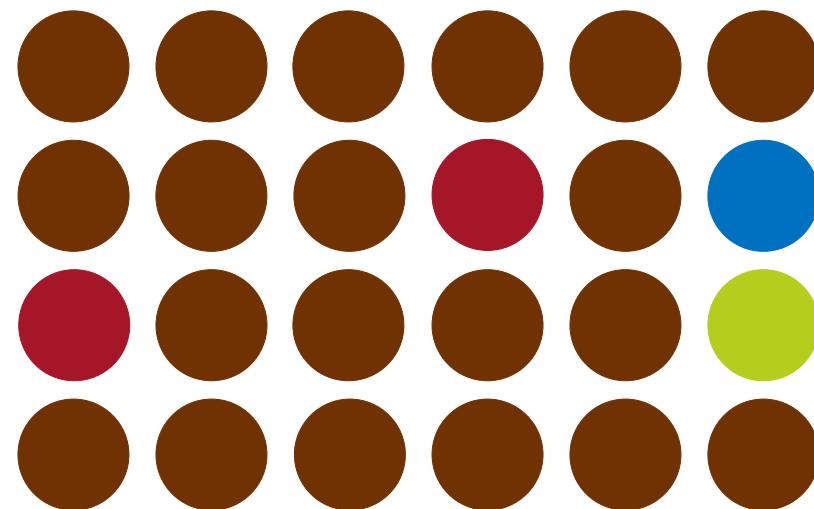
# dinâmica evolutiva

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



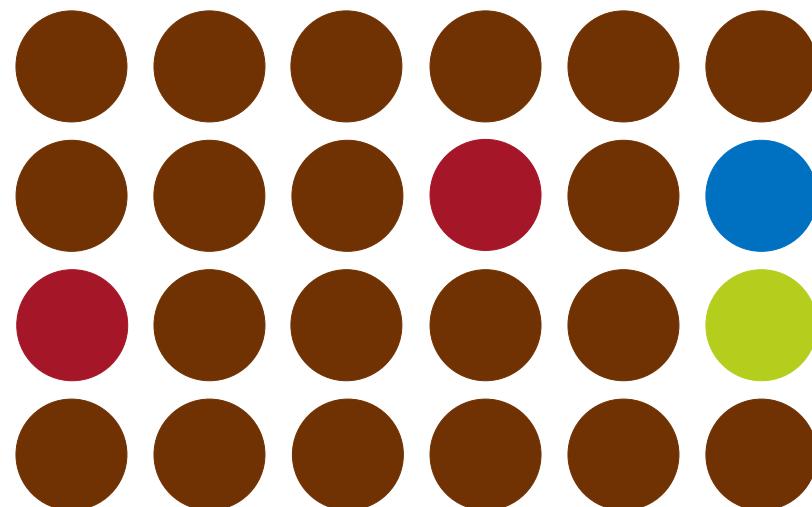
# dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



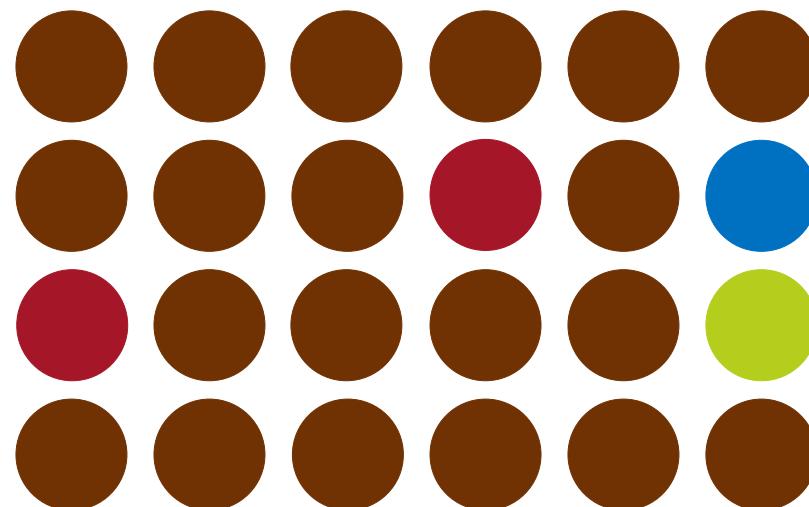
## dinâmica evolutiva

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



# dinâmica evolutiva

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

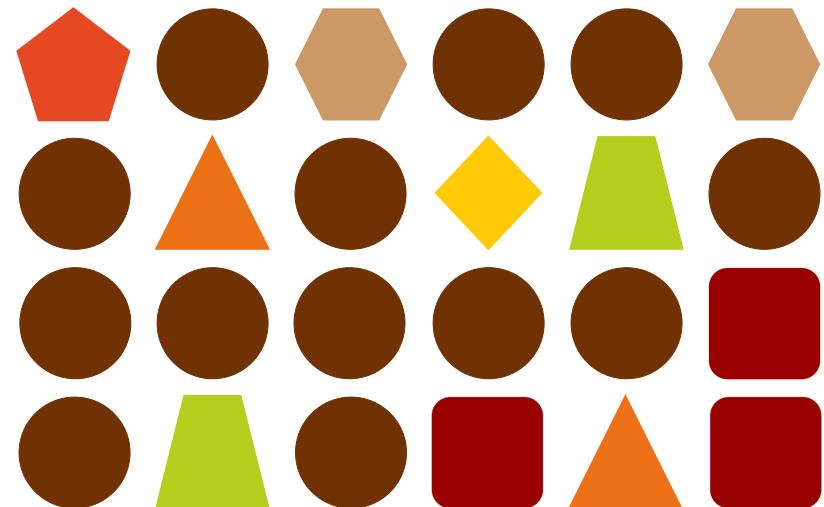




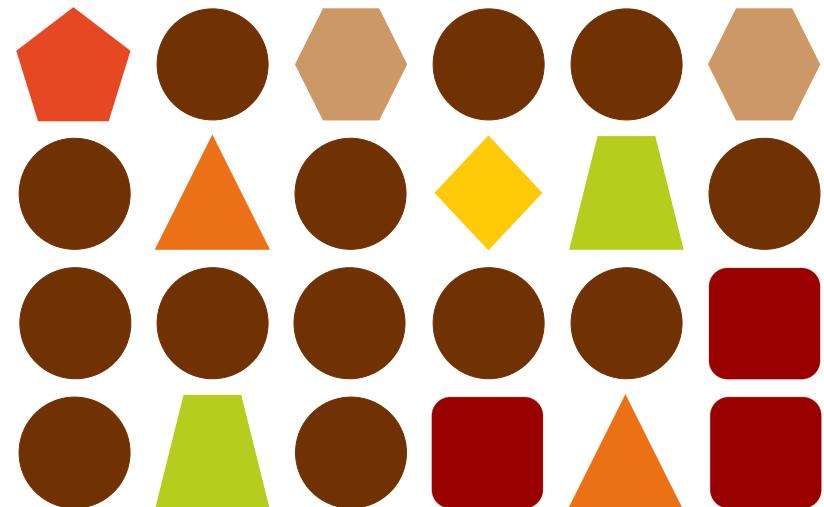
## dinâmica ecológica

- filtragem ecológica
- deriva ecológica
- migração
- especiação

## dinâmica ecológica



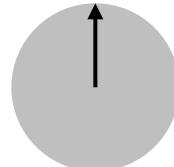
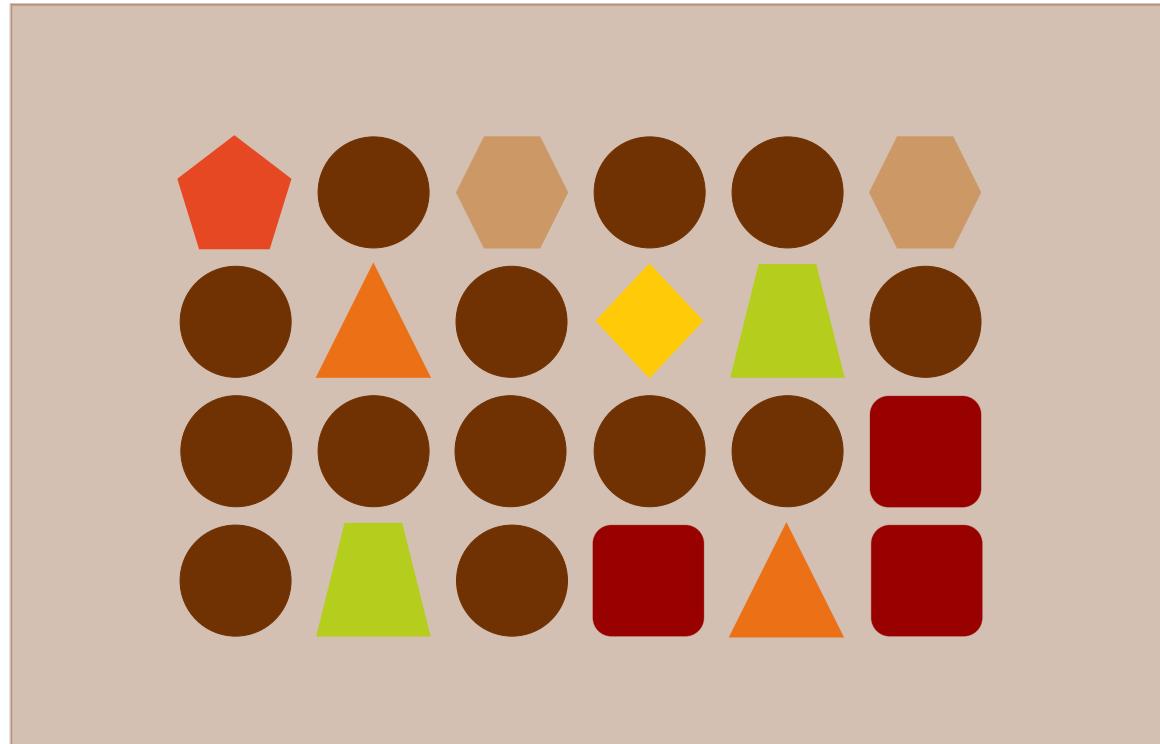
- filtragem ecológica
- deriva ecológica
- migração
- especiação



## dinâmica ecológica

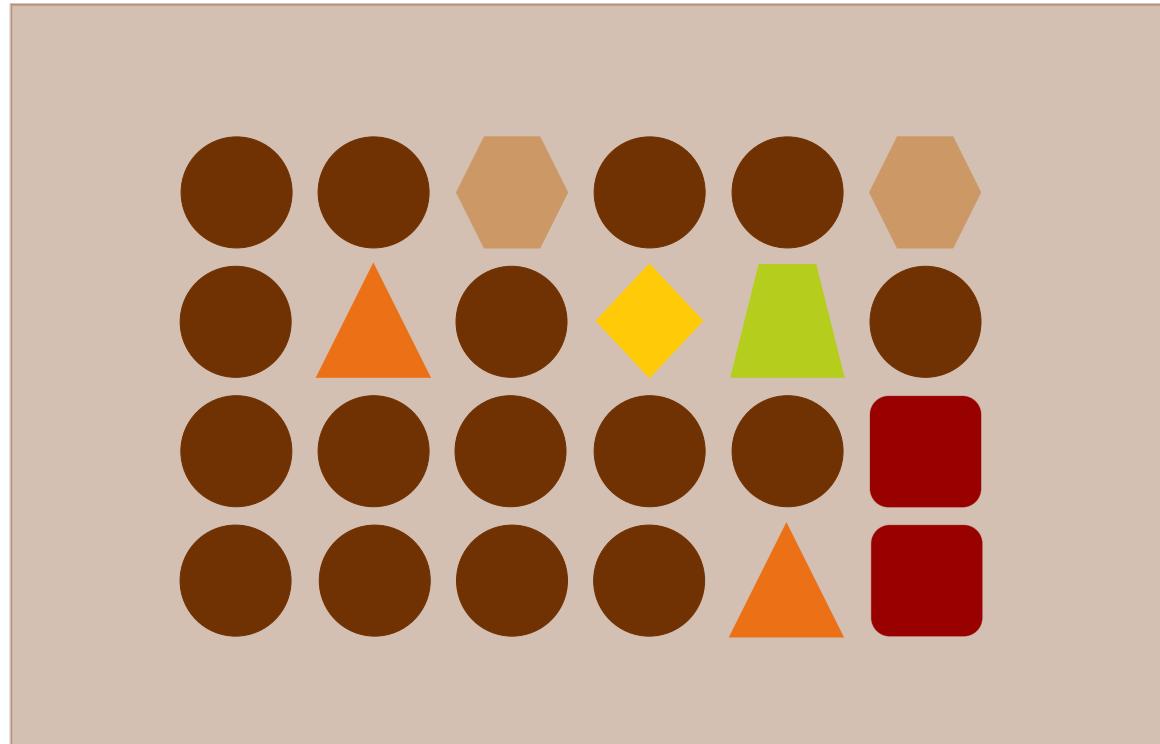
- **filtragem ecológica**
- deriva ecológica
- migração
- especiação

## dinâmica ecológica



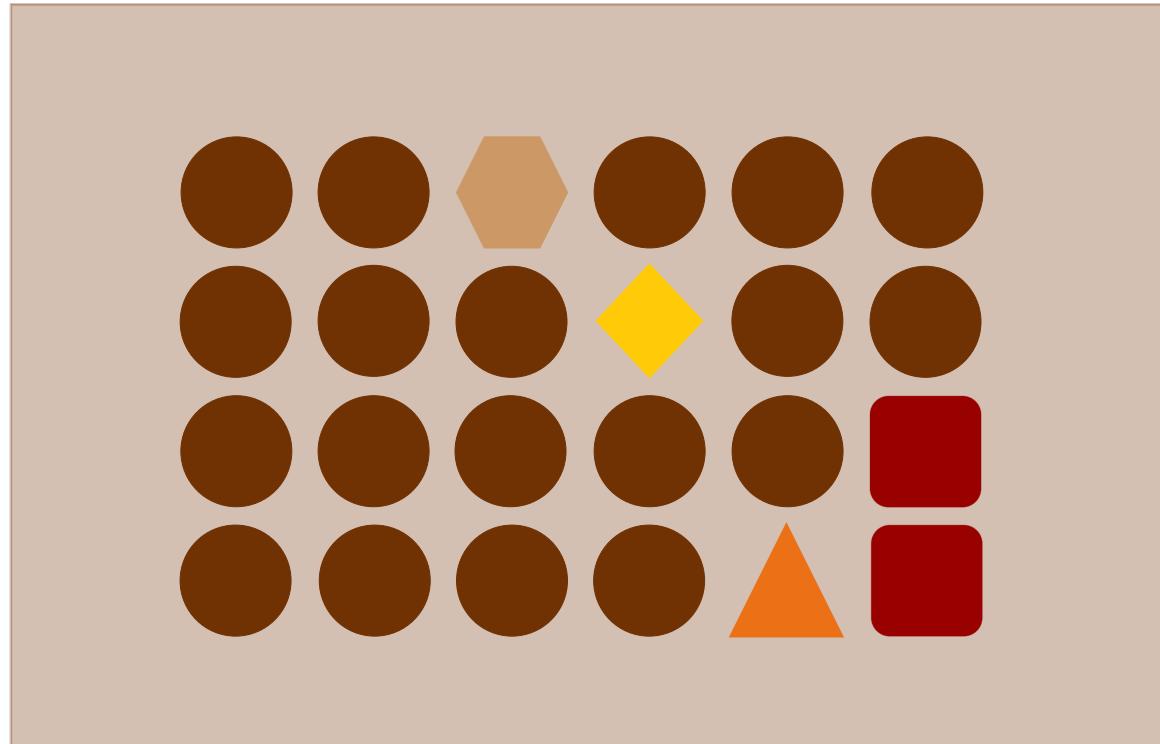
- **filtragem ecológica**
- deriva ecológica
- migração
- especiação

## dinâmica ecológica

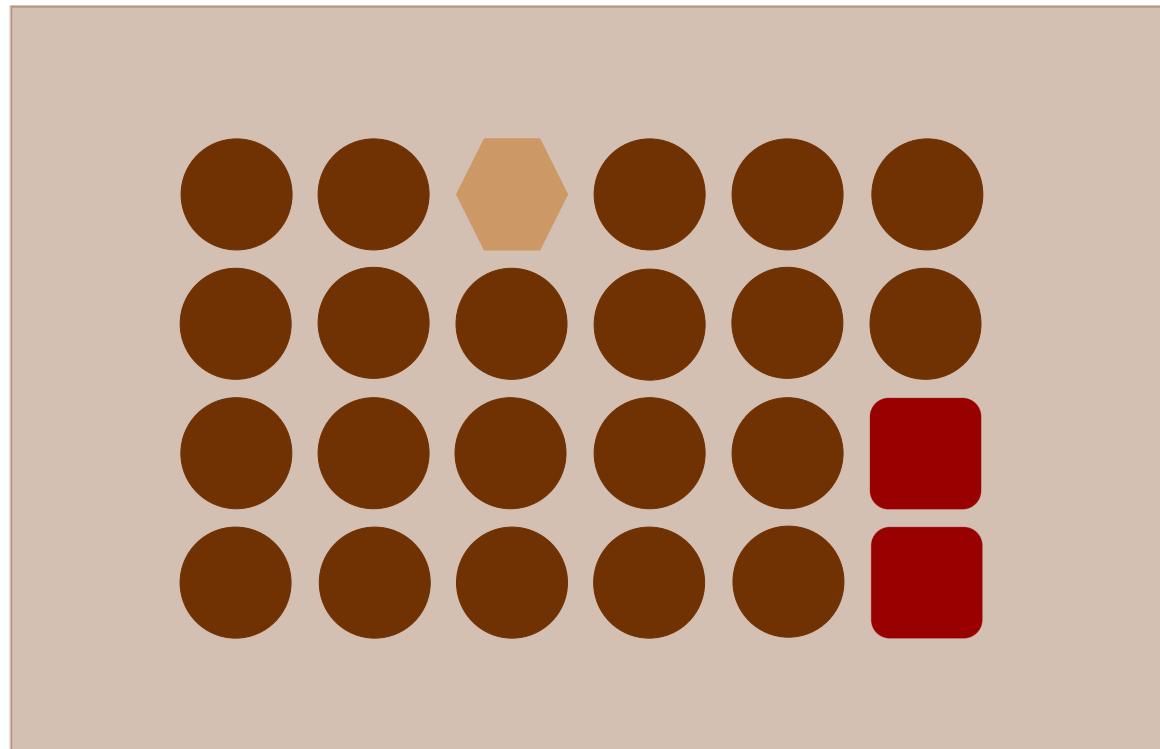


- **filtragem ecológica**
  - deriva ecológica
  - migração
  - especiação

## dinâmica ecológica

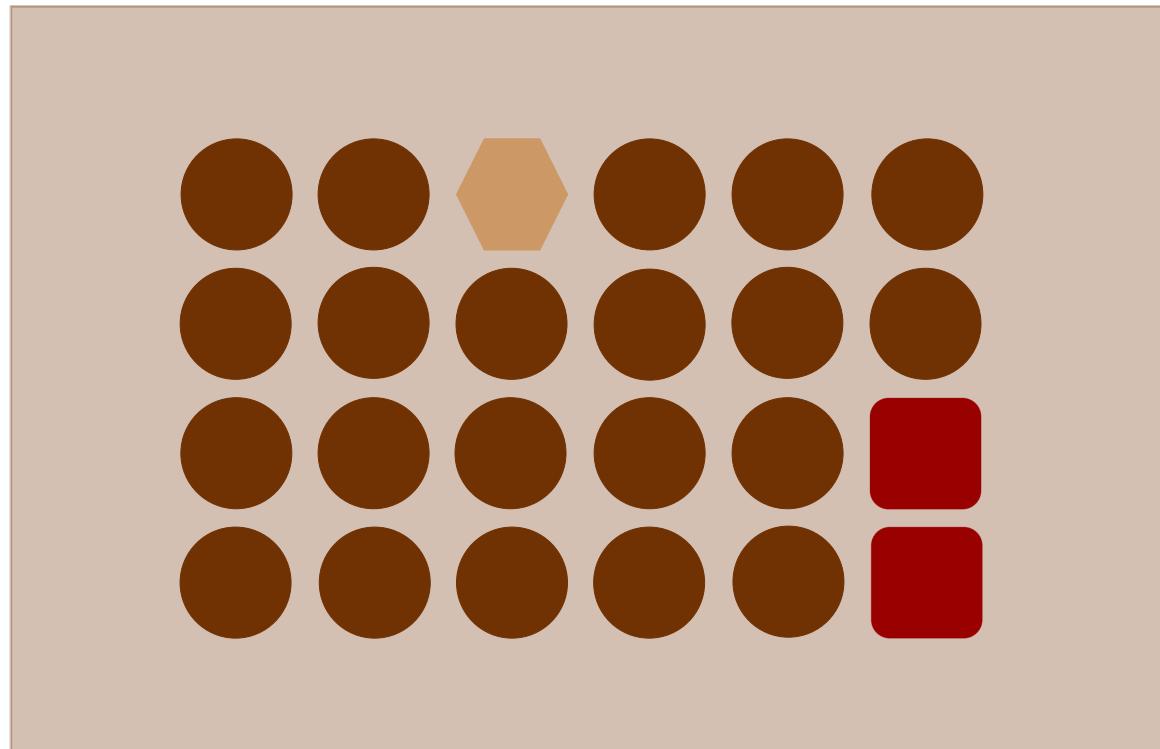


- **filtragem ecológica**
  - deriva ecológica
  - migração
  - especiação



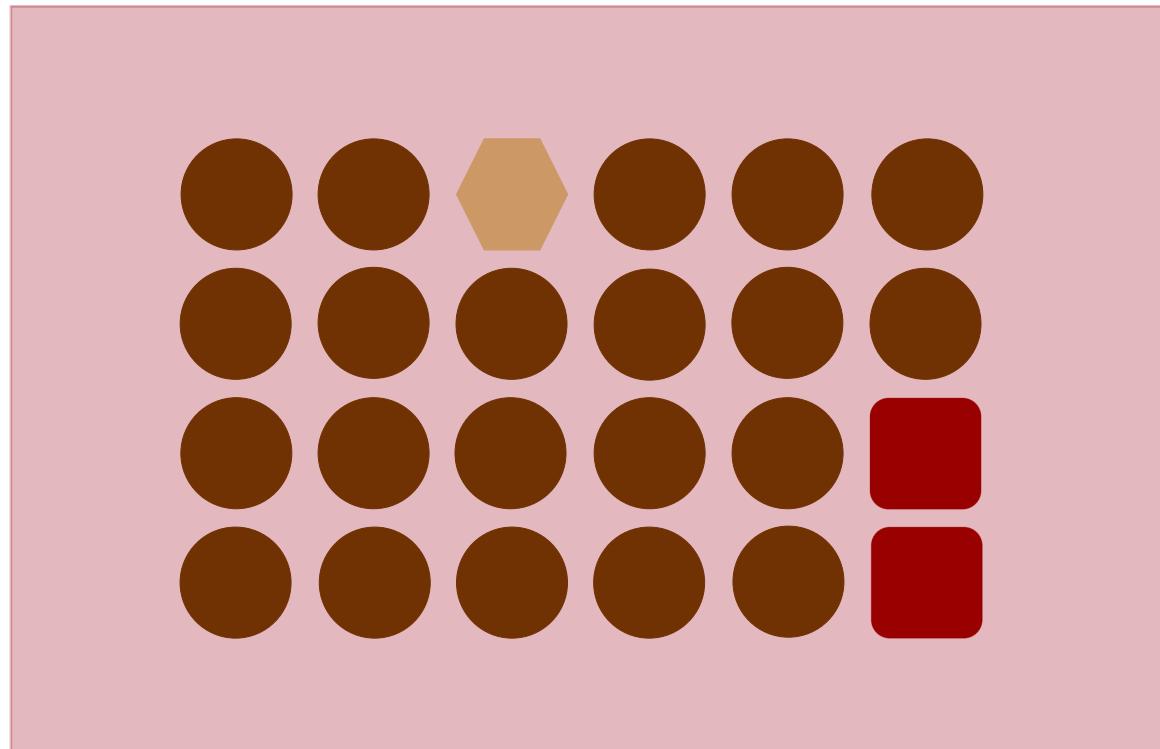
## dinâmica ecológica

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



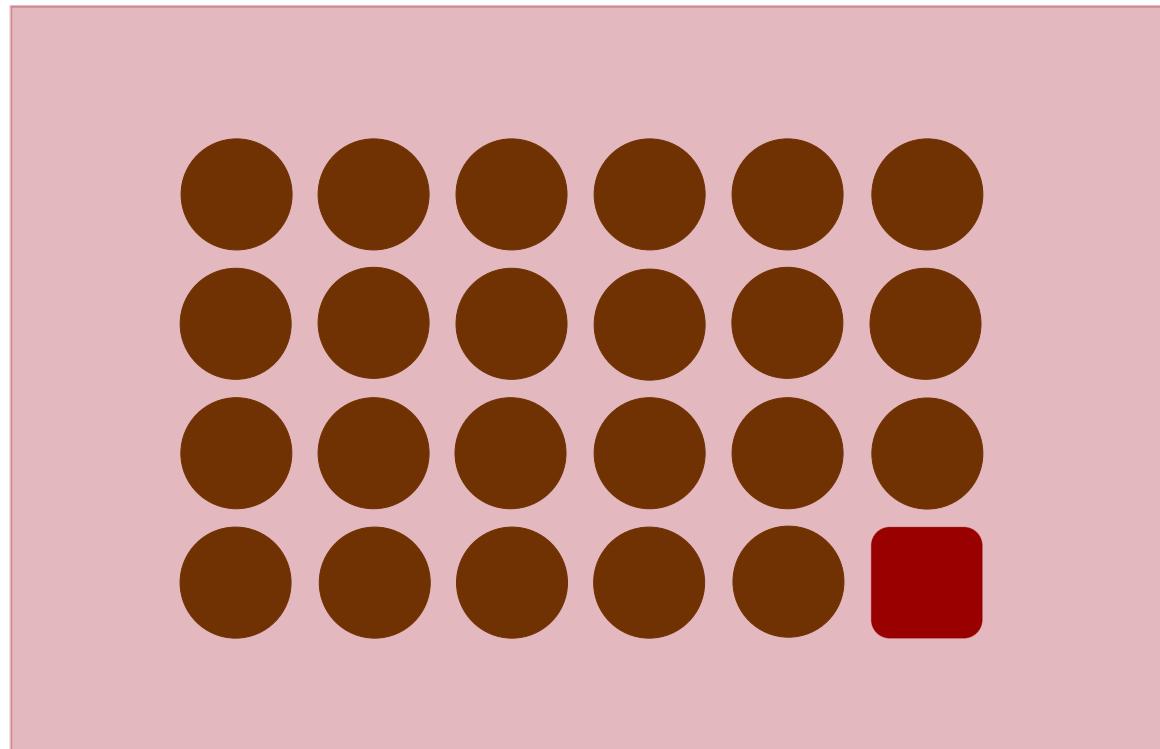
## dinâmica ecológica

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



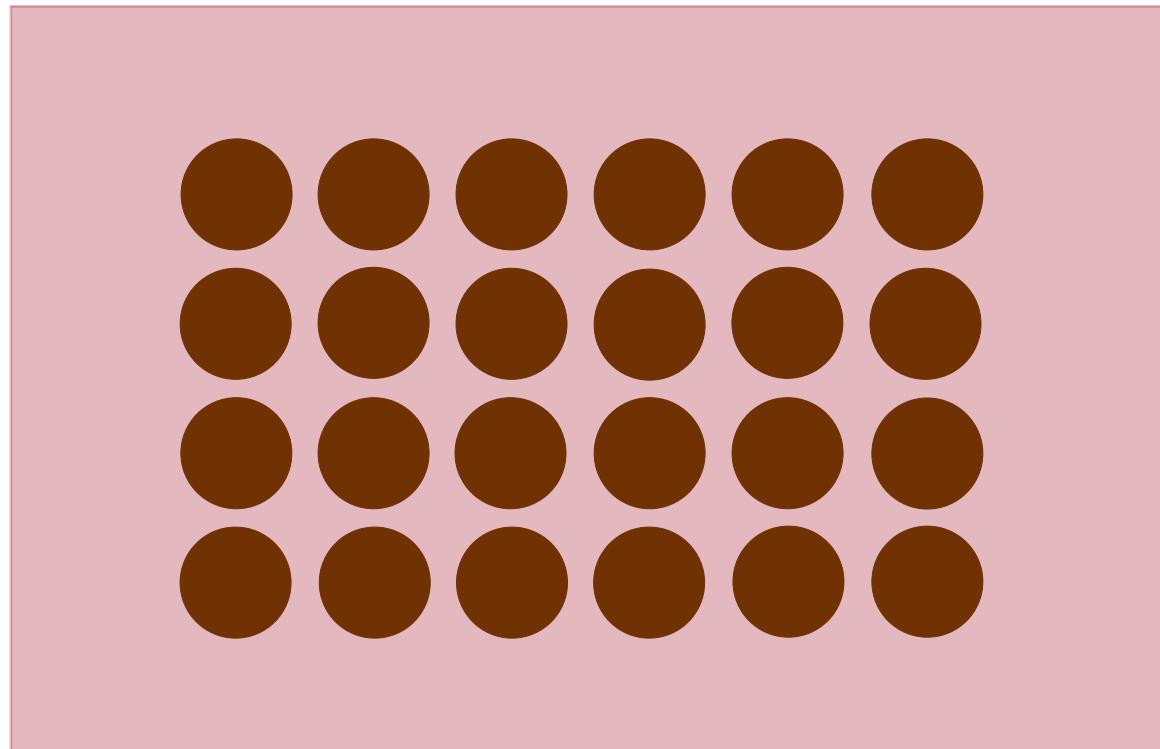
## dinâmica ecológica

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



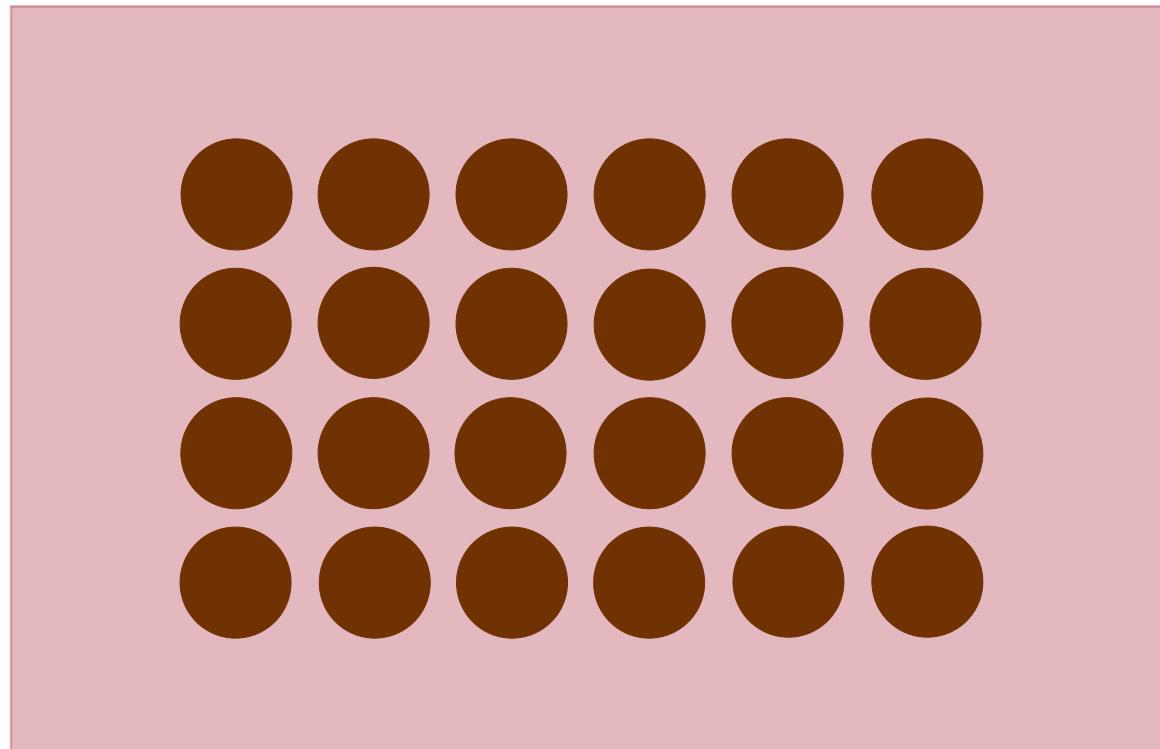
## dinâmica ecológica

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



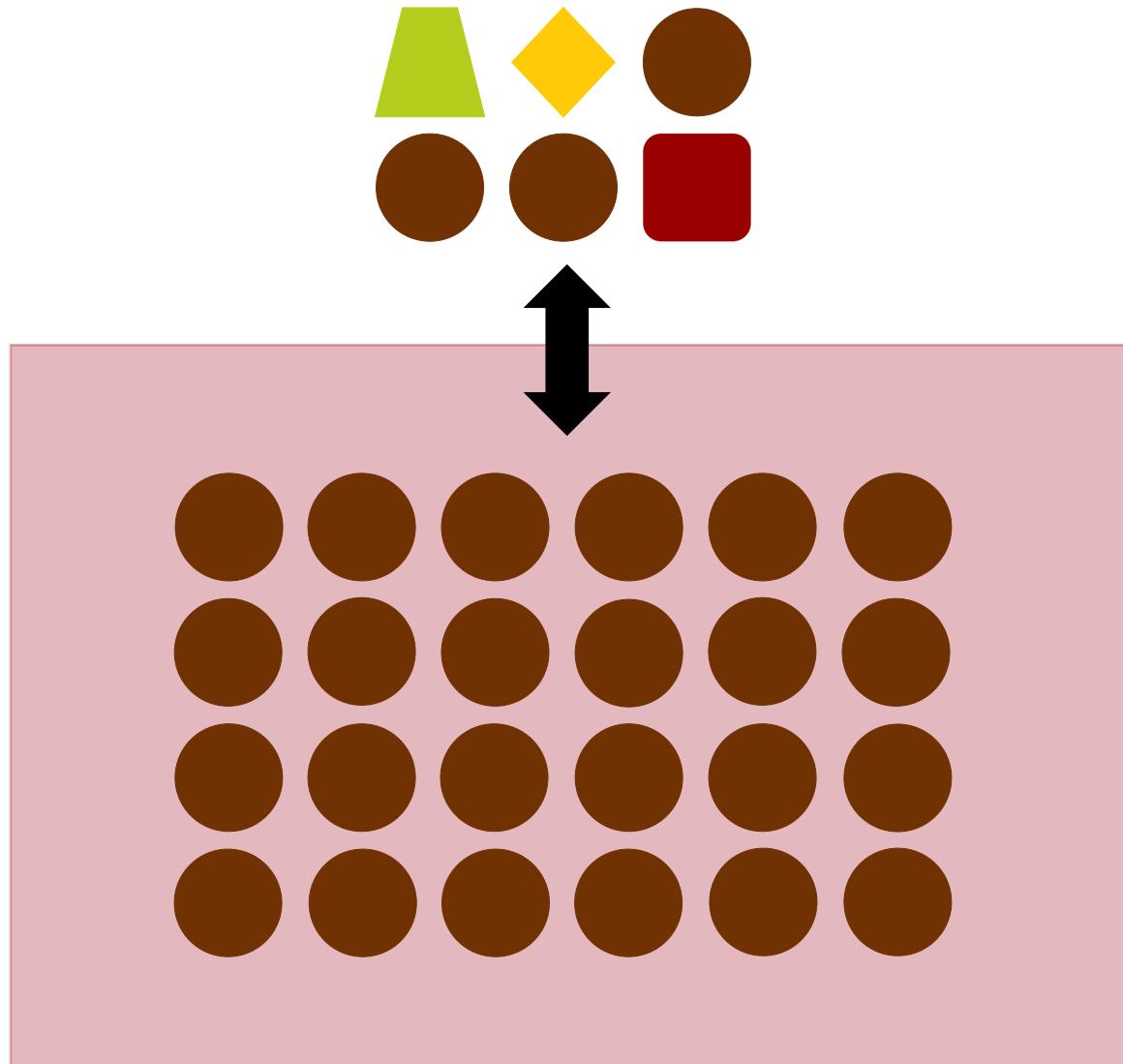
## dinâmica ecológica

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



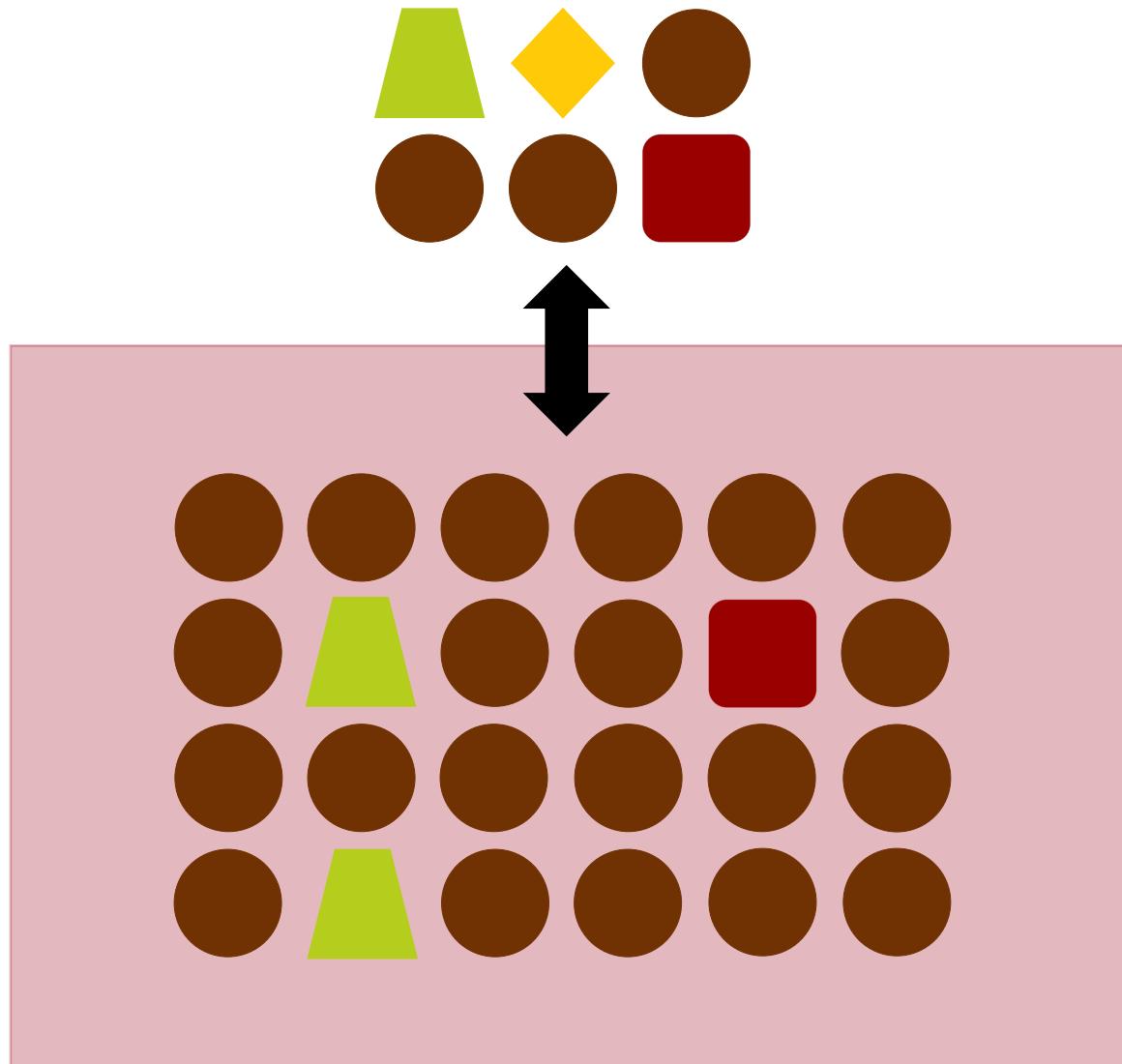
## dinâmica ecológica

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



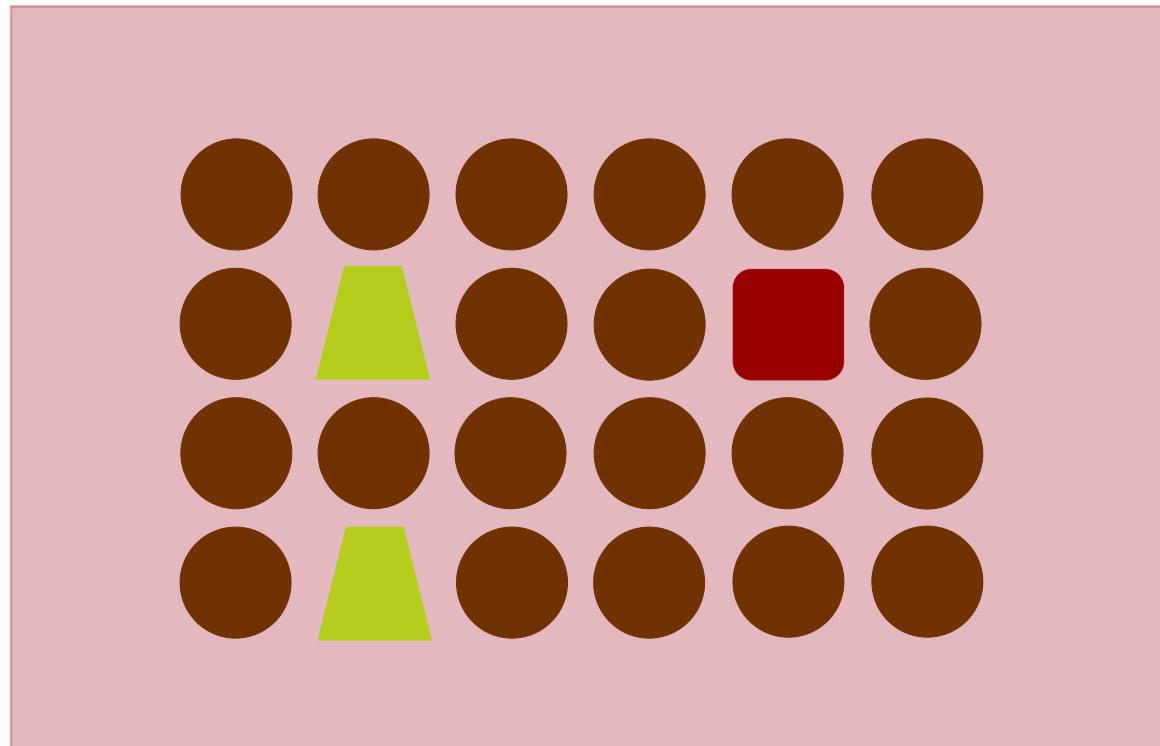
## dinâmica ecológica

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



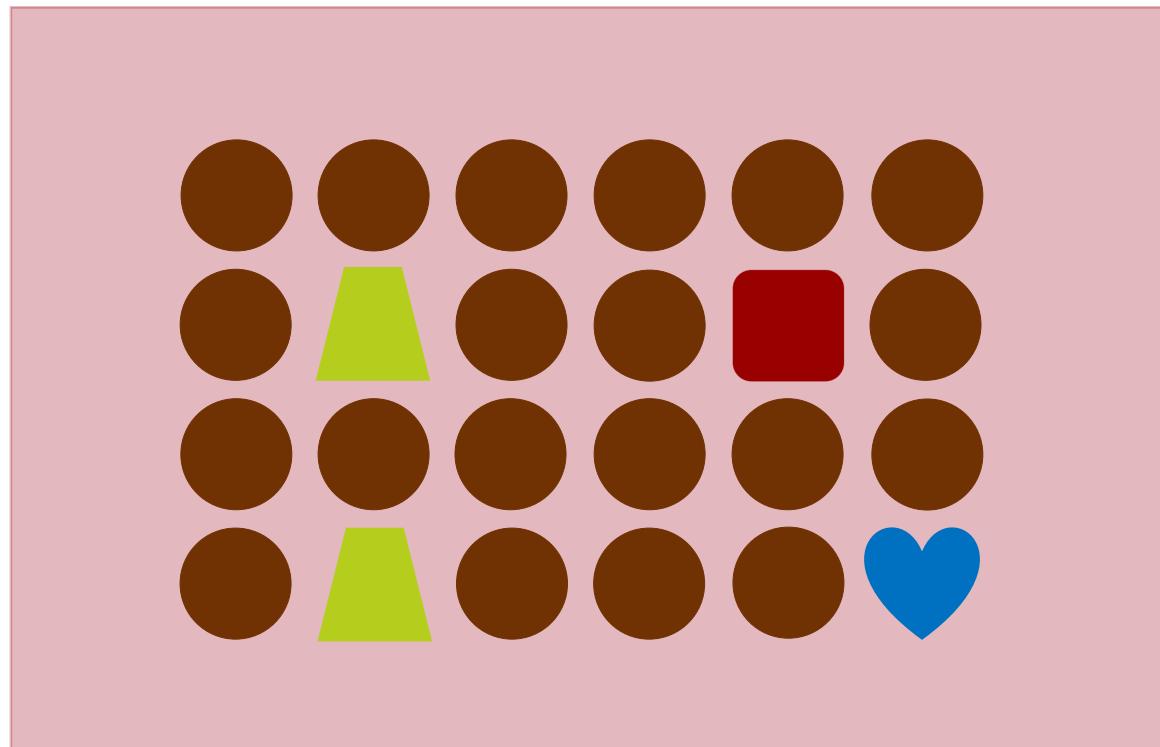
## dinâmica ecológica

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



## dinâmica ecológica

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



## dinâmica ecológica

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

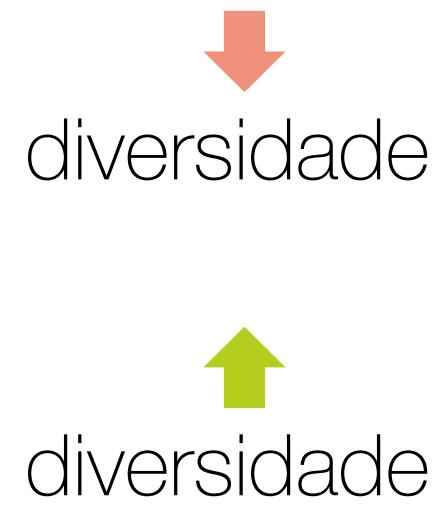


## dinâmica ecológica

diversidade



- filtragem ecológica
- deriva ecológica
- migração
- especiação



## dinâmica ecológica

- filtragem ecológica
- deriva ecológica
- migração
- especiação

## dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

diversidade  
↓  
diversidade  
↑

## dinâmica ecológica

- filtragem ecológica
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva



dinâmica  
ecológica

- seleção
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



- seleção
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
- migração
- especiação



- seleção ←
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



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

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



- seleção →
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
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- especiação

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



mudança nos atributos =  
mudança nas interações

- seleção
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
- migração
- especiação



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



- seleção
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
- migração
- especiação



- seleção
- deriva genética
- fluxo gênico
- mutação
- filtragem ecológica
- deriva ecológica
- migração
- especiação



- seleção
  - deriva genética
  - fluxo gênico
  - mutação
- filtragem ecológica
  - deriva ecológica
  - migração
  - especiação

dinâmica  
evolutiva

dinâmica  
ecológica

## **estratégia de vida**

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



**estratégia de vida**

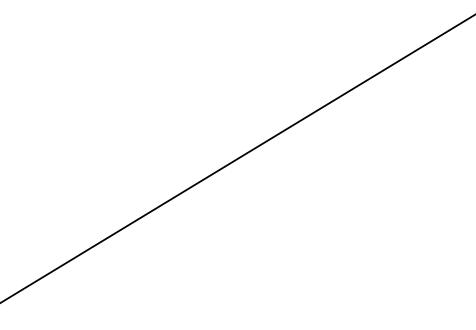
dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica

## **estratégia de vida**

número de  
descendentes



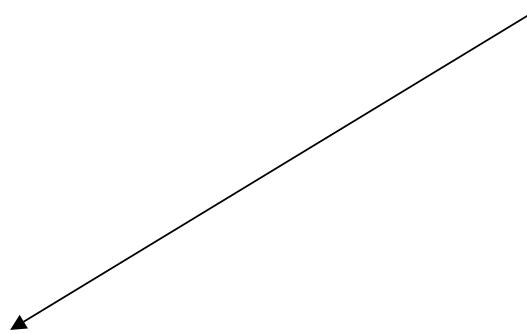
dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica

**estratégia de vida**

aptidão



dinâmica  
evolutiva

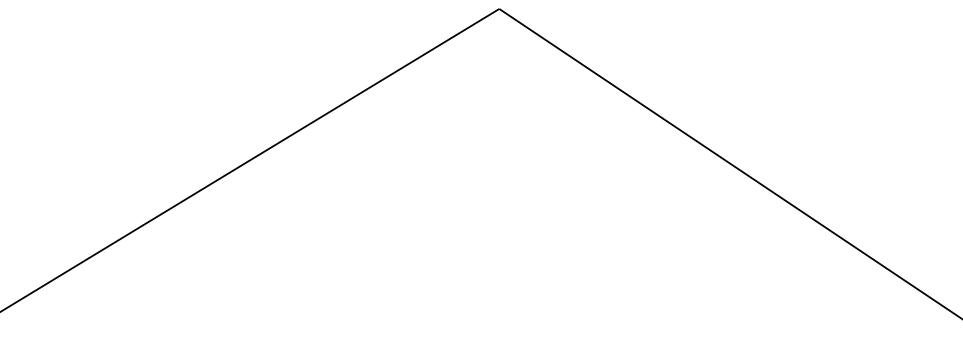
dinâmica  
eco-evolutiva

dinâmica  
ecológica

## **estratégia de vida**

aptidão

uso eficiente  
do recurso



dinâmica  
evolutiva

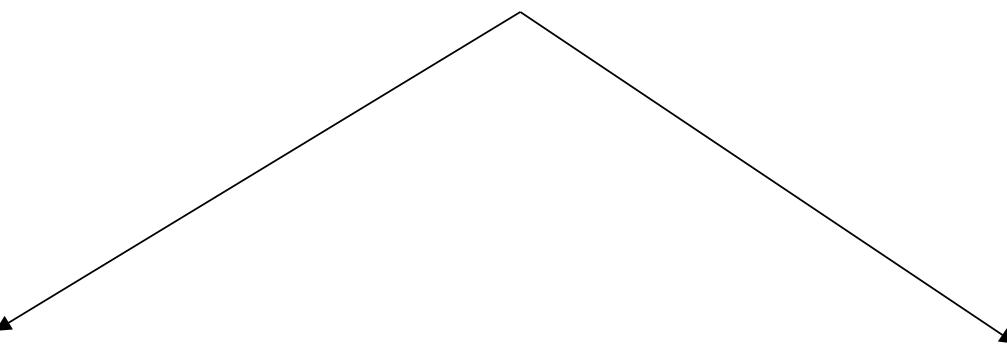
dinâmica  
eco-evolutiva

dinâmica  
ecológica

## **estratégia de vida**

aptidão

habilidade  
competitiva



## estratégia de vida

sobrevivência  reprodução

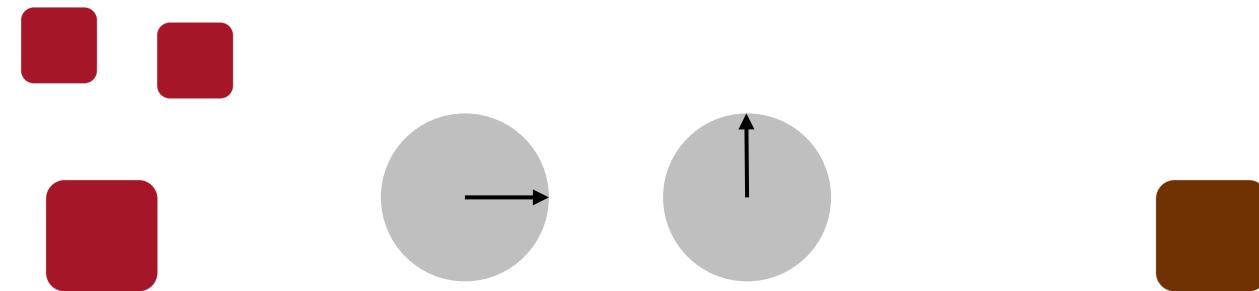
## estratégia de vida

sobrevivência ← → reprodução



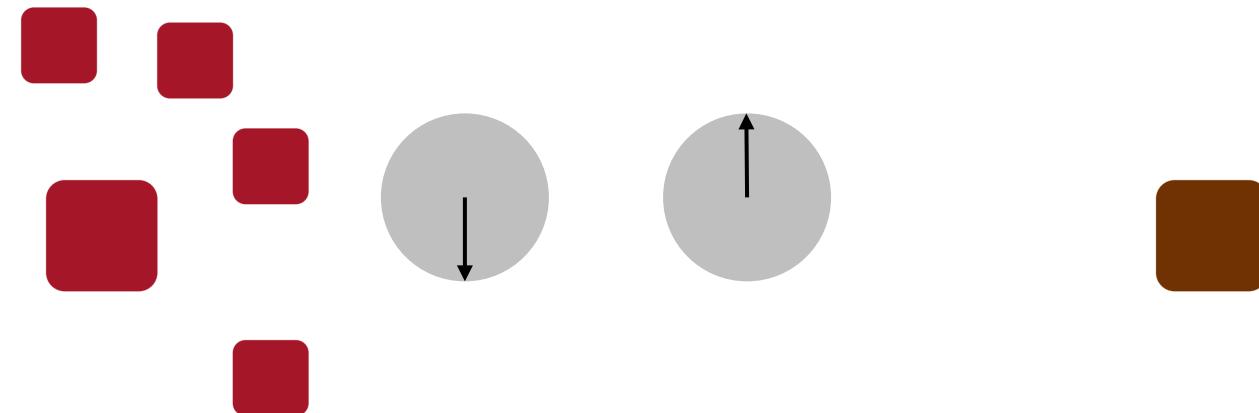
## estratégia de vida

sobrevivência ← → reprodução



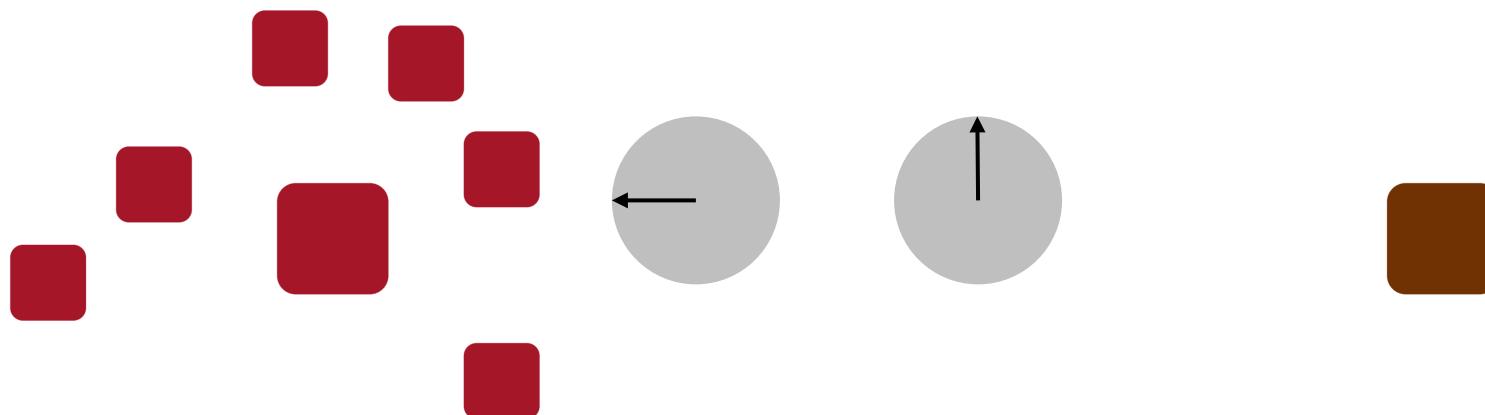
## estratégia de vida

sobrevivência ← → reprodução



## estratégia de vida

sobrevivência ← → reprodução

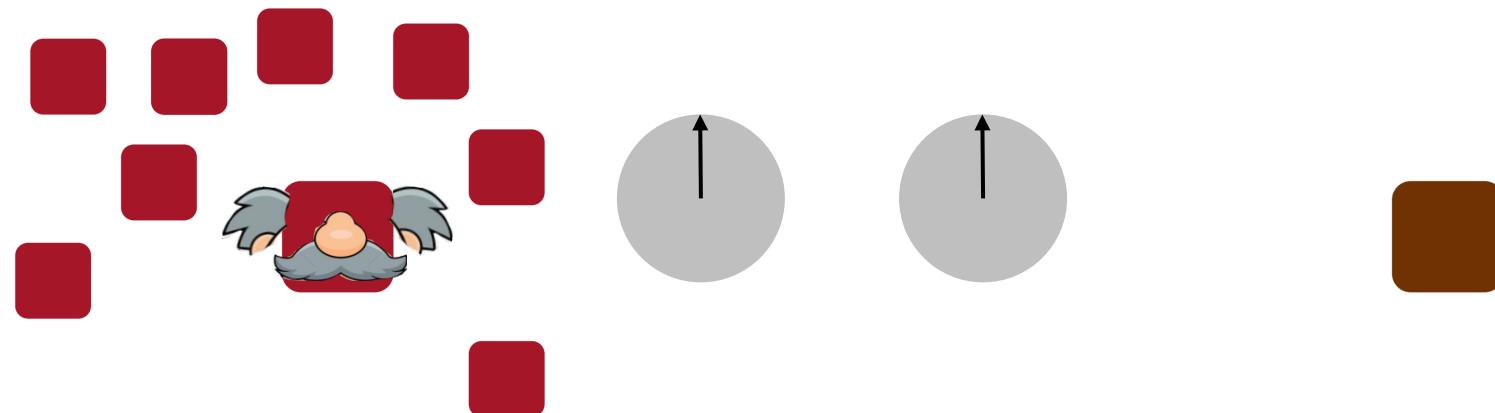


## estratégia de vida

sobrevivência



reprodução

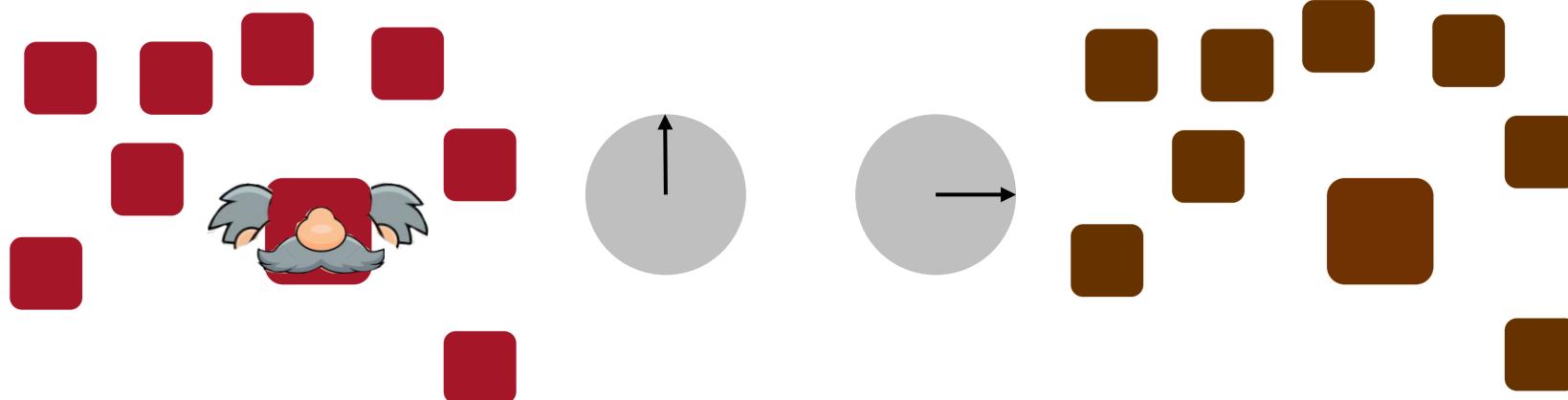


## estratégia de vida

sobrevivência



reprodução

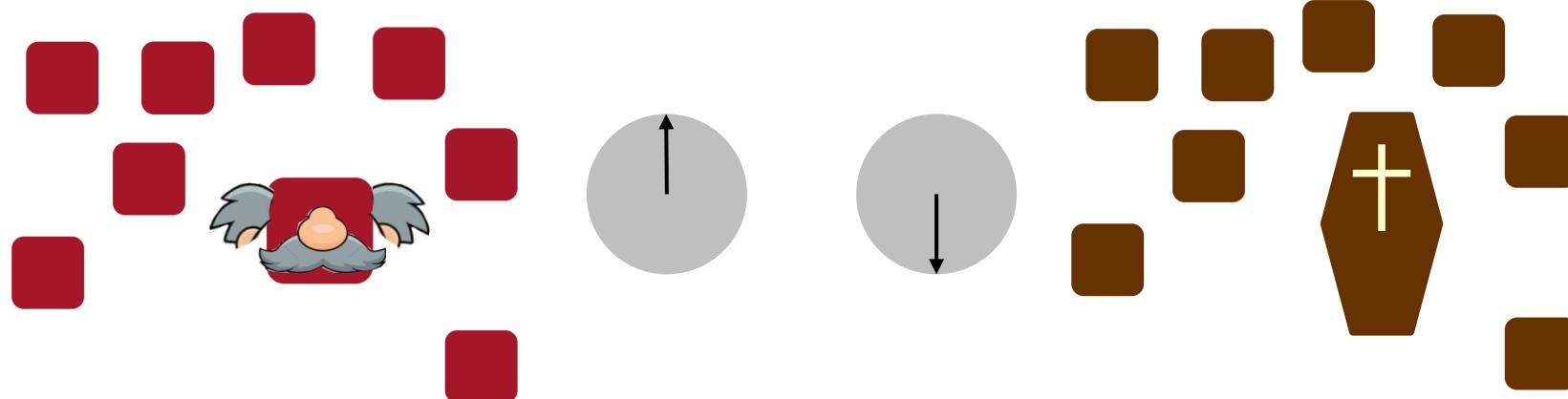


## estratégia de vida

sobrevivência



reprodução

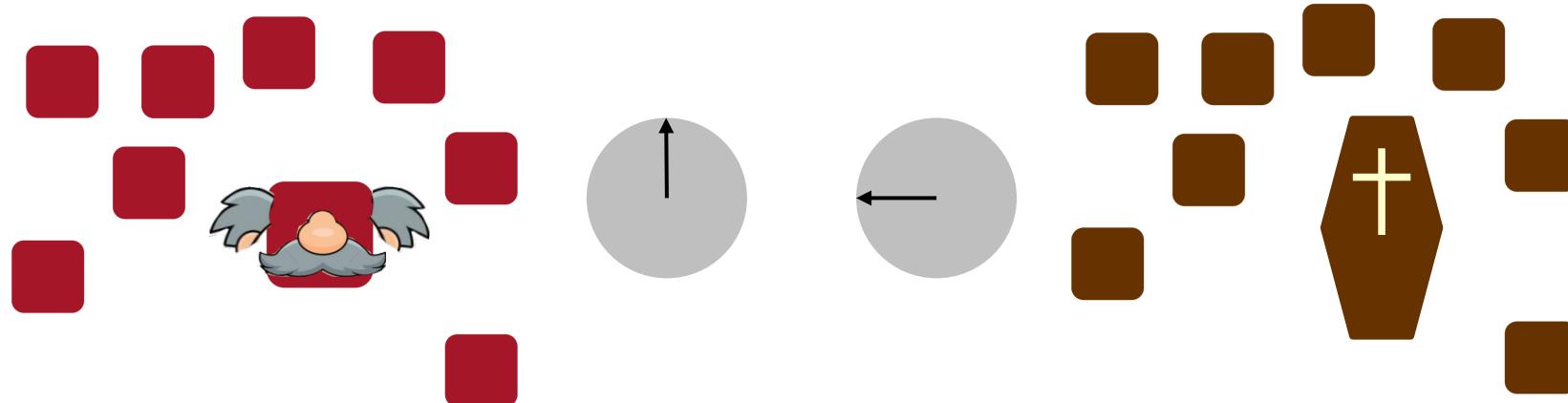


## estratégia de vida

sobrevivência



reprodução

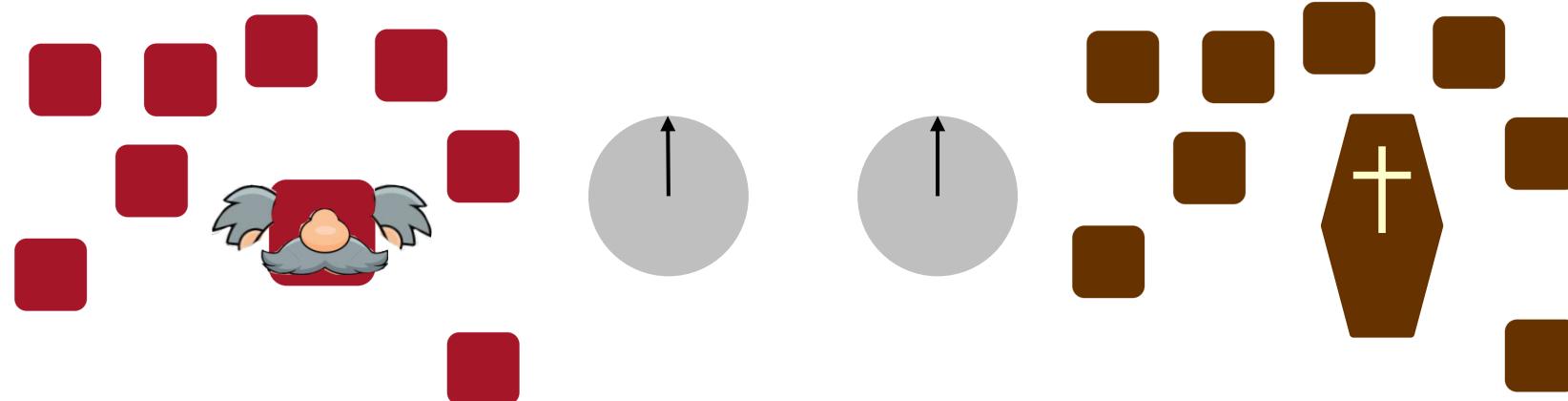


## estratégia de vida

sobrevivência



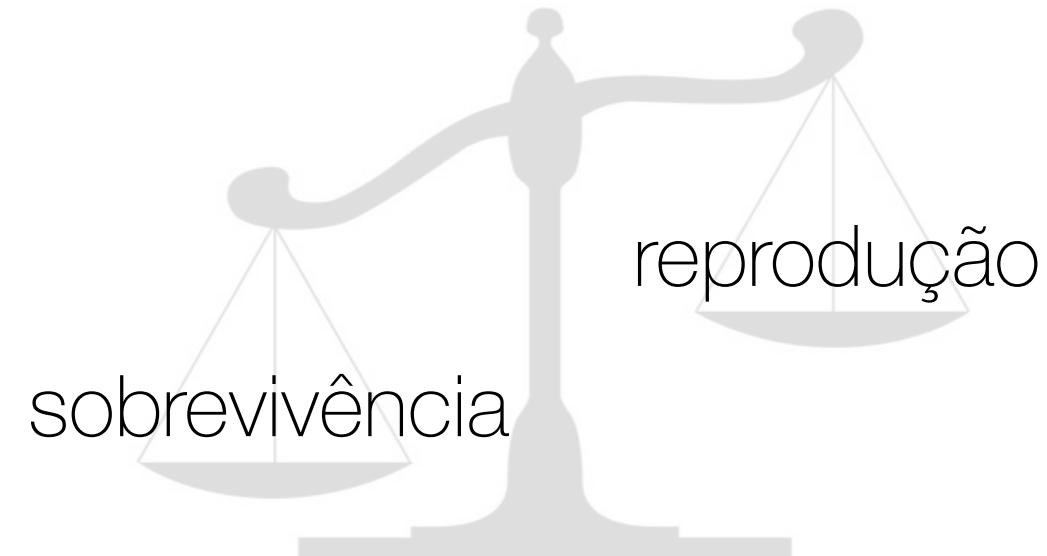
reprodução

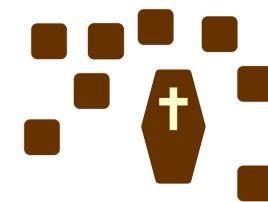


# estratégia de vida



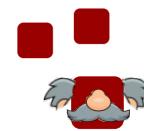
fatores ambientais





↓ recurso

reprodução

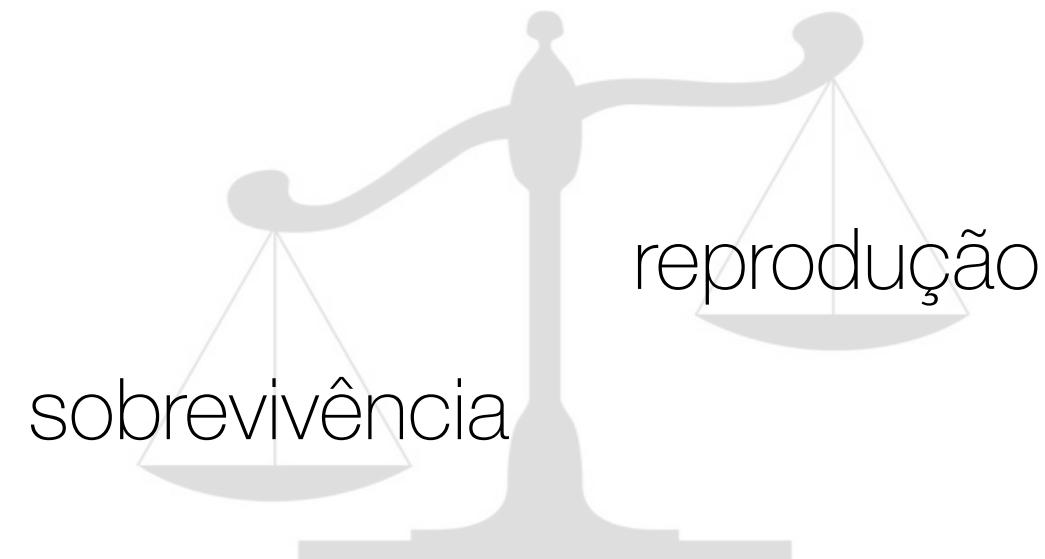


**sobrevivência**

# distúrbio



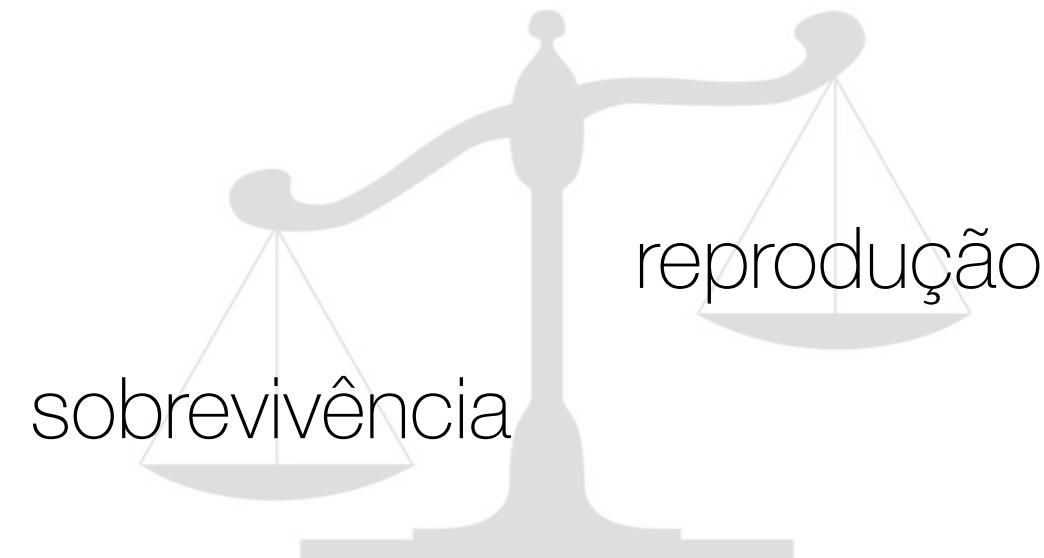
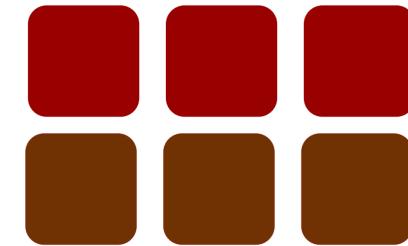
recurso



# distúrbio



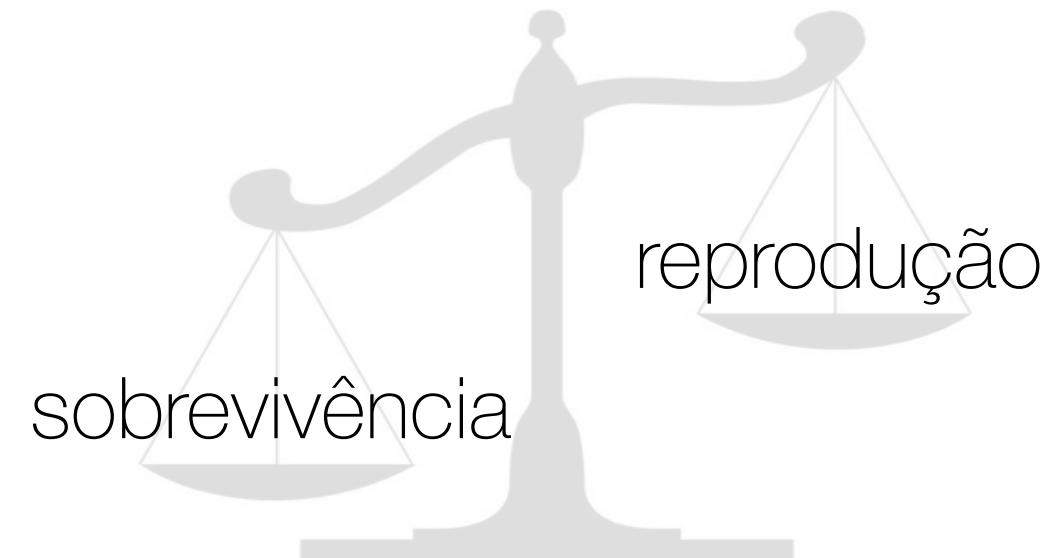
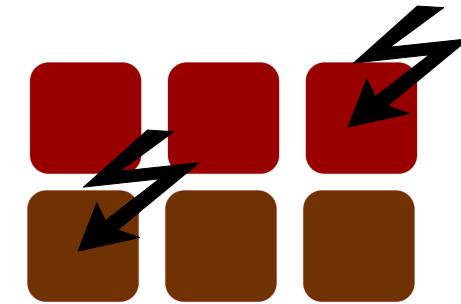
recurso



# distúrbio



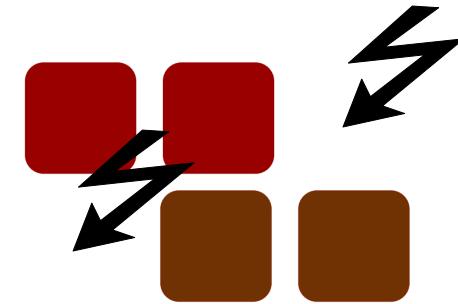
recurso



# distúrbio



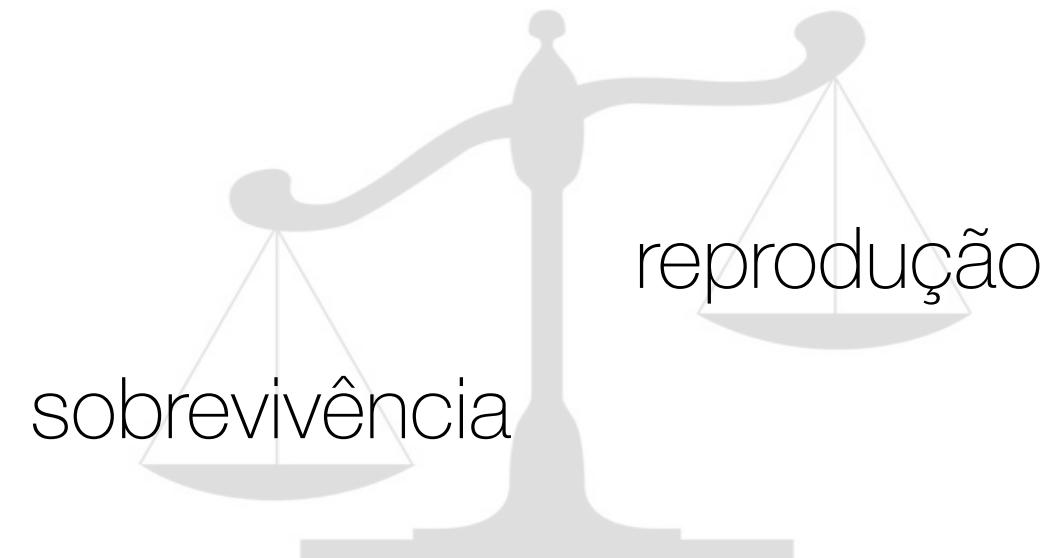
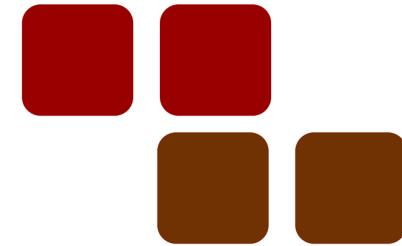
recurso



# distúrbio



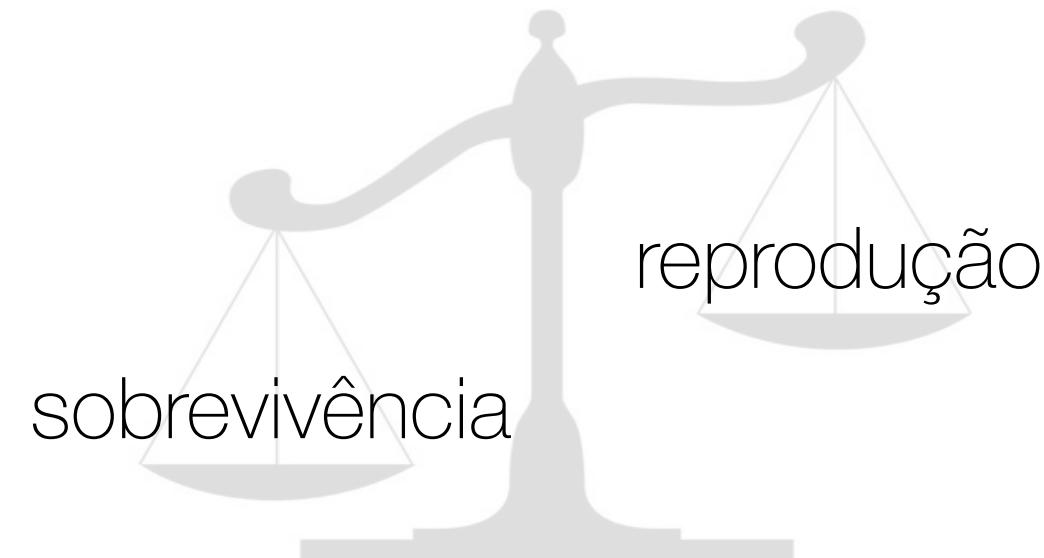
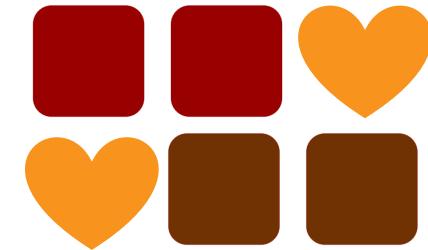
recurso



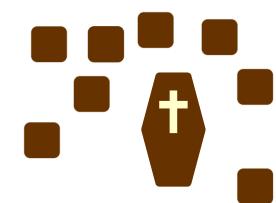
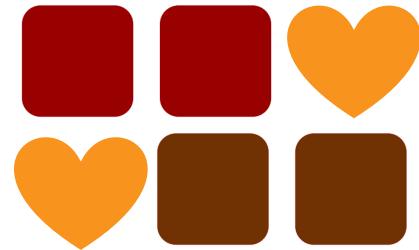
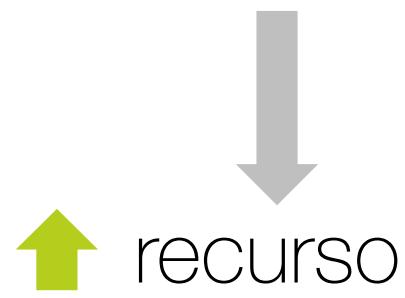
# distúrbio



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

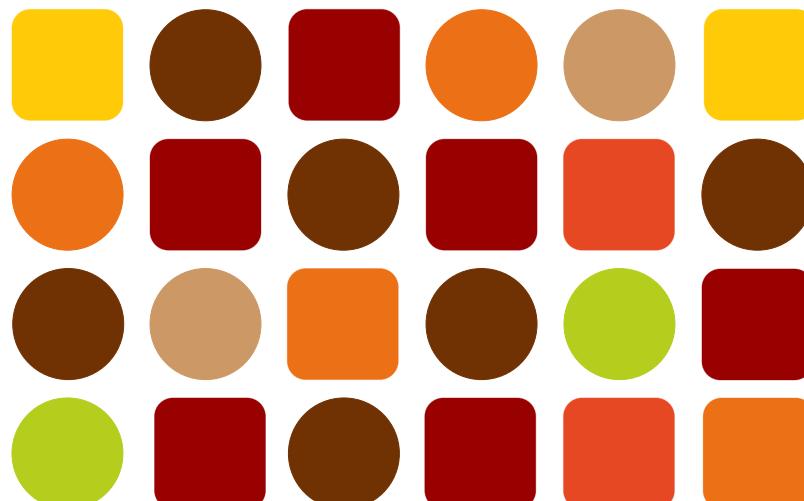
# distúrbio

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

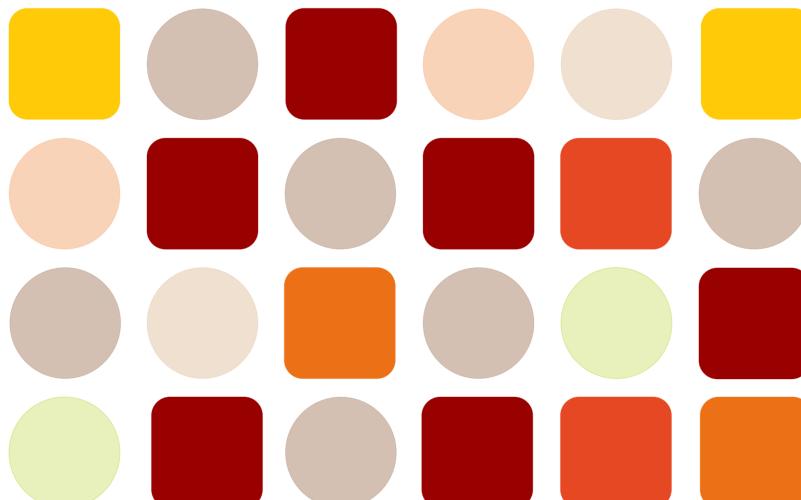
dinâmica ecológica



- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



## distúrbio

- abundância
- recurso

dinâmica  
ecológica

- filtragem
- deriva ecológica
- migração
- especiação

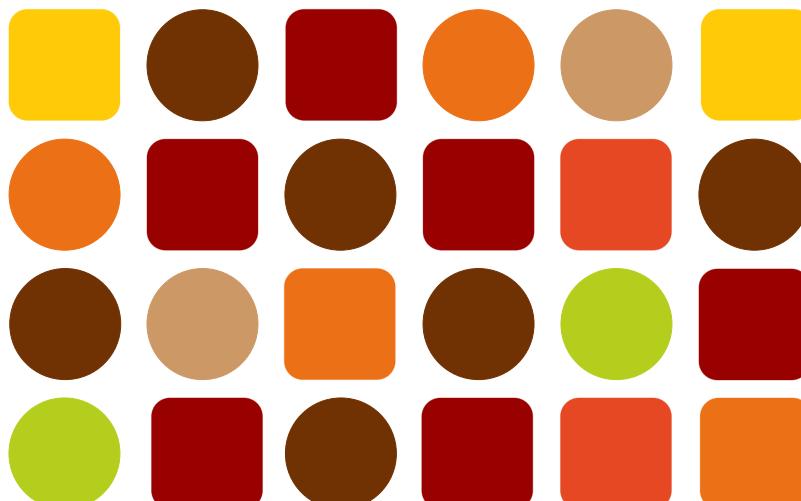
# distúrbio

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

dinâmica  
ecológica



- filtragem
- deriva ecológica
- migração
- especiação

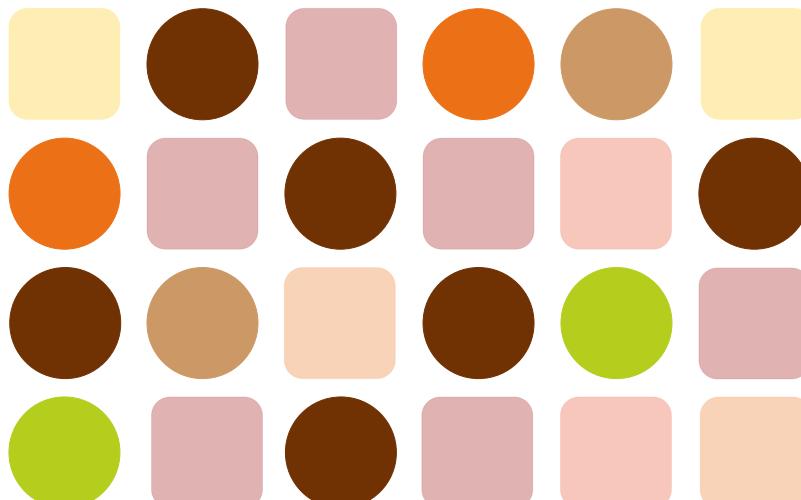
# distúrbio

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

dinâmica ecológica



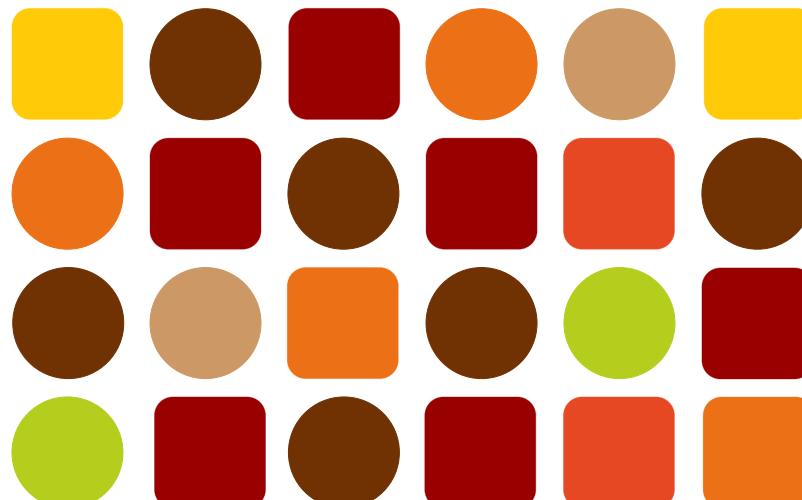
- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

- abundância
- recurso

dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

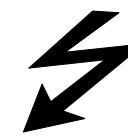


- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
ecológica

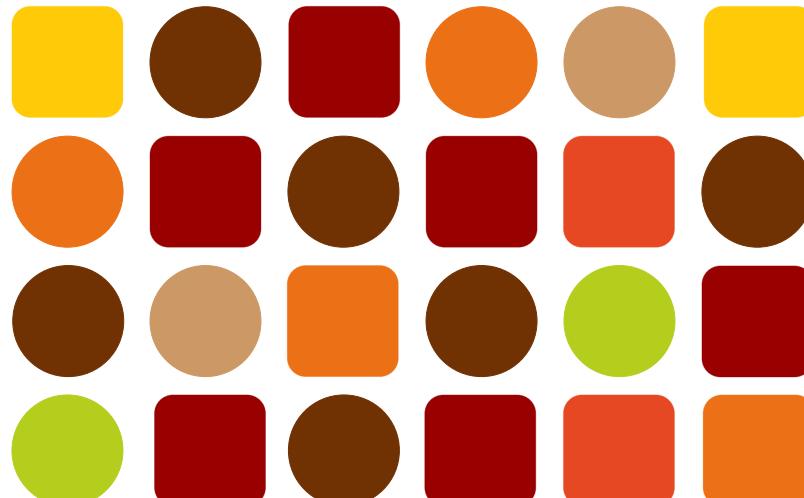
# distúrbio

- abundância
- recurso



dinâmica  
evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação



dinâmica  
ecológica

- filtragem
- deriva ecológica
- migração
- especiação

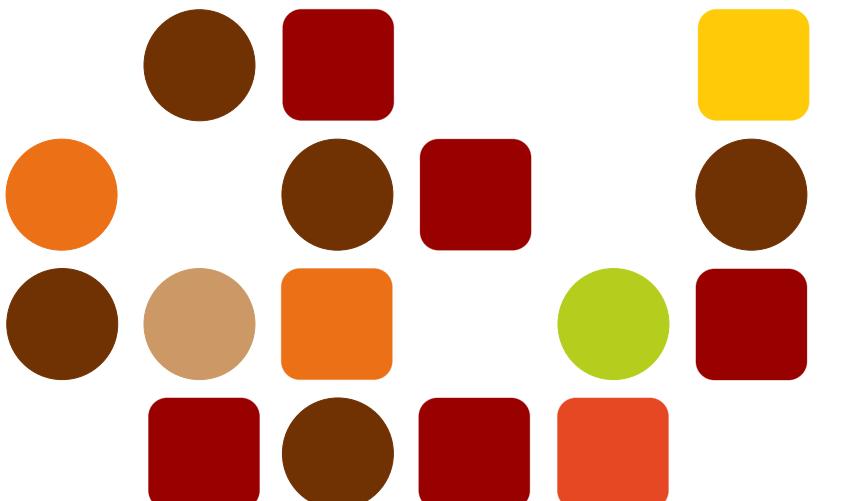
# distúrbio

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

- abundância
- recurso

dinâmica ecológica



- filtragem
- deriva ecológica
- migração
- especiação

# distúrbio

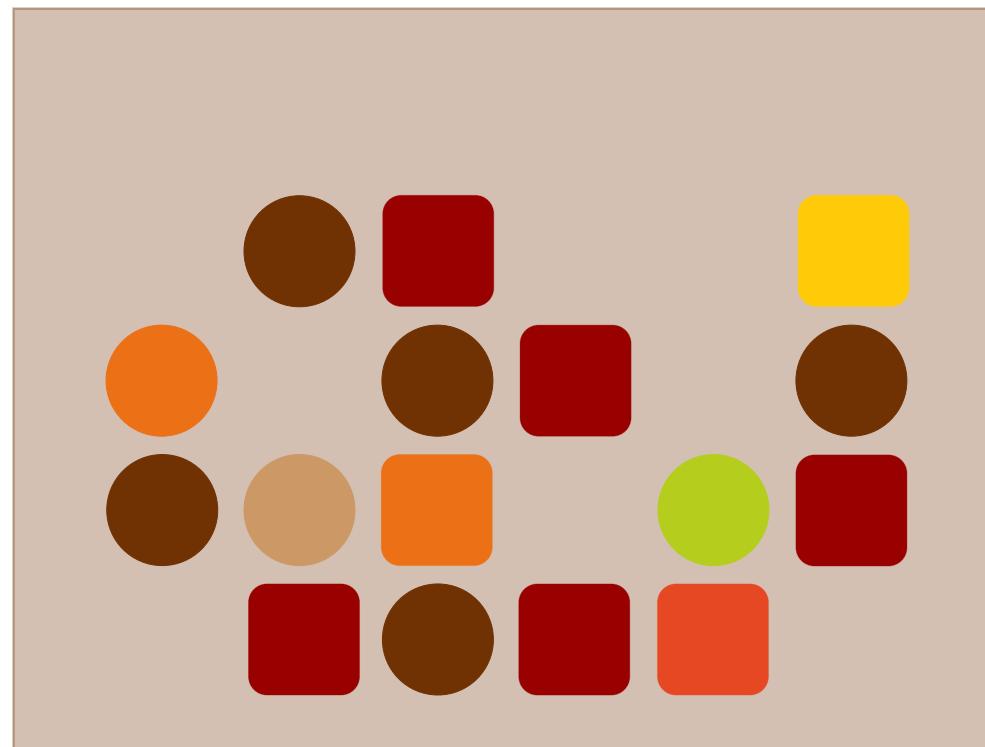
- abundância
- recurso

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

dinâmica ecológica

- filtragem
- deriva ecológica
- migração
- especiação



# distúrbio

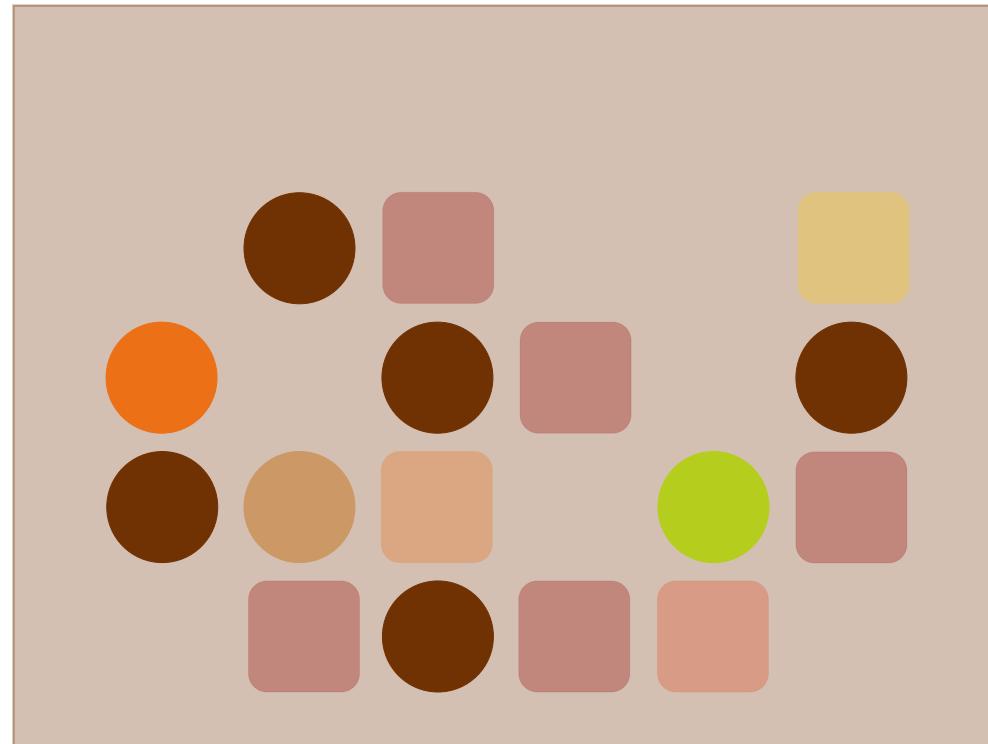
- abundância
- recurso

dinâmica evolutiva

- seleção
- deriva genética
- fluxo gênico
- mutação

dinâmica ecológica

- filtragem
- deriva ecológica
- migração
- especiação



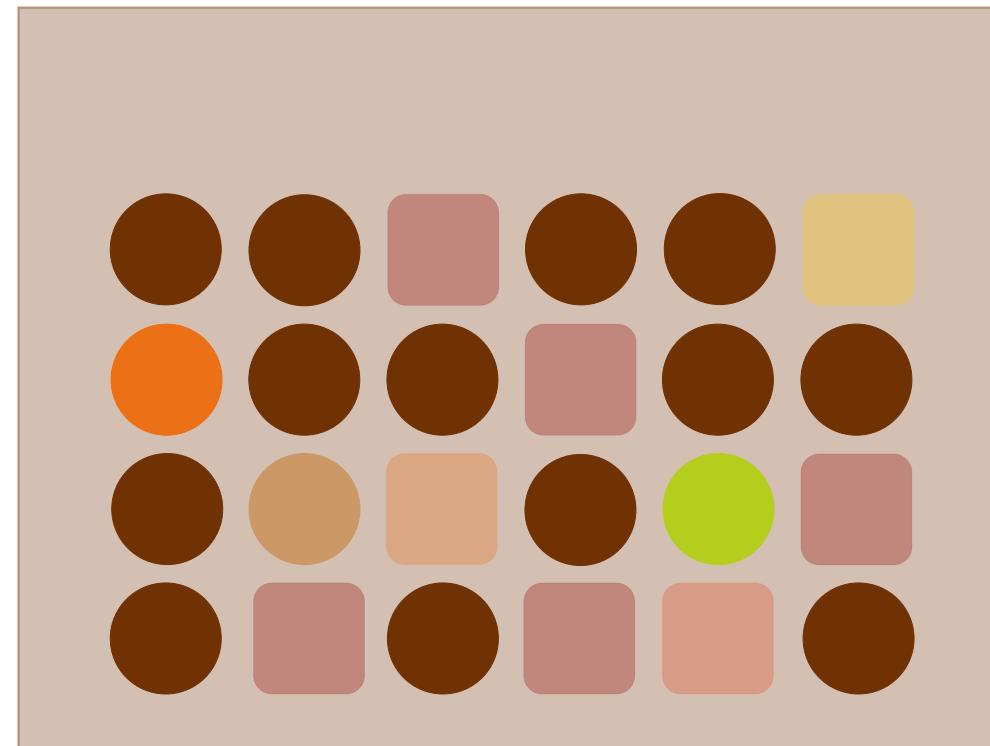
# distúrbio

- abundância
- recurso

dinâmica evolutiva

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

dinâmica ecológica



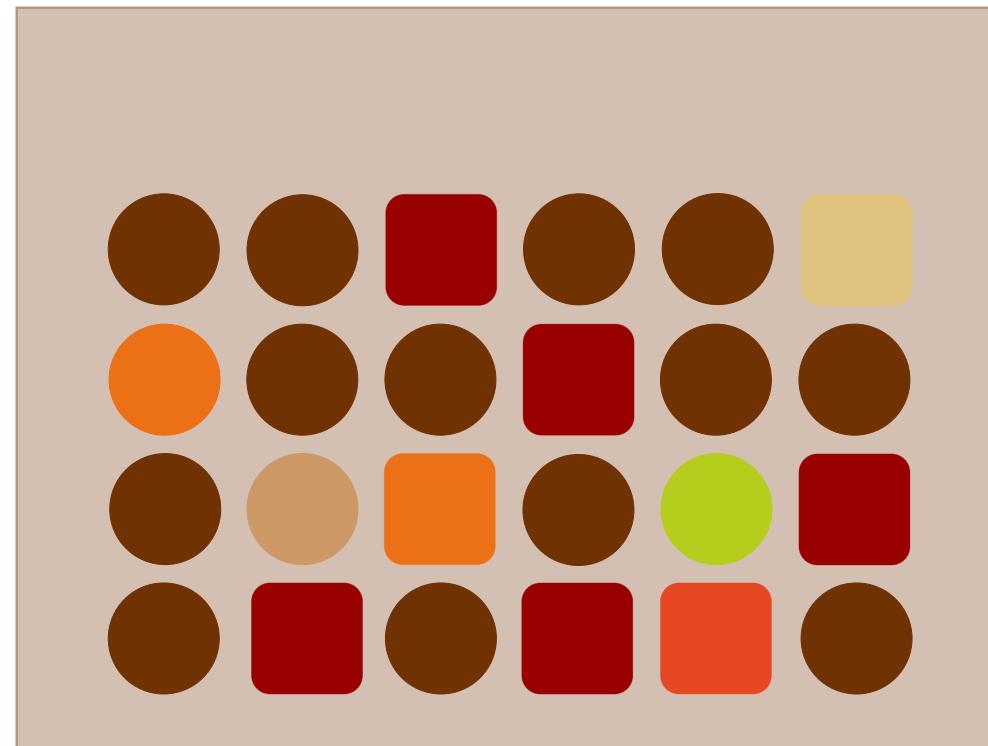
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

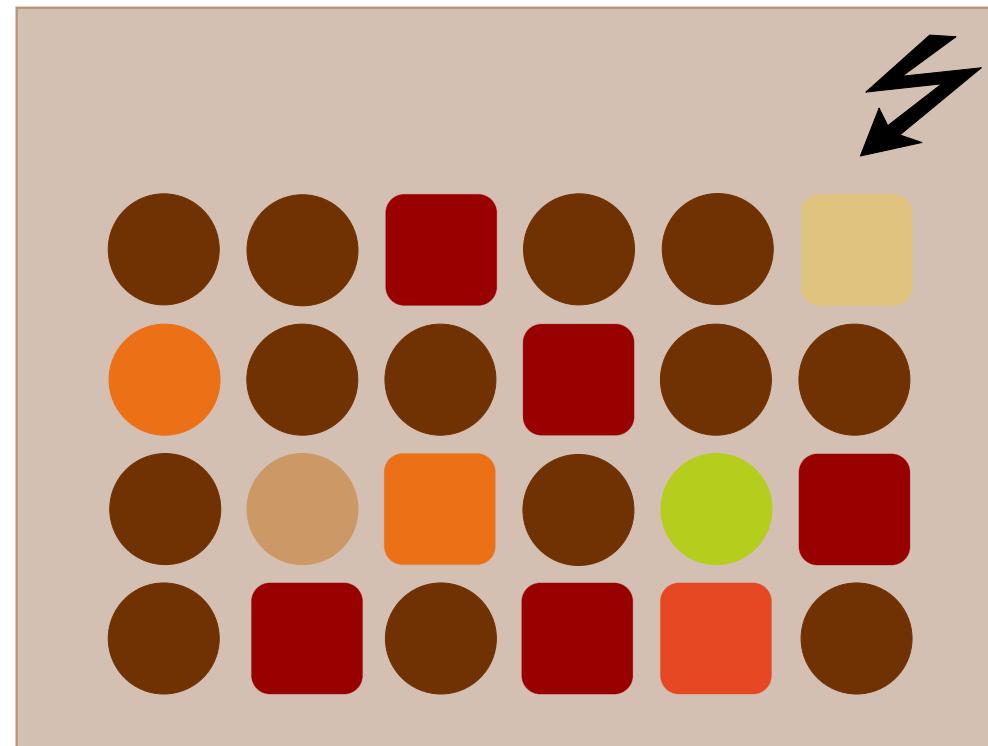
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

# distúrbio

- abundância
- recurso



dinâmica  
ecológica

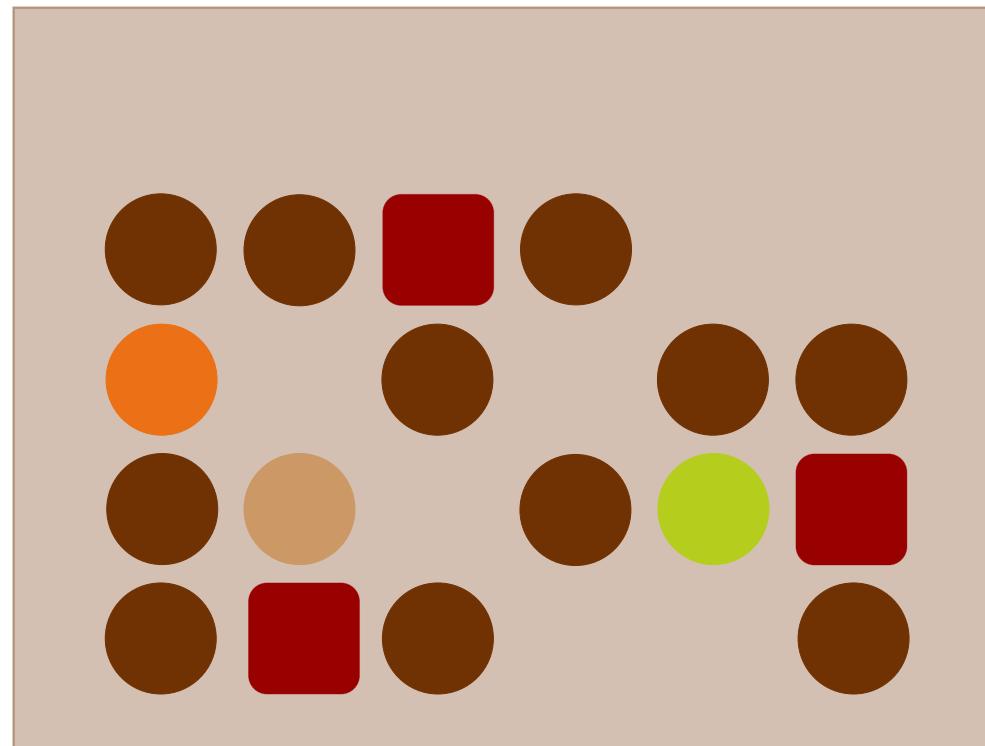
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

# distúrbio

- abundância
- recurso



dinâmica  
ecológica

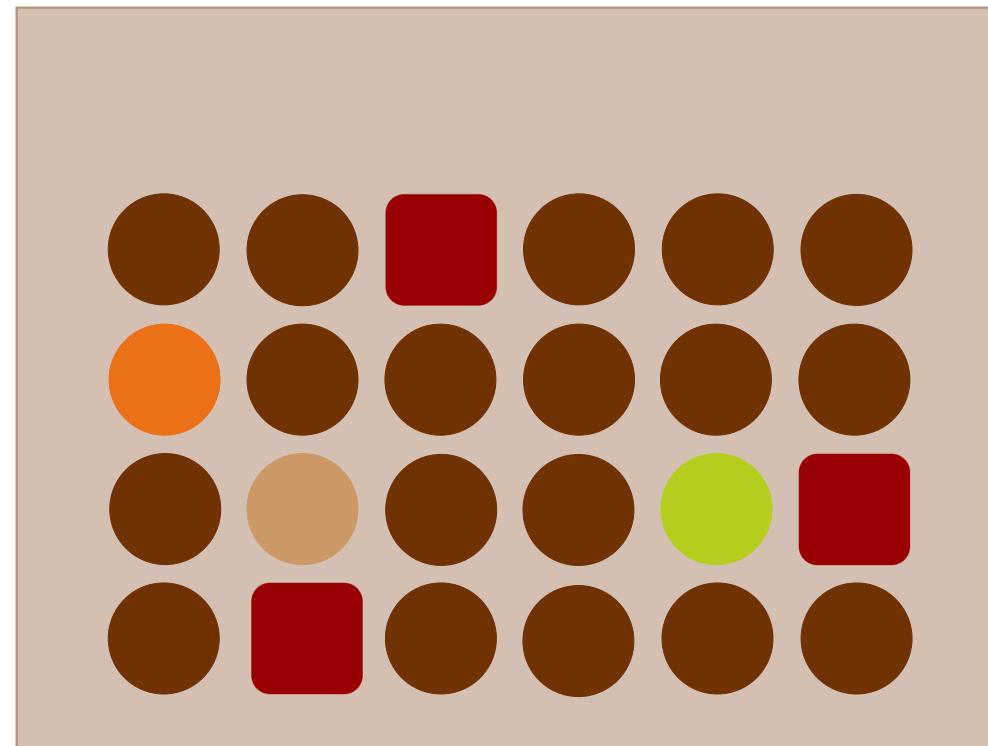
- filtragem
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

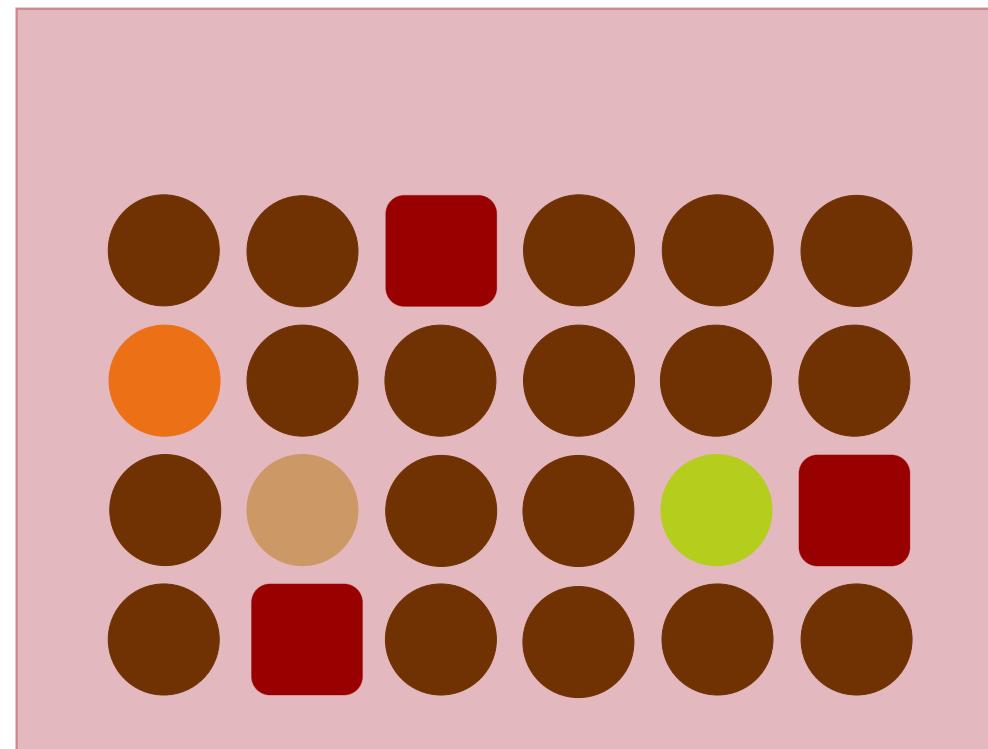
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

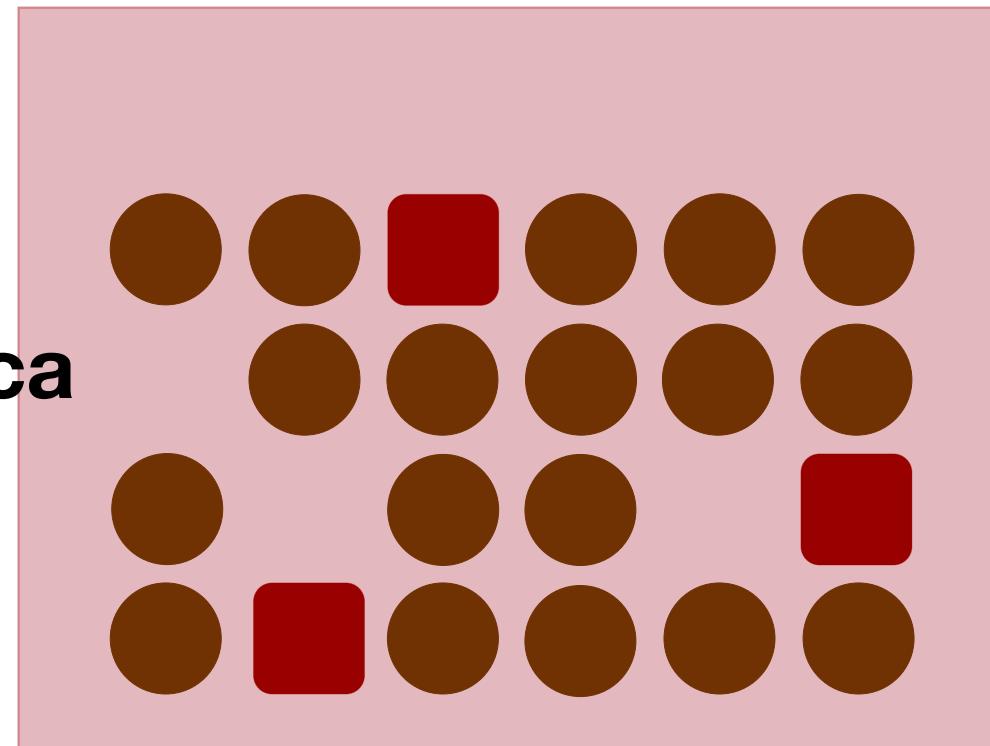
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

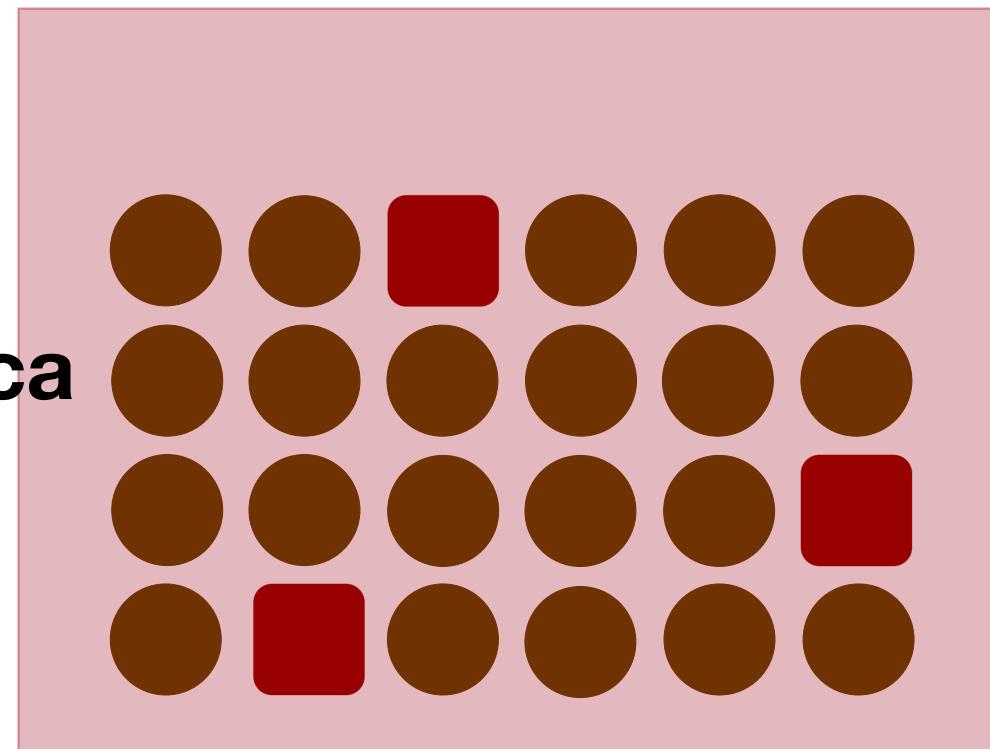
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

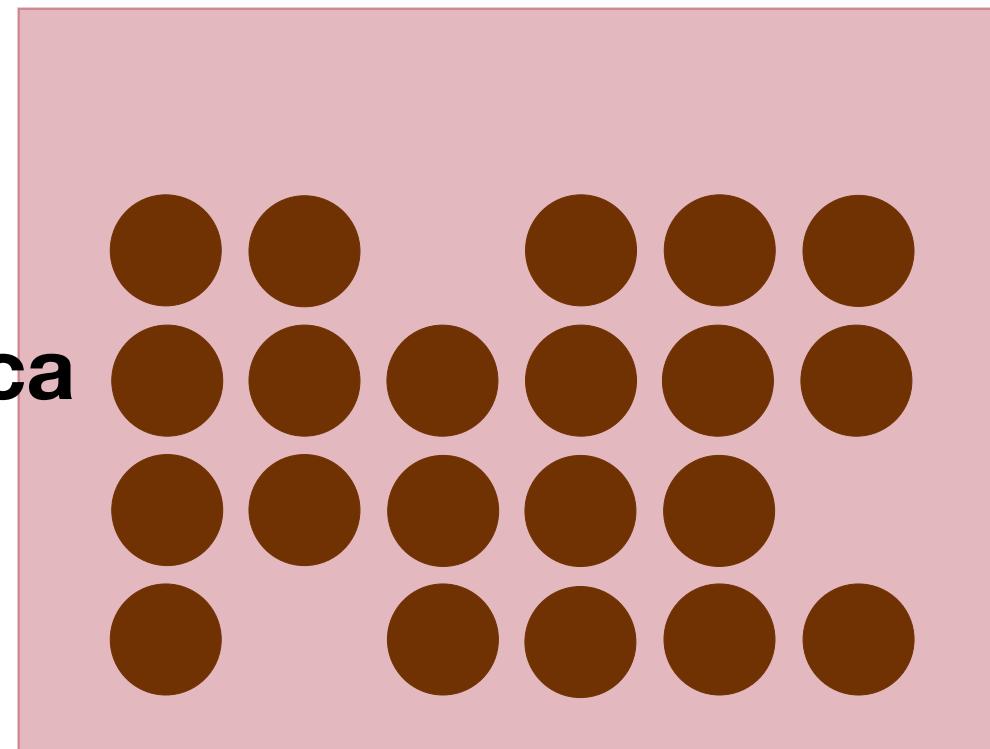
- **filtragem**
- deriva ecológica
- migração
- especiação

dinâmica  
evolutiva

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

## distúrbio

- abundância
- recurso



dinâmica  
ecológica

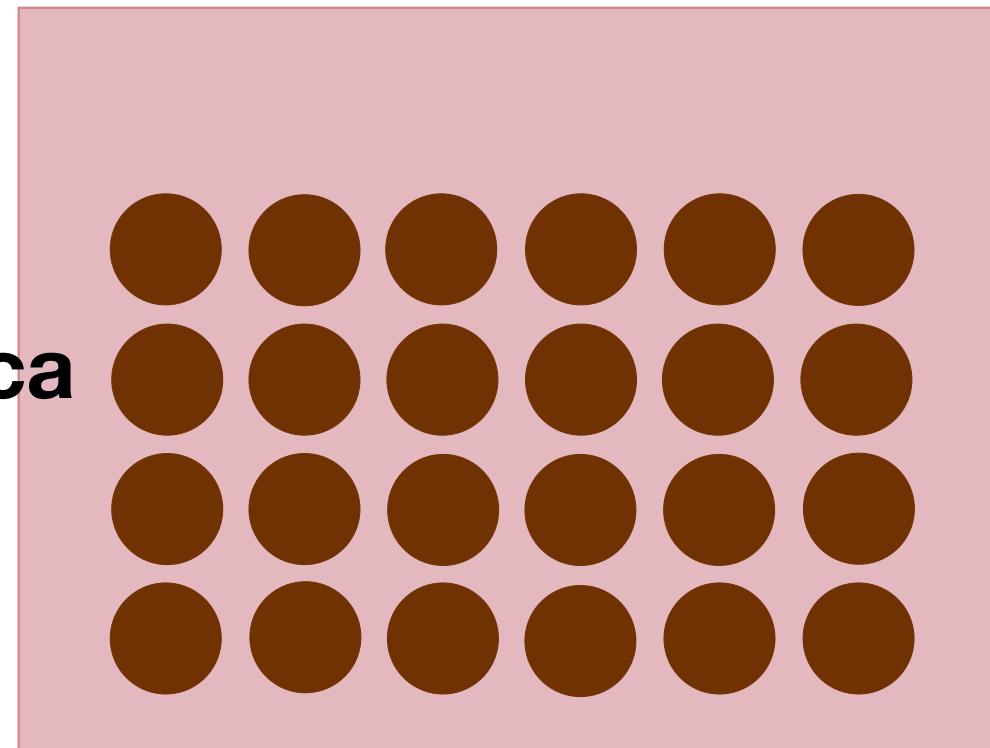
- **filtragem**
- **deriva ecológica**
- migração
- especiação

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



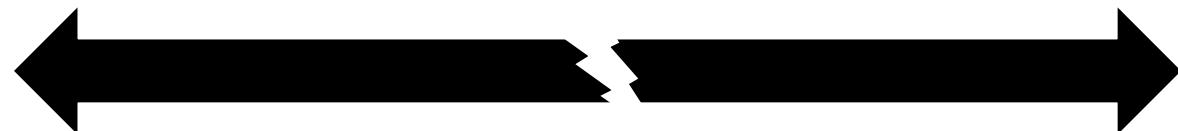
 **distúrbio**

logo...

dinâmica  
evolutiva

dinâmica  
eco-evolutiva

dinâmica  
ecológica



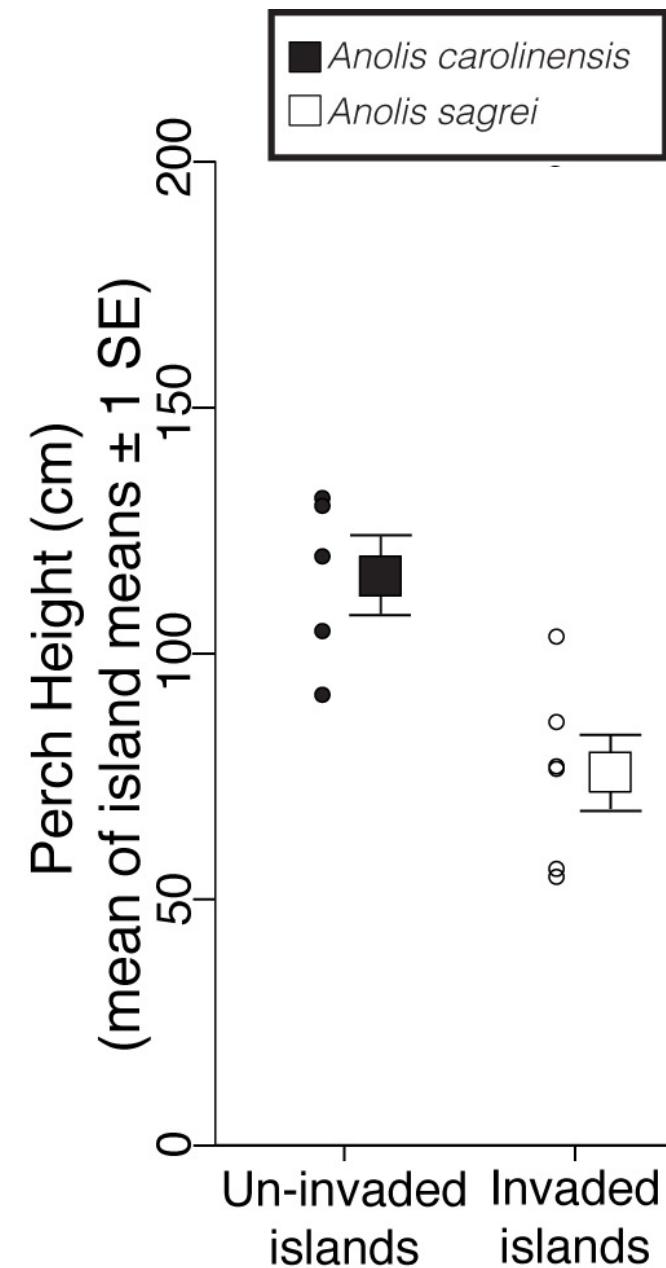
 **distúrbio**

predições  
distintas e imprecisas

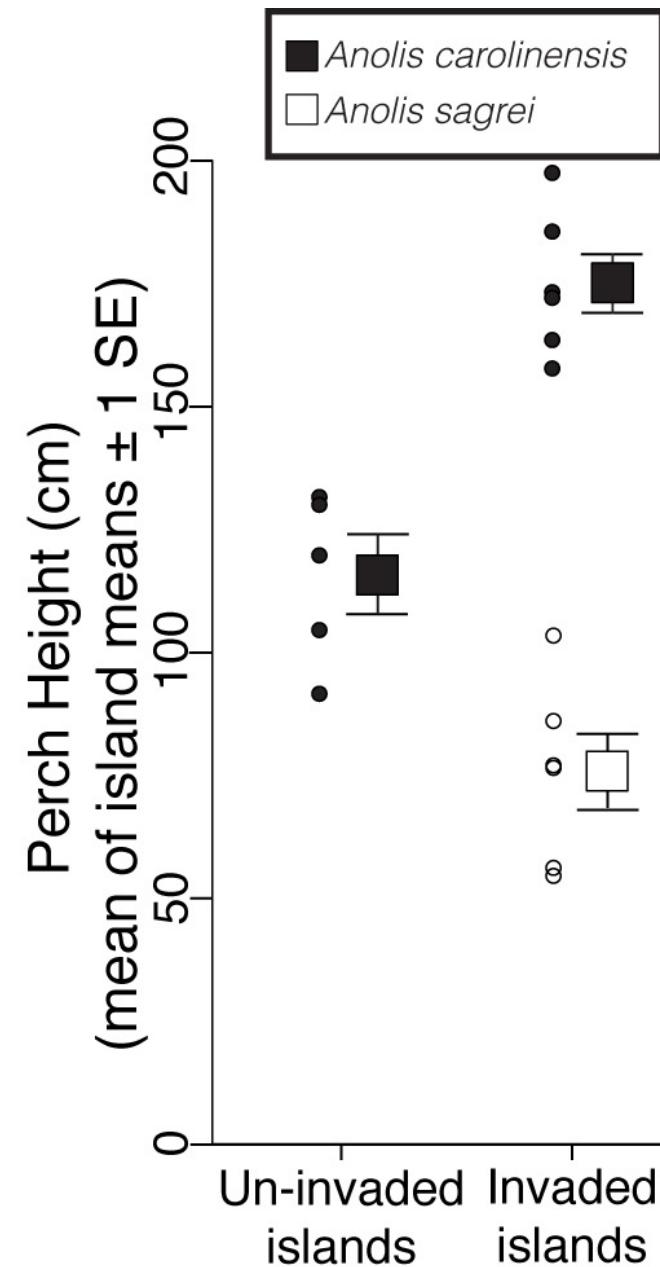
logo...



logo...



logo...



# 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?**

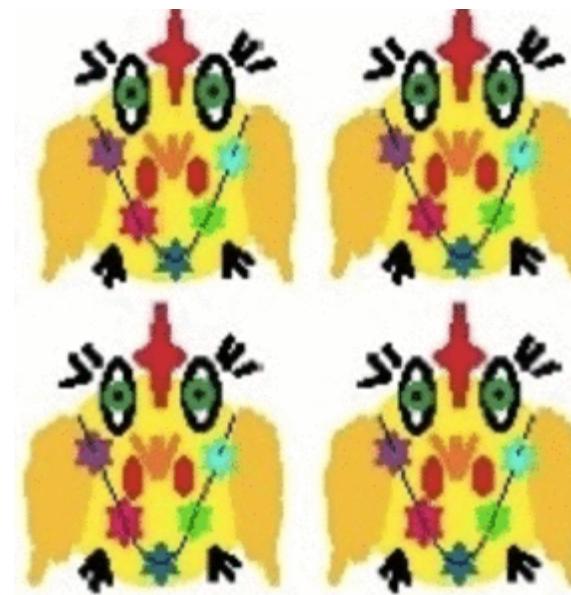


# modelo baseado em indivíduo

# modelo baseado em indivíduo



# modelo baseado em indivíduo



# modelo baseado em indivíduo

***parâmetros***

# modelo baseado em indivíduo



***parâmetros***

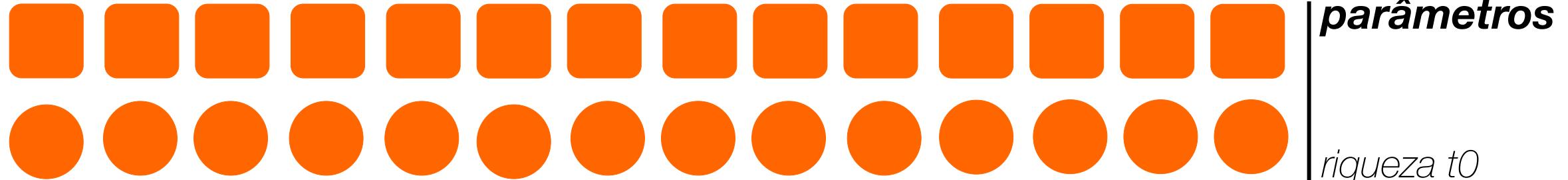
# modelo baseado em indivíduo



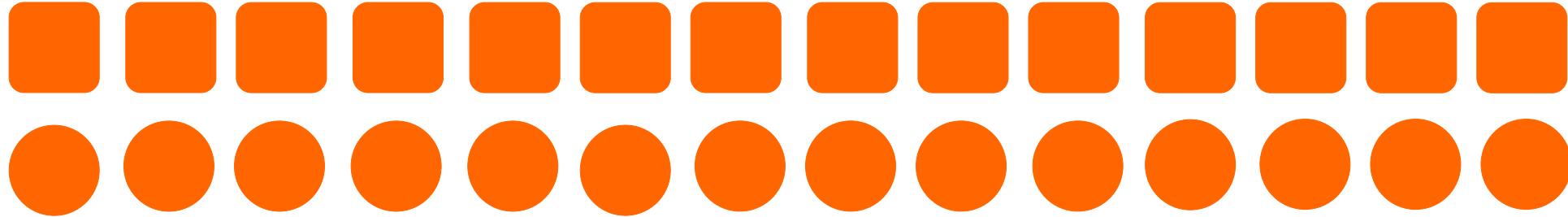
**parâmetros**

*riqueza  $t_0$*

# modelo baseado em indivíduo



# modelo baseado em indivíduo

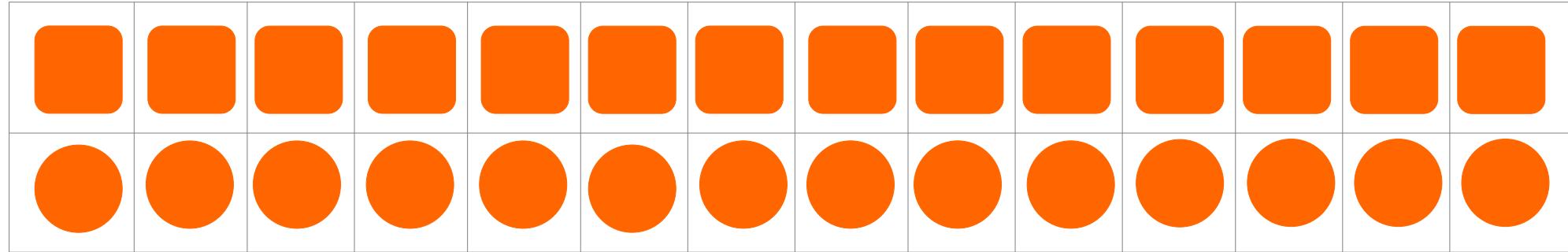


**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo

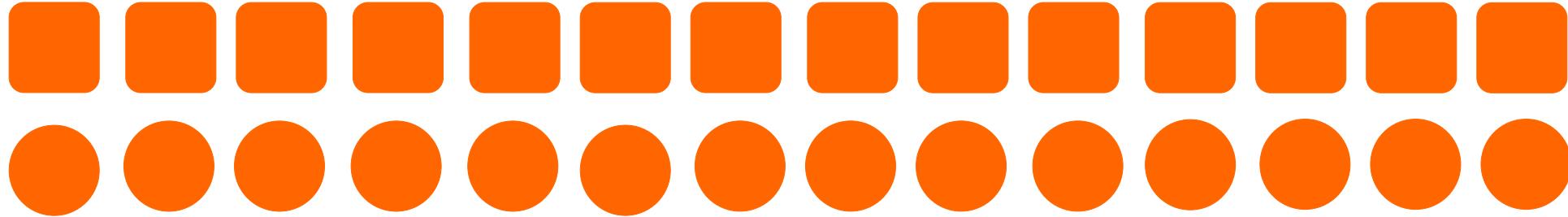


**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo

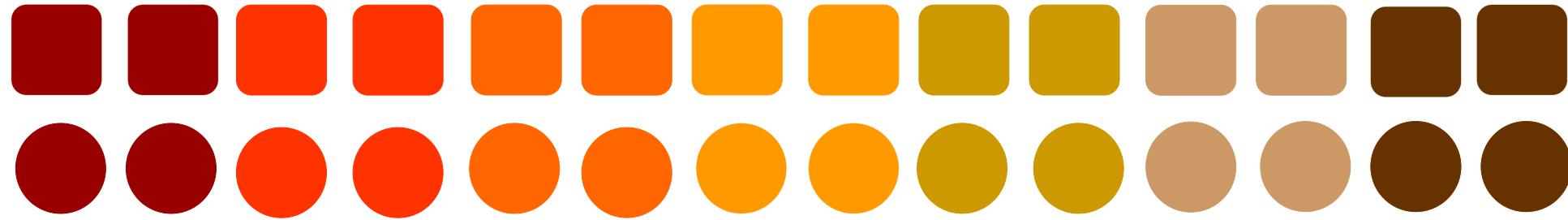


**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo



**parâmetros**

riqueza  $t_0$

abundância  $t_0$

# modelo baseado em indivíduo



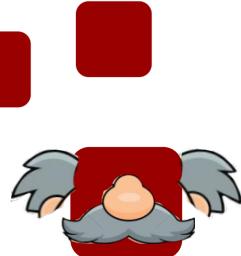
# modelo baseado em indivíduo



# modelo baseado em indivíduo



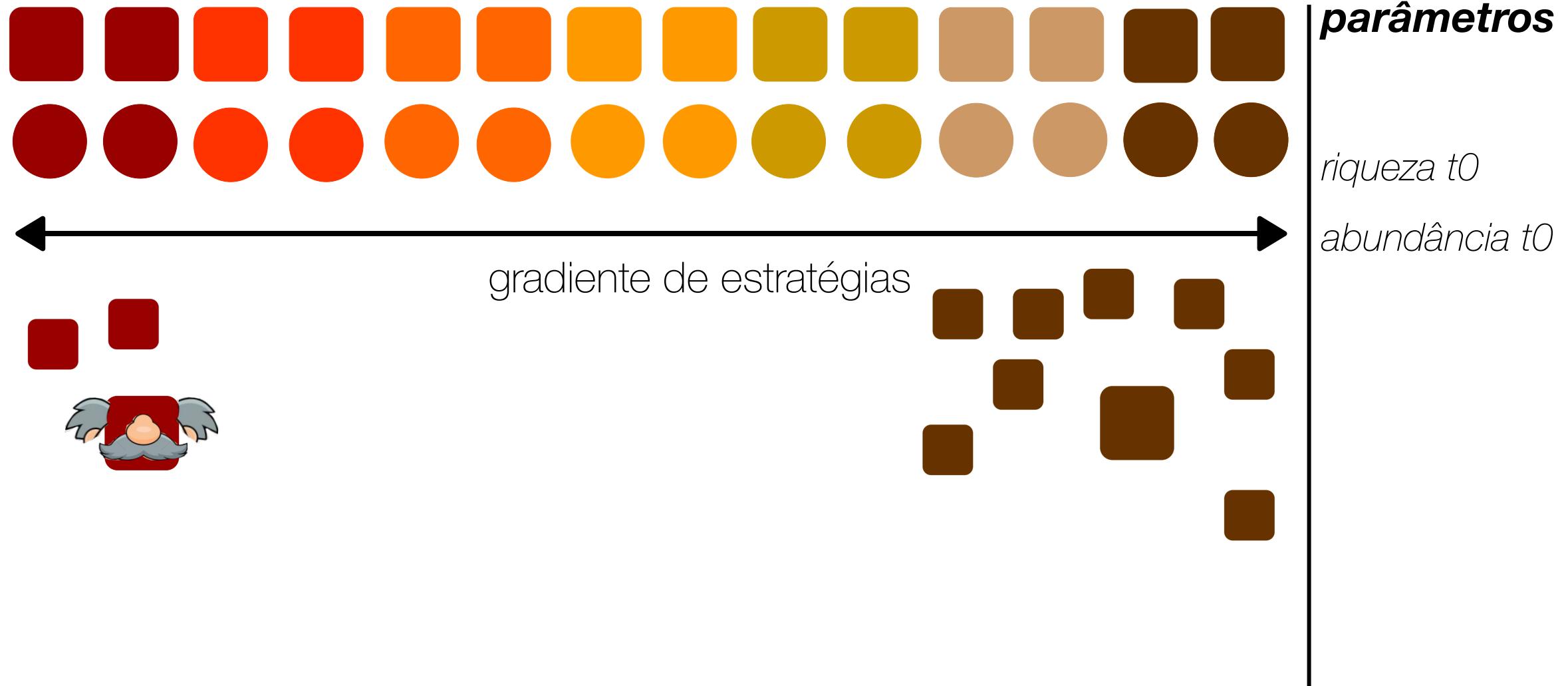
# modelo baseado em indivíduo



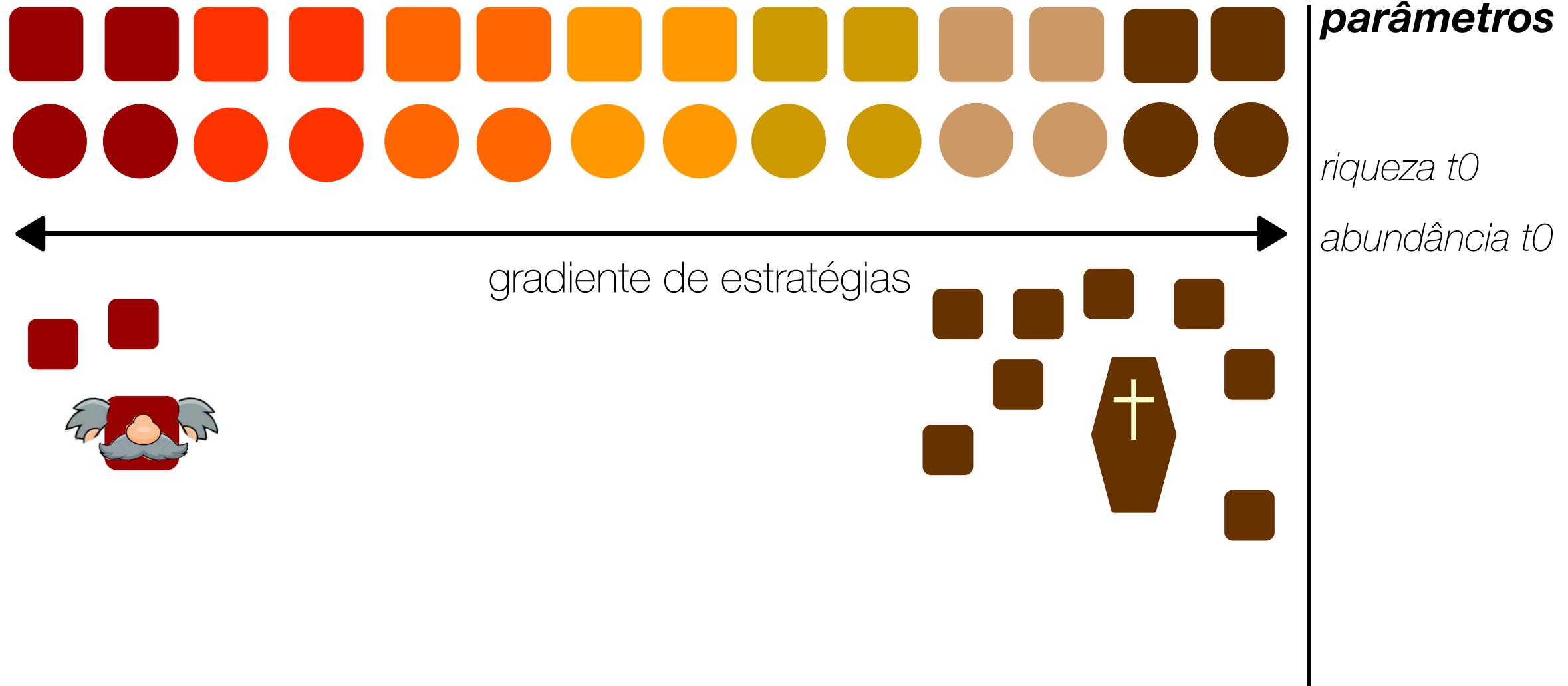
# modelo baseado em indivíduo



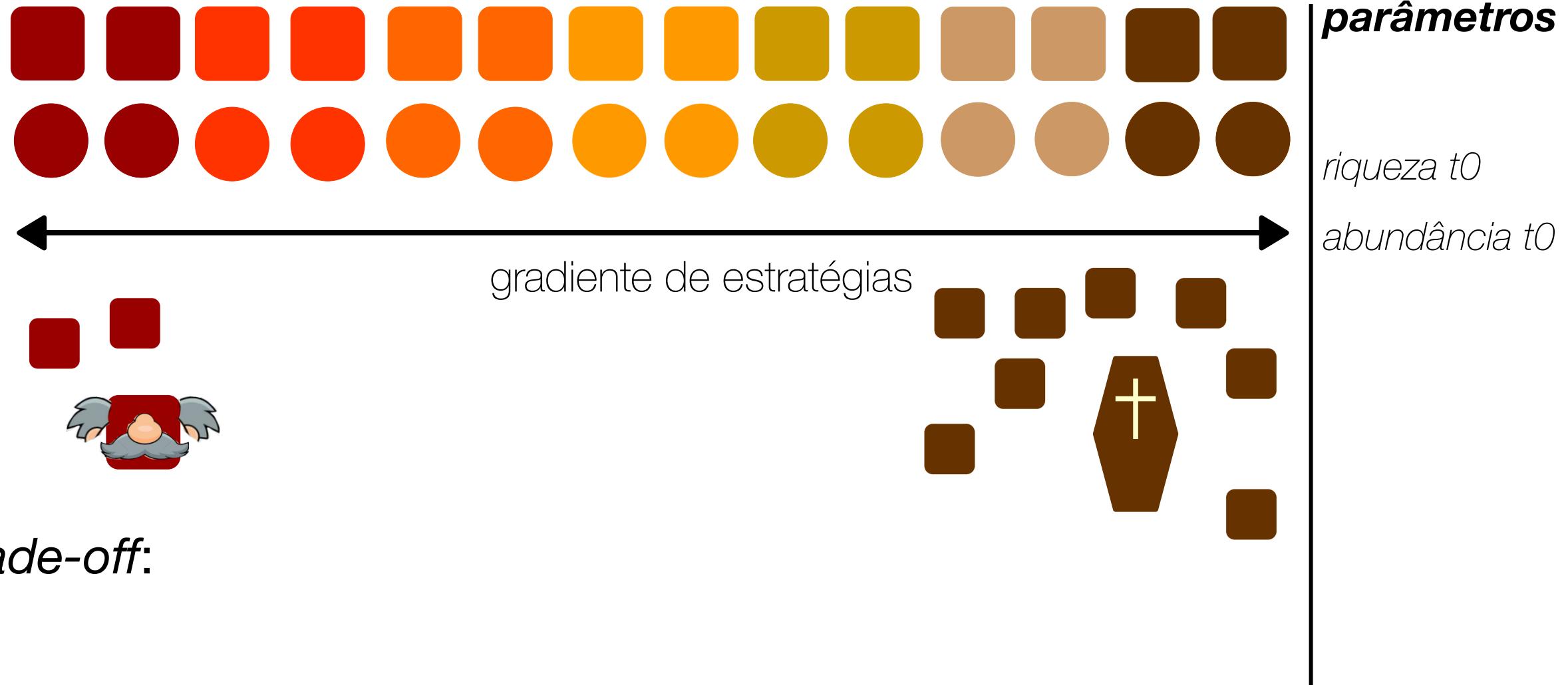
# modelo baseado em indivíduo



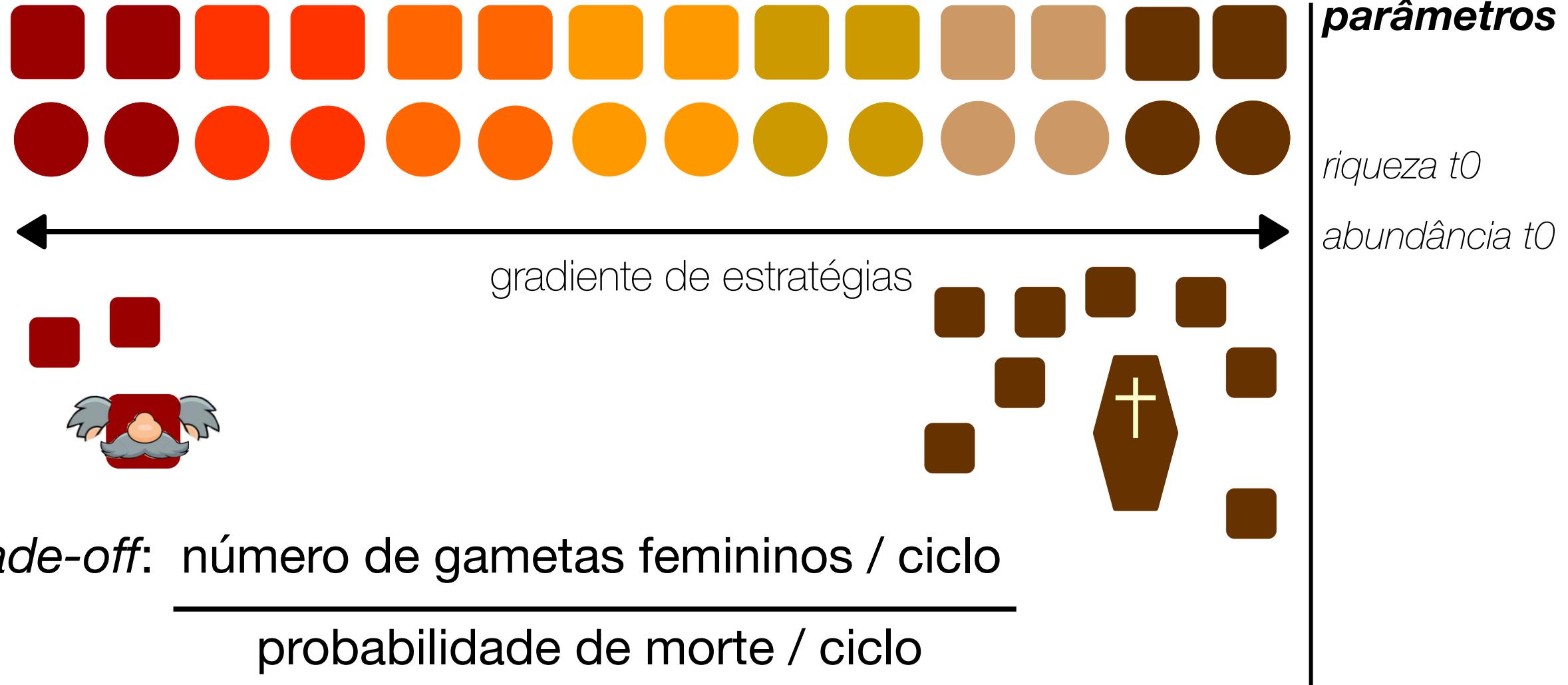
# modelo baseado em indivíduo



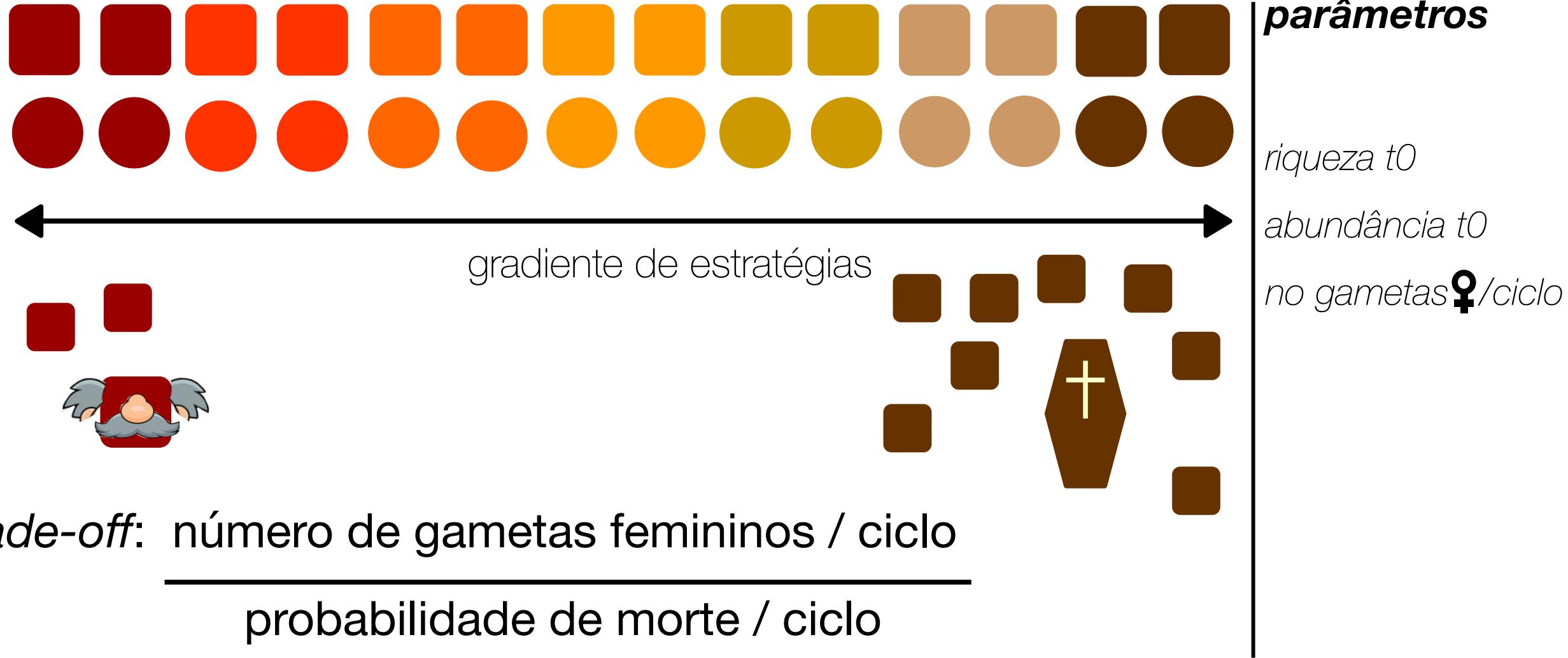
# modelo baseado em indivíduo



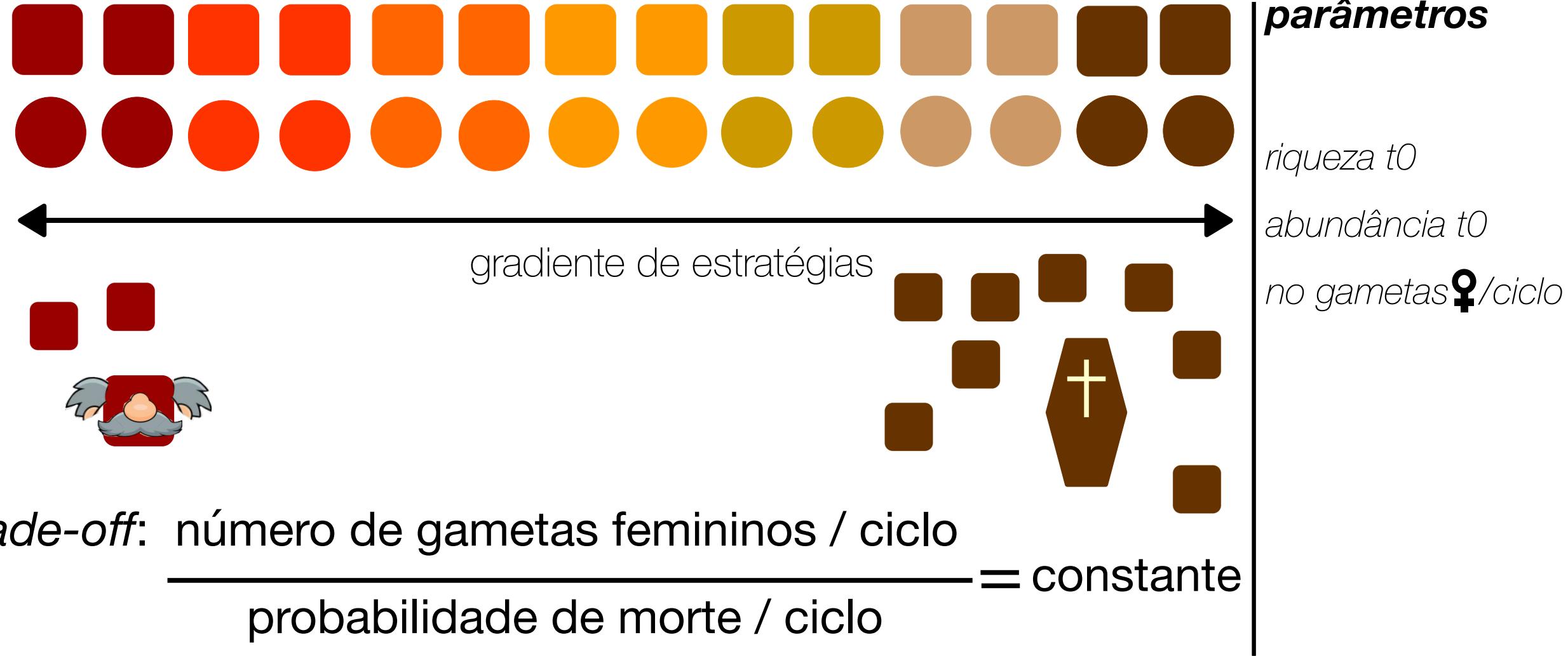
# modelo baseado em indivíduo



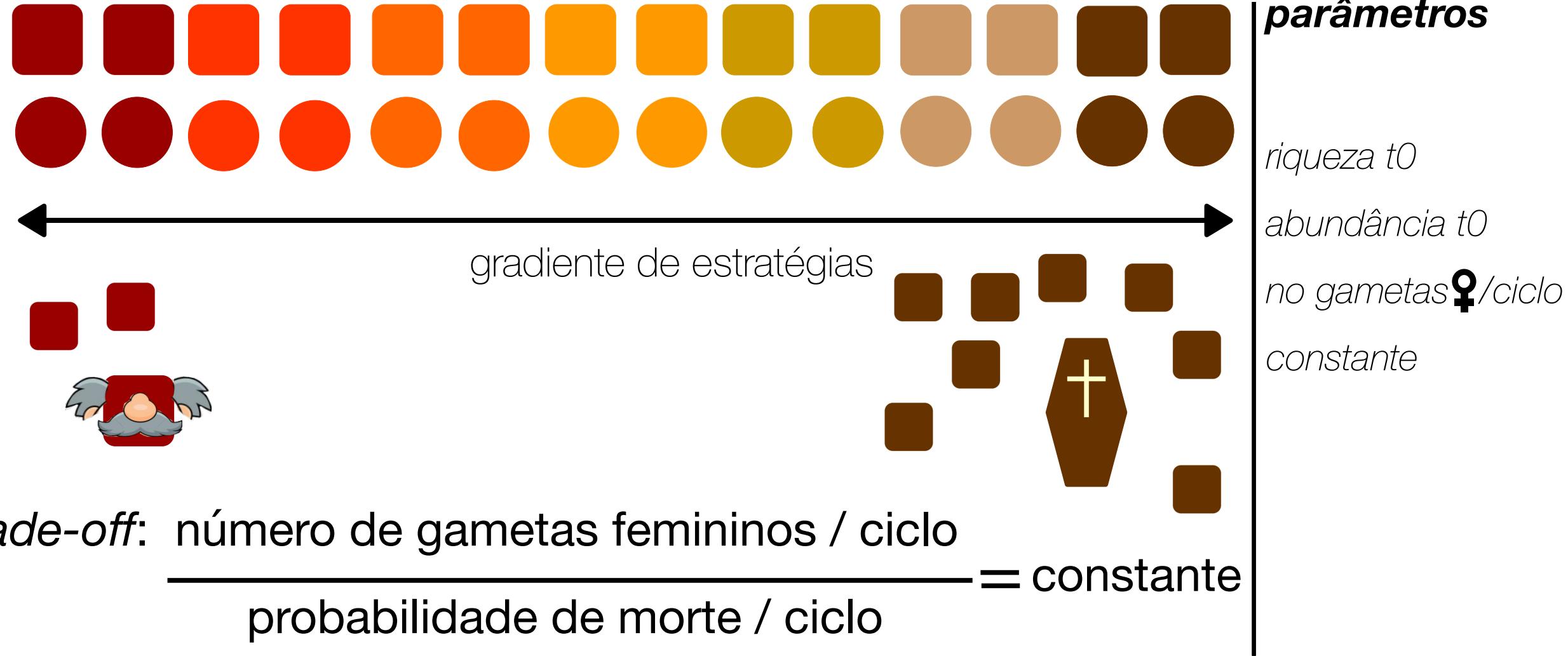
# modelo baseado em indivíduo

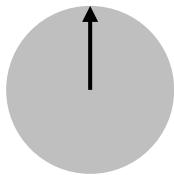


# modelo baseado em indivíduo

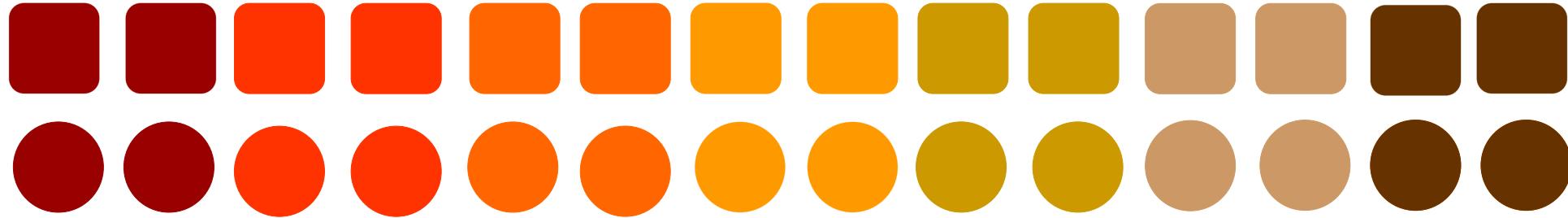


# modelo baseado em indivíduo





# modelo baseado em indivíduo



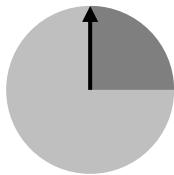
**parâmetros**

riqueza  $t_0$

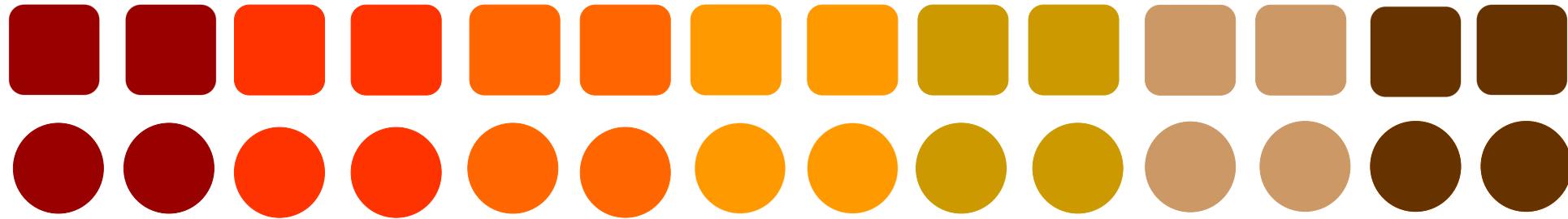
abundância  $t_0$

no gametas ♀/ciclo

constante



# modelo baseado em indivíduo



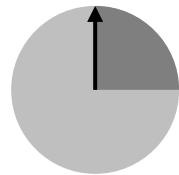
## **parâmetros**

*riqueza  $t_0$*

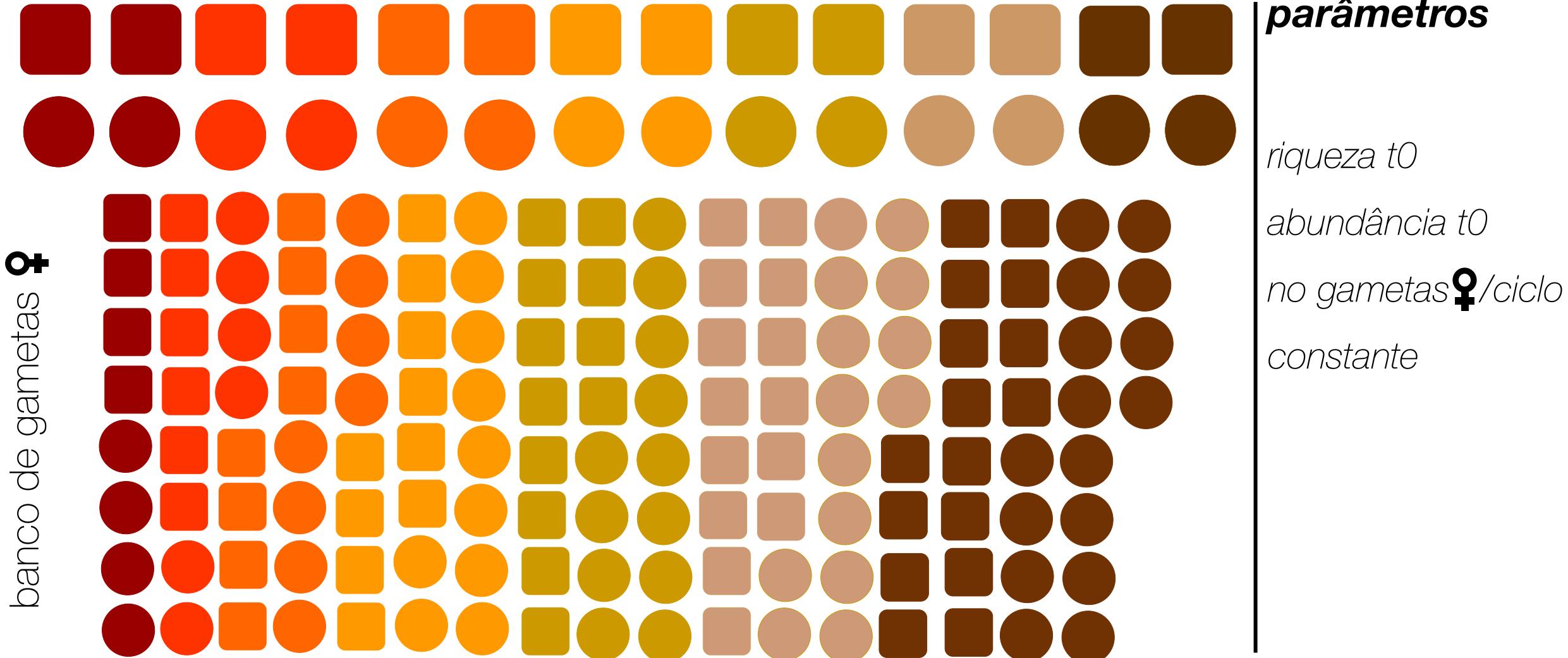
*abundância  $t_0$*

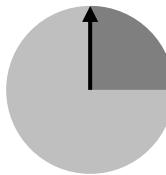
*no gametas ♀/ciclo*

*constante*

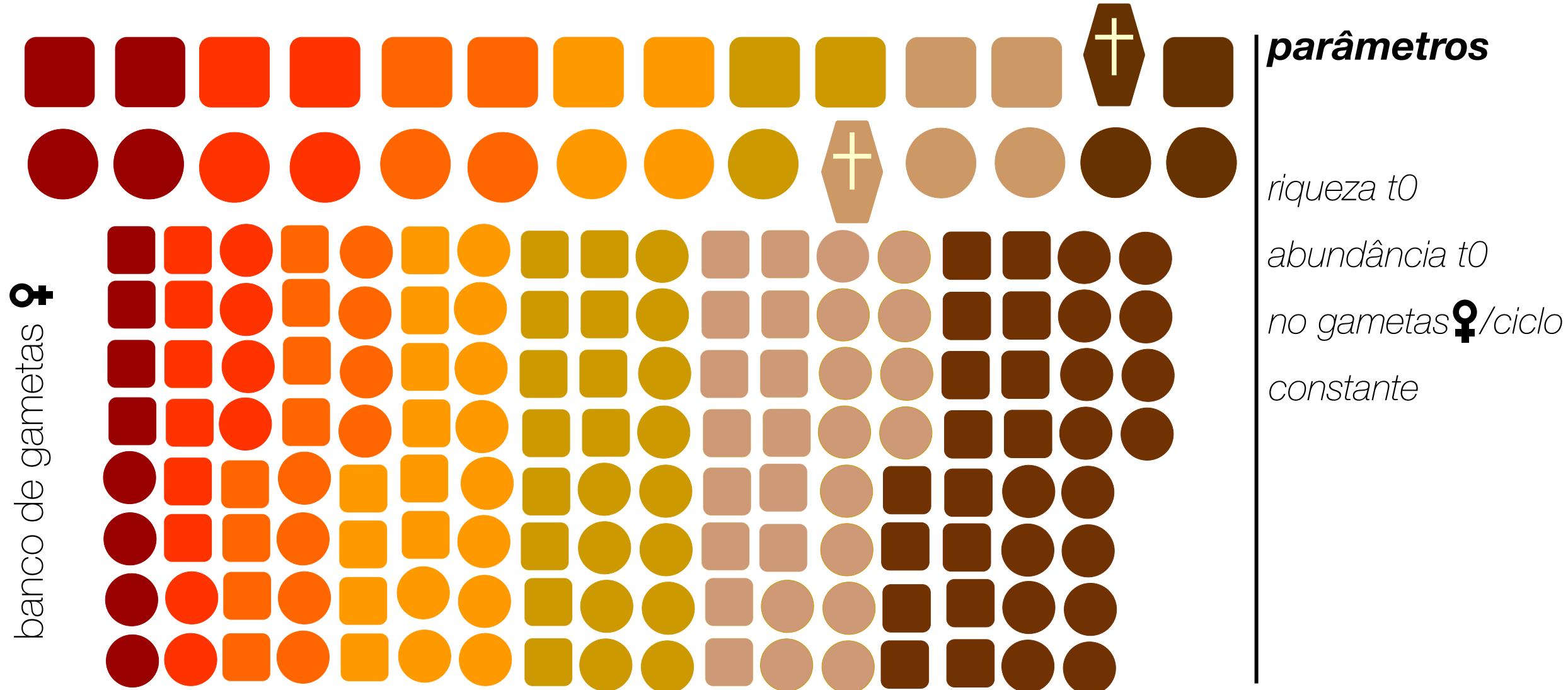


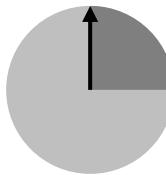
# modelo baseado em indivíduo



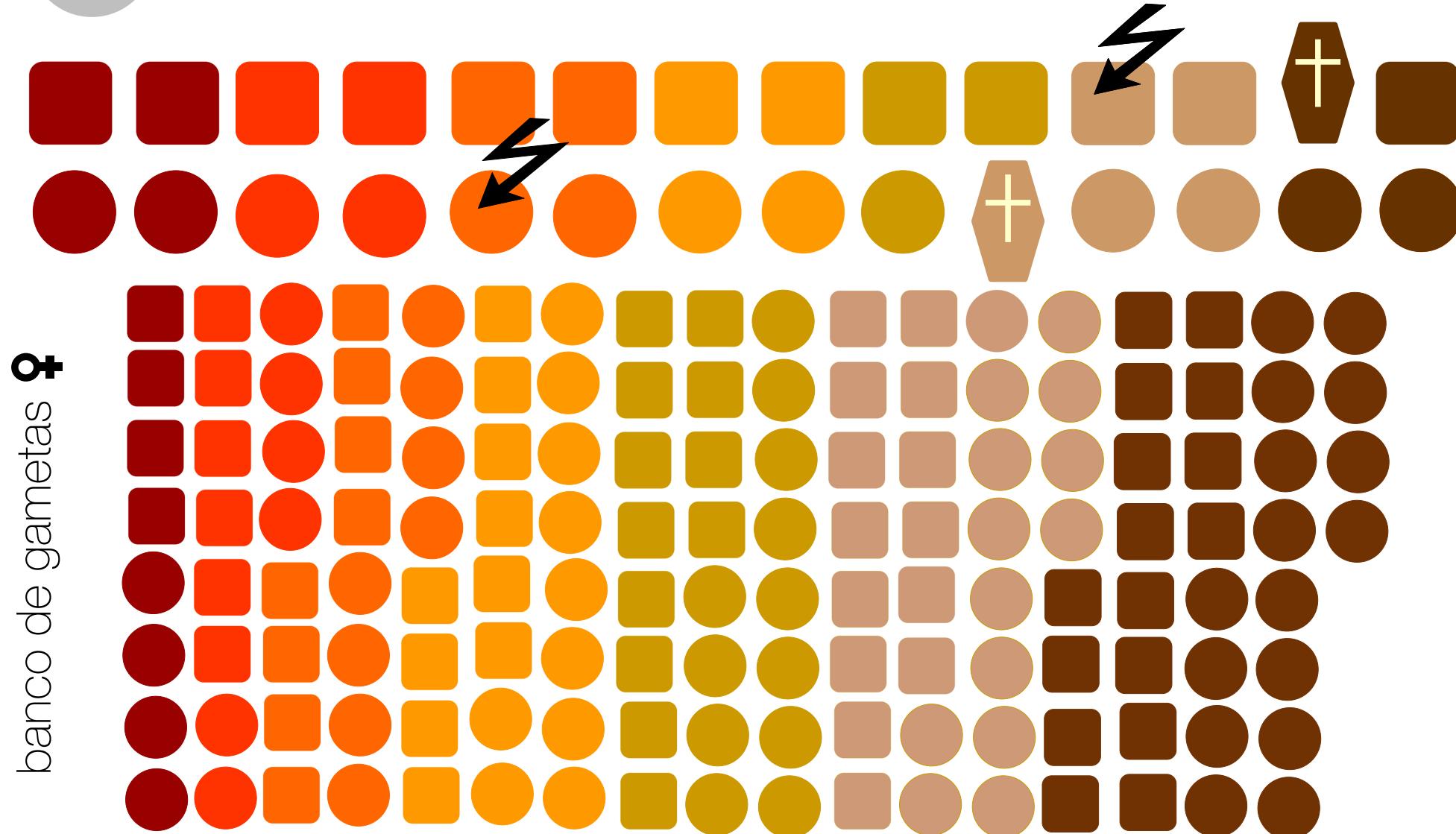


# modelo baseado em indivíduo





# modelo baseado em indivíduo



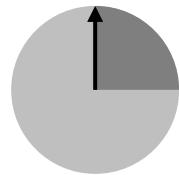
## parâmetros

riqueza  $t_0$

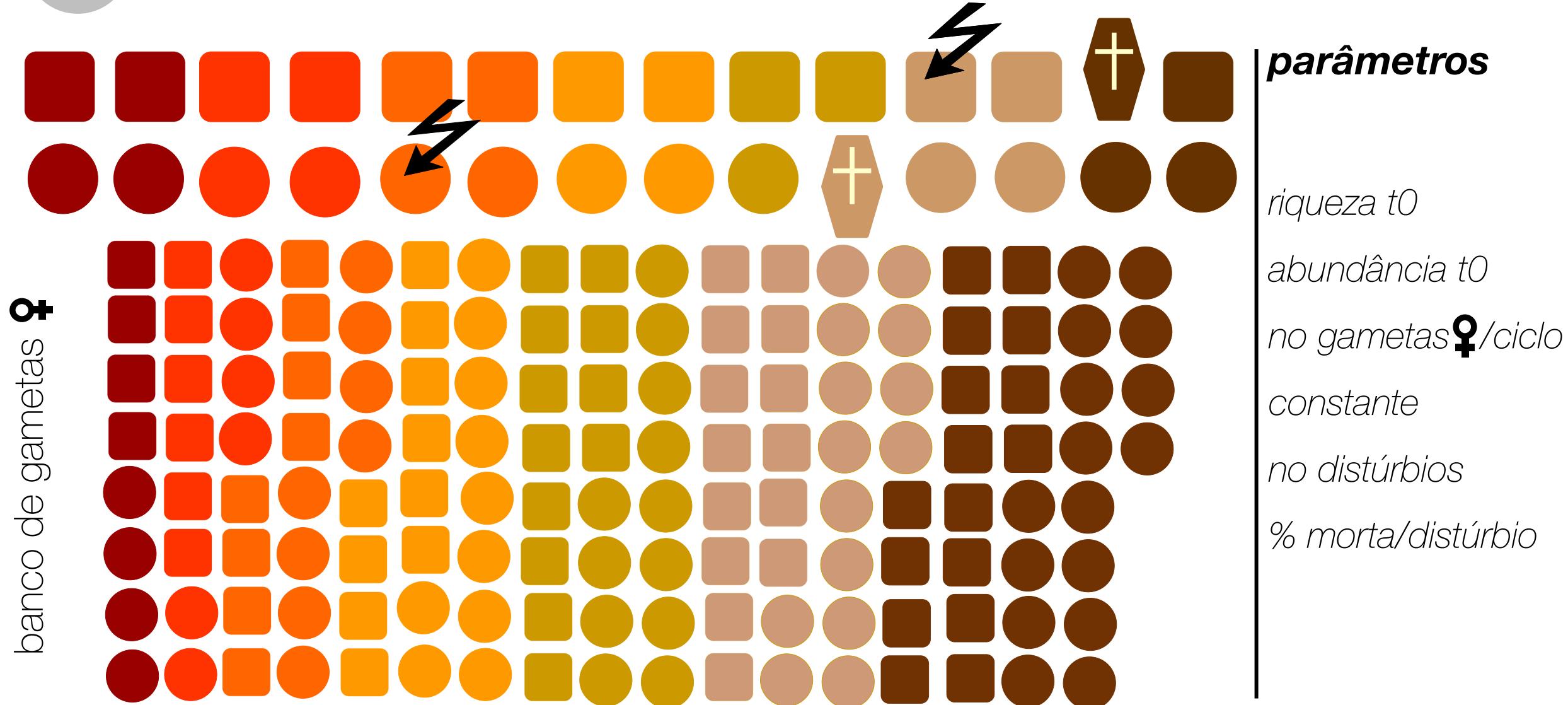
abundância  $t_0$

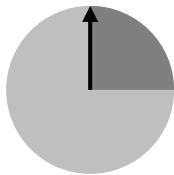
no gametas ♀/ciclo

constante

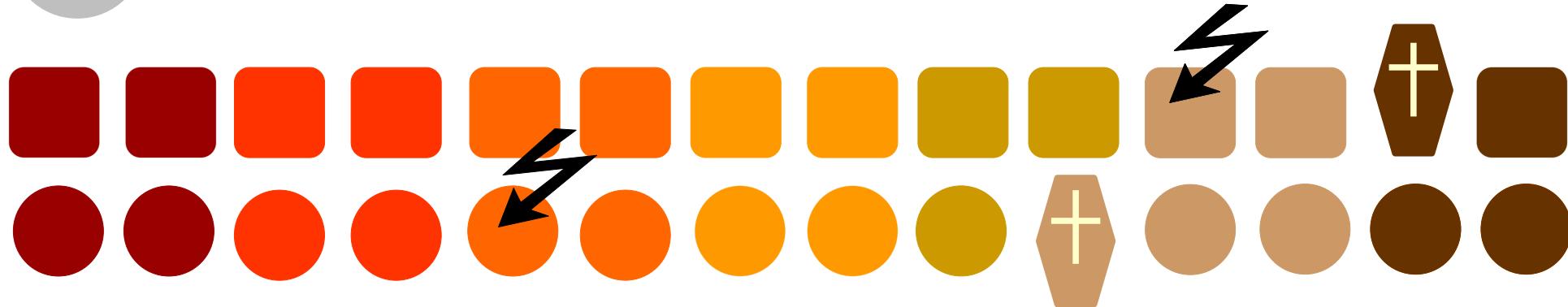


# modelo baseado em indivíduo





# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

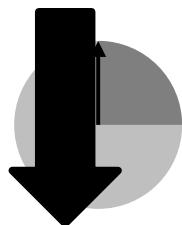
abundância  $t_0$

no gametas ♀/ciclo

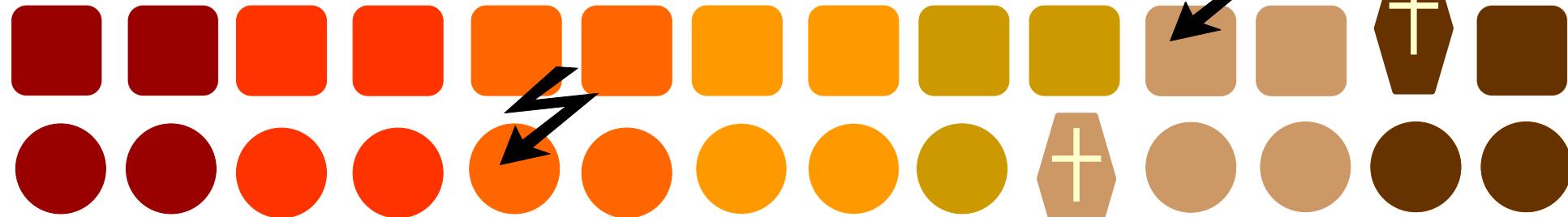
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

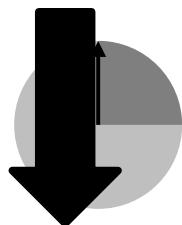
abundância  $t_0$

no gametas ♀/ciclo

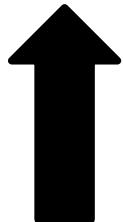
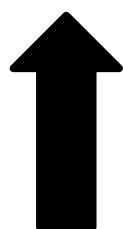
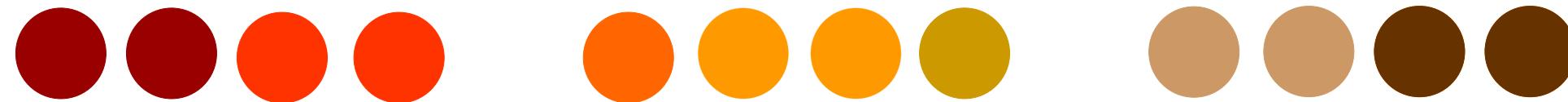
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

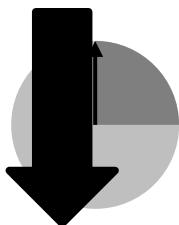
abundância  $t_0$

no gametas ♀/ciclo

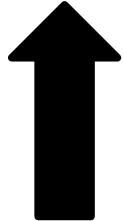
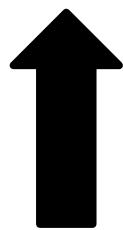
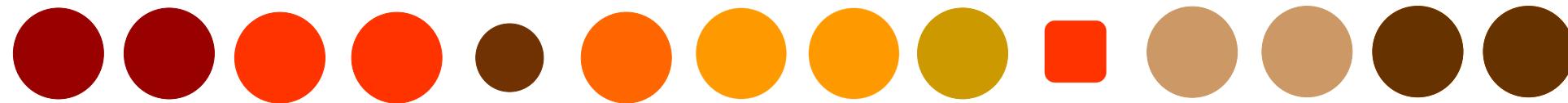
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

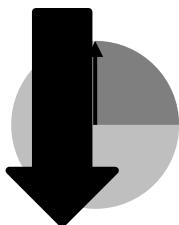
abundância  $t_0$

no gametas ♀/ciclo

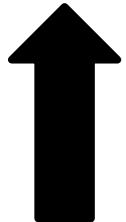
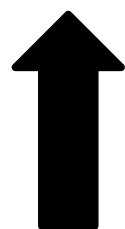
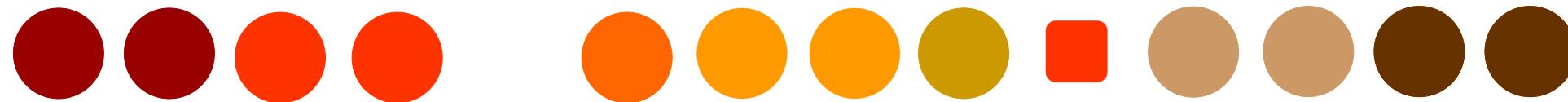
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

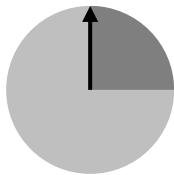
abundância  $t_0$

no gametas ♀/ciclo

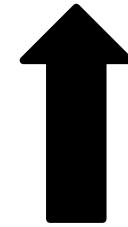
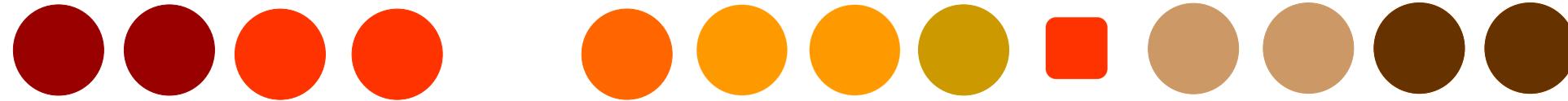
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

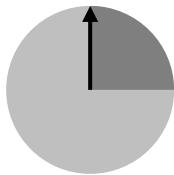
abundância  $t_0$

no gametas ♀/ciclo

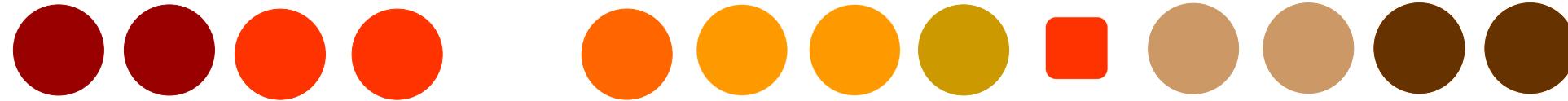
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

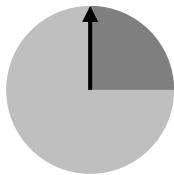
abundância  $t_0$

no gametas ♀/ciclo

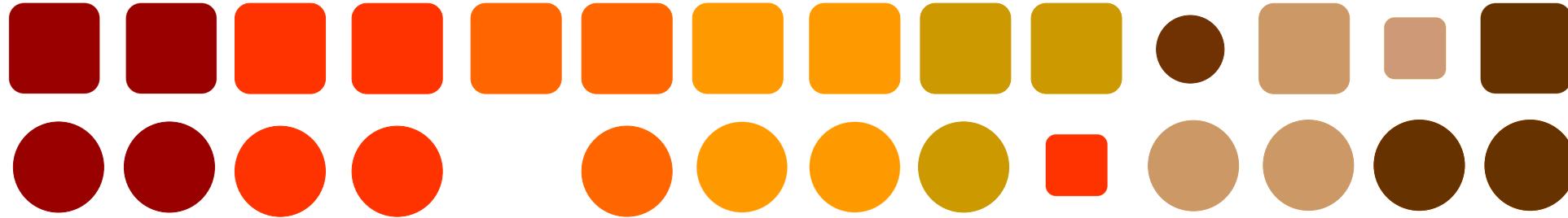
constante

no distúrbios

% morta/distúrbio



# modelo baseado em indivíduo



## parâmetros

riqueza  $t_0$

abundância  $t_0$

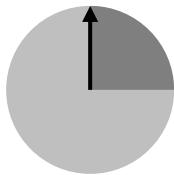
no gametas ♀/ciclo

constante

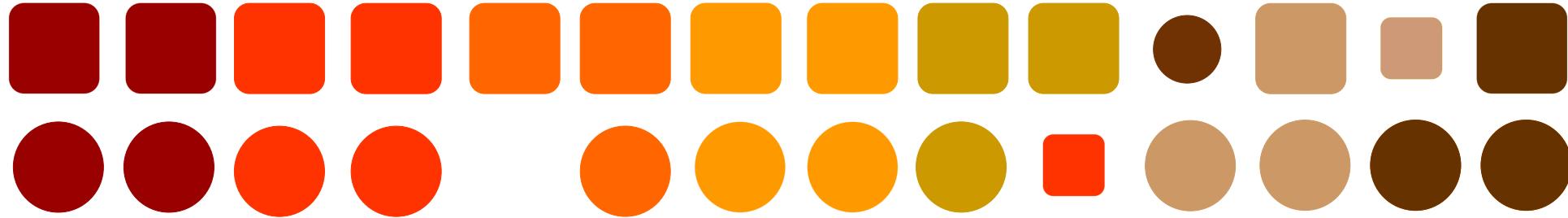
no distúrbios

% morta/distúrbio

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



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

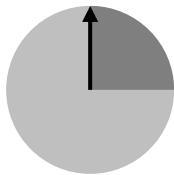
abundância  $t_0$

no gametas ♀/ciclo

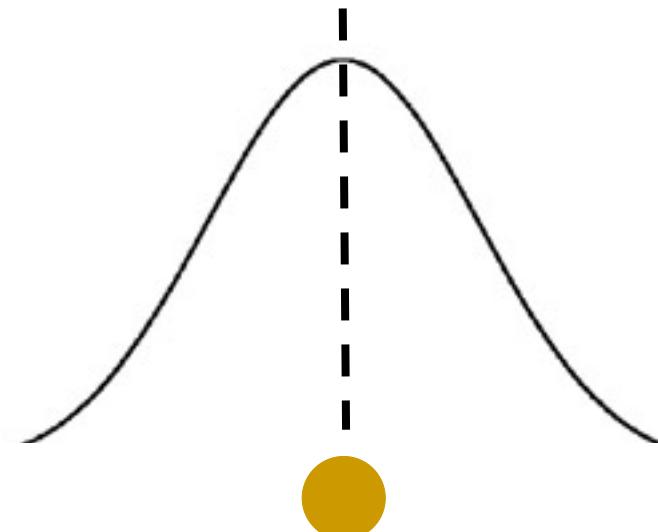
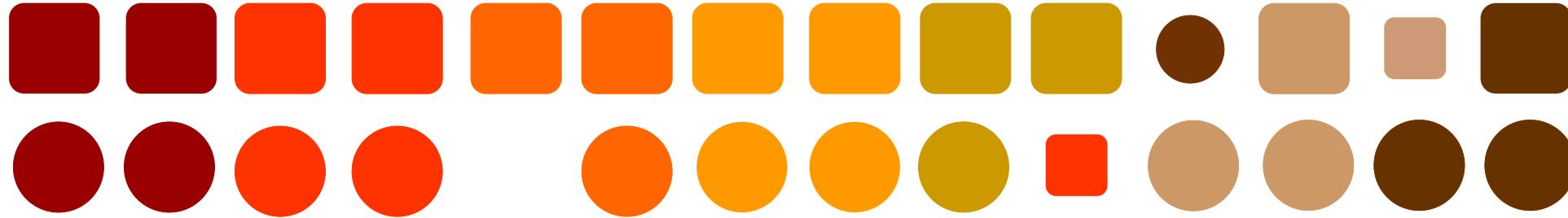
constante

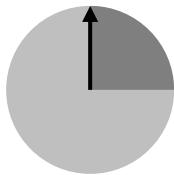
no distúrbios

% morta/distúrbio

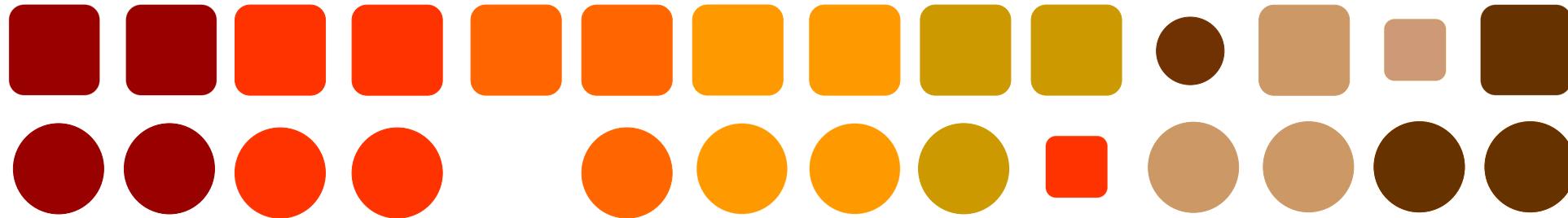


# modelo baseado em indivíduo





# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

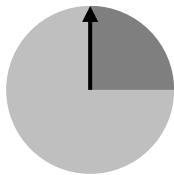
abundância  $t_0$

no gametas ♀/ciclo

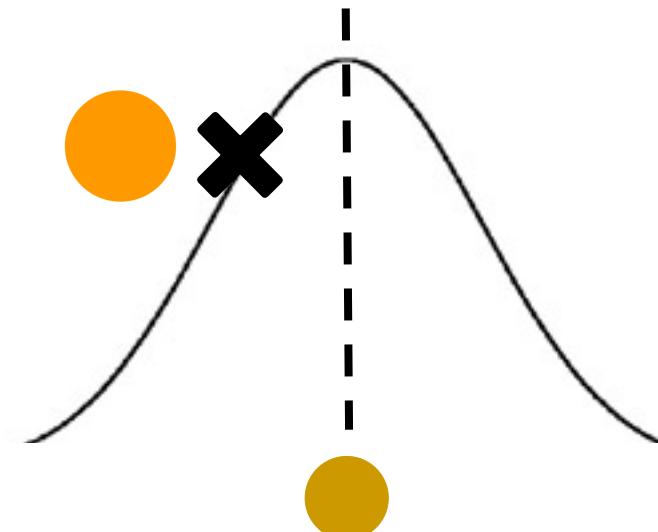
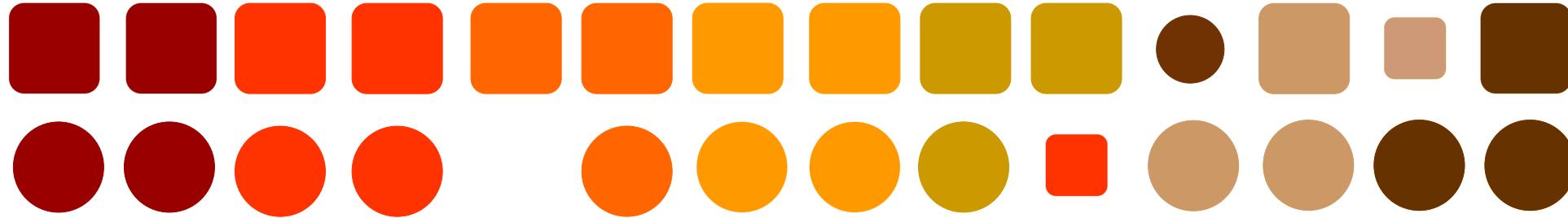
constante

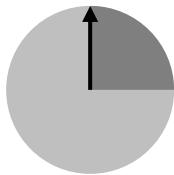
no distúrbios

% morta/distúrbio

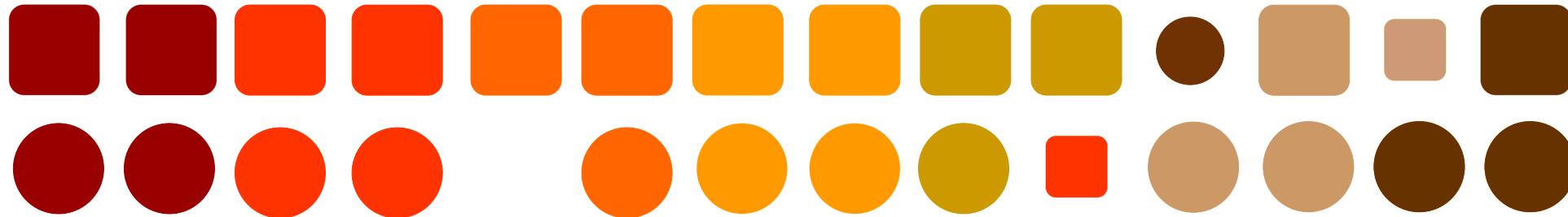


# modelo baseado em indivíduo





# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

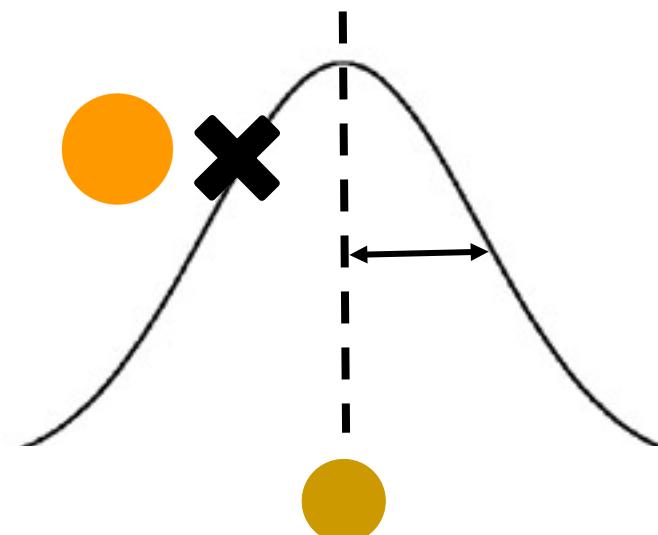
abundância  $t_0$

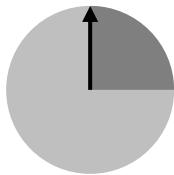
no gametas ♀/ciclo

constante

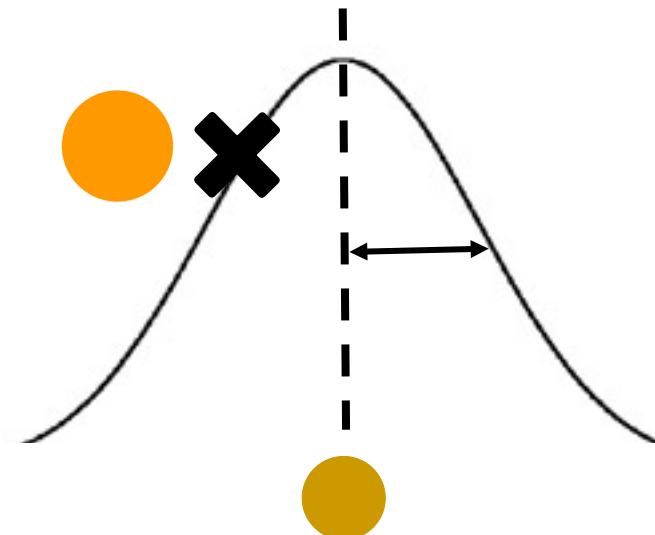
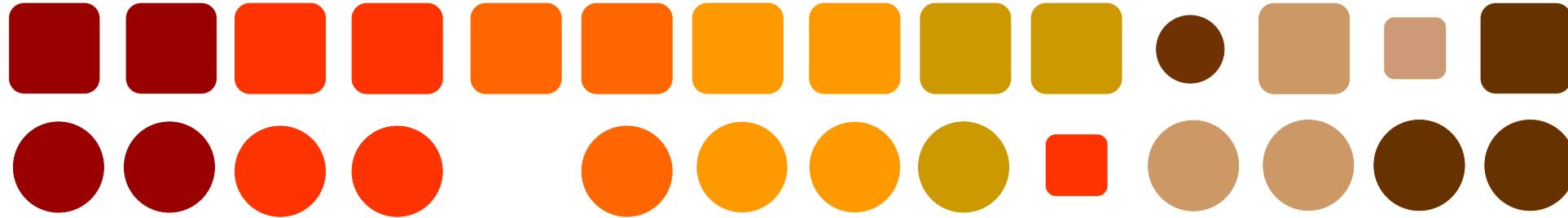
no distúrbios

% morta/distúrbio





# modelo baseado em indivíduo



**parâmetros**

riqueza  $t_0$

abundância  $t_0$

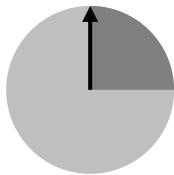
no gametas ♀/ciclo

constante

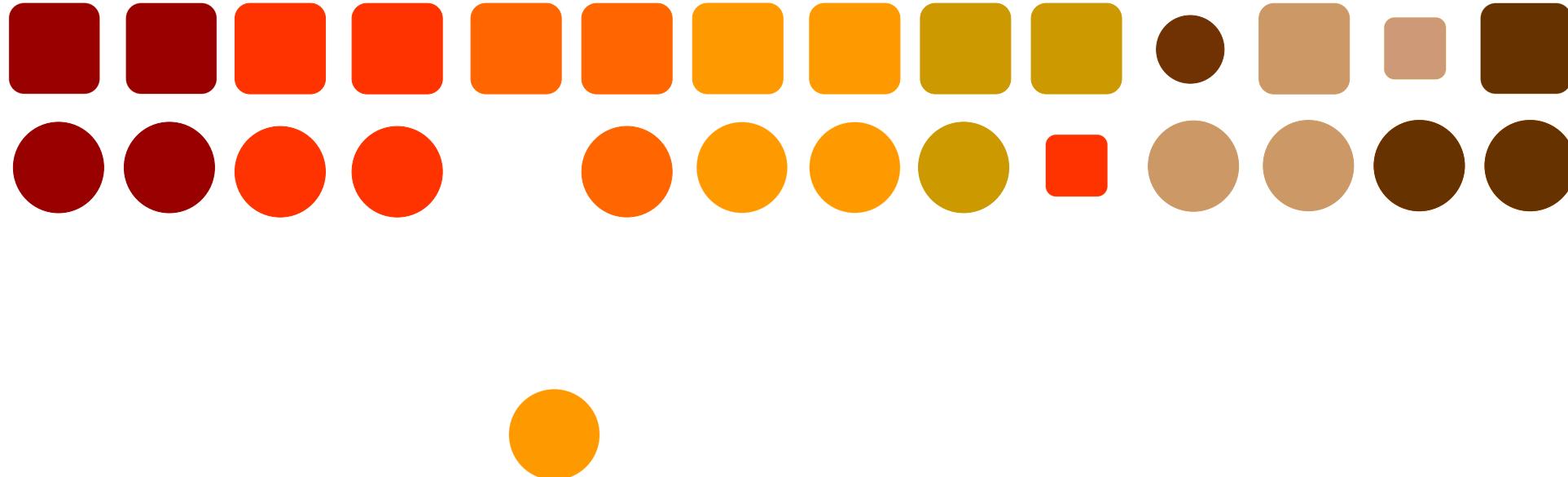
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

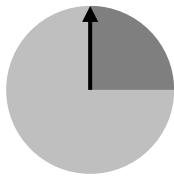
no gametas ♀/ciclo

constante

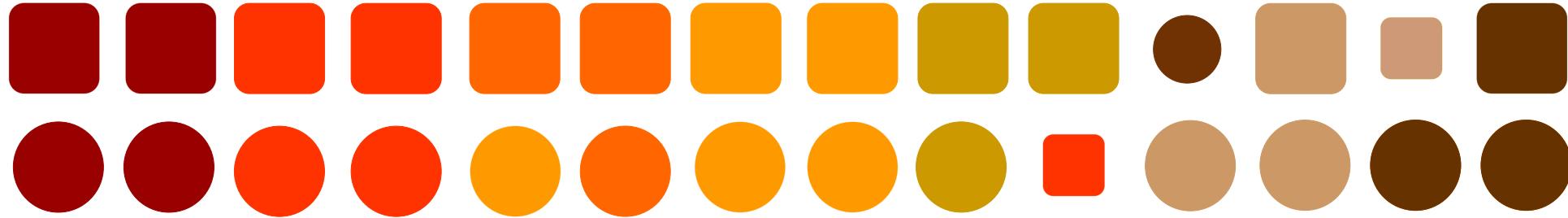
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

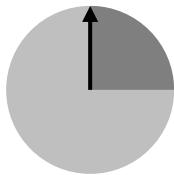
no gametas ♀/ciclo

constante

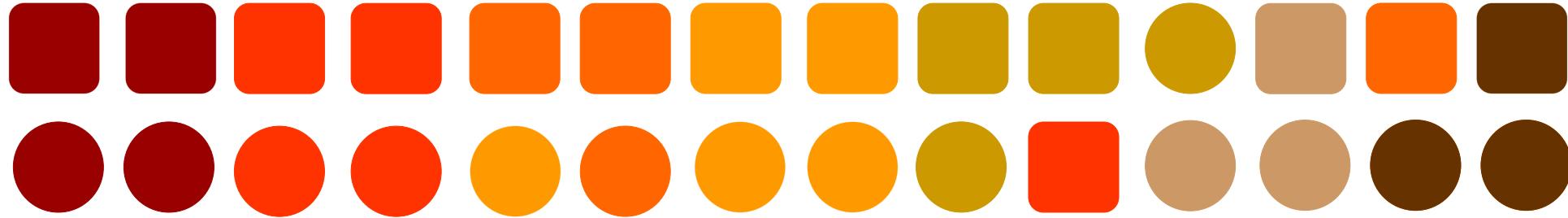
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

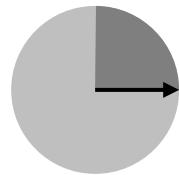
no gametas ♀/ciclo

constante

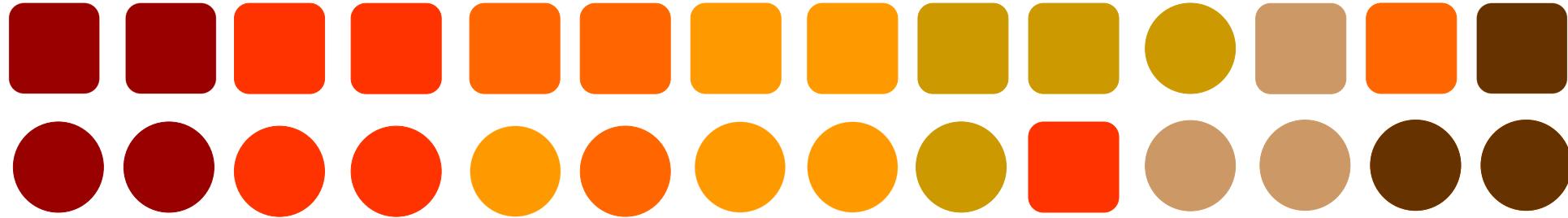
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

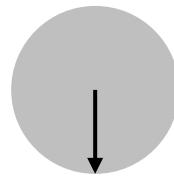
no gametas ♀/ciclo

constante

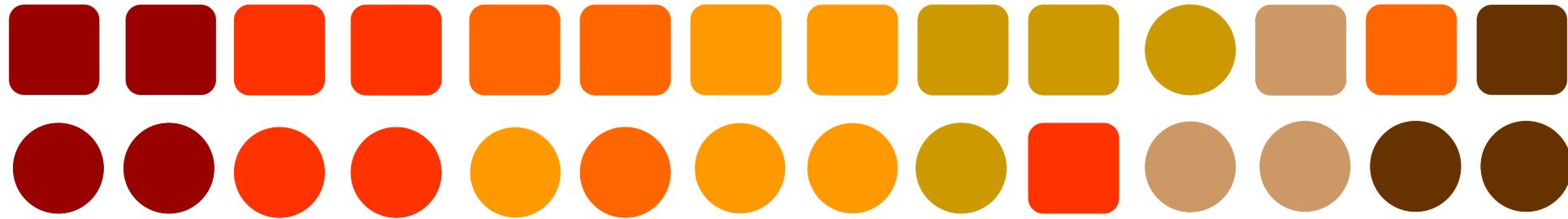
no distúrbios

% morta/distúrbio

taxa de mutação



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

no gametas ♀/ciclo

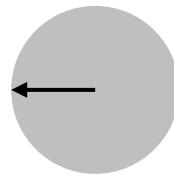
constante

no distúrbios

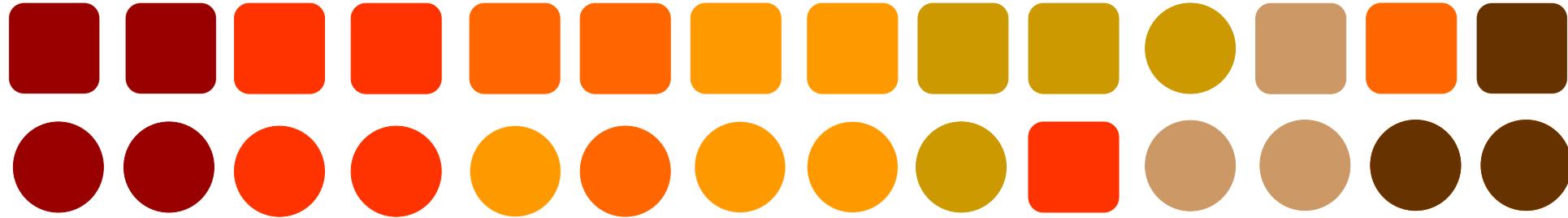
% morta/distúrbio

taxa de mutação

no tempos



# modelo baseado em indivíduo



## **parâmetros**

riqueza  $t_0$

abundância  $t_0$

no gametas ♀/ciclo

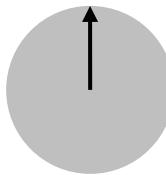
constante

no distúrbios

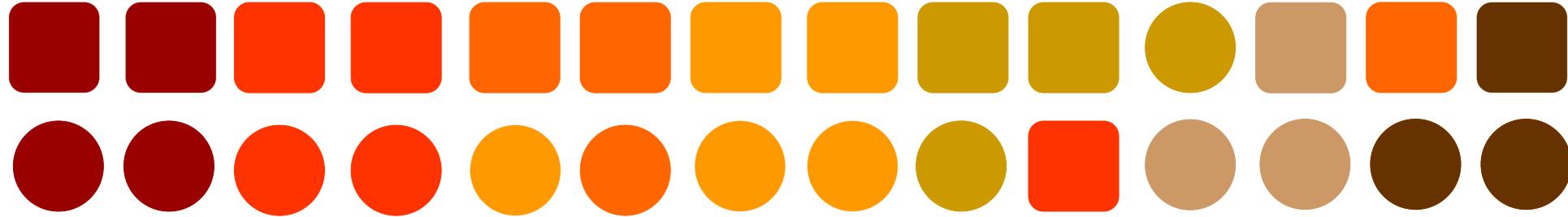
% morta/distúrbio

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



# cenários simulados



# cenários simulados

**evolutivo**

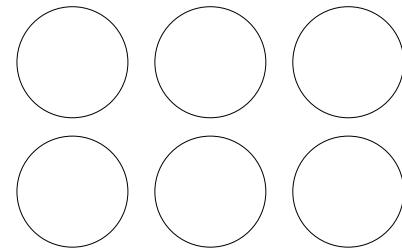
**ecológico**

**eco-evolutivo**



# cenários simulados

**evolutivo**

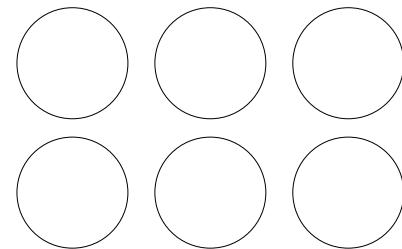


**ecológico**

**eco-evolutivo**

# cenários simulados

**evolutivo**



**ecológico**

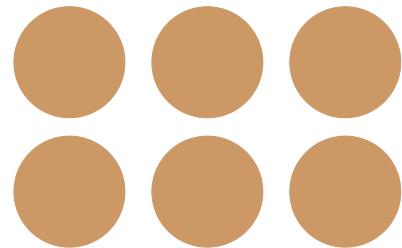
**eco-evolutivo**

1 espécie



# cenários simulados

**evolutivo**



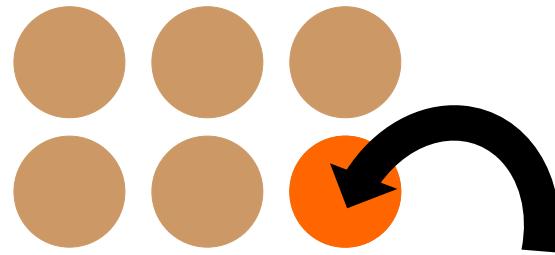
1 espécie

**ecológico**

**eco-evolutivo**

# cenários simulados

**evolutivo**



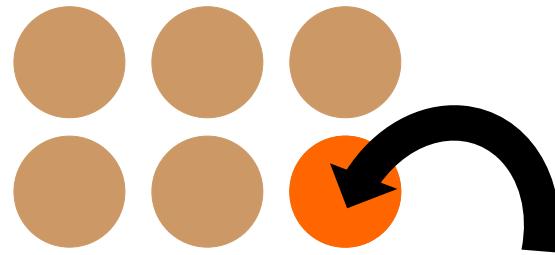
1 espécie

**ecológico**

**eco-evolutivo**

# cenários simulados

**evolutivo**



1 espécie

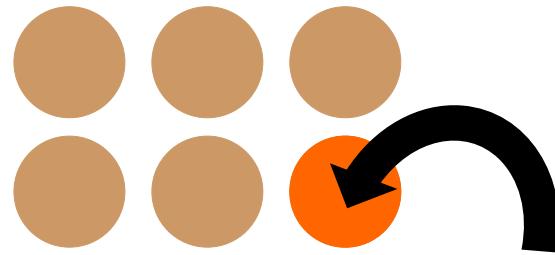
mutação > 0

**ecológico**

**eco-evolutivo**

# cenários simulados

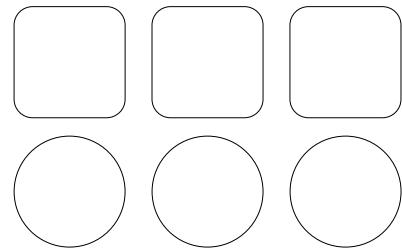
**evolutivo**



1 espécie

mutação > 0

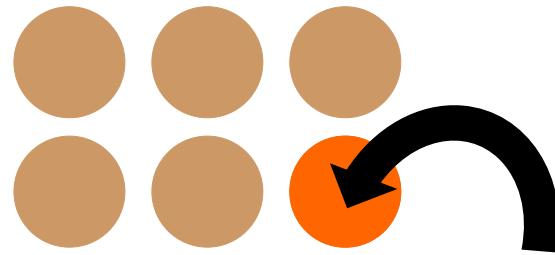
**ecológico**



**eco-evolutivo**

# cenários simulados

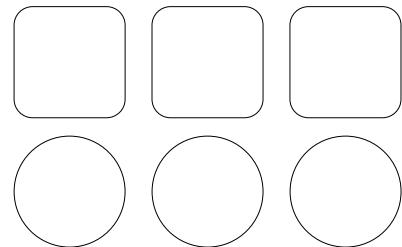
**evolutivo**



1 espécie

mutação > 0

**ecológico**

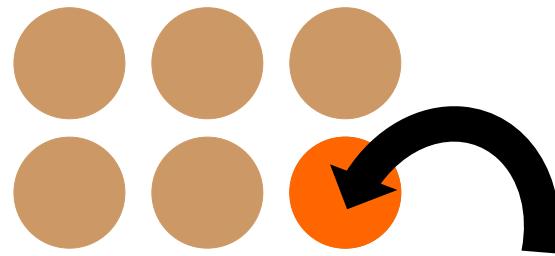


+ 1 espécie

**eco-evolutivo**

# cenários simulados

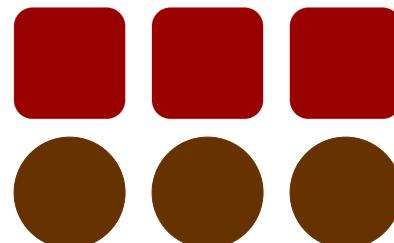
**evolutivo**



1 espécie

mutação > 0

**ecológico**

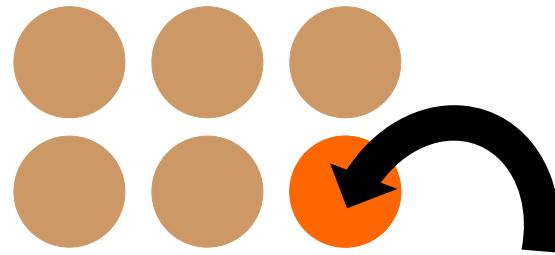


+ 1 espécie

**eco-evolutivo**

# cenários simulados

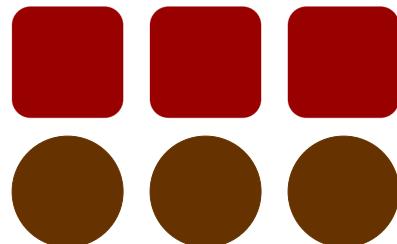
## evolutivo



1 espécie

mutação > 0

## ecológico



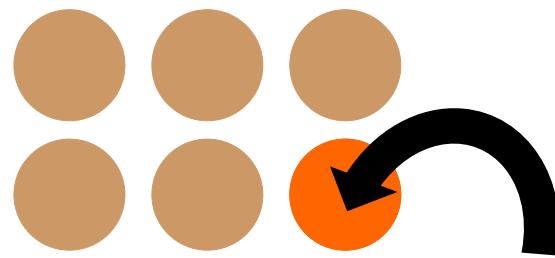
+ 1 espécie

mutação = 0

## eco-evolutivo

# cenários simulados

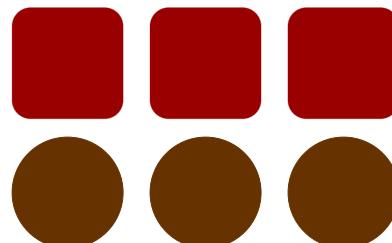
## evolutivo



1 espécie

mutação > 0

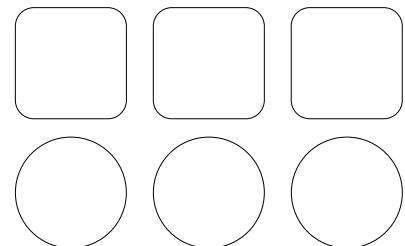
## ecológico



+ 1 espécie

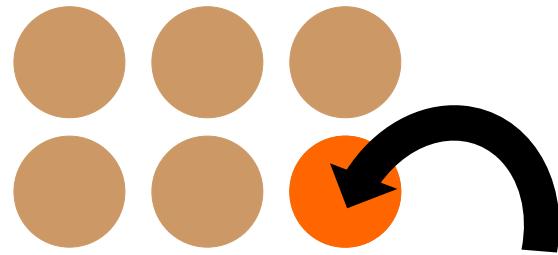
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## eco-evolutivo



# cenários simulados

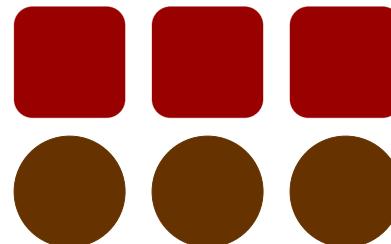
## evolutivo



1 espécie

mutação > 0

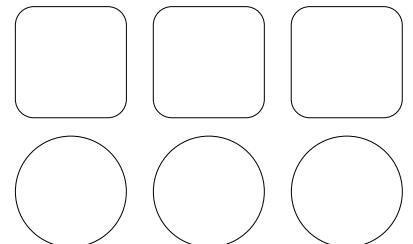
## ecológico



+ 1 espécie

mutação = 0

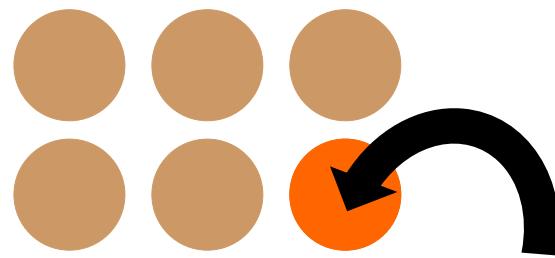
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+ 1 espécie

# cenários simulados

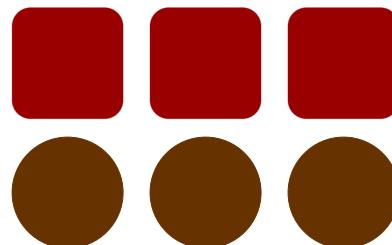
## evolutivo



1 espécie

mutação > 0

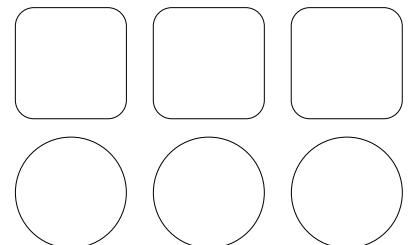
## ecológico



+ 1 espécie

mutação = 0

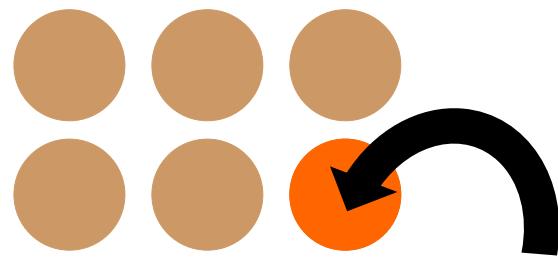
## eco-evolutivo



+ 1 espécie

# cenários simulados

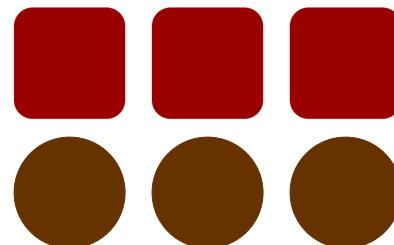
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1 espécie

mutação > 0

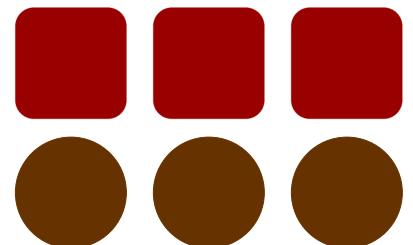
## ecológico



+ 1 espécie

mutação = 0

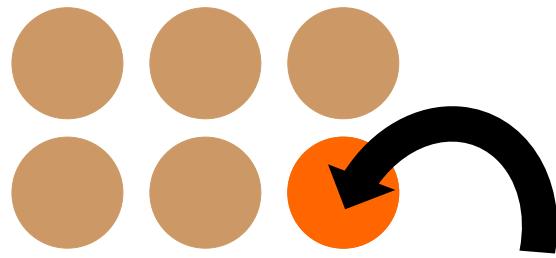
## eco-evolutivo



+ 1 espécie

# cenários simulados

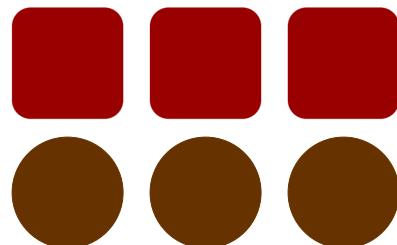
## evolutivo



1 espécie

mutação > 0

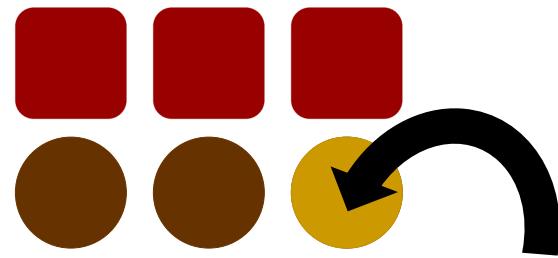
## ecológico



+ 1 espécie

mutação = 0

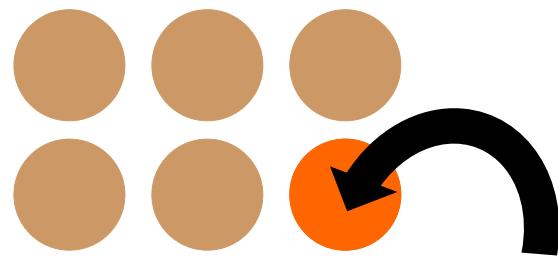
## eco-evolutivo



+ 1 espécie

# cenários simulados

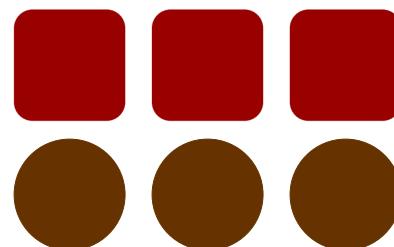
## evolutivo



1 espécie

mutação > 0

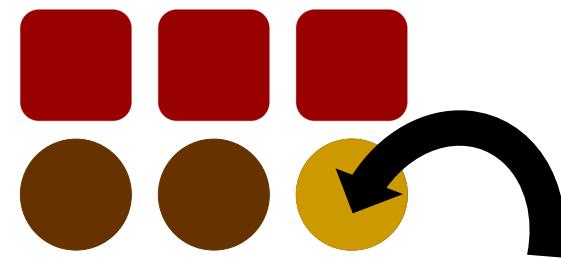
## ecológico



+ 1 espécie

mutação = 0

## eco-evolutivo

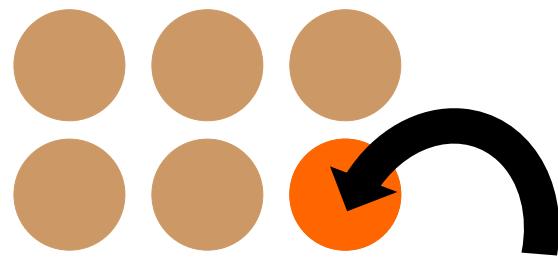


+ 1 espécie

mutação > 0

# cenários simulados

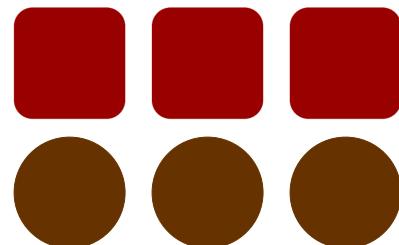
## evolutivo



1 espécie

**mutação > 0**

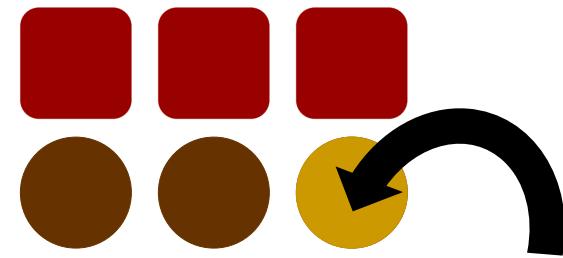
## ecológico



+ 1 espécie

mutação = 0

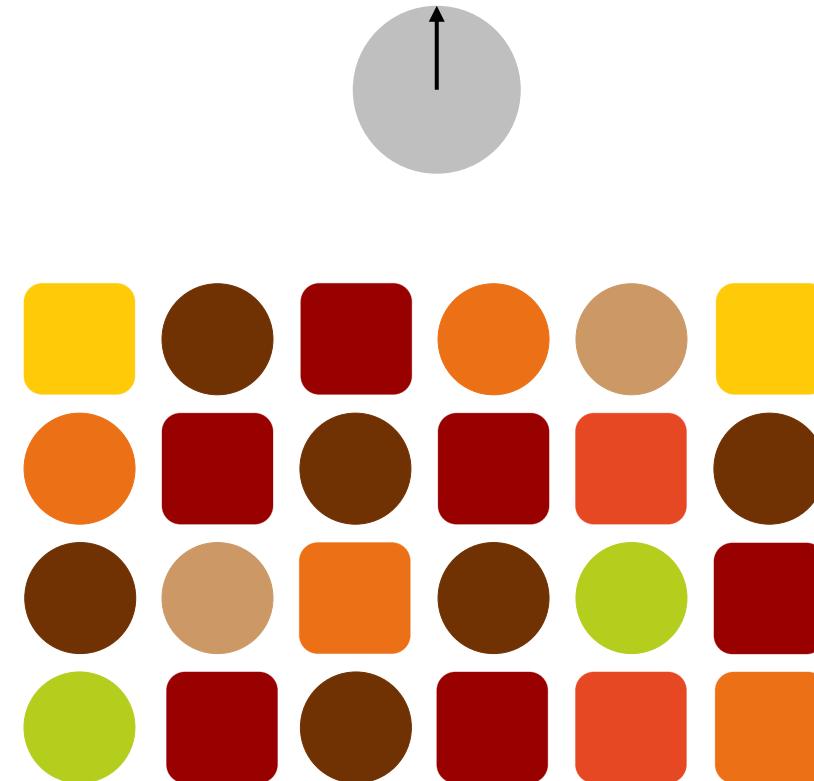
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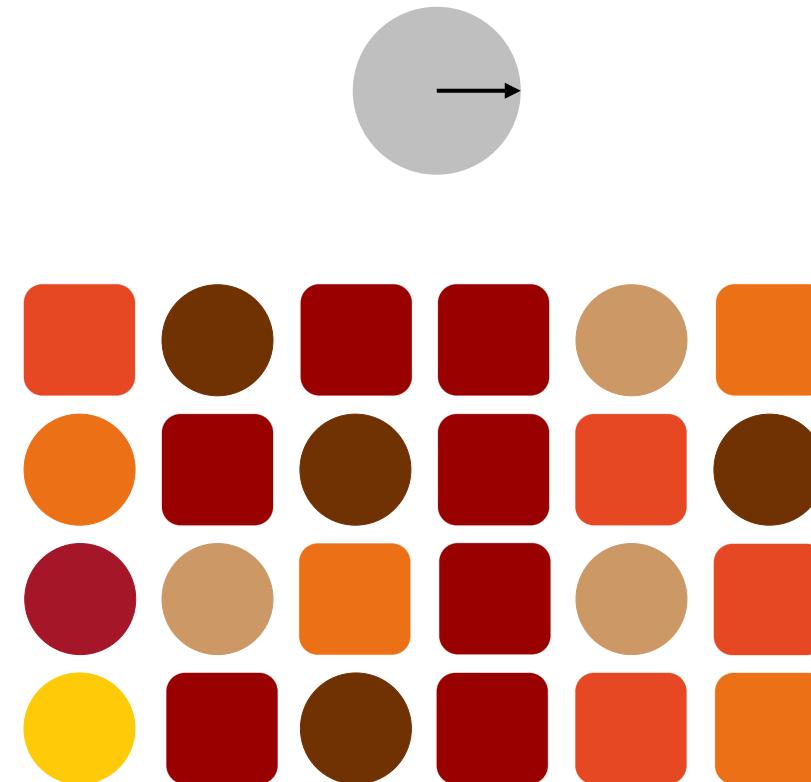
+ 1 espécie

**mutação > 0**

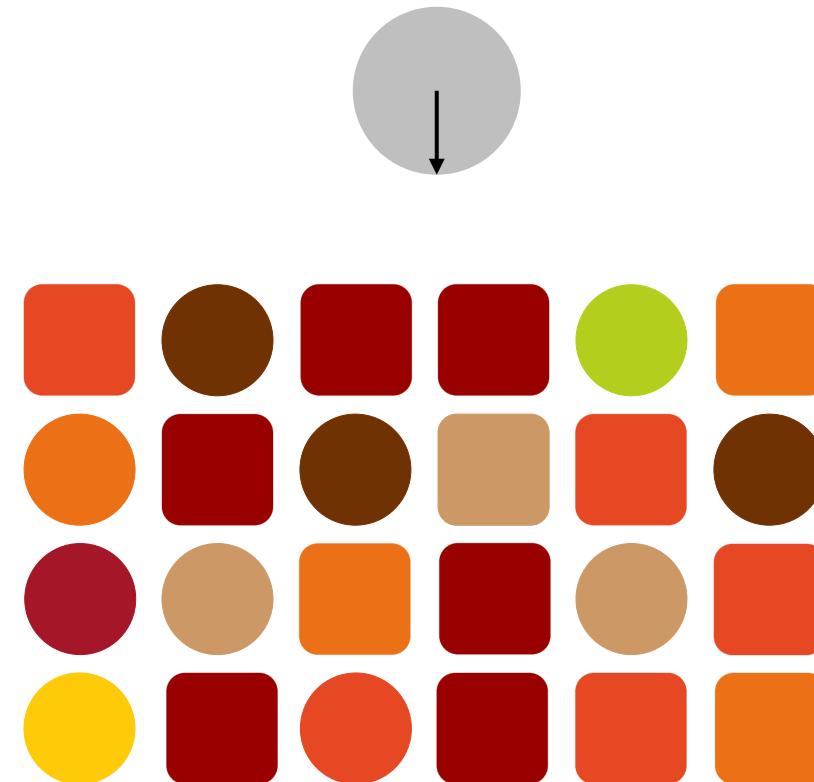
# variáveis de interesse



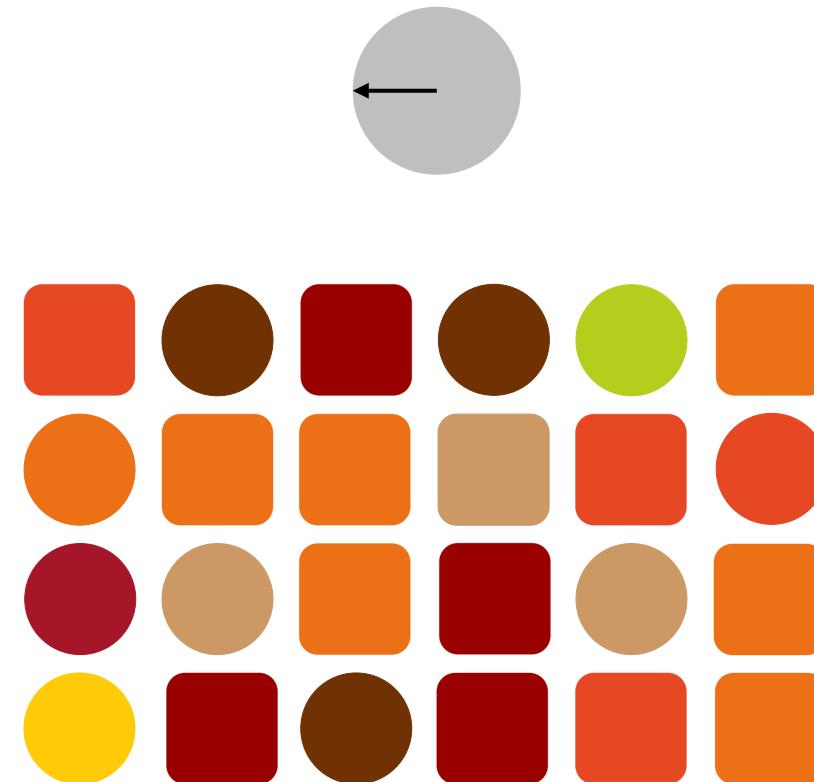
# variáveis de interesse



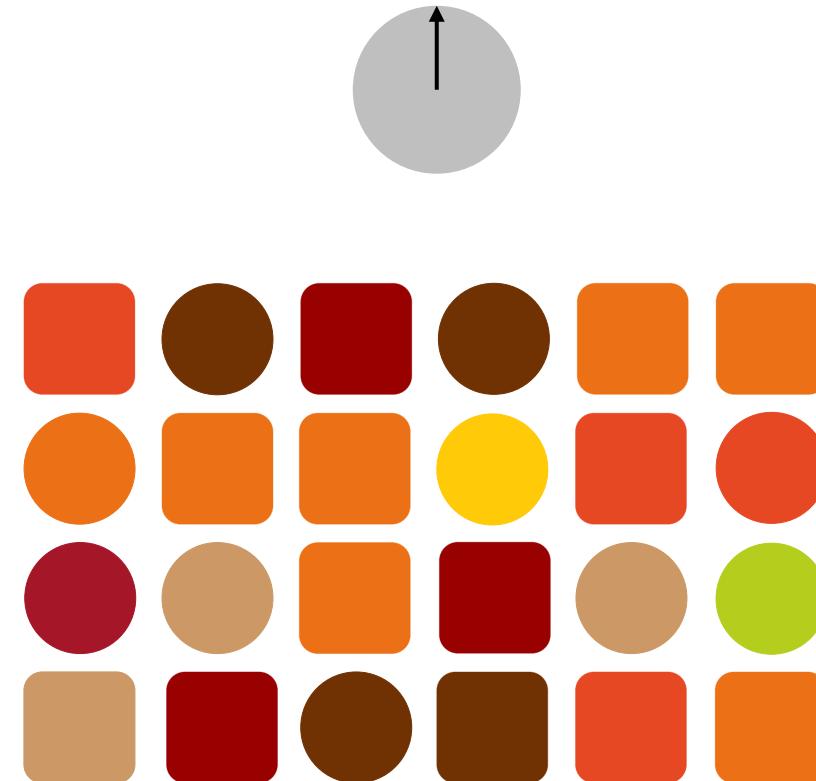
# variáveis de interesse



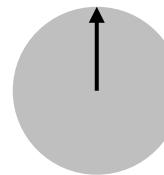
# variáveis de interesse



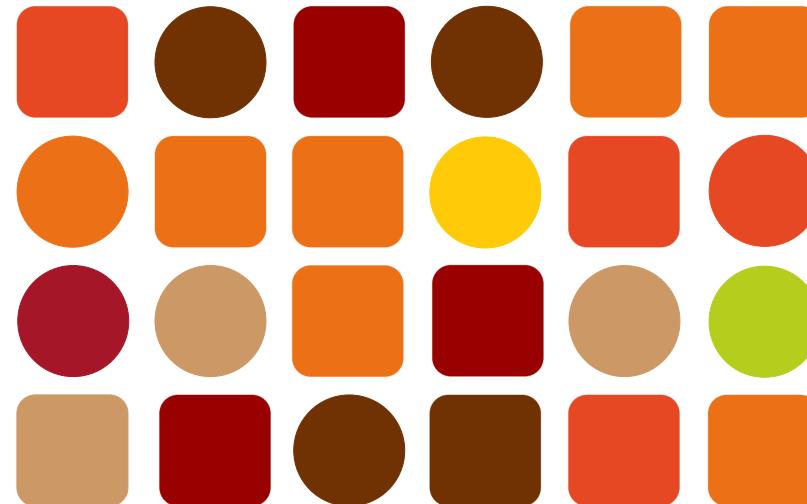
# variáveis de interesse



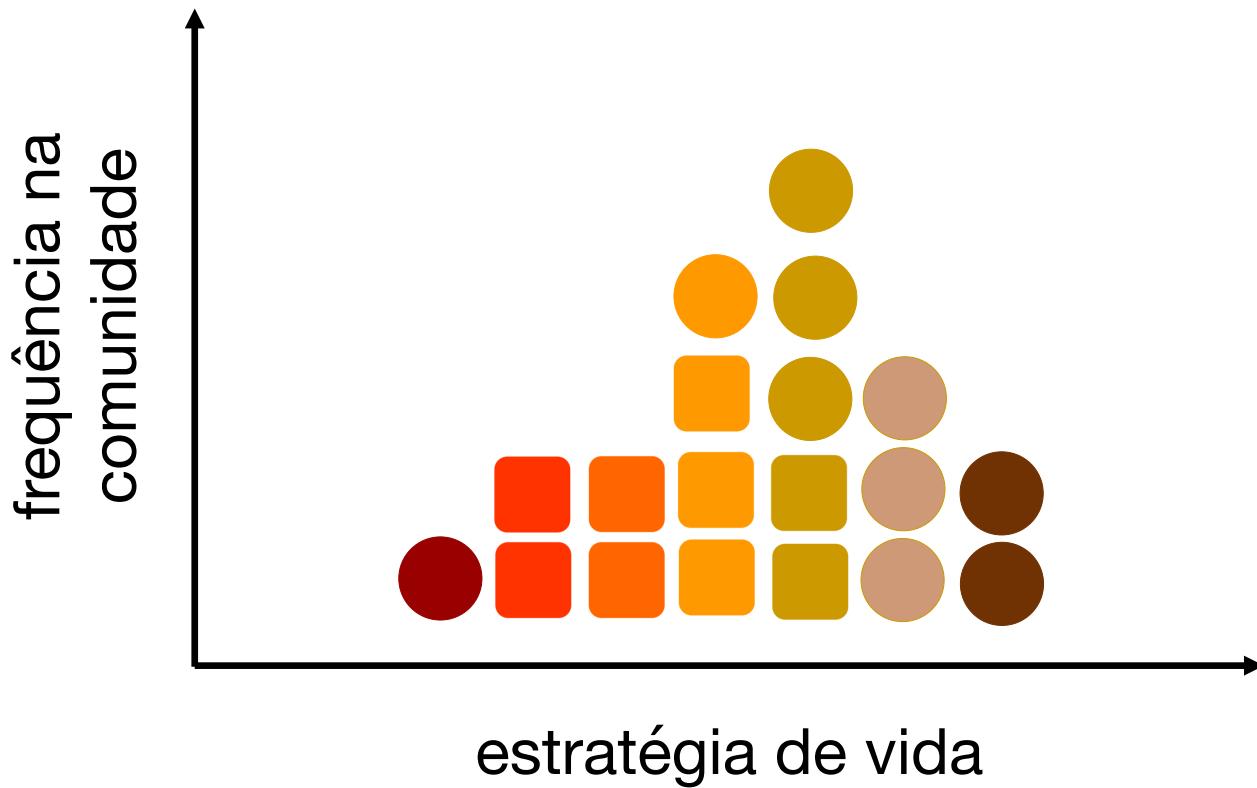
# variáveis de interesse



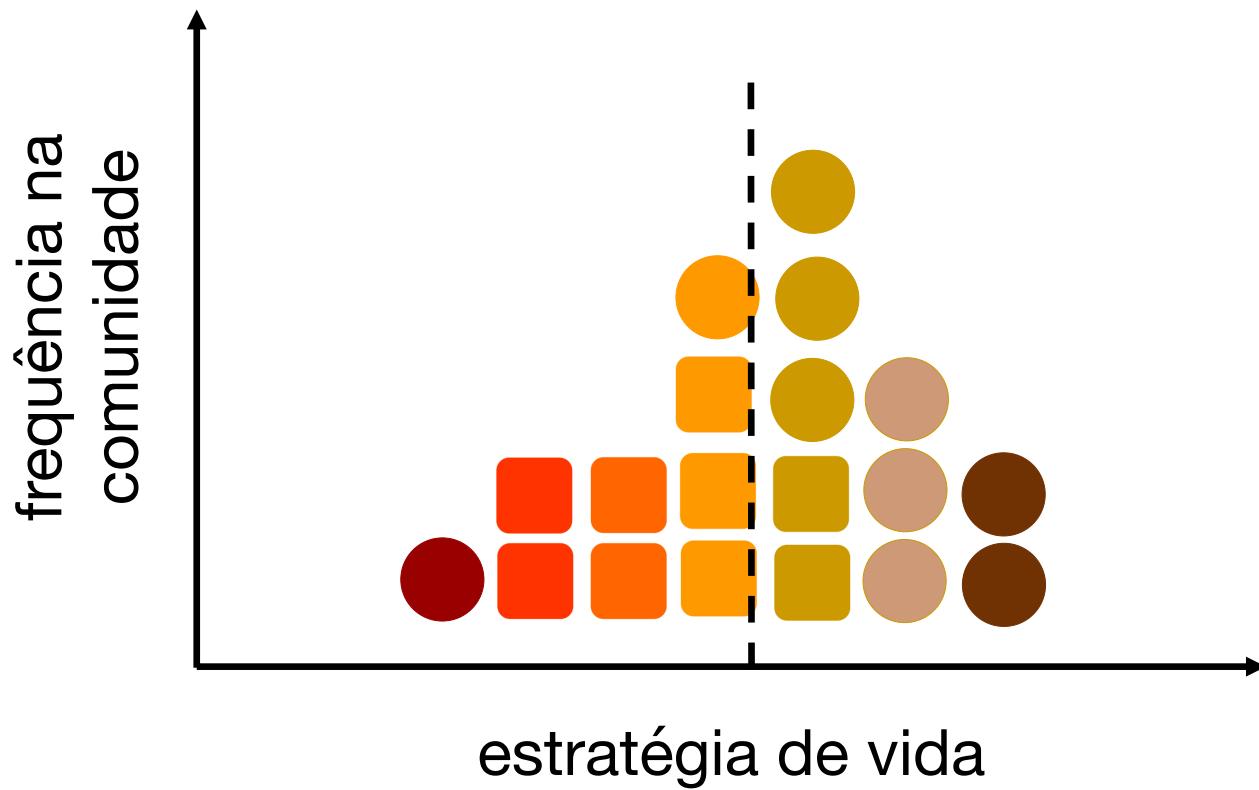
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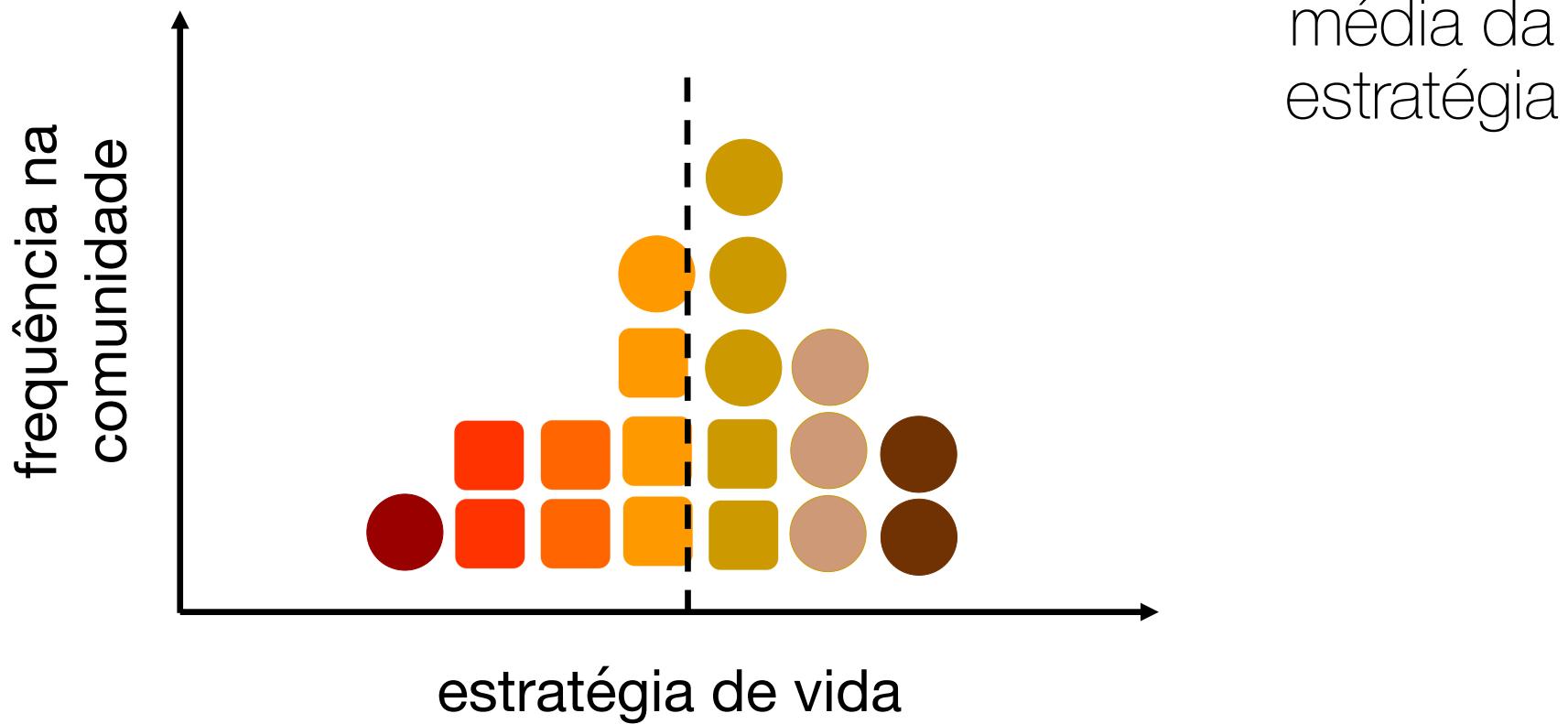
# variáveis de interesse



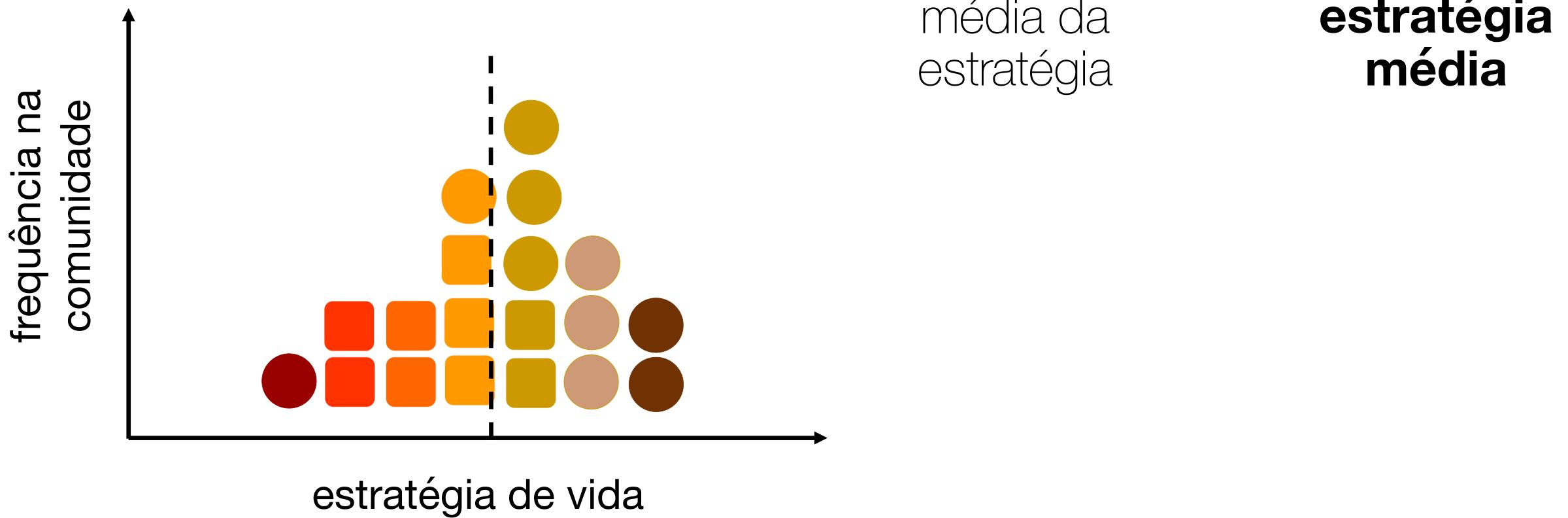
# variáveis de interesse



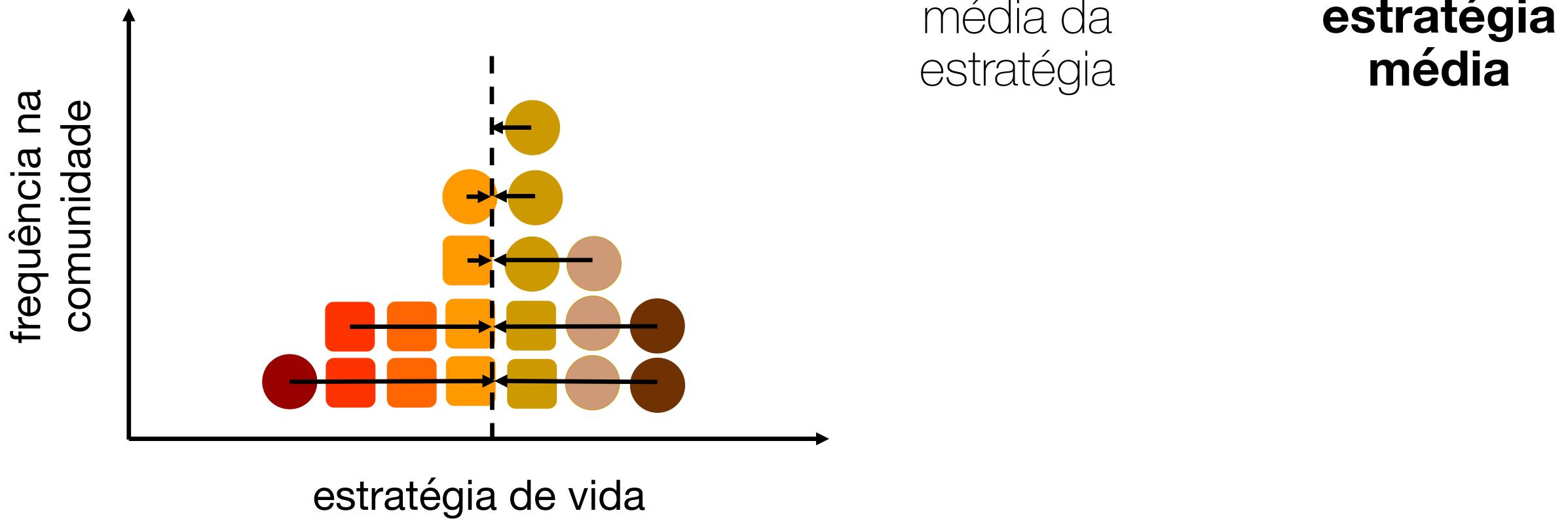
# variáveis de interesse



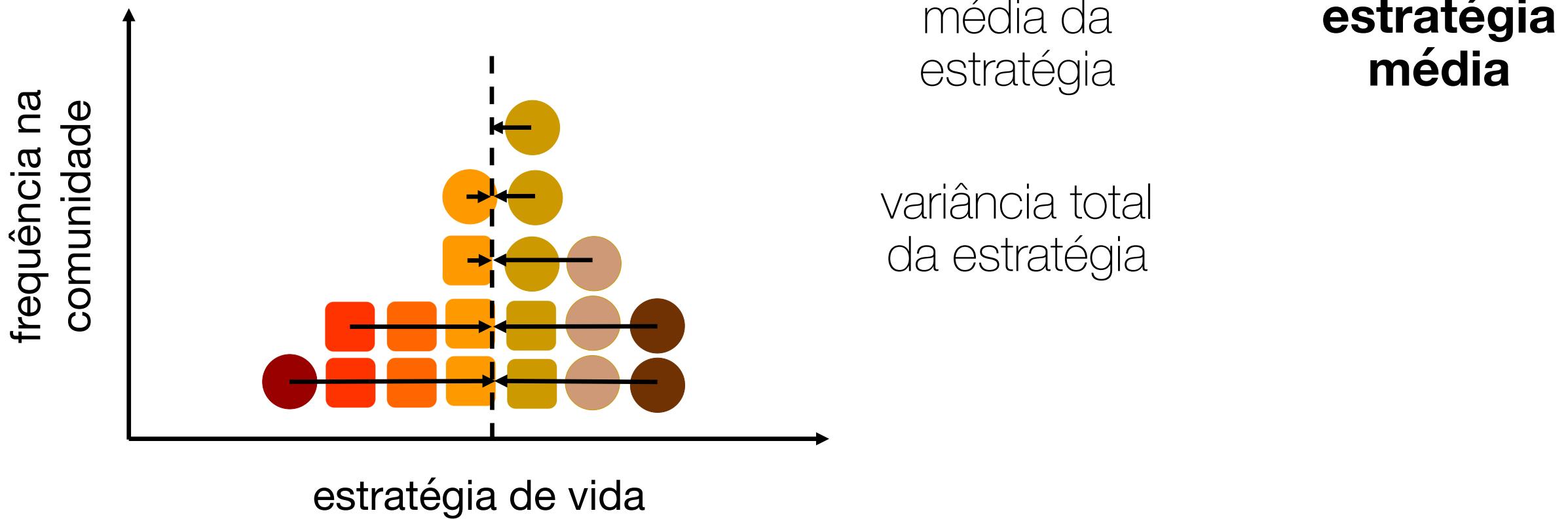
# variáveis de interesse



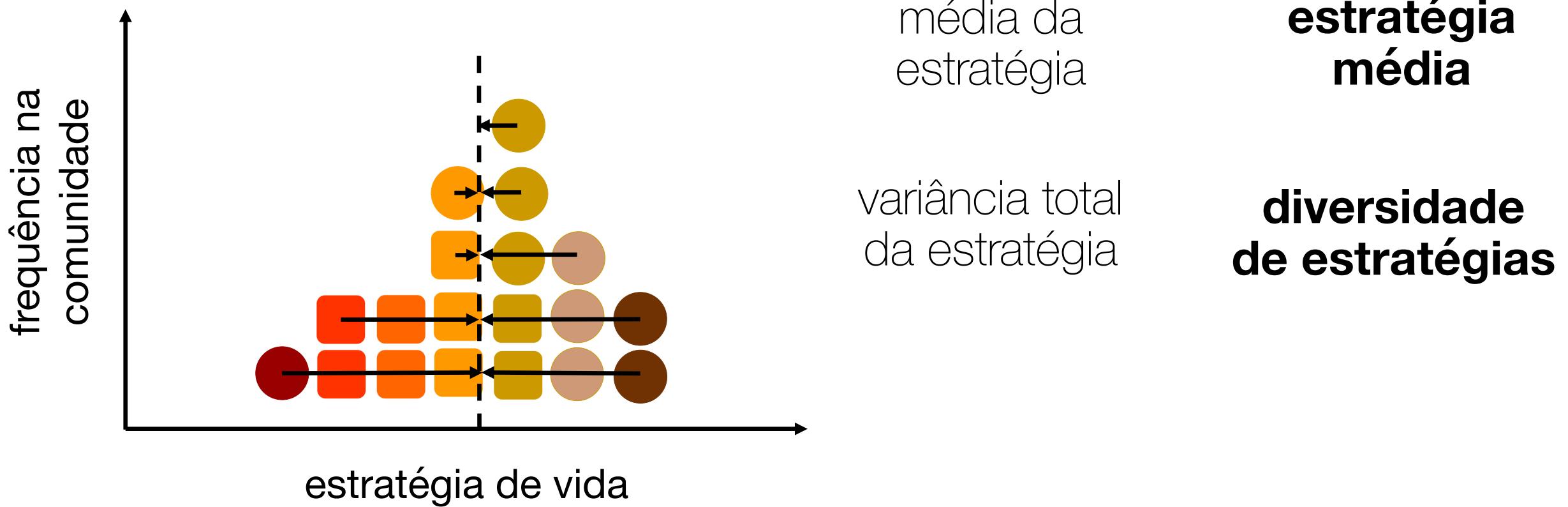
# variáveis de interesse



# variáveis de interesse



# variáveis de interesse



# variáveis de interesse

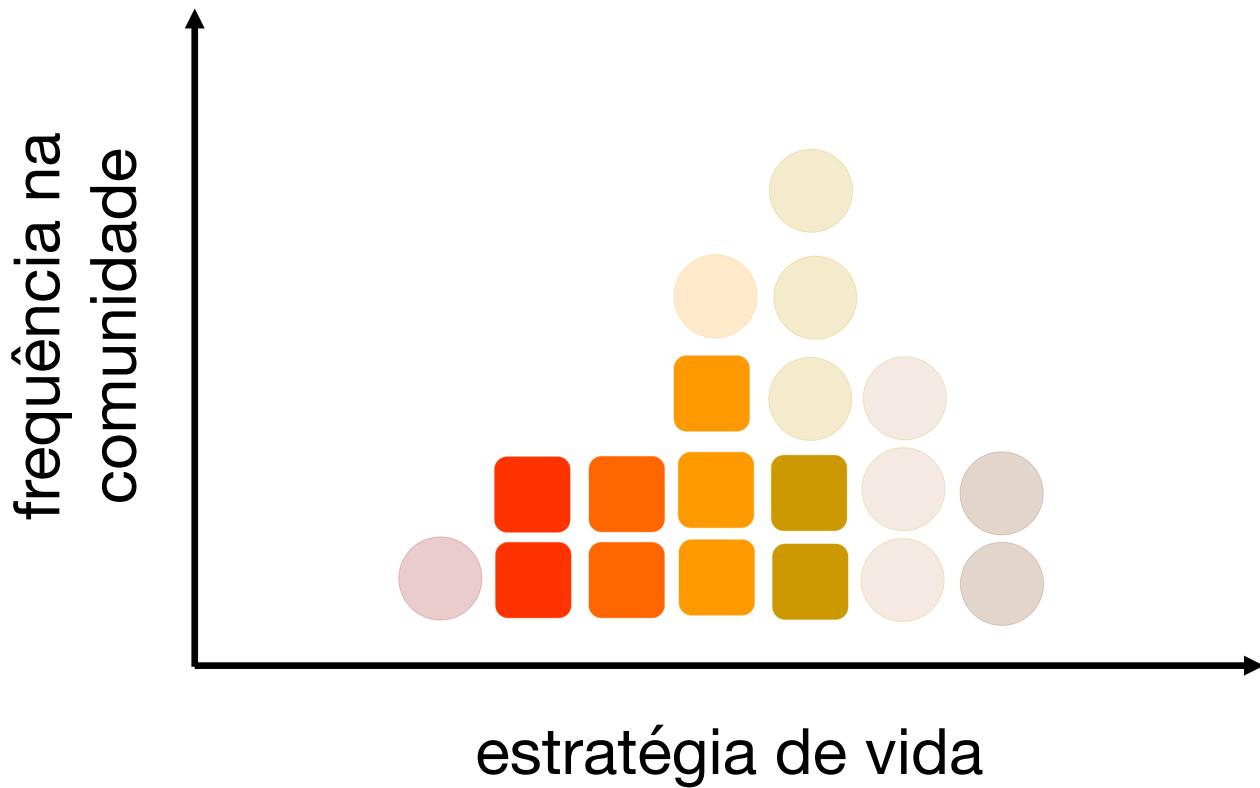


média da  
estratégia

variância total  
da estratégia

**diversidade  
de estratégias**

# variáveis de interesse



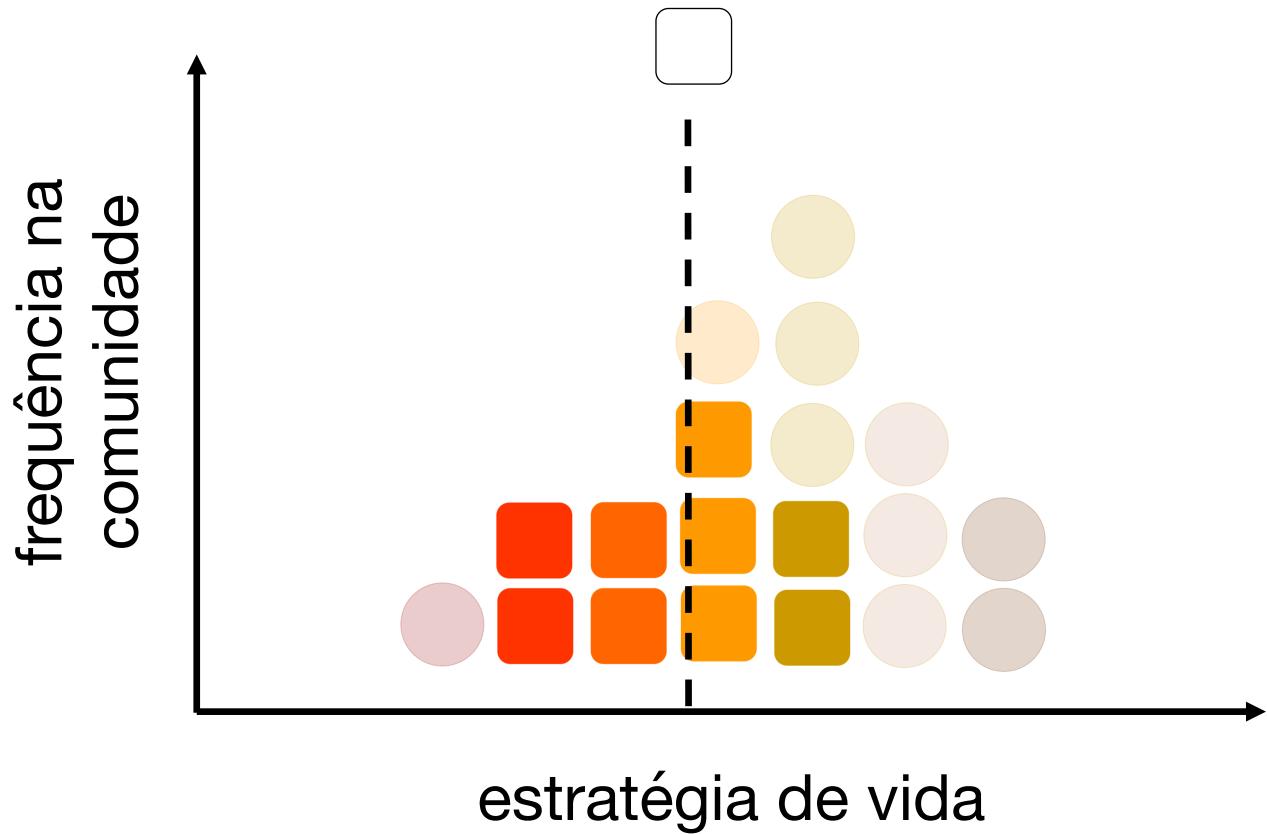
média da  
estratégia

variância total  
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**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse



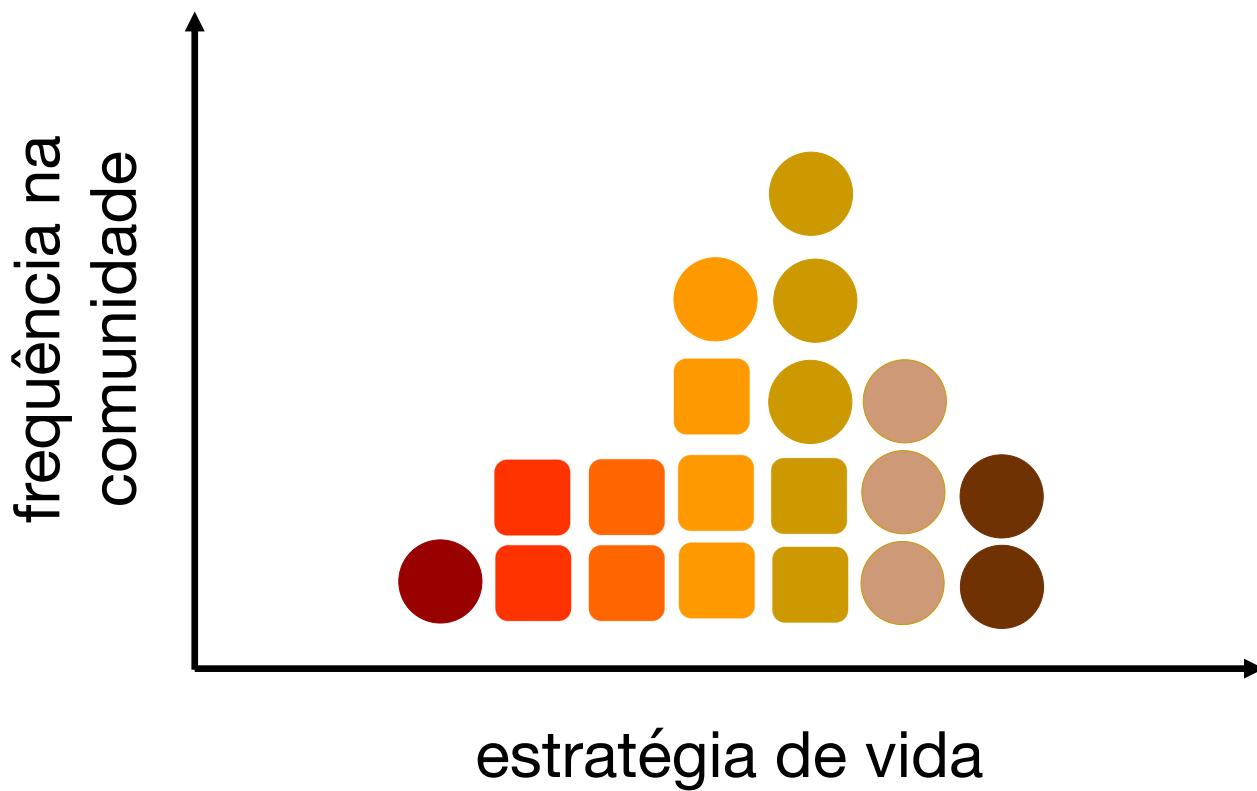
média da  
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da estratégia

**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse

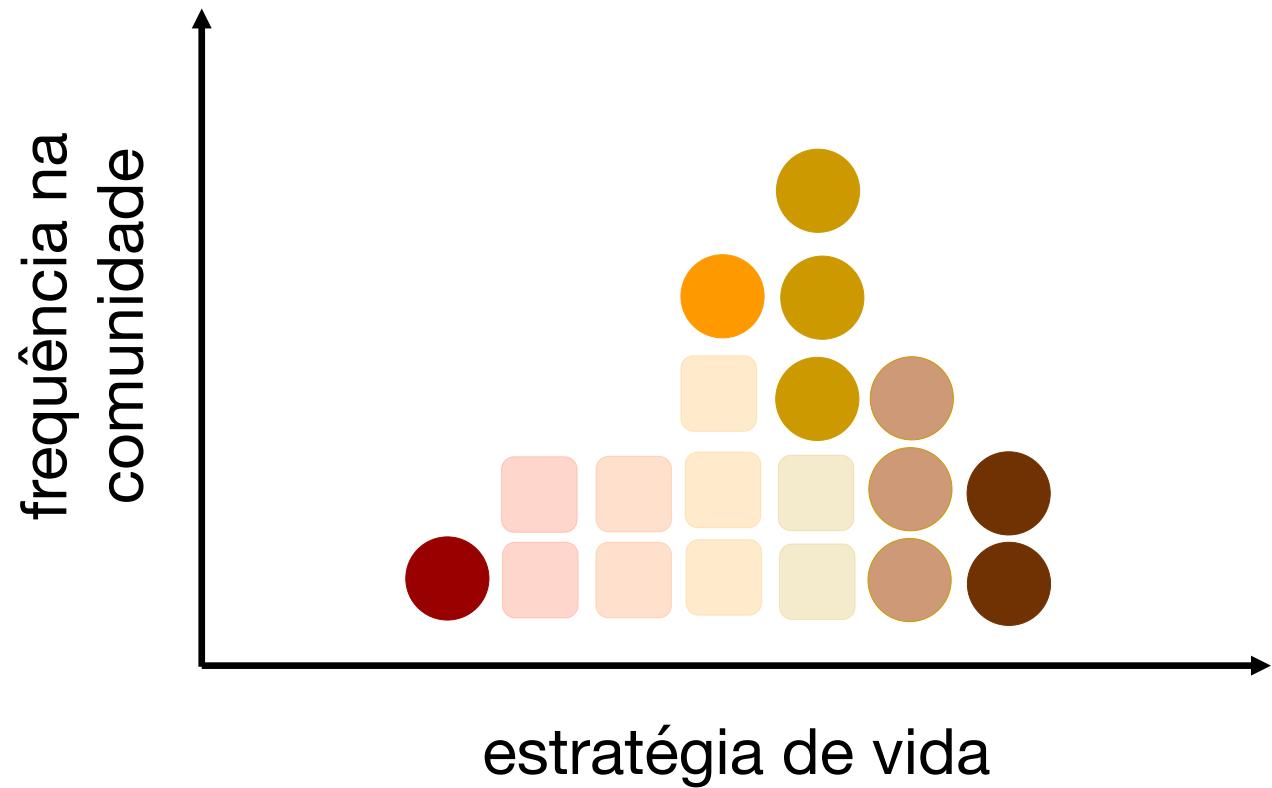


média da  
estratégia

variância total  
da estratégia

**diversidade  
de estratégias**

# variáveis de interesse



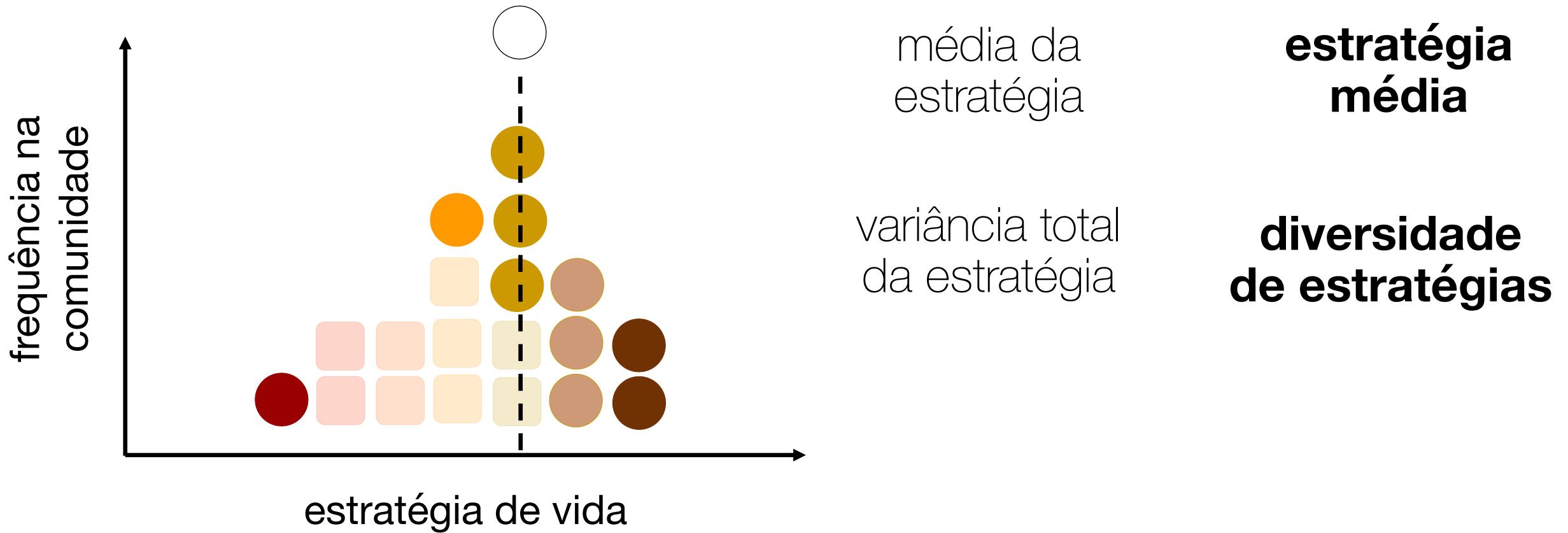
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variância total da estratégia

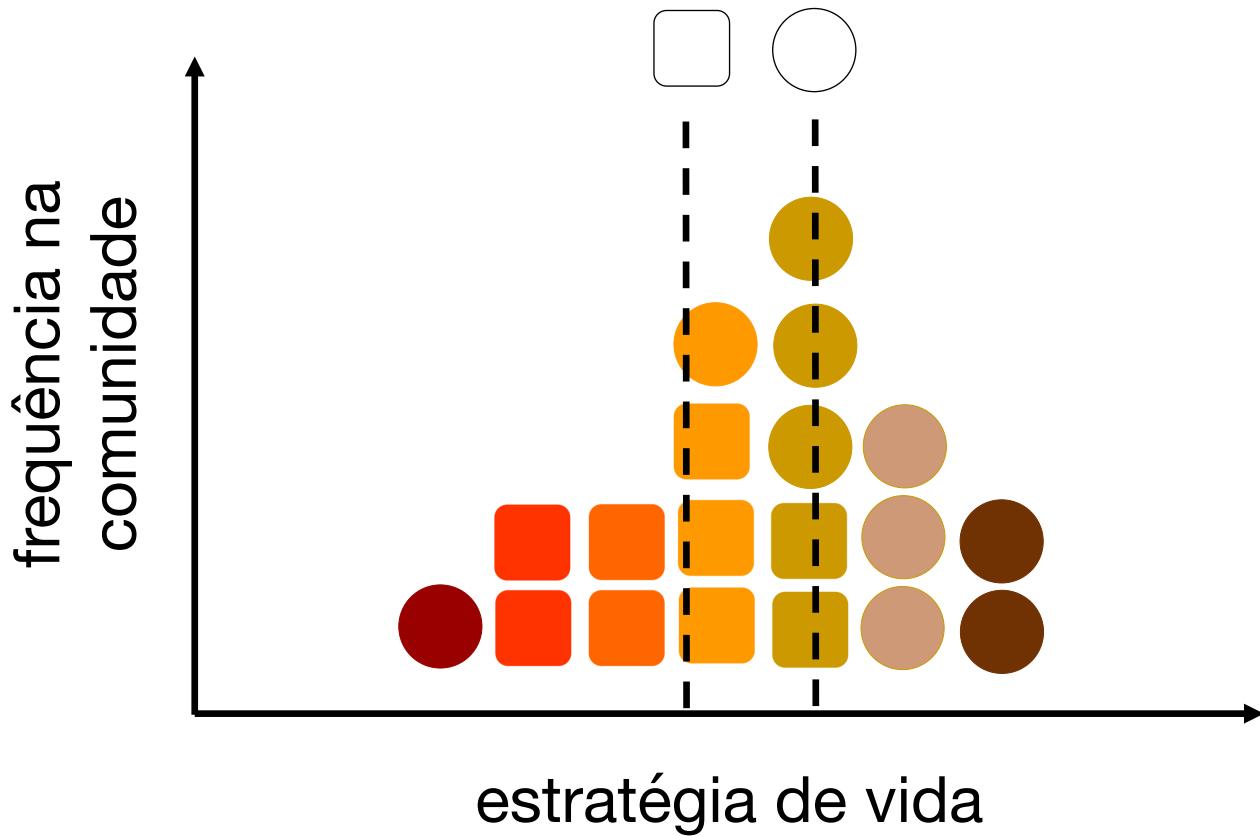
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**diversidade de estratégias**

# variáveis de interesse



# variáveis de interesse



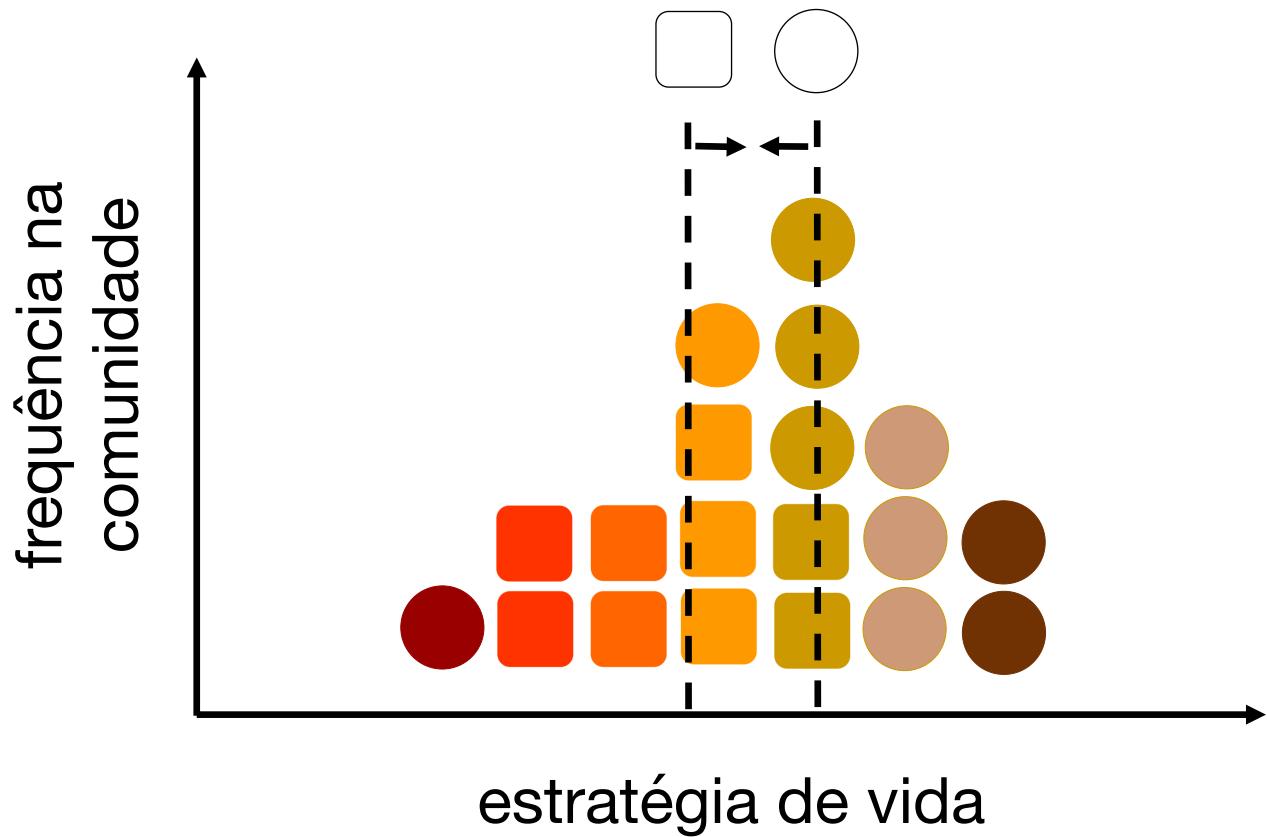
média da  
estratégia

variância total  
da estratégia

**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse



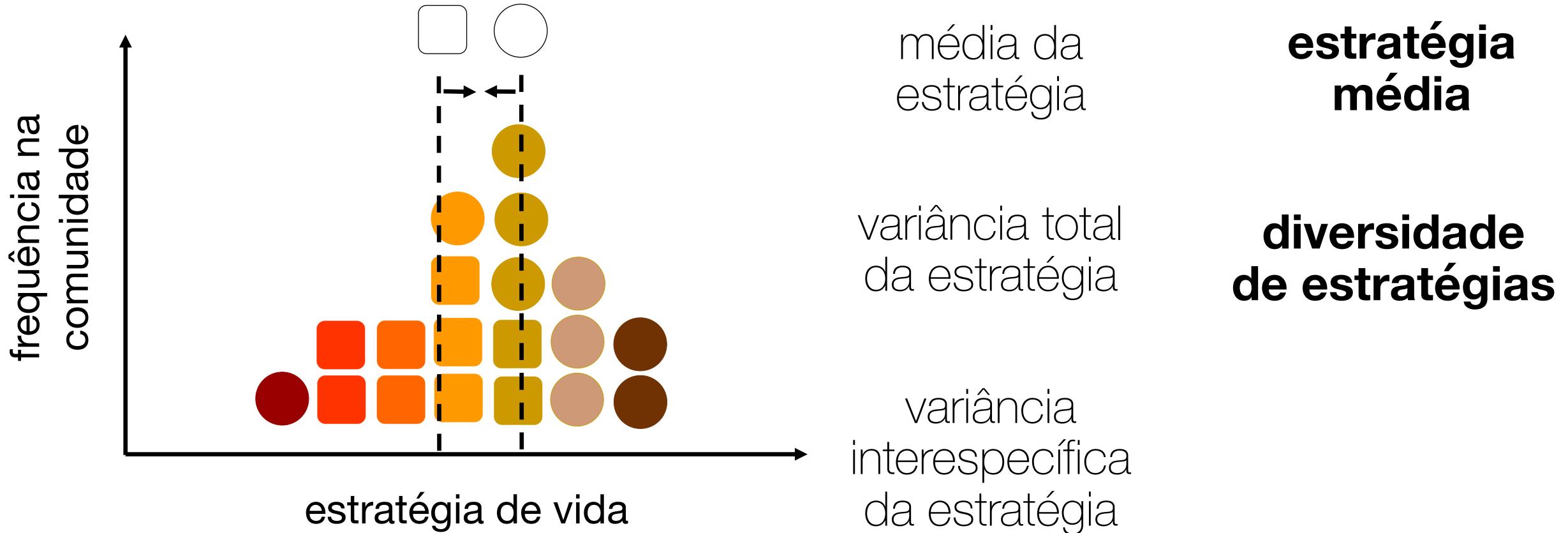
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estratégia

variância total  
da estratégia

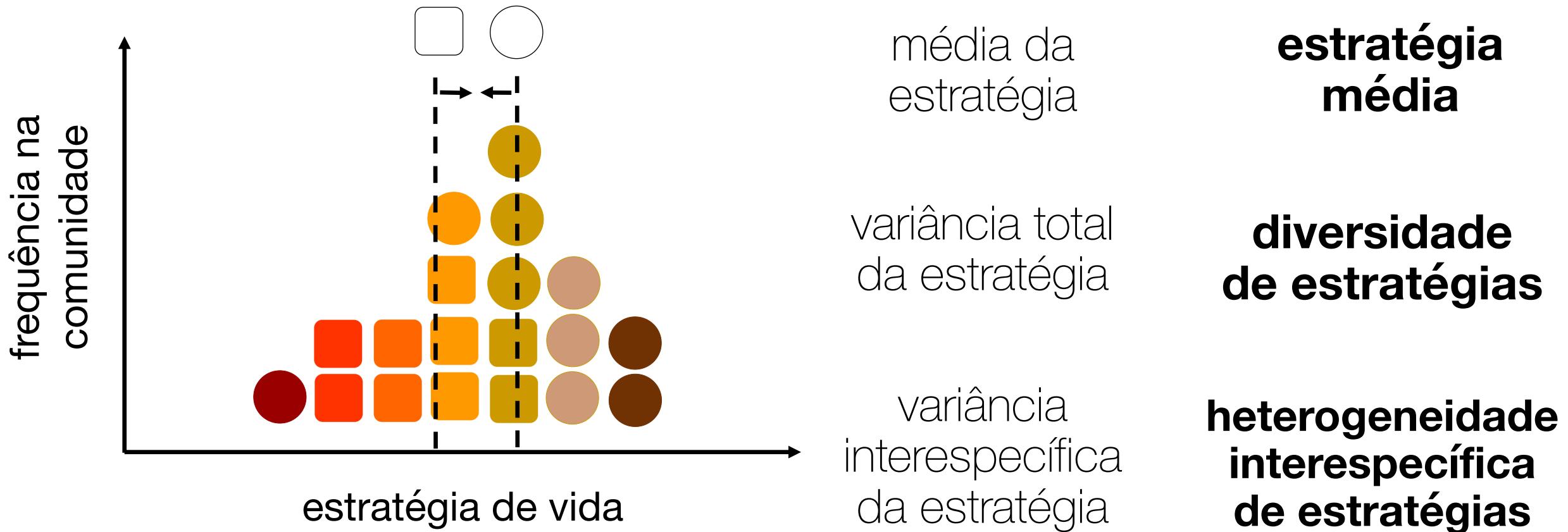
**estratégia  
média**

**diversidade  
de estratégias**

# variáveis de interesse



# variáveis de interesse



# variáveis de interesse



média da estratégia

variância total da estratégia

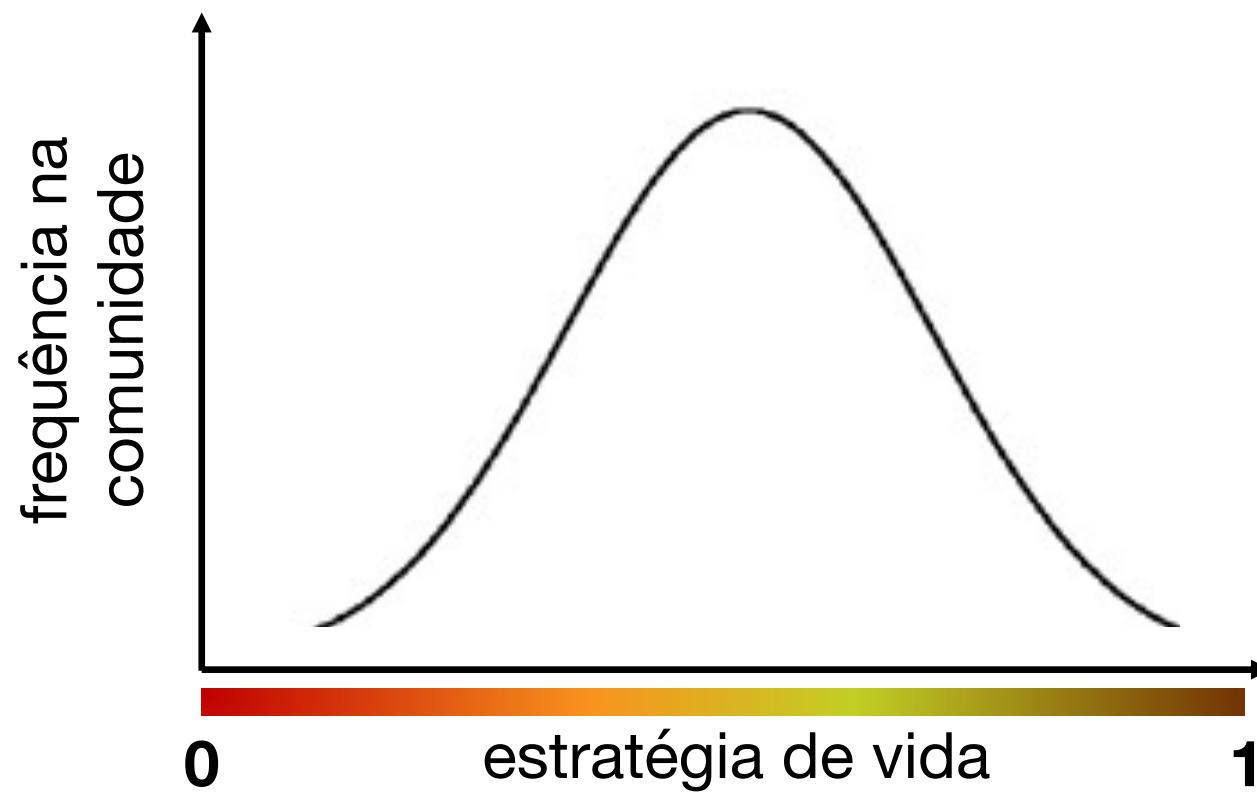
variância interespecífica da estratégia

**estratégia média**

**diversidade de estratégias**

**heterogeneidade interespecífica de estratégias**

# variáveis de interesse



# média da estratégia

# variância total da estratégia

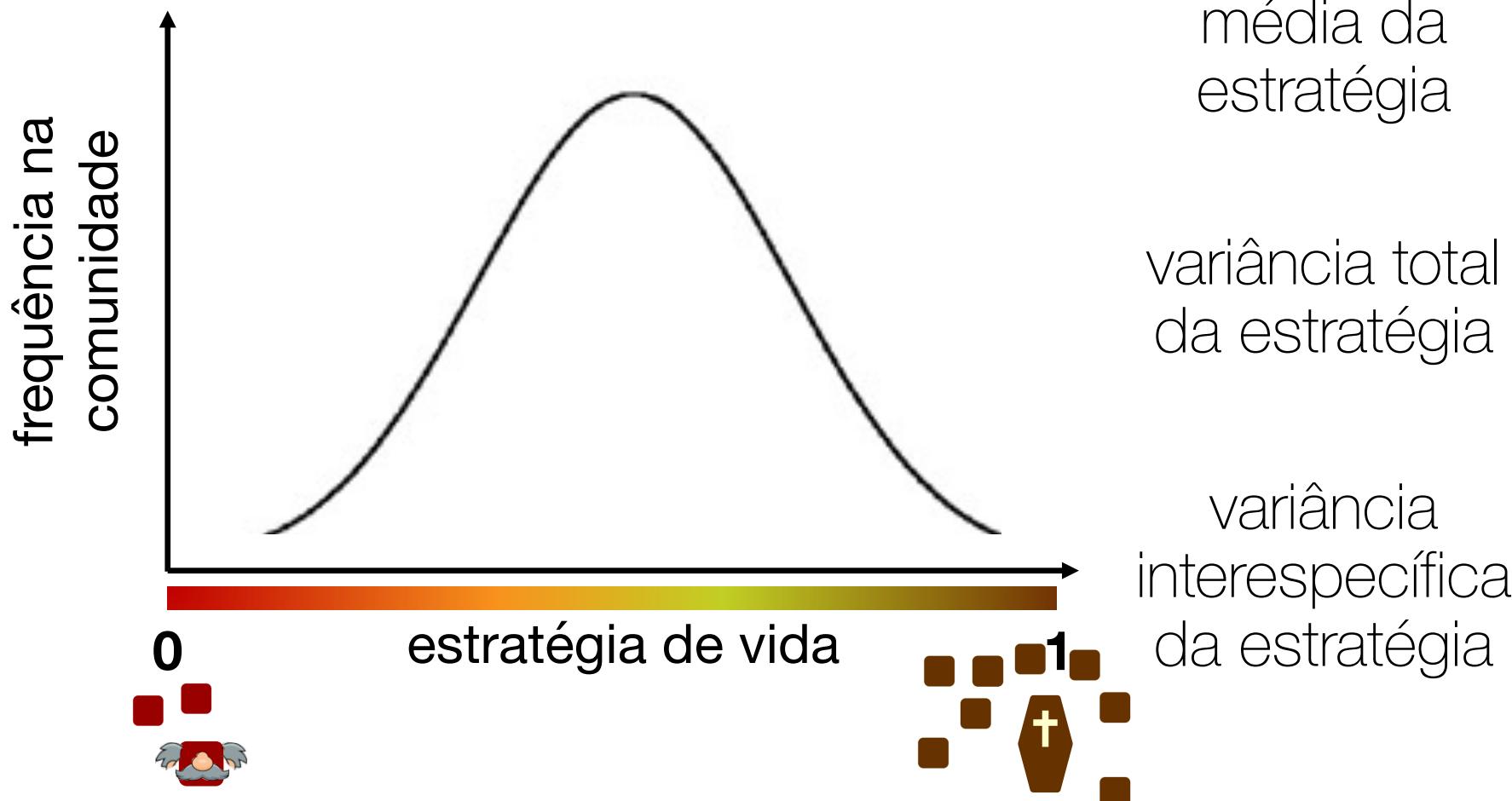
# variância interespecífica da estratégia

# estratégia média

# **diversidade de estratégias**

# **heterogeneidade interespecífica de estratégias**

# variáveis de interesse



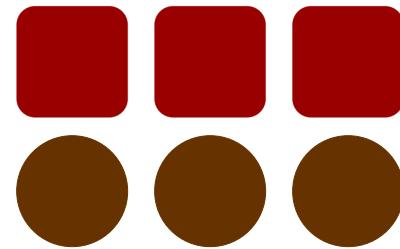
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**diversidade de estratégias**

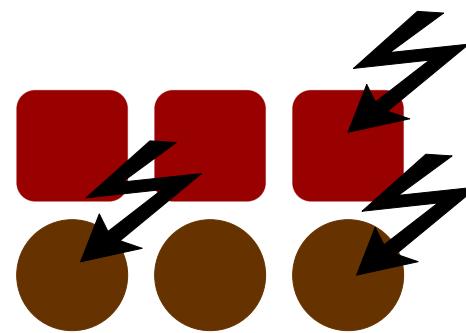
**heterogeneidade interespecífica de estratégias**

# variável preditora

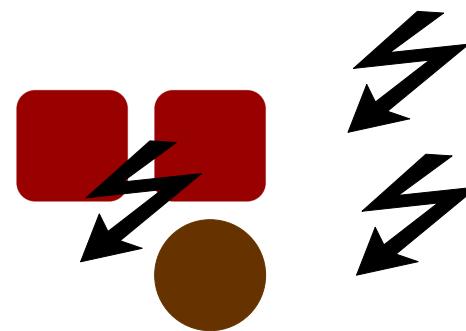
# variável preditora



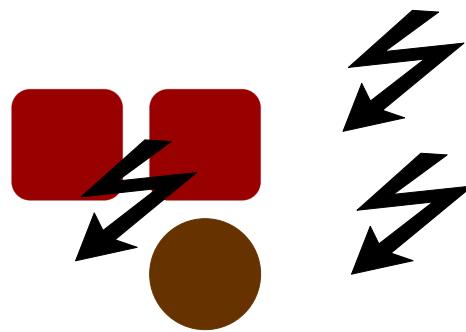
# variável preditora



# variável preditora

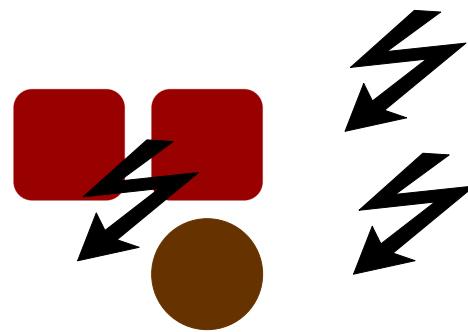


# variável preditora



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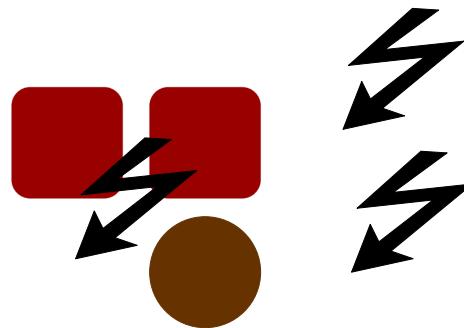
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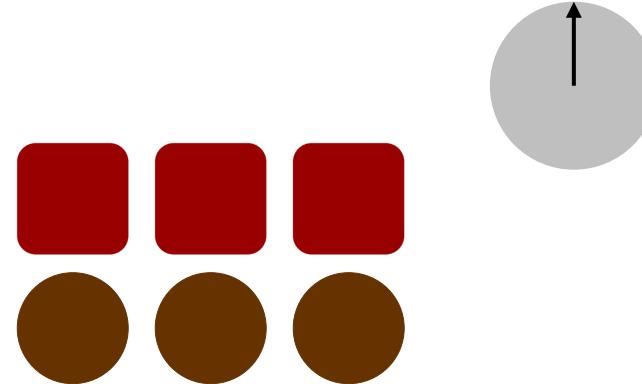
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**intensidade  
do distúrbio**

# variável preditora

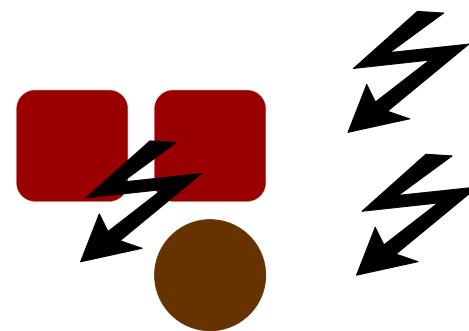


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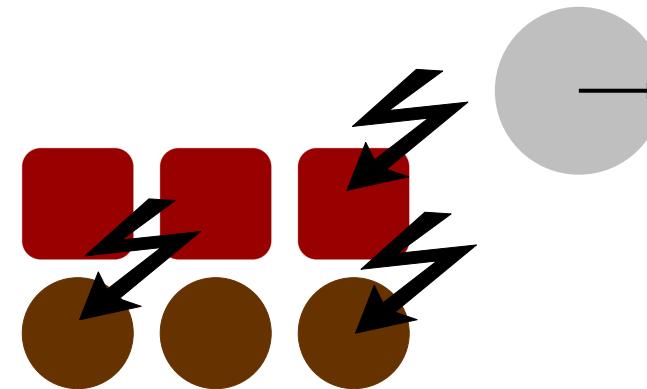


**intensidade  
do distúrbio**

# variável preditora

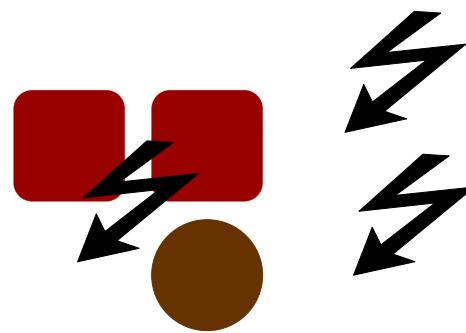


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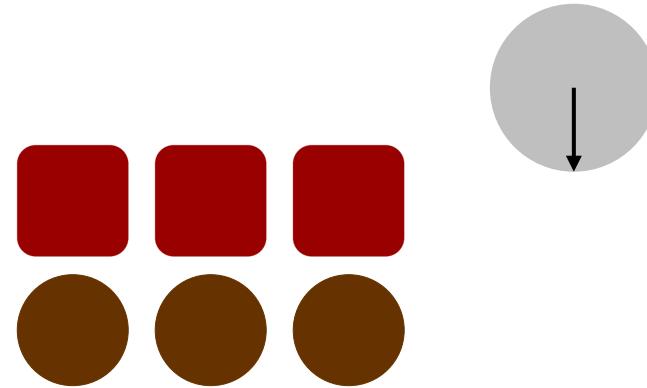


**intensidade  
do distúrbio**

# variável preditora

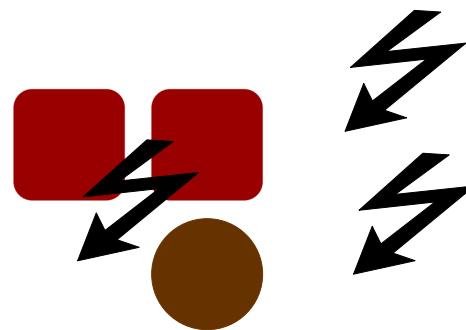


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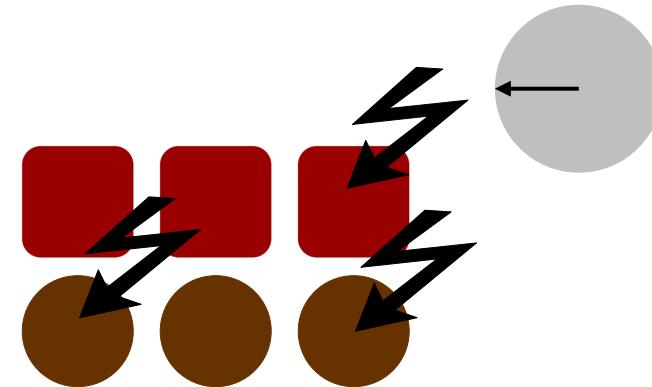


**intensidade  
do distúrbio**

# variável preditora

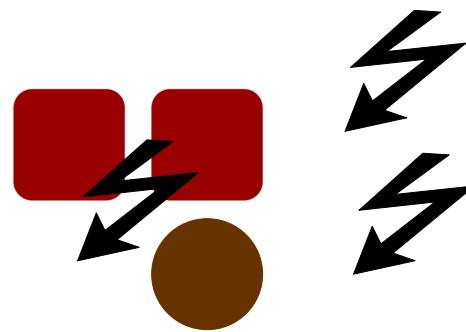


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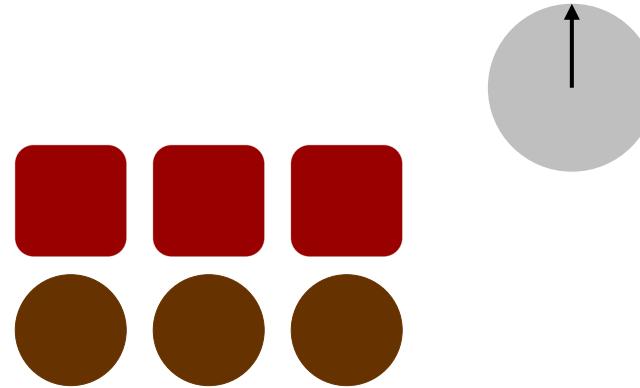


**intensidade  
do distúrbio**

# variável preditora

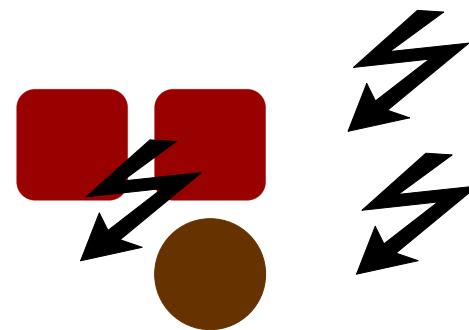


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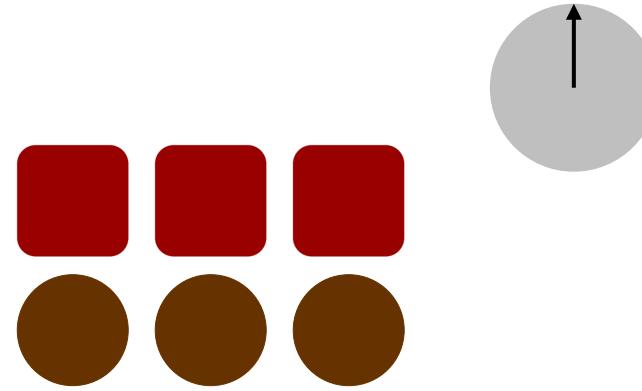
**intensidade  
do distúrbio**

# variável preditora



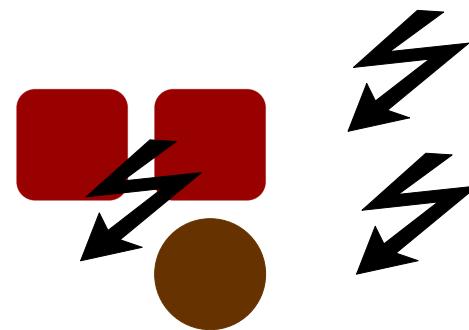
50%

**intensidade  
do distúrbio**



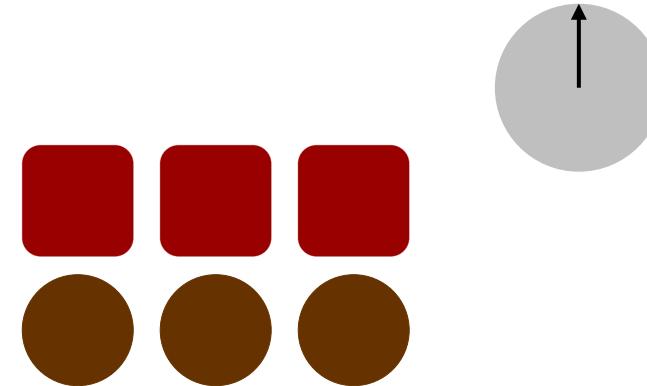
2 eventos

# variável preditora



50%

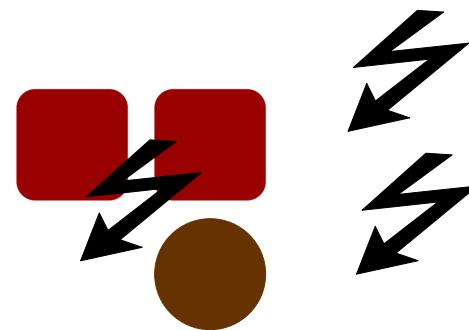
**intensidade  
do distúrbio**



2 eventos

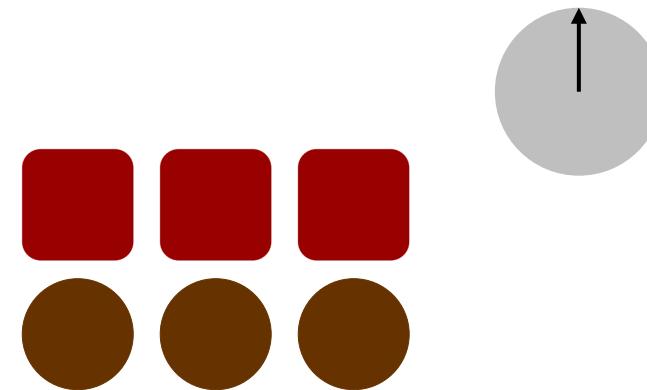
**número de  
eventos de  
distúrbio**

# variável preditora



50%

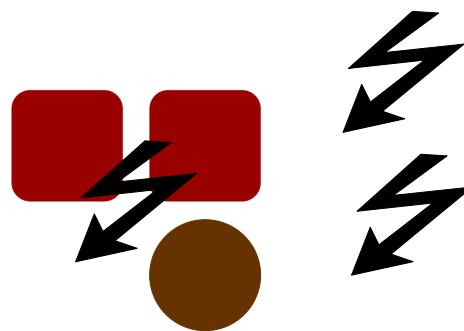
**intensidade  
do distúrbio**



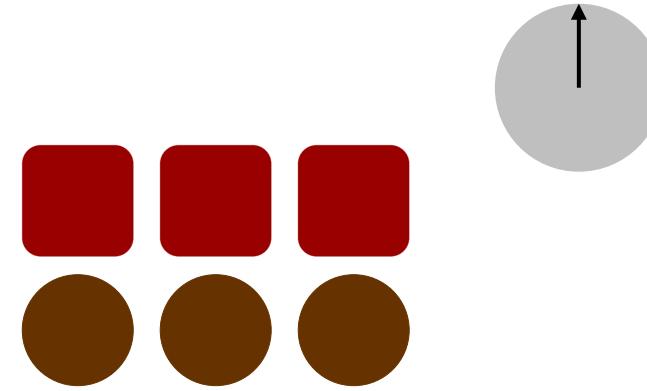
2 eventos

**número de  
eventos de  
distúrbio**

# variável preditora



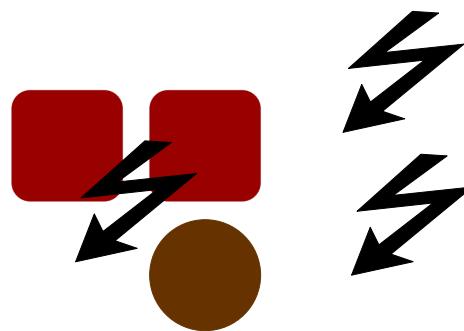
50%



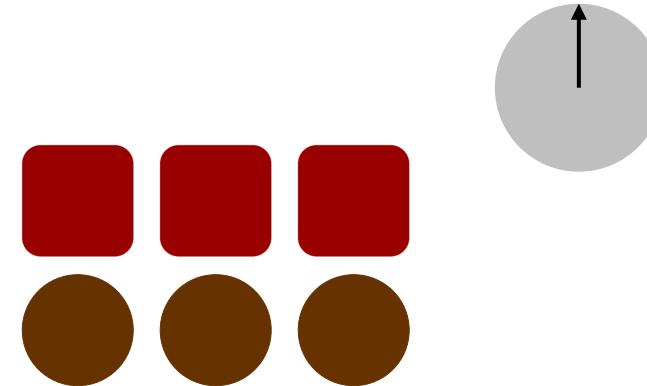
2 eventos

=

# variável preditora



50%



2 eventos

**índice de  
distúrbio**



# análise dos dados

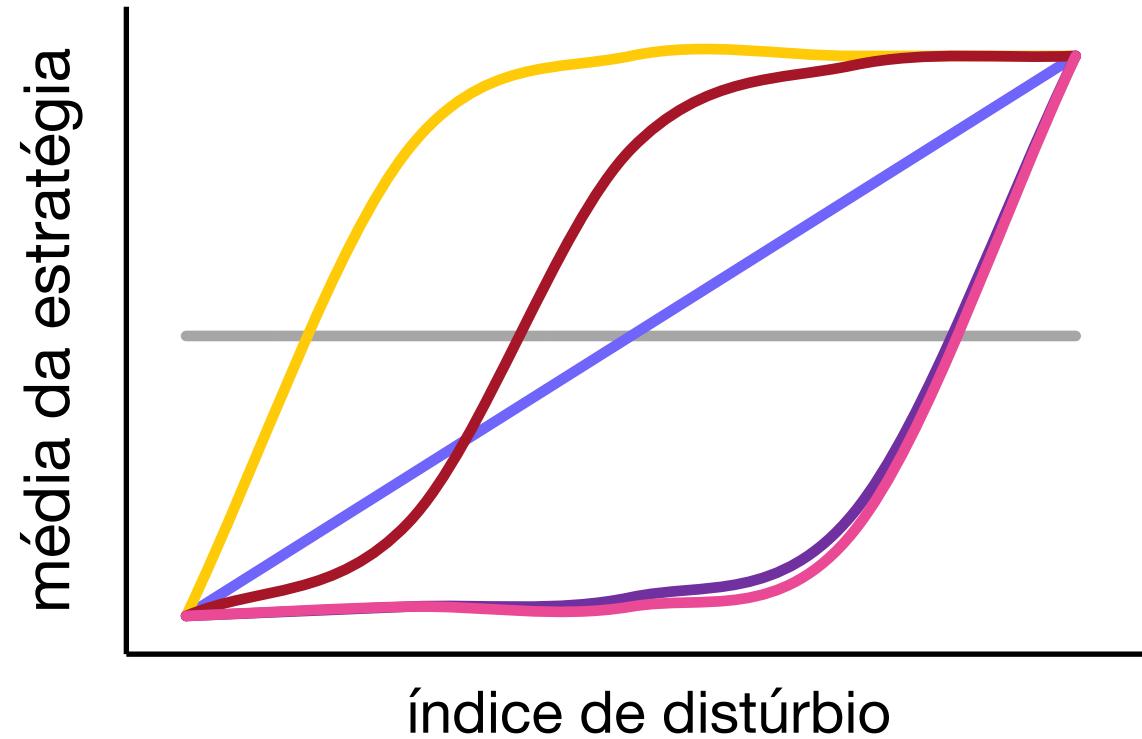


# modelos

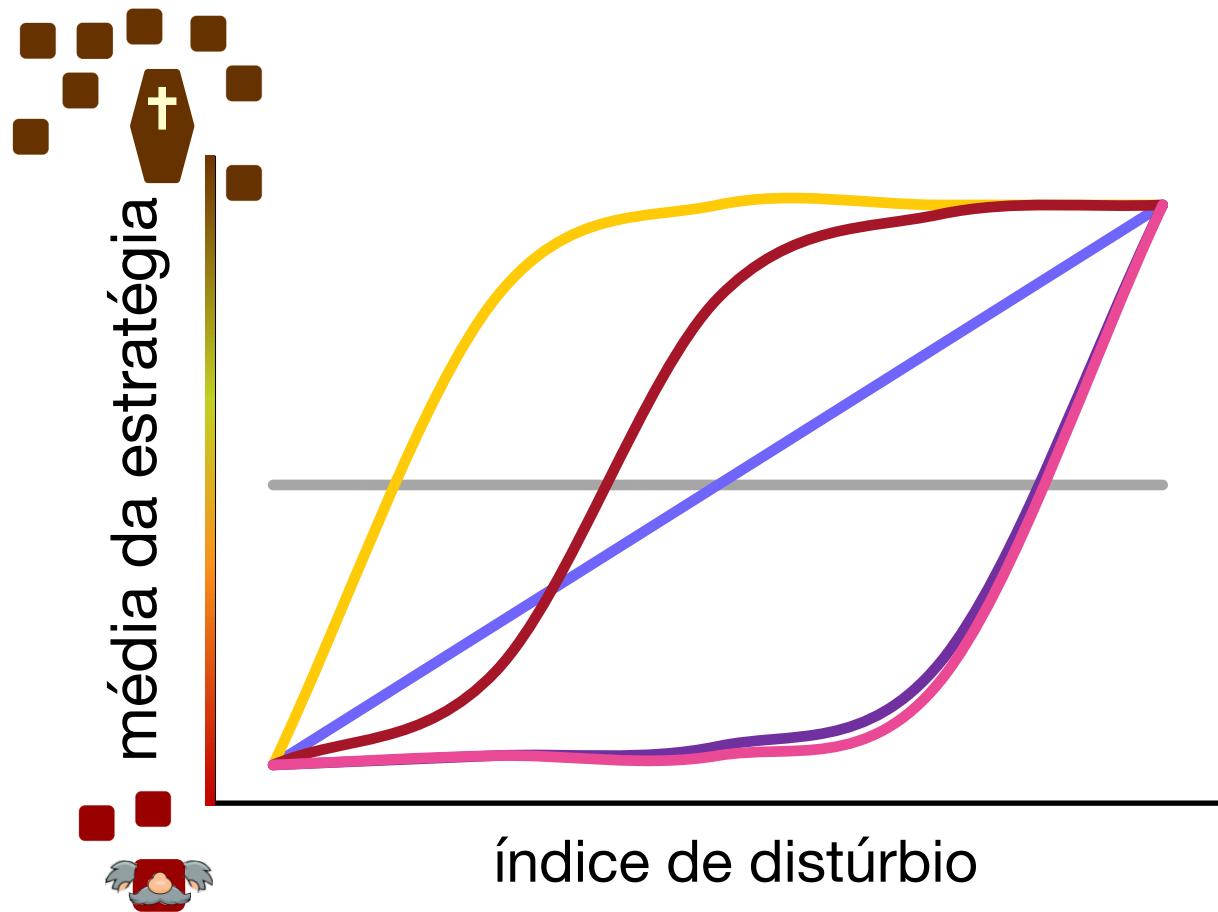
estratégia média ~ distúrbio



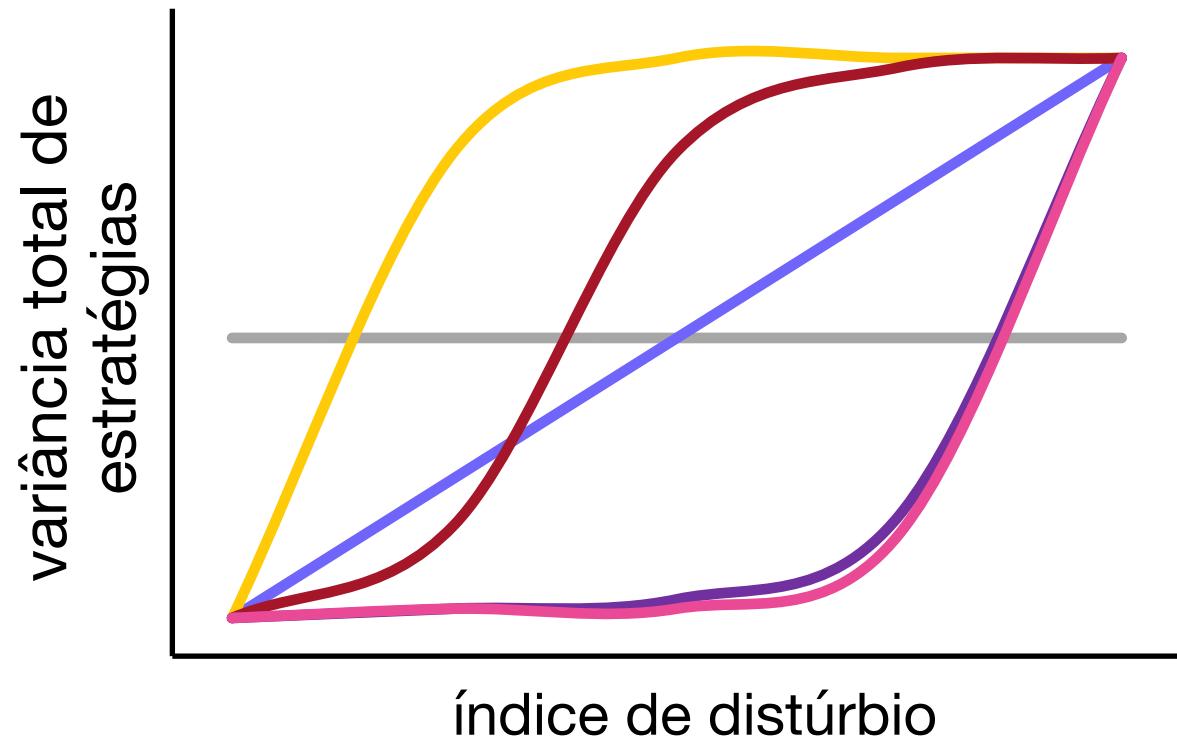
estratégia média ~ distúrbio



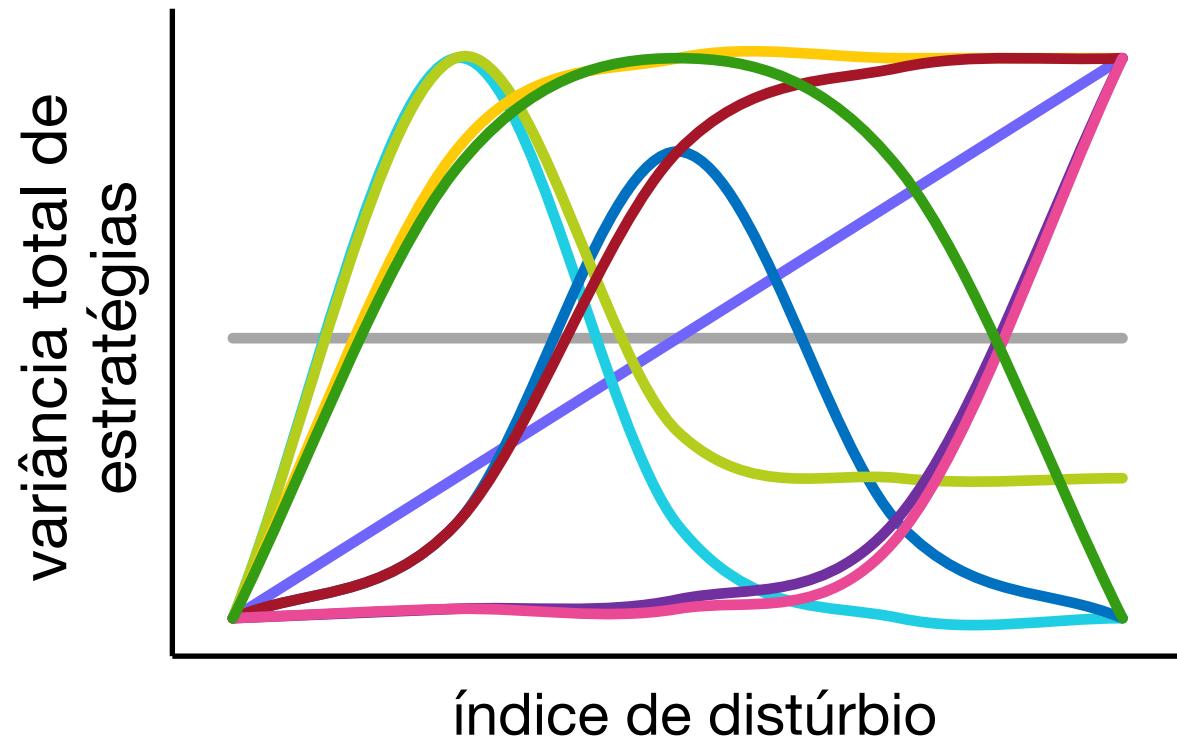
# estratégia média ~ distúrbio



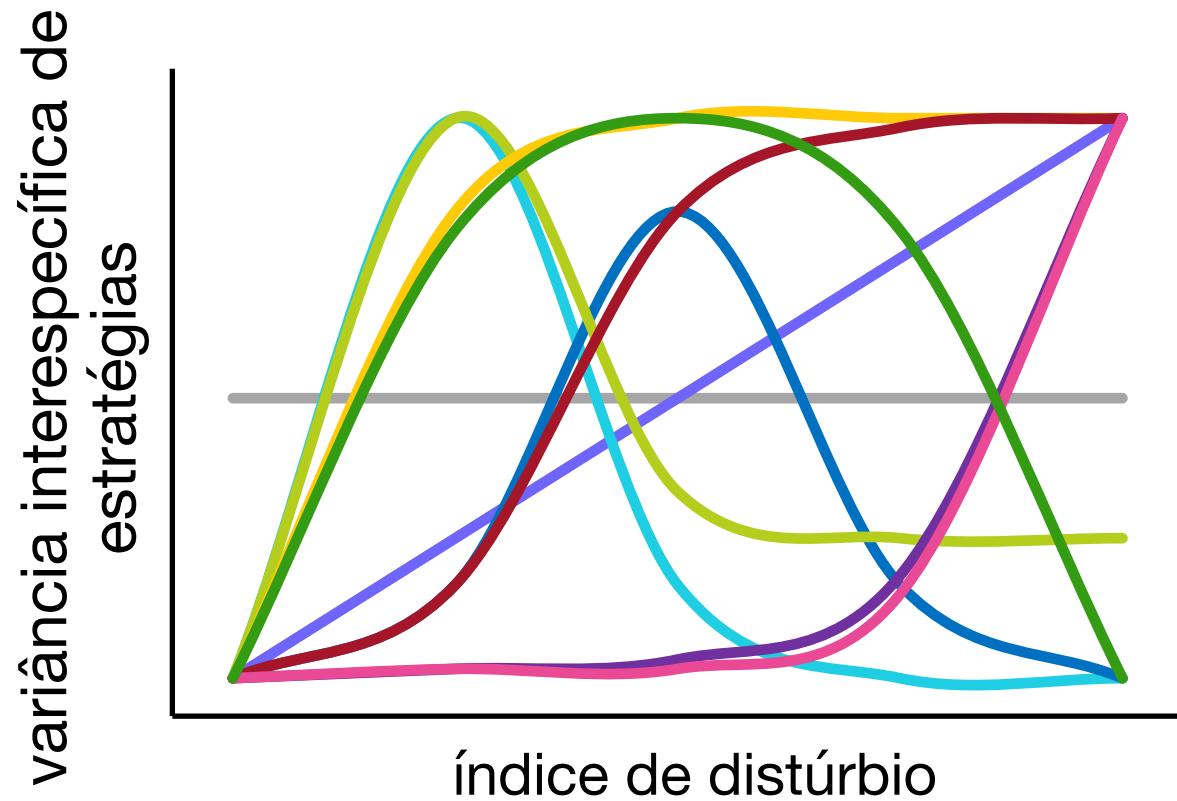
diversidade de estratégias ~ distúrbio



diversidade de estratégias ~ distúrbio



# heterogeneidade interespecífica de ~ estratéгias distúrbio

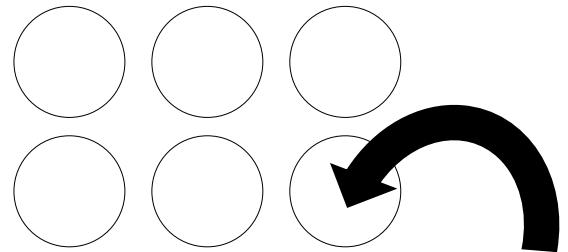




# seleção de modelos

# 8 seleções de modelo

## evolutivo

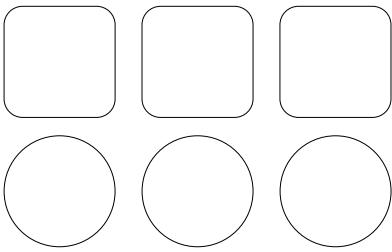


estratégia média

diversidade  
de estratégias

-

## ecológico

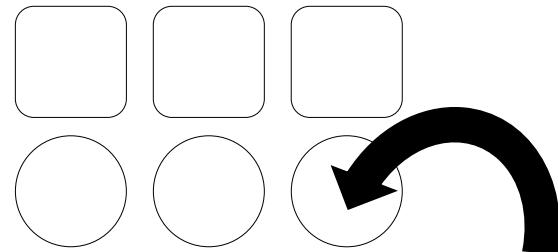


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

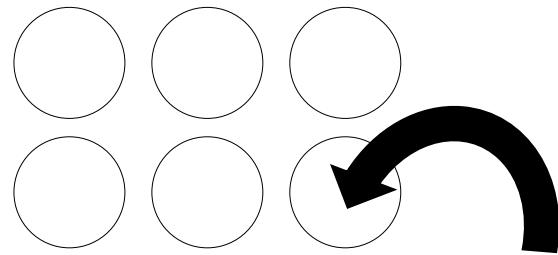


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

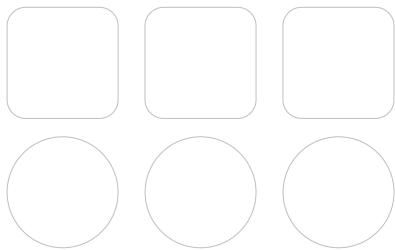


### estratégia média

diversidade  
de estratégias

-

## ecológico

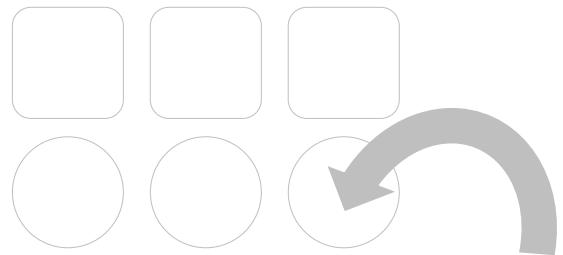


### estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

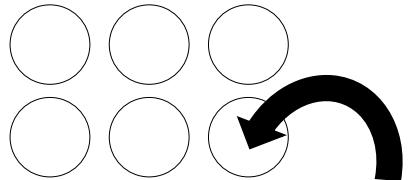


### estratégia média

diversidade  
de estratégias

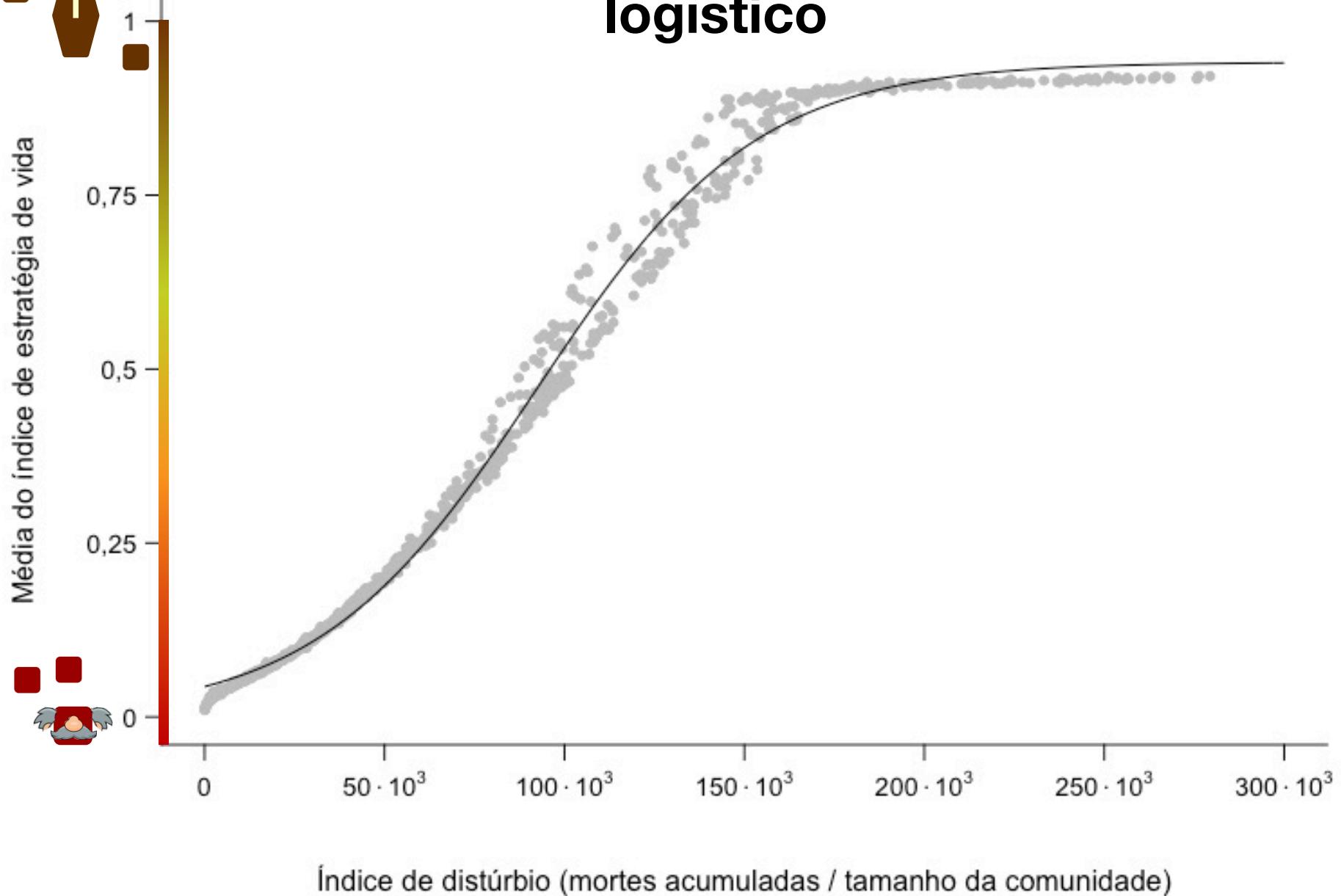
heterogeneidade  
interespecífica de  
estratégias

# estratégia média



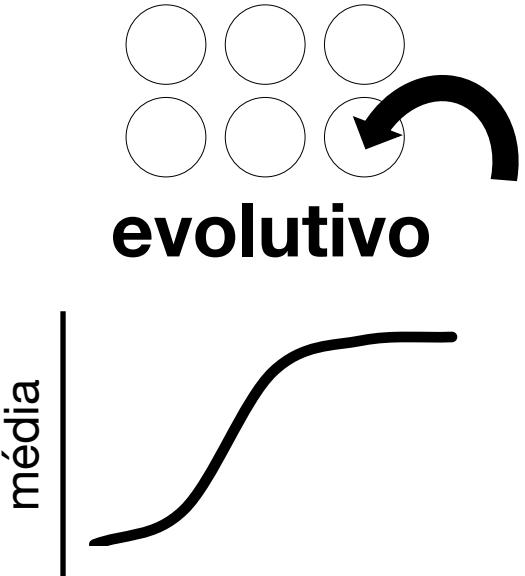
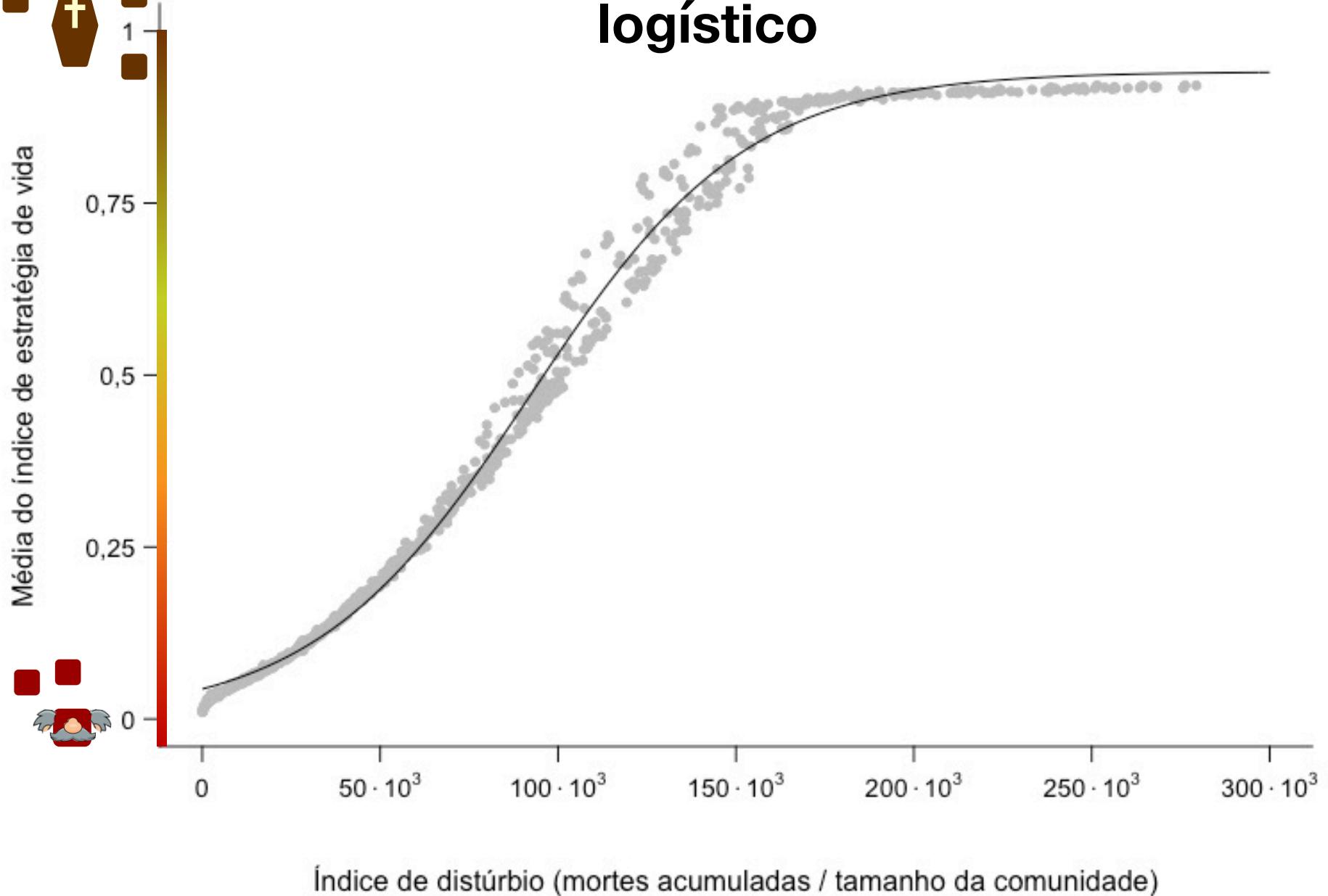
**evolutivo**

# estratégia média logístico



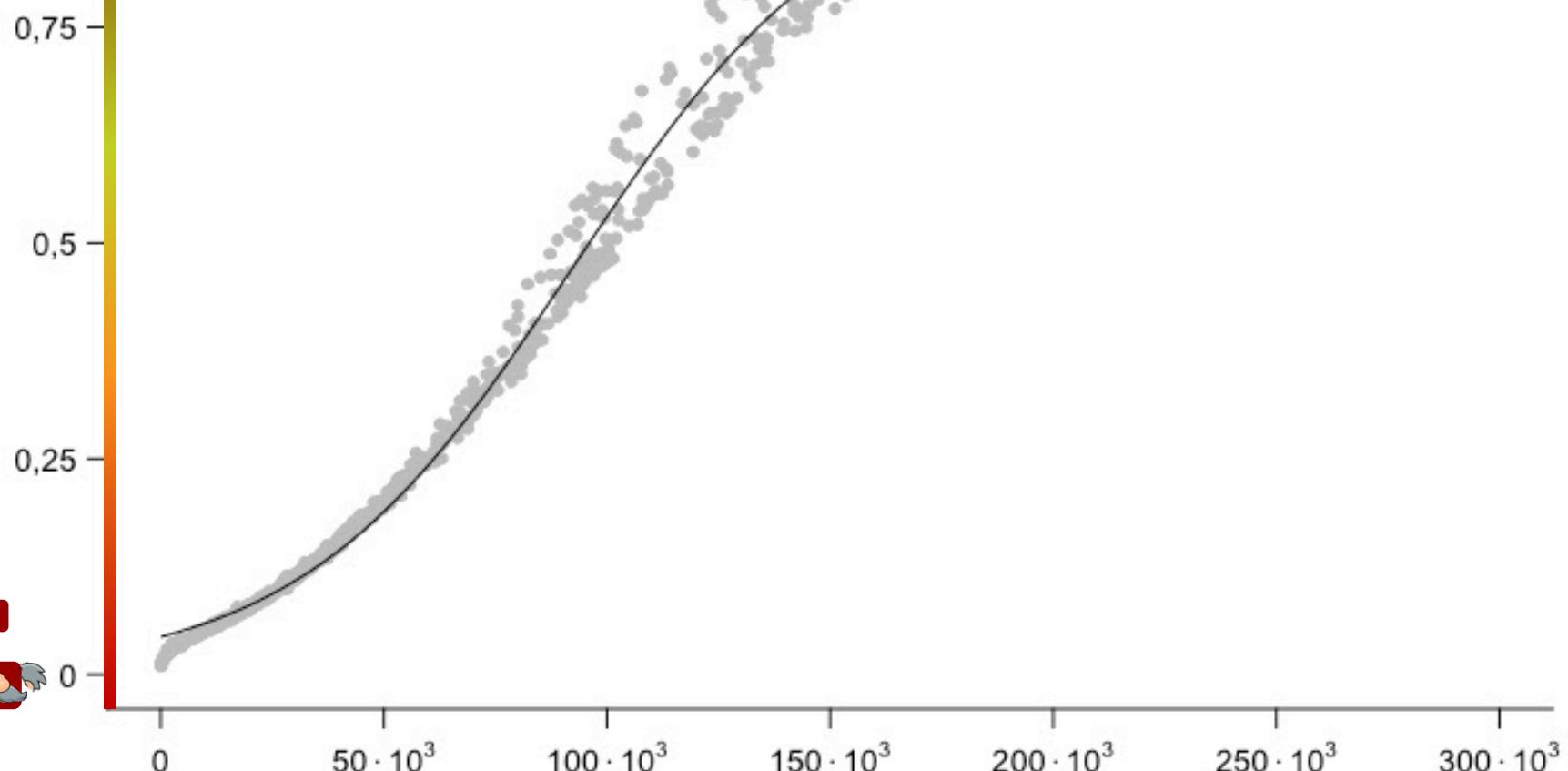
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# estratégia média logístico

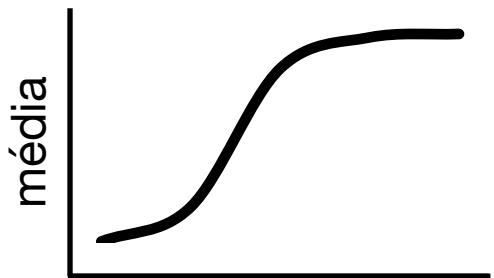
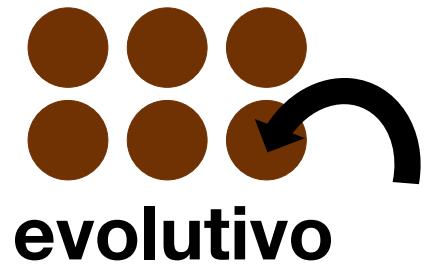


# estratégia média logístico

Média do índice de estratégia de vida

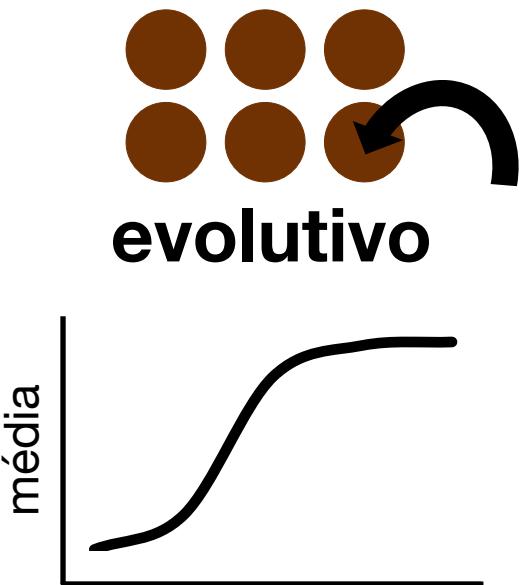


Índice de distúrbio (mortes acumuladas / tamanho da comunidade)



# seleção natural

- variação herdável
- componente da aptidão



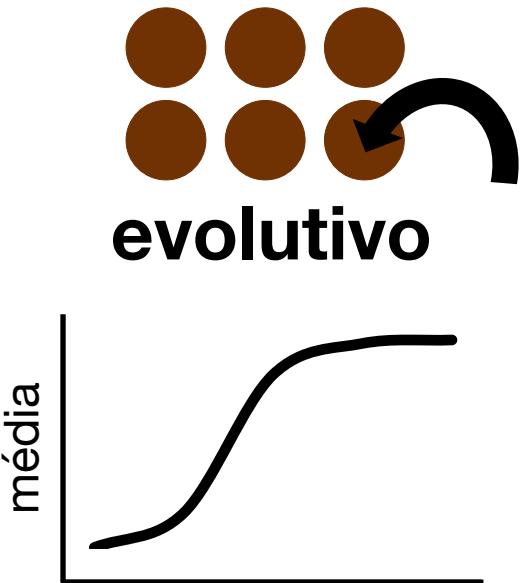
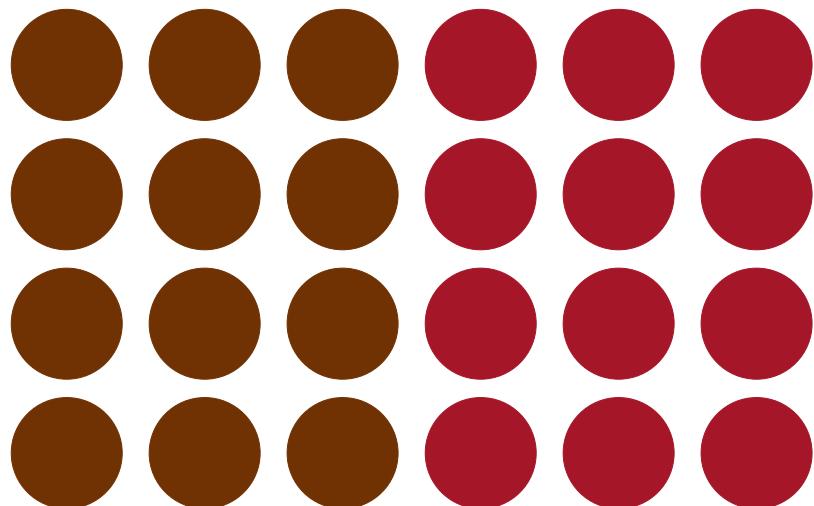
# seleção natural

- variação herdável
- componente da aptidão

banco

x 96

x 24



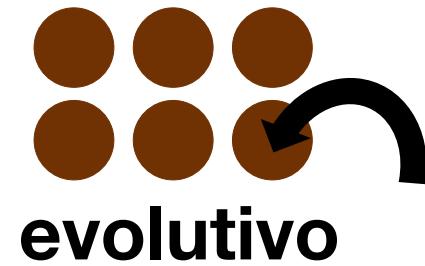
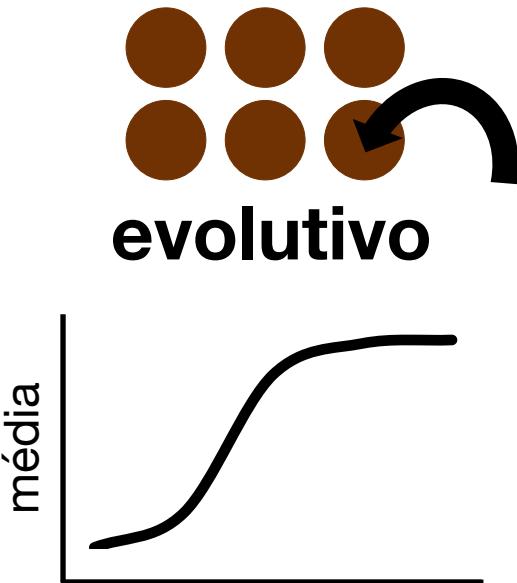
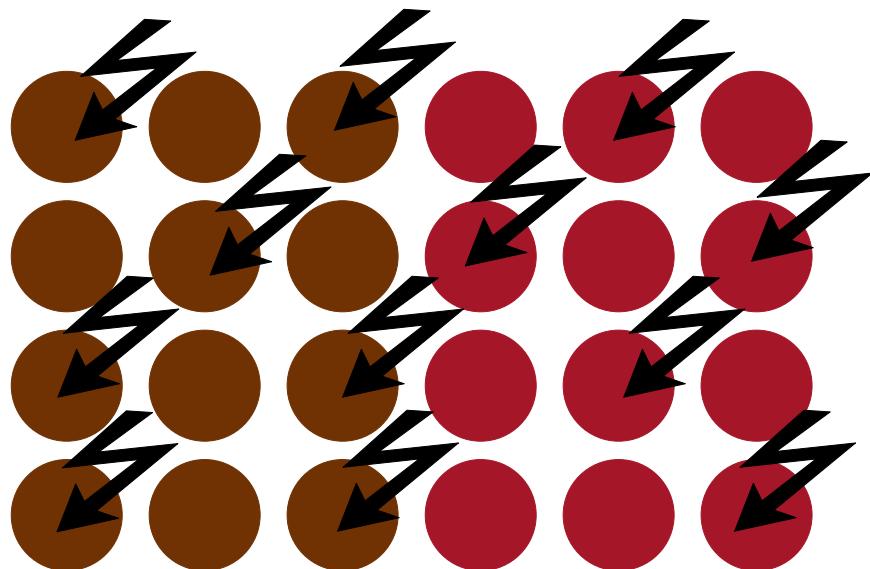
# seleção natural

- variação herdável
- componente da aptidão

banco

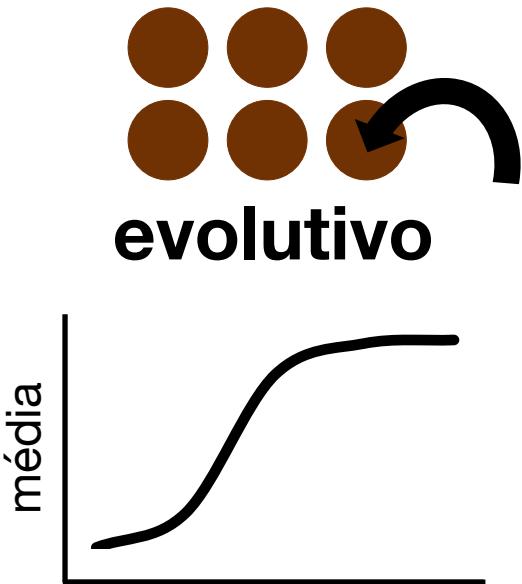
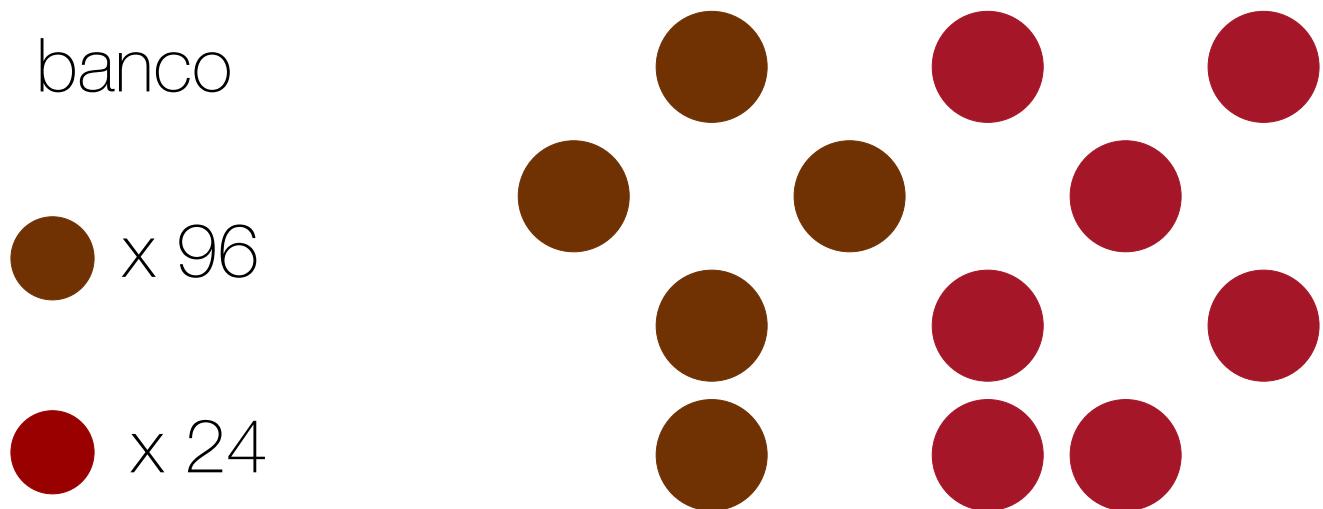
● x 96

● x 24



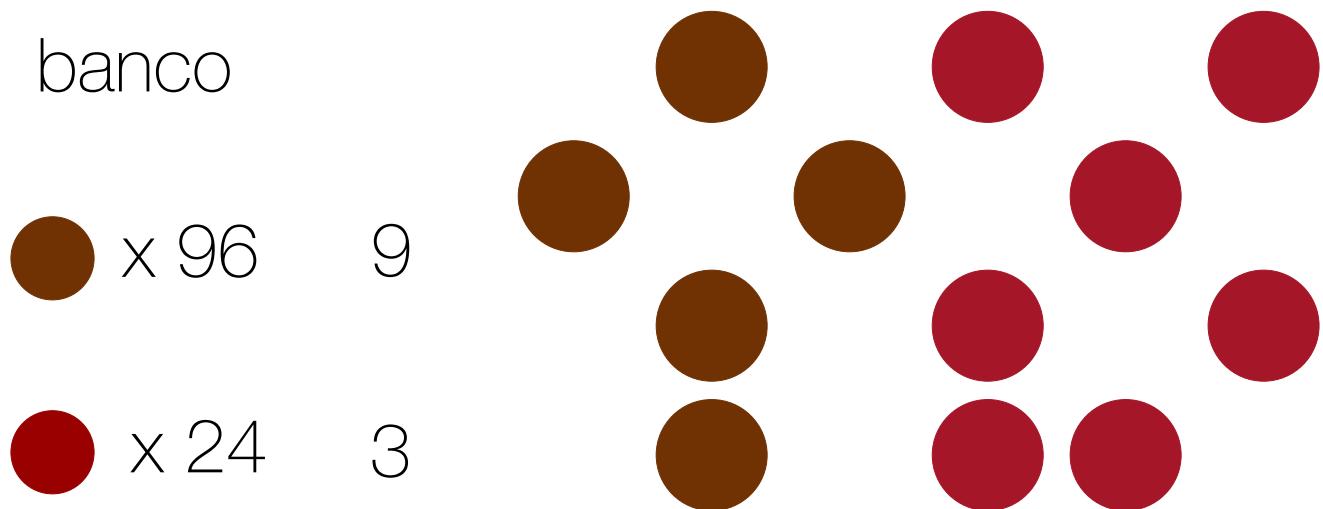
# seleção natural

- variação herdável
- componente da aptidão



# seleção natural

- variação herdável
- componente da aptidão



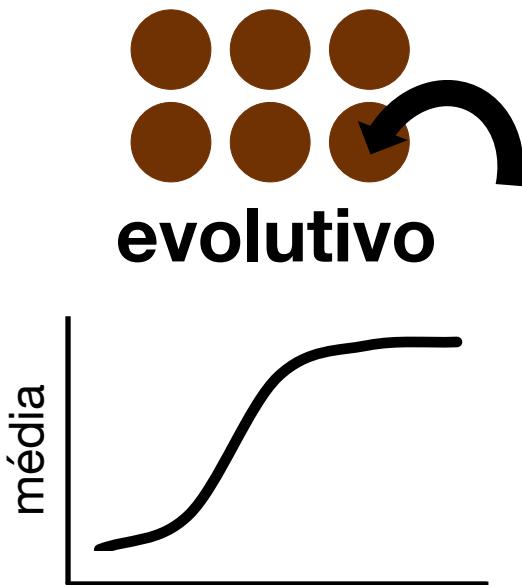
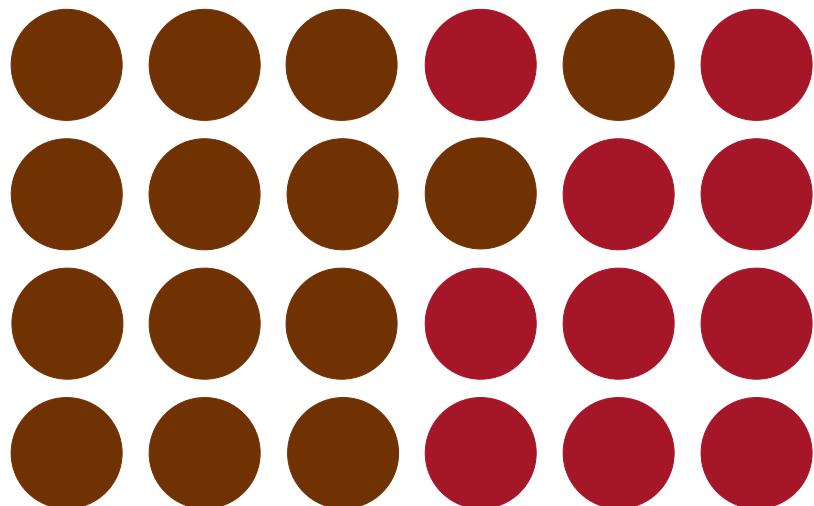
# seleção natural

- variação herdável
- componente da aptidão

banco

x 112

x 20



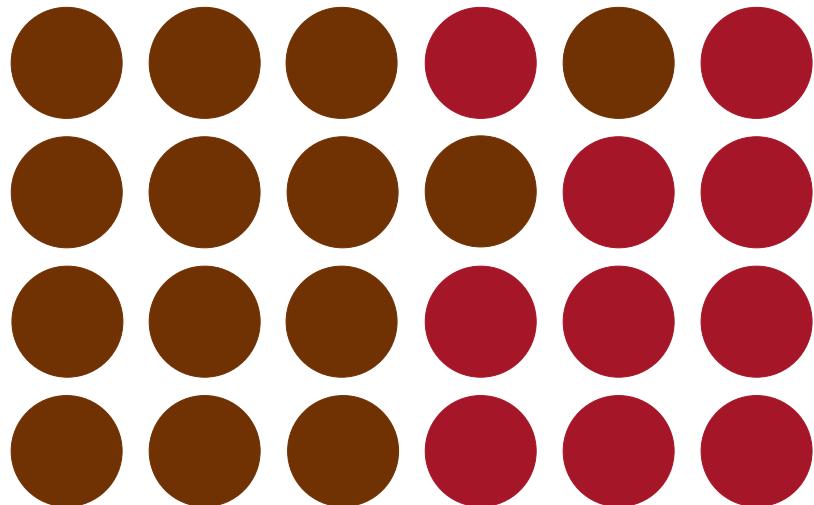
# seleção natural

- variação herdável
- componente da aptidão

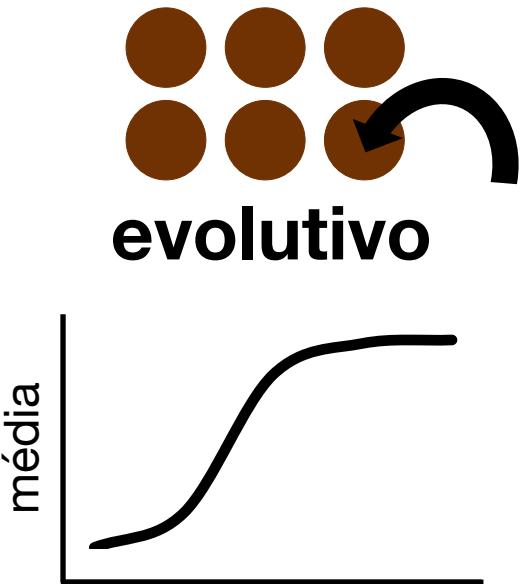
banco

x 112

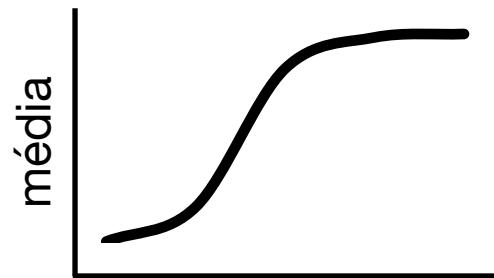
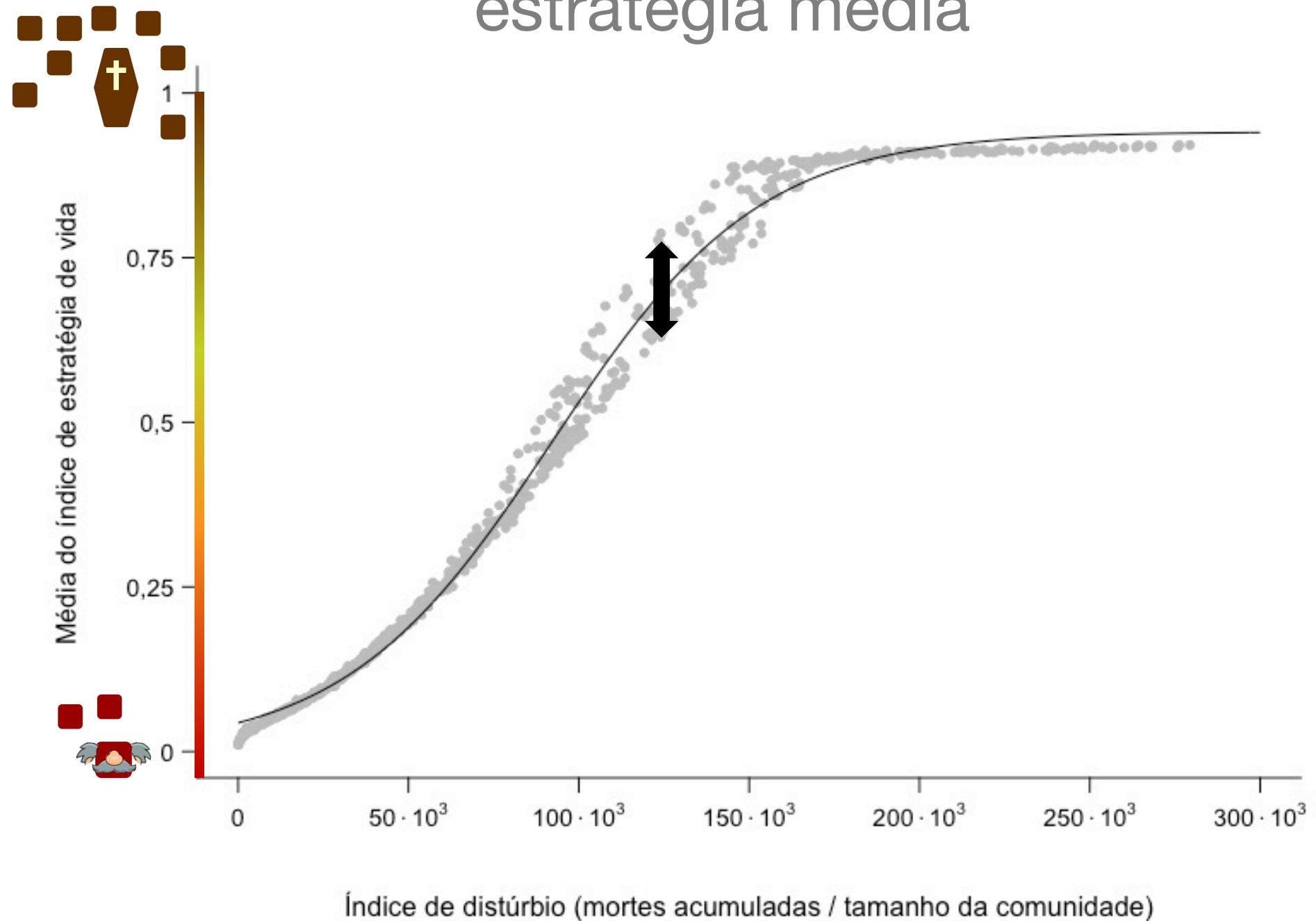
x 20



estratégia de maior fecundidade mais apta

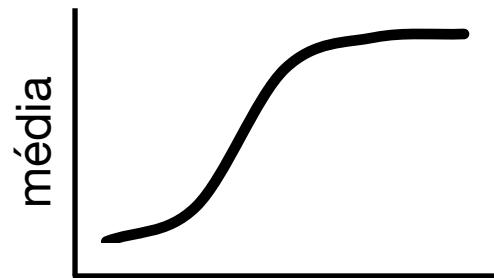
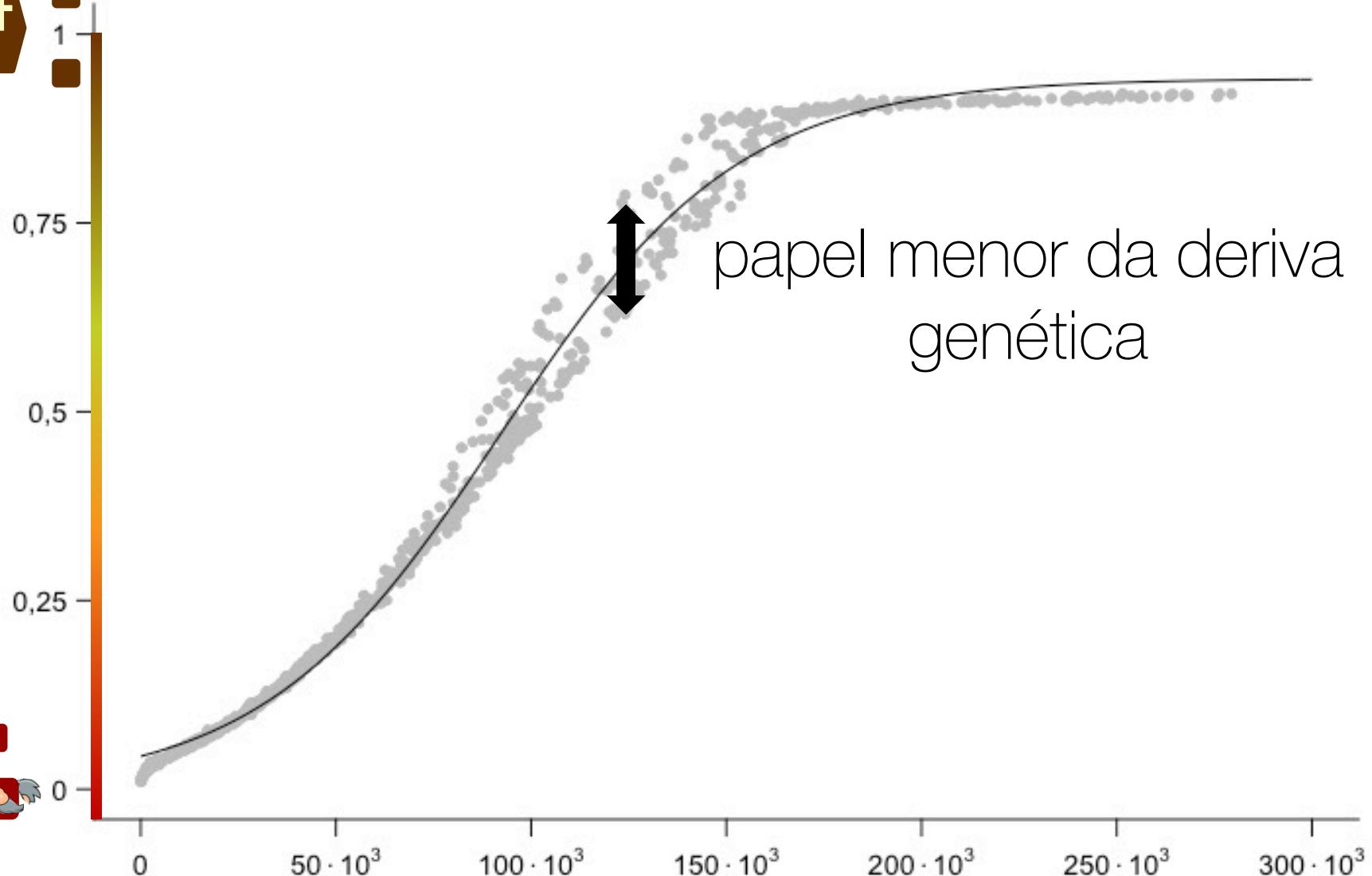


# estratégia média

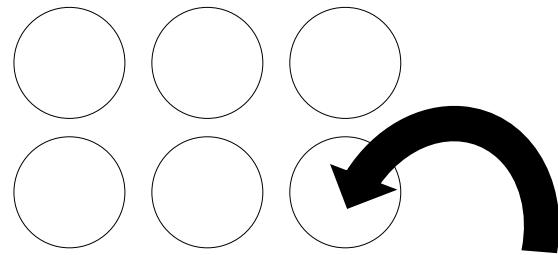


# estratégia média

Média do índice de estratégia de vida



## evolutivo

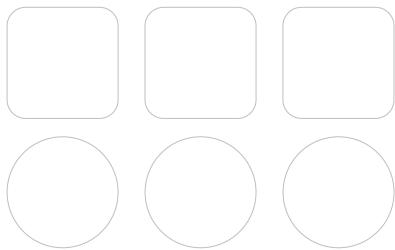


### estratégia média

diversidade  
de estratégias

-

## ecológico

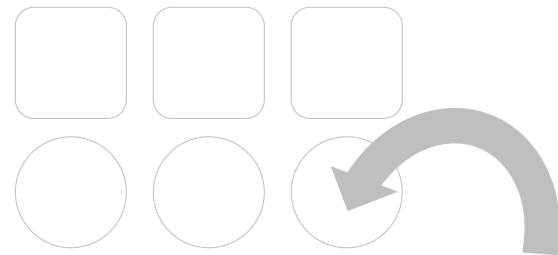


### estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

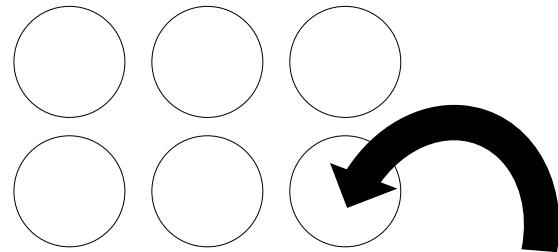


### estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

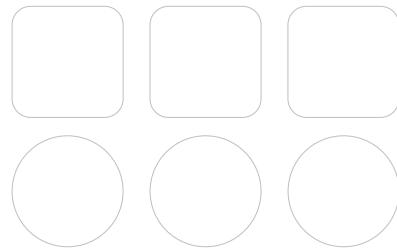


estratégia média

diversidade  
de estratégias

-

## ecológico

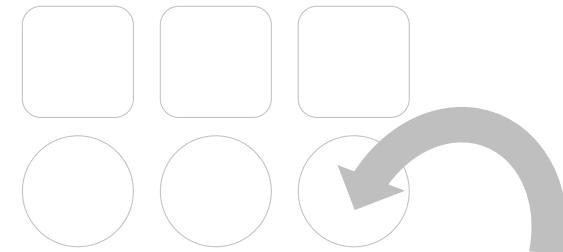


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

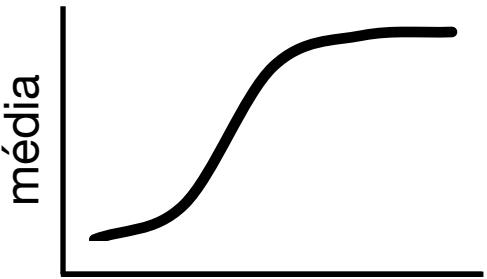
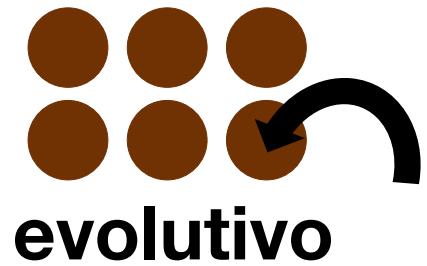


estratégia média

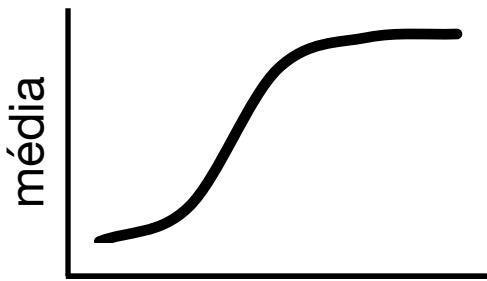
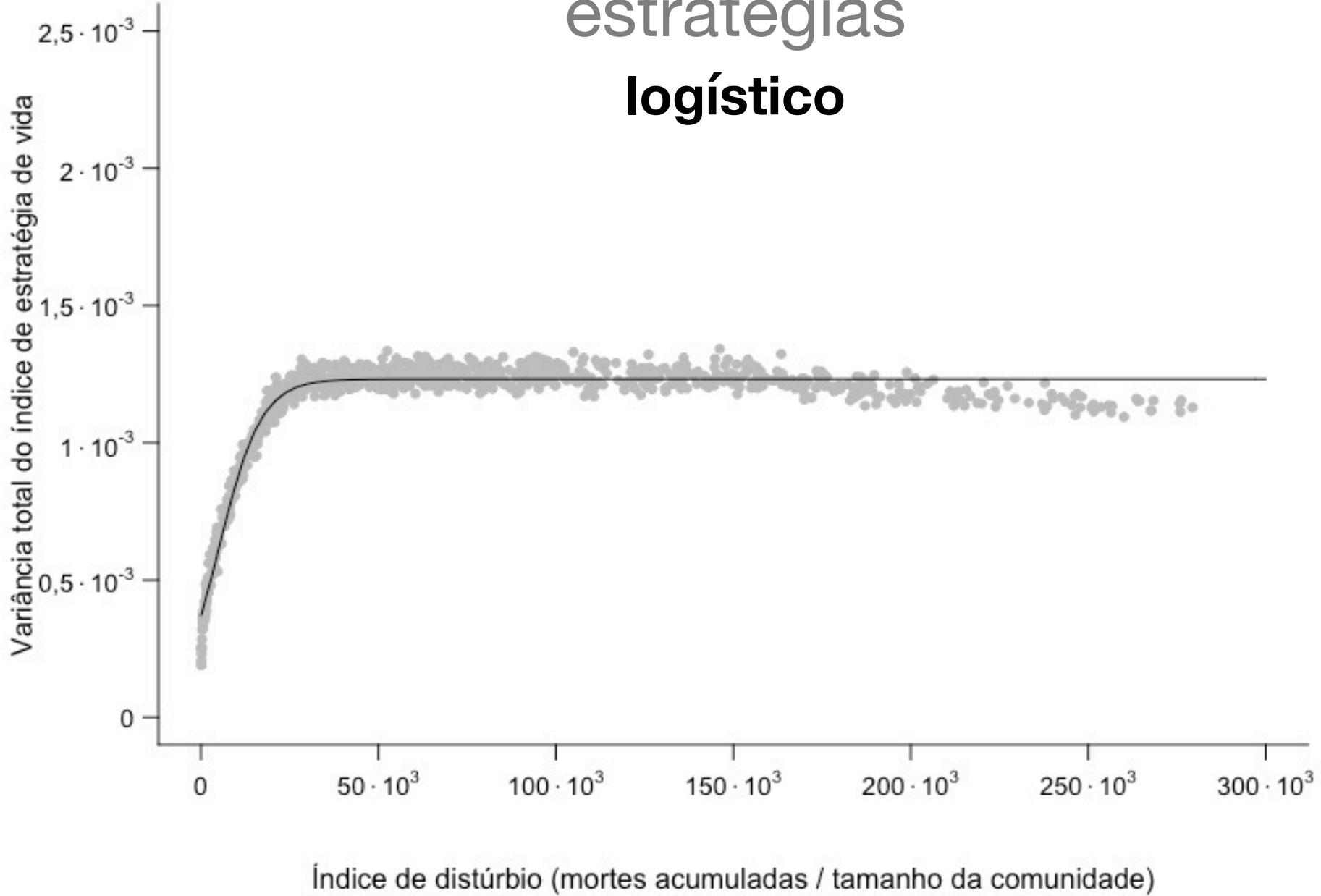
diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

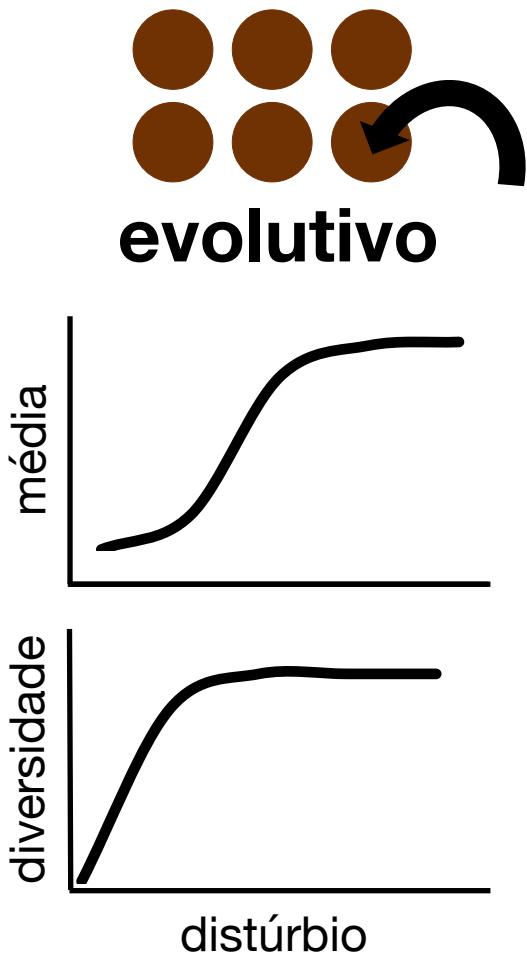
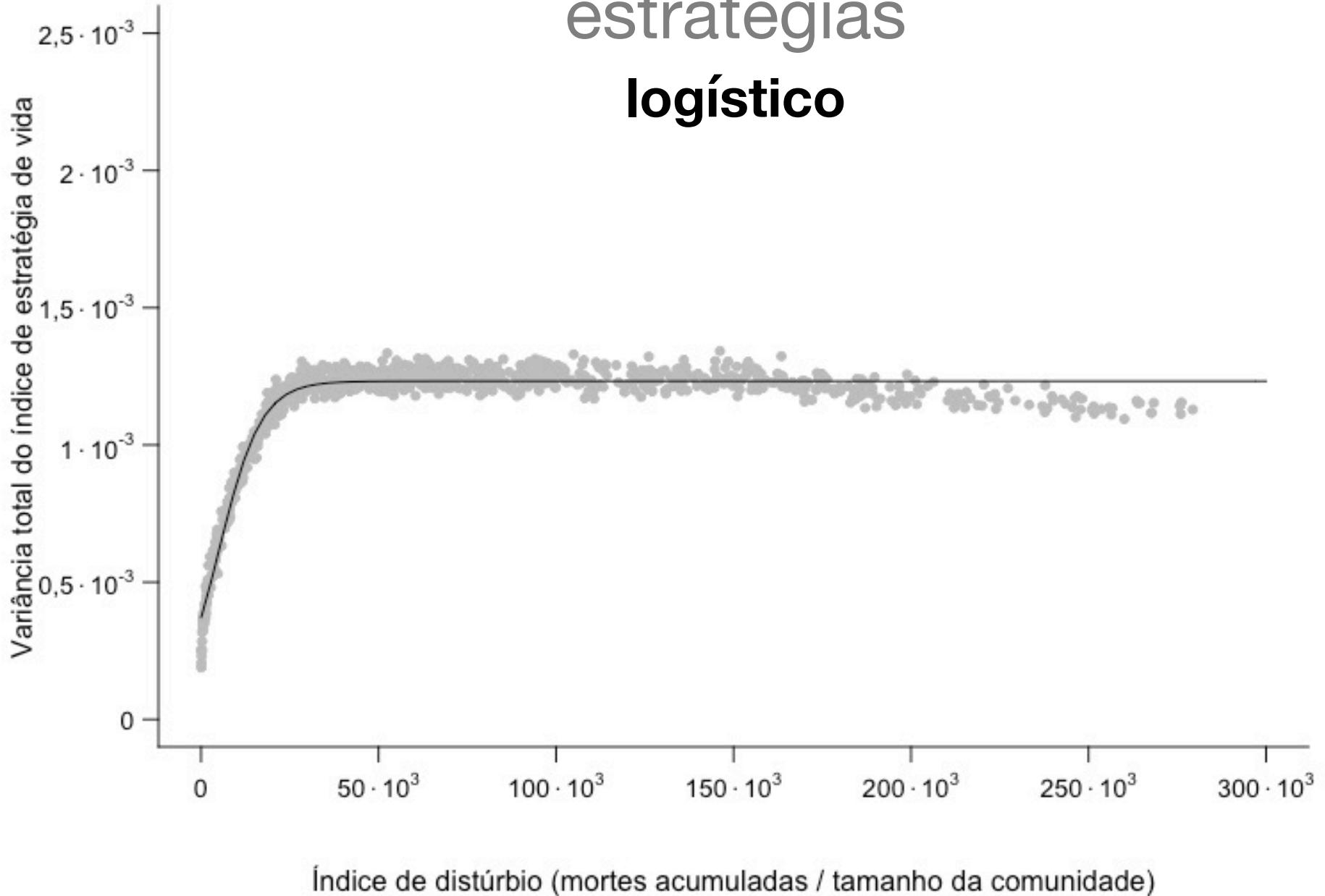
# diversidade de estratégias



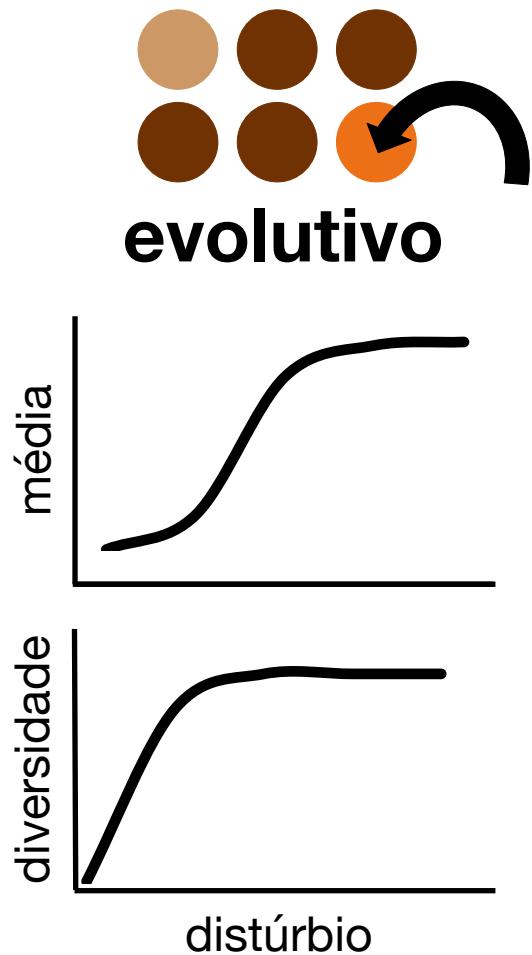
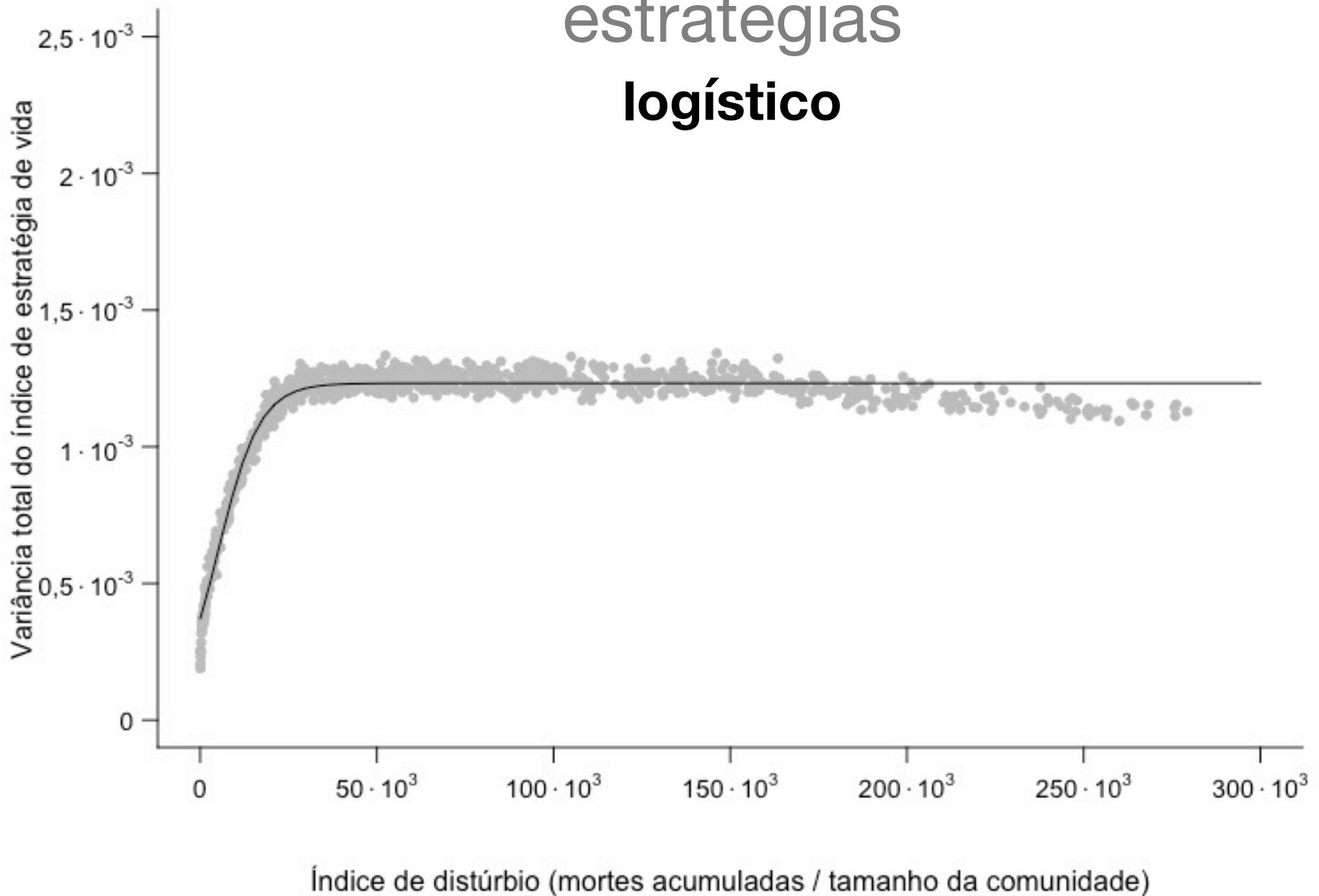
# diversidade de estratégias **logístico**



# diversidade de estratégias **logístico**



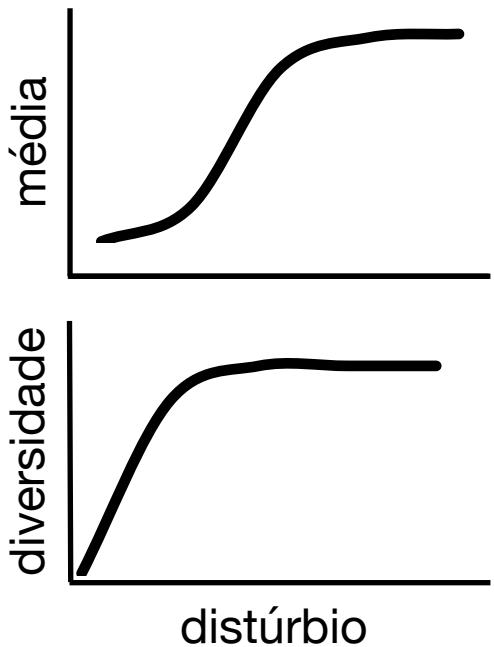
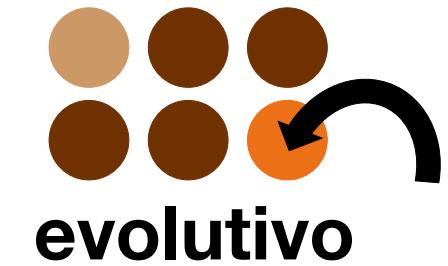
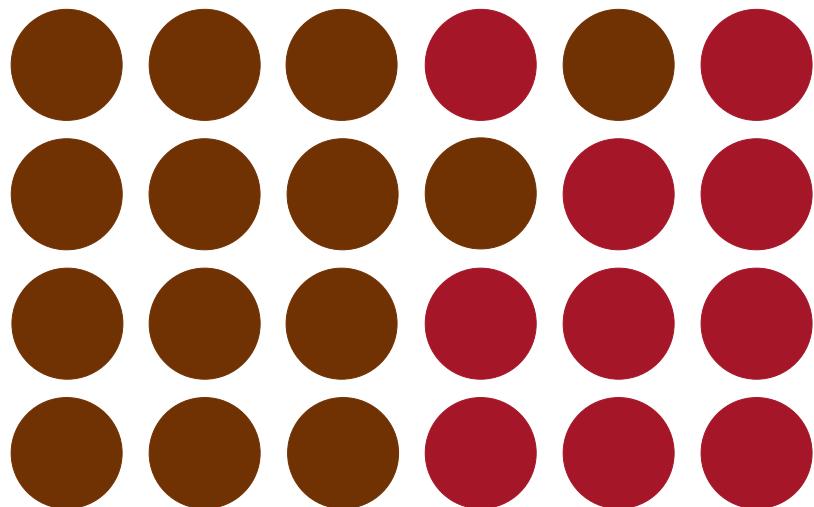
# diversidade de estratégias **logístico**

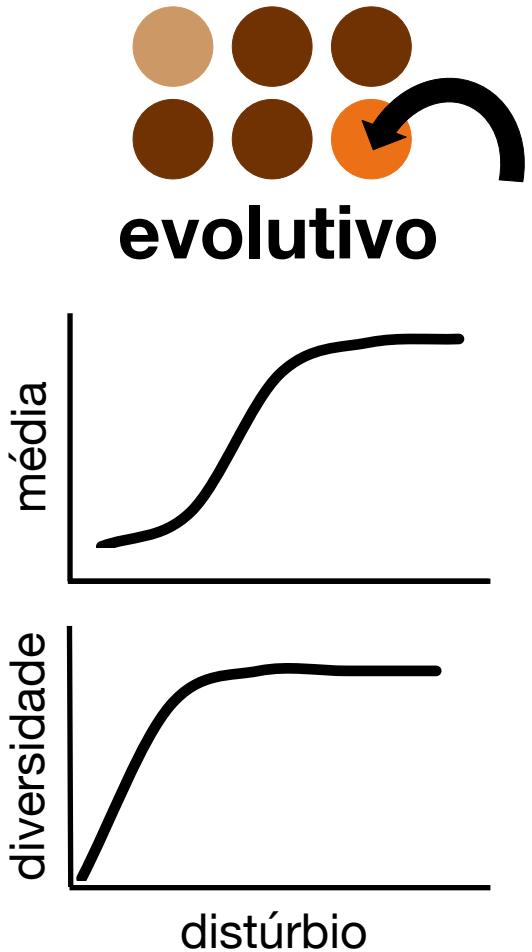
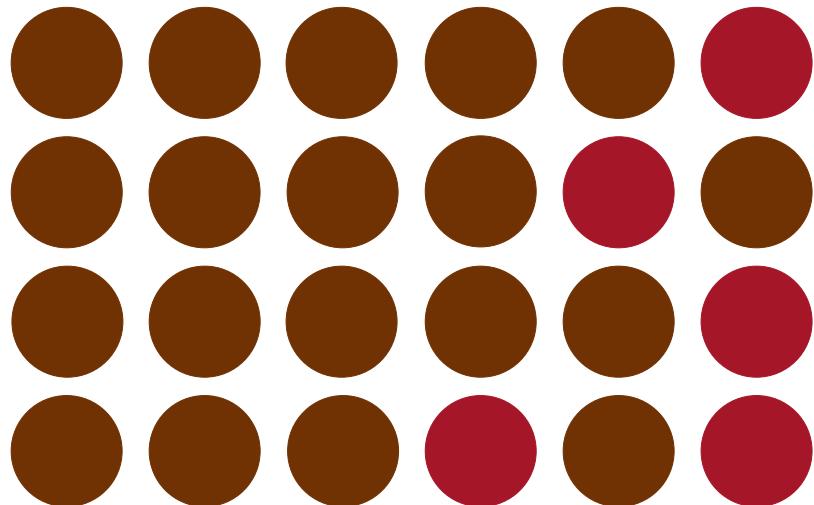


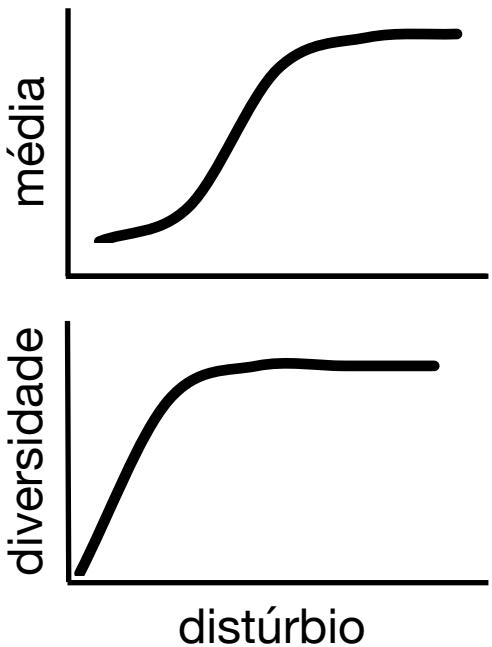
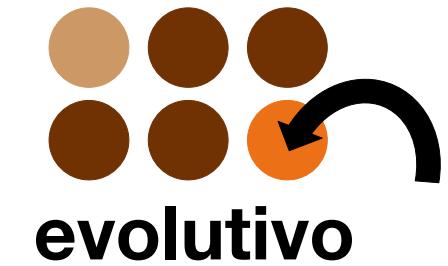
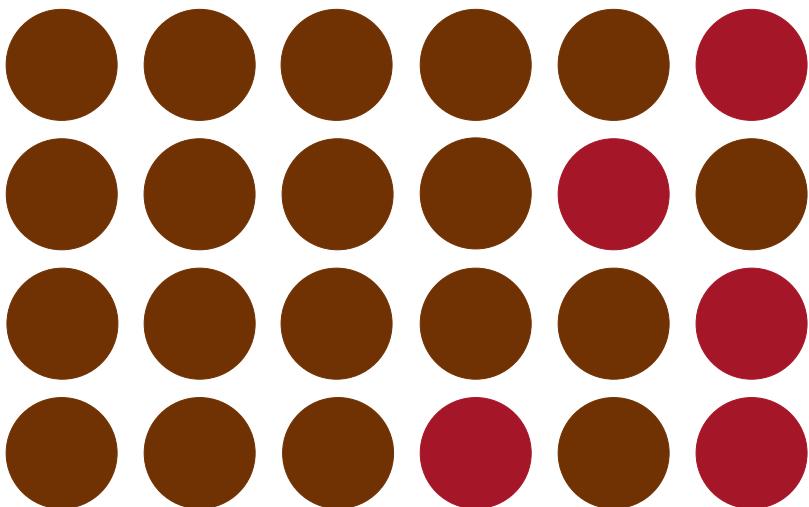
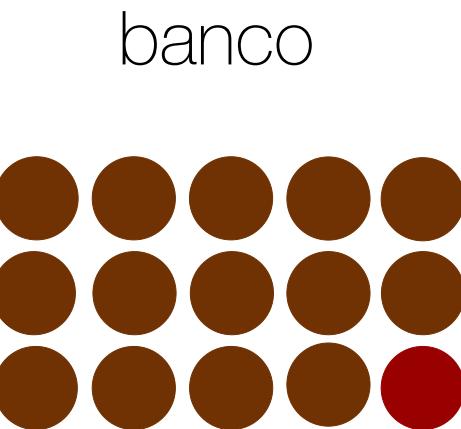
banco

● x 112

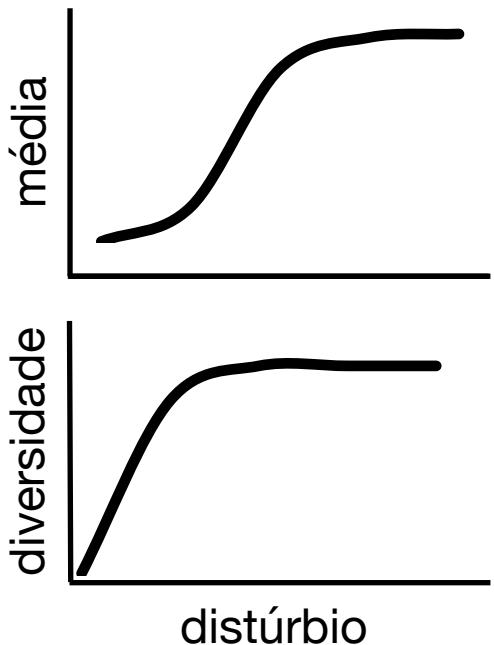
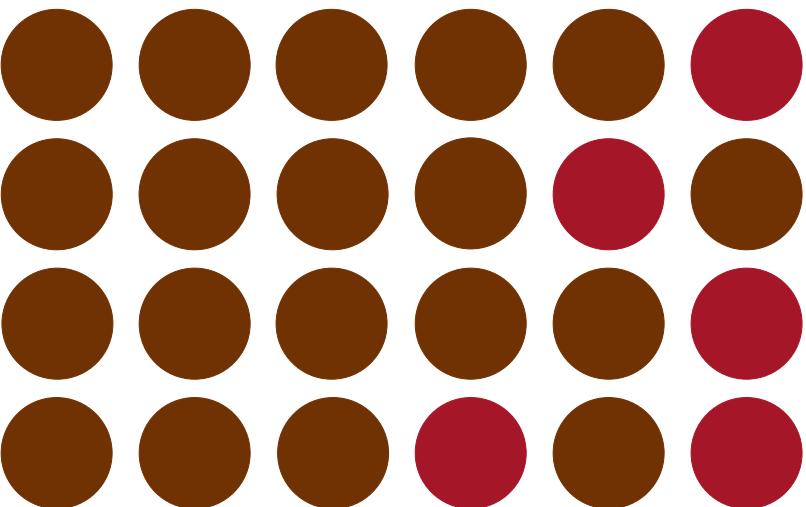
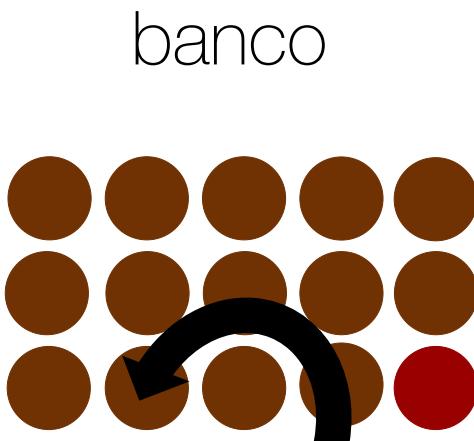
● x 20





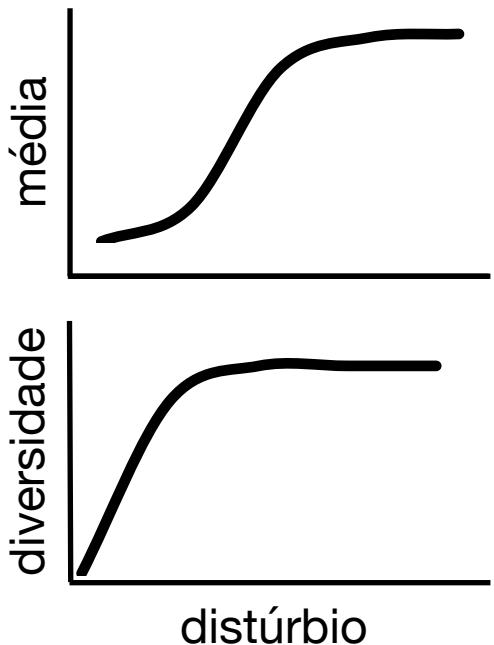
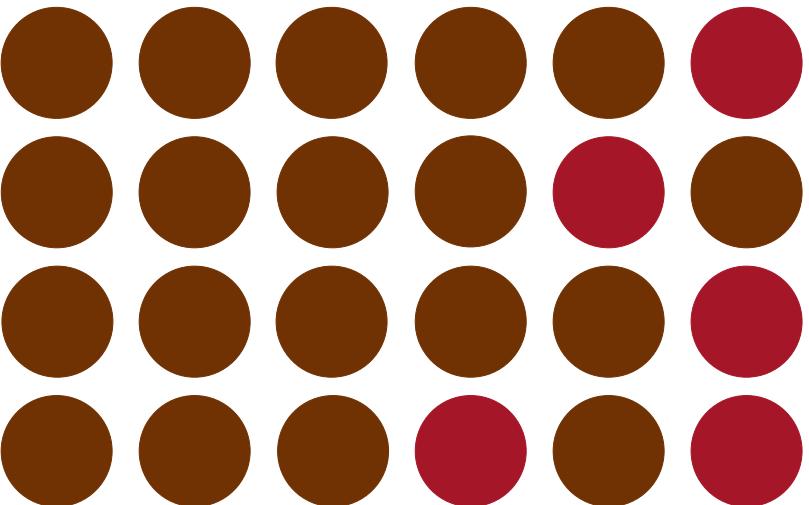
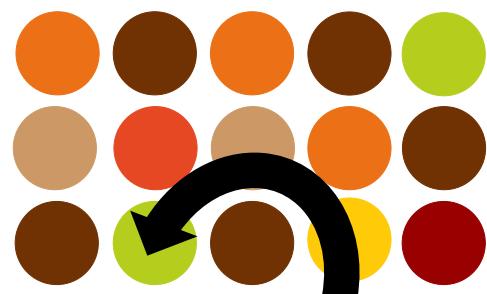


# mutação



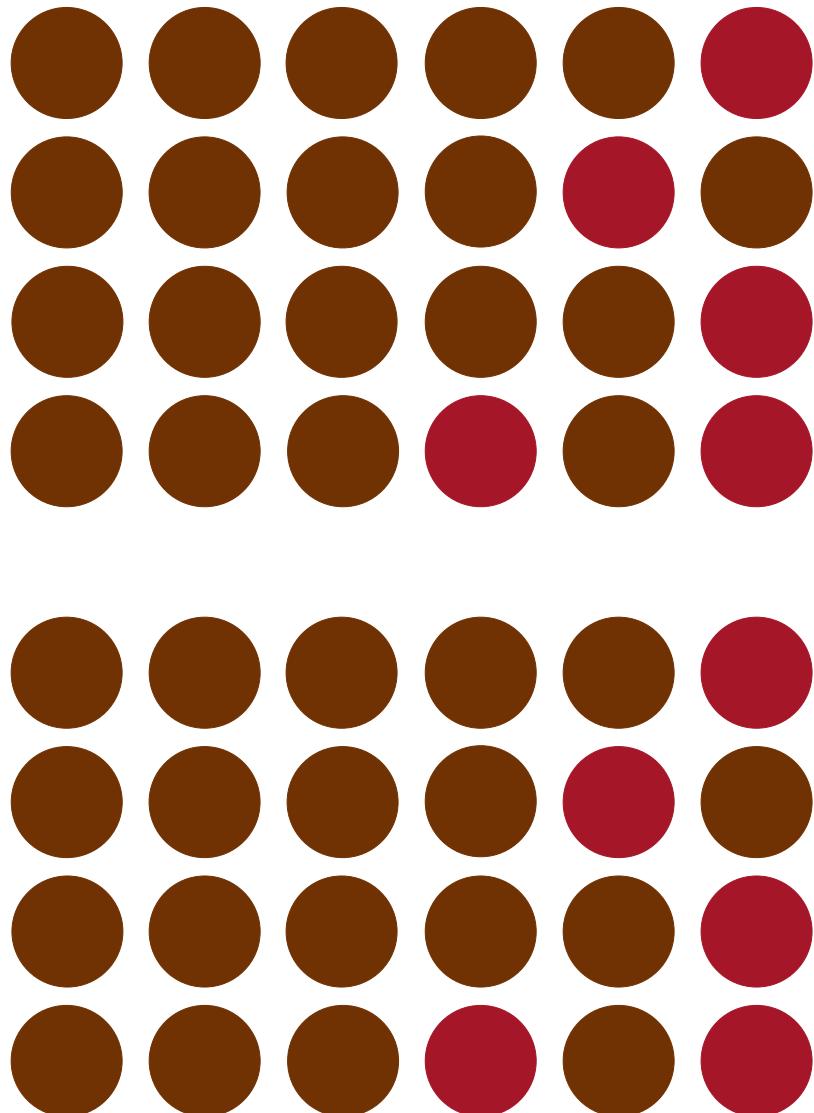
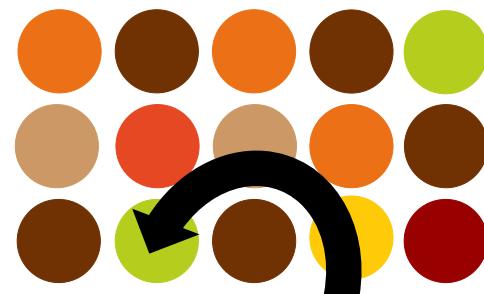
# mutação

banco



# mutação

banco

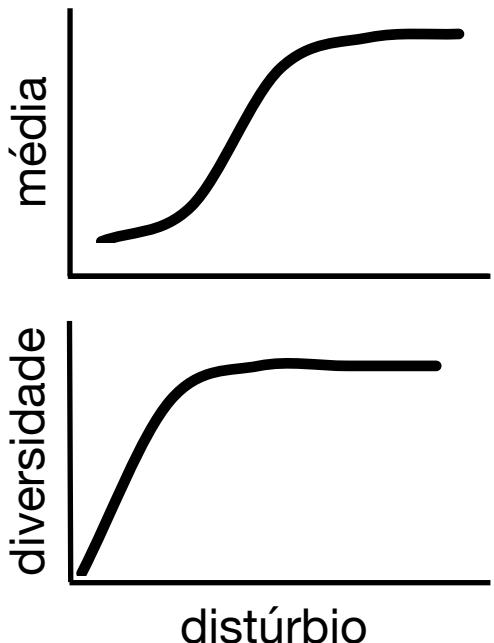


distúrbio

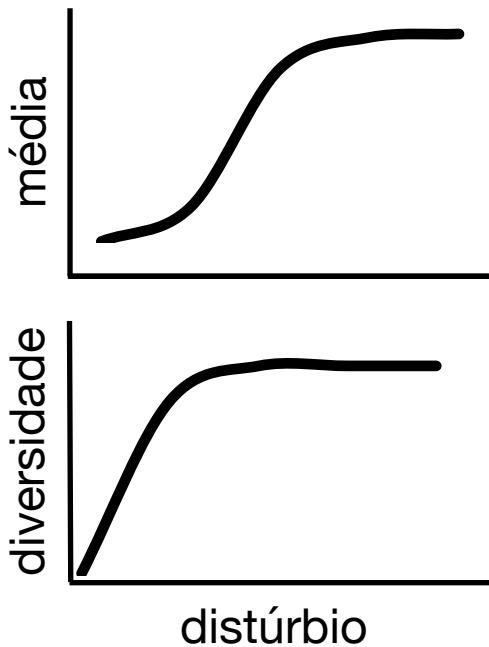
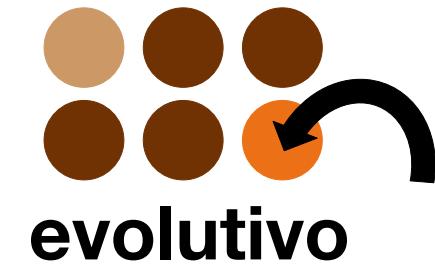
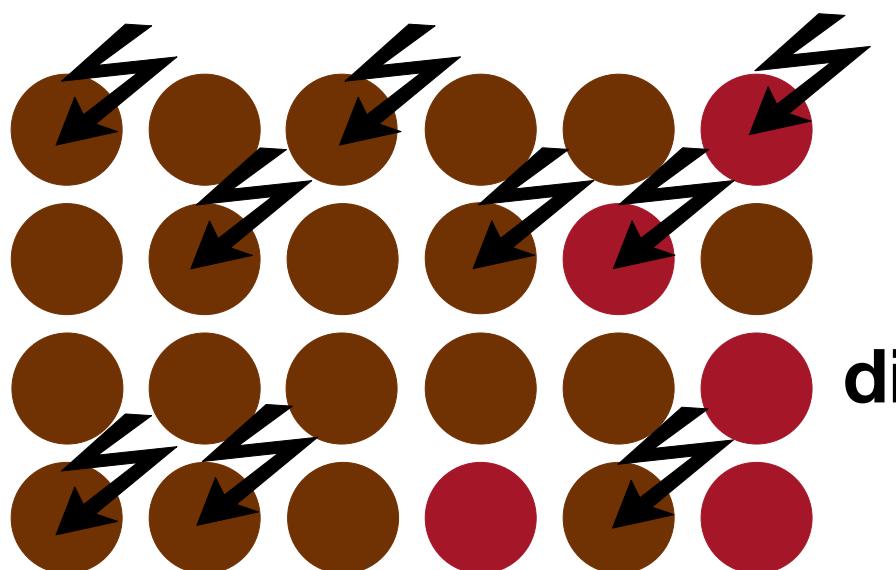
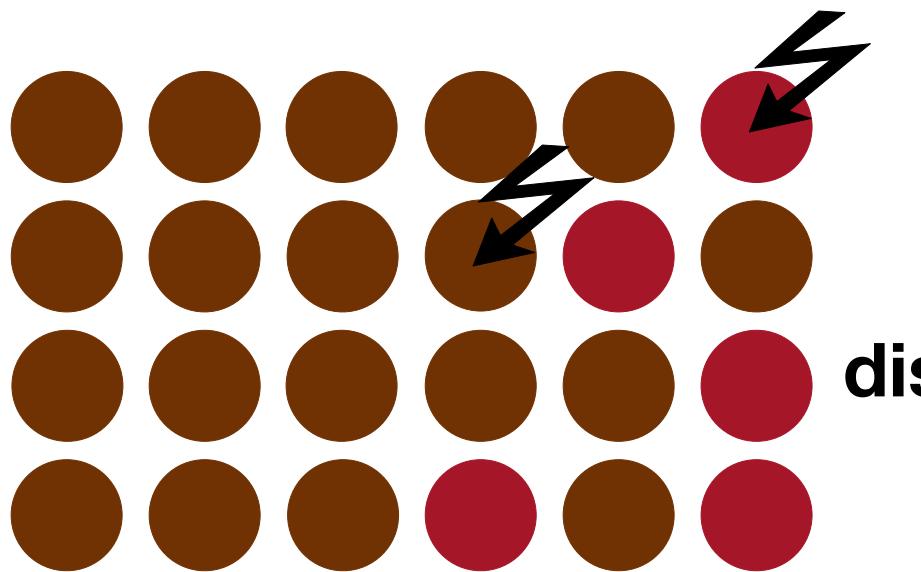
distúrbio



evolutivo

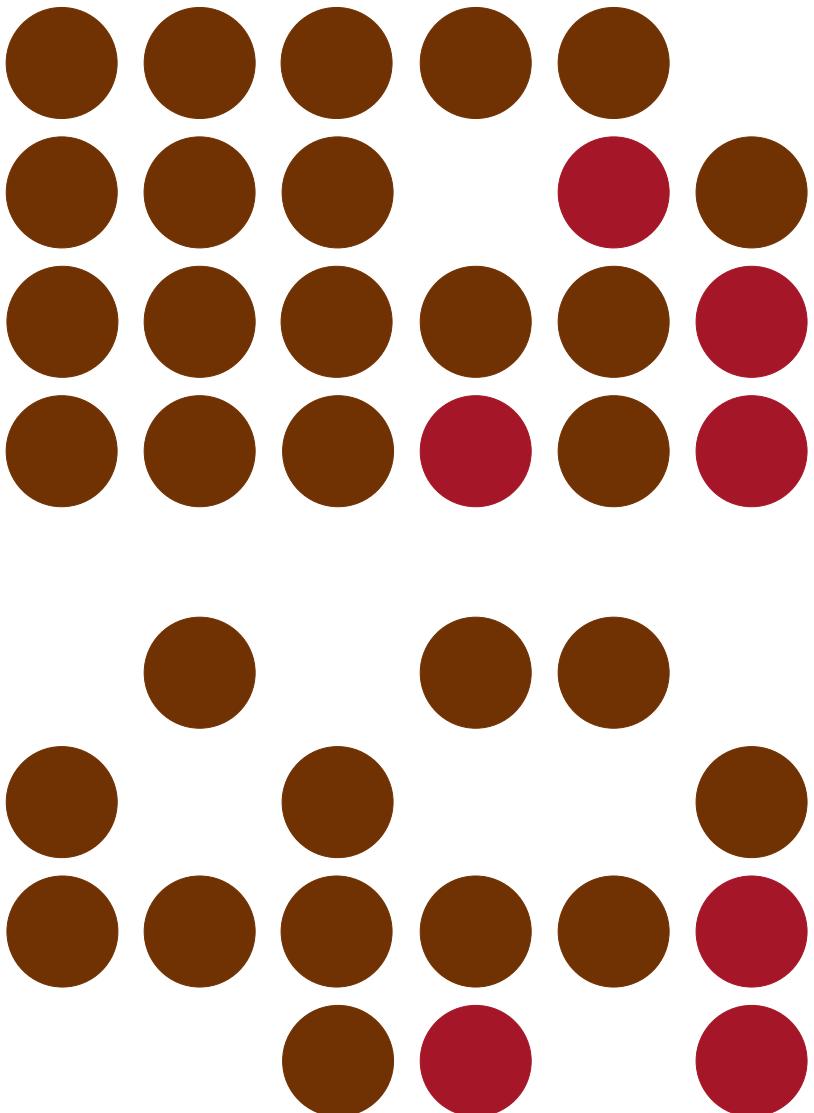
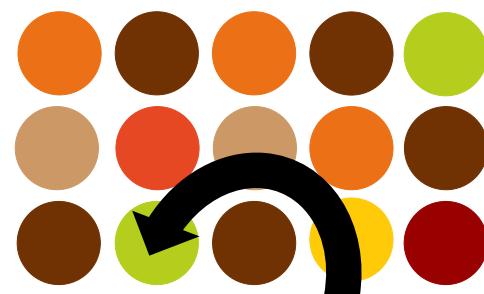


# mutação



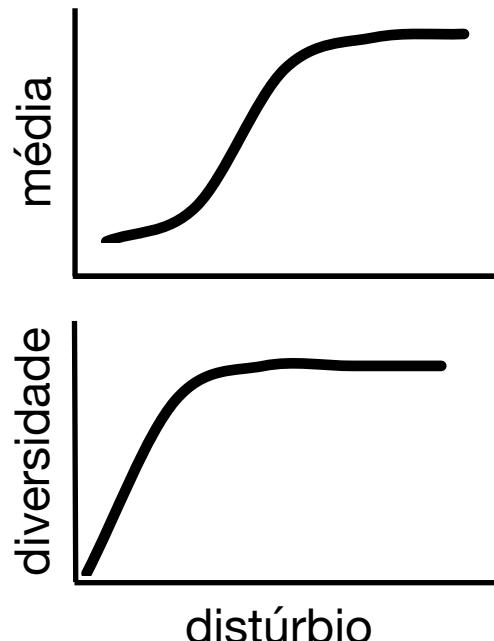
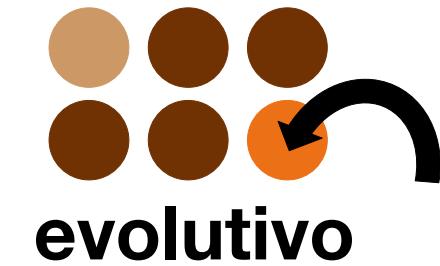
# mutação

banco

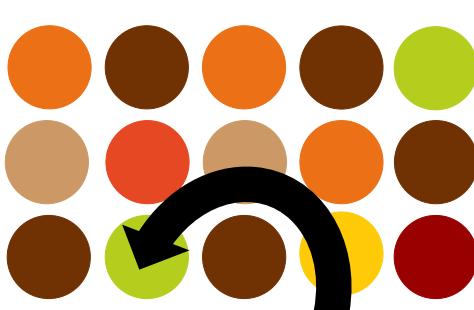


distúrbio

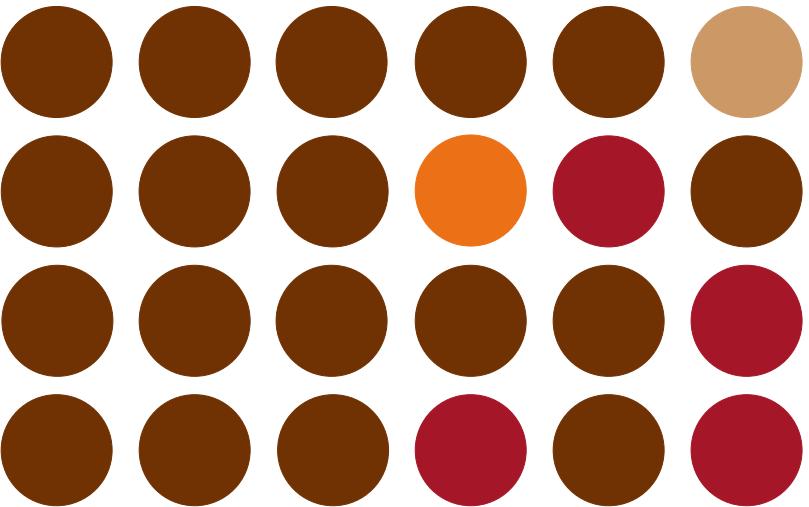
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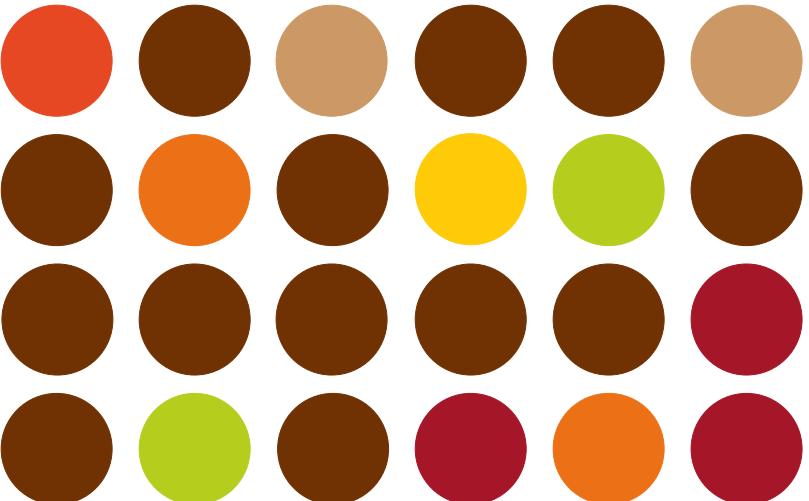
# mutação + amostragem



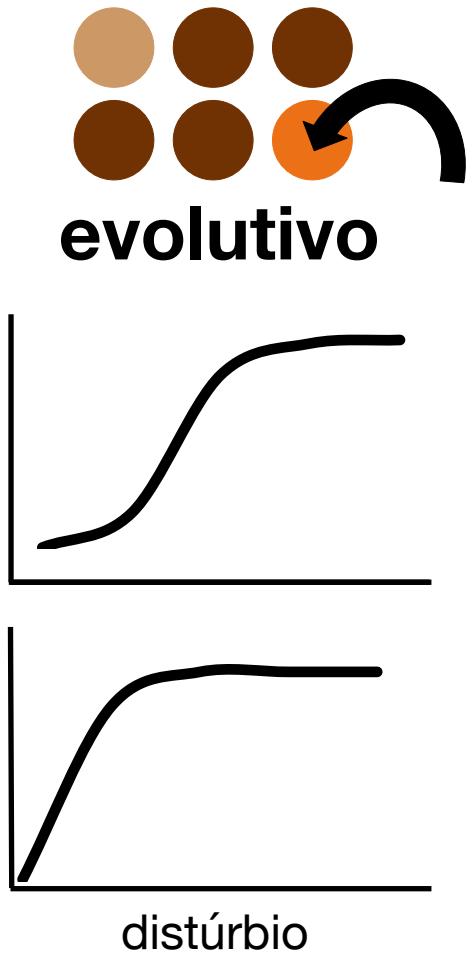
banco



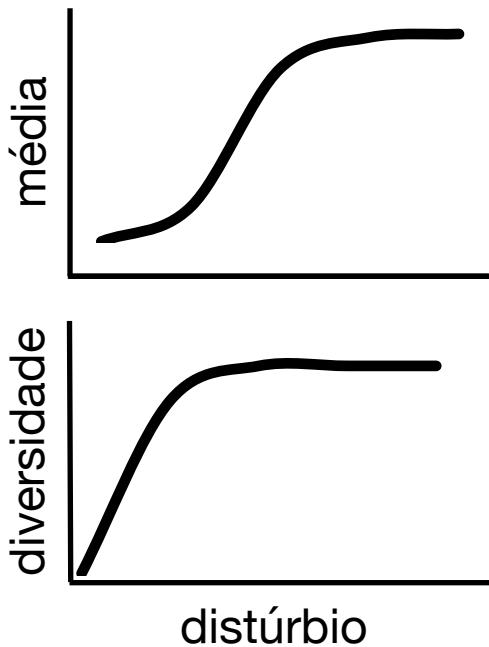
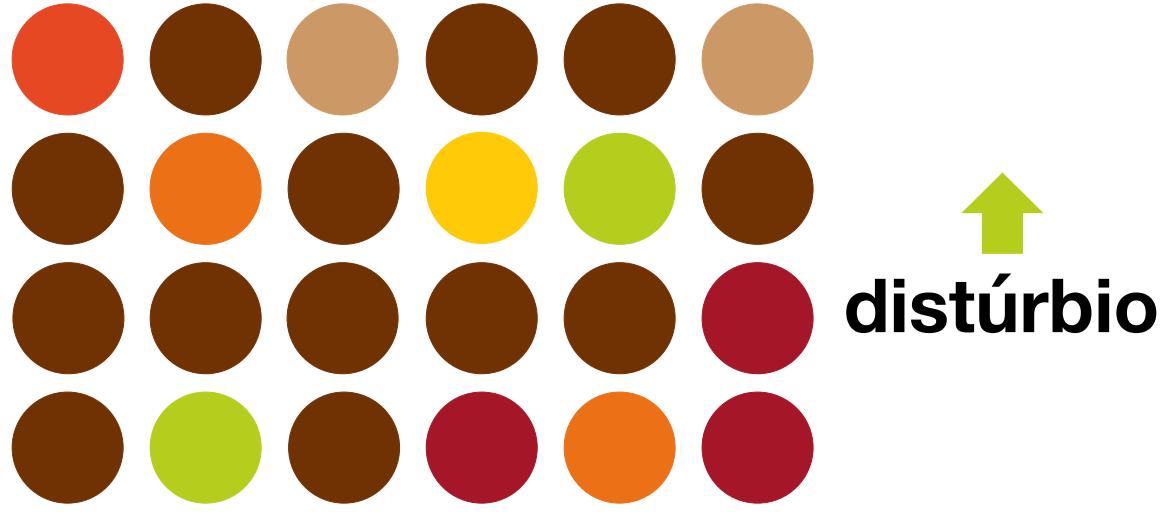
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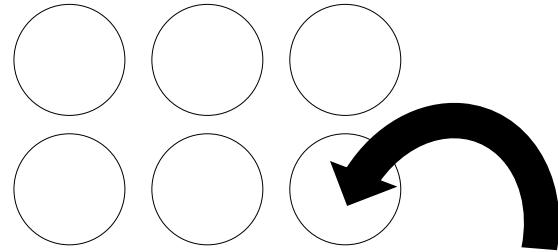
distúrbio



# mutação + amostragem



## evolutivo

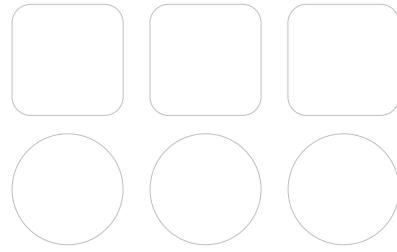


estratégia média

diversidade  
de estratégias

-

## ecológico

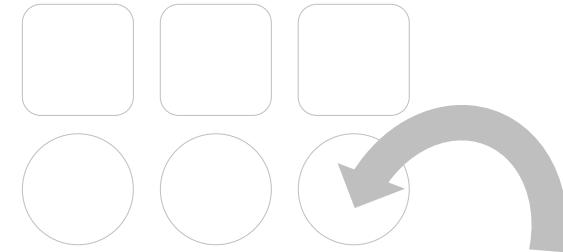


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

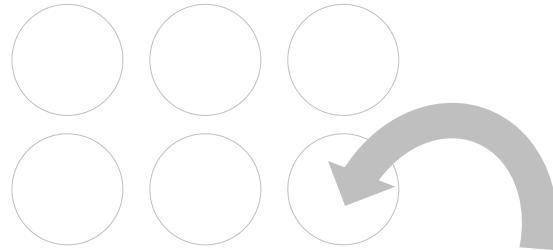


estratégia média

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de estratégias

heterogeneidade  
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estratégias

## evolutivo

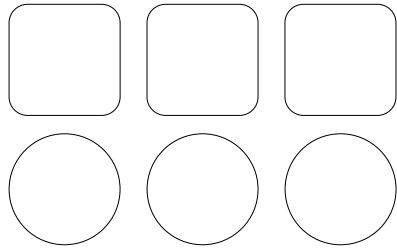


estratégia média

diversidade  
de estratégias

-

## ecológico

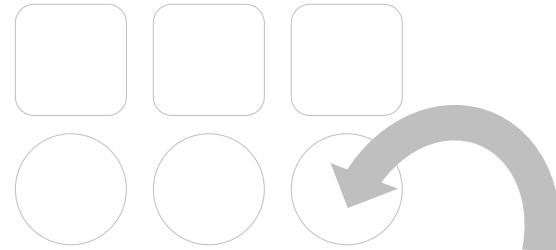


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo



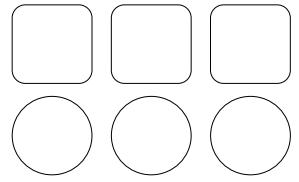
estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

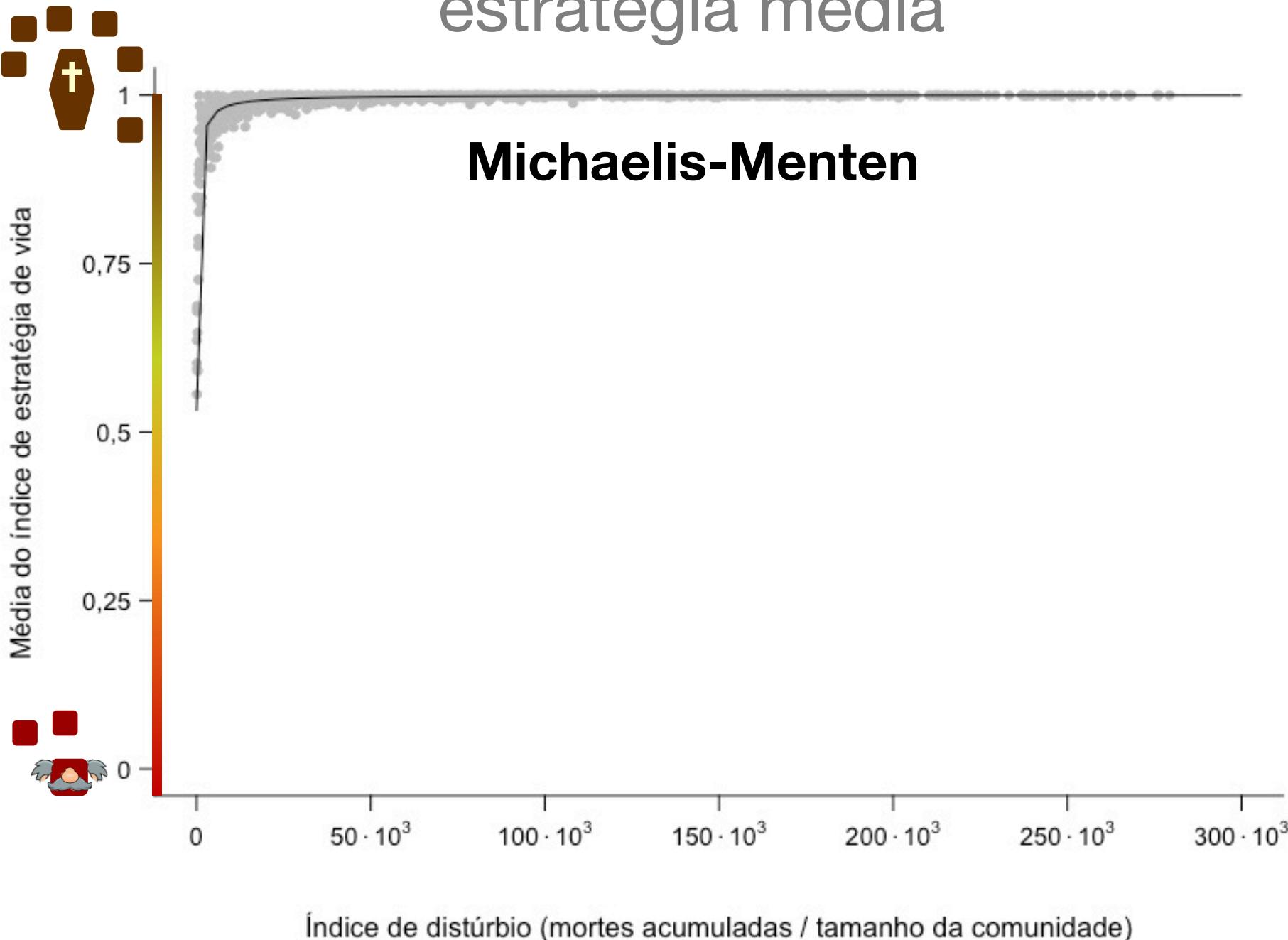


# estratégia média



**ecológico**

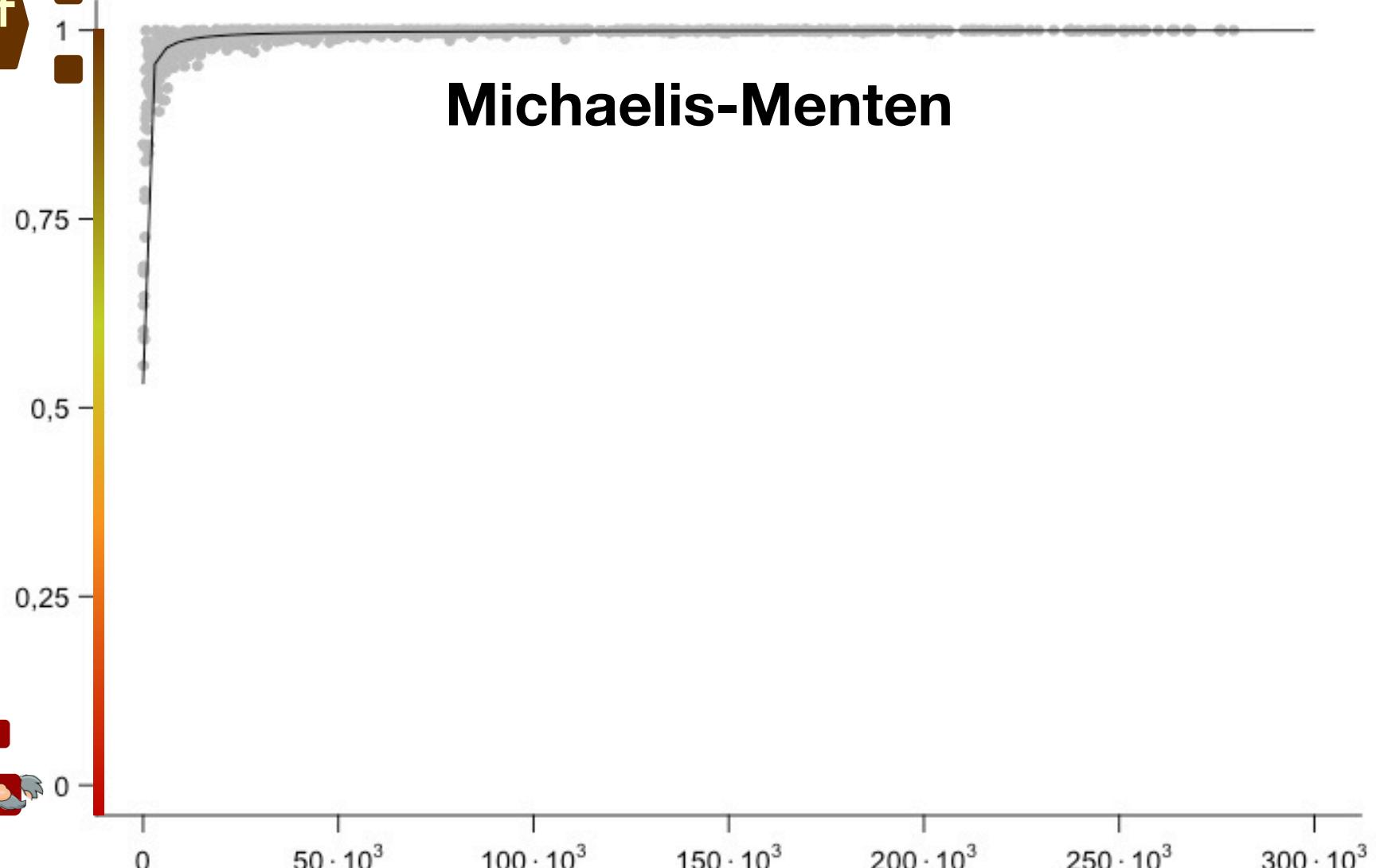
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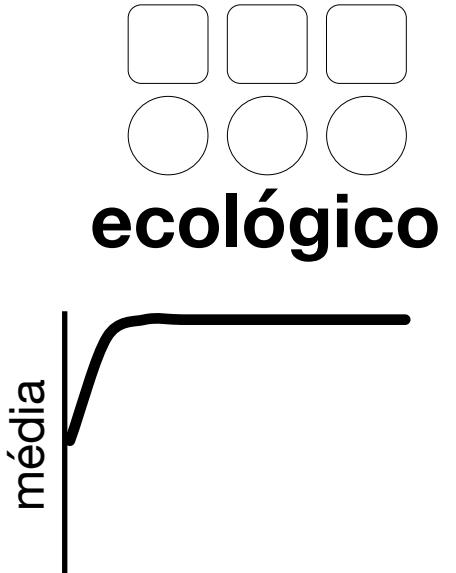
**ecológico**

# estratégia média

Média do índice de estratégia de vida



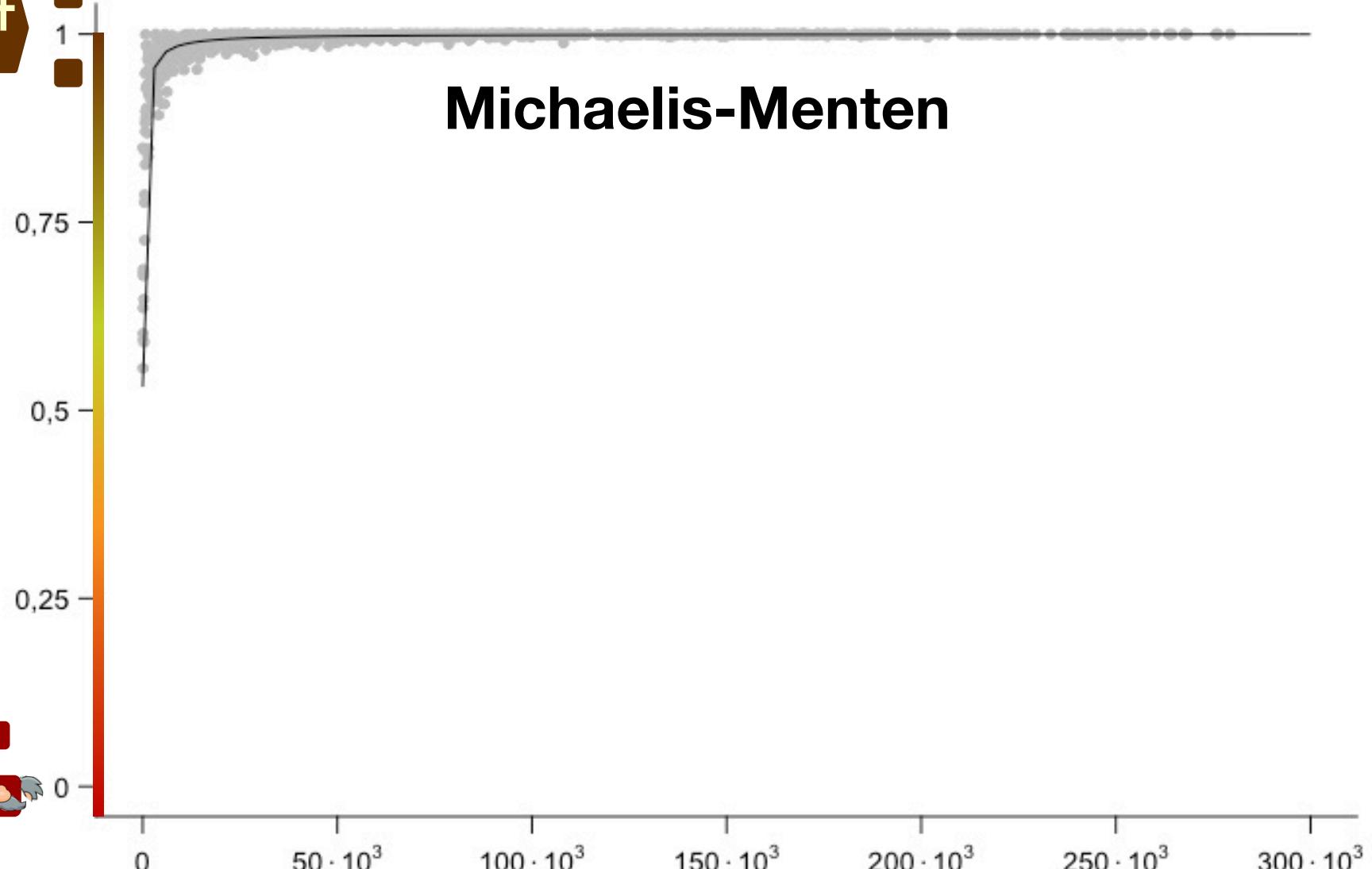
## Michaelis-Menten



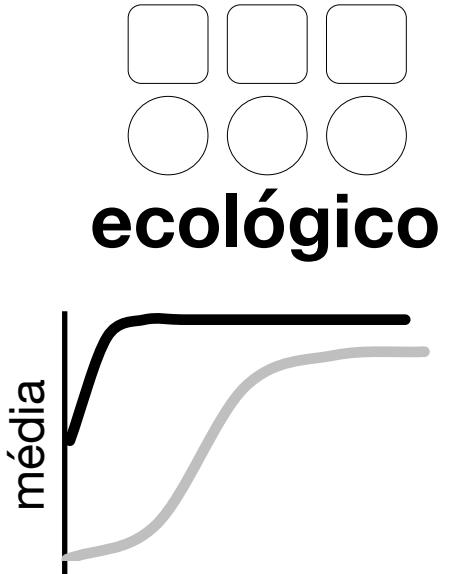
Índice de distúrbio (mortes acumuladas / tamanho da comunidade)

# estratégia média

Média do índice de estratégia de vida



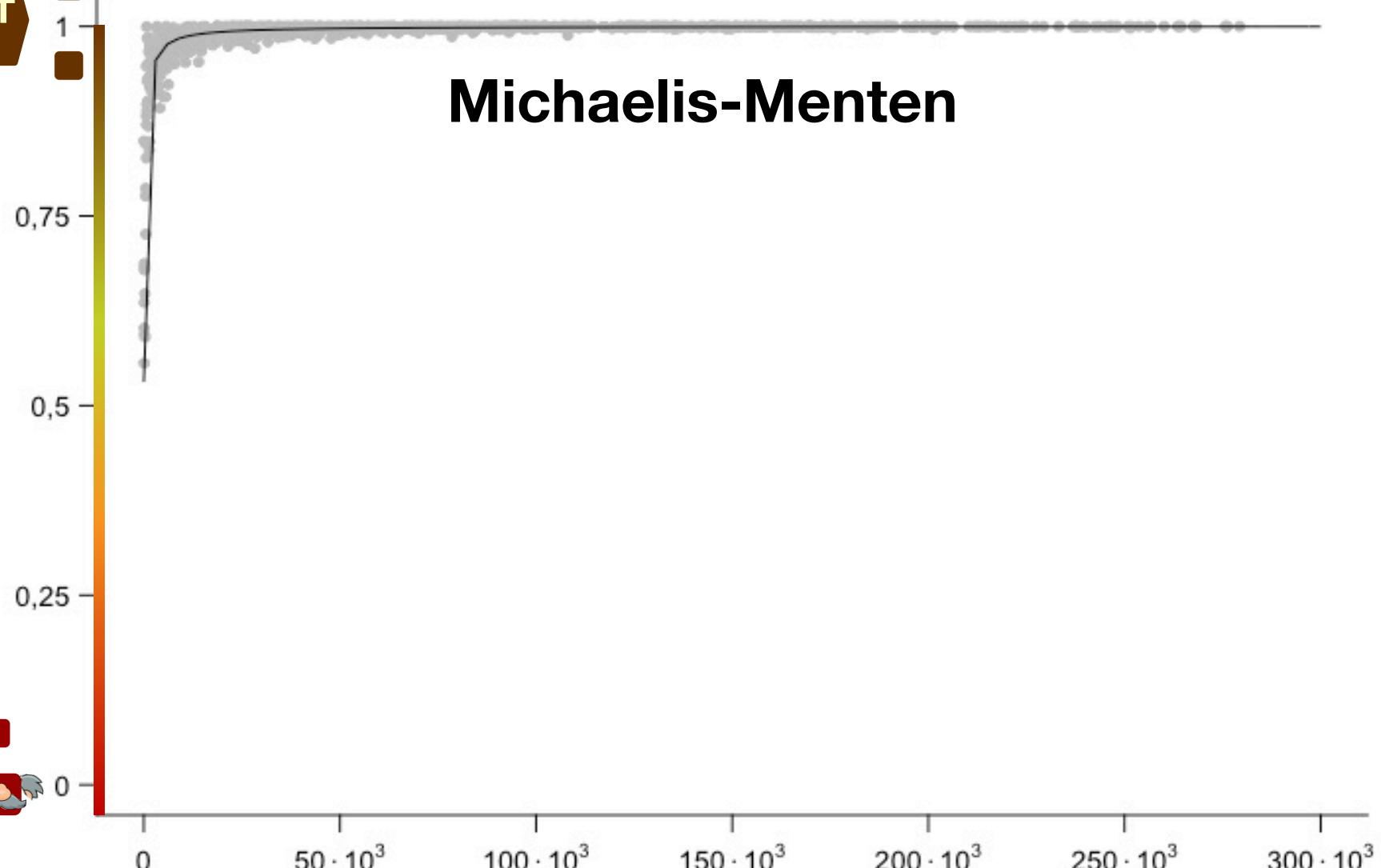
**Michaelis-Menten**



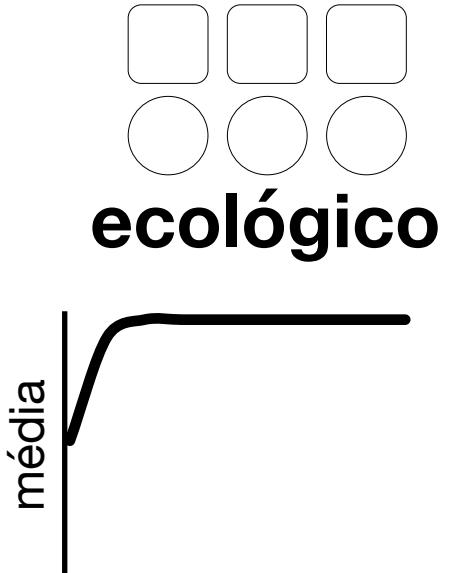
Índice de distúrbio (mortes acumuladas / tamanho da comunidade)

# estratégia média

Média do índice de estratégia de vida

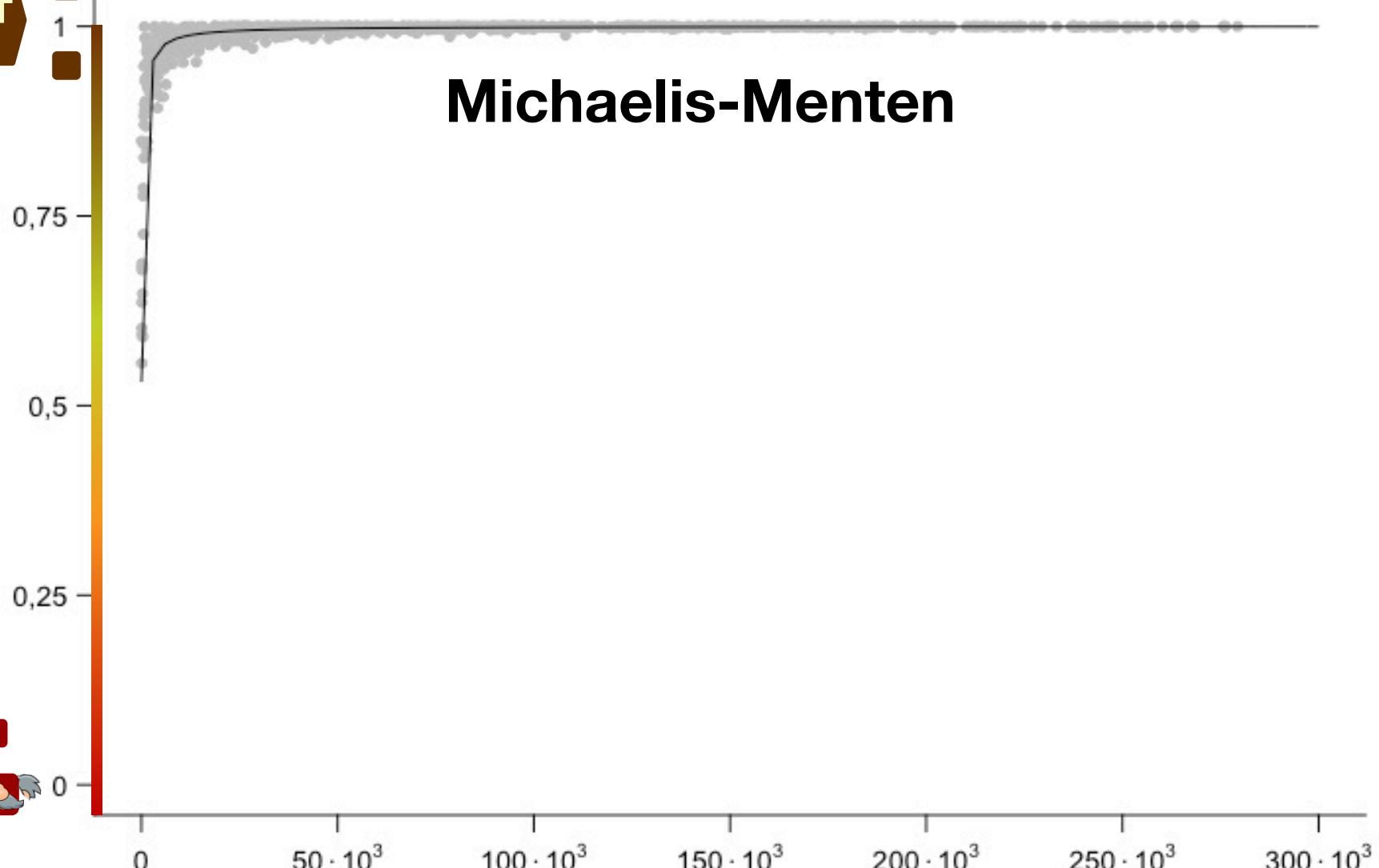


**Michaelis-Menten**

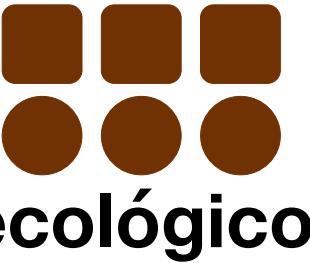


# estratégia média

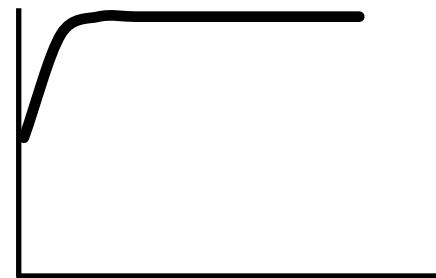
Média do índice de estratégia de vida



Índice de distúrbio (mortes acumuladas / tamanho da comunidade)



média

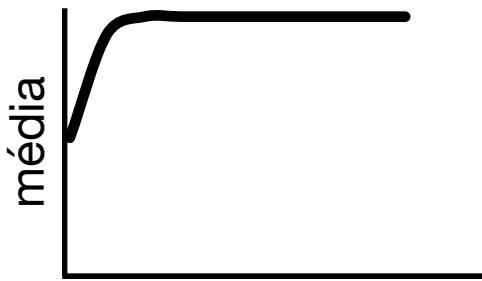
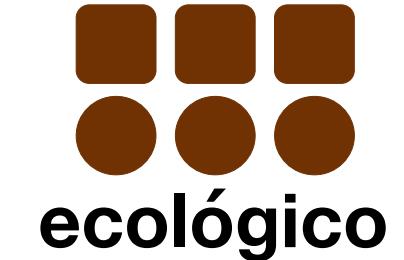
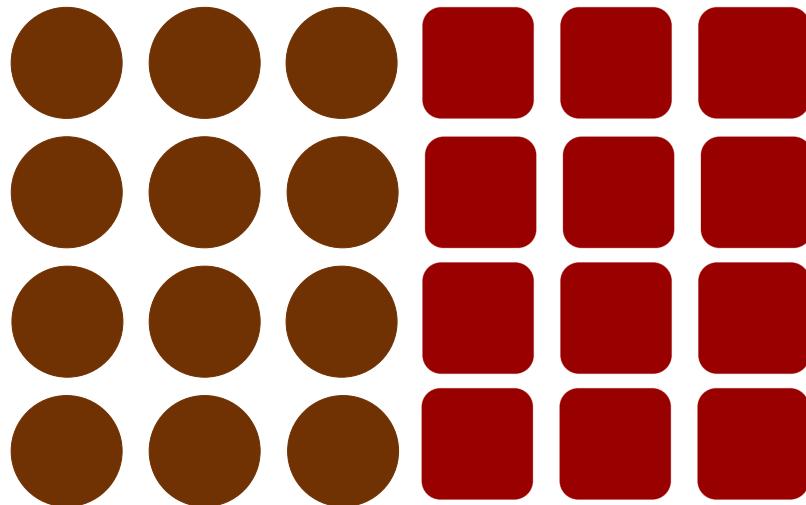


# exclusão competitiva de espécies

banco

x 96

x 24

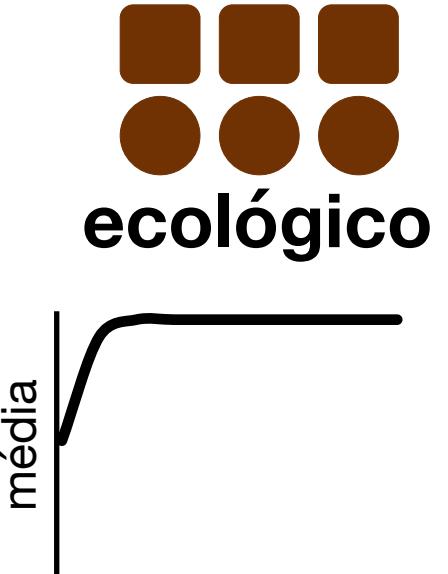
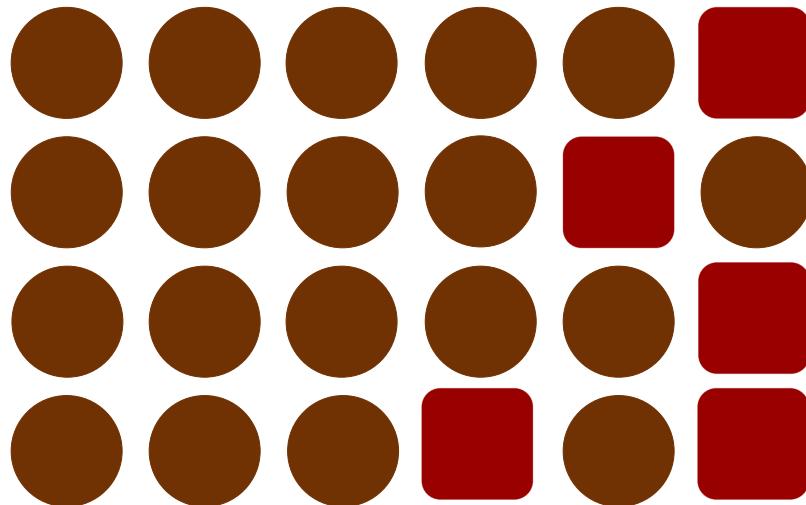


# exclusão competitiva de espécies

banco

● x 152

■ x 10

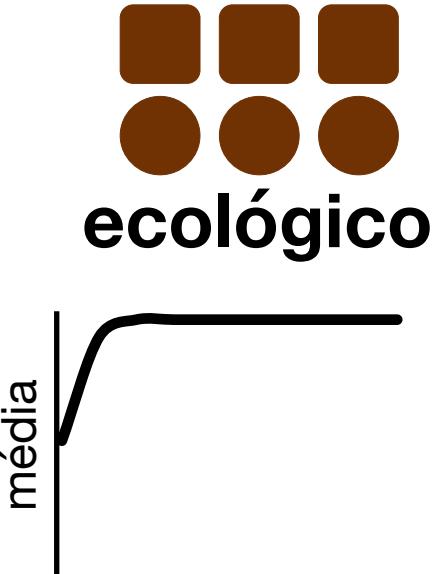
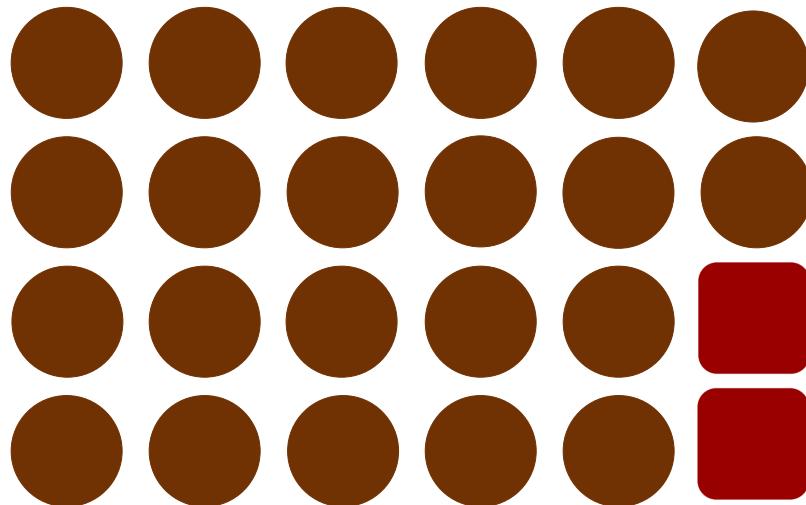


# exclusão competitiva de espécies

banco

● x 176

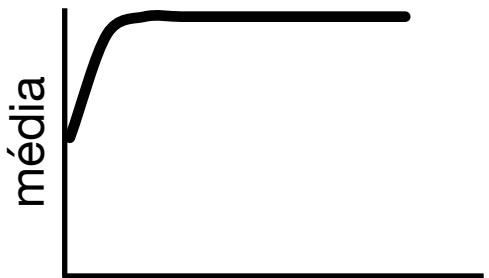
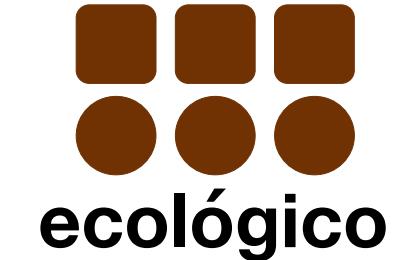
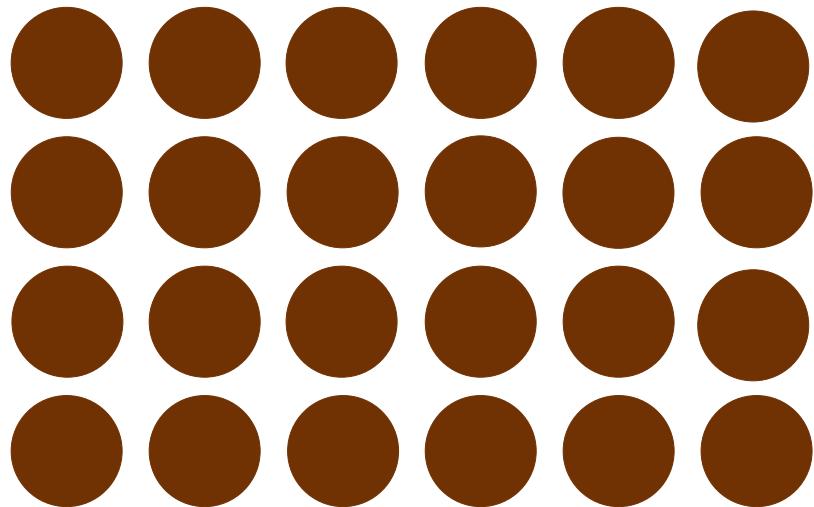
■ x 4



# exclusão competitiva de espécies

banco

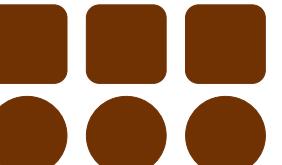
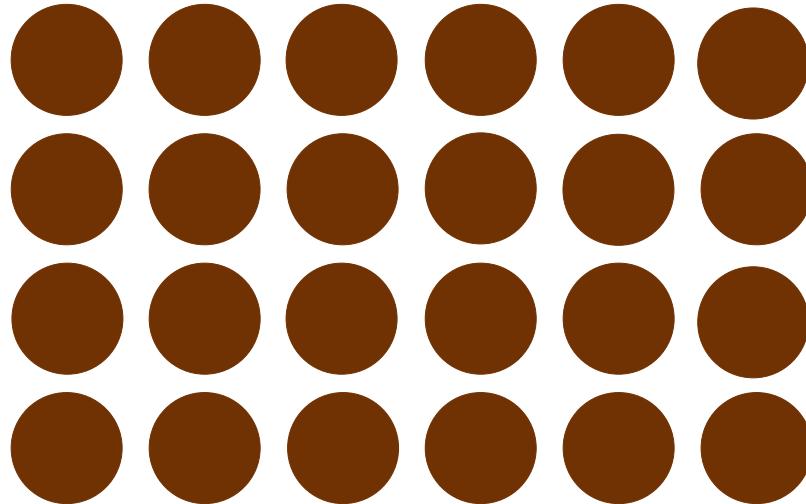
● x 176



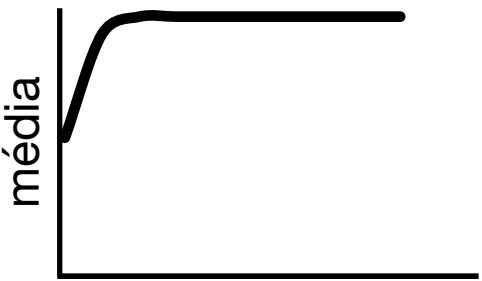
# exclusão competitiva de espécies

banco

● x 176

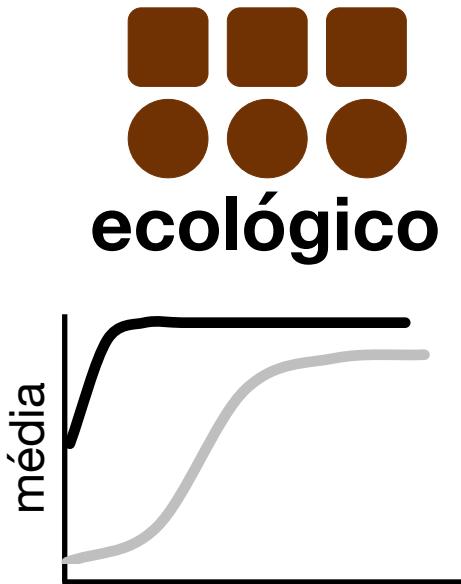
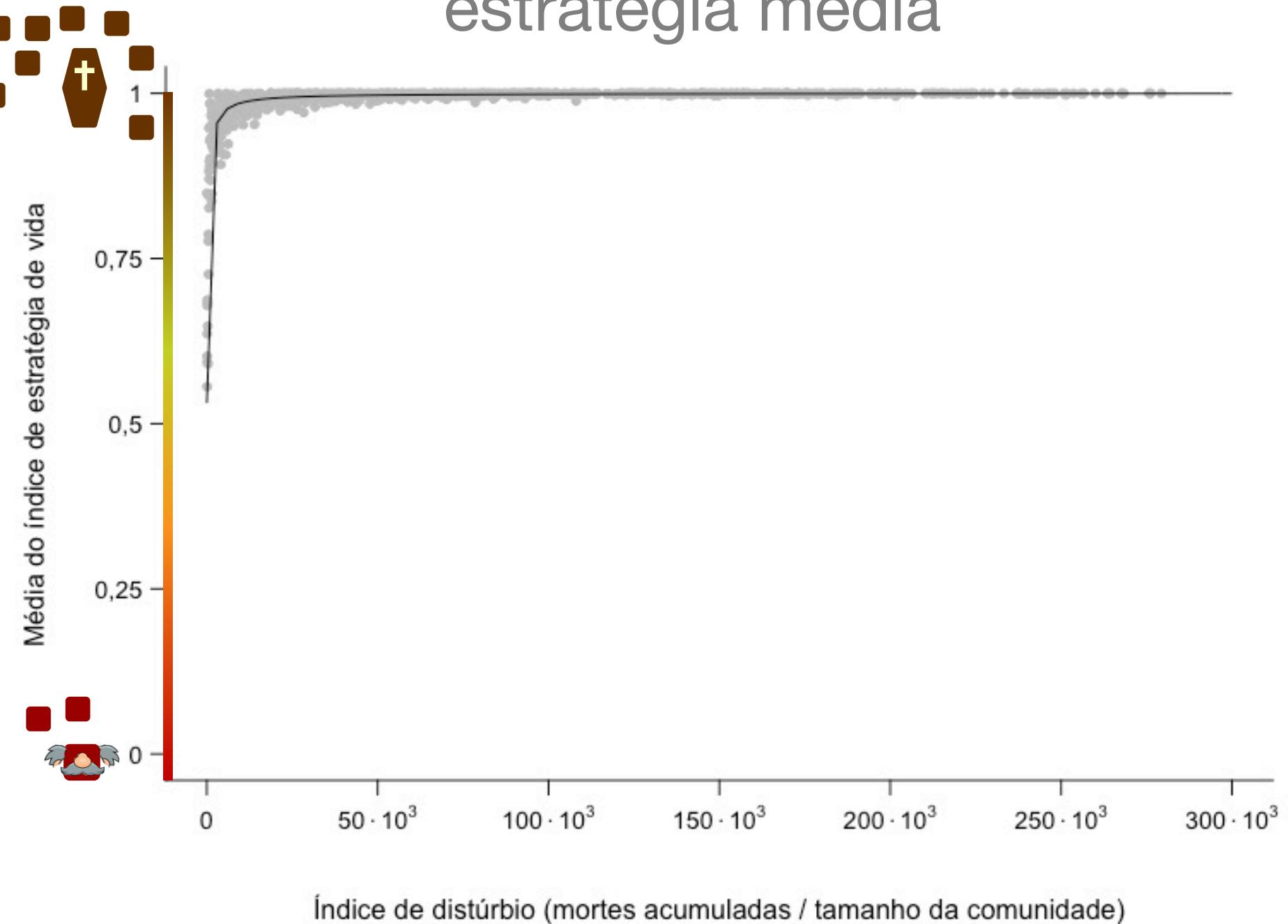


**ecológico**



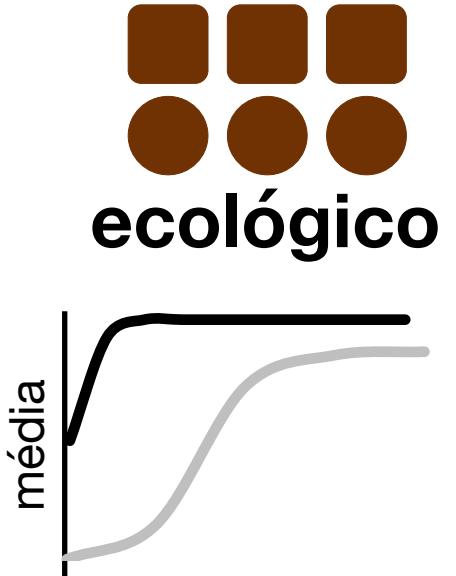
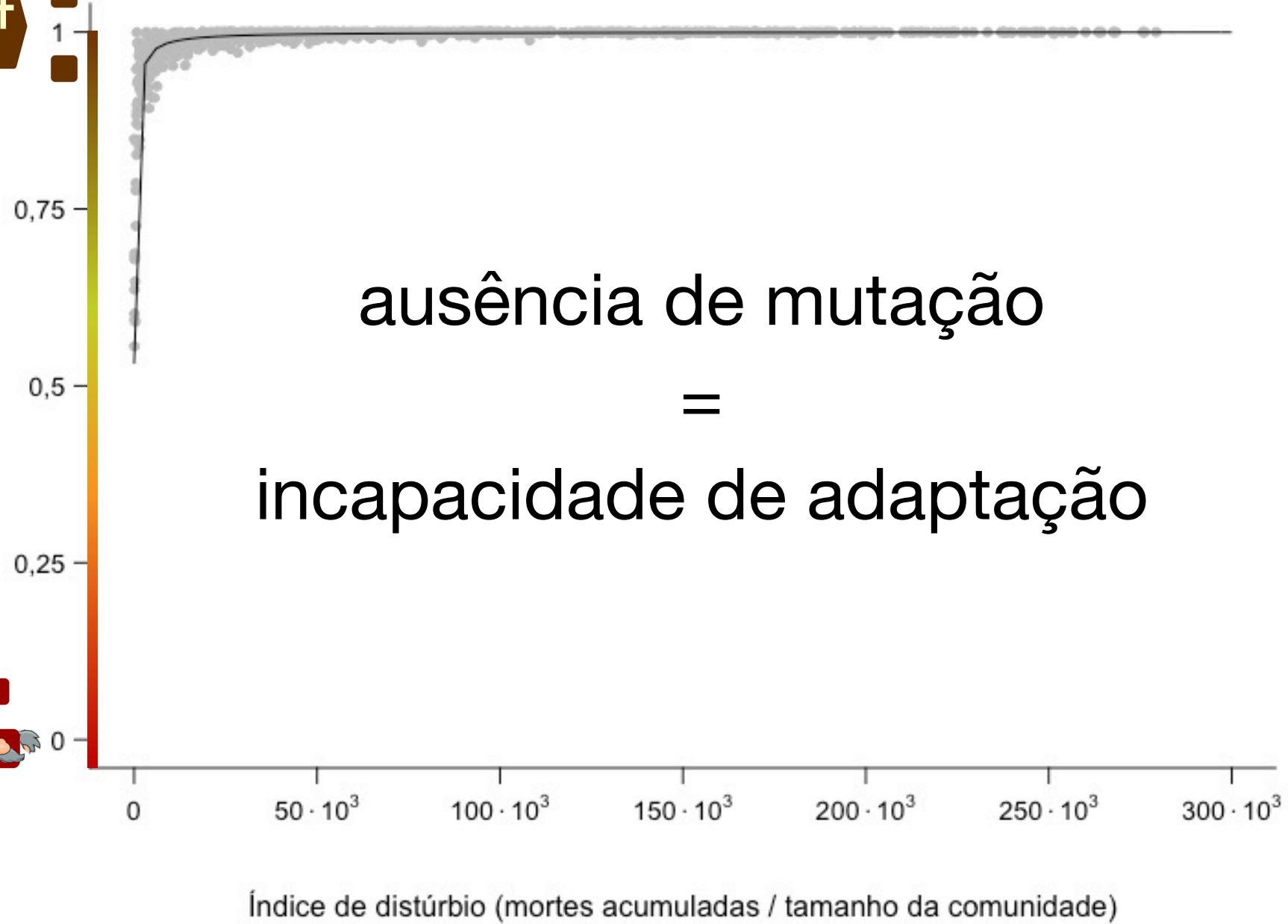
estratégia de maior fecundidade melhor competidora

# estratégia média



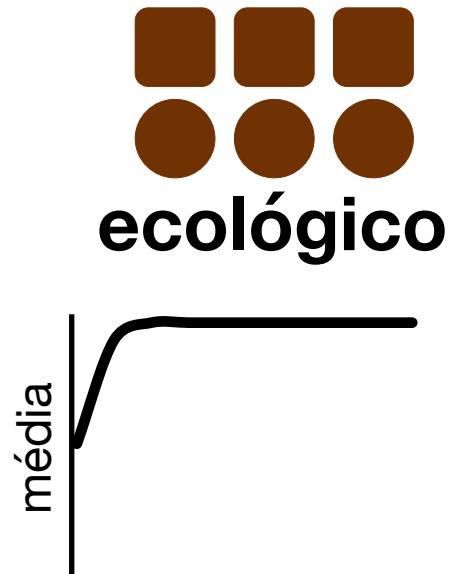
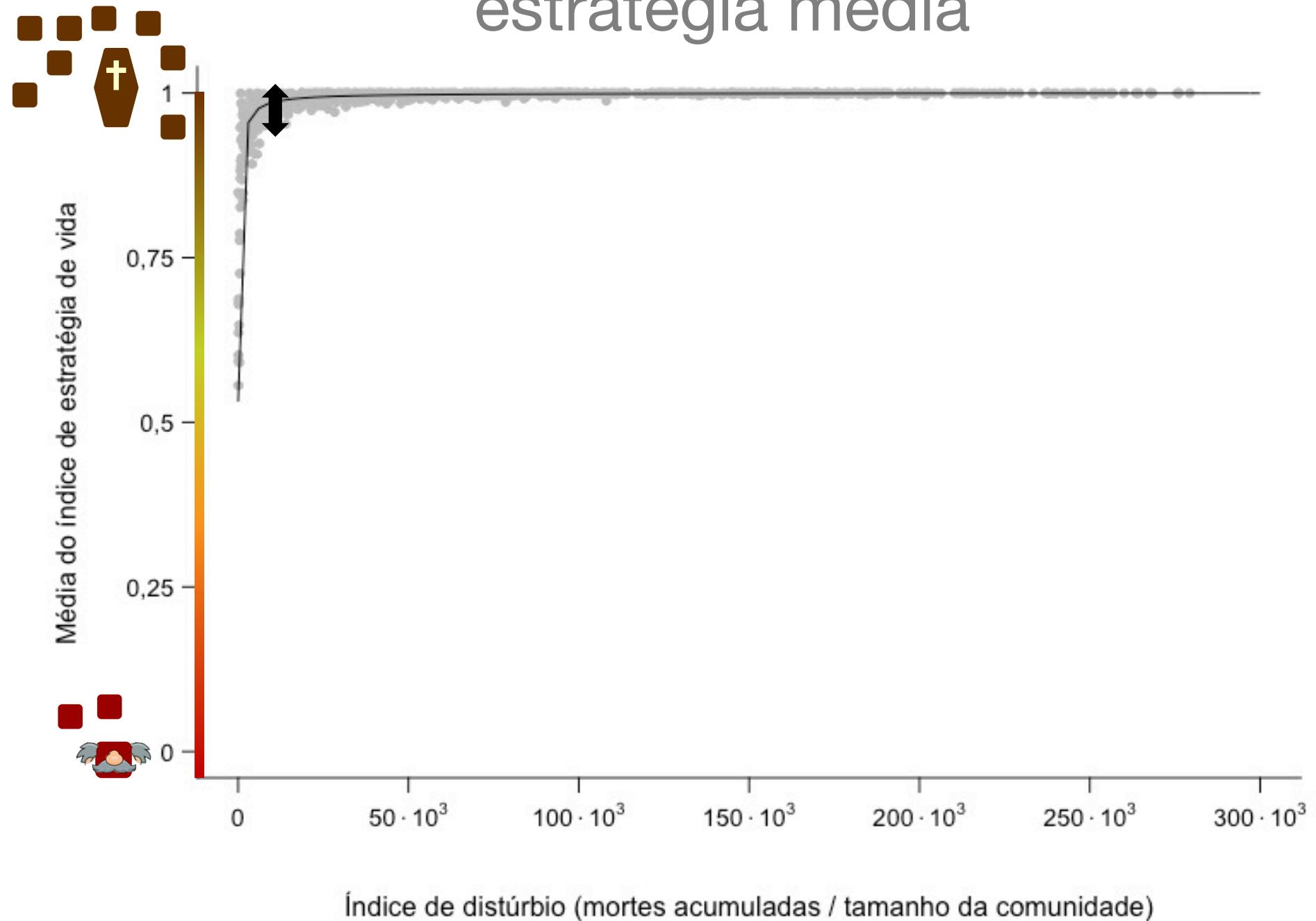
# estratégia média

Média do índice de estratégia de vida

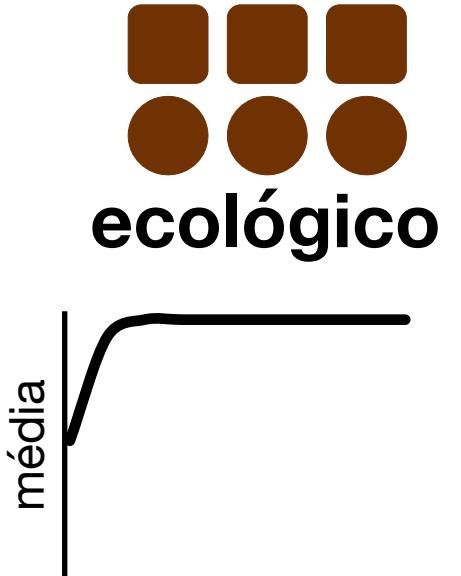
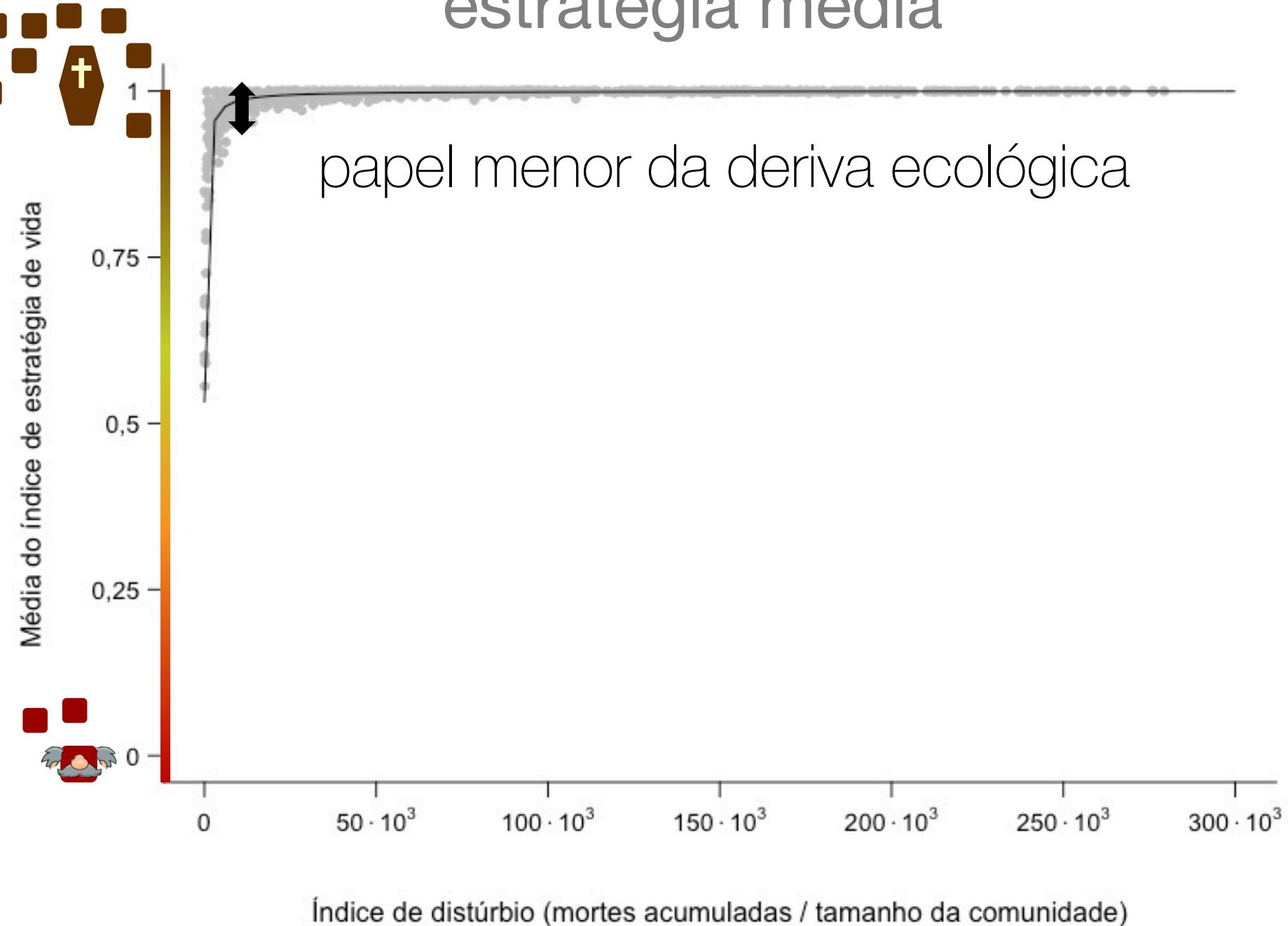


incapacidade de adaptação

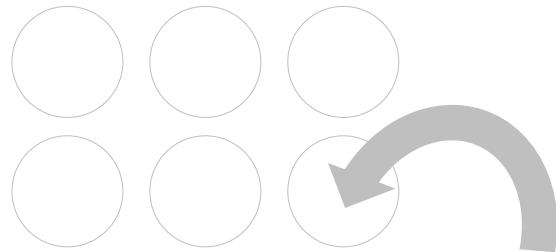
# estratégia média



# estratégia média



## evolutivo

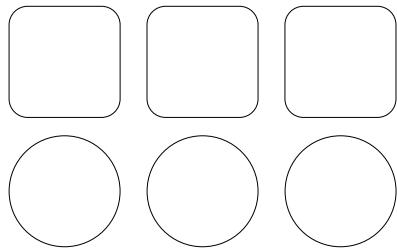


estratégia média

diversidade  
de estratégias

-

## ecológico

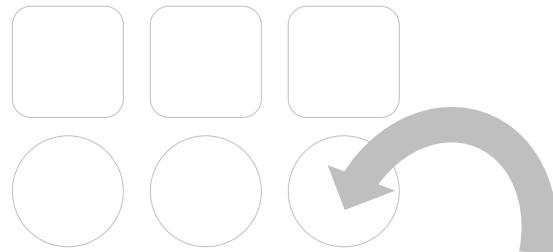


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

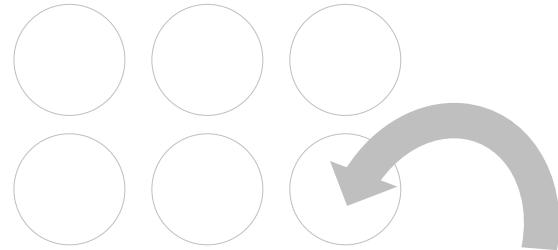


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

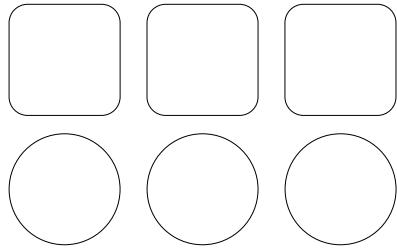


estratégia média

diversidade  
de estratégias

-

## ecológico

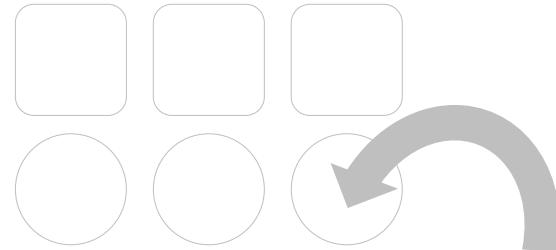


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo



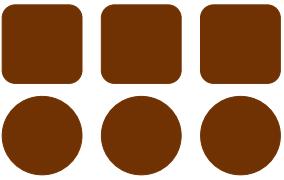
estratégia média

diversidade  
de estratégias

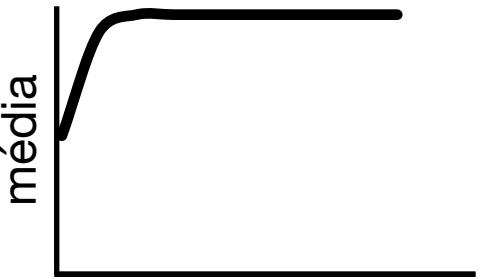
heterogeneidade  
interespecífica de  
estratégias



# diversidade de estratégias

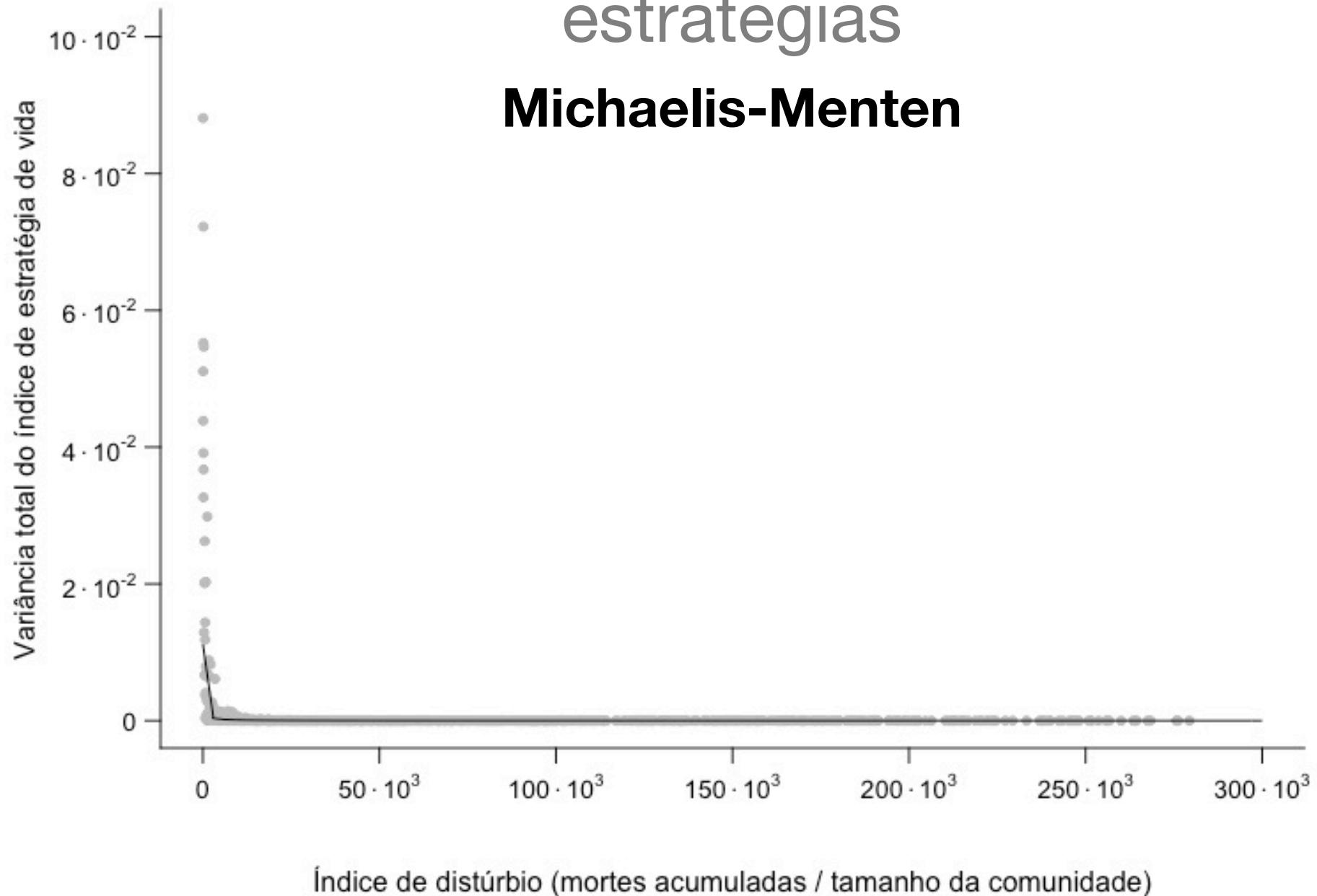


**ecológico**



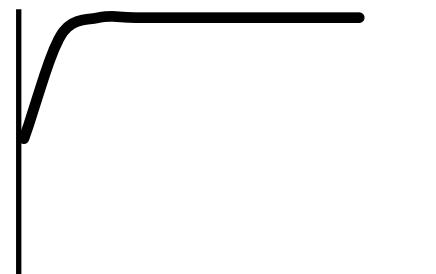
# diversidade de estratégias

## Michaelis-Menten



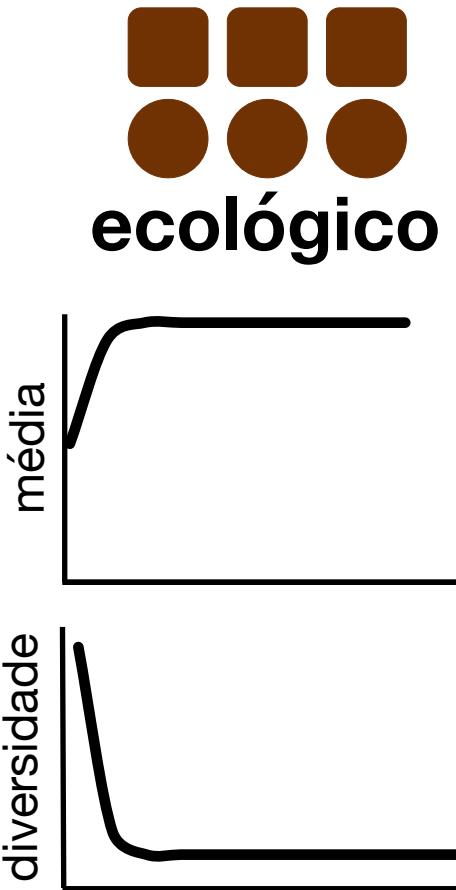
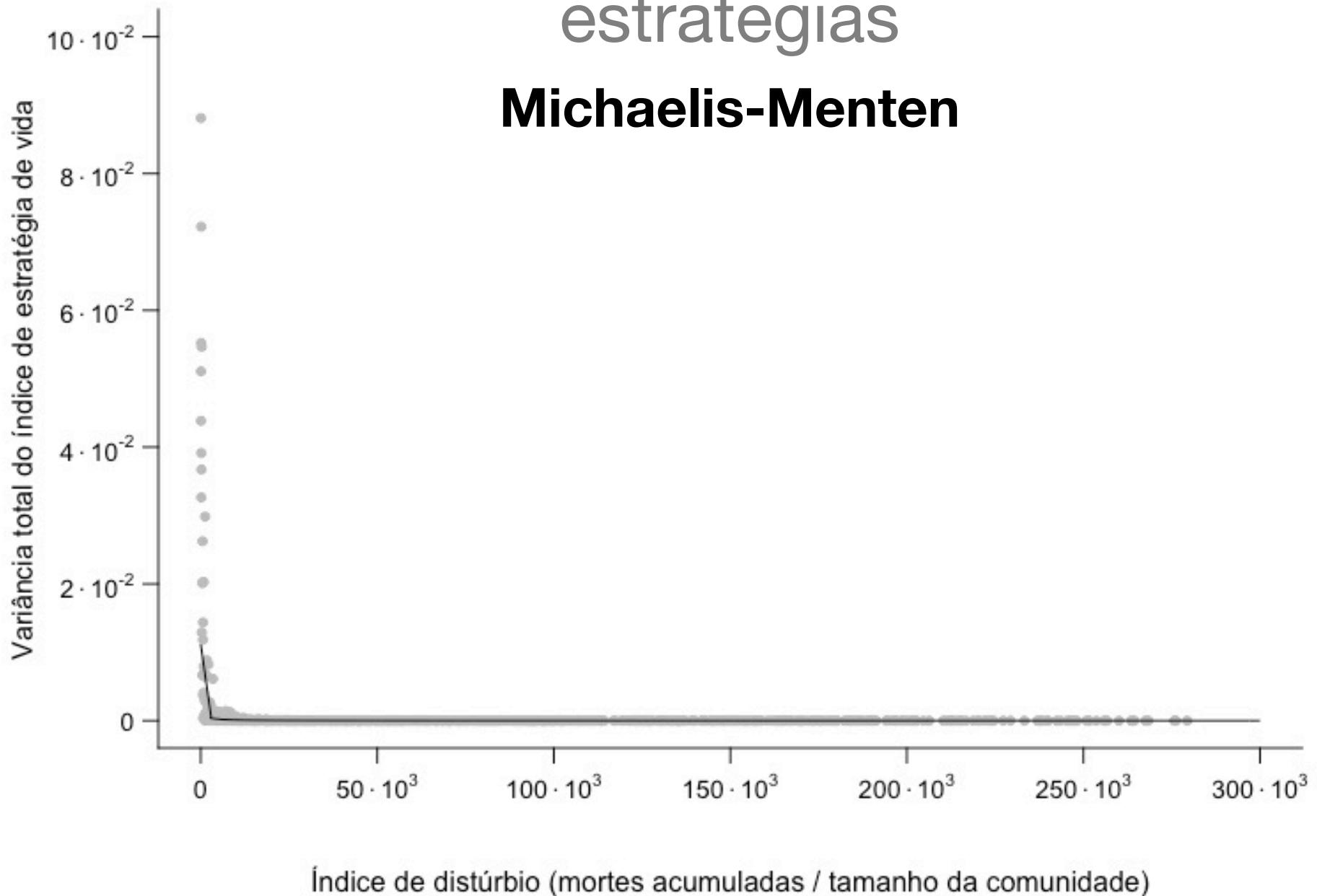
ecológico

média



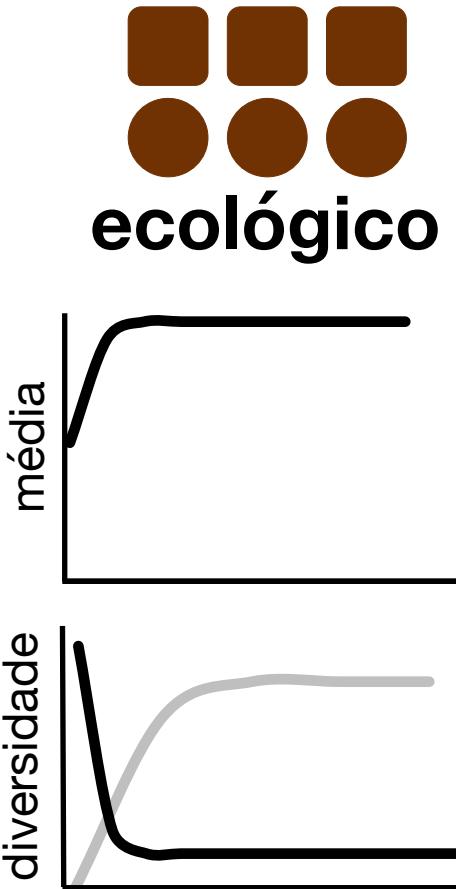
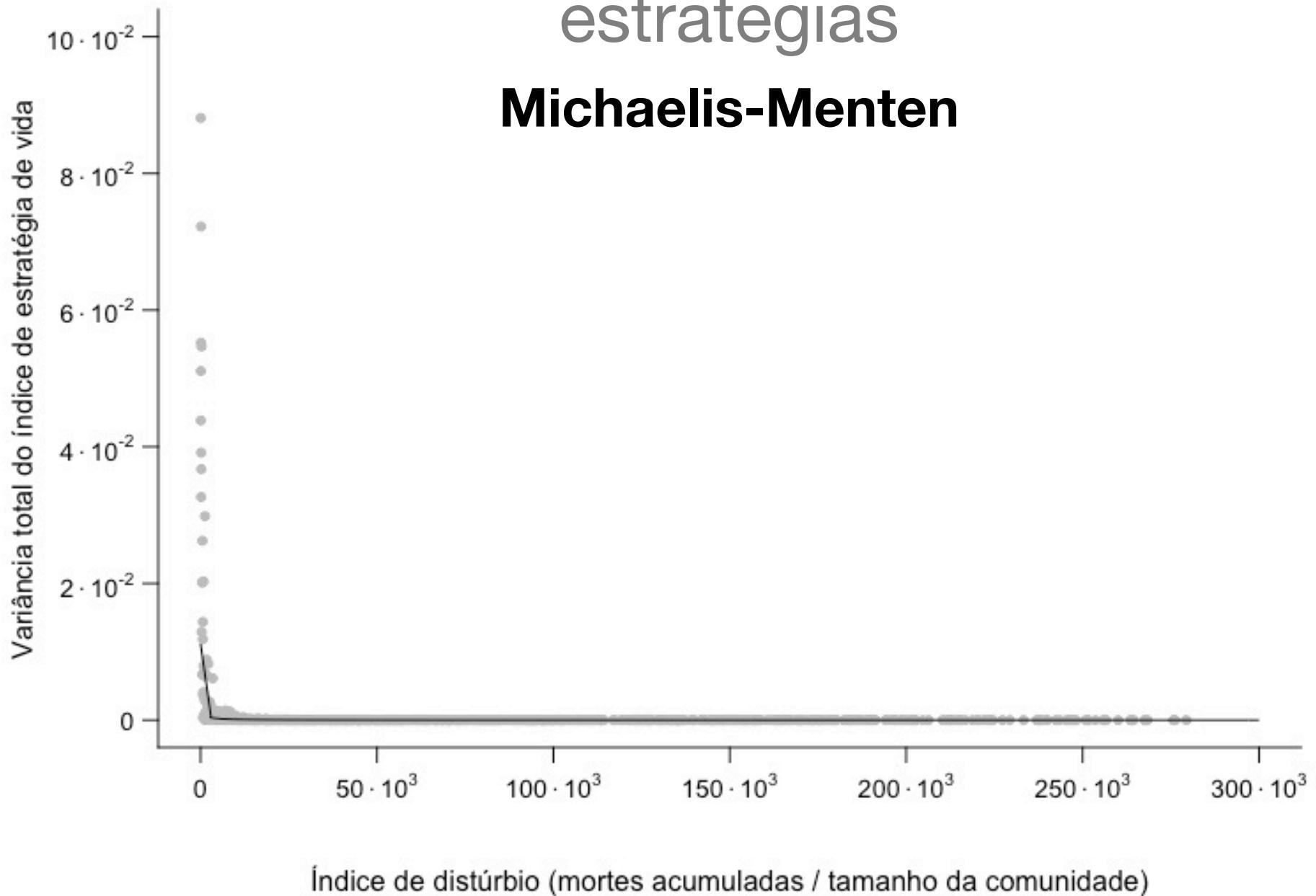
# diversidade de estratégias

## Michaelis-Menten



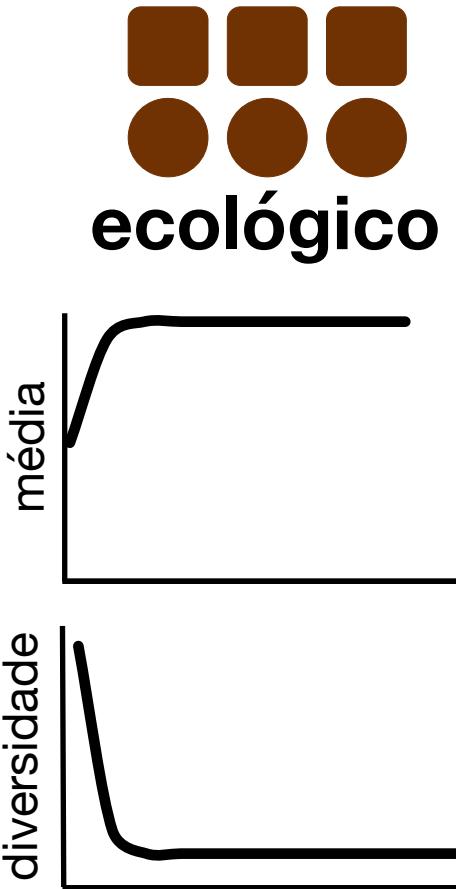
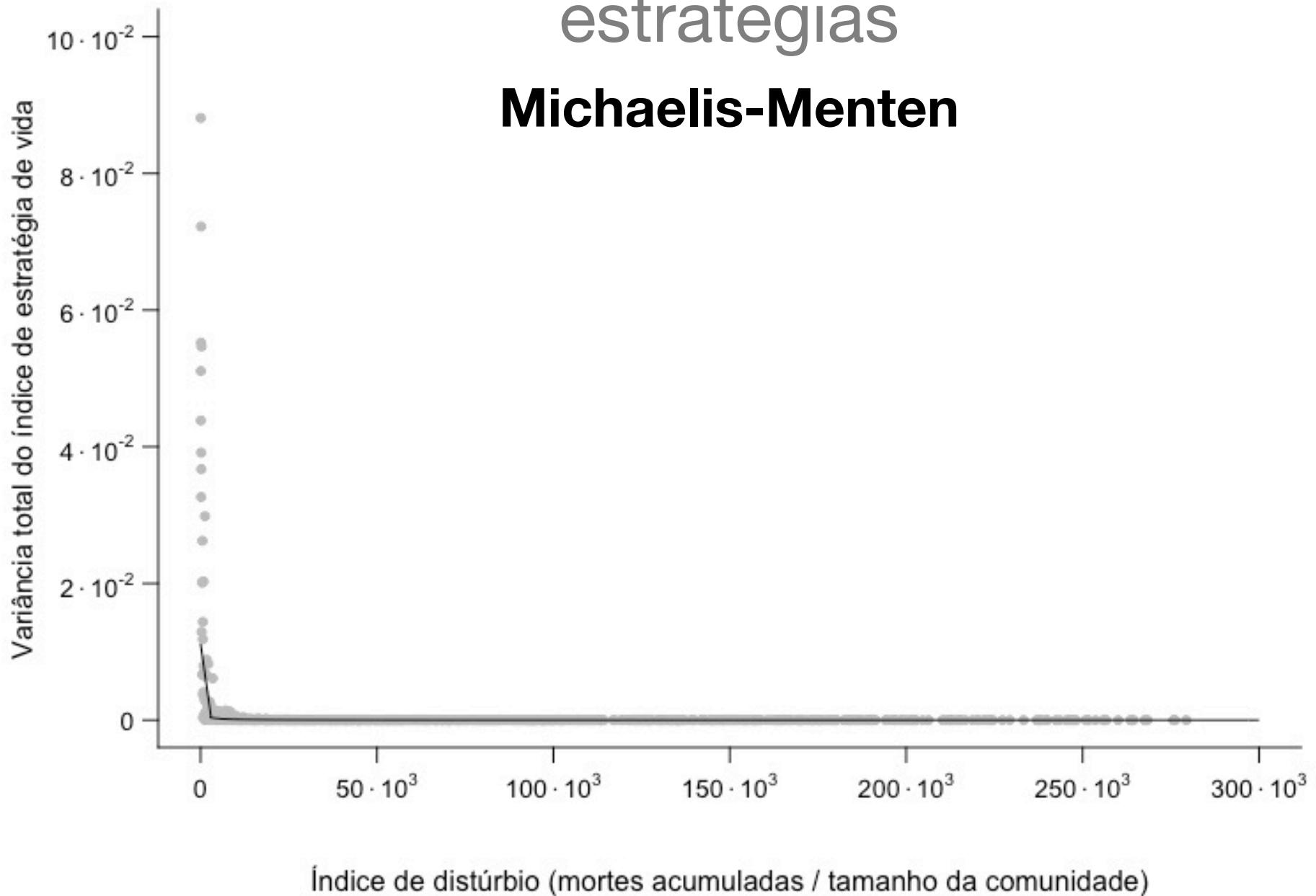
# diversidade de estratégias

## Michaelis-Menten

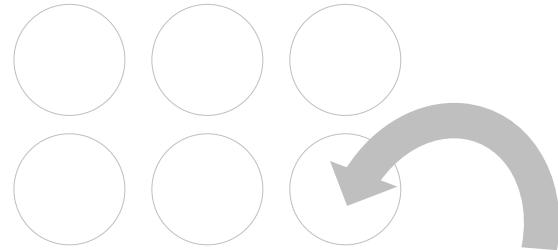


# diversidade de estratégias

## Michaelis-Menten



## evolutivo

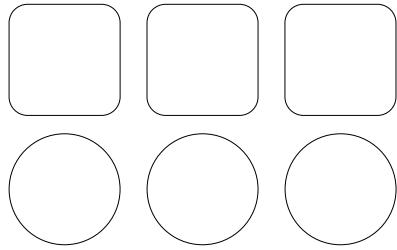


estratégia média

diversidade  
de estratégias

-

## ecológico

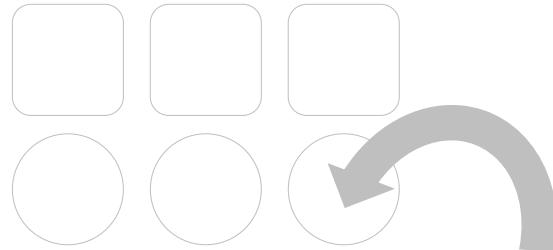


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

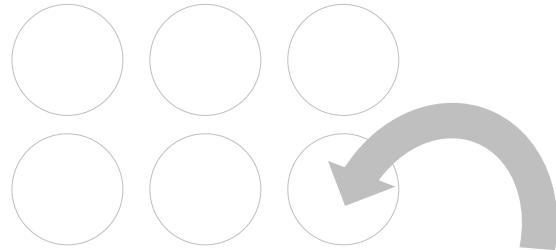


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

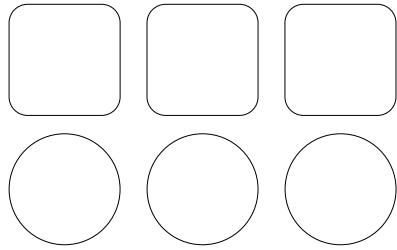


estratégia média

diversidade  
de estratégias

-

## ecológico

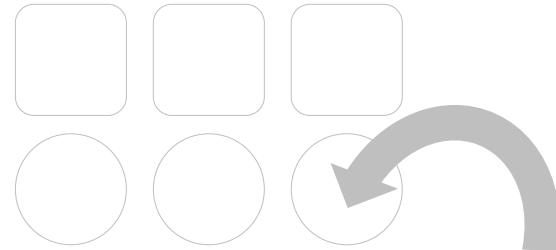


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

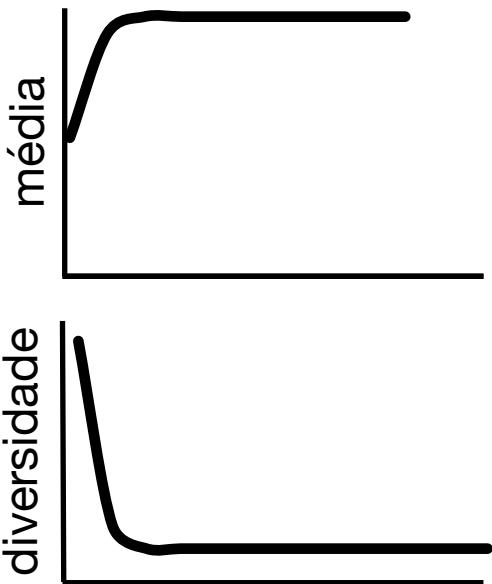
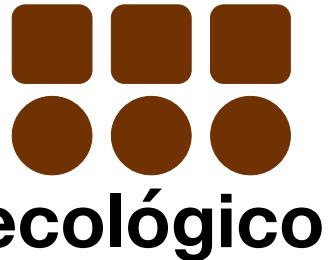


estratégia média

diversidade  
de estratégias

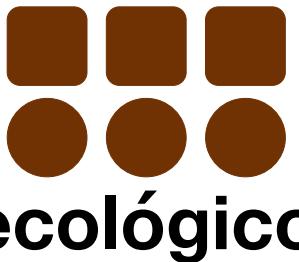
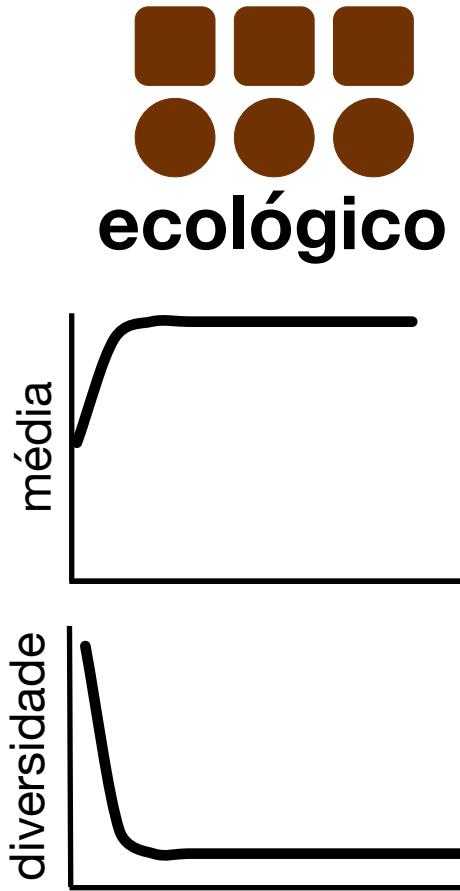
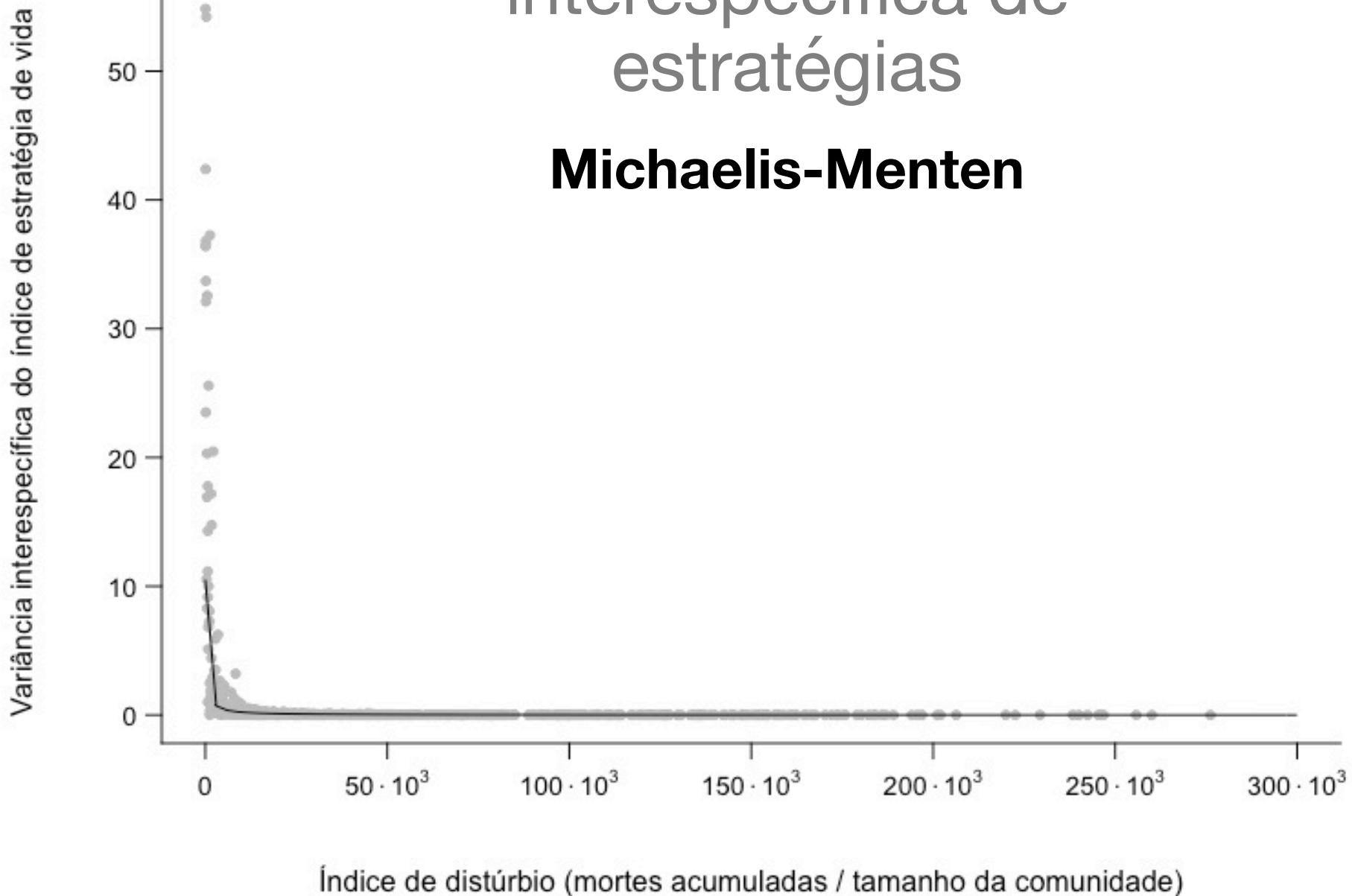
heterogeneidade  
interespecífica de  
estratégias

# heterogeneidade interespecífica de estratégias



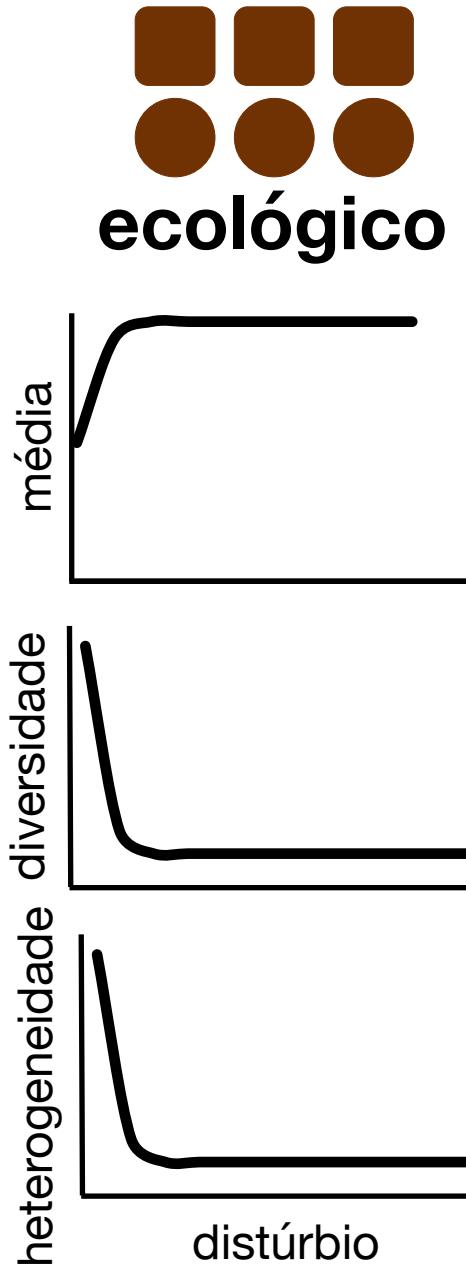
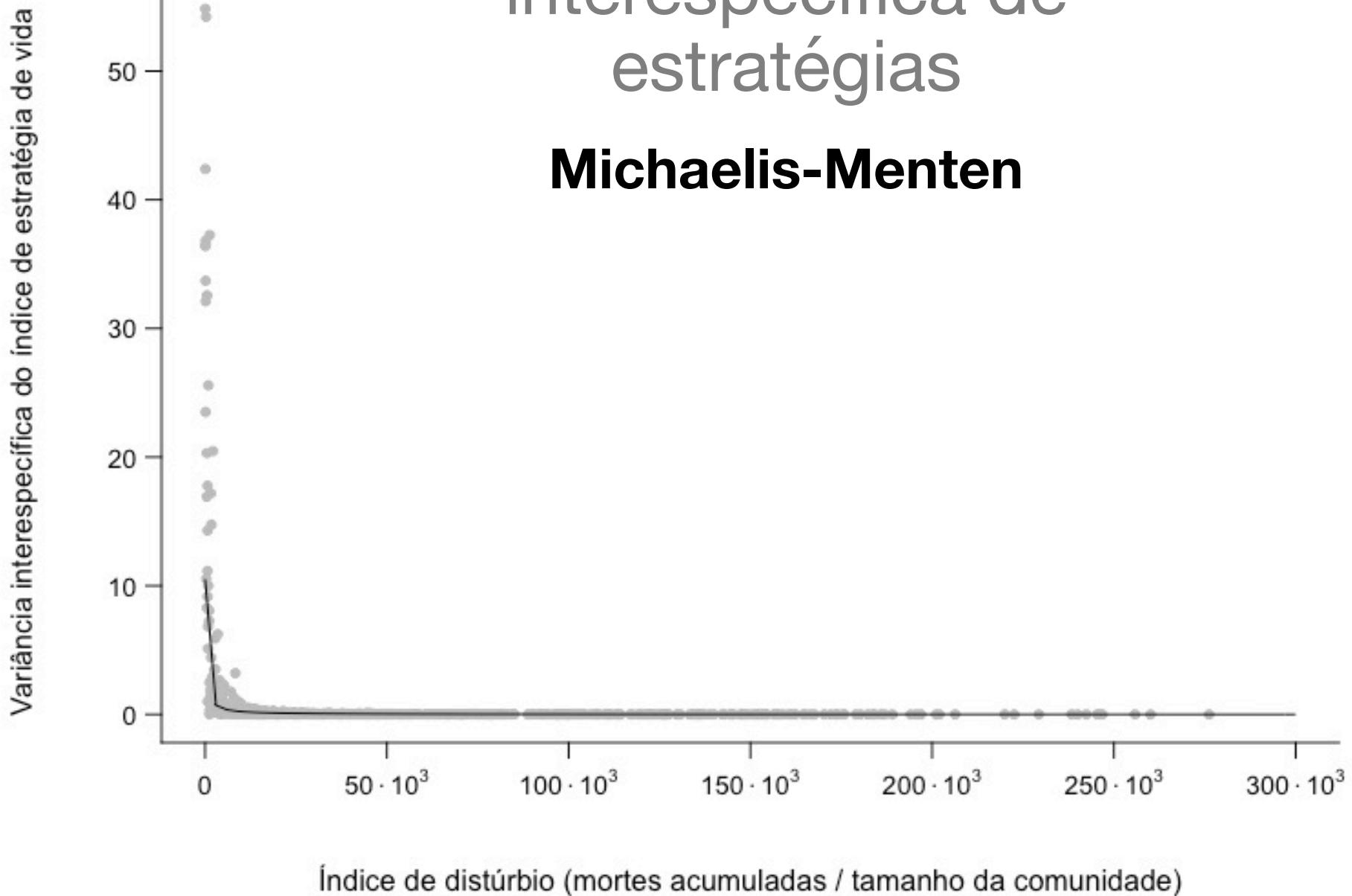
# heterogeneidade interespecífica de estratégias

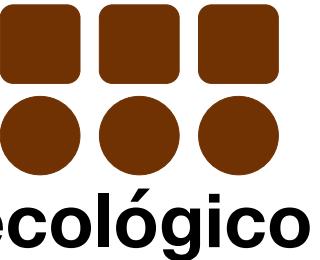
## Michaelis-Menten



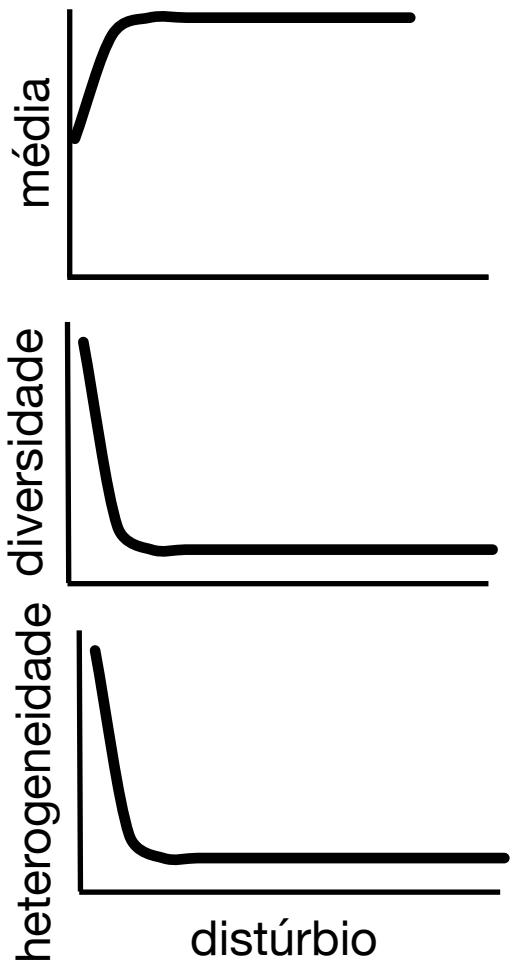
# heterogeneidade interespecífica de estratégias

## Michaelis-Menten

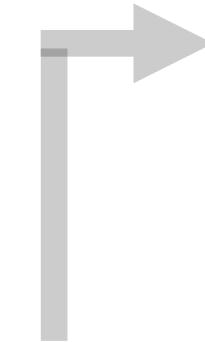




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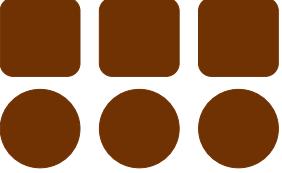


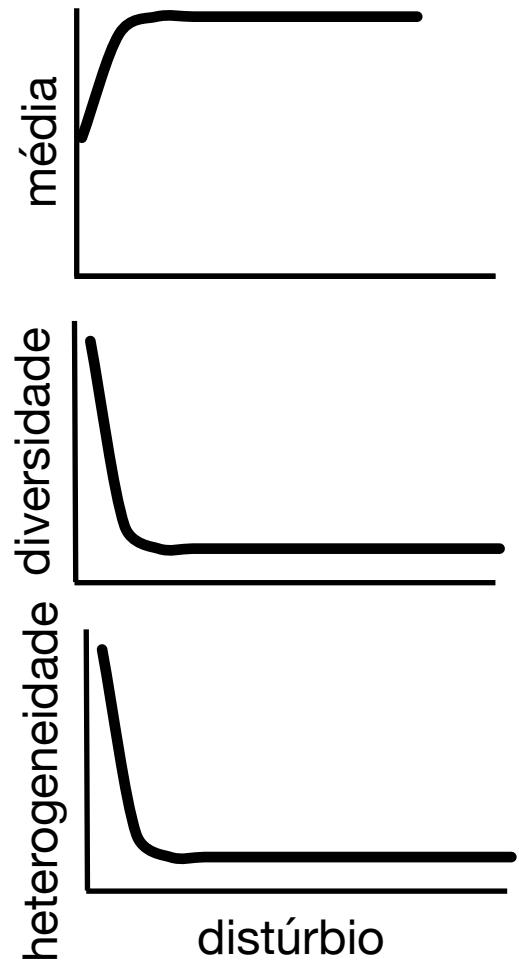
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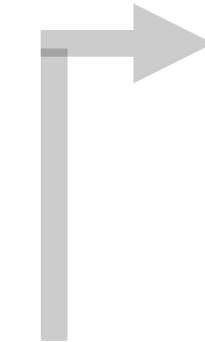
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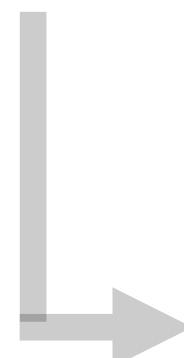
  
**ecológico**



**extinção**

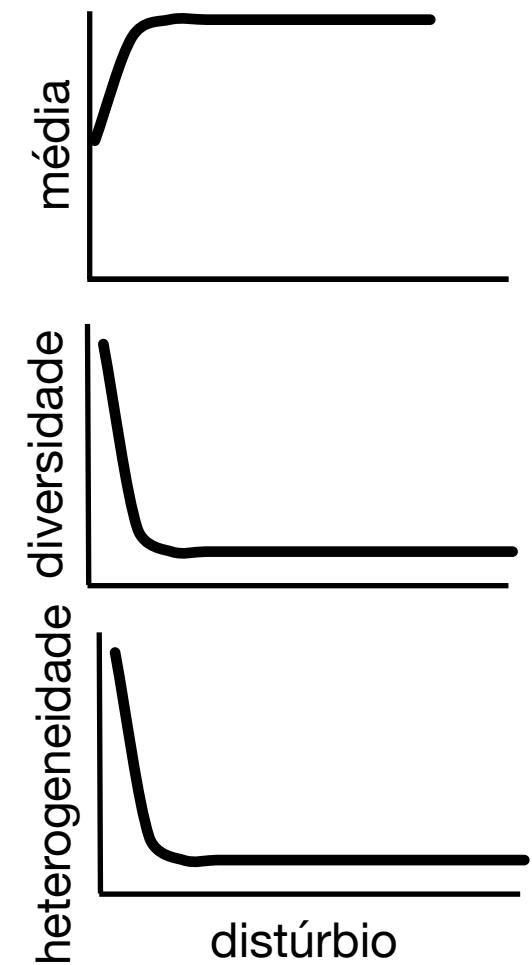


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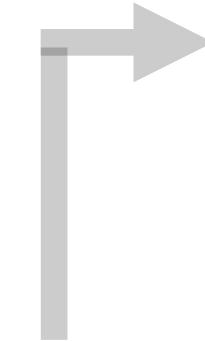


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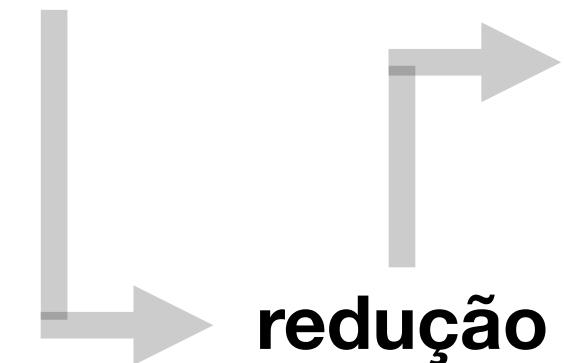
**ecológico**



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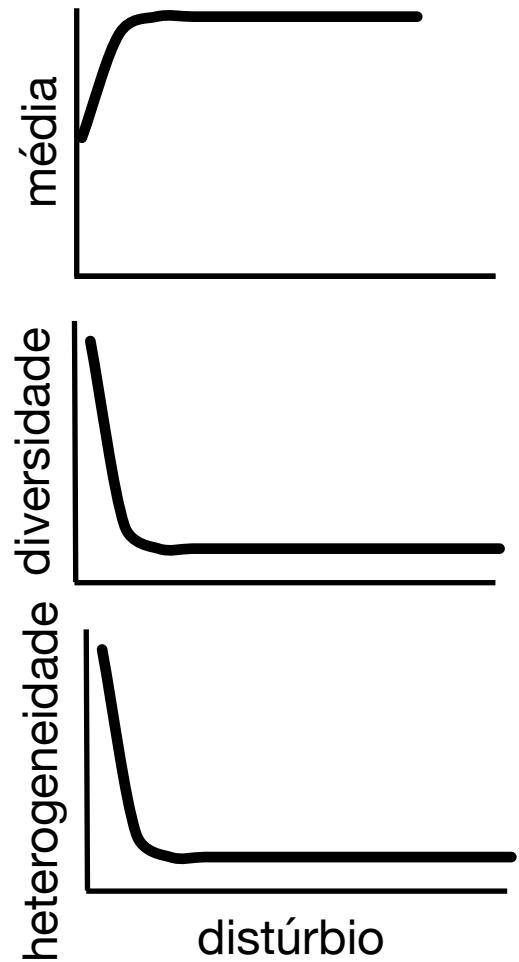
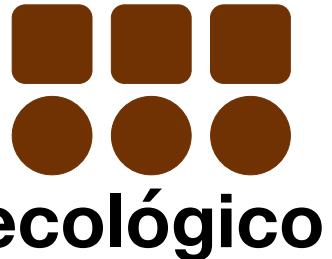


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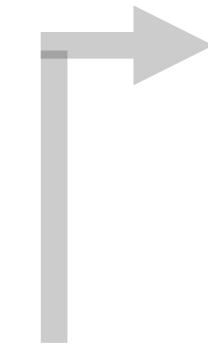


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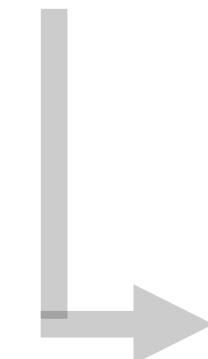
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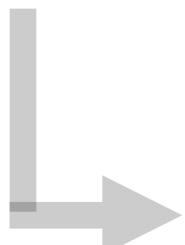
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**distúrbio**



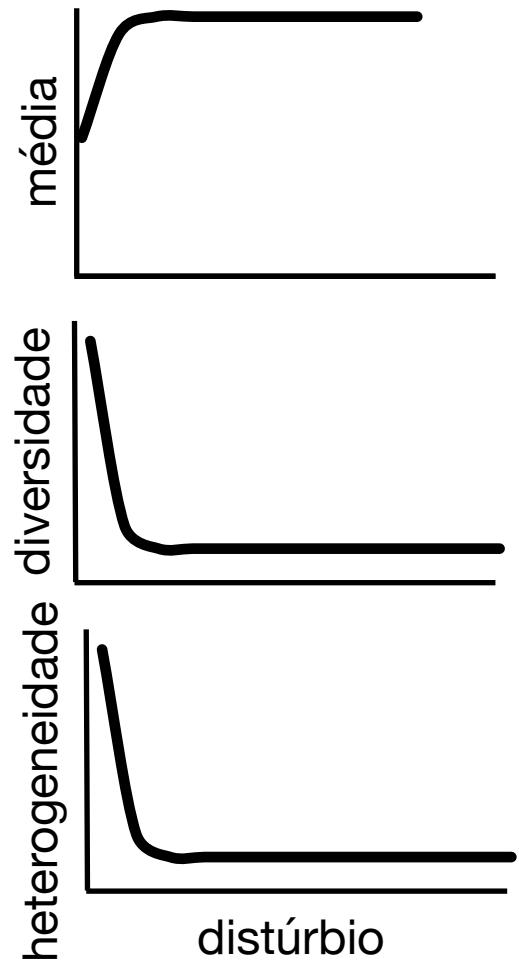
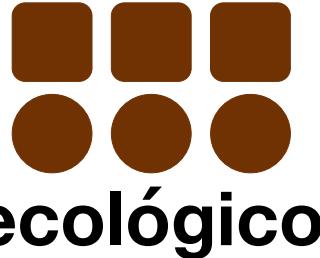
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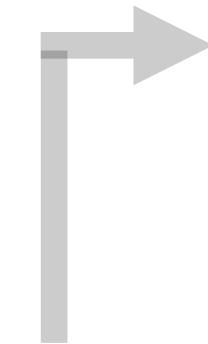
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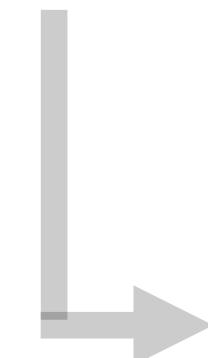
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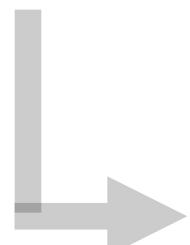
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**distúrbio**



**redução**



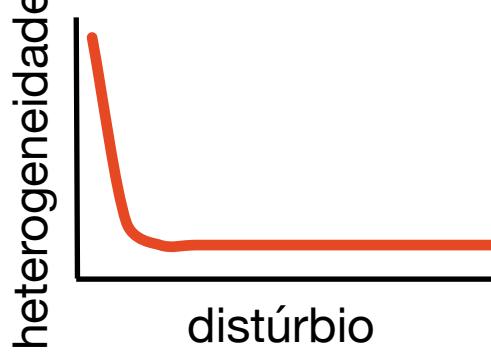
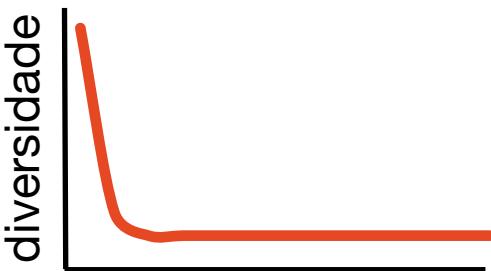
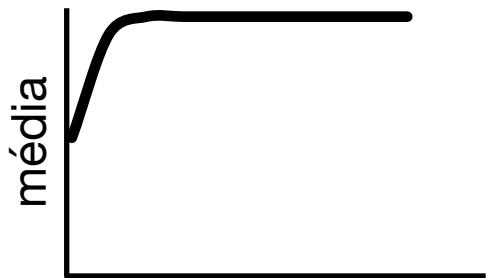
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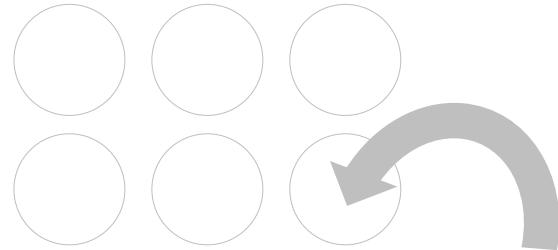
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**ecológico**



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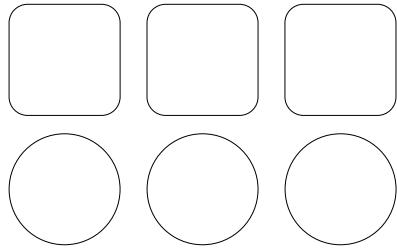


estratégia média

diversidade  
de estratégias

-

## ecológico

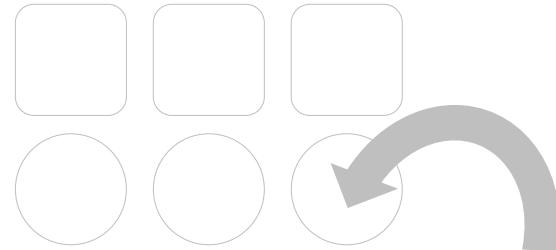


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

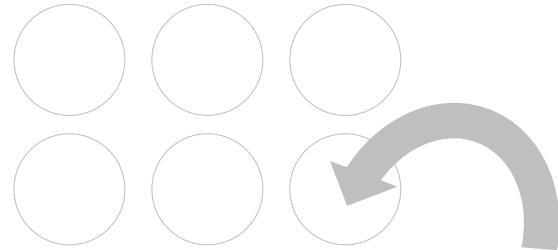


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## evolutivo

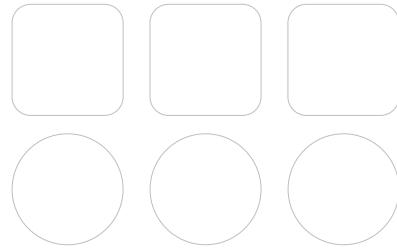


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diversidade  
de estratégias

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## ecológico

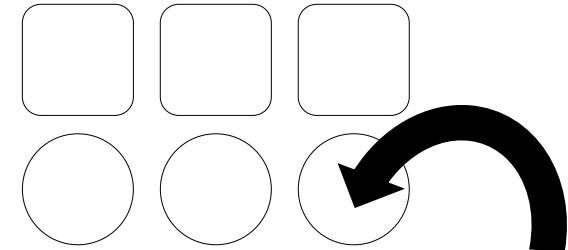


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diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo



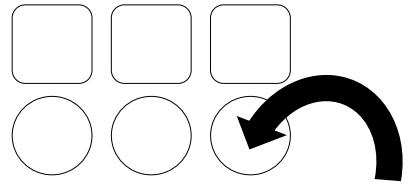
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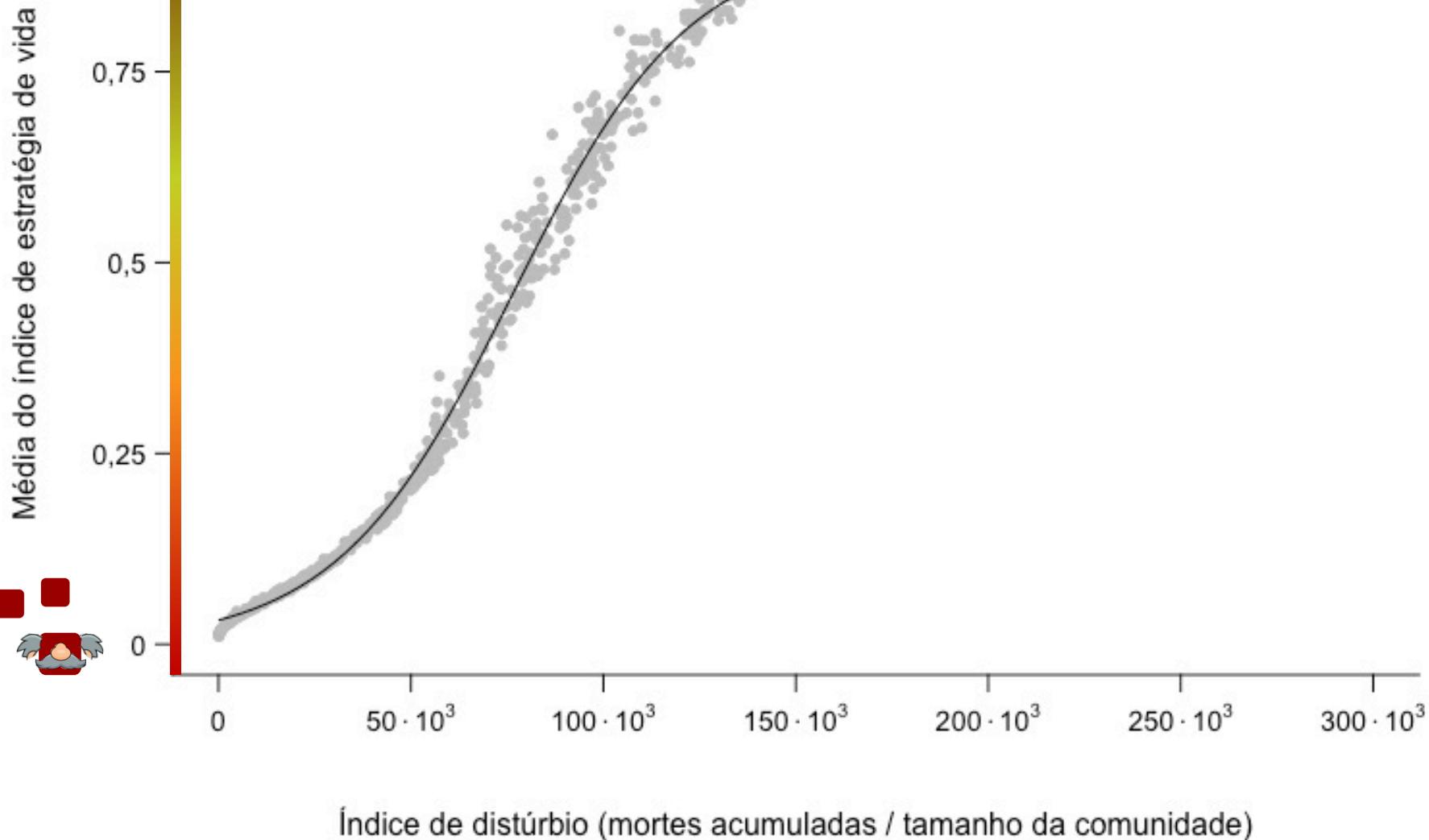


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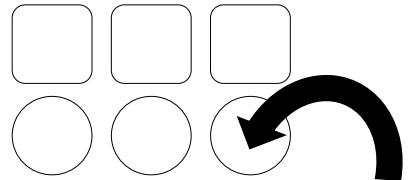


**eco-evolutivo**

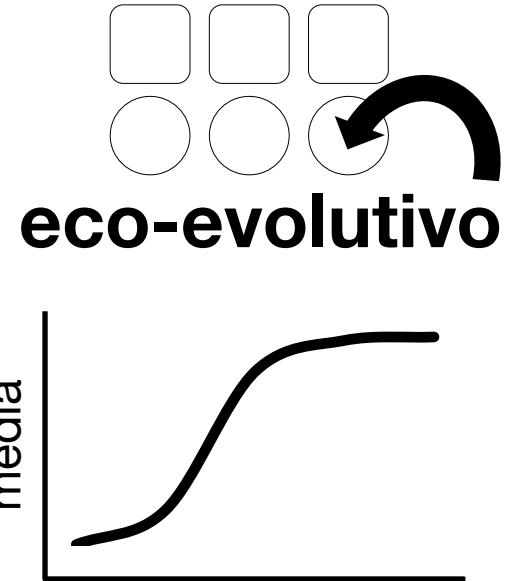
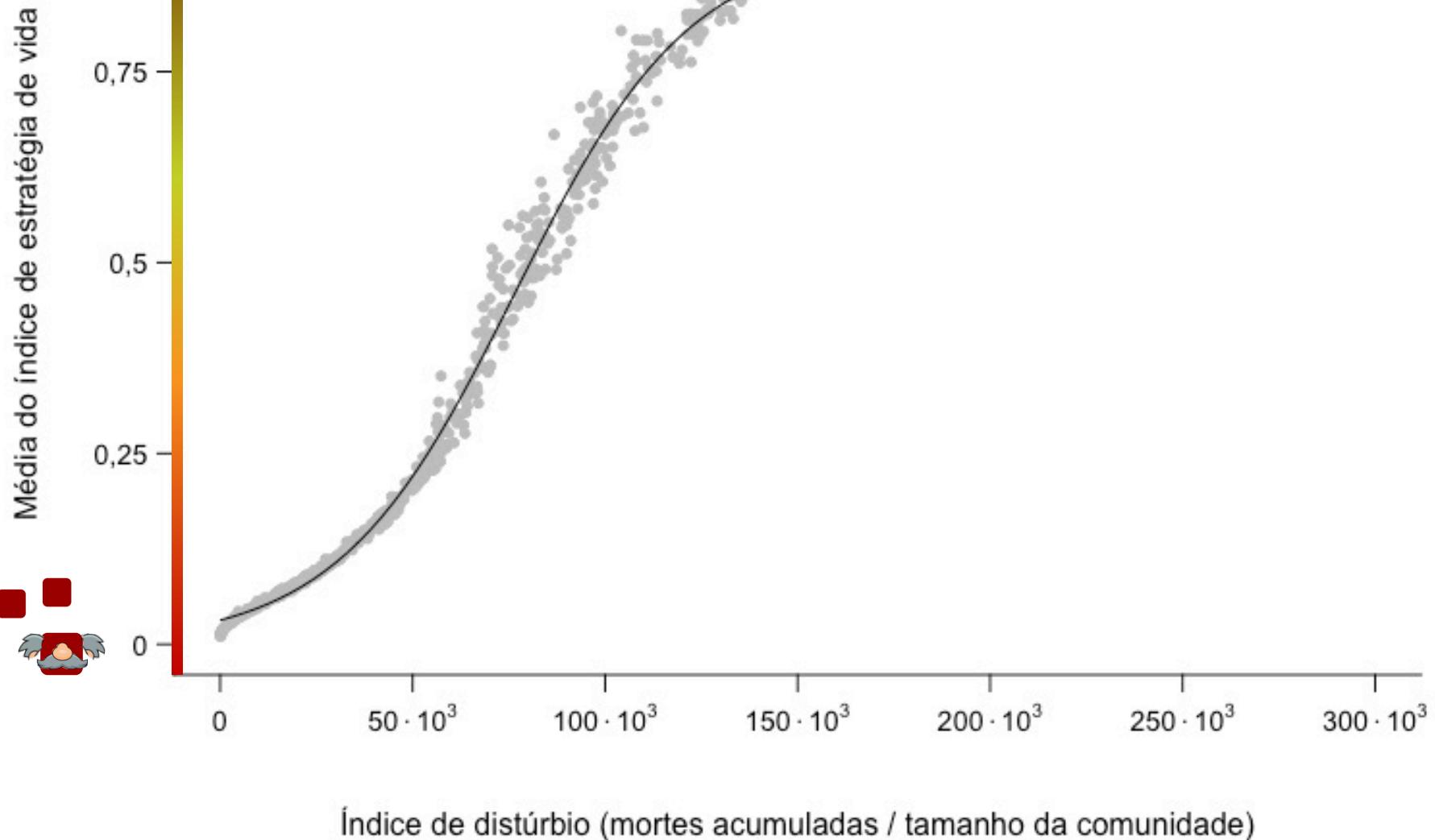
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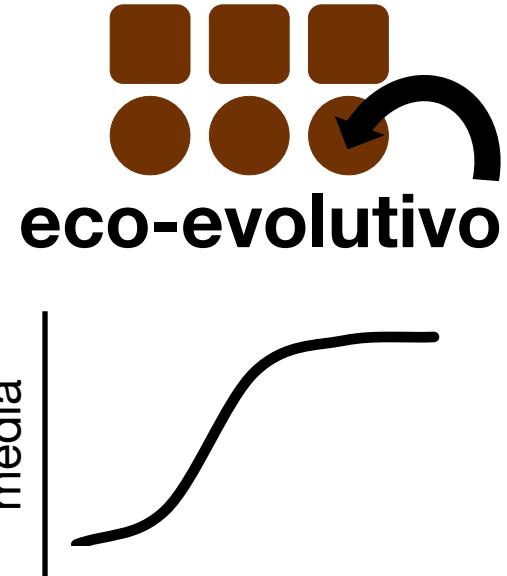
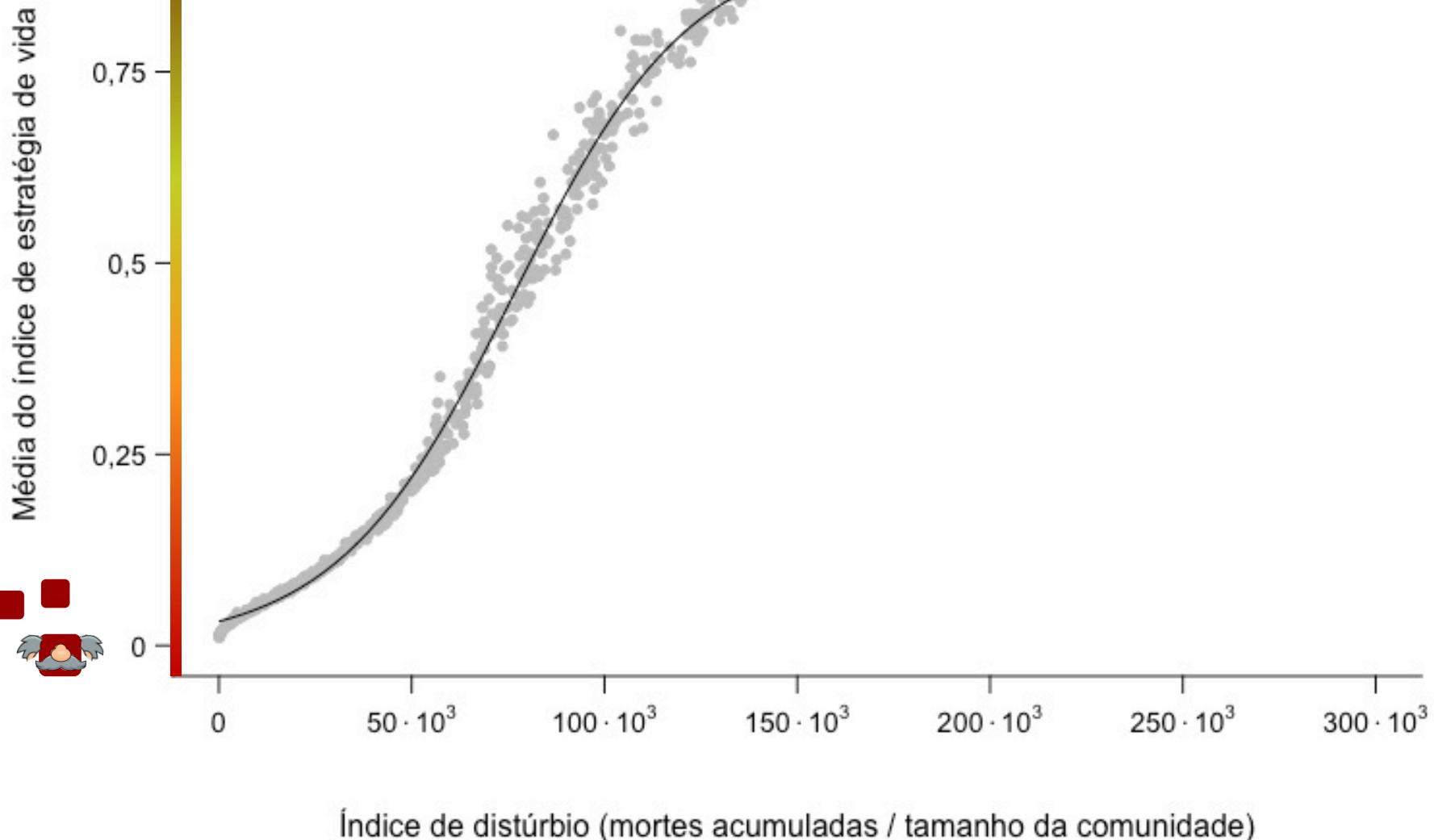
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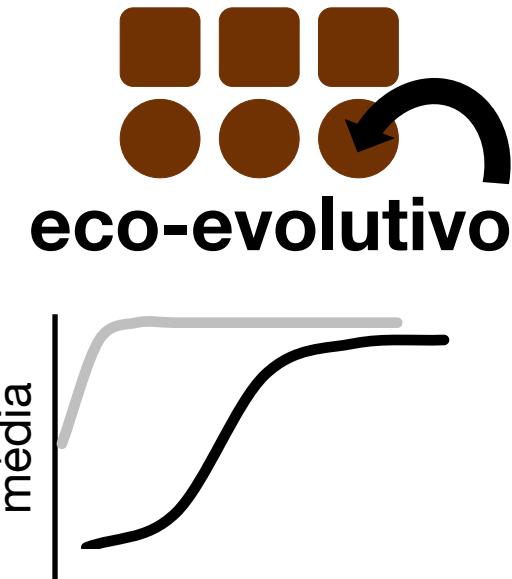
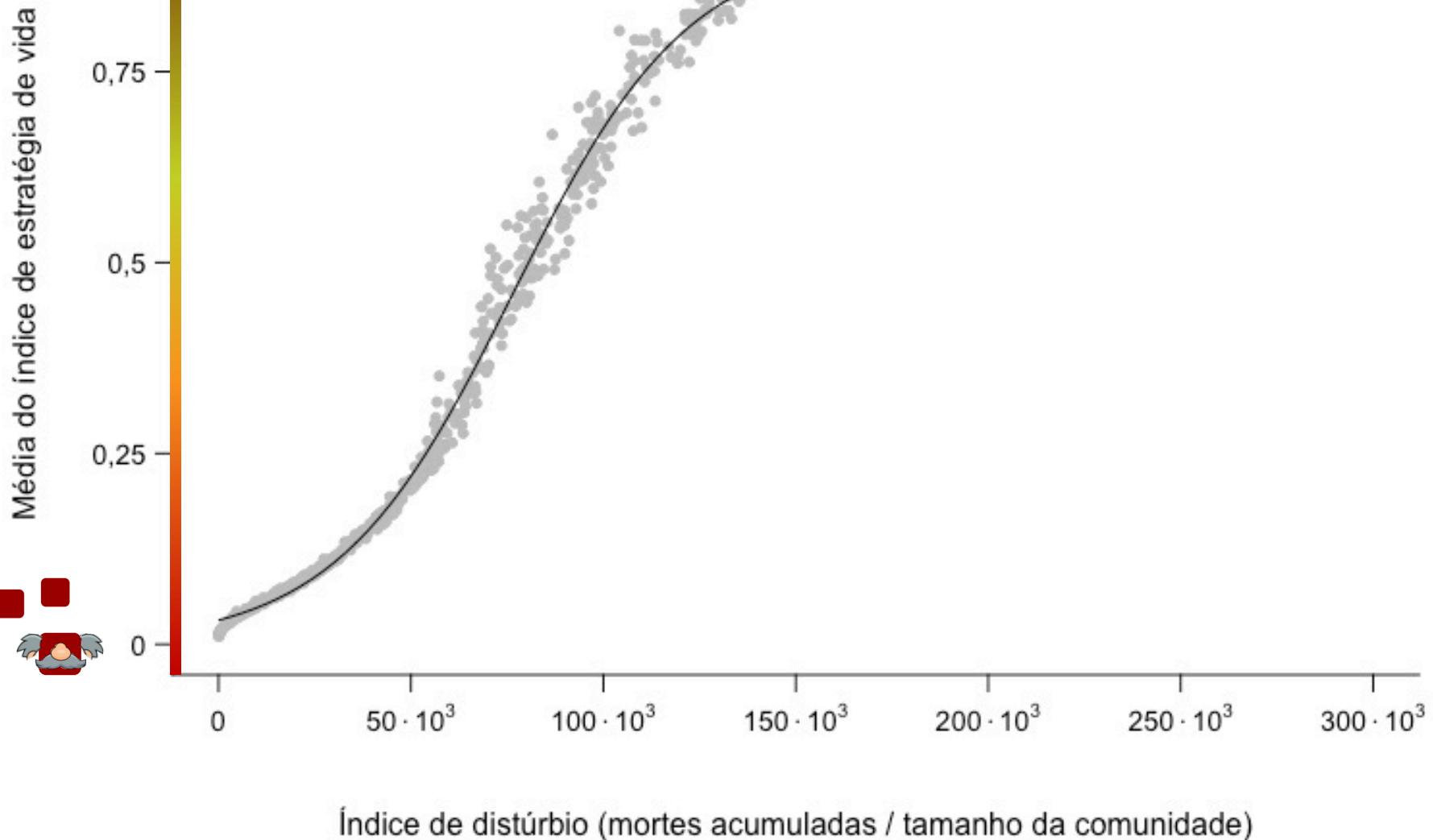
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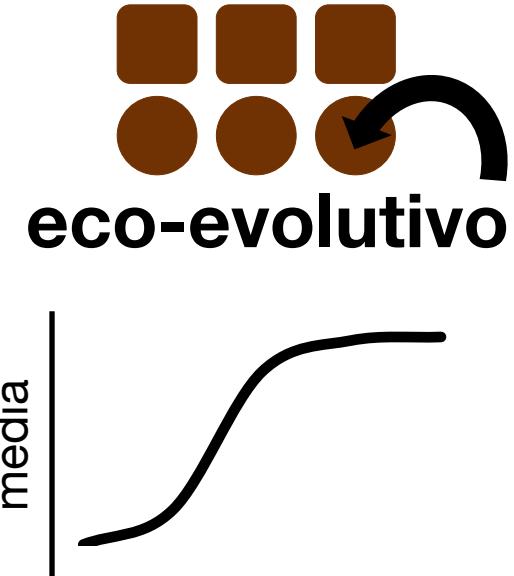
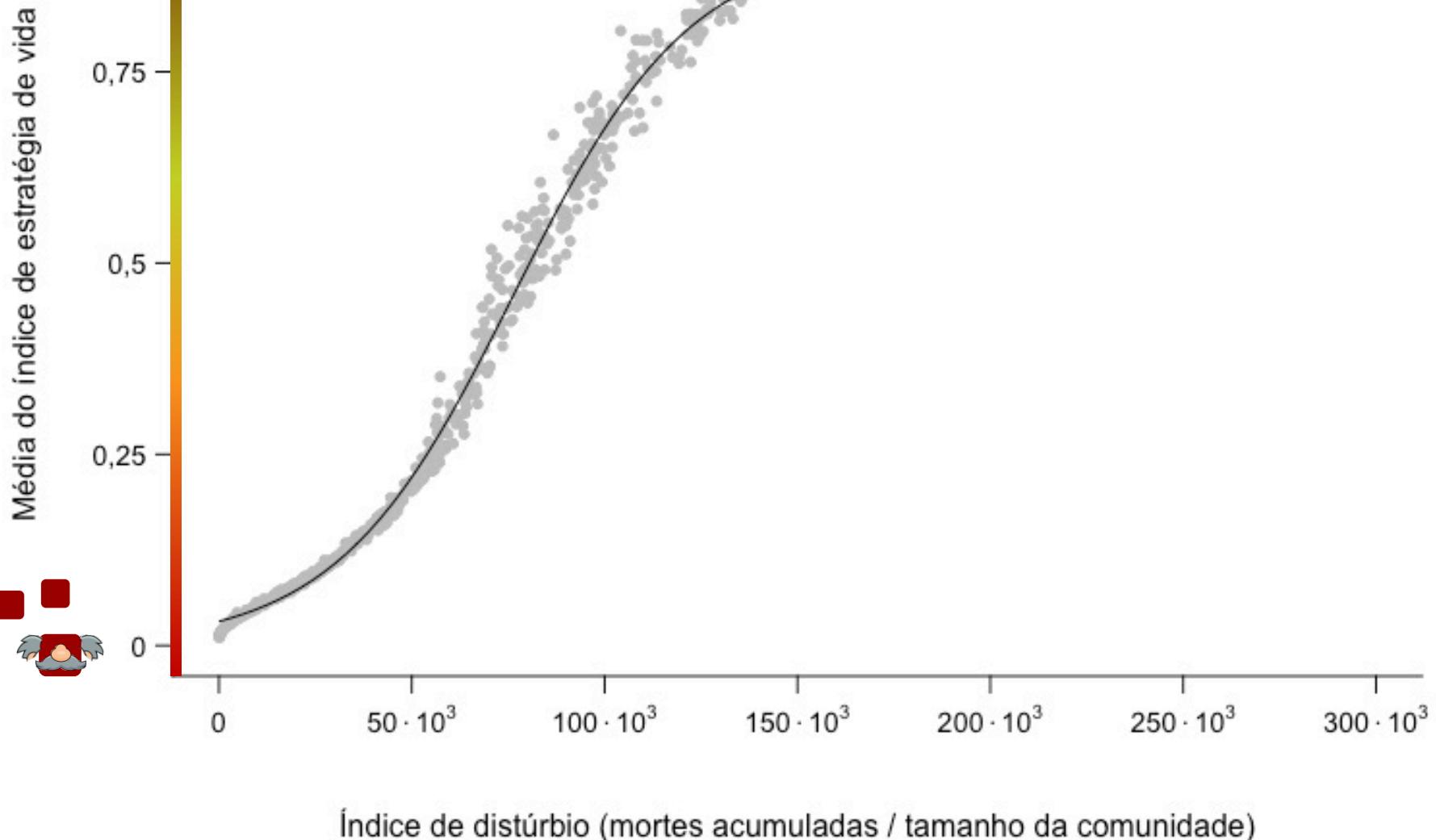
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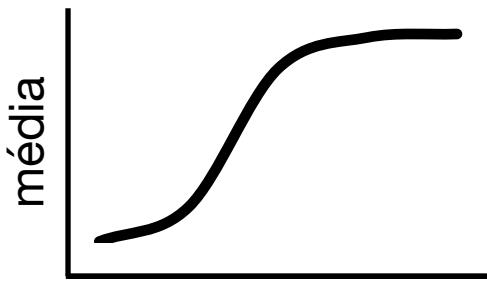
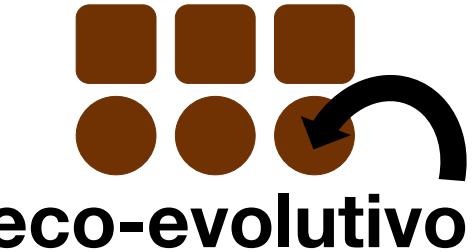
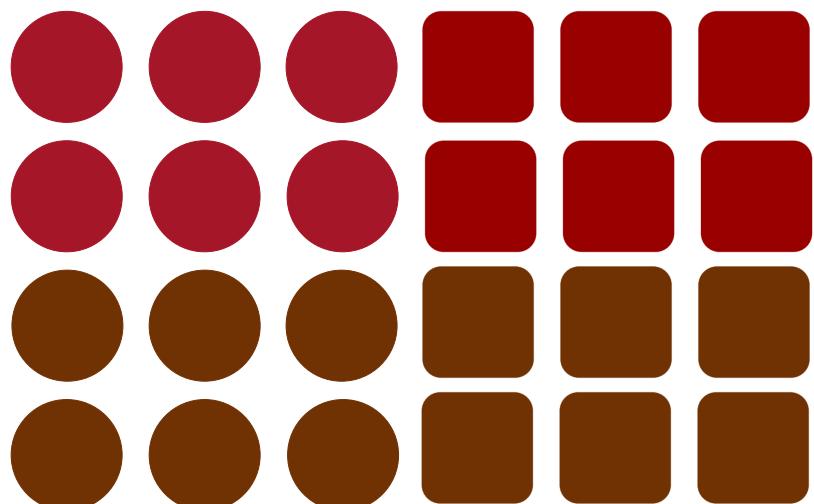


# estratégia média logístico



# estratégia média logístico





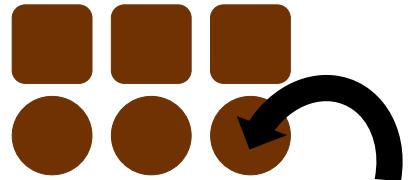
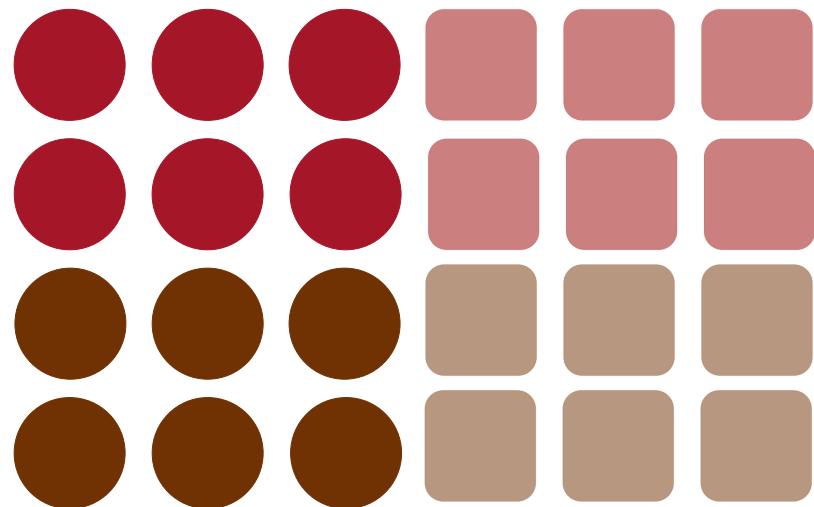
banco

x 48

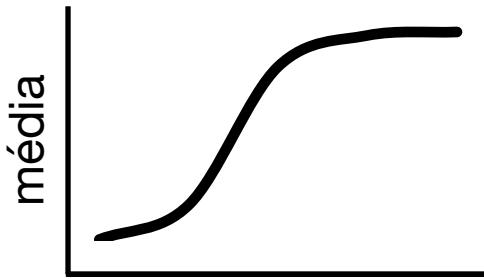
x 12

x 48

x 12



**eco-evolutivo**



# seleção natural

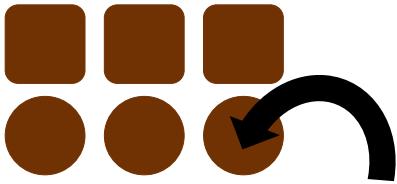
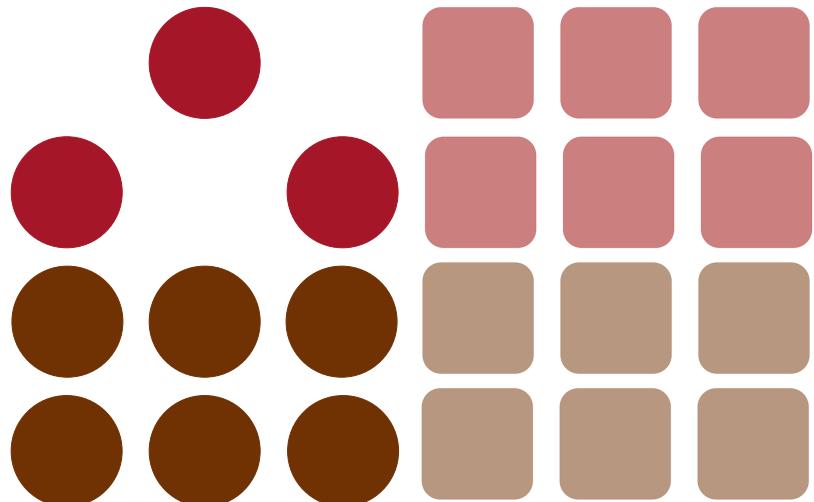
banco

x 48

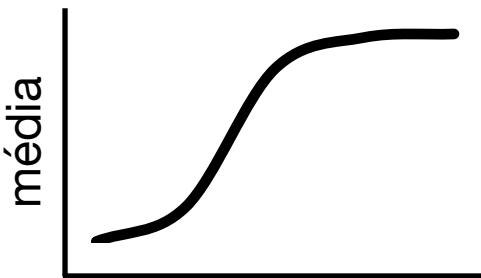
x 12

x 48

x 12



**eco-evolutivo**



# seleção natural

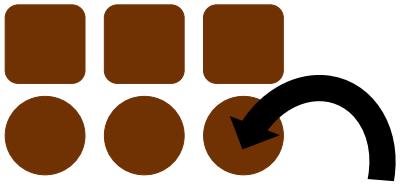
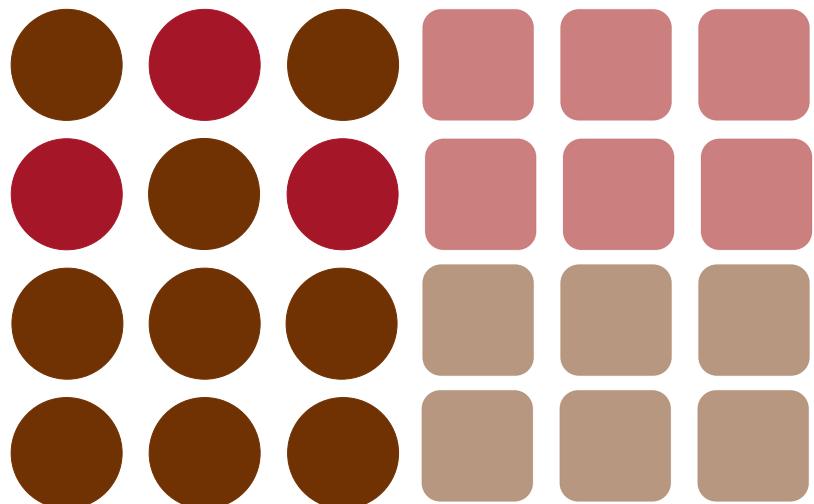
banco

x 72

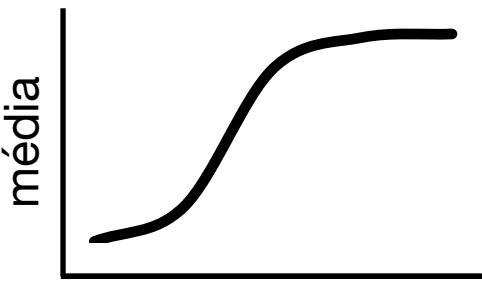
x 6

x 48

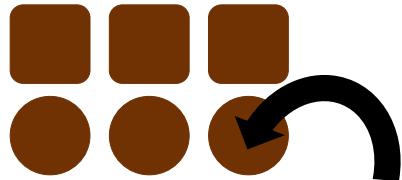
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**eco-evolutivo**



# seleção natural + exclusão competitiva de espécies



**eco-evolutivo**

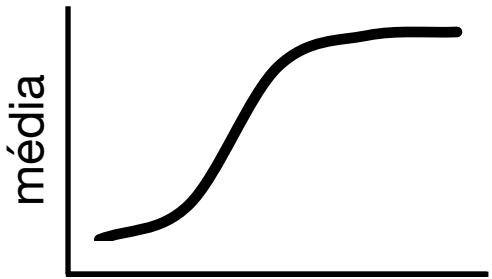
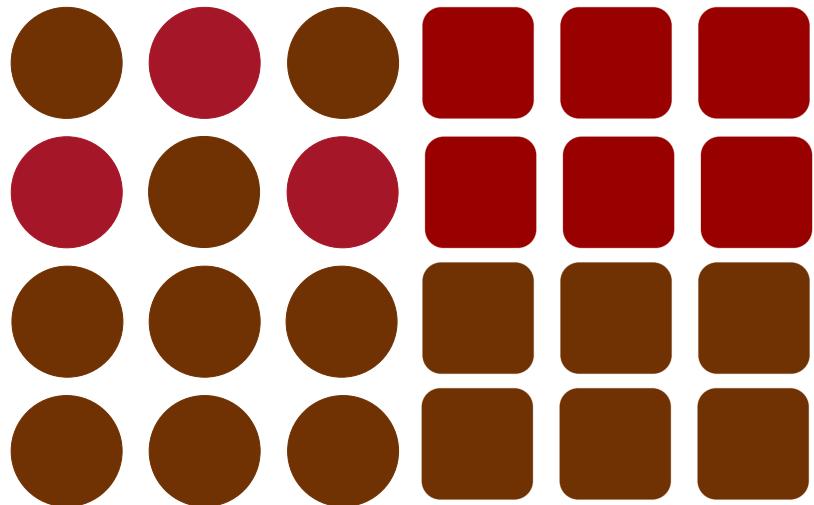
banco

 x 72

 x 6

 x 48

 x 12



# seleção natural + exclusão competitiva de espécies

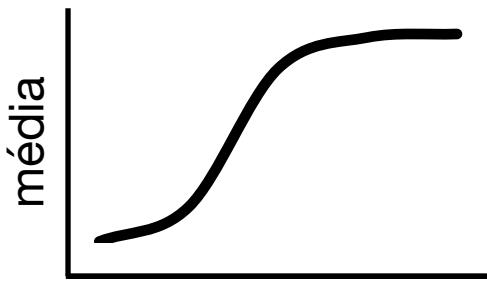
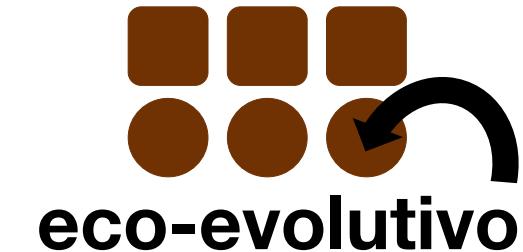
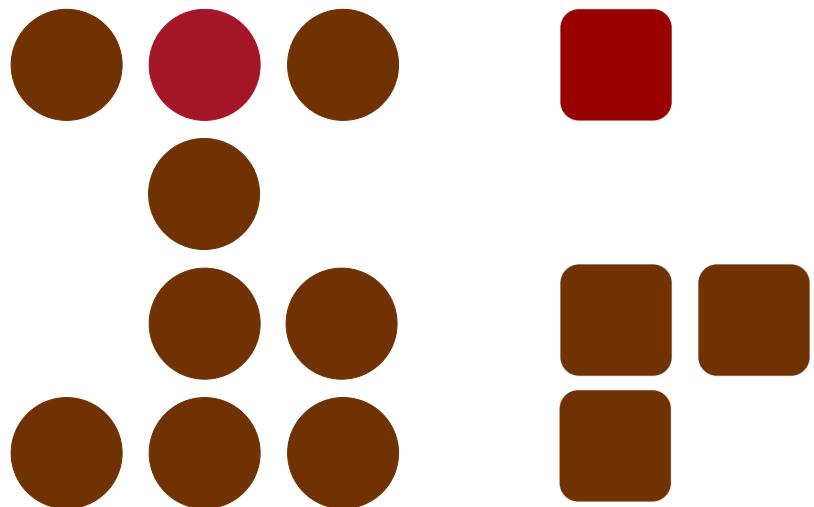
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x 72

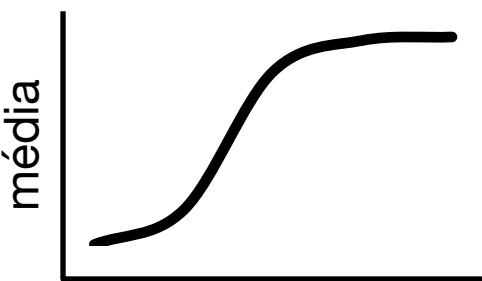
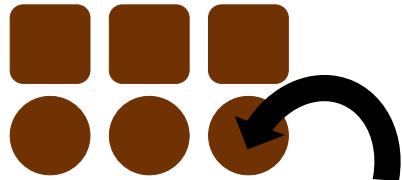
x 6

x 48

x 12



# seleção natural + exclusão competitiva de espécies



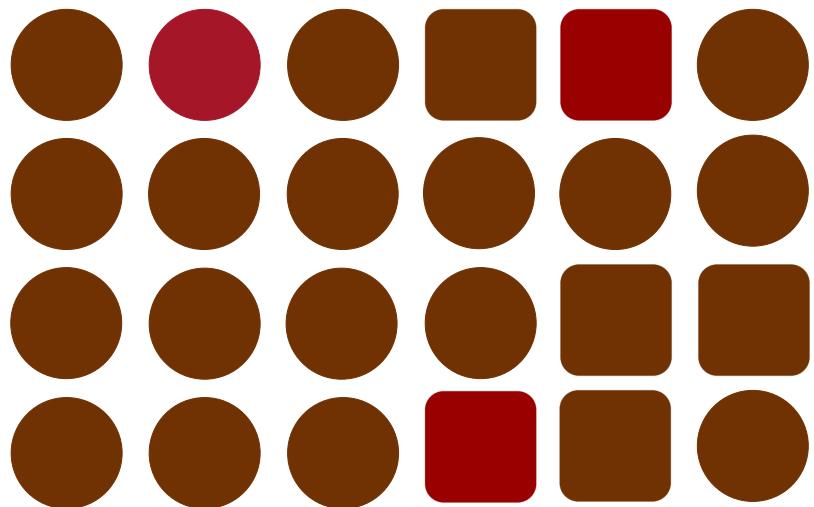
banco

● x 136

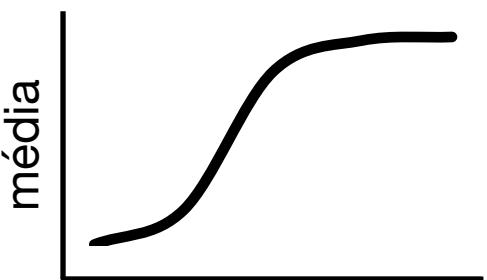
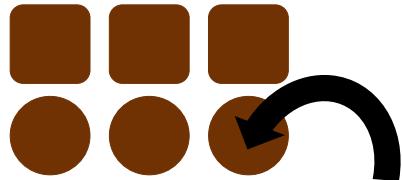
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■ x 32

■ x 4



# seleção natural + exclusão competitiva de espécies



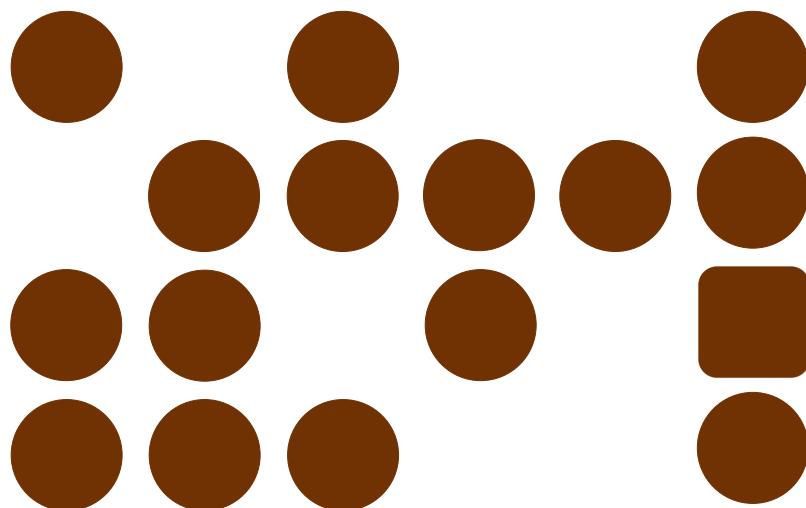
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x 136

x 2

x 32

x 4

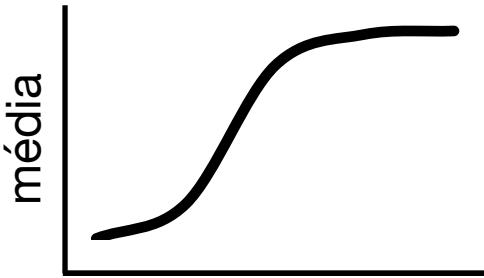
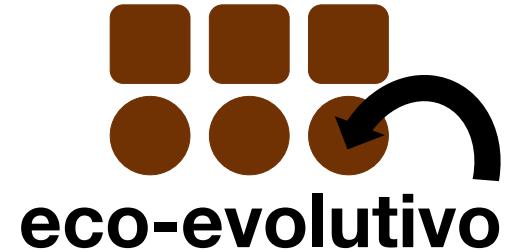
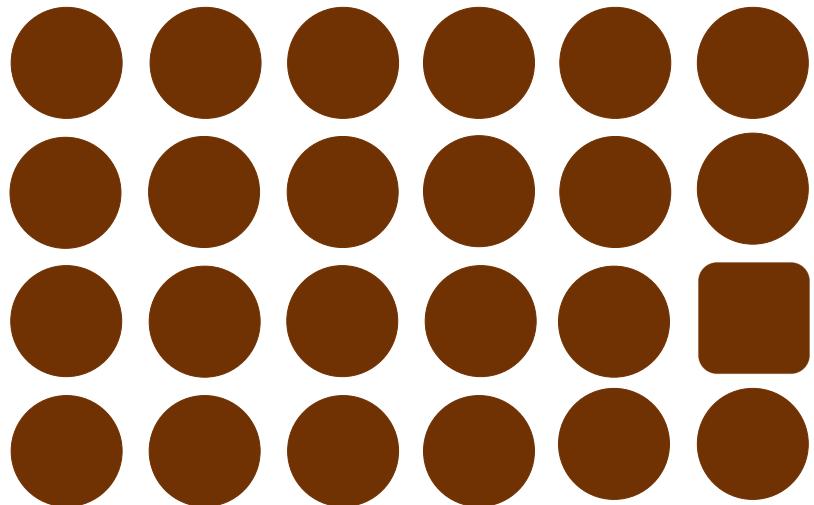


# seleção natural + exclusão competitiva de espécies

banco

x 184

x 8

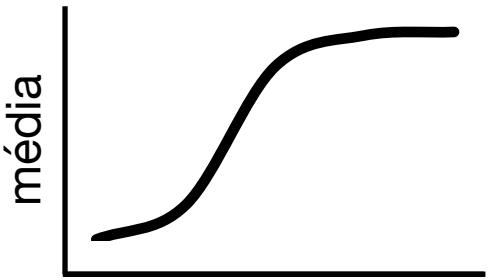
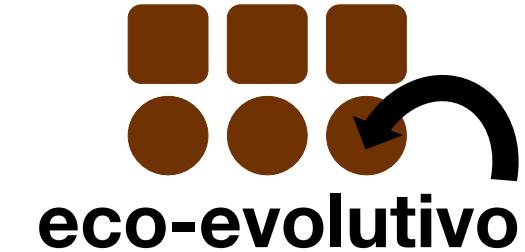
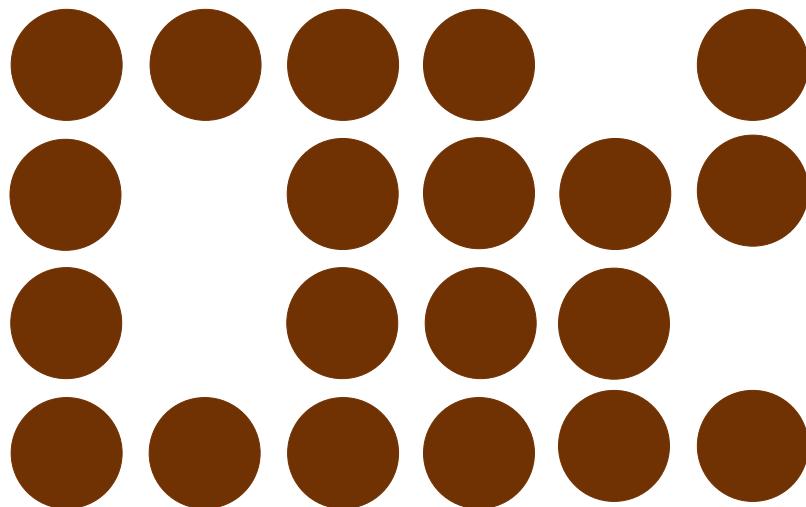


# seleção natural + exclusão competitiva de espécies

banco

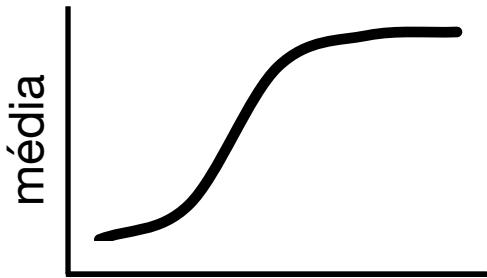
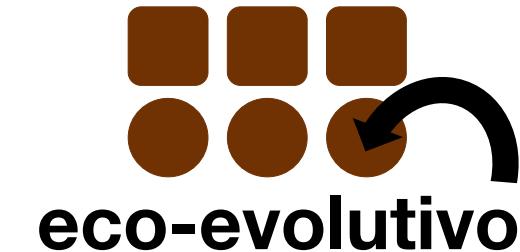
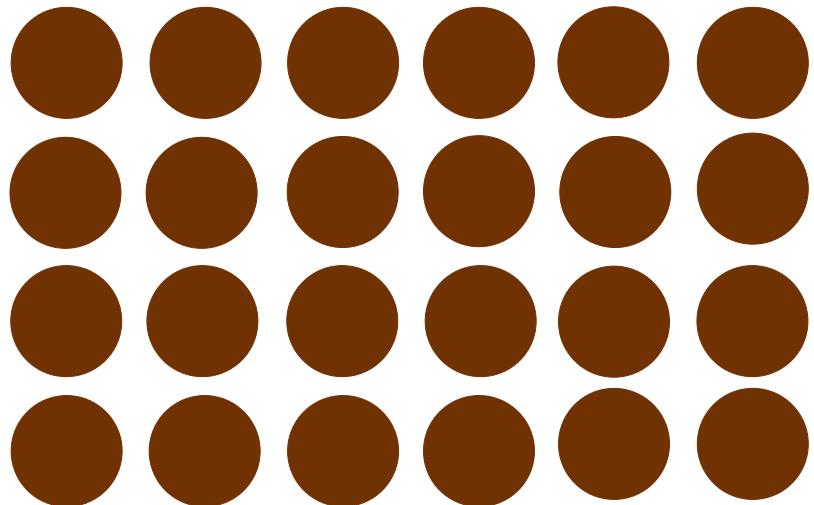
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■ x 8

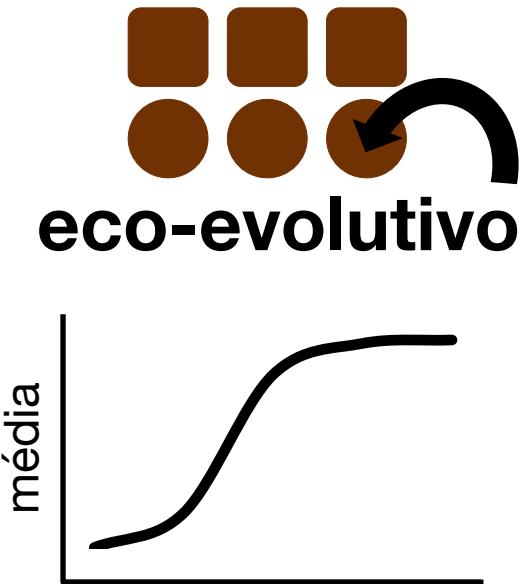
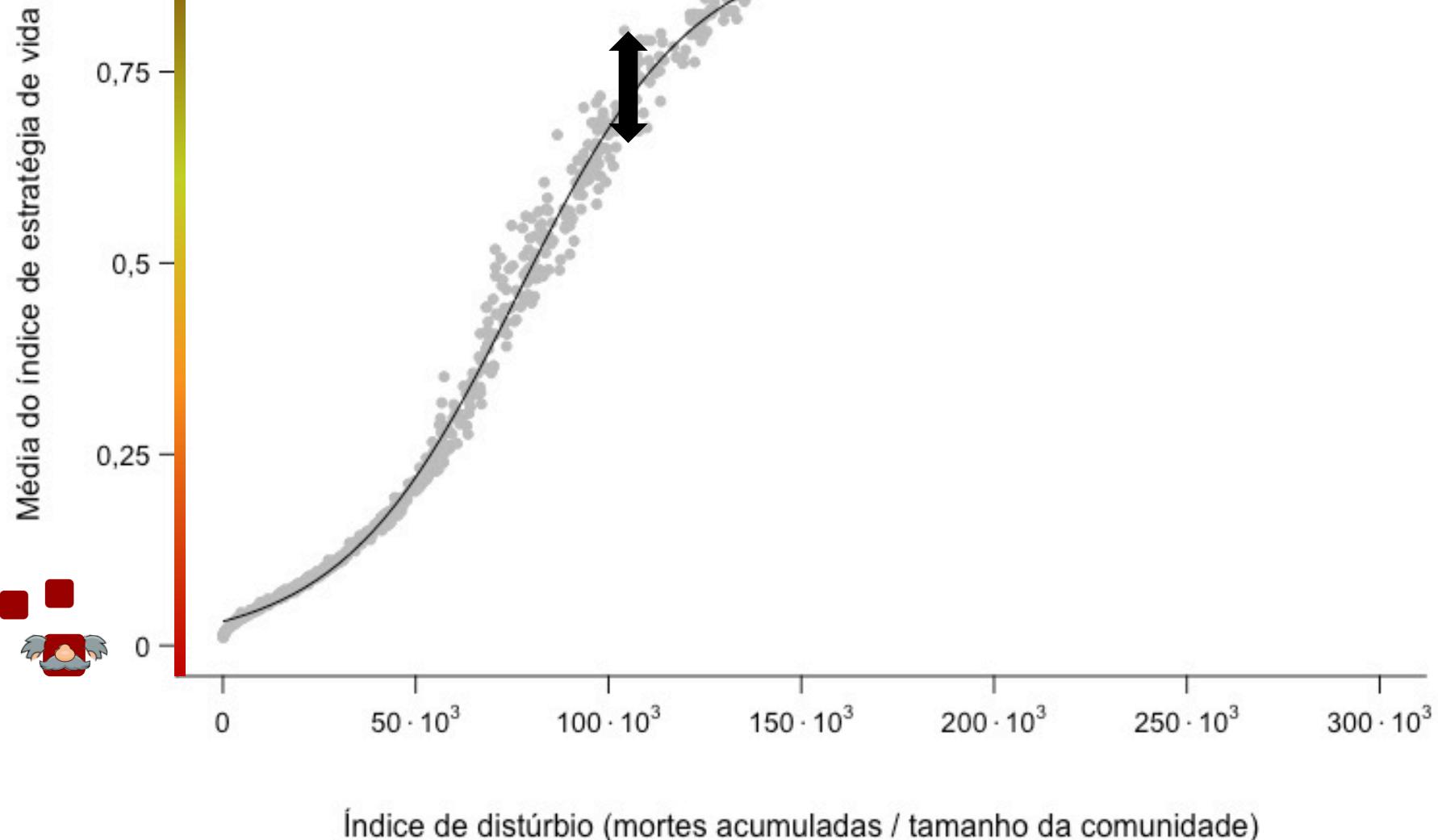


# seleção natural + exclusão competitiva de espécies

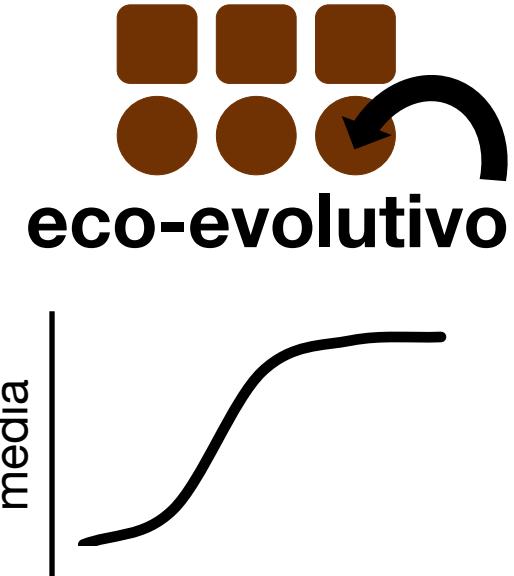
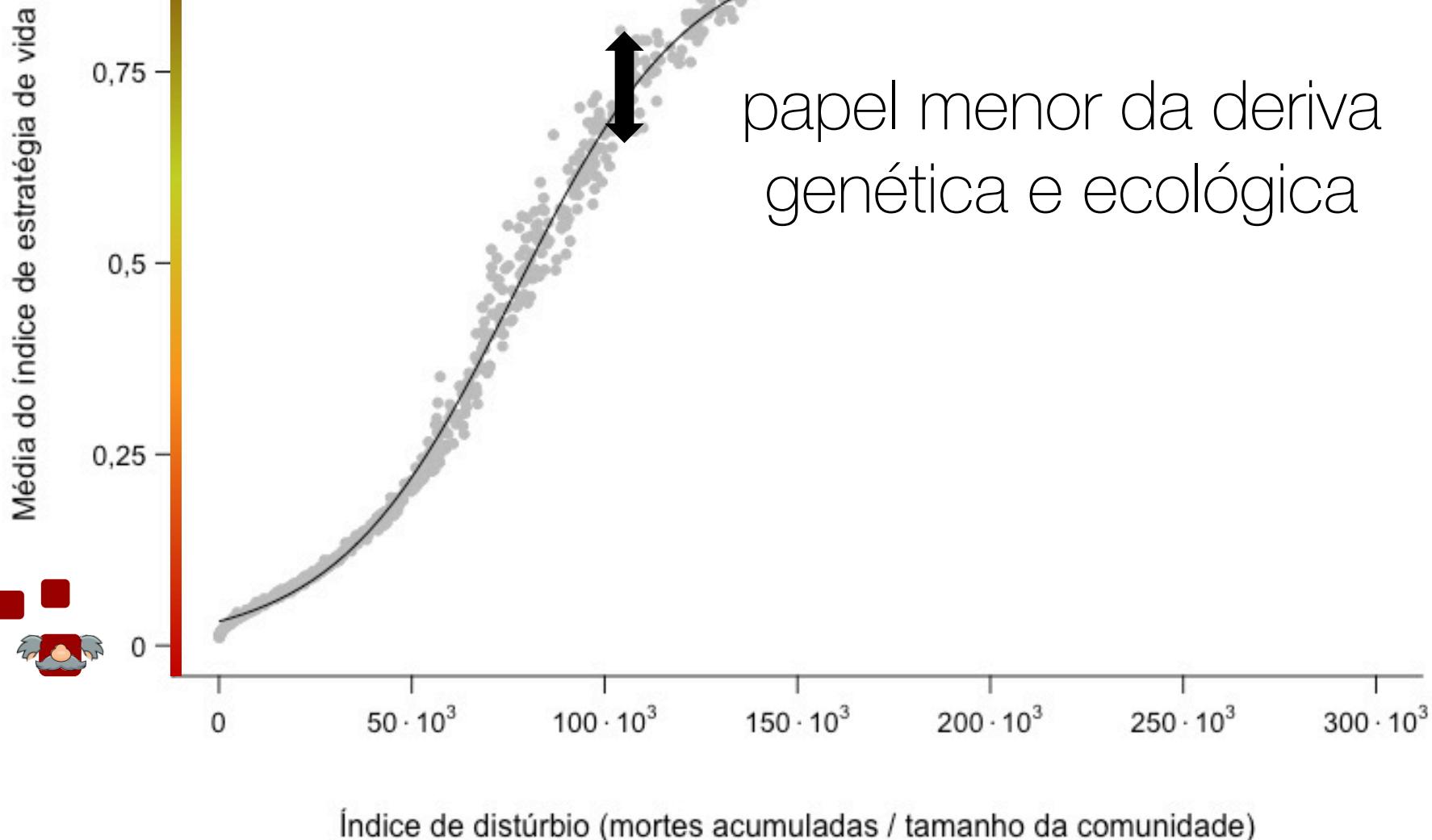
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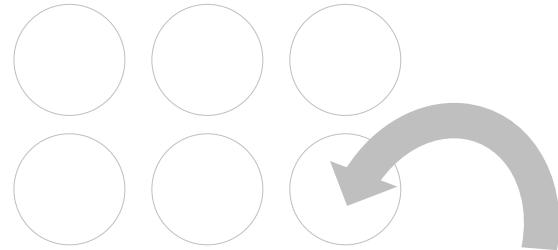
# estratégia média



# estratégia média



## evolutivo

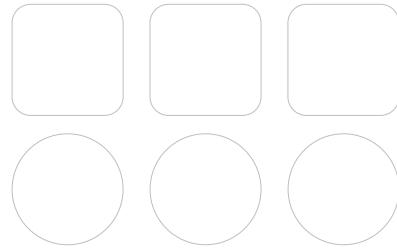


estratégia média

diversidade  
de estratégias

-

## ecológico

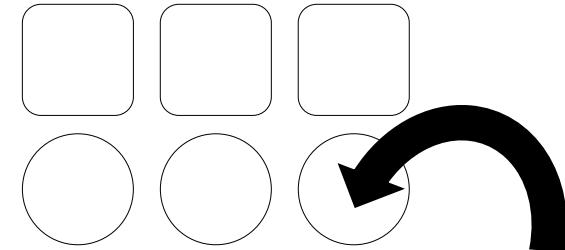


estratégia média

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heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

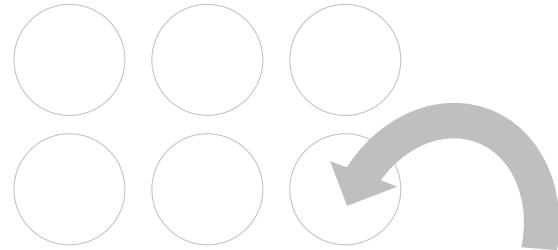


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## evolutivo

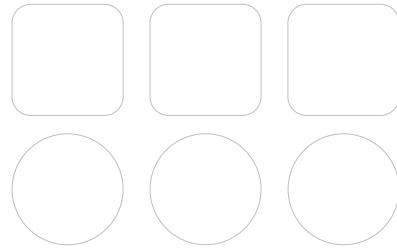


estratégia média

diversidade  
de estratégias

-

## ecológico

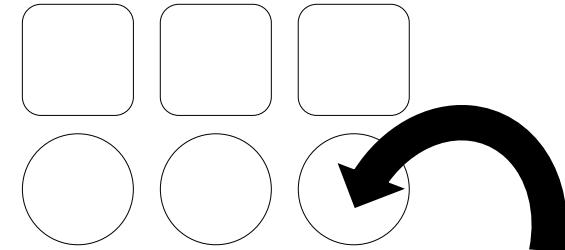


estratégia média

diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

## eco-evolutivo

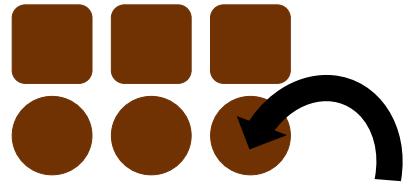


estratégia média

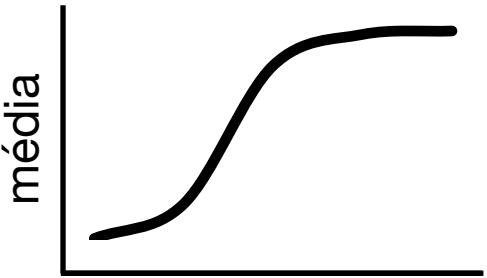
diversidade  
de estratégias

heterogeneidade  
interespecífica de  
estratégias

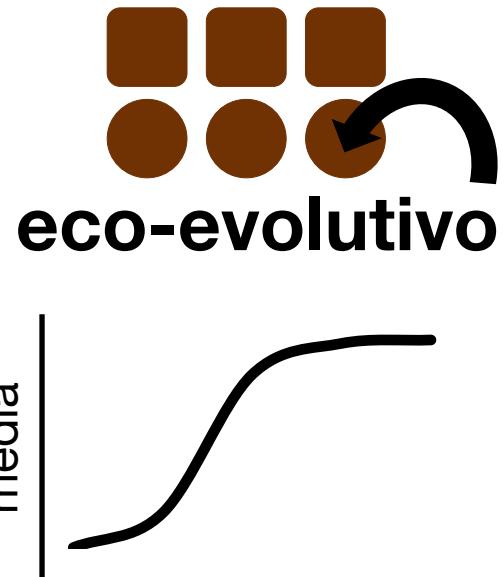
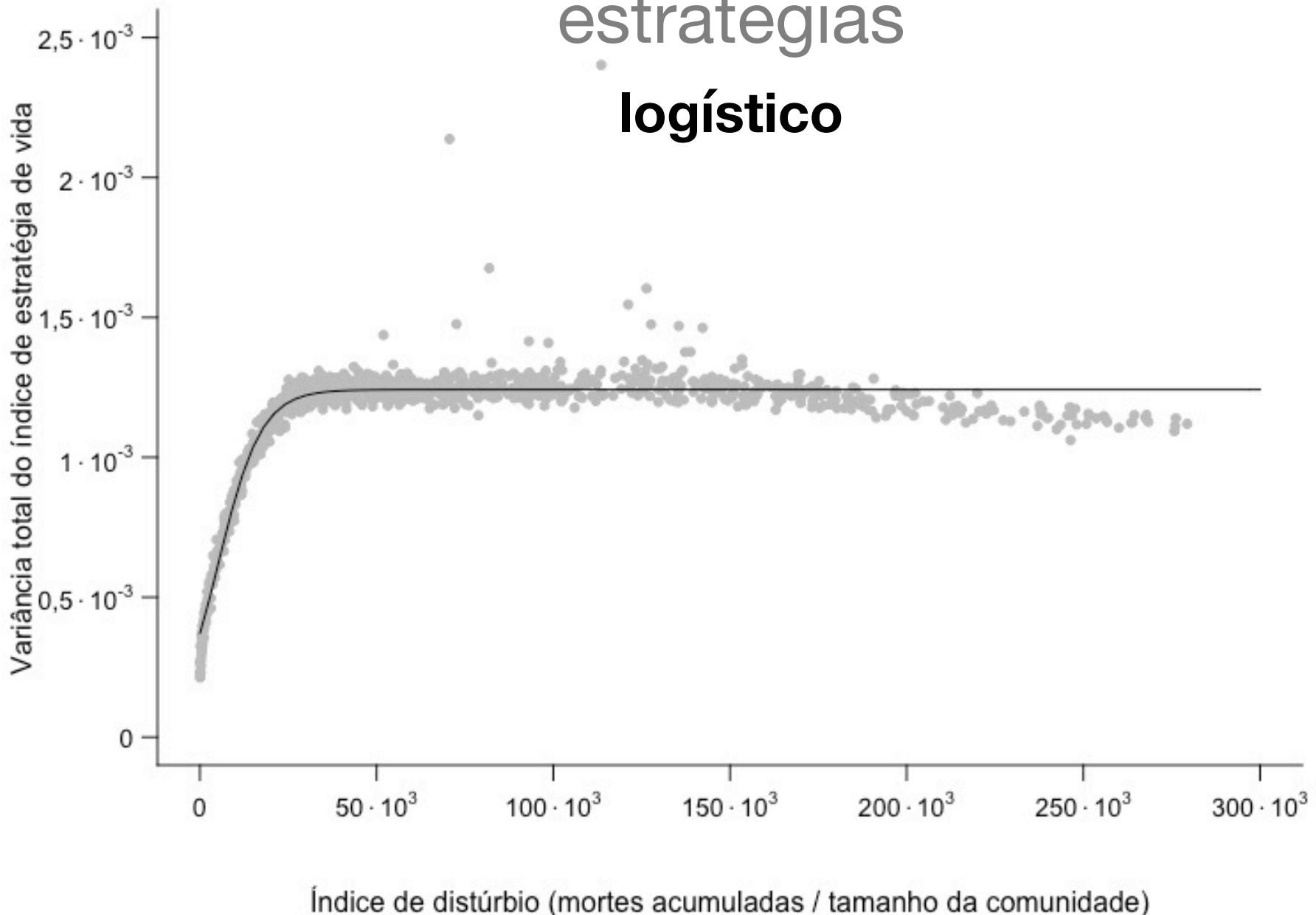
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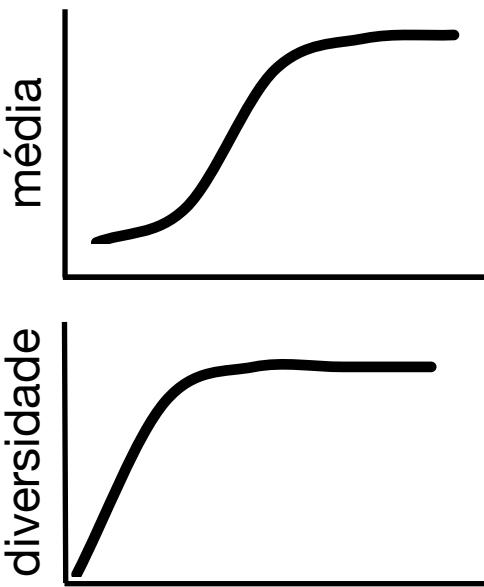
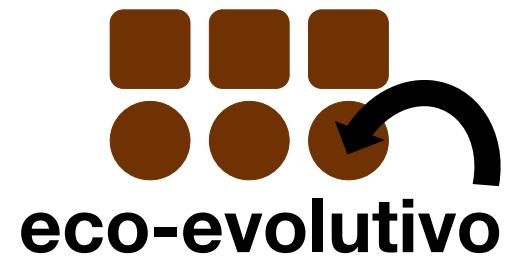
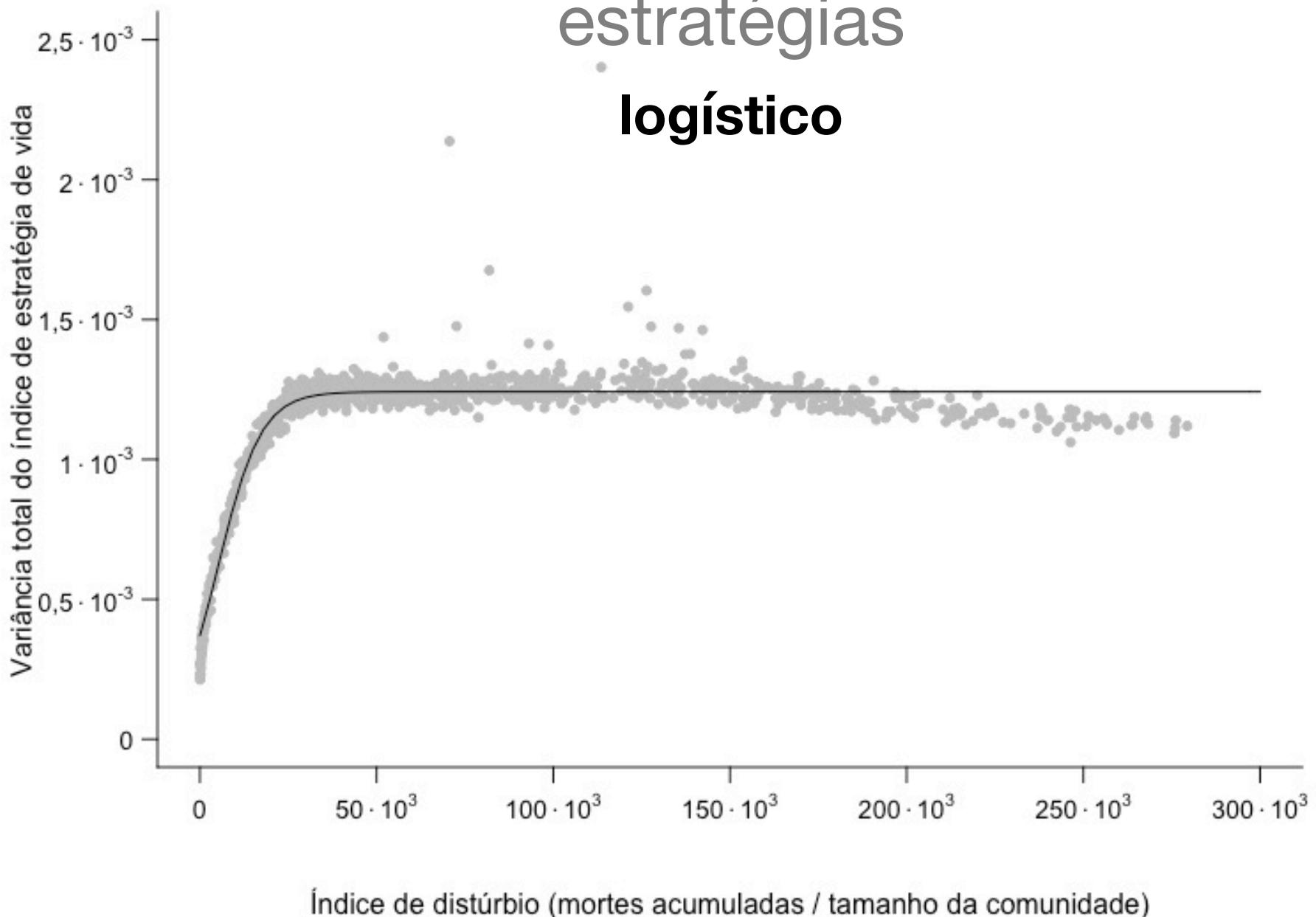
**eco-evolutivo**



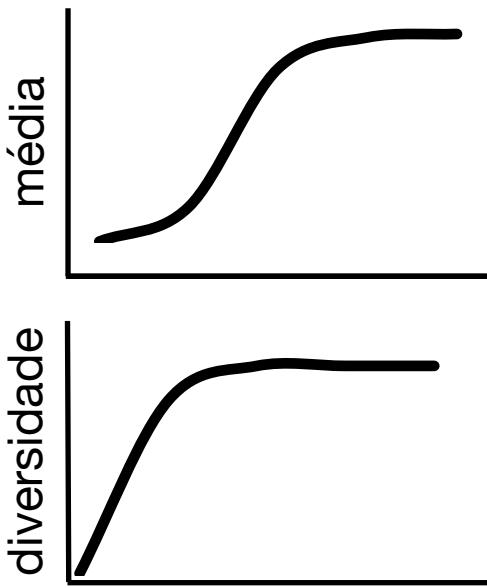
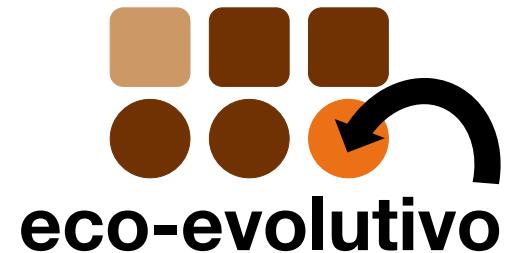
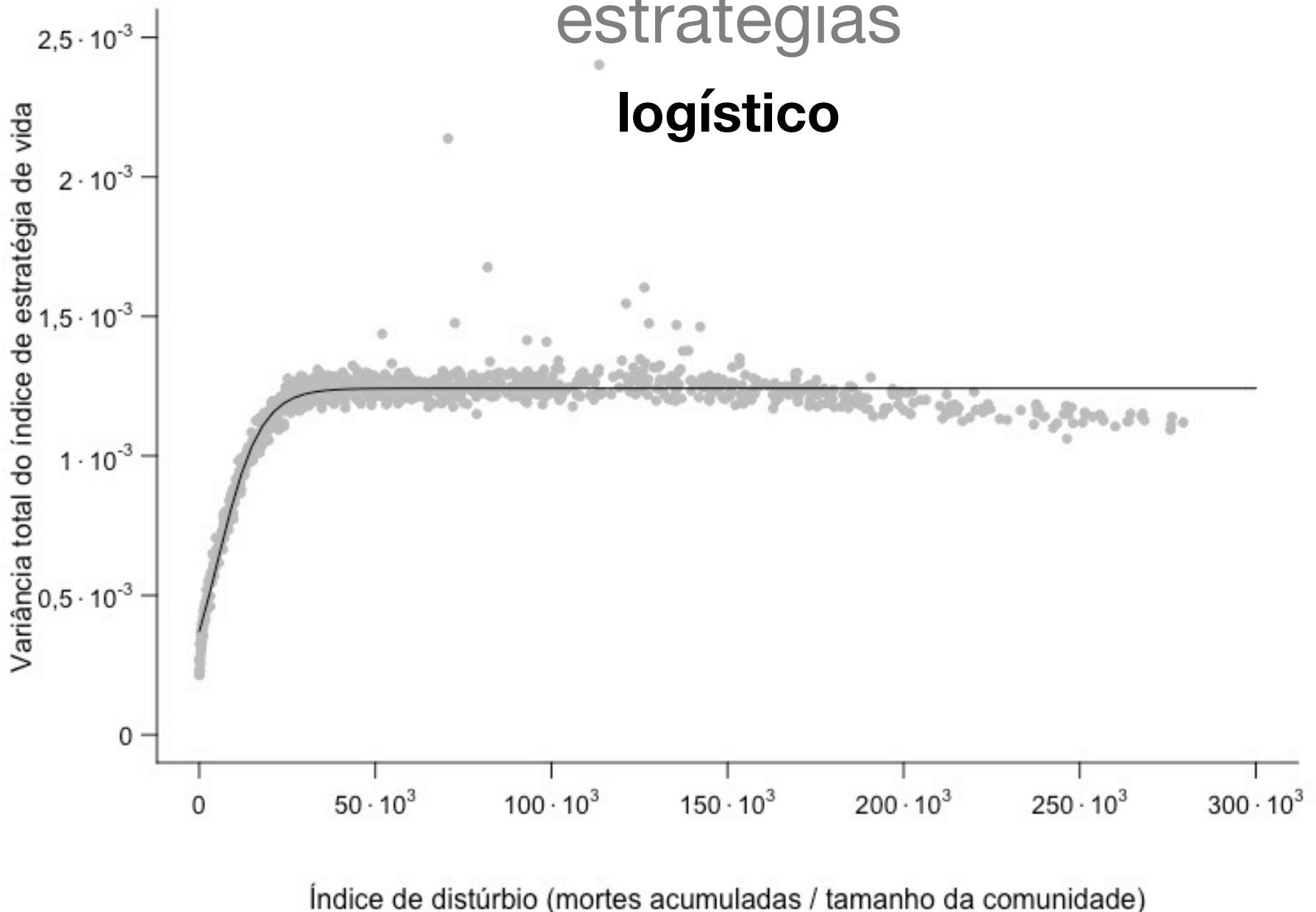
# diversidade de estratégias **logístico**



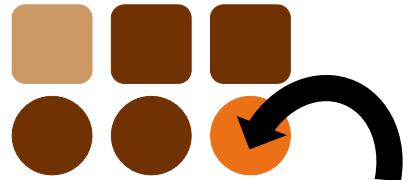
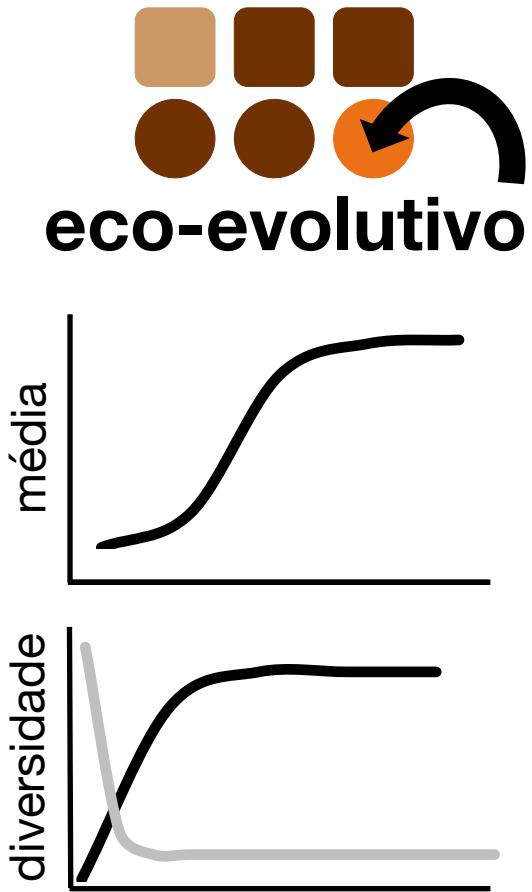
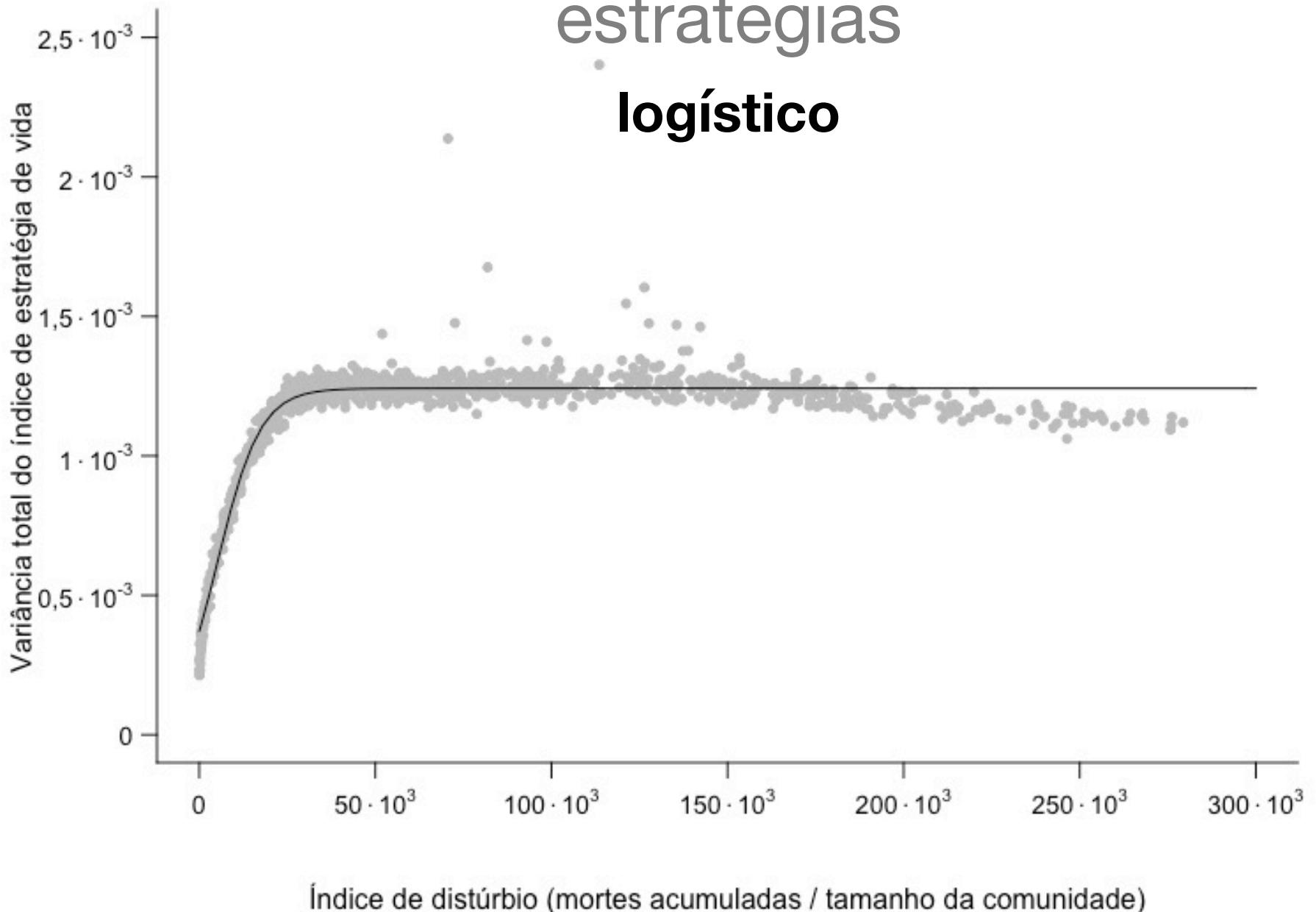
# diversidade de estratégias **logístico**



# diversidade de estratégias logístico

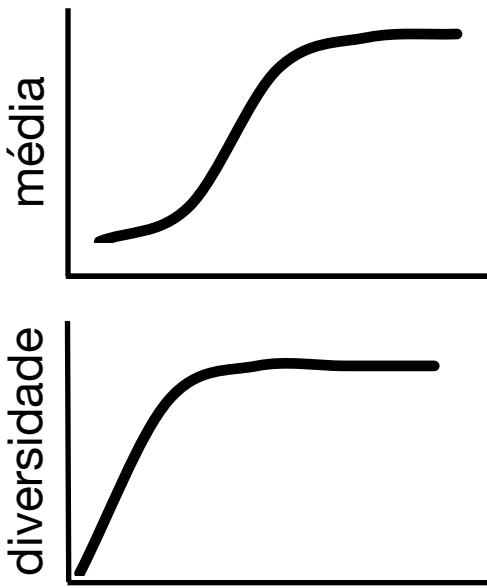
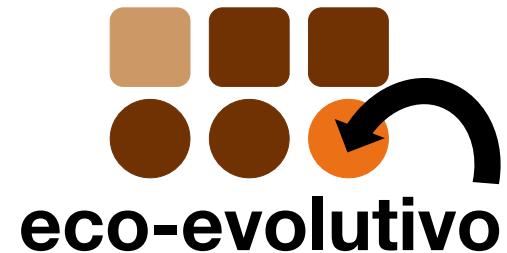
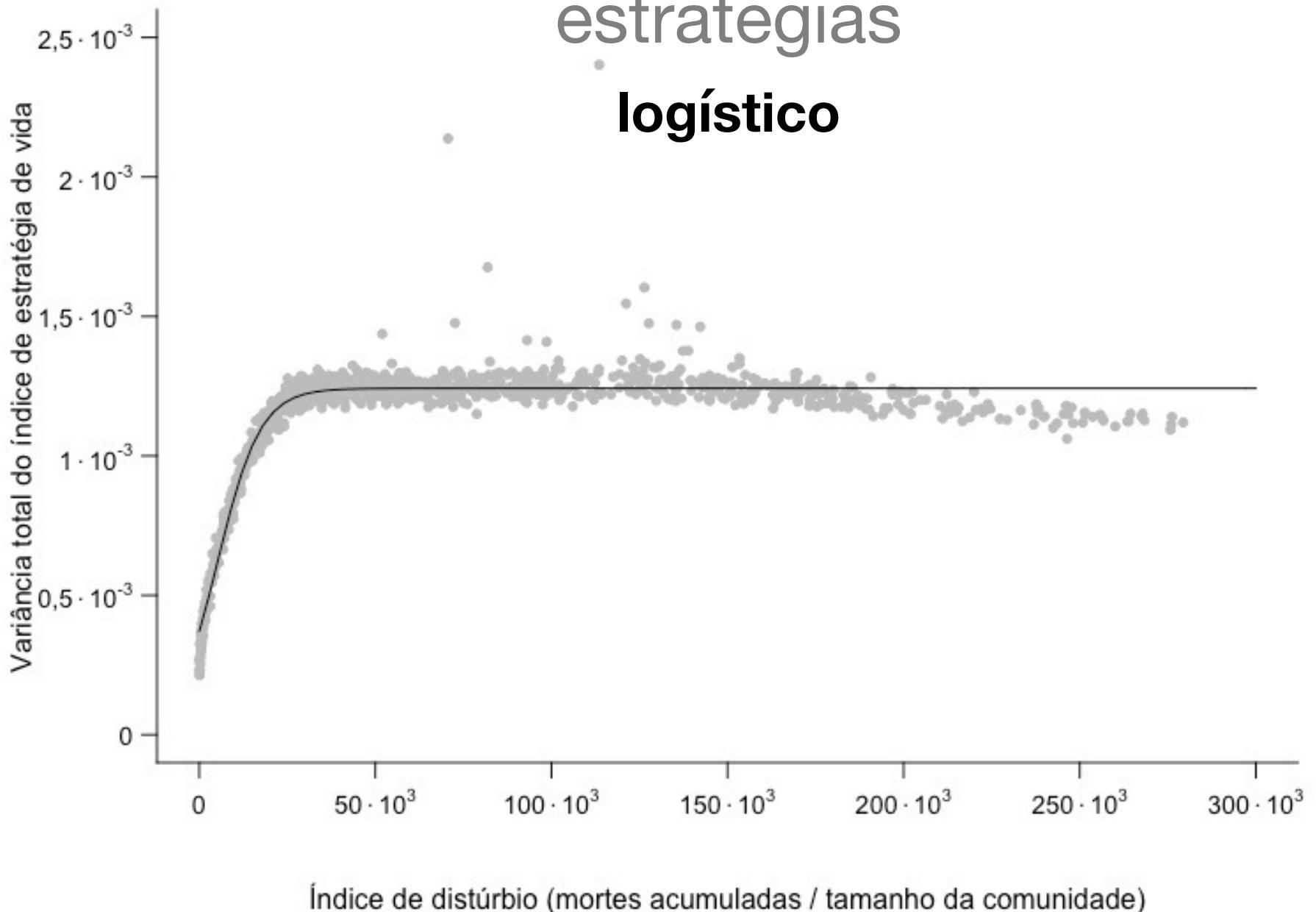


# diversidade de estratégias logístico

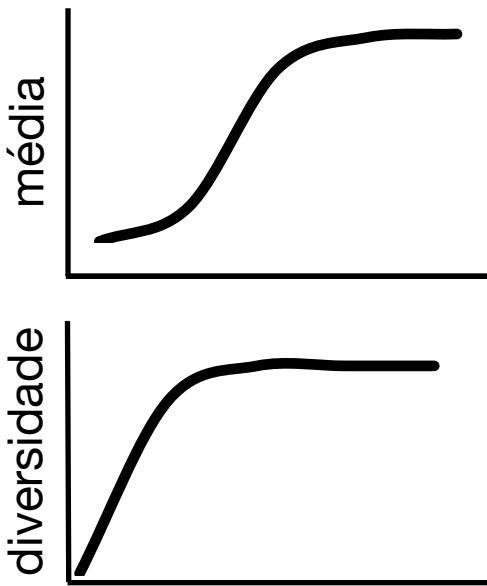
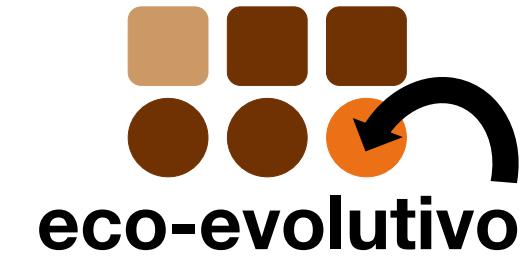
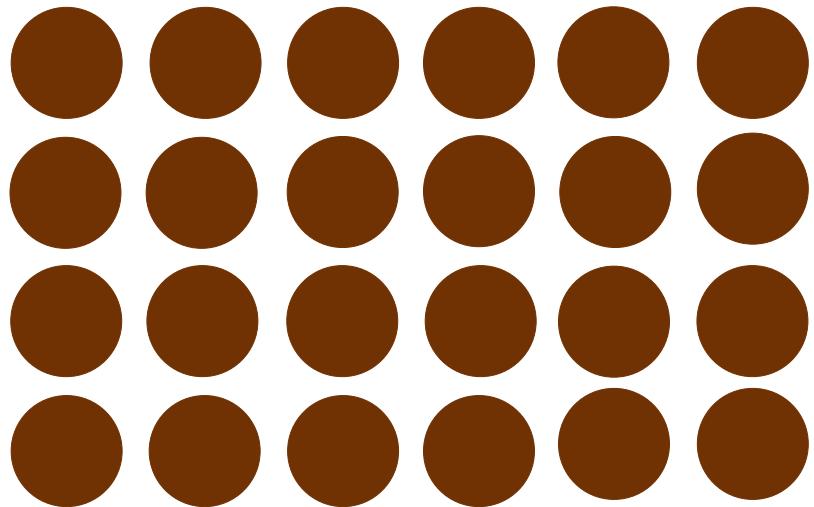


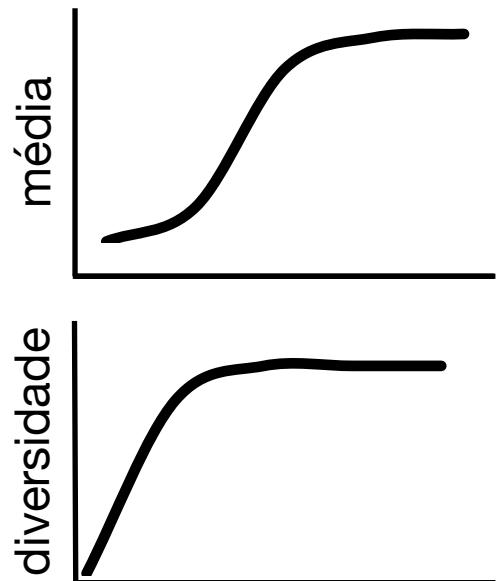
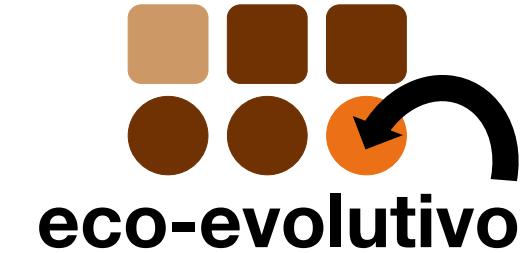
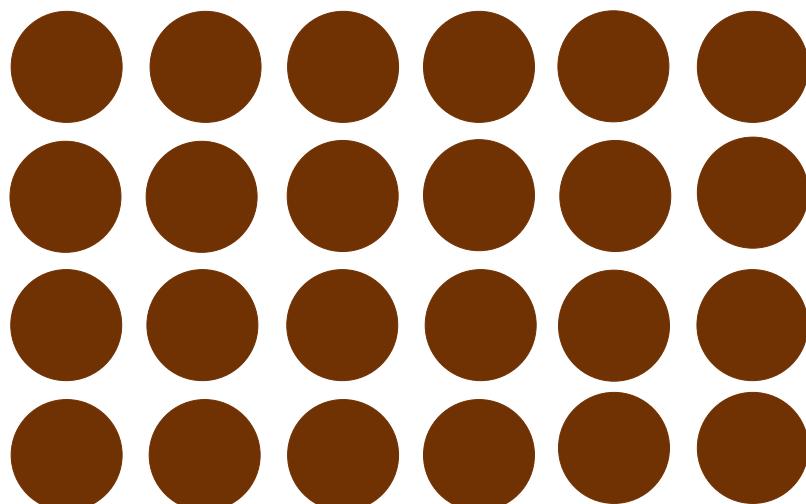
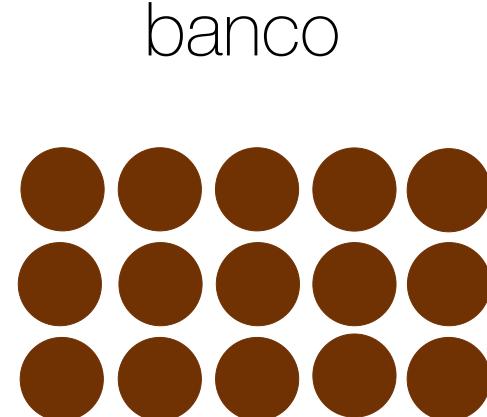
**eco-evolutivo**

# diversidade de estratégias logístico



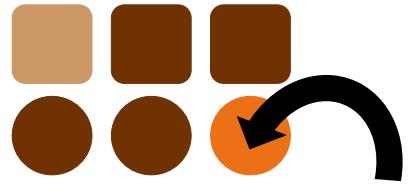
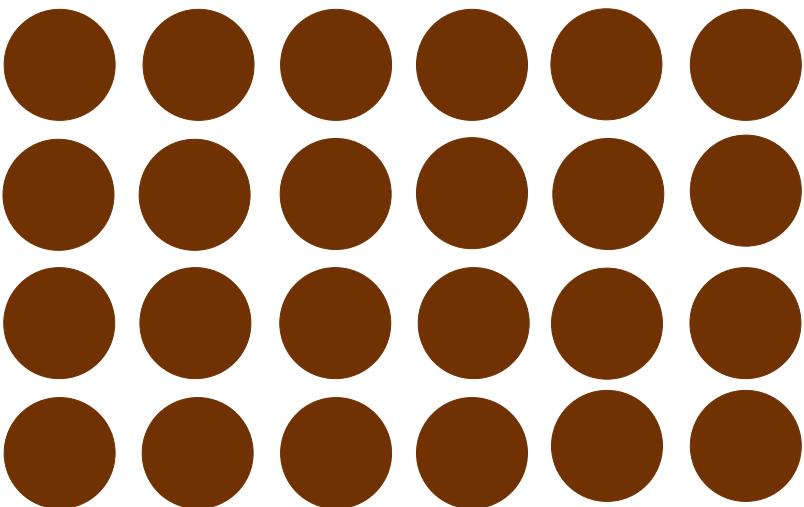
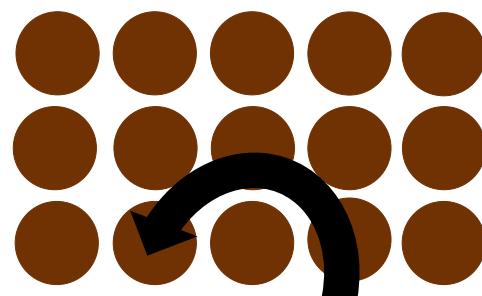
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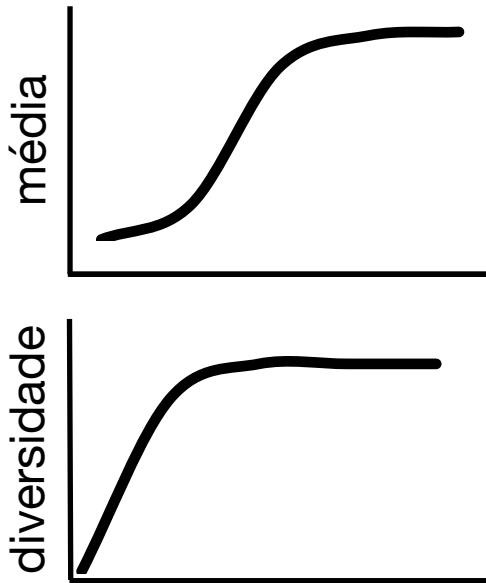


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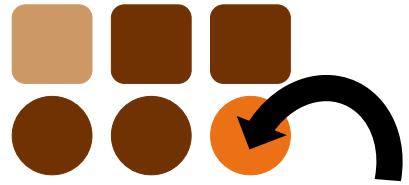
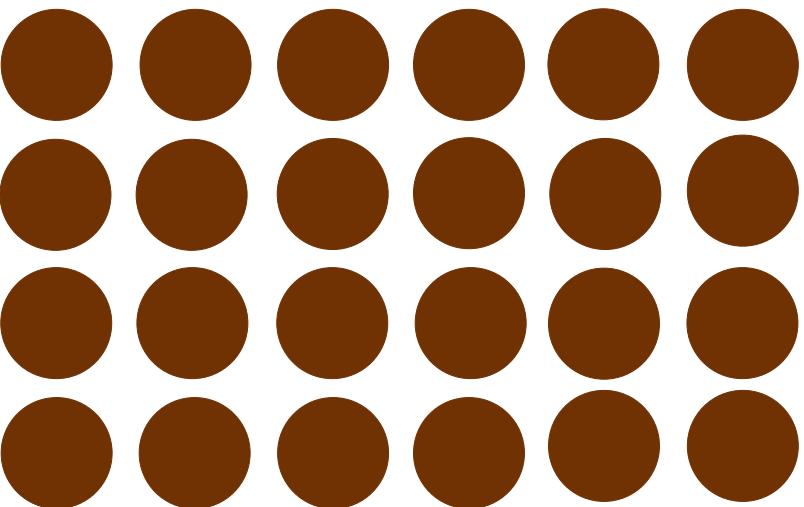
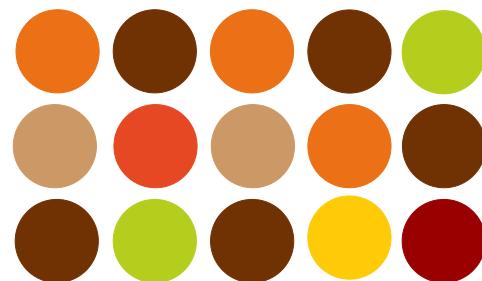


**eco-evolutivo**

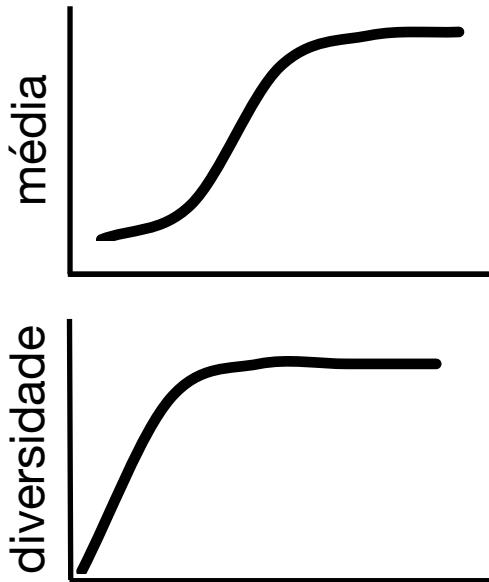


# mutação

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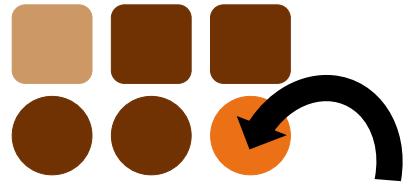
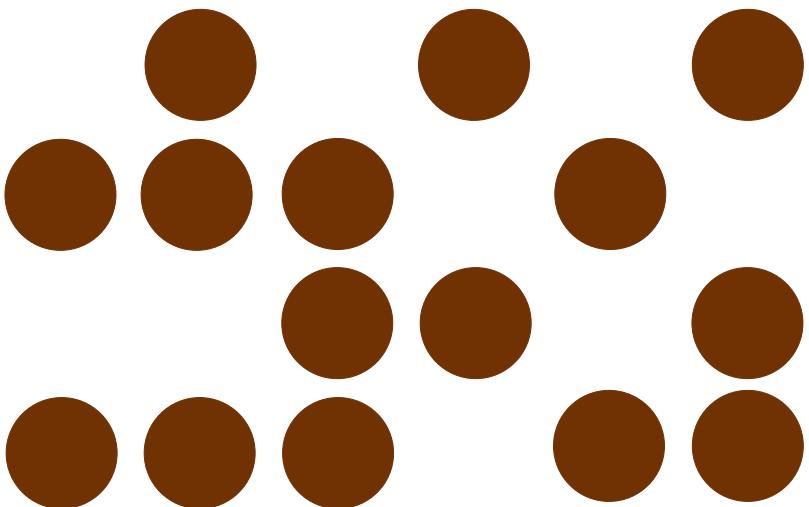
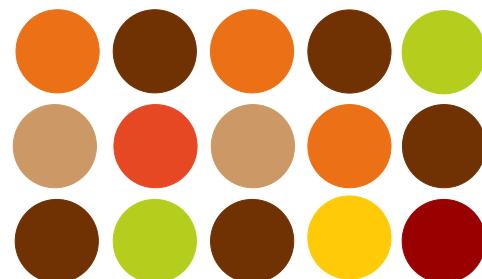


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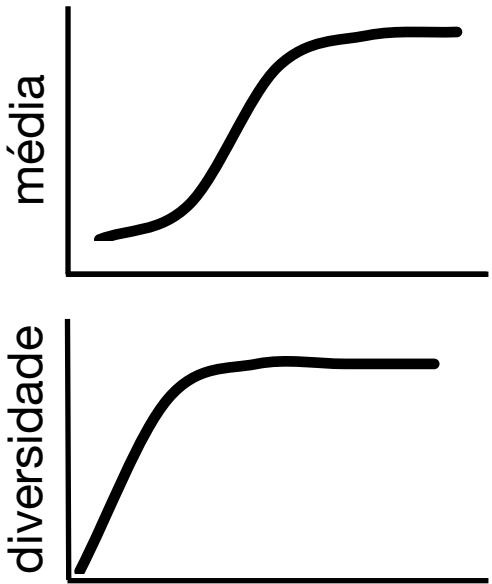


# mutação

banco

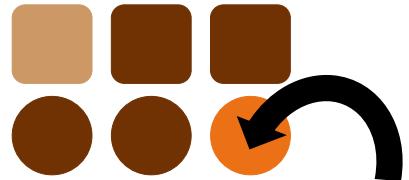
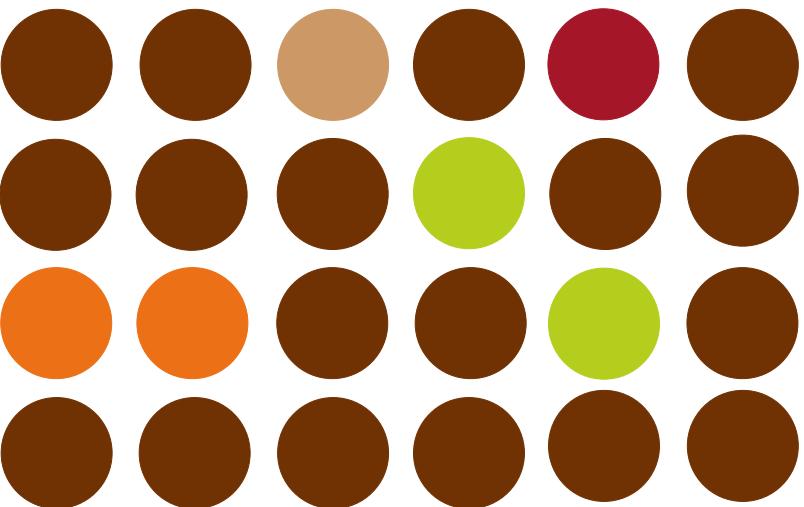
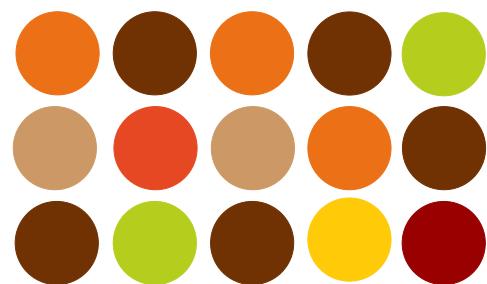


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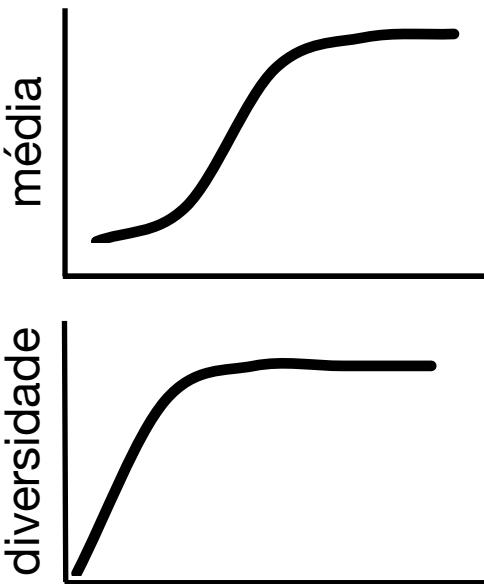


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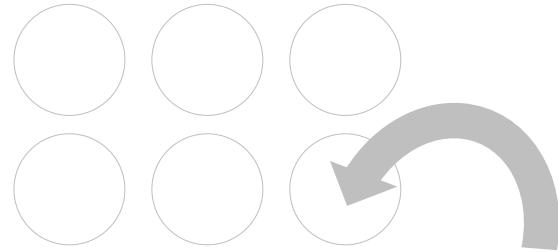
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**eco-evolutivo**



## evolutivo

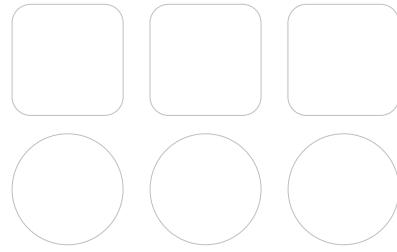


estratégia média

diversidade  
de estratégias

-

## ecológico

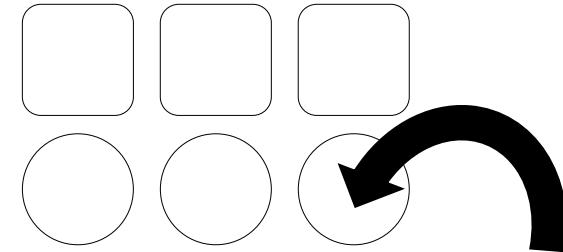


estratégia média

diversidade  
de estratégias

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interespecífica de  
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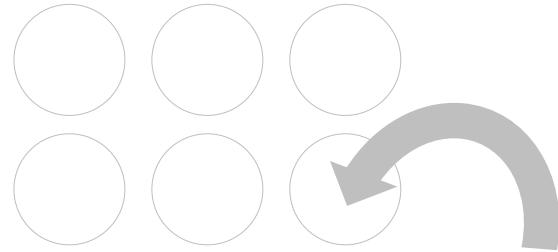


estratégia média

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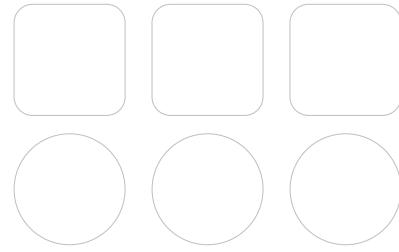


estratégia média

diversidade  
de estratégias

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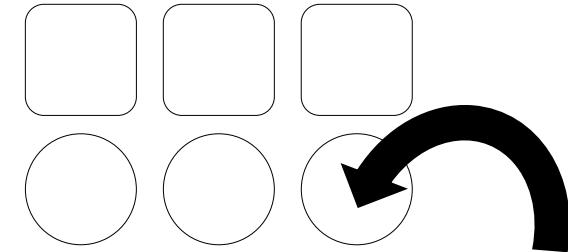


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diversidade  
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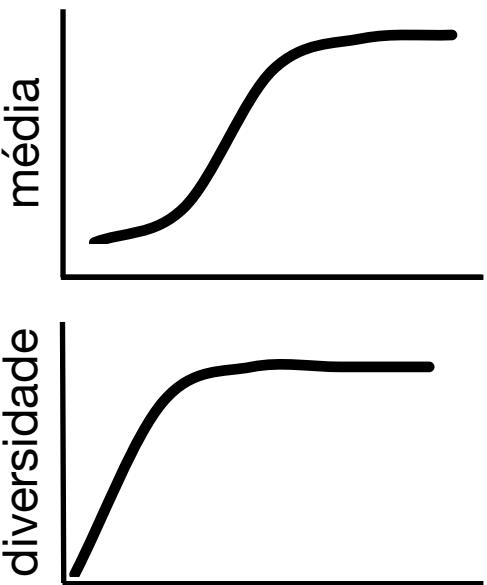
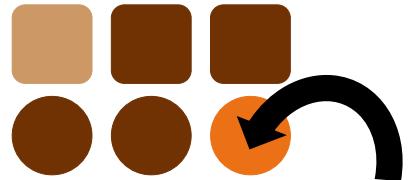


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diversidade  
de estratégias

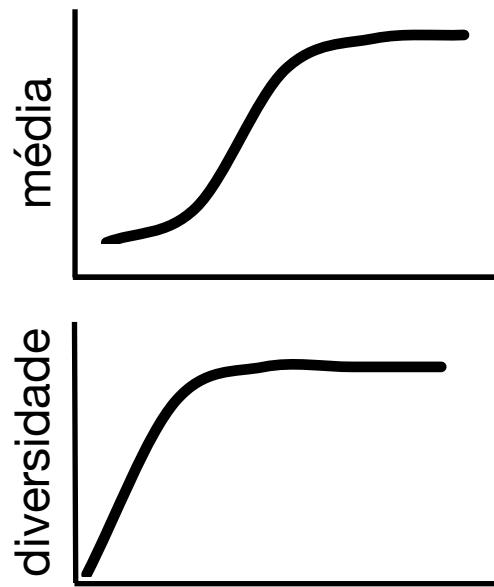
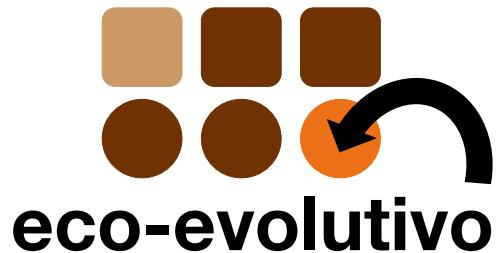
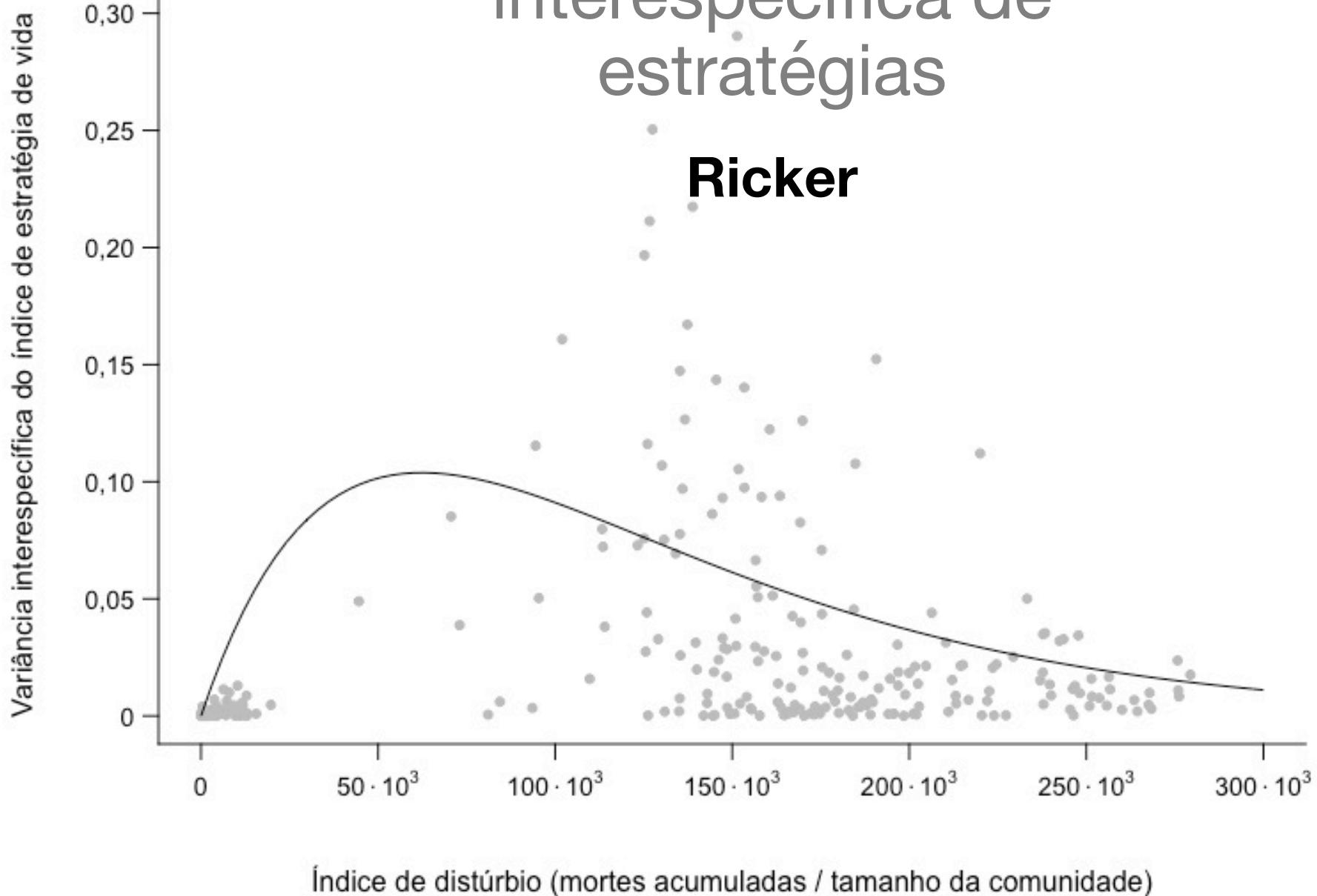
heterogeneidade  
interespecífica de  
estratégias

# heterogeneidade interespecífica de estratégias



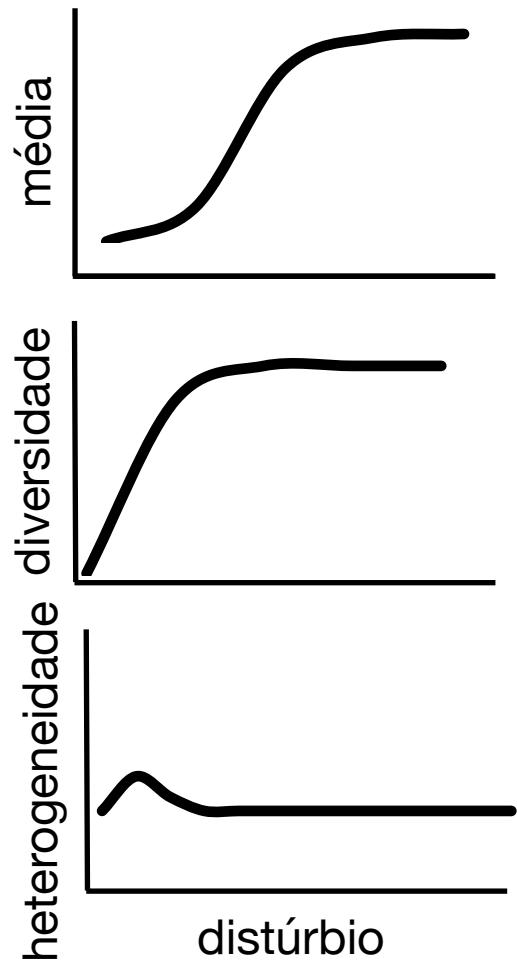
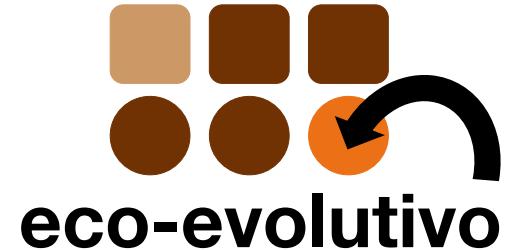
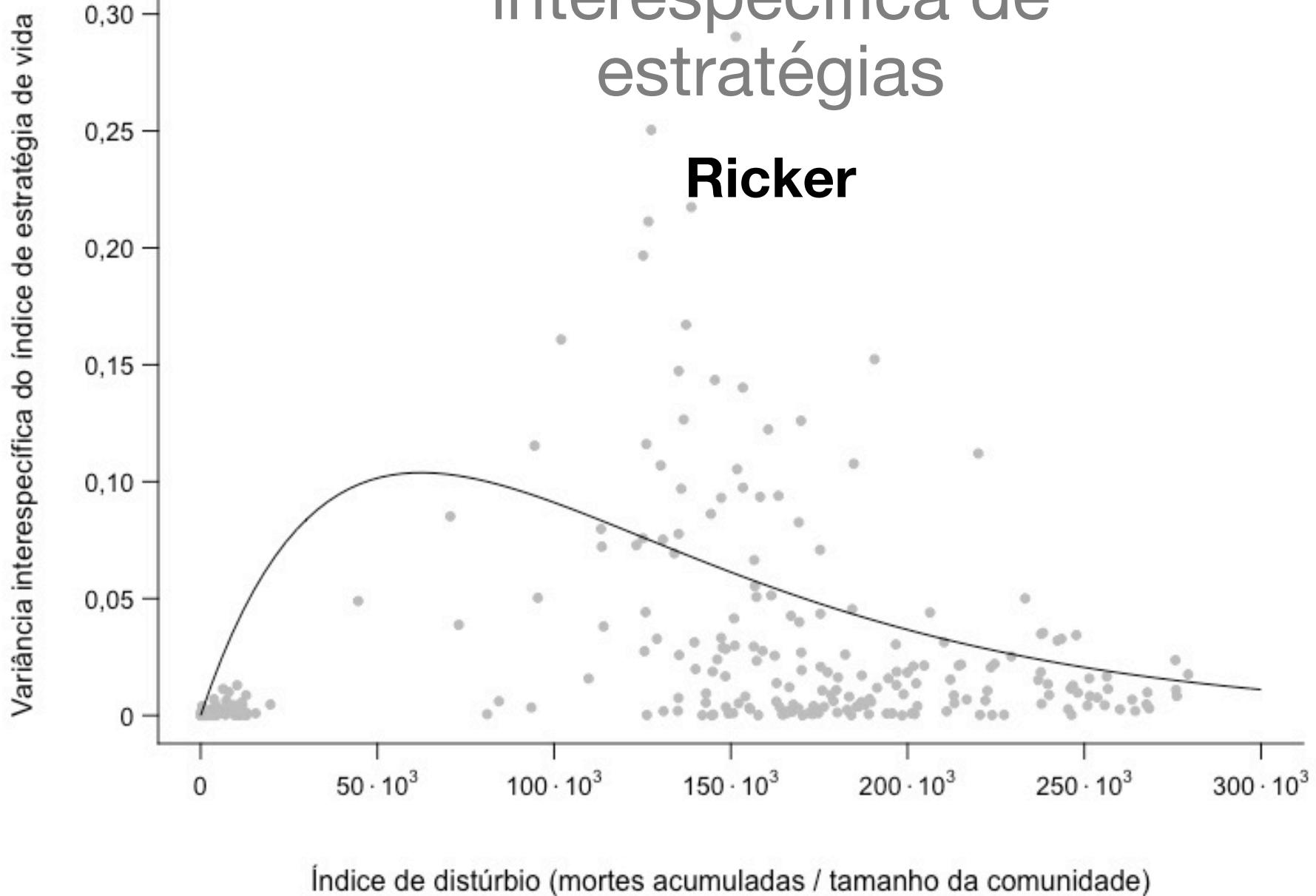
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Ricker



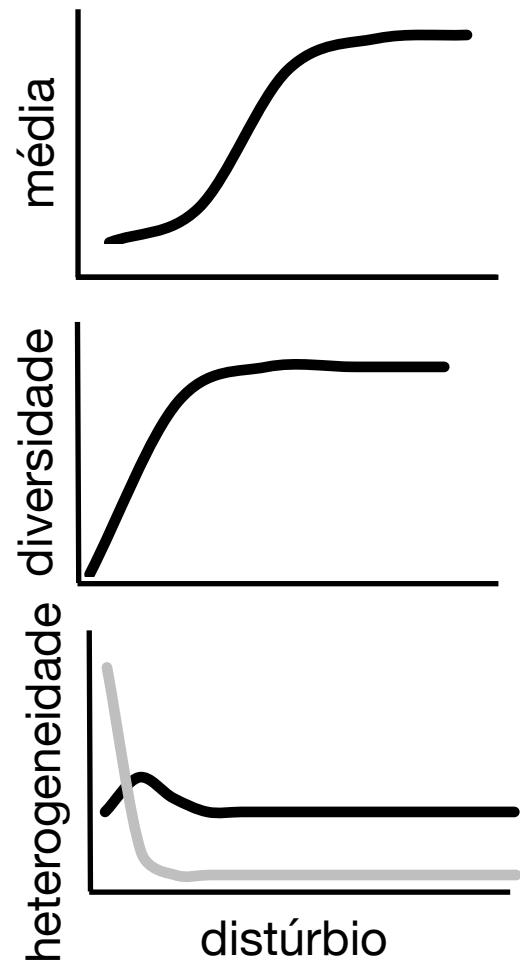
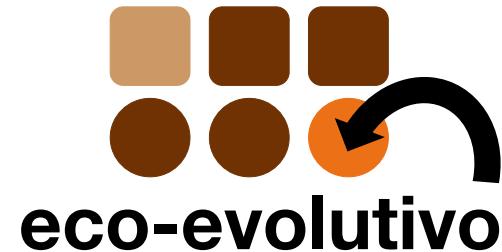
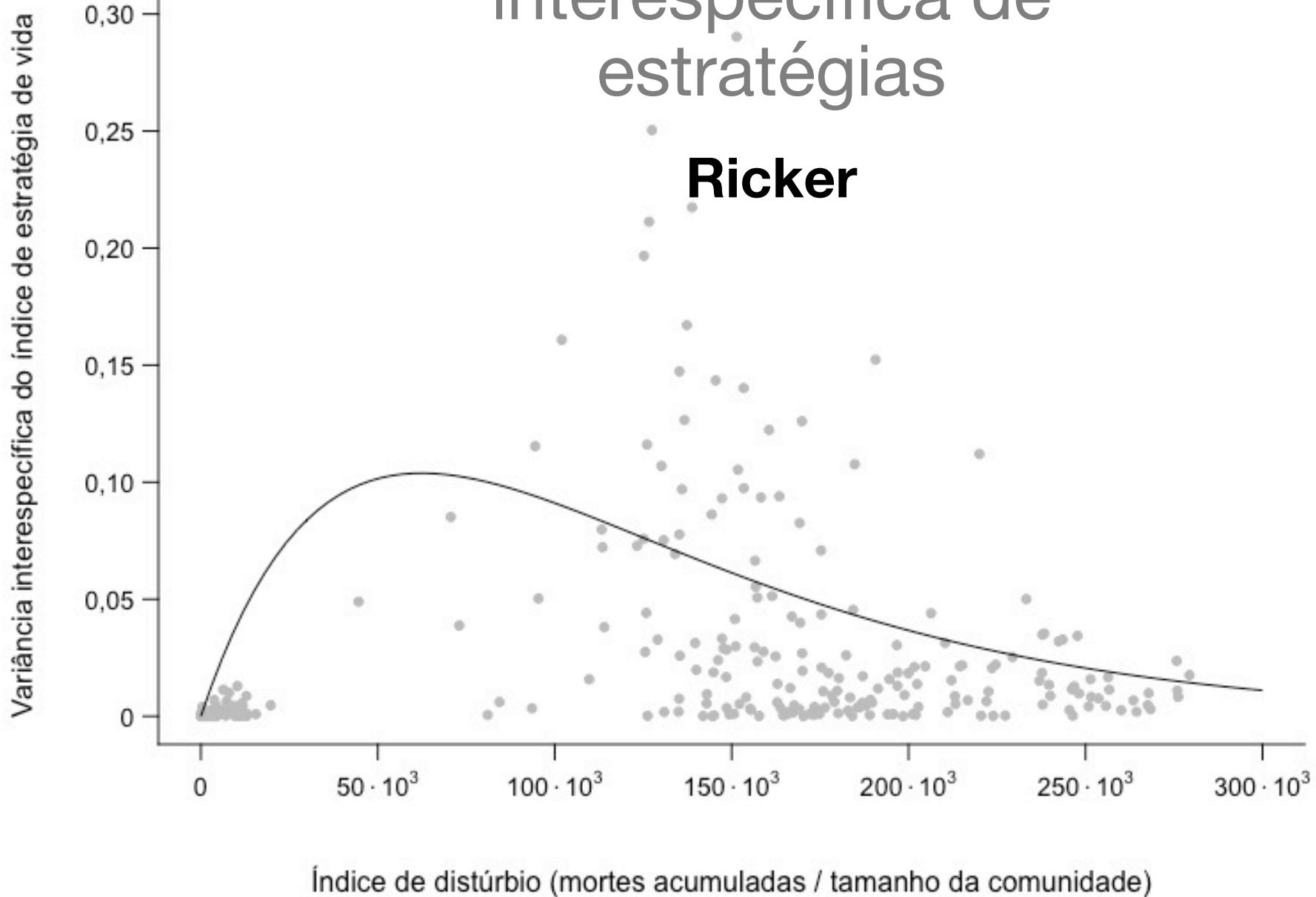
# heterogeneidade interespecífica de estratégias

Ricker



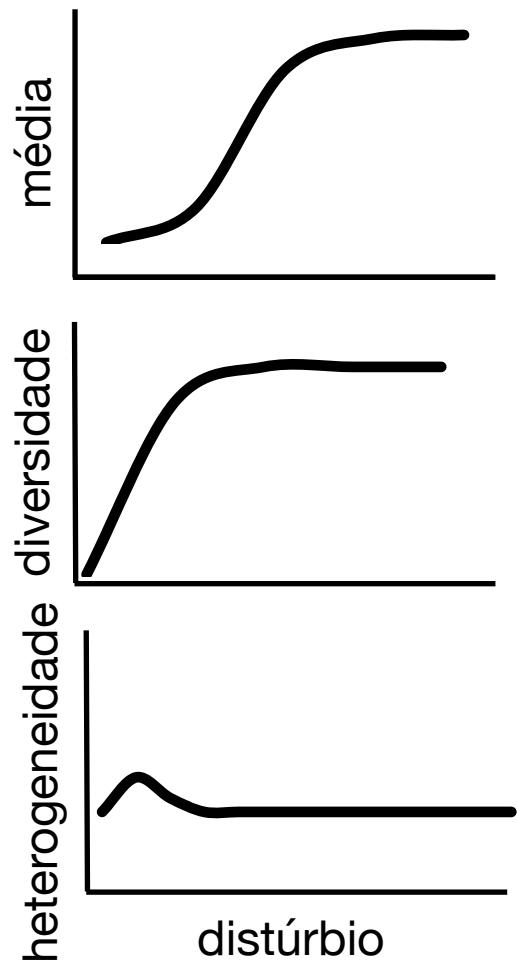
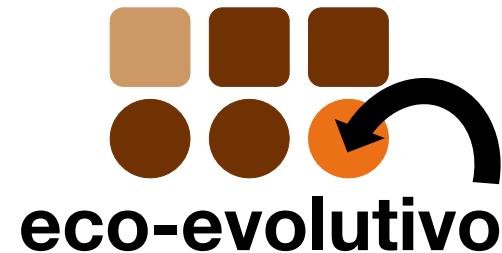
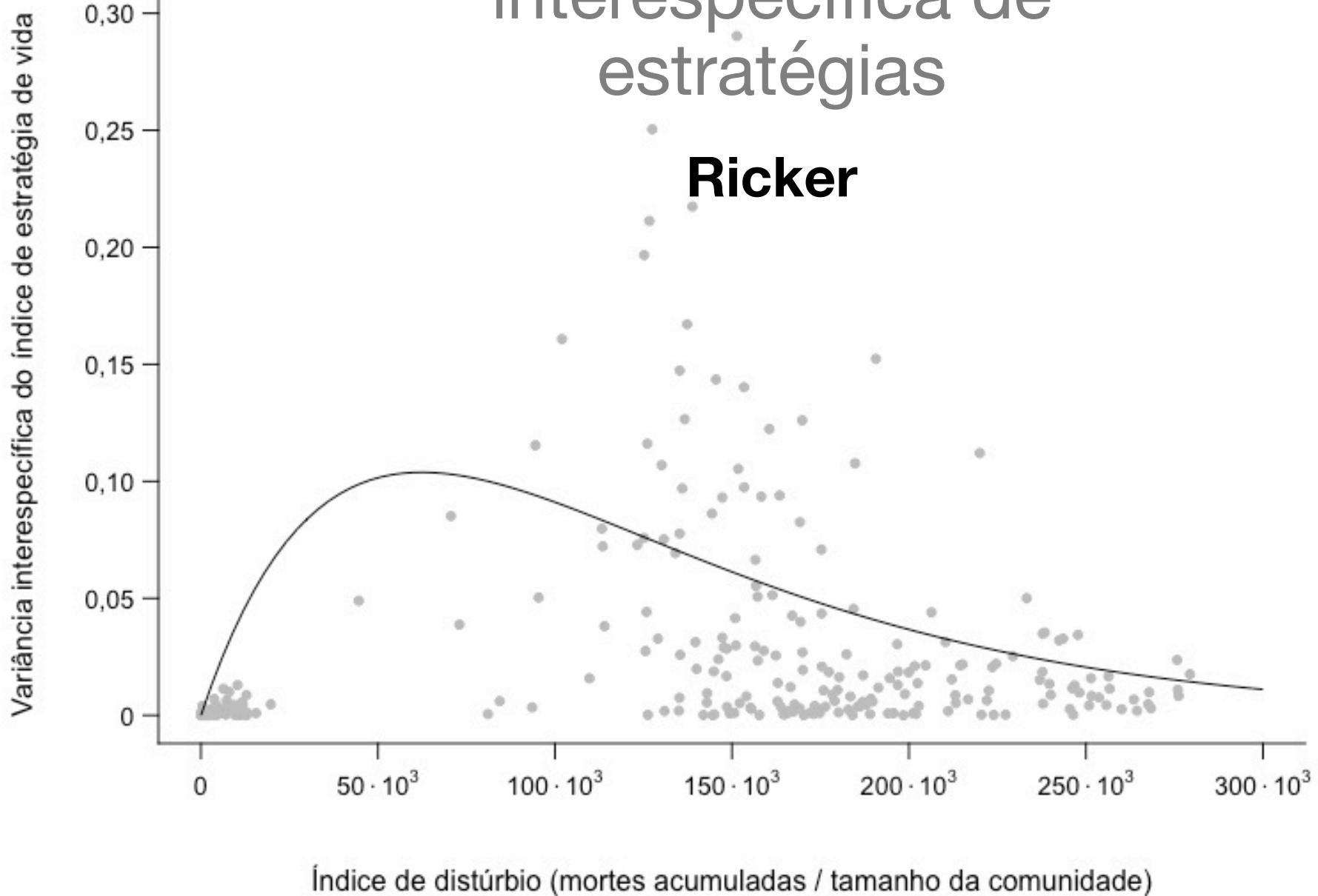
# heterogeneidade interespecífica de estratégias

Ricker



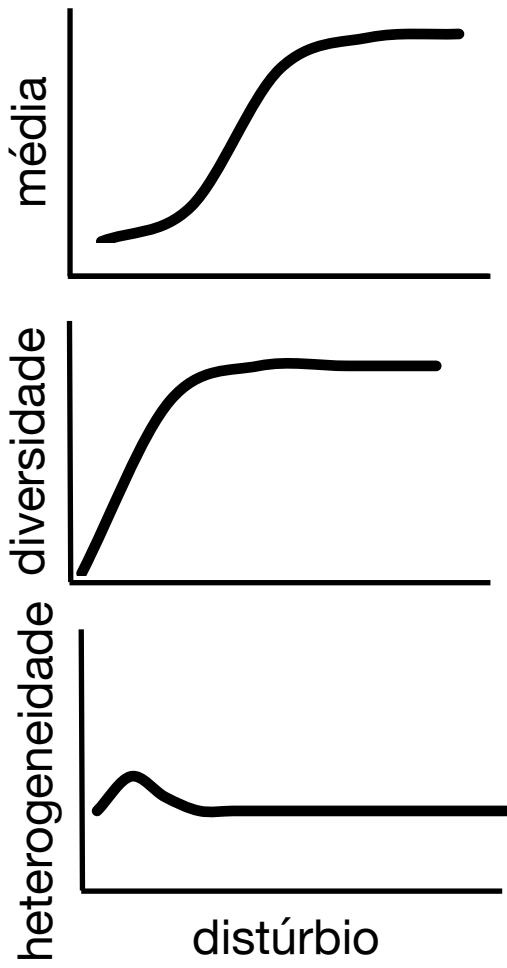
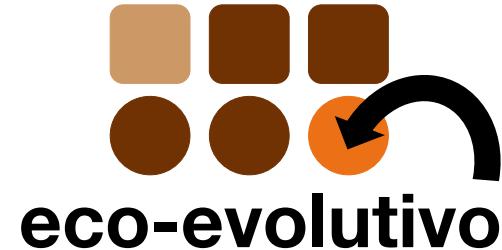
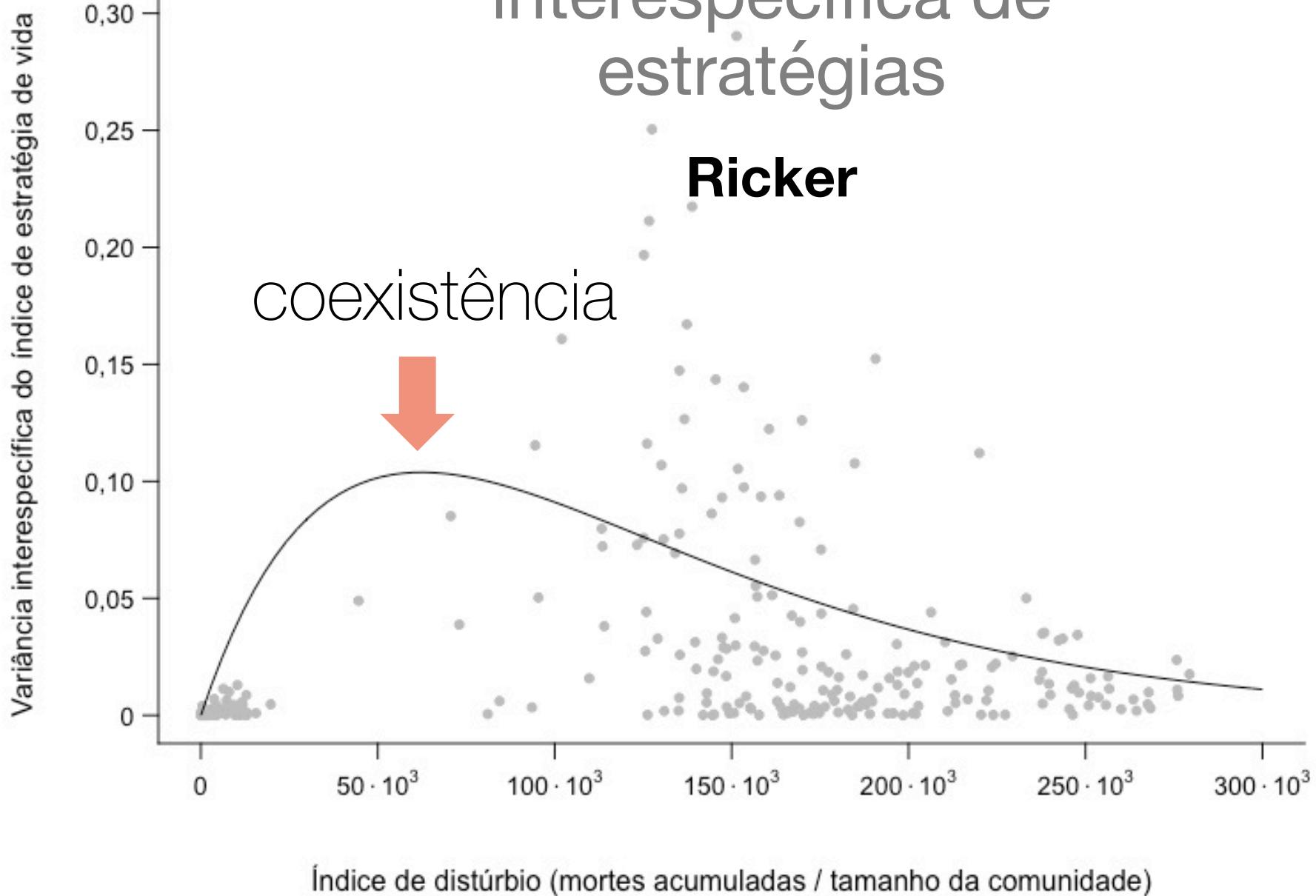
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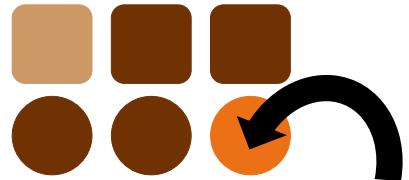


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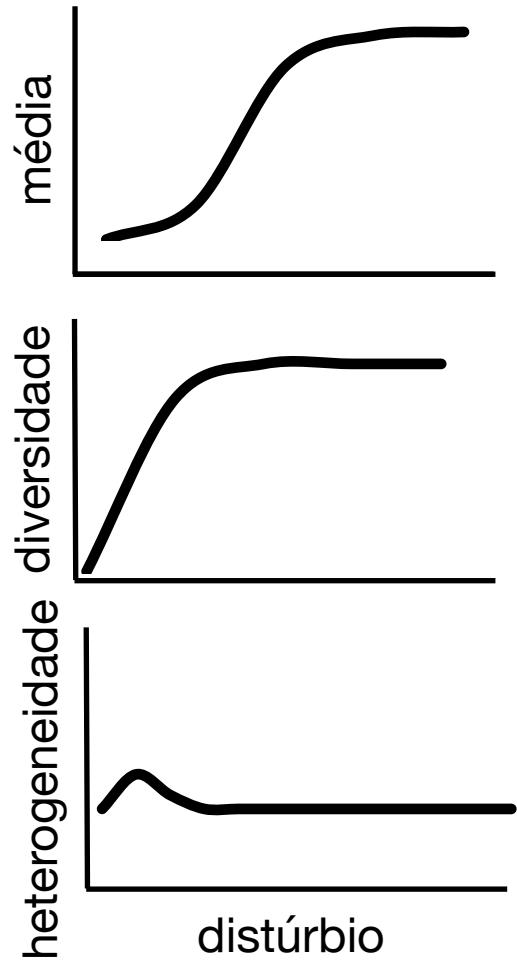
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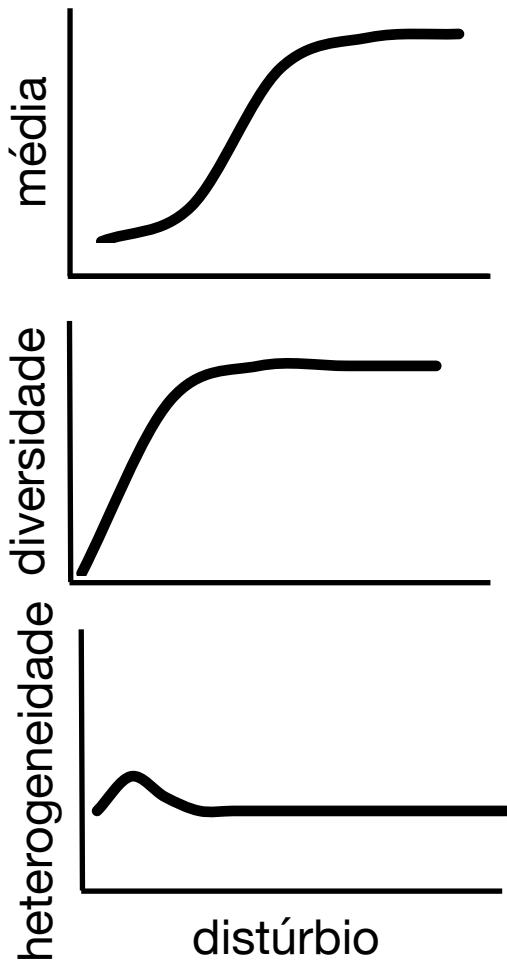
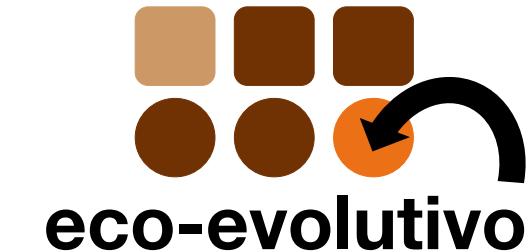
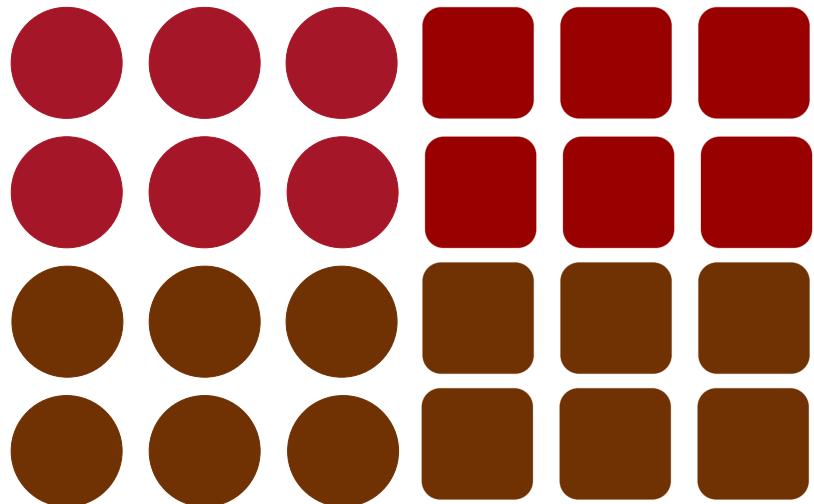


**eco-evolutivo**



# coexistência de estratégias mediada pelo distúrbio

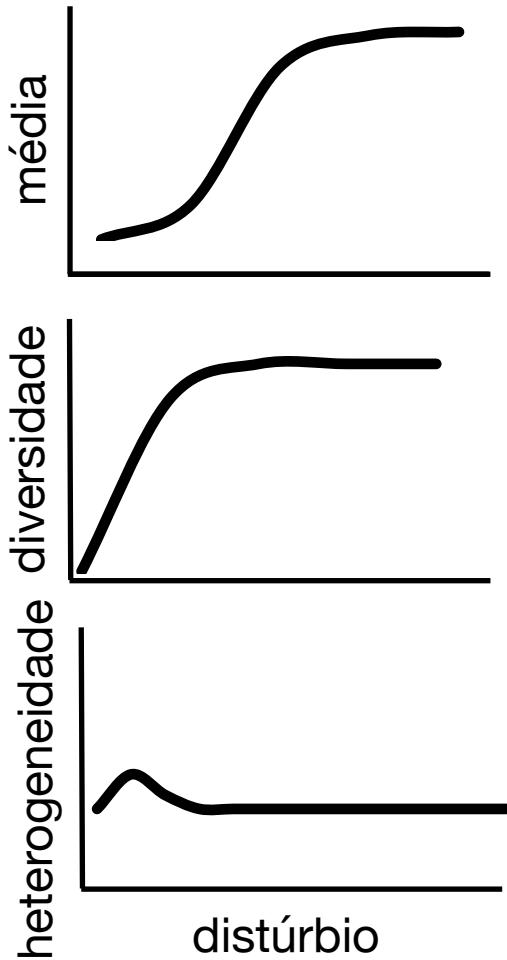
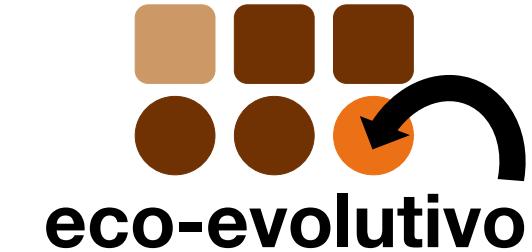
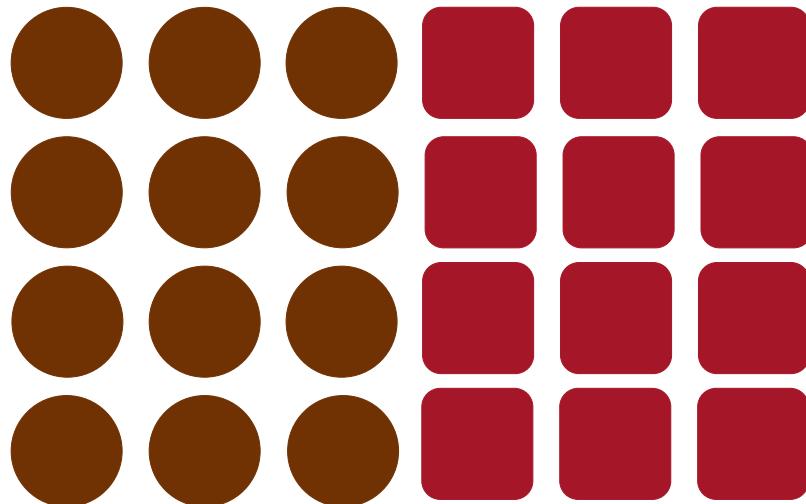
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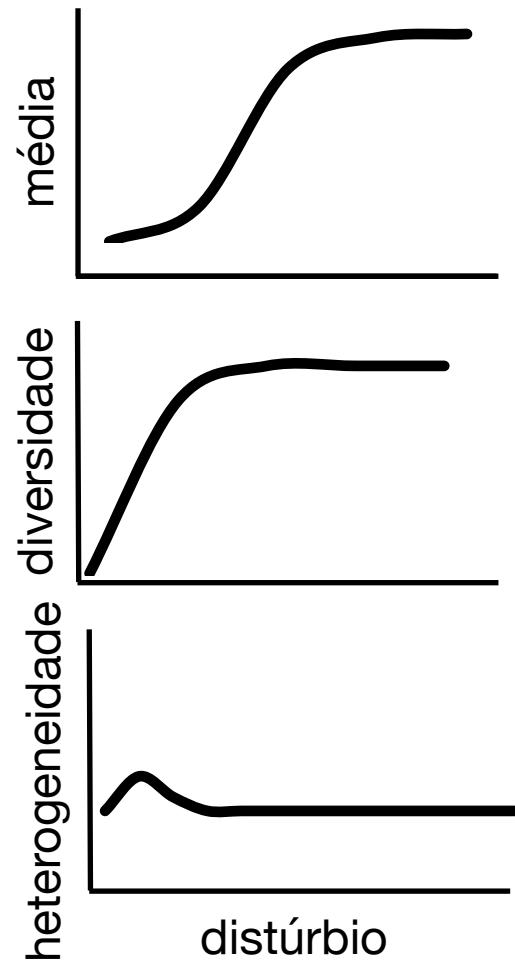
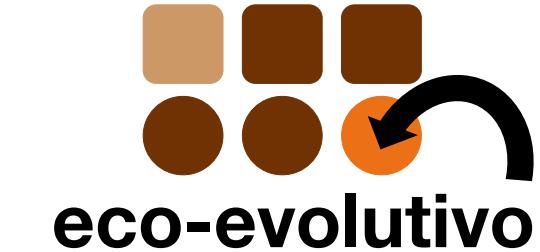
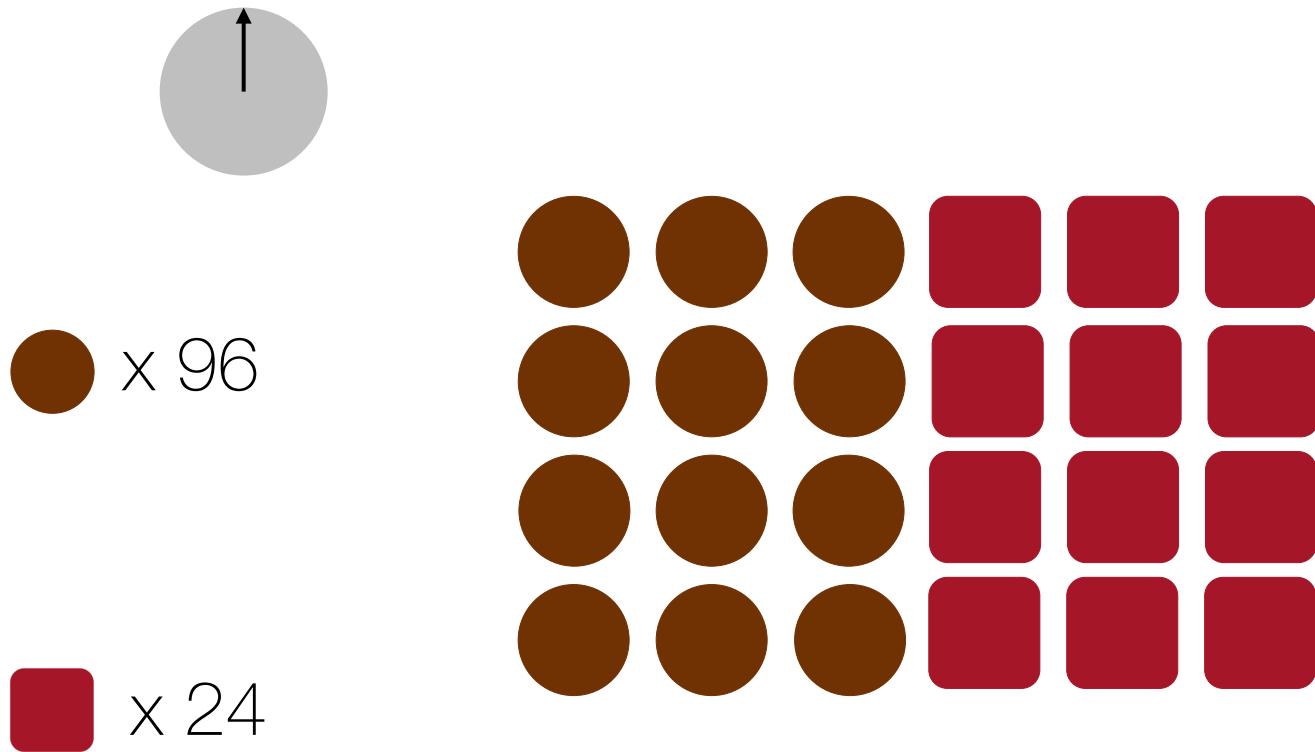
# coexistência de estratégias mediada pelo distúrbio

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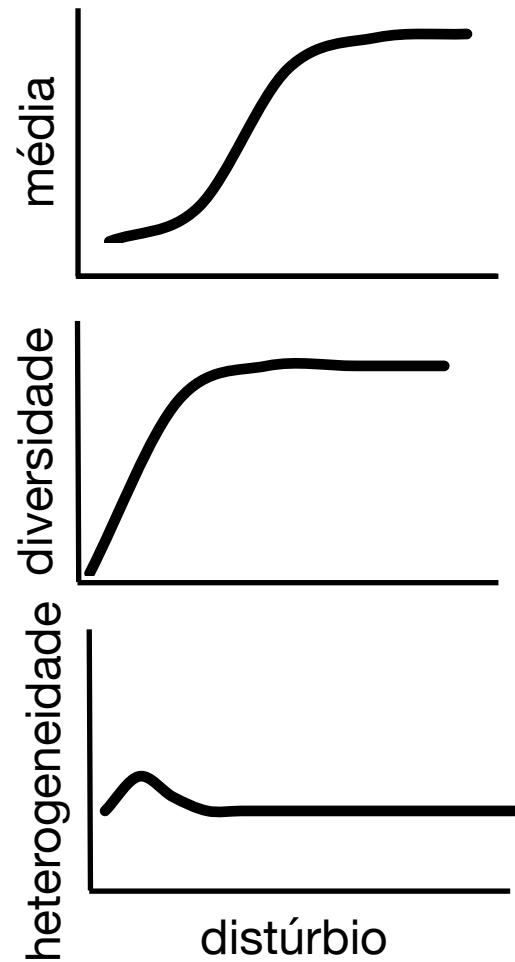
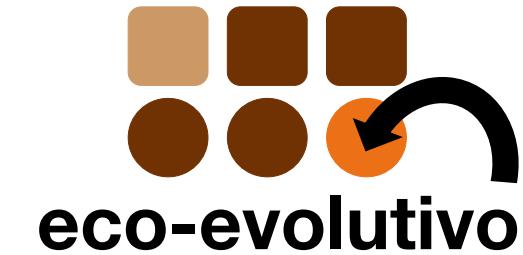
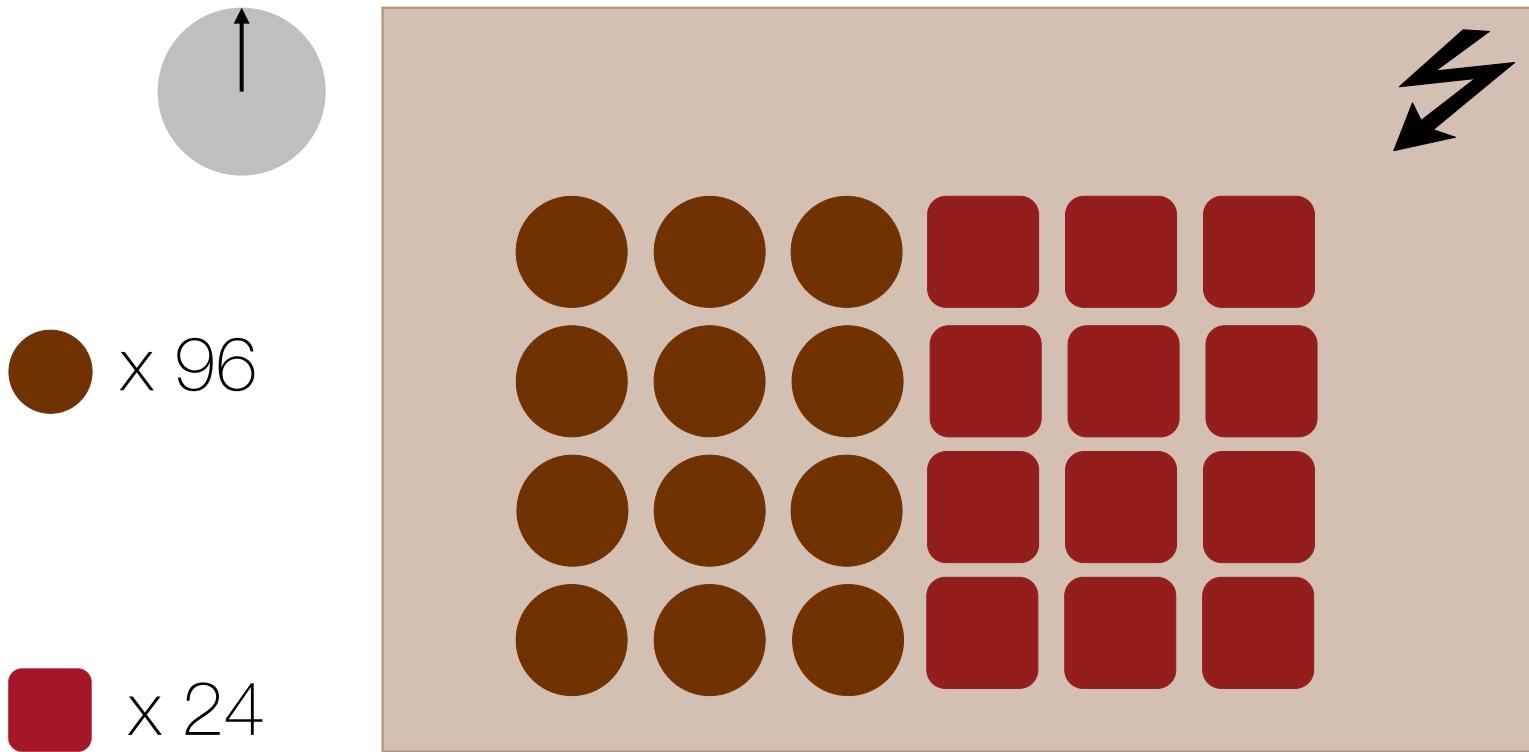
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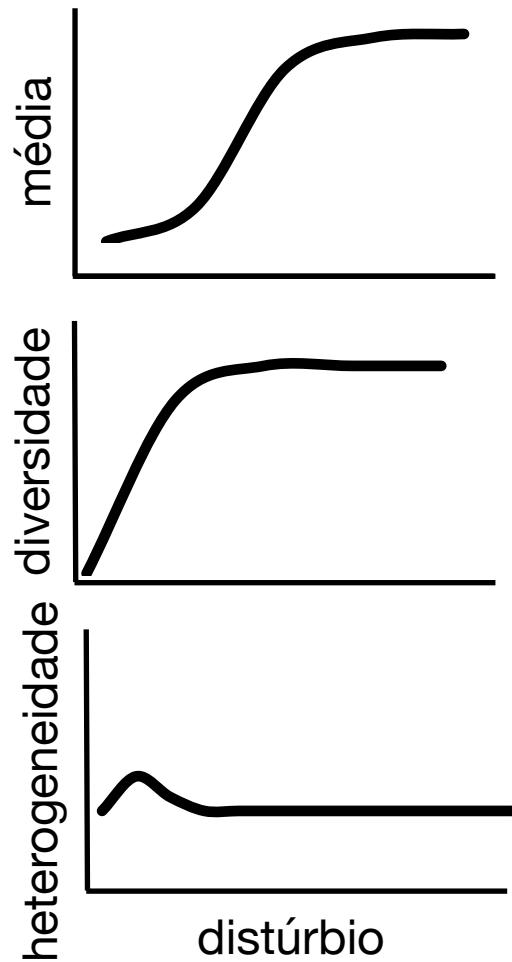
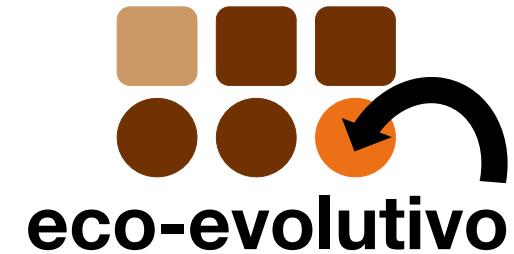
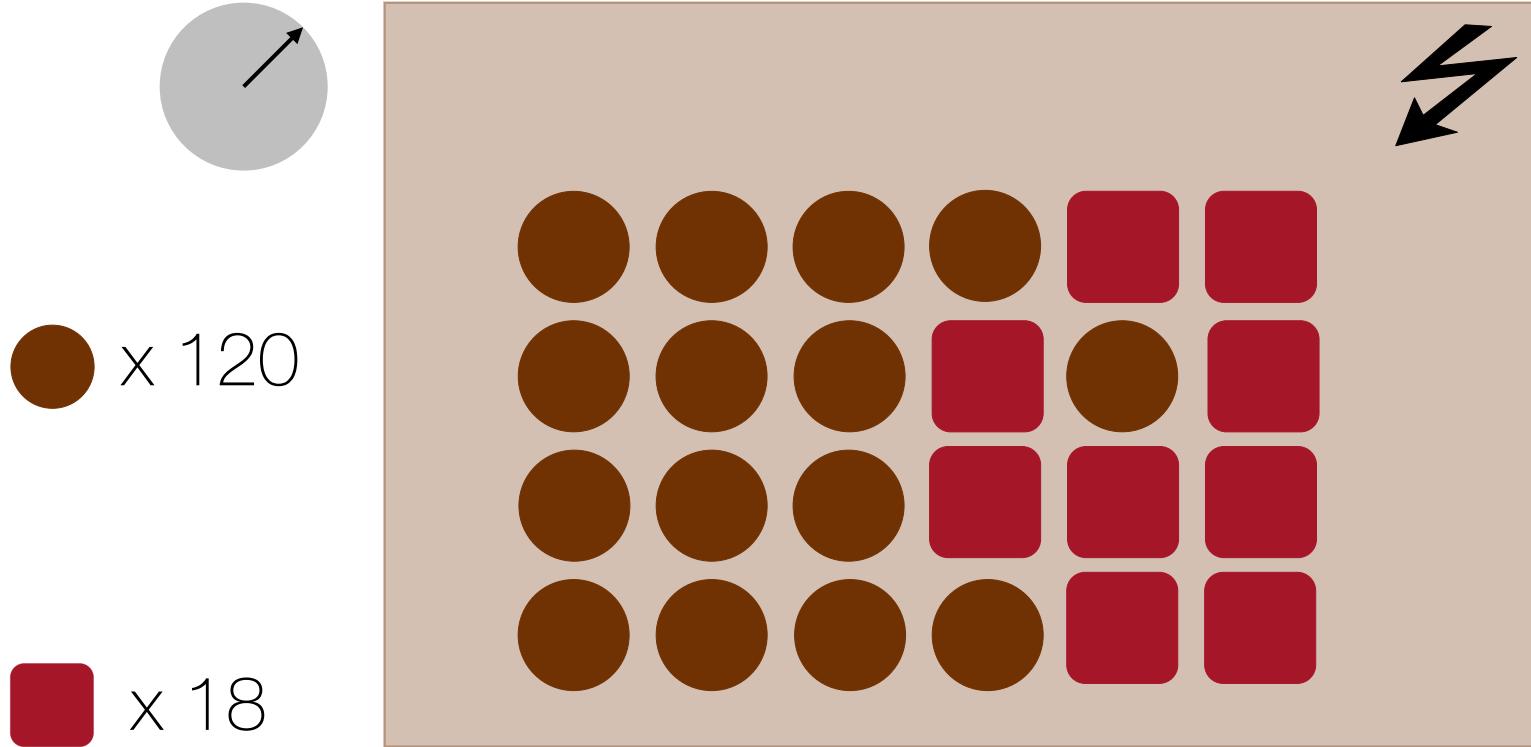
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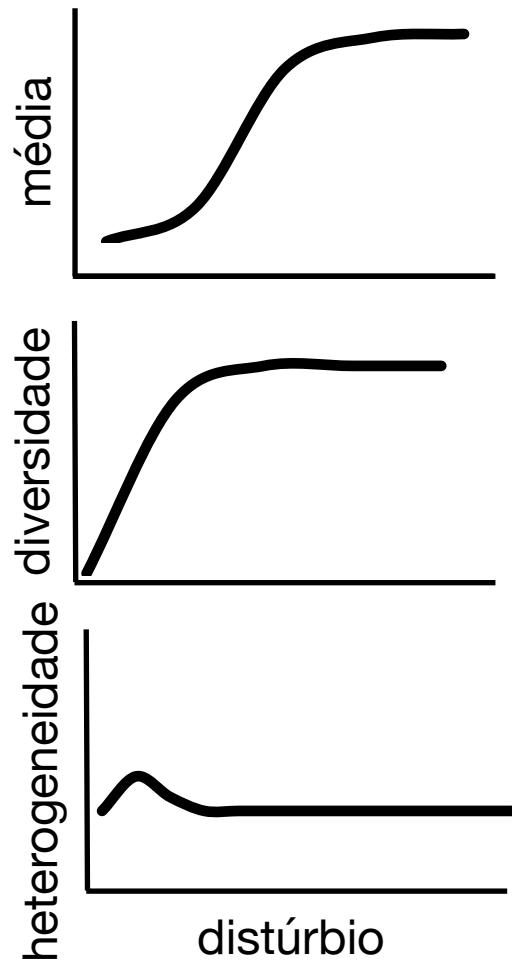
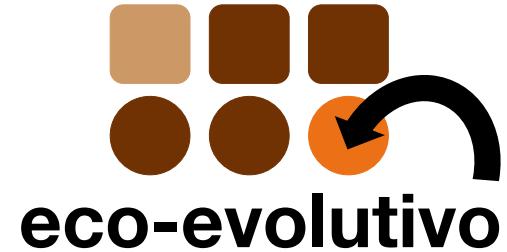
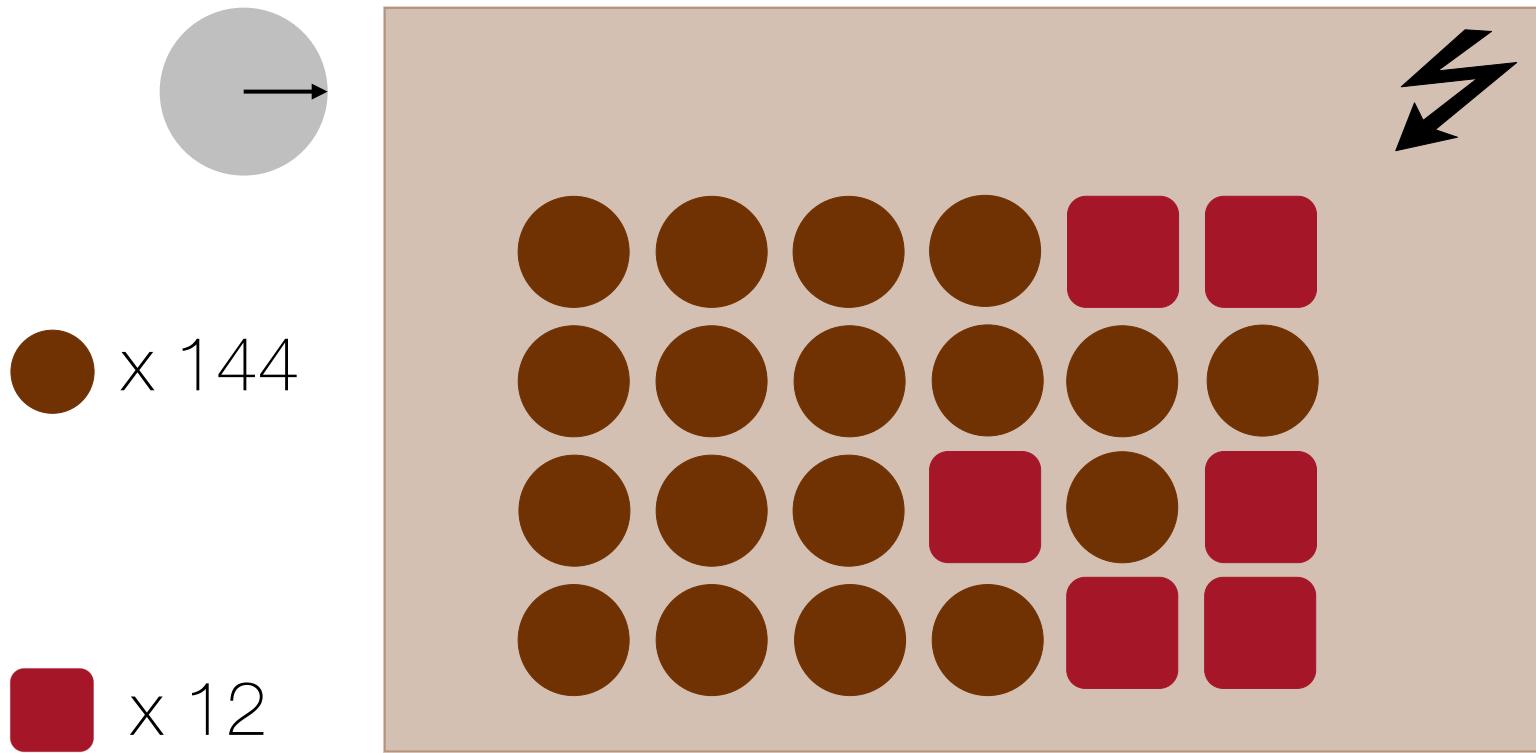
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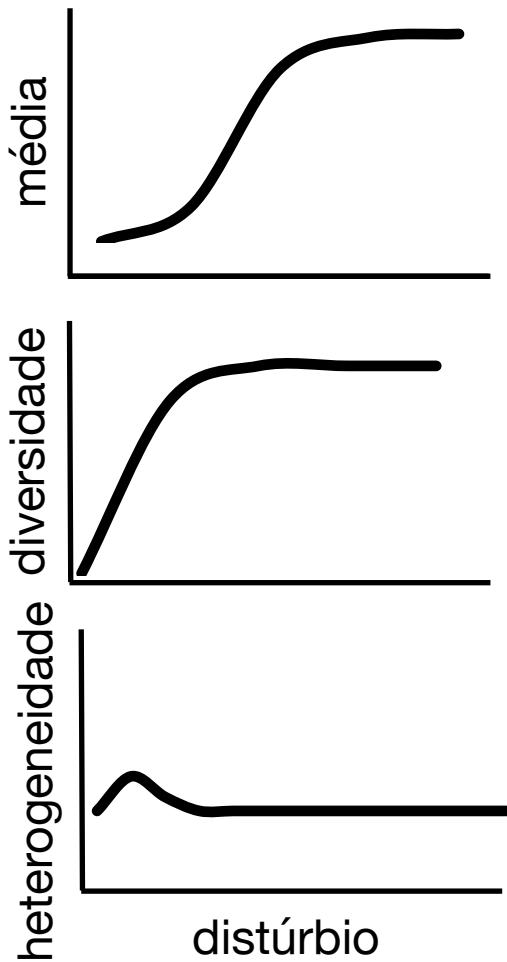
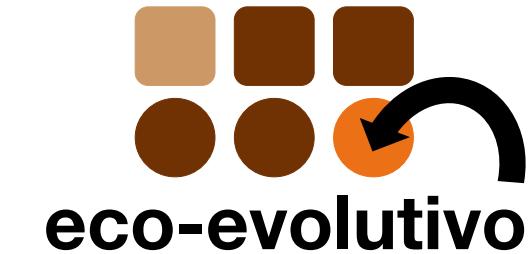
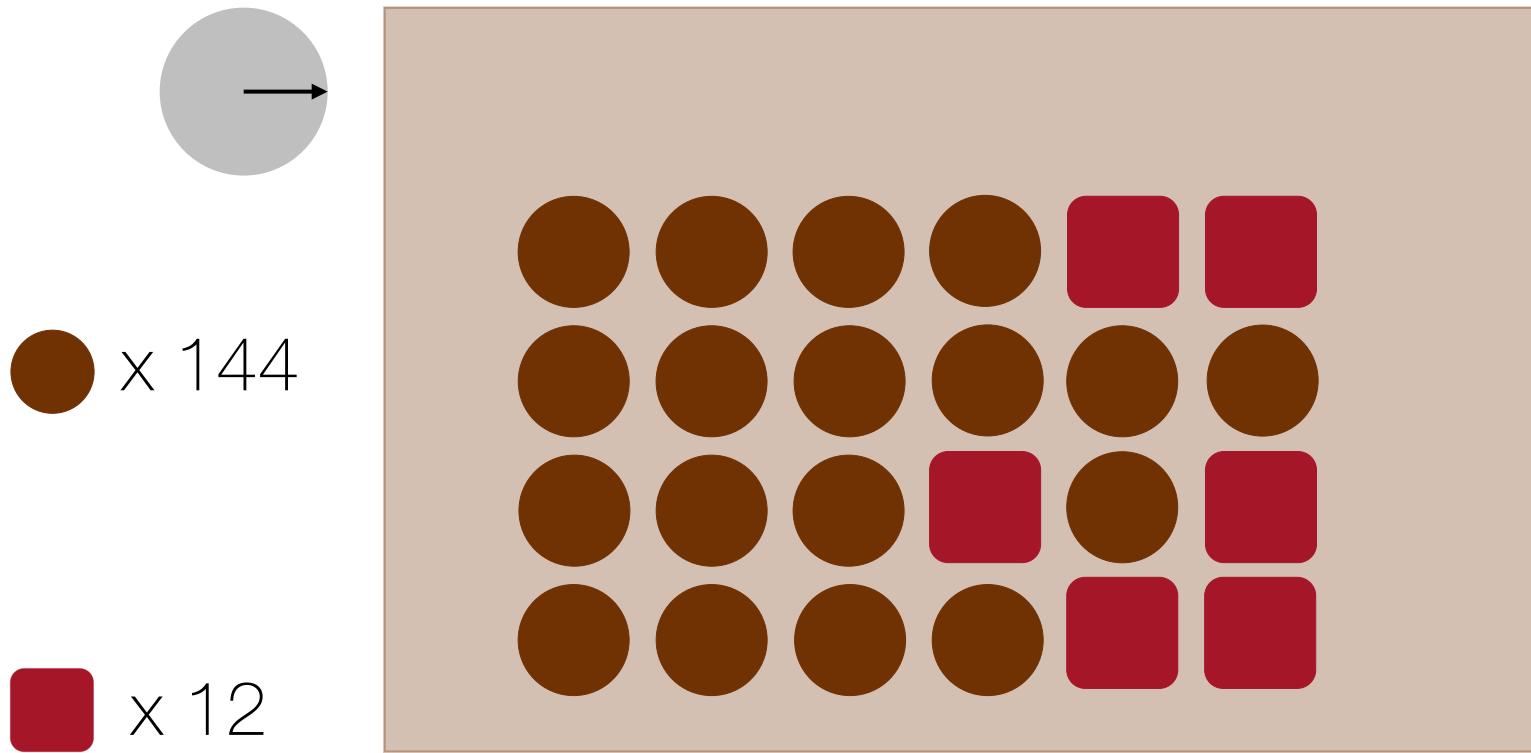
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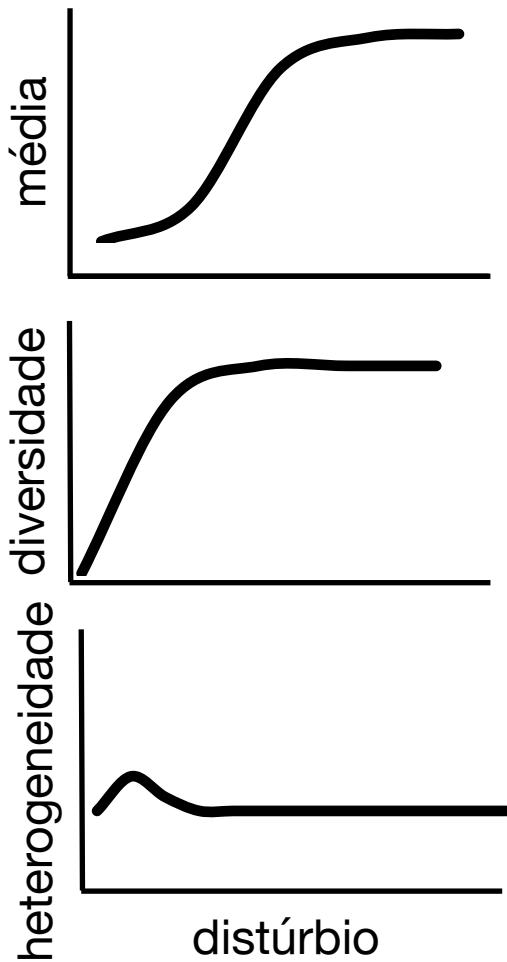
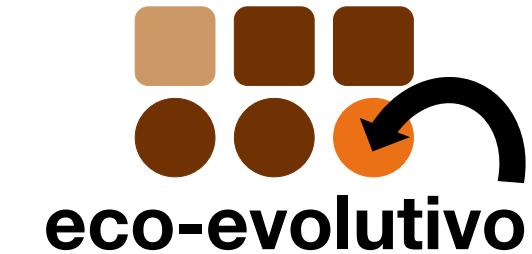
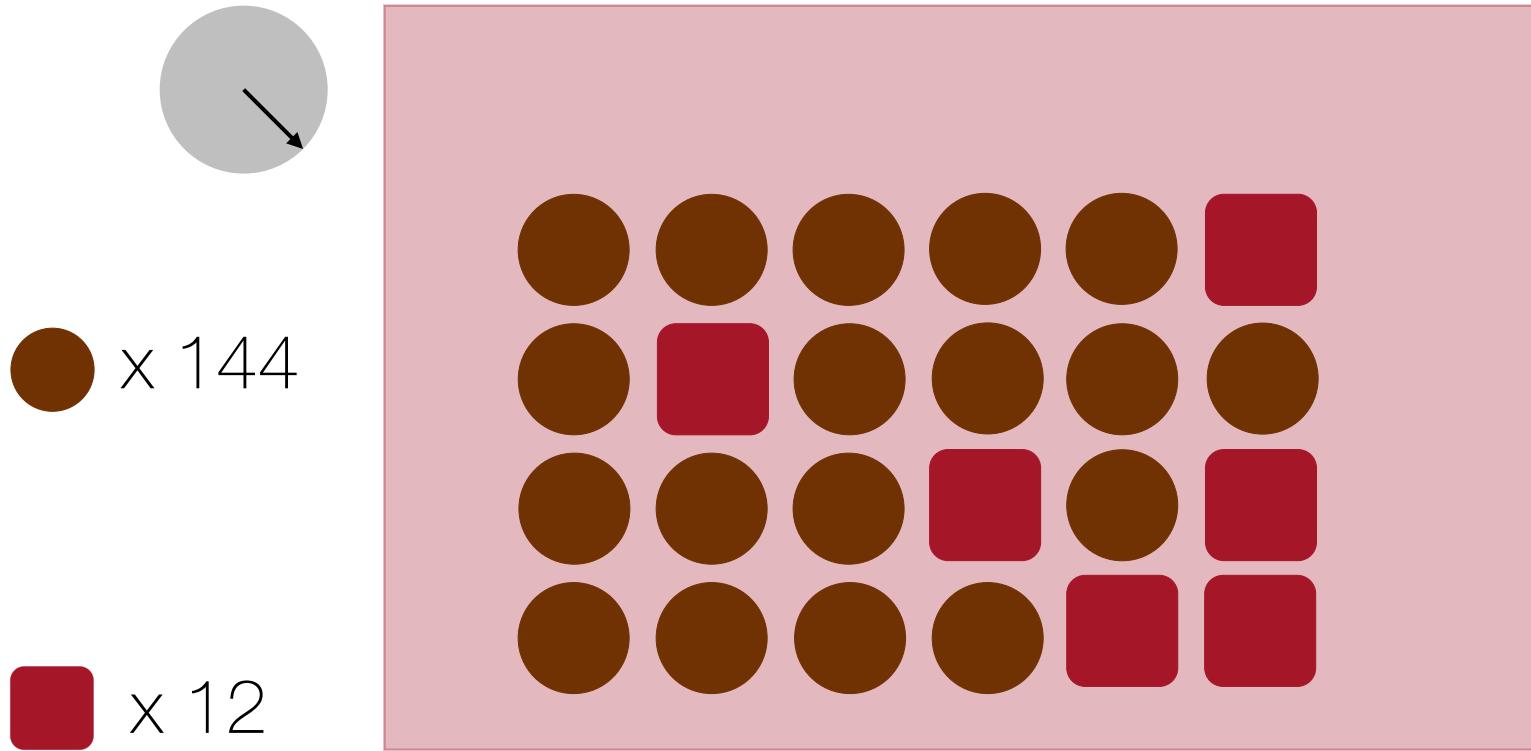
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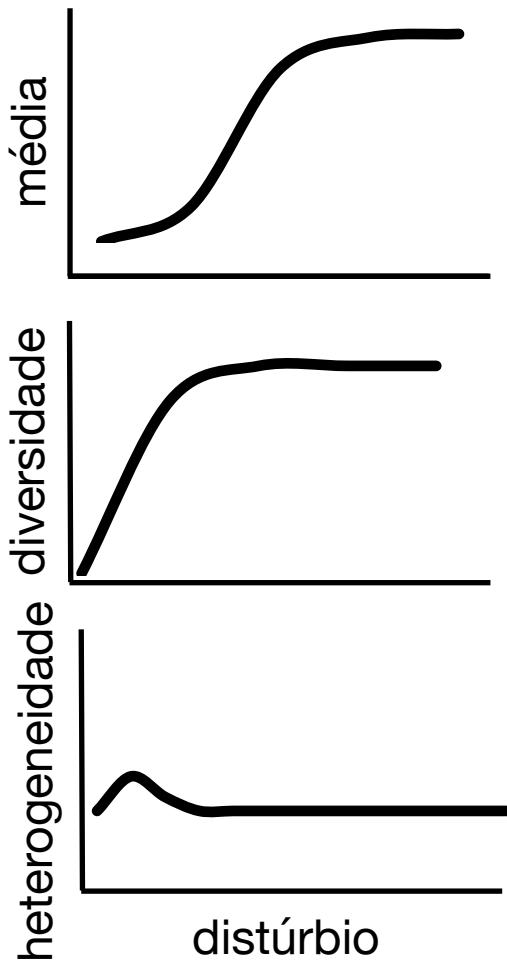
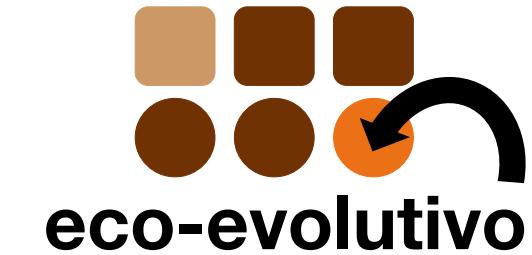
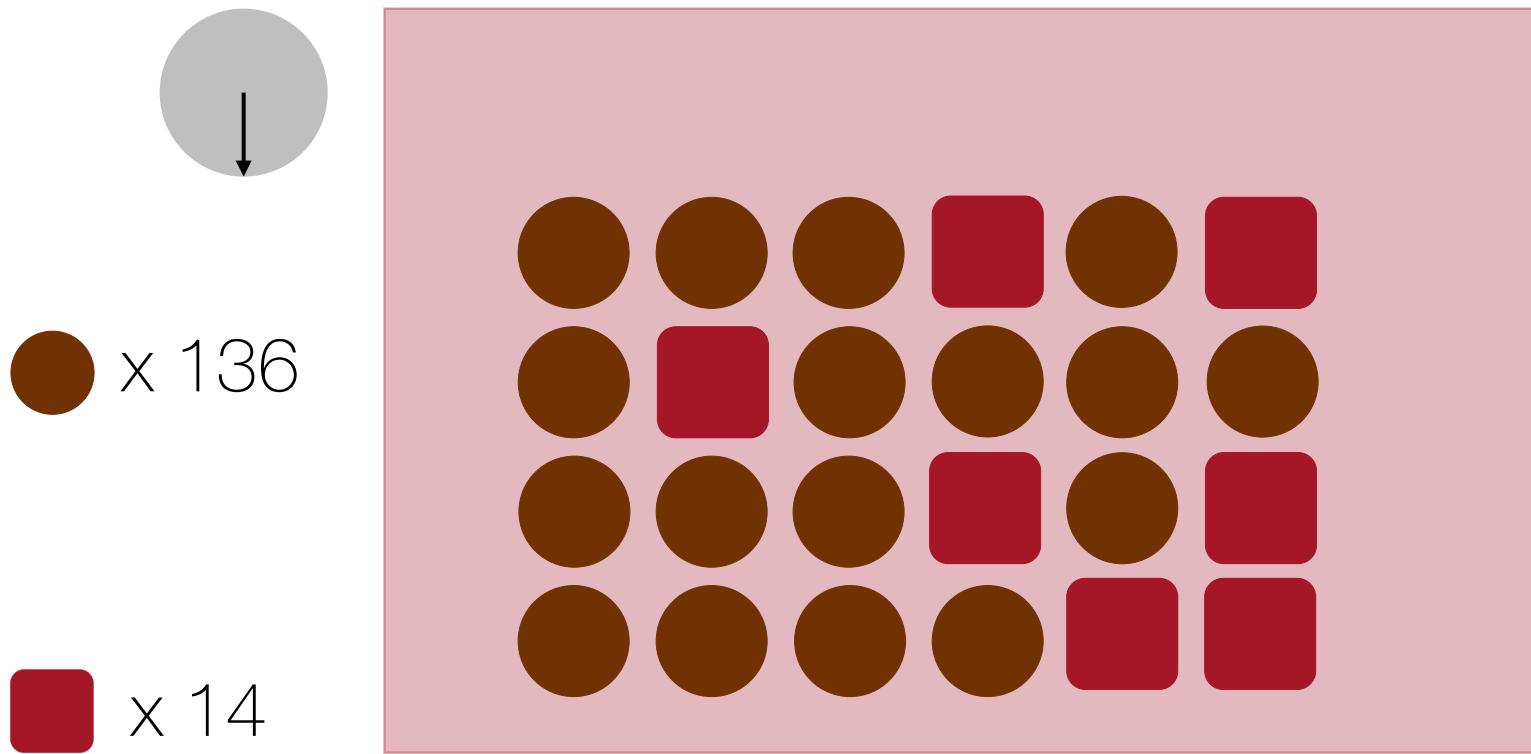
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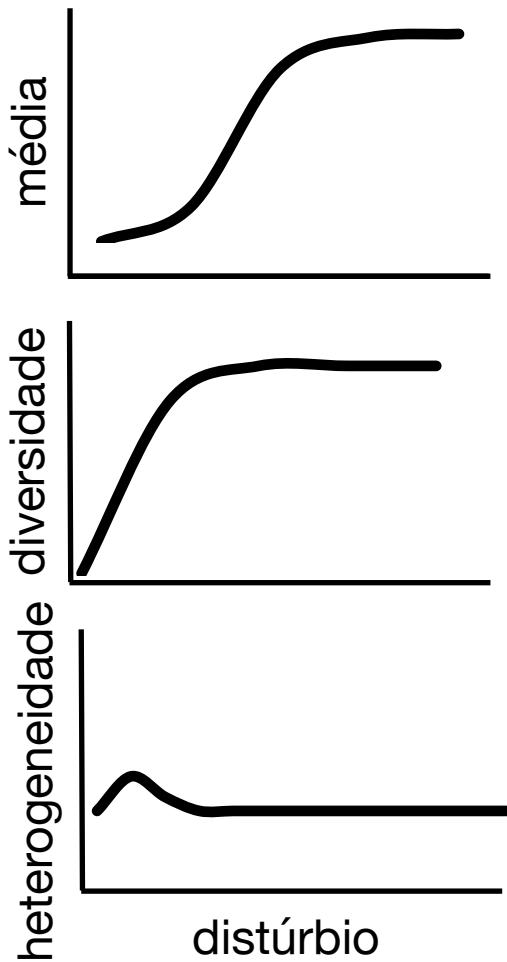
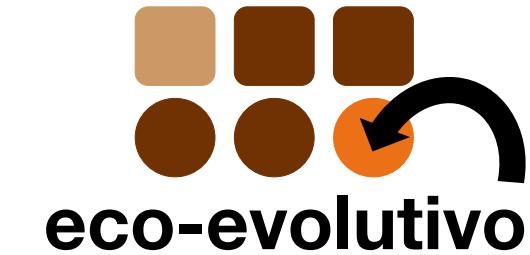
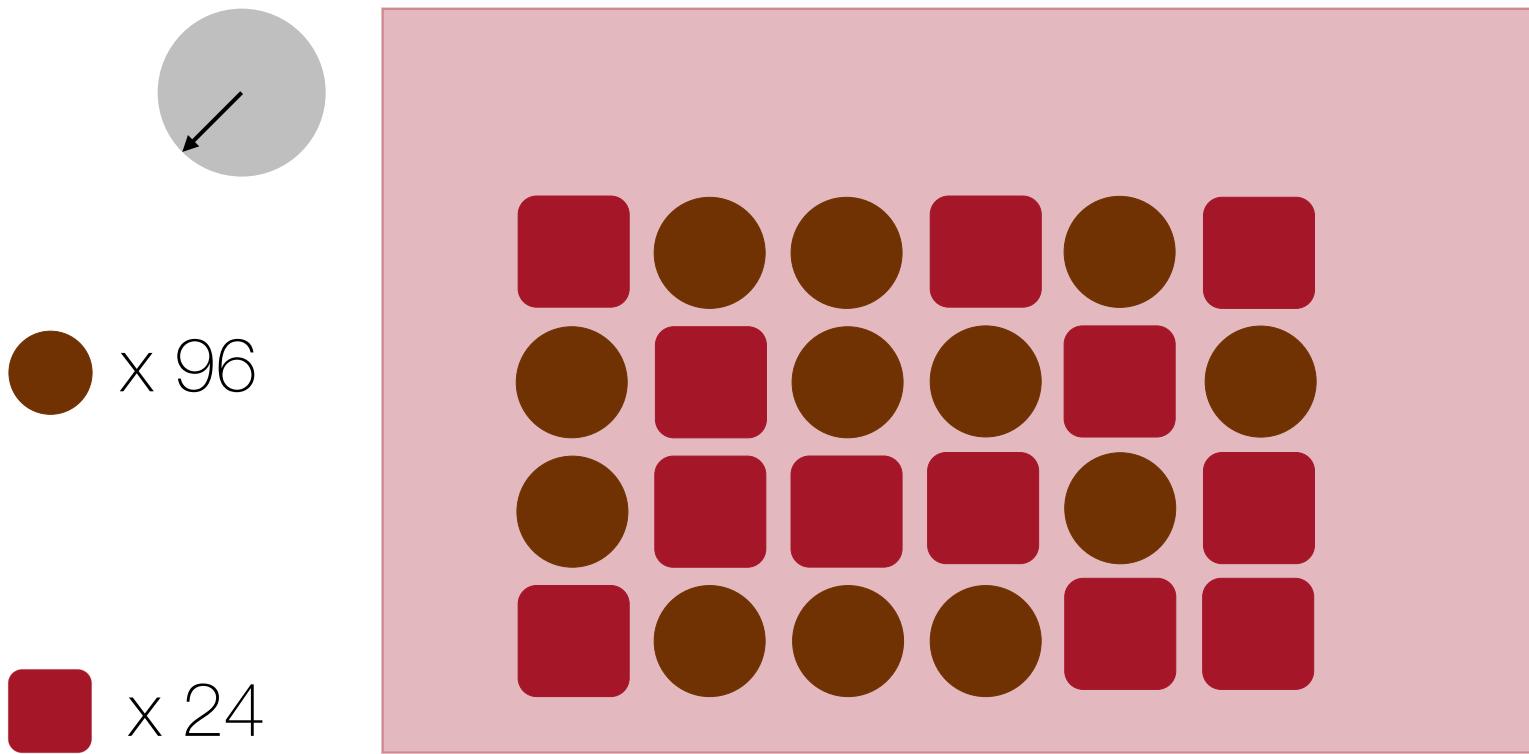
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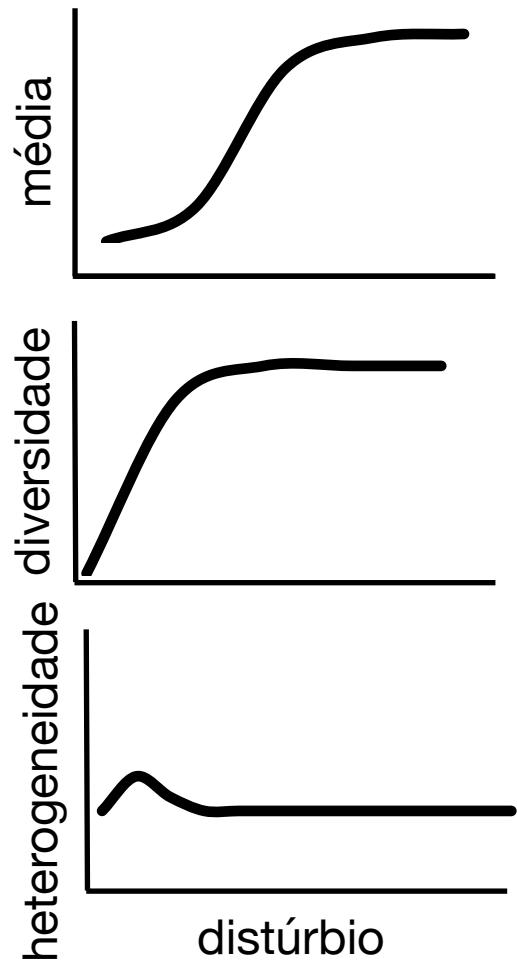
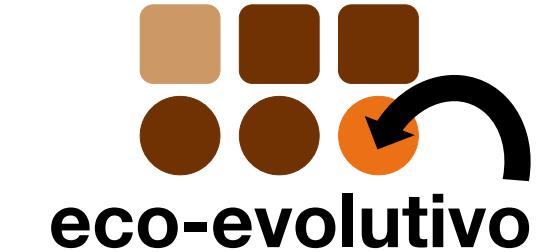
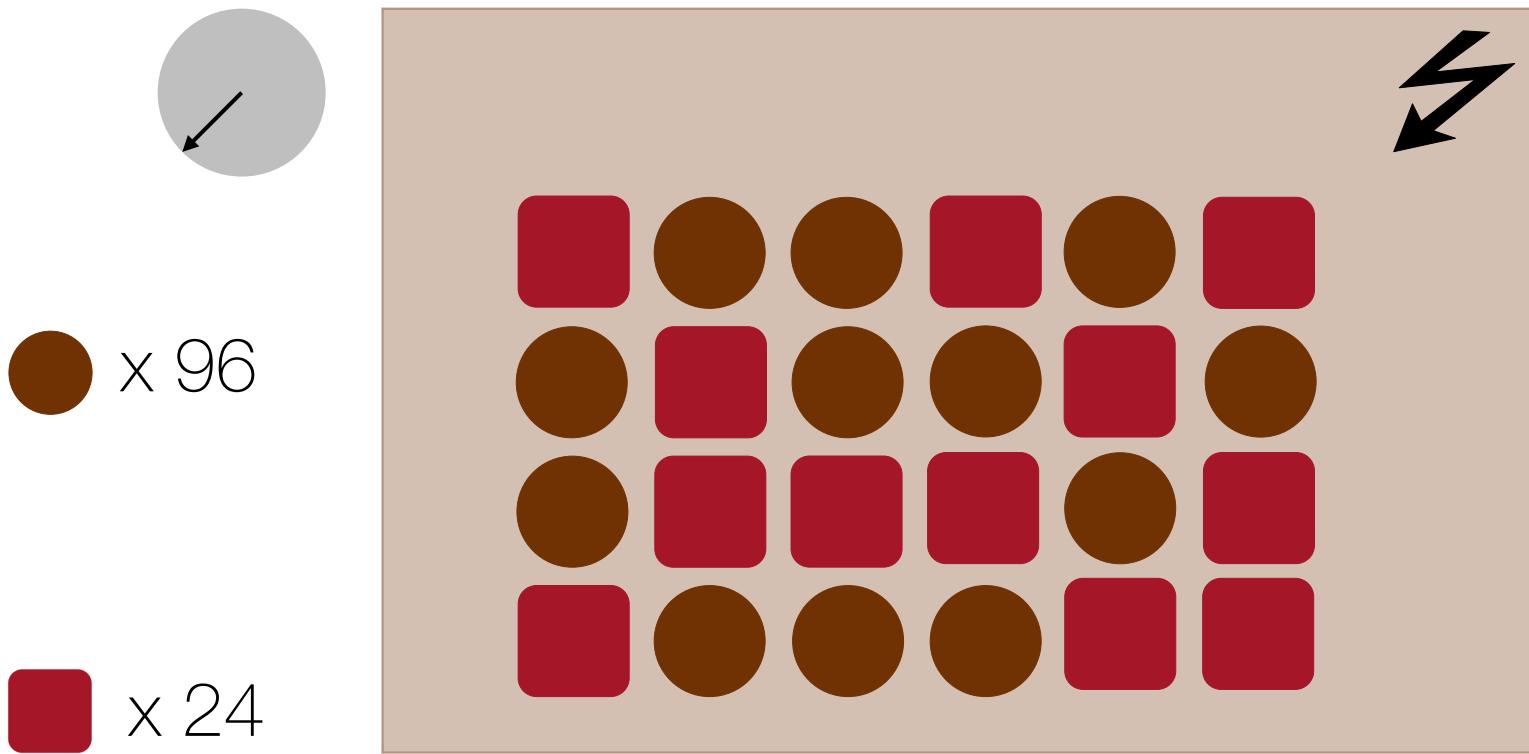
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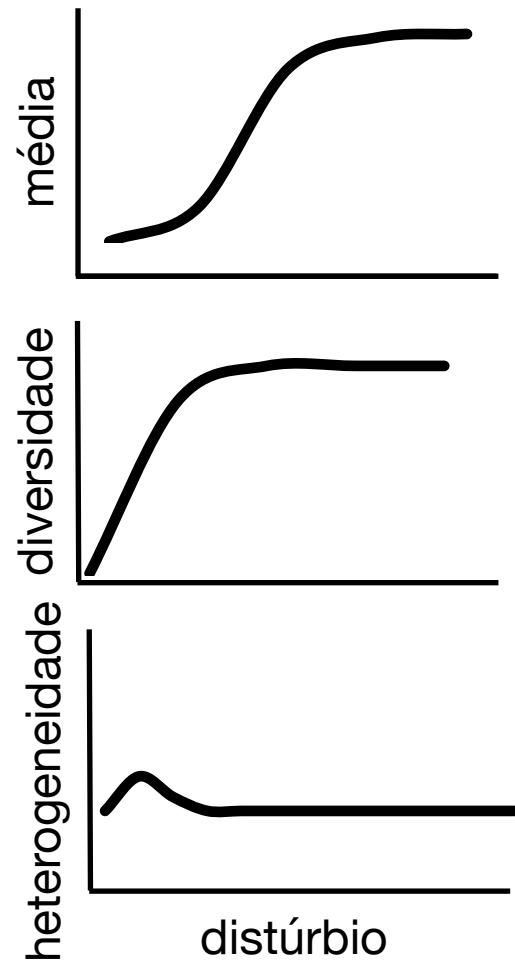
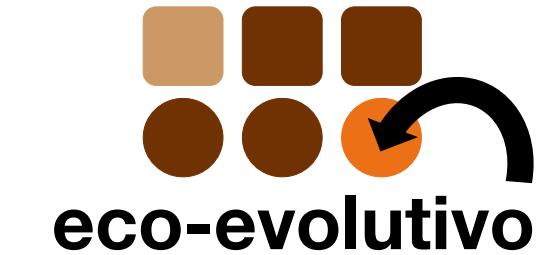
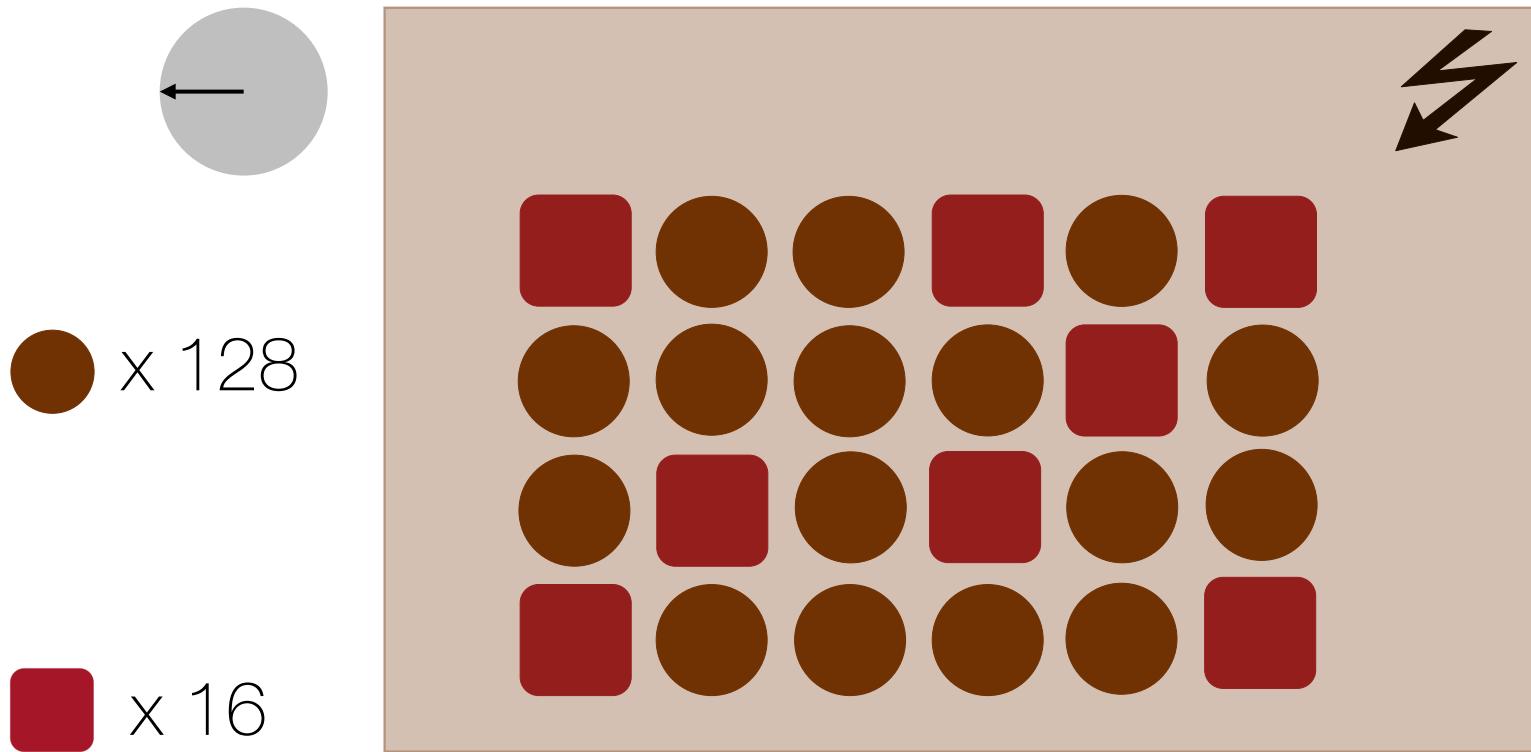
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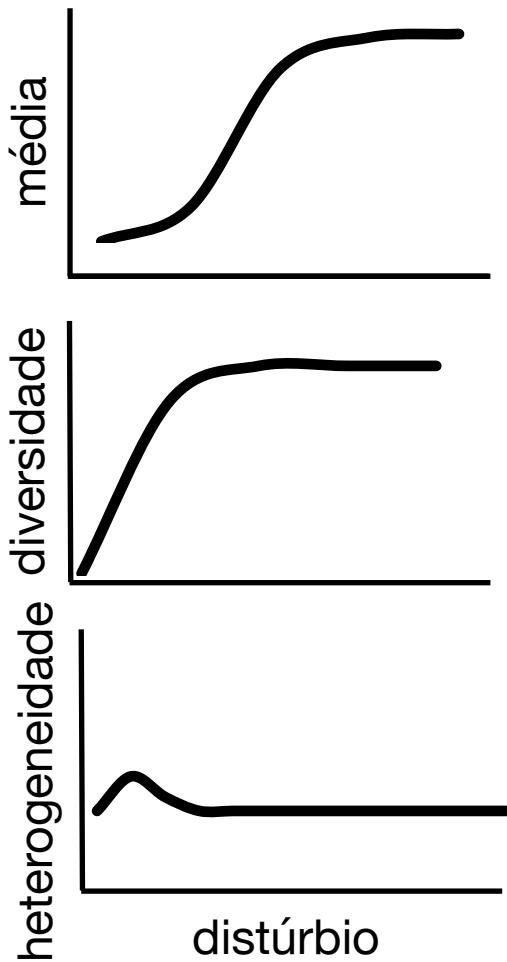
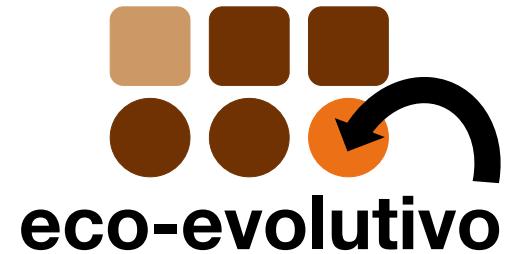
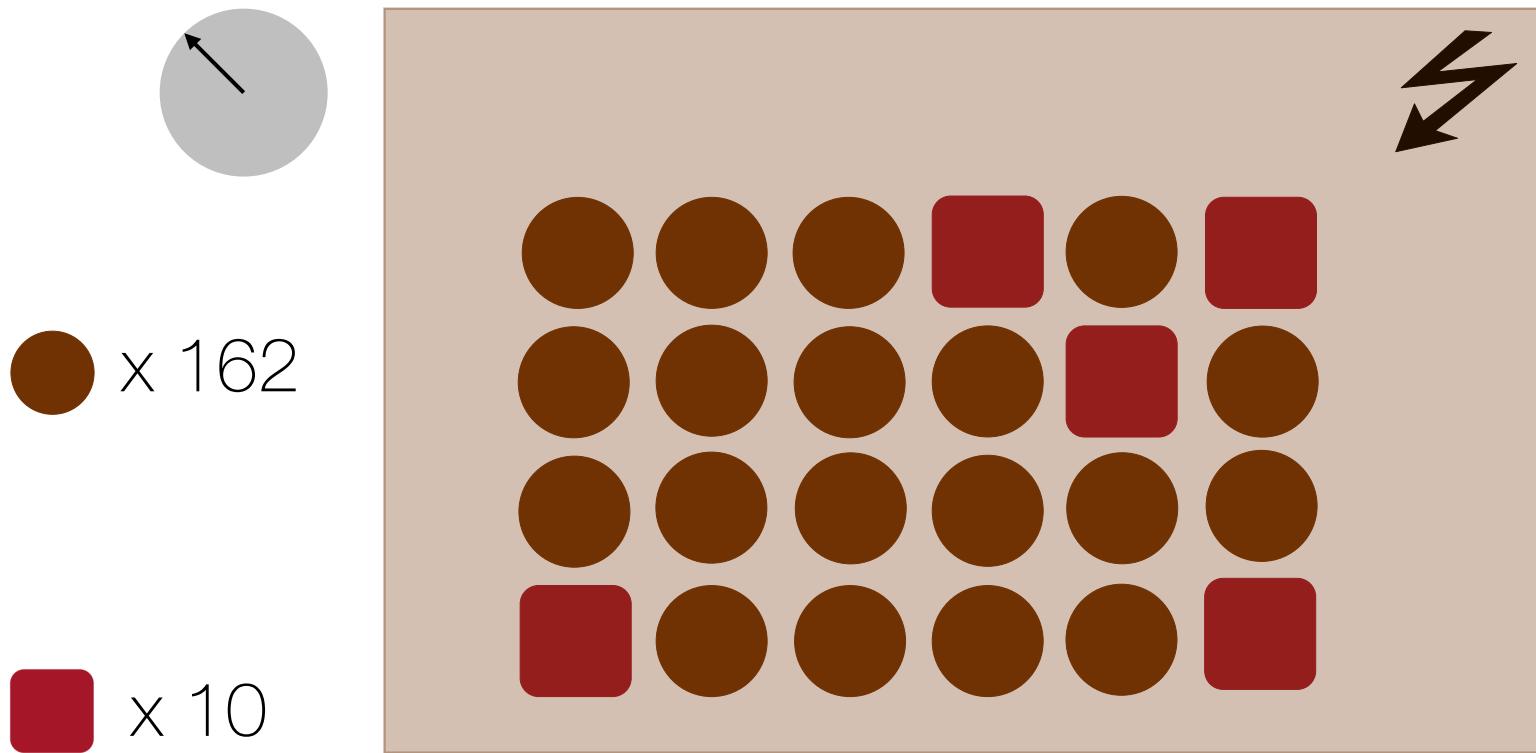
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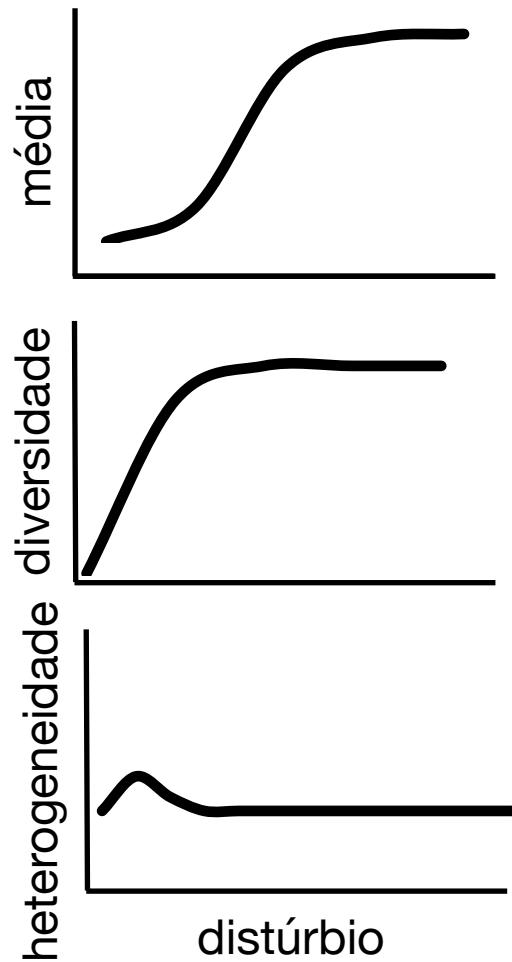
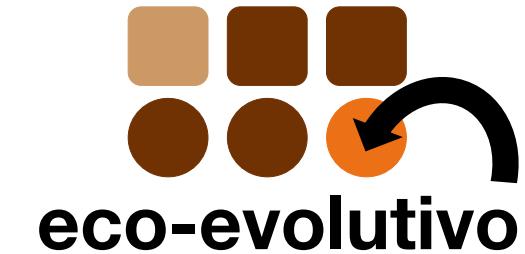
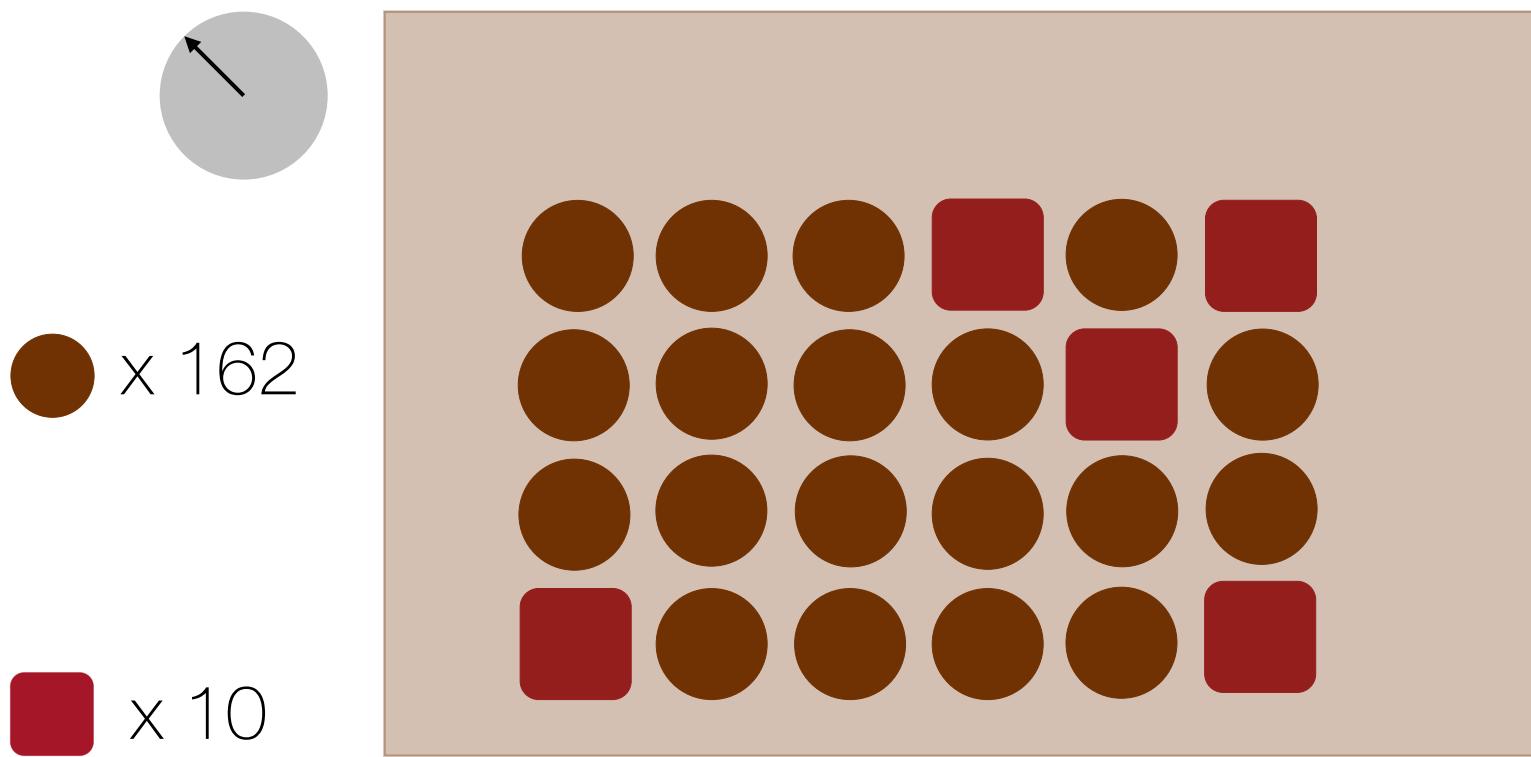
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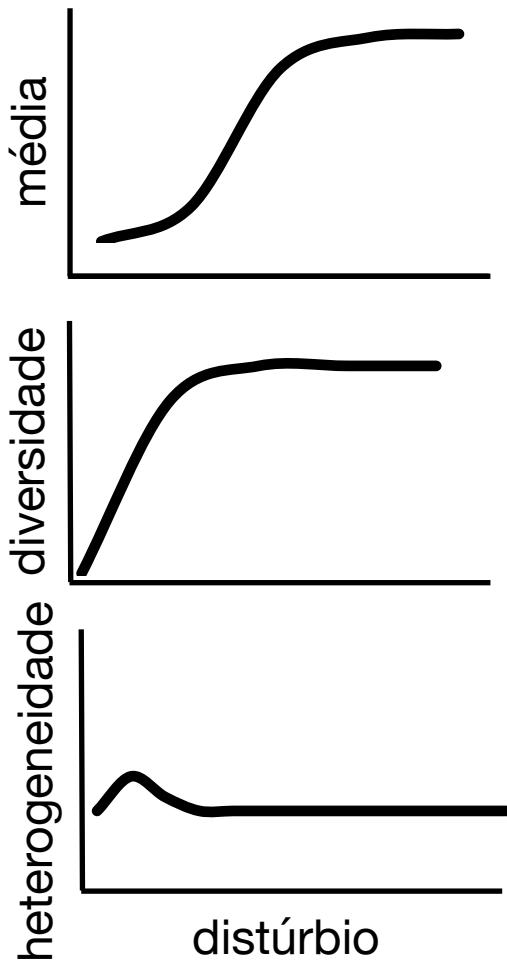
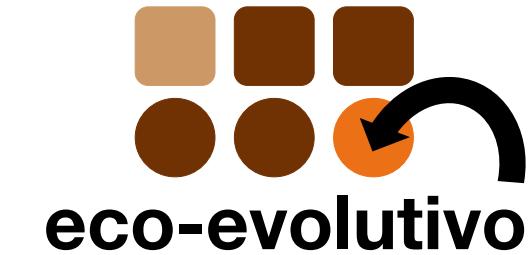
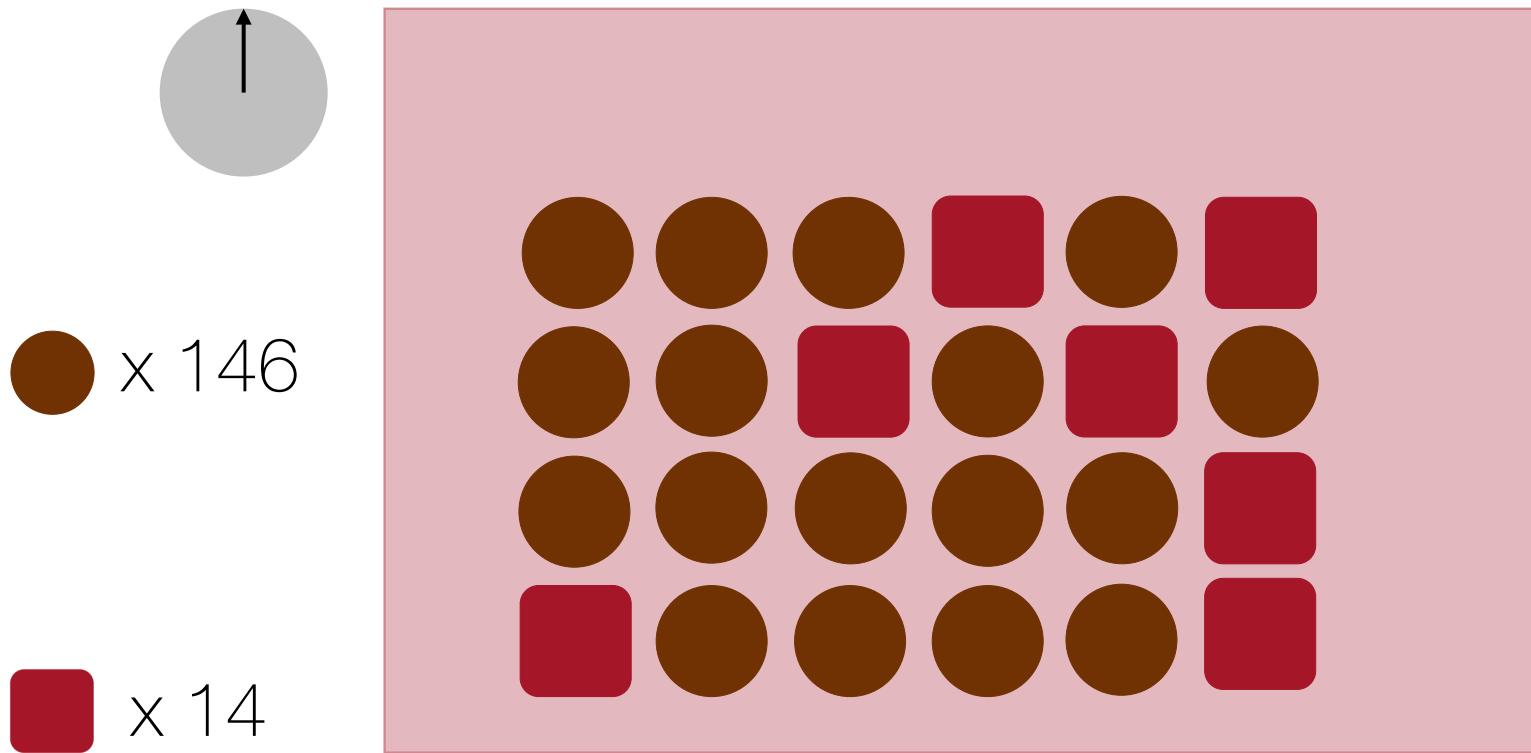
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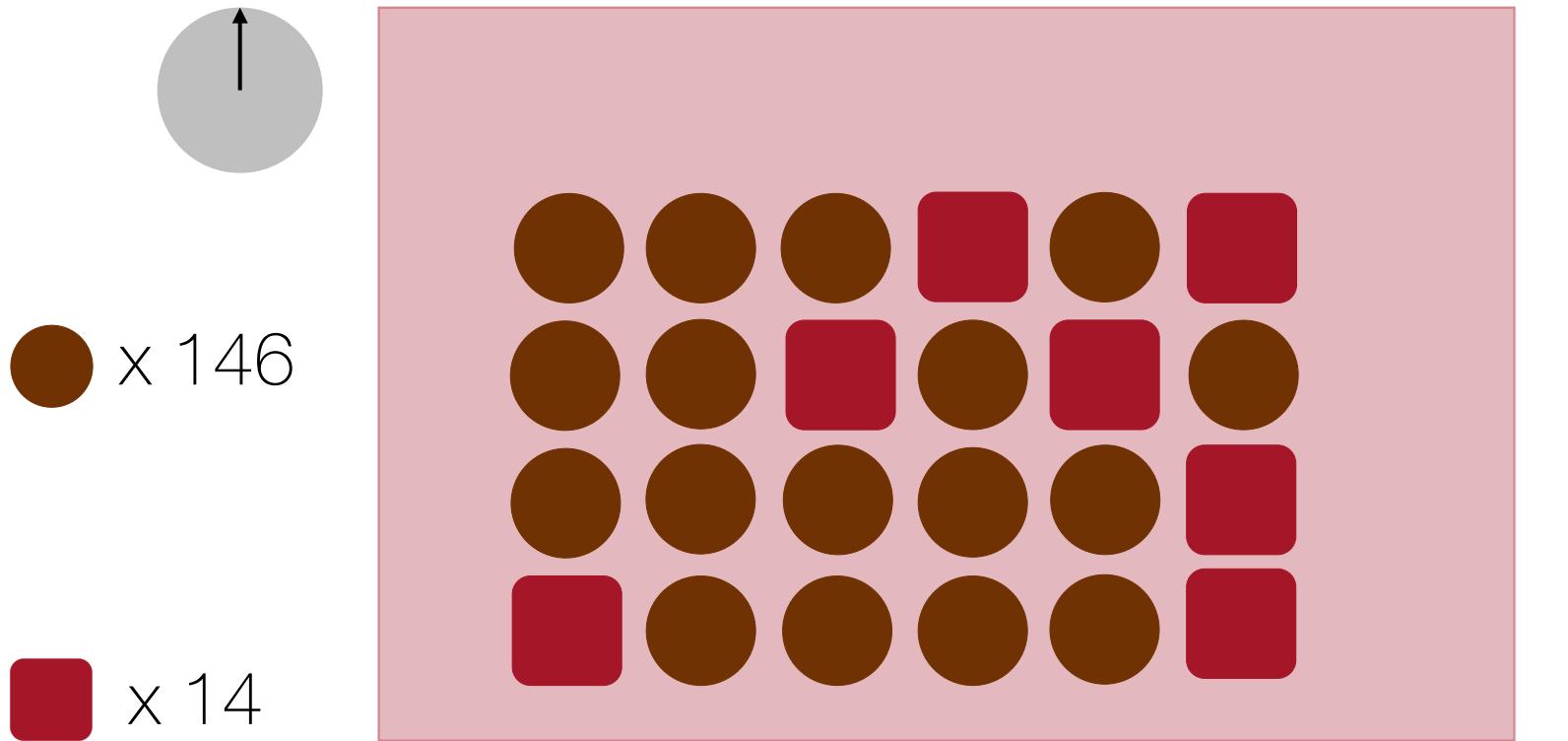
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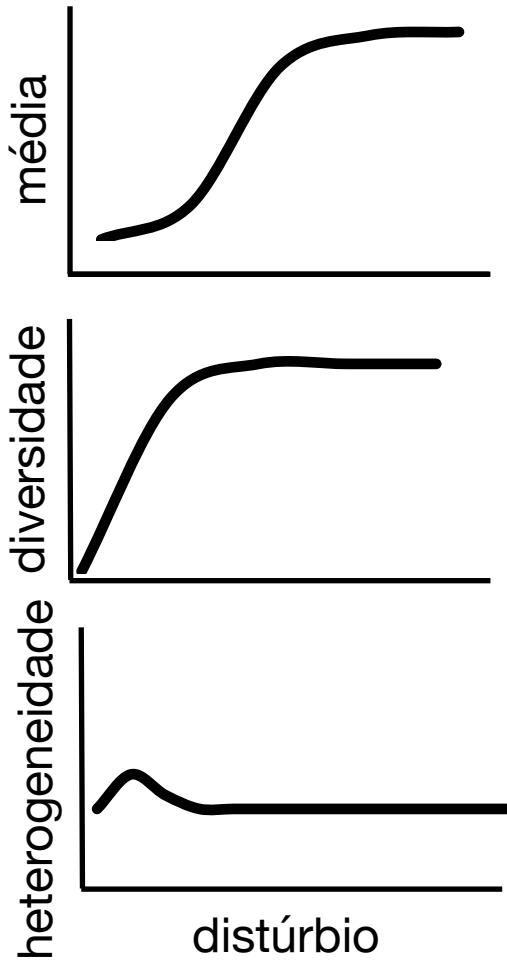
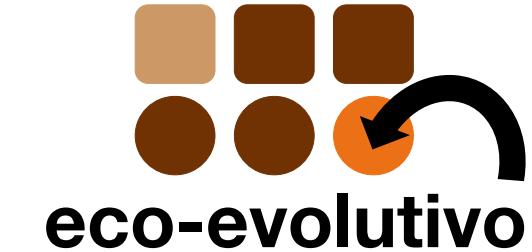
# coexistência de estratégias mediada pelo distúrbio



# coexistência de estratégias mediada pelo distúrbio

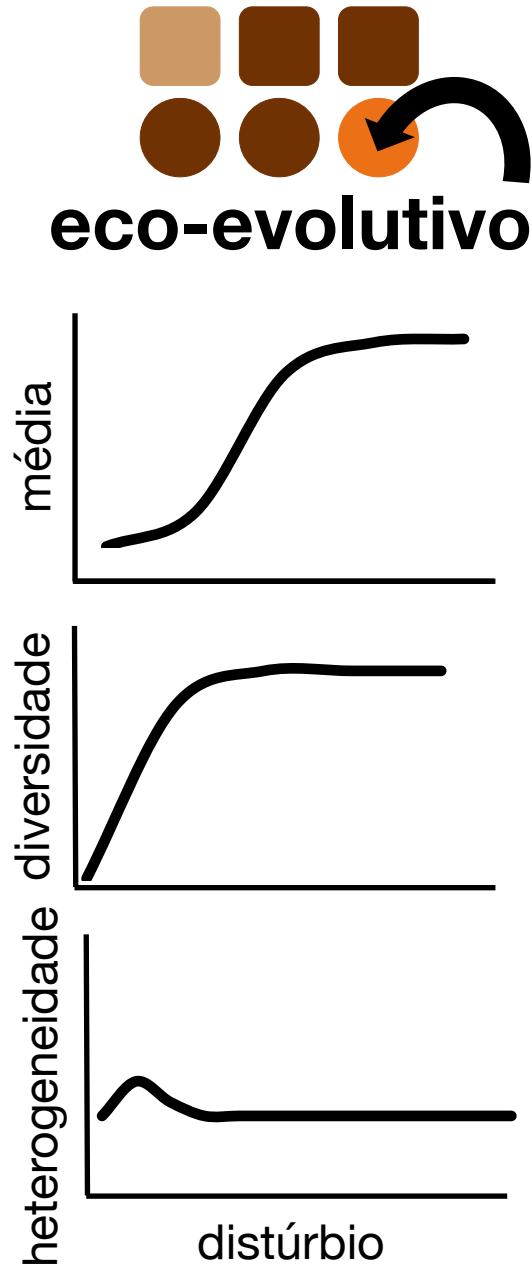
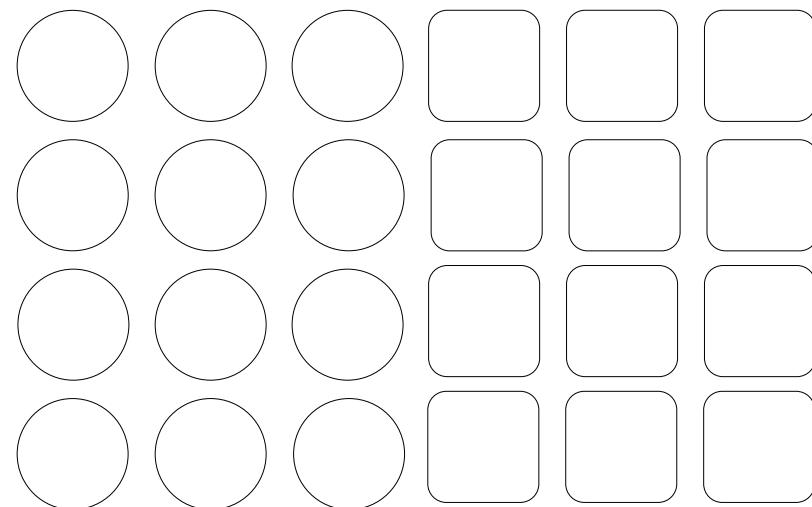


coexistência de especialistas



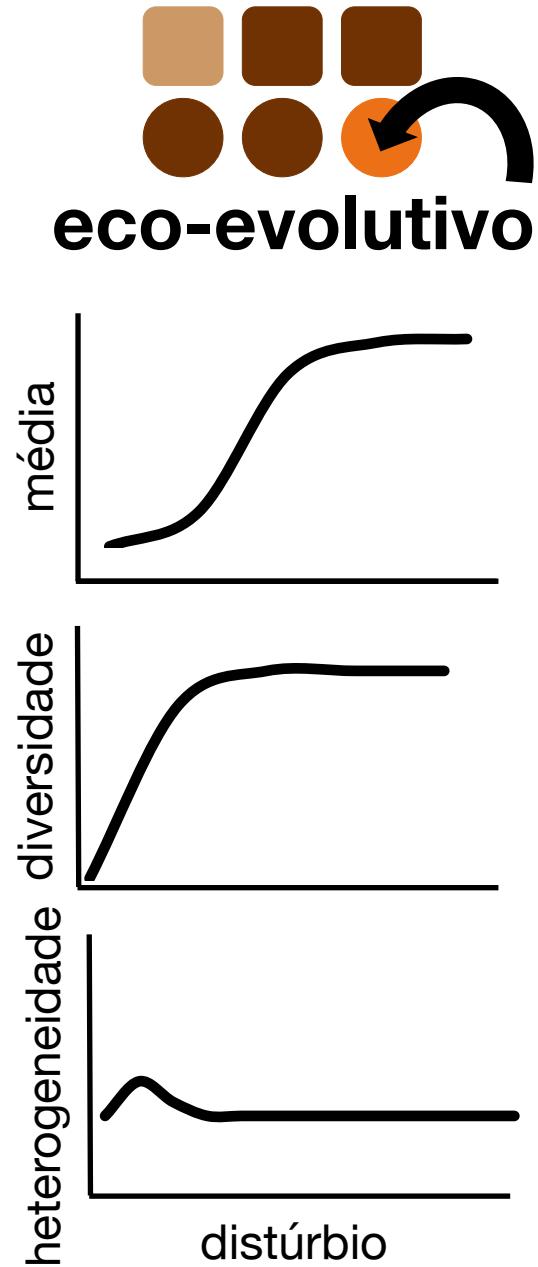
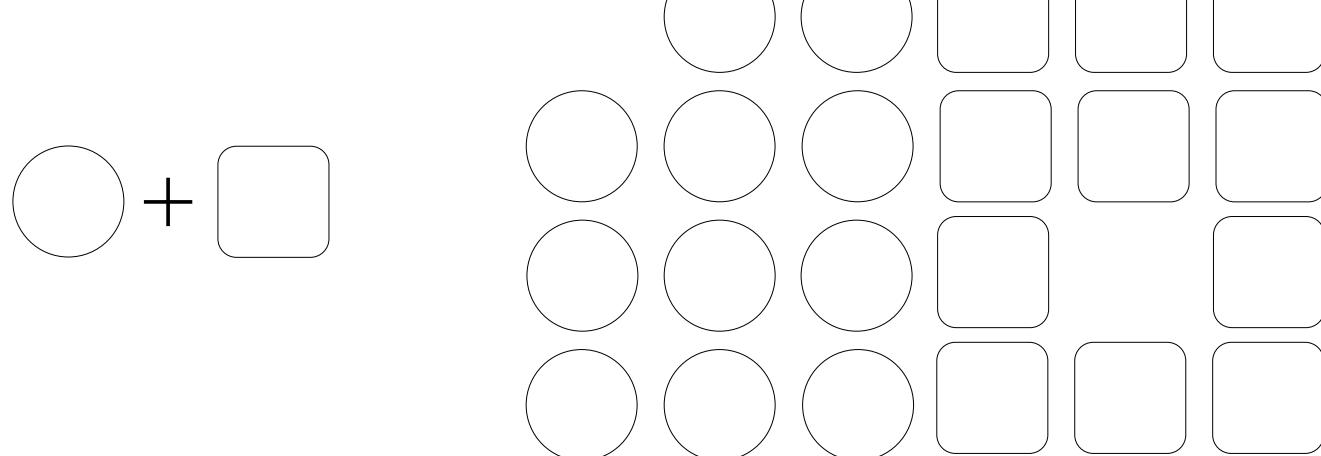
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = isolamento reprodutivo



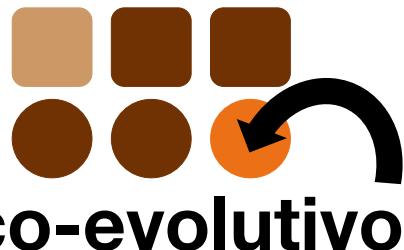
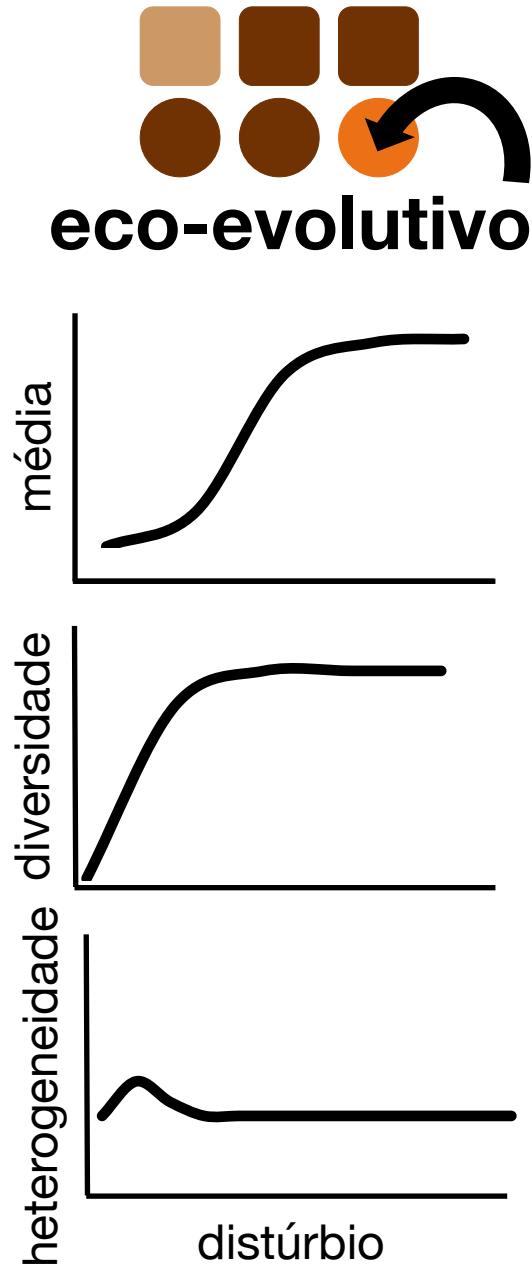
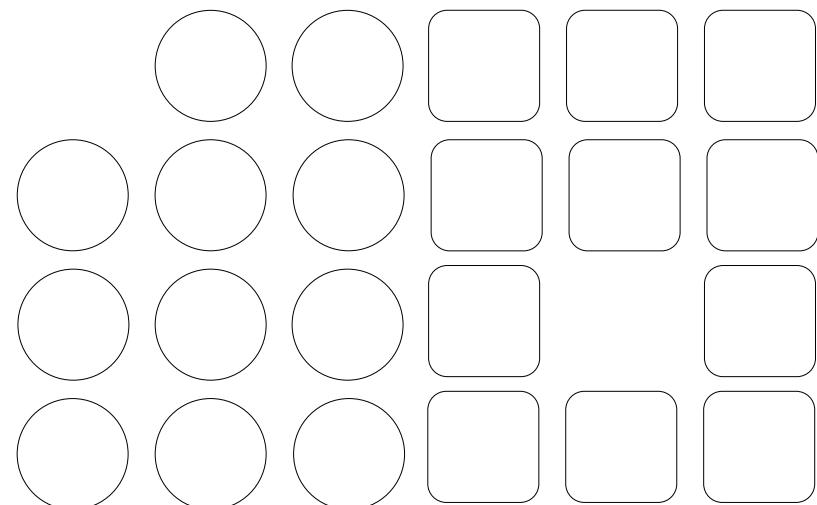
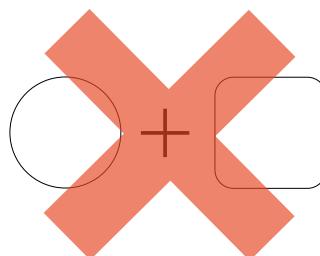
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cenário eco-evolutivo = isolamento reprodutivo



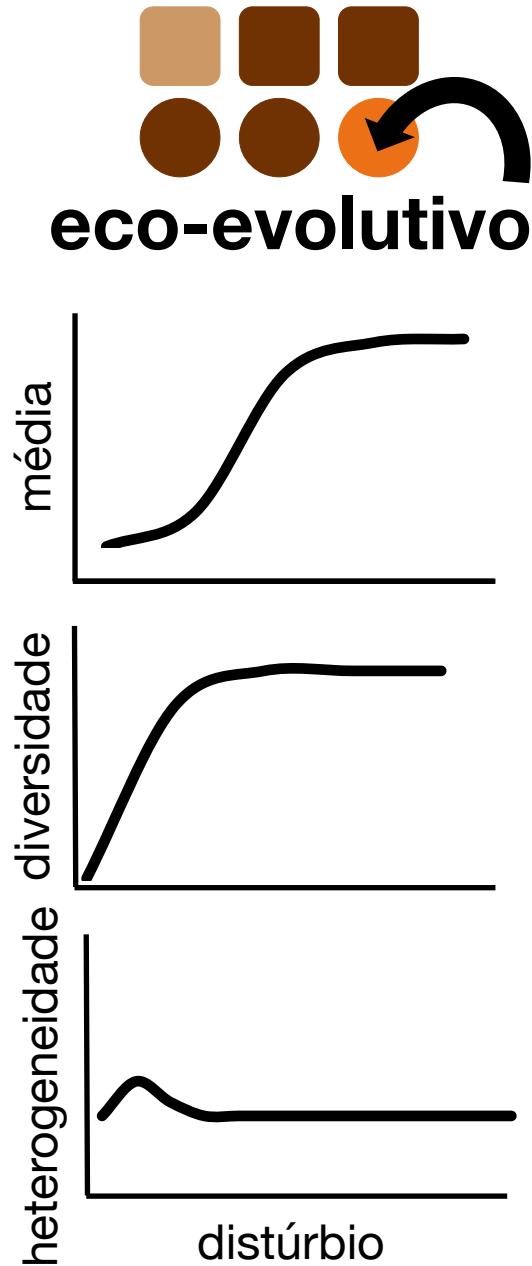
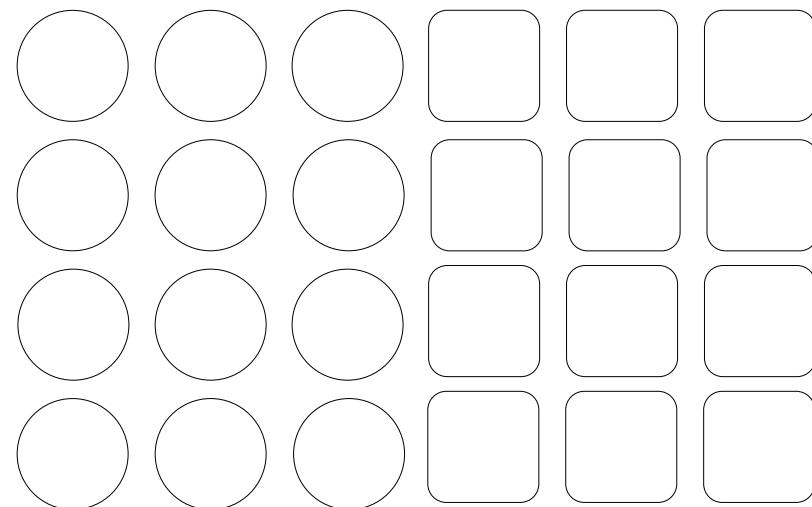
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = isolamento reprodutivo



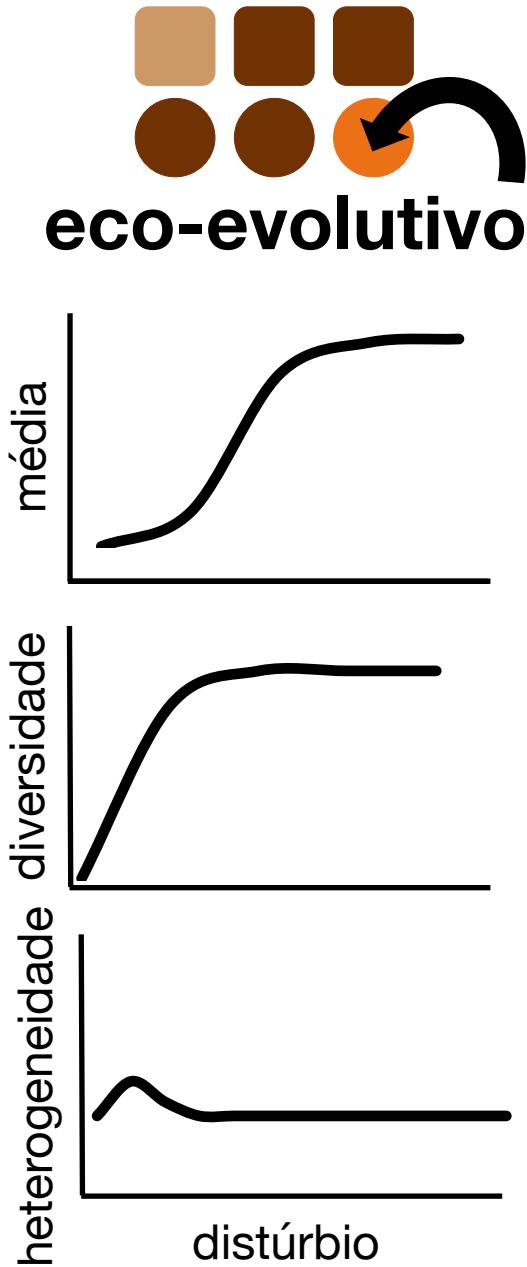
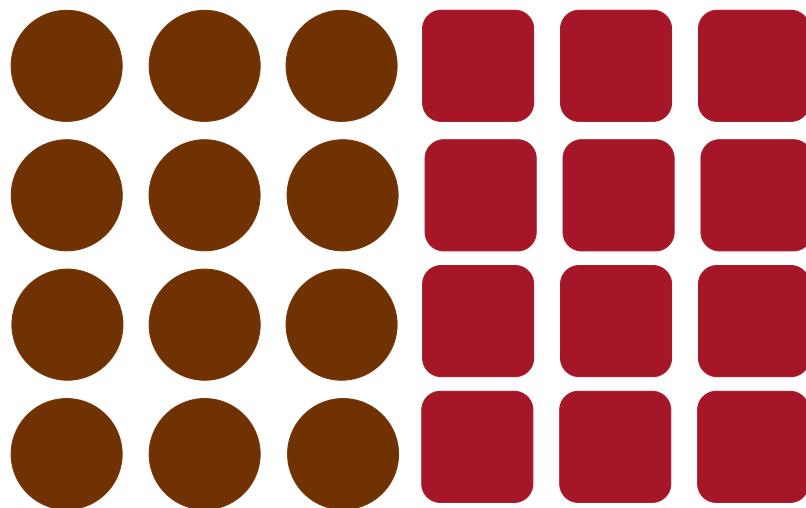
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cenário eco-evolutivo = isolamento reprodutivo



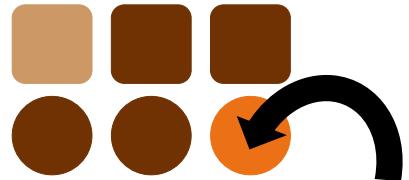
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cenário eco-evolutivo = isolamento reprodutivo

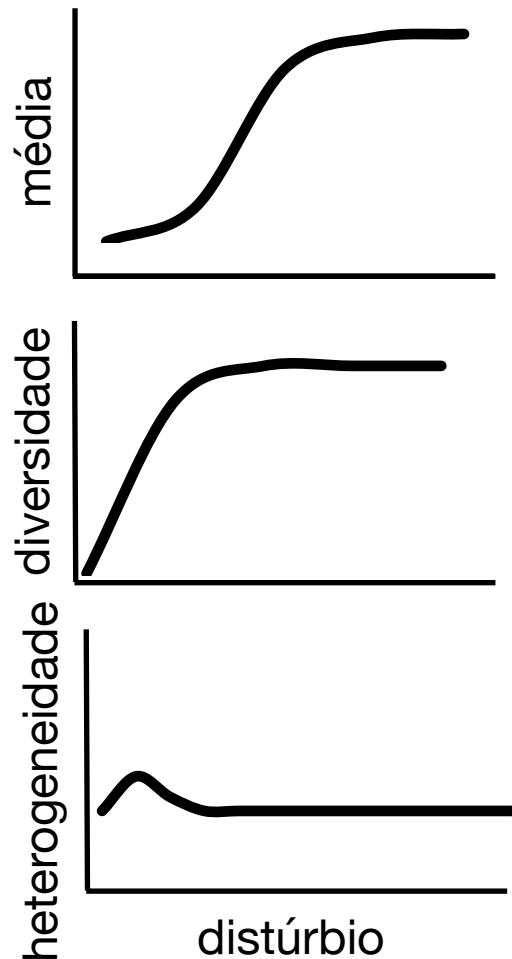


# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação

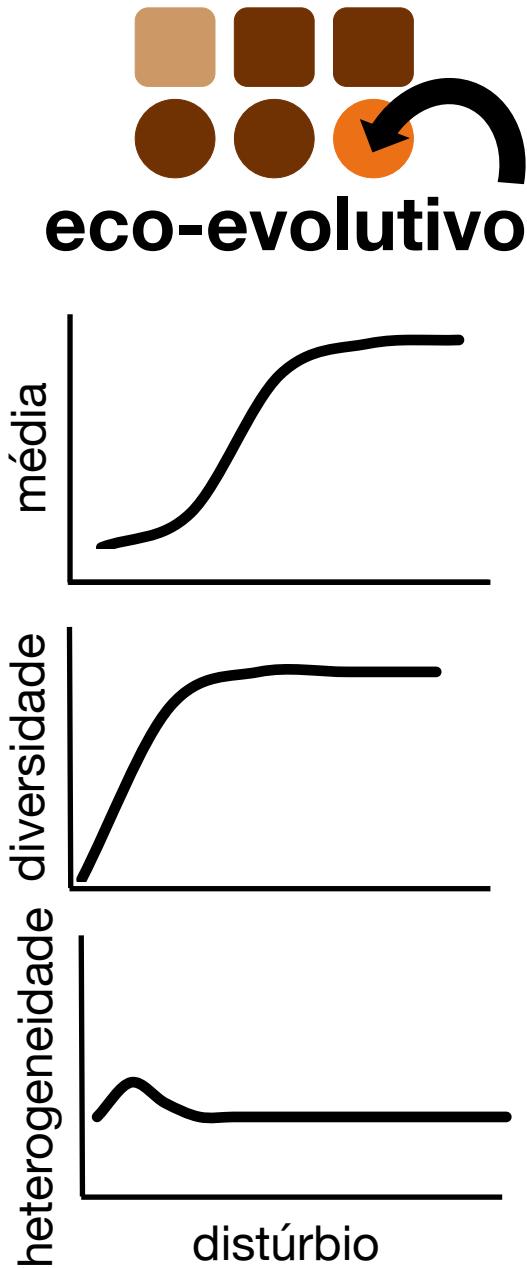
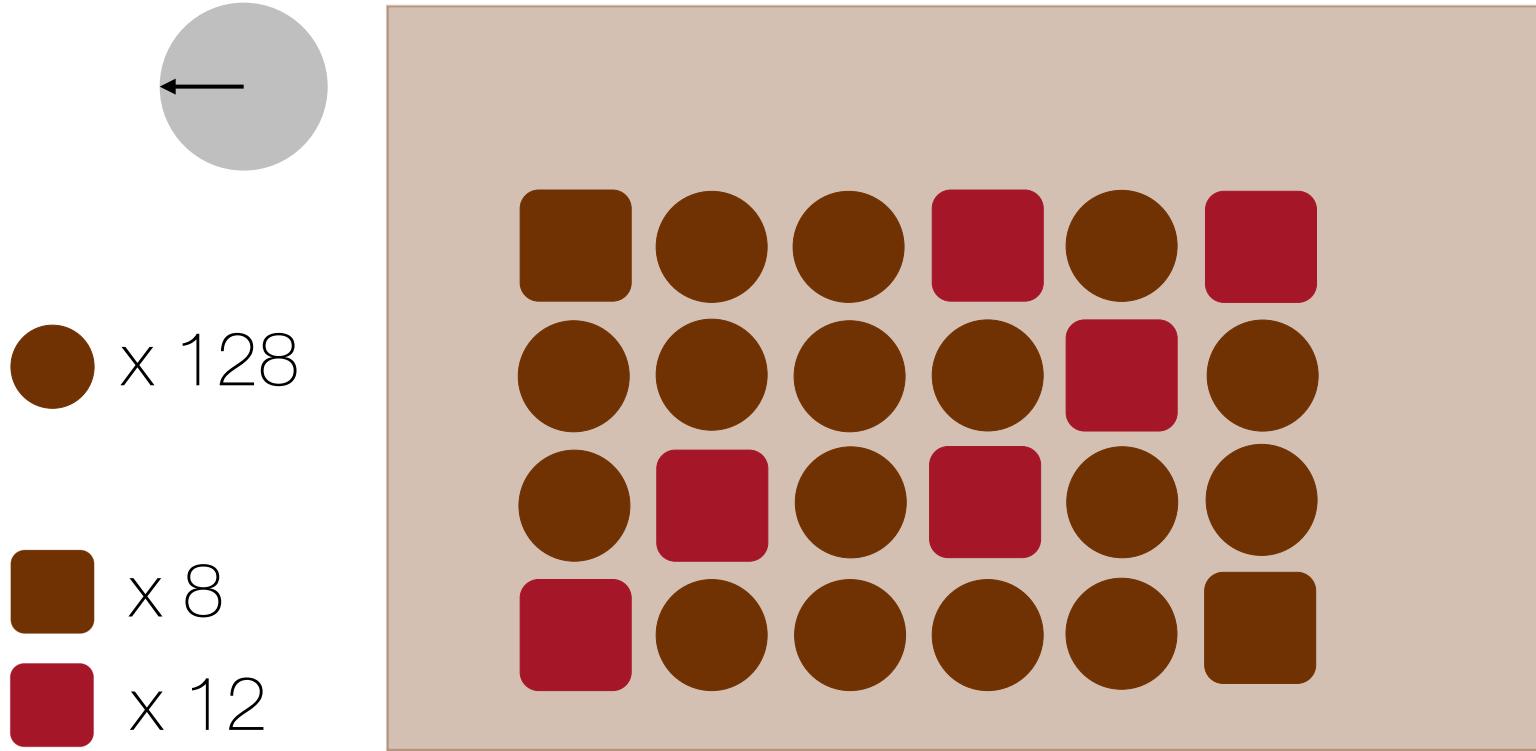


**eco-evolutivo**



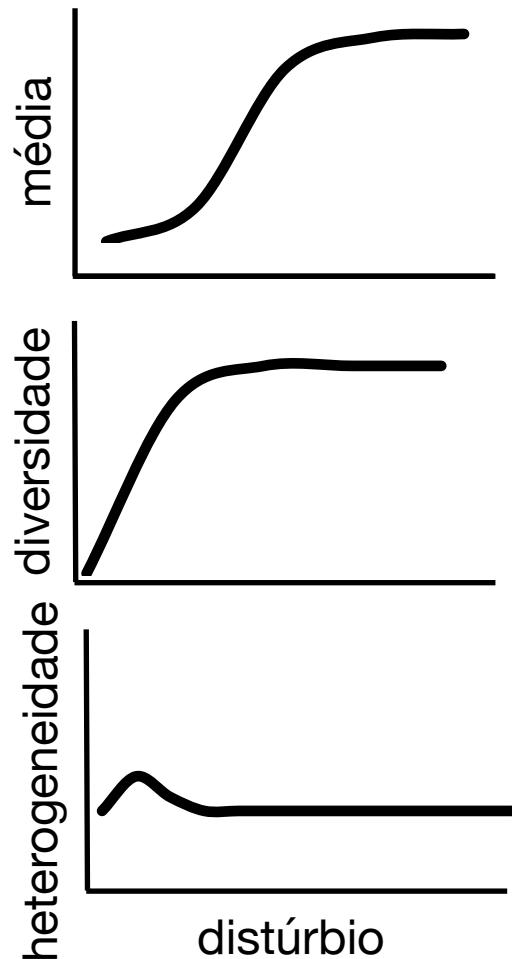
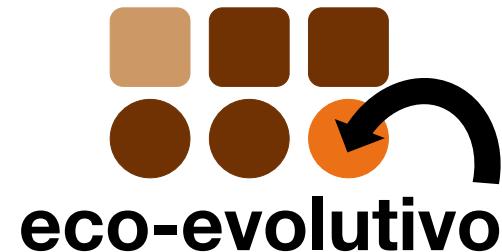
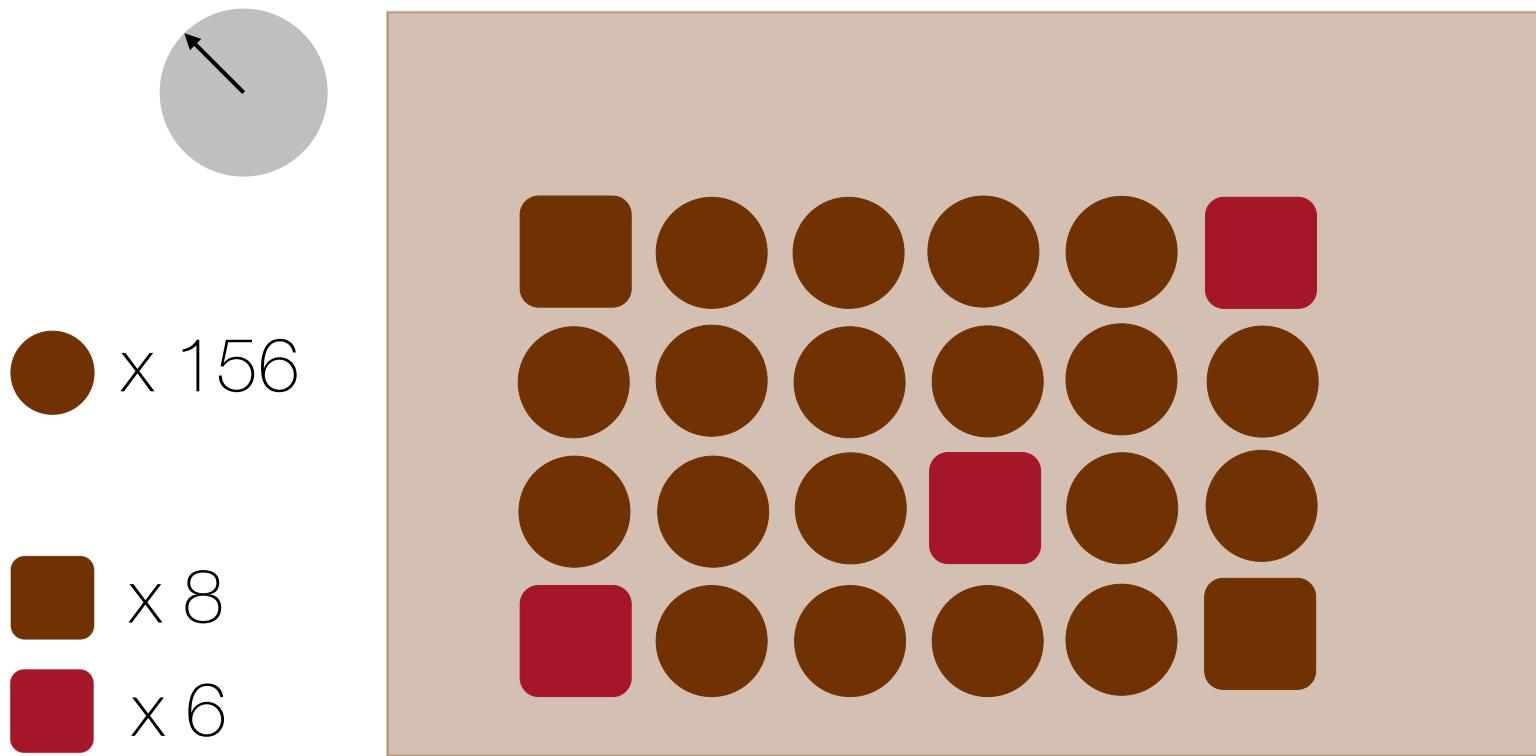
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



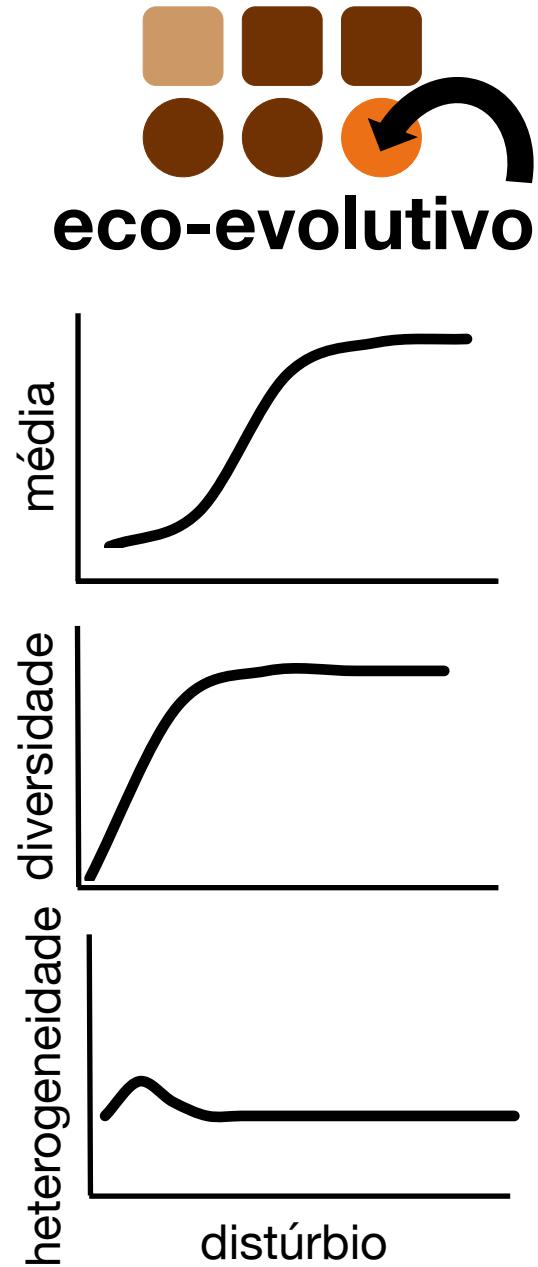
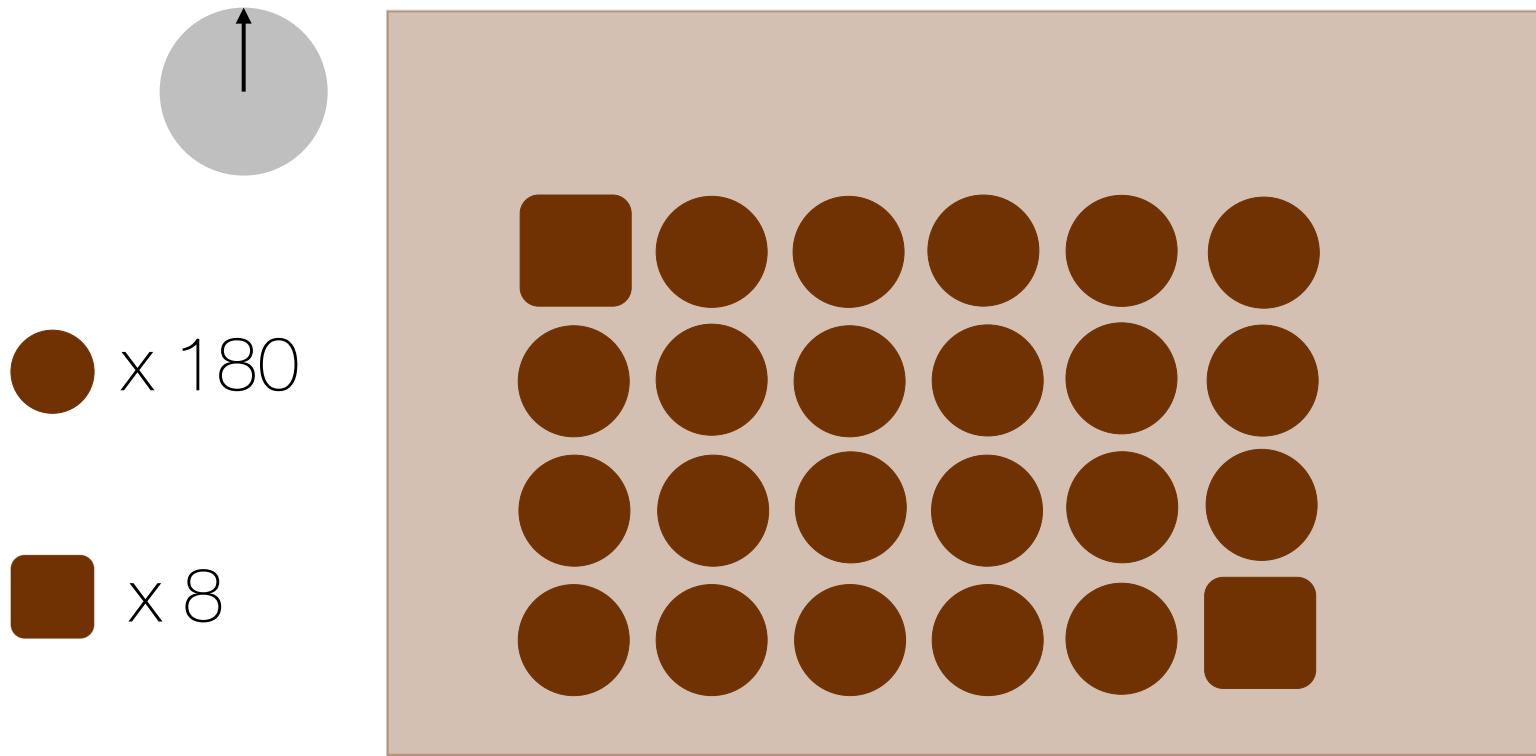
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



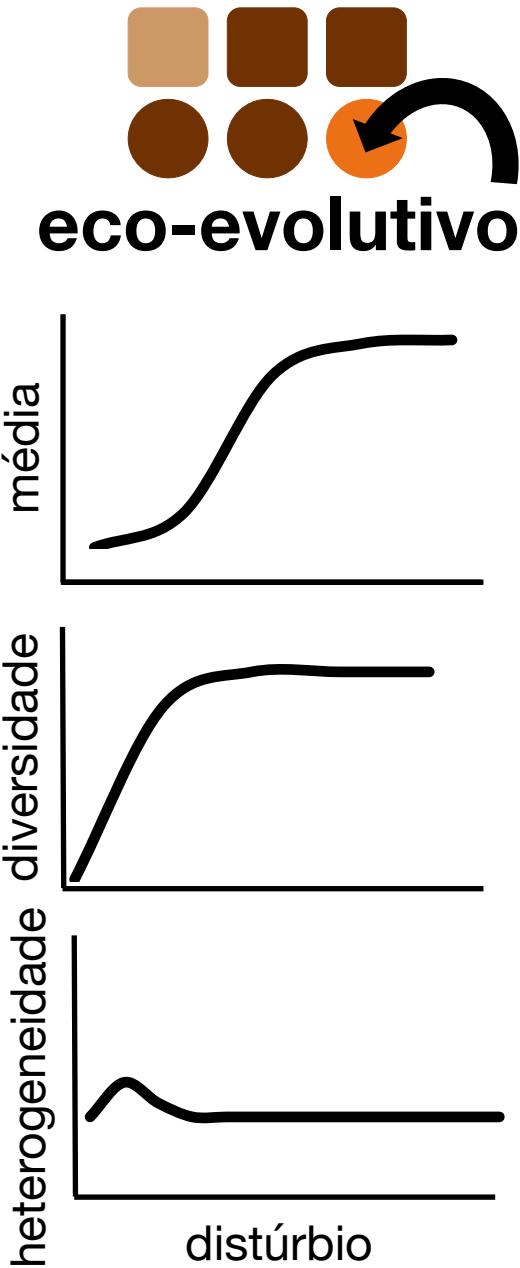
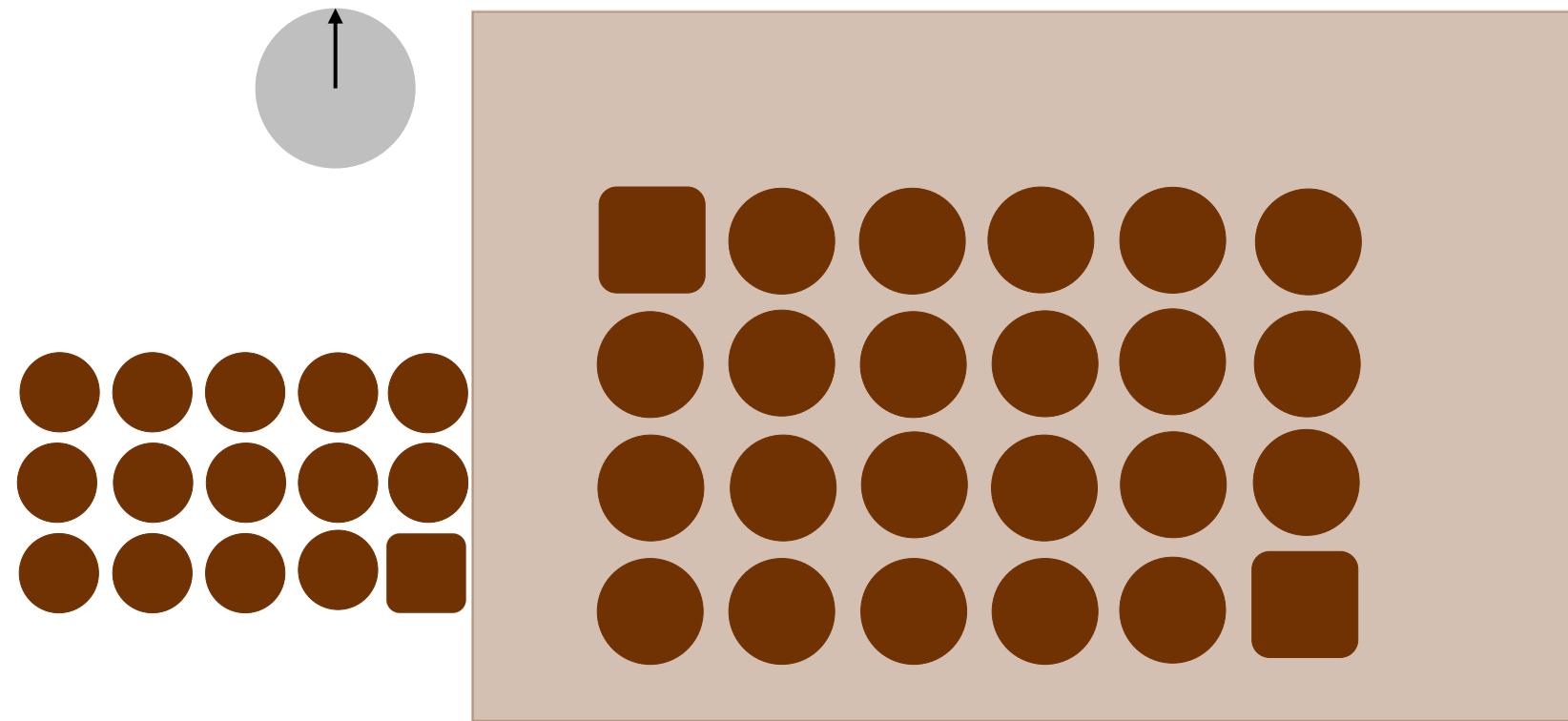
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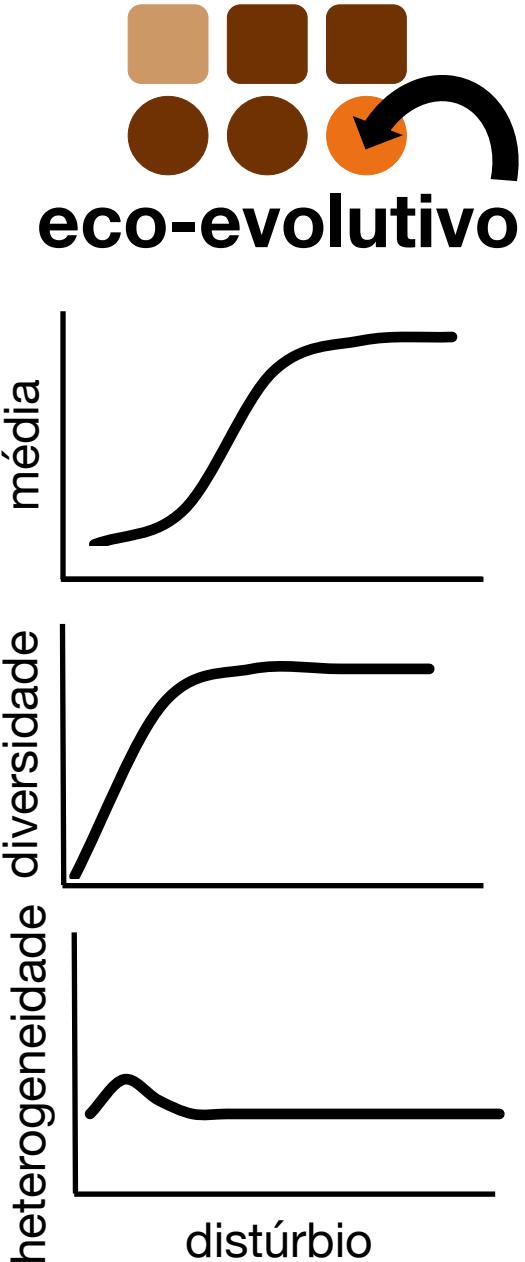
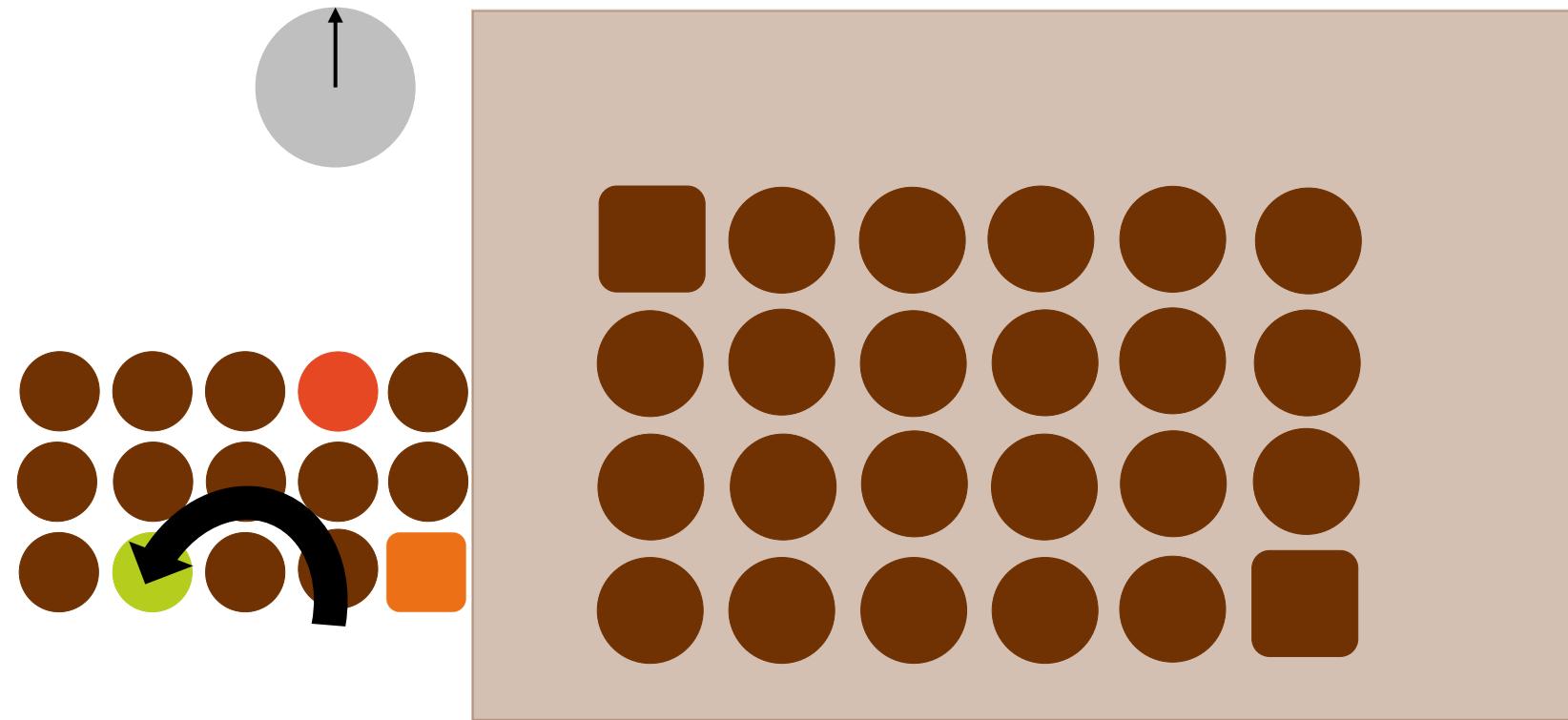
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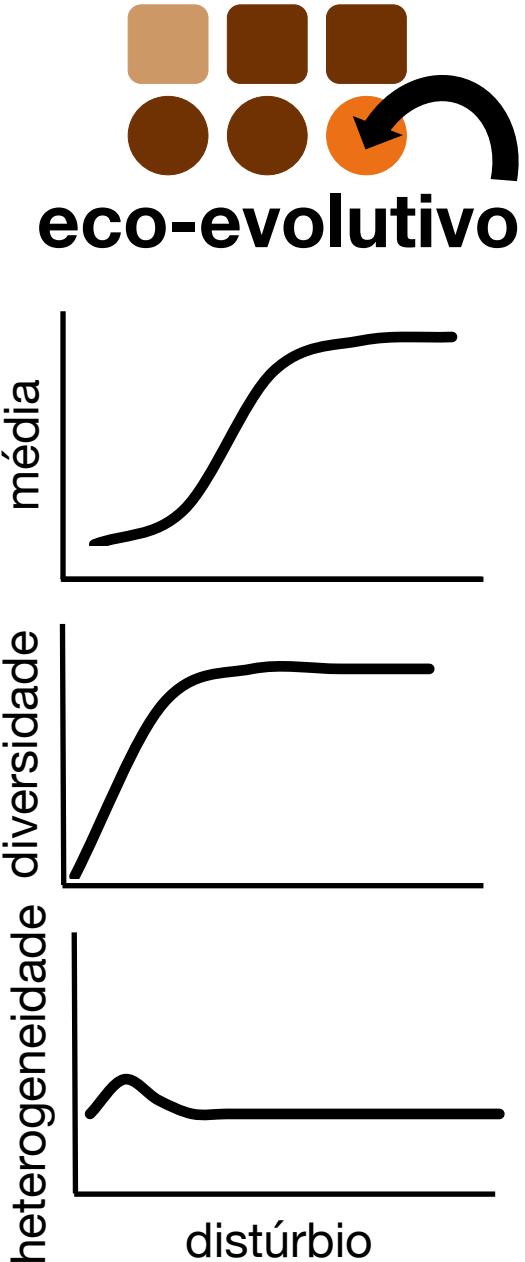
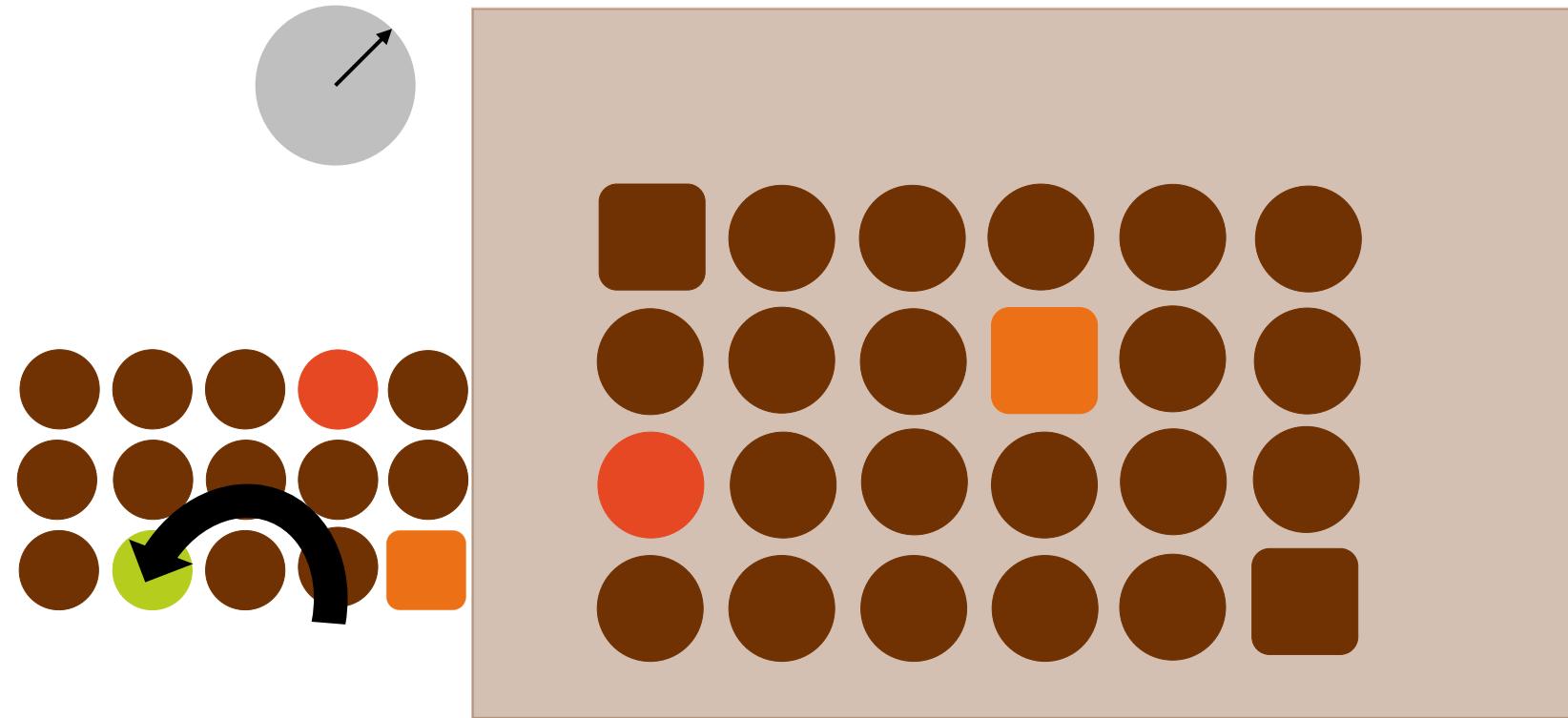
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cenário eco-evolutivo = mutação



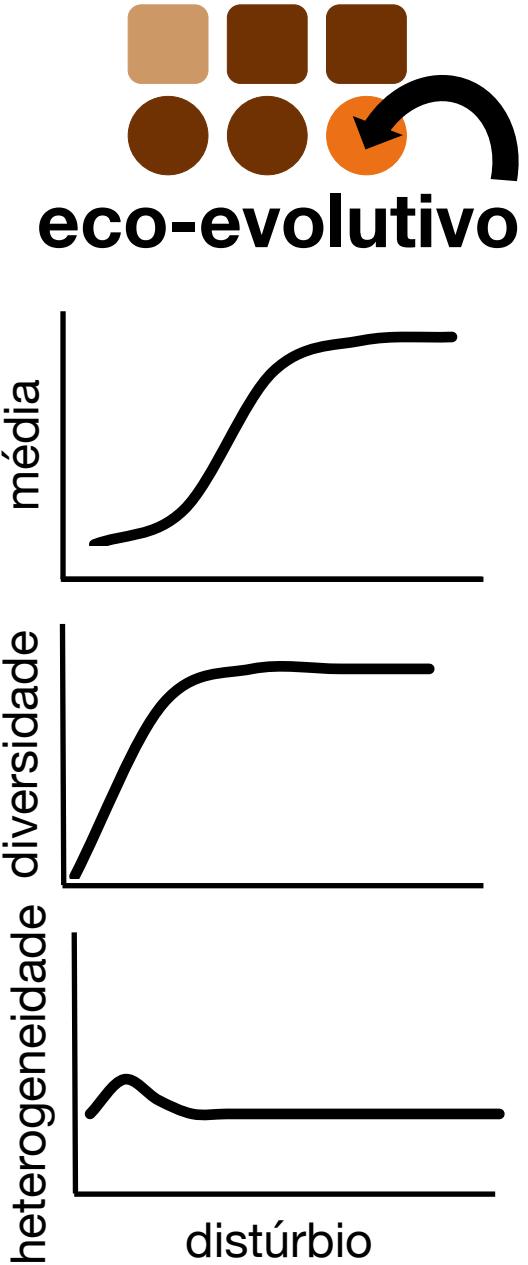
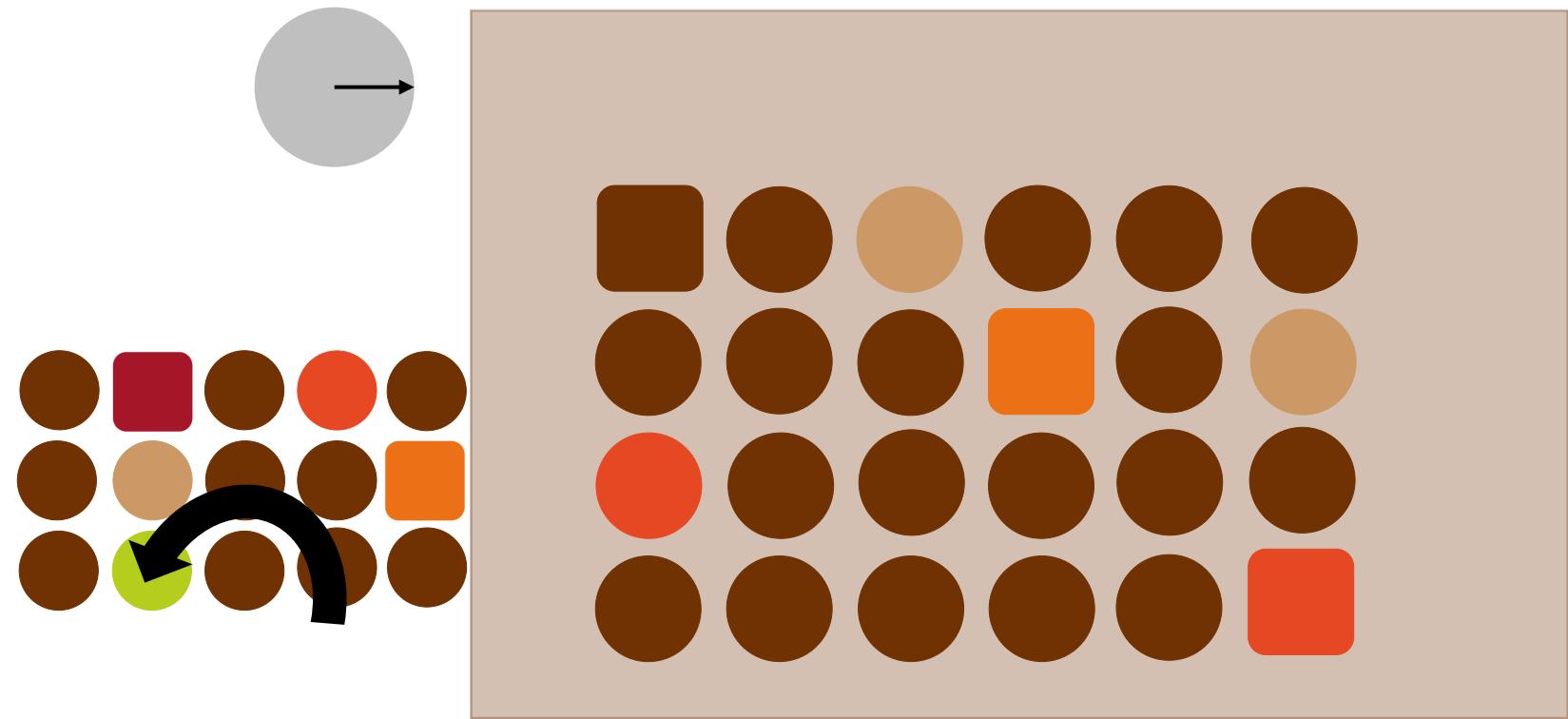
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cenário eco-evolutivo = mutação



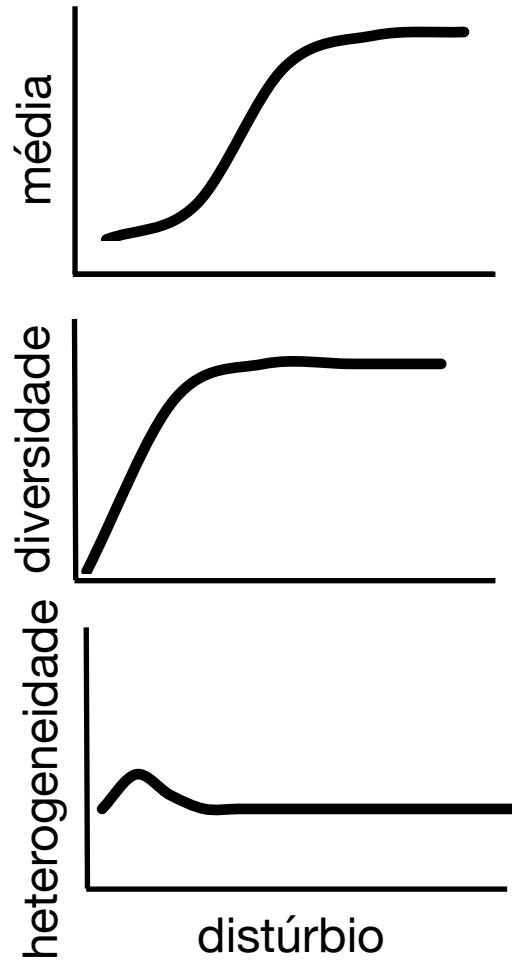
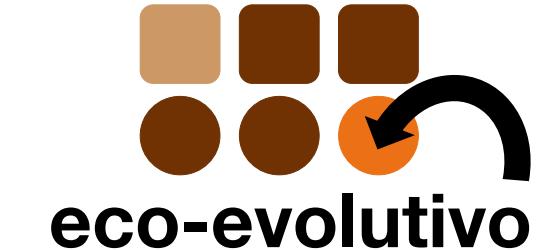
# coexistência de estratégias mediada pelo distúrbio

cenário eco-evolutivo = mutação



# coexistência de estratégias mediada pelo distúrbio

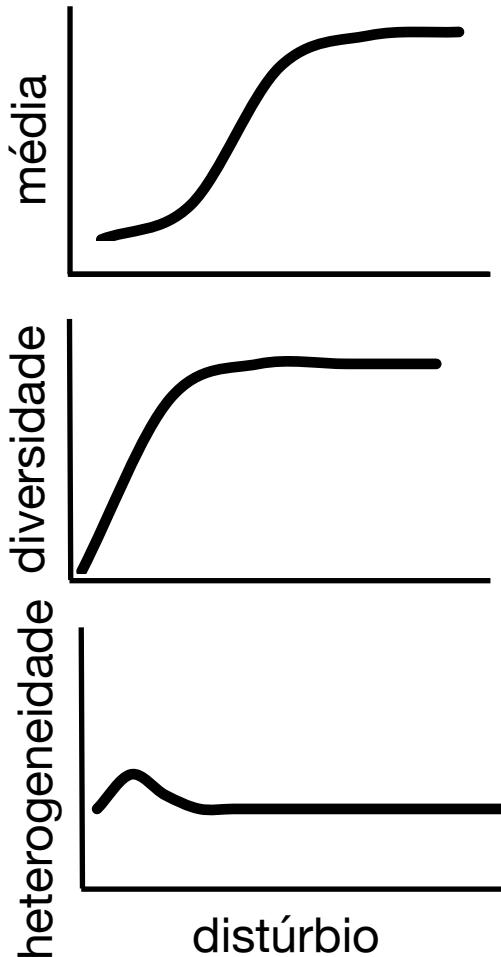
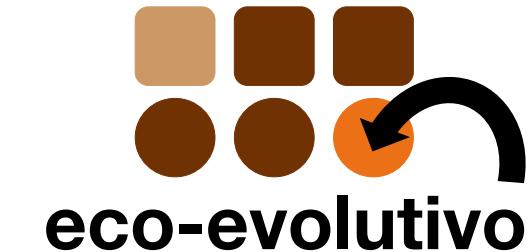
*storage effect:*



# coexistência de estratégias mediada pelo distúrbio

*storage effect:*

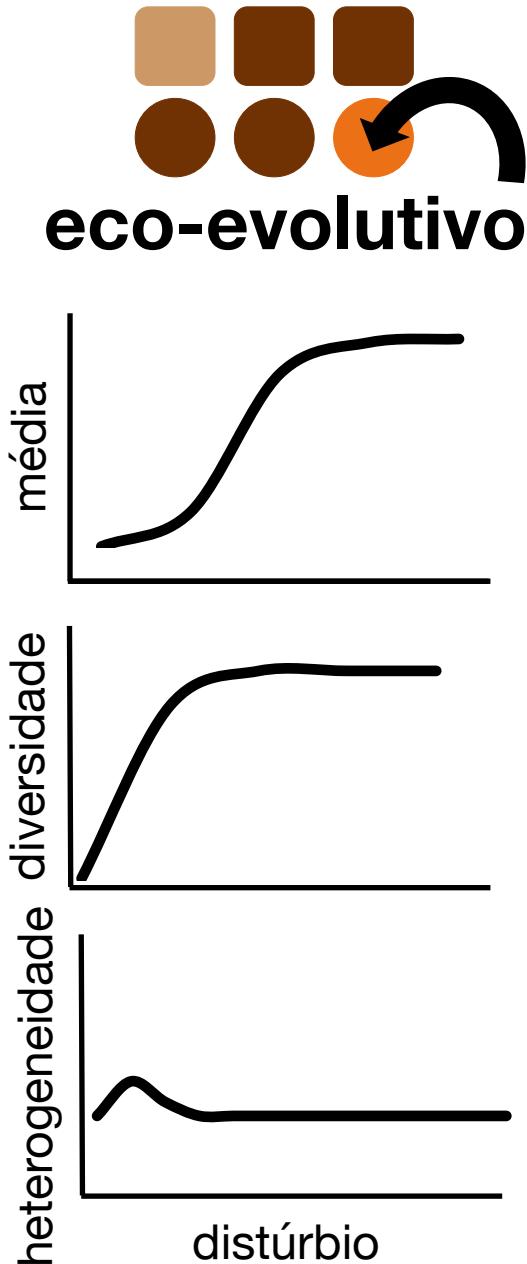
- diferença na resposta ao ambiente



# coexistência de estratégias mediada pelo distúrbio

*storage effect:*

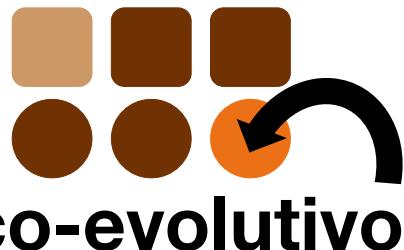
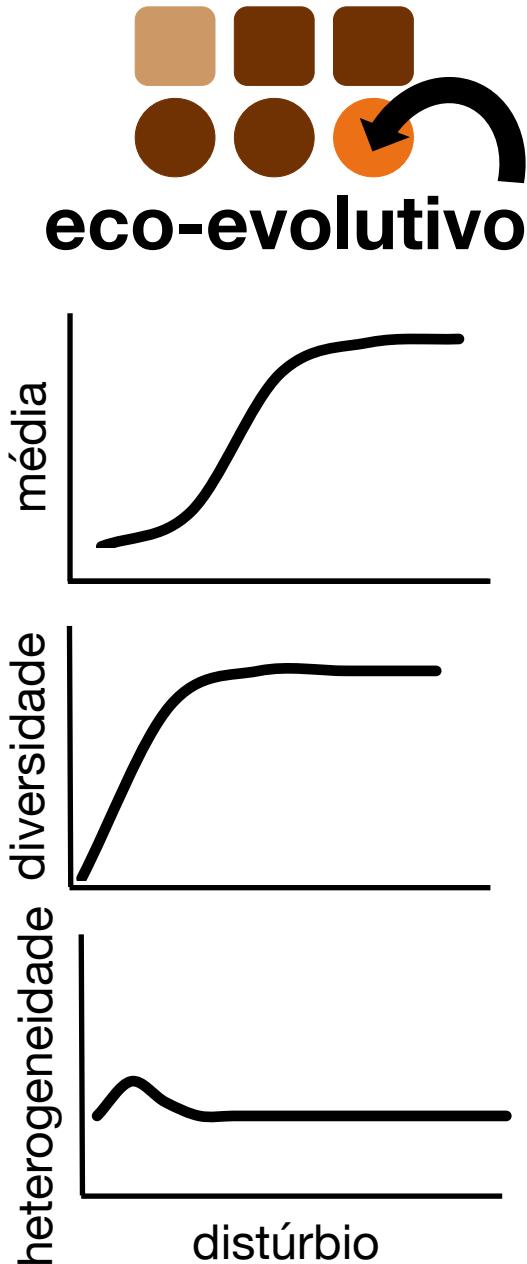
- diferença na reposita ao ambiente
- crescimento populacional tamponado



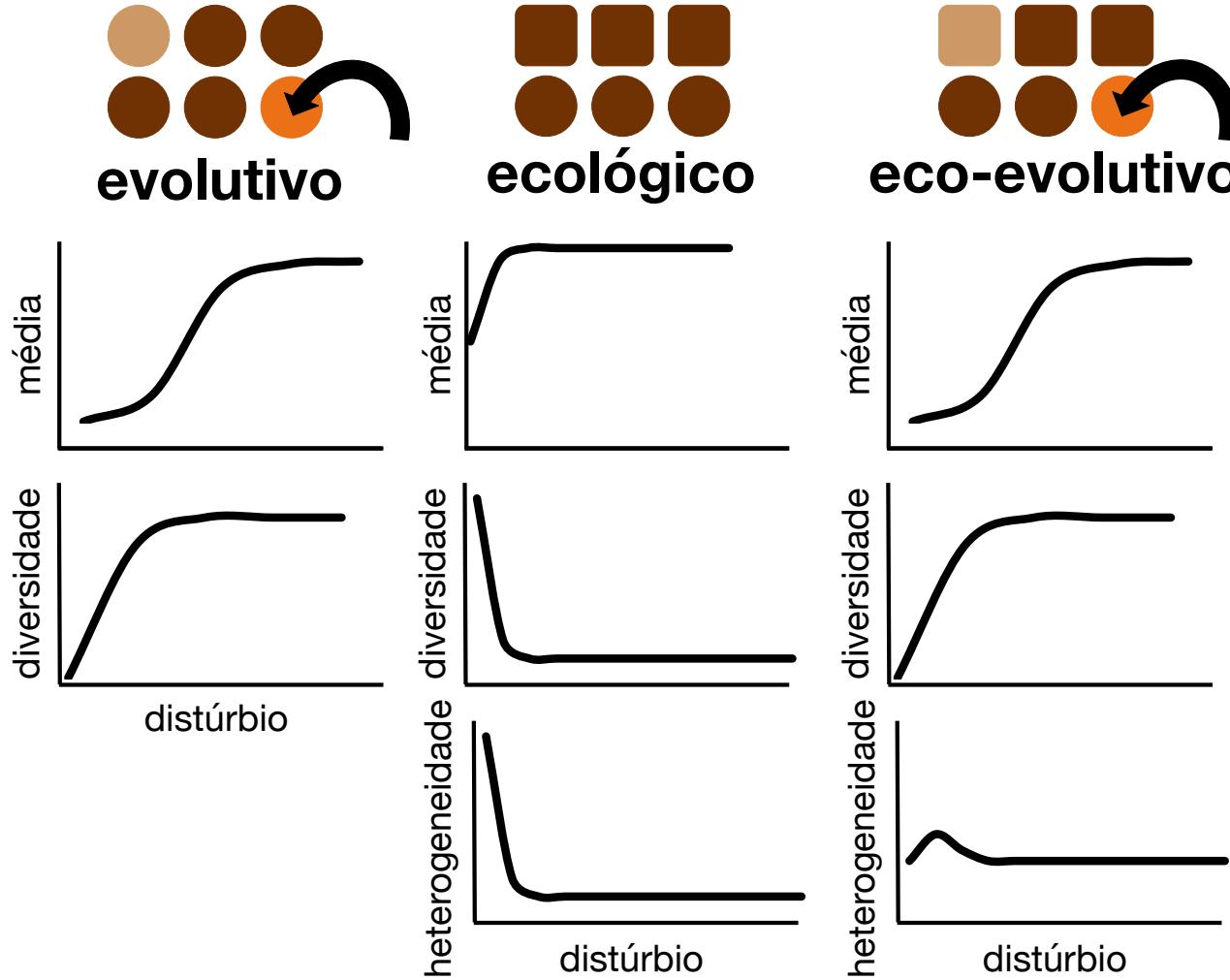
# coexistência de estratégias mediada pelo distúrbio

*storage effect:*

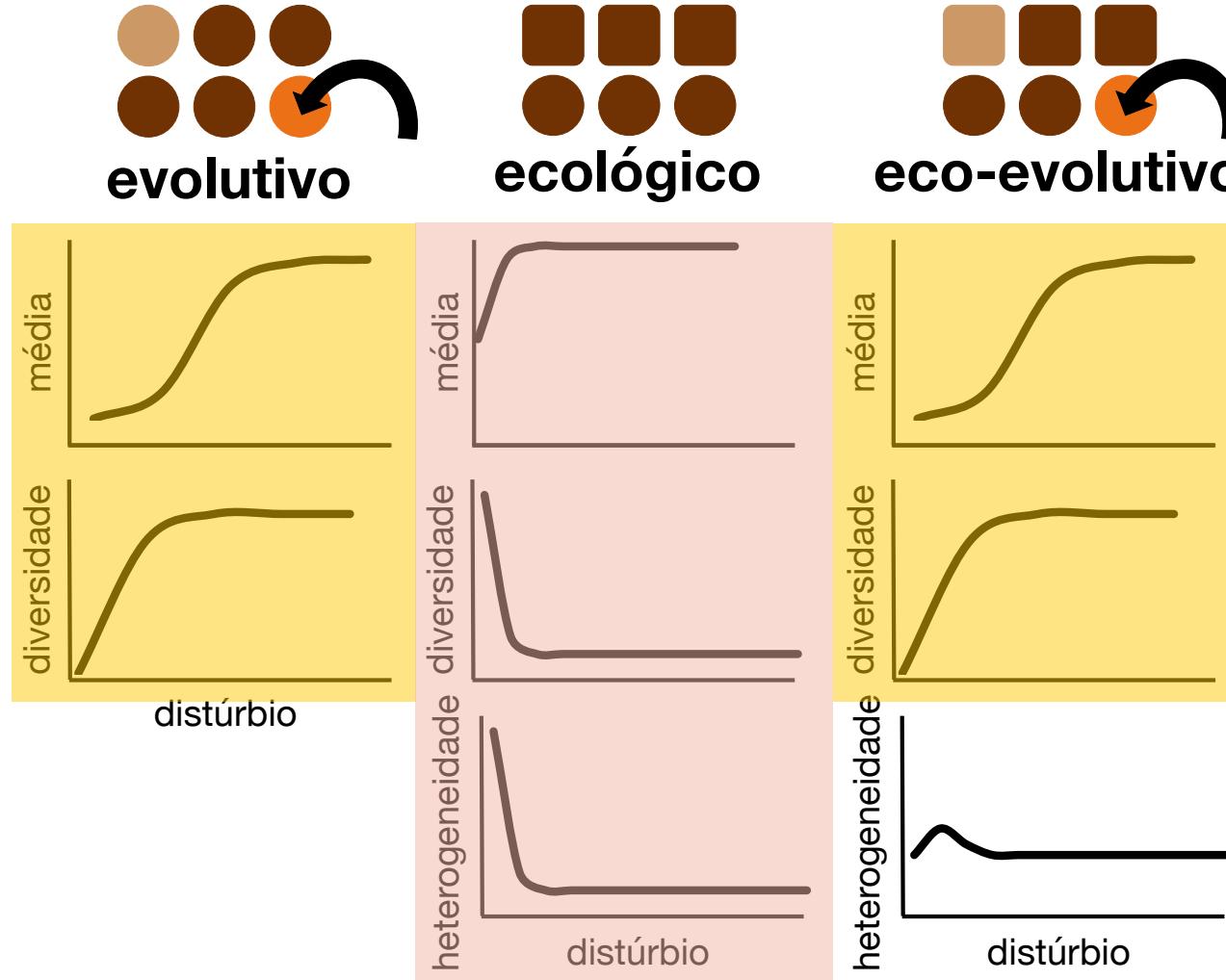
- diferença na reposita ao ambiente  
(= isolamento reprodutivo das espécies)
- crescimento populacional tamponado  
(= mutação)



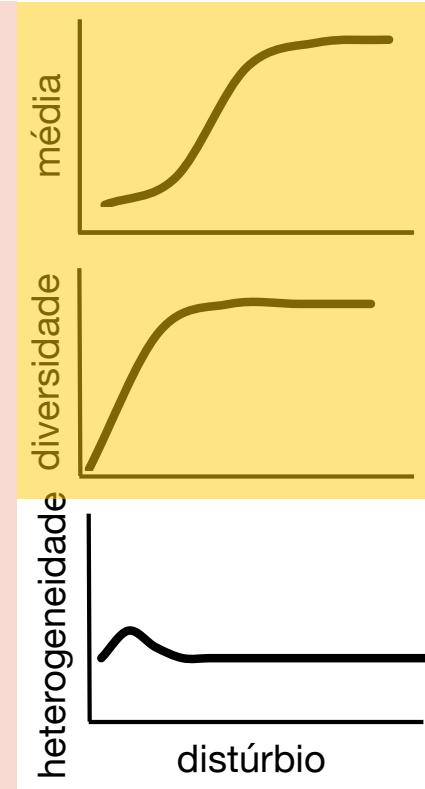
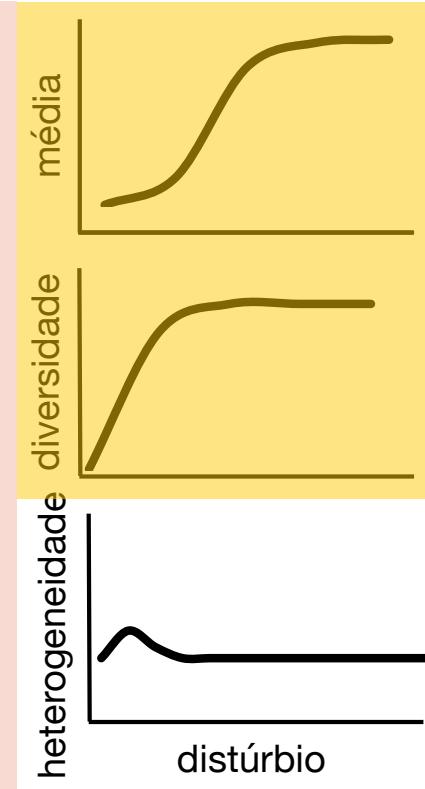
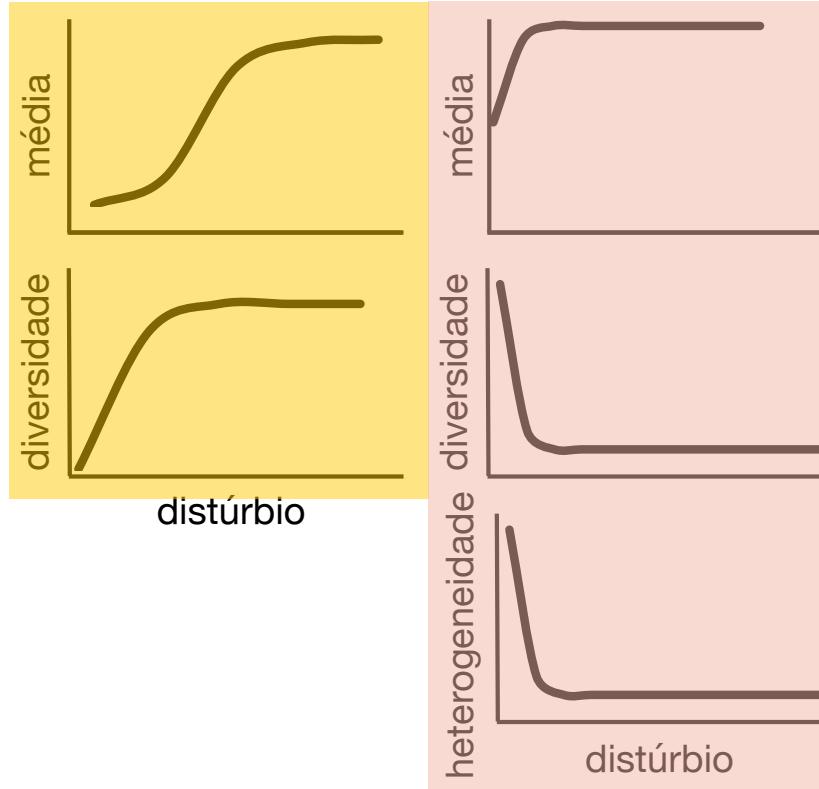
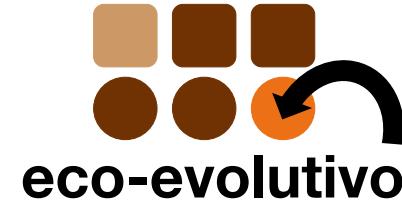
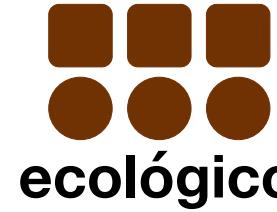
# cenários



# cenários

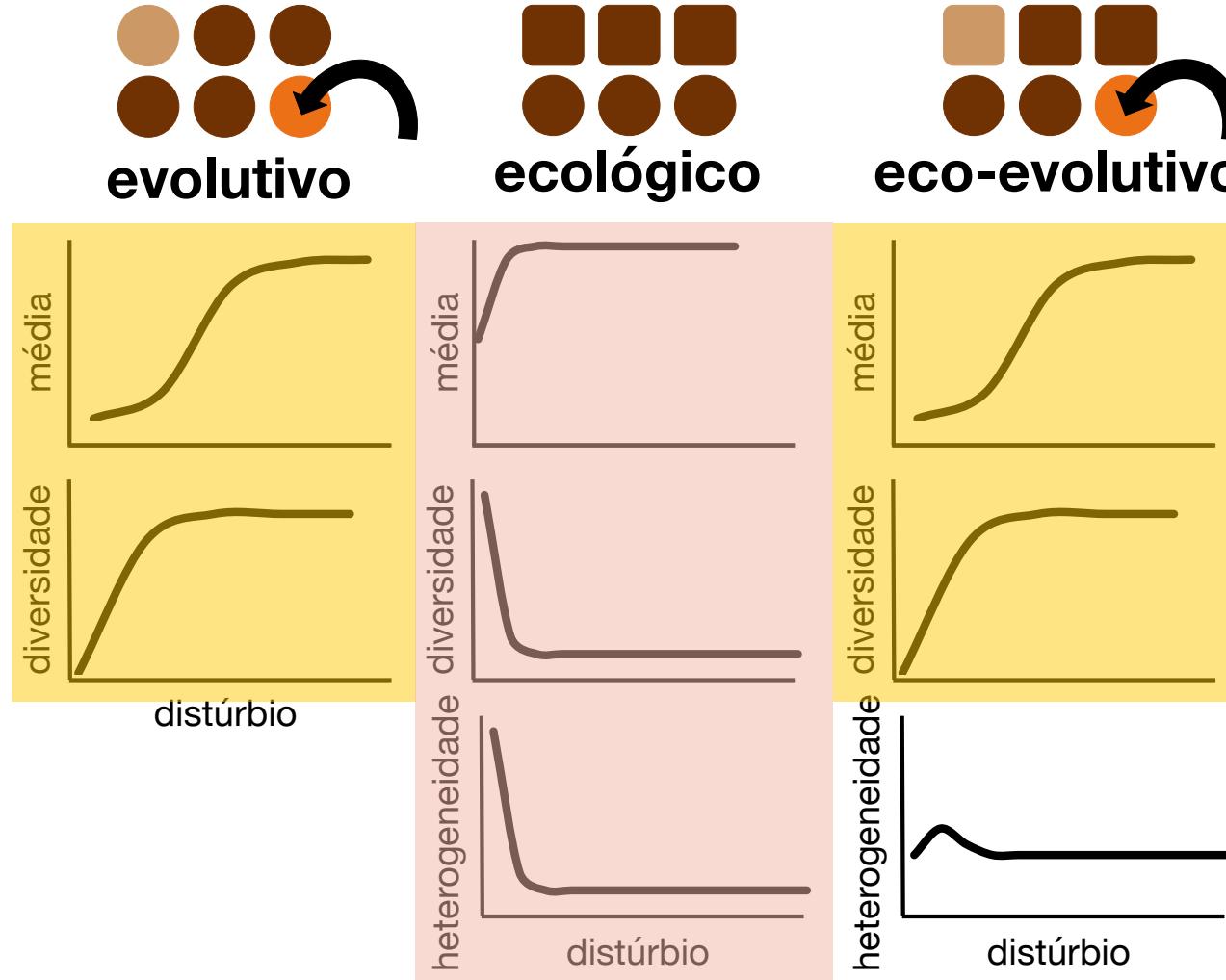


# cenários



# mutação

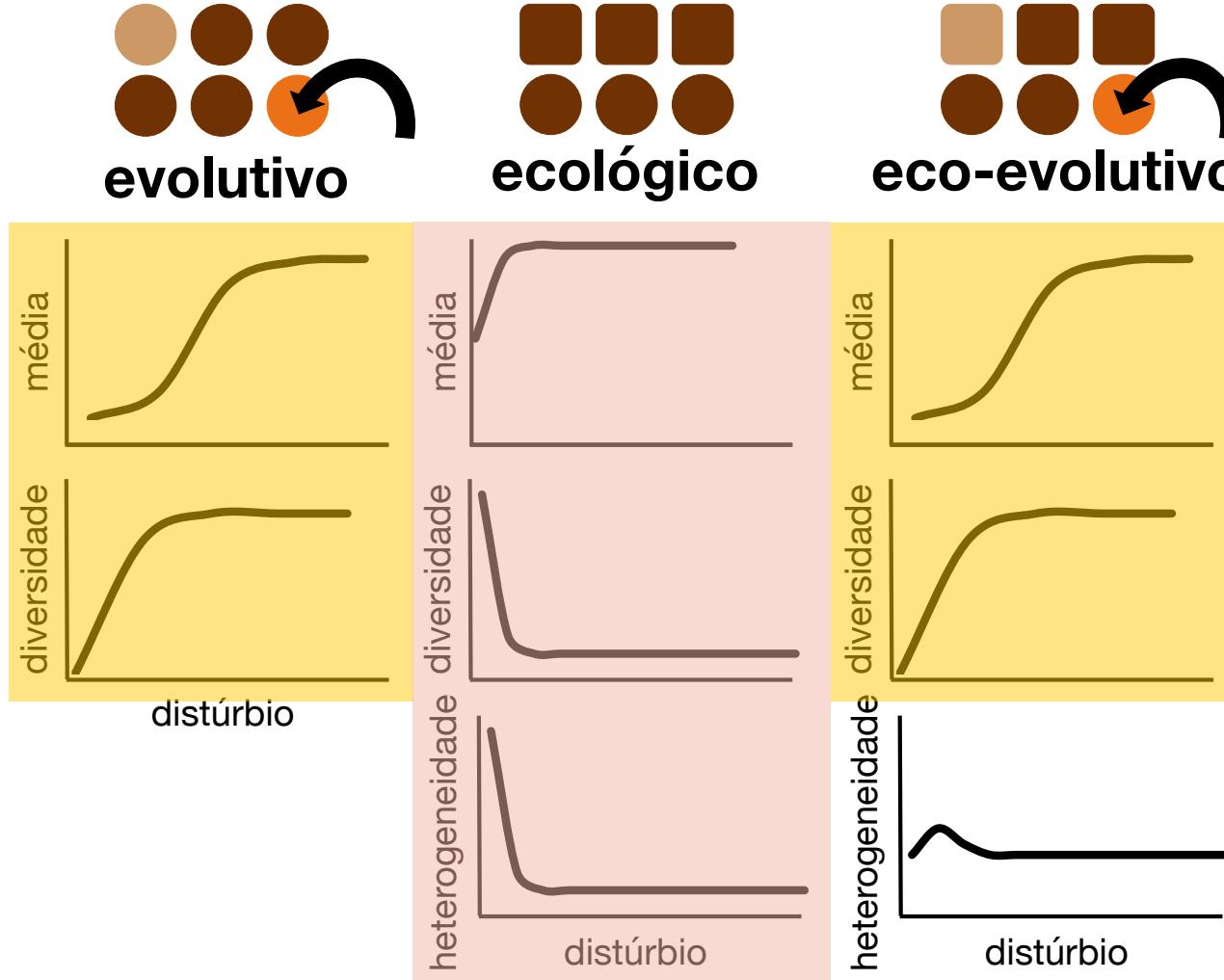
# cenários



# mutação

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

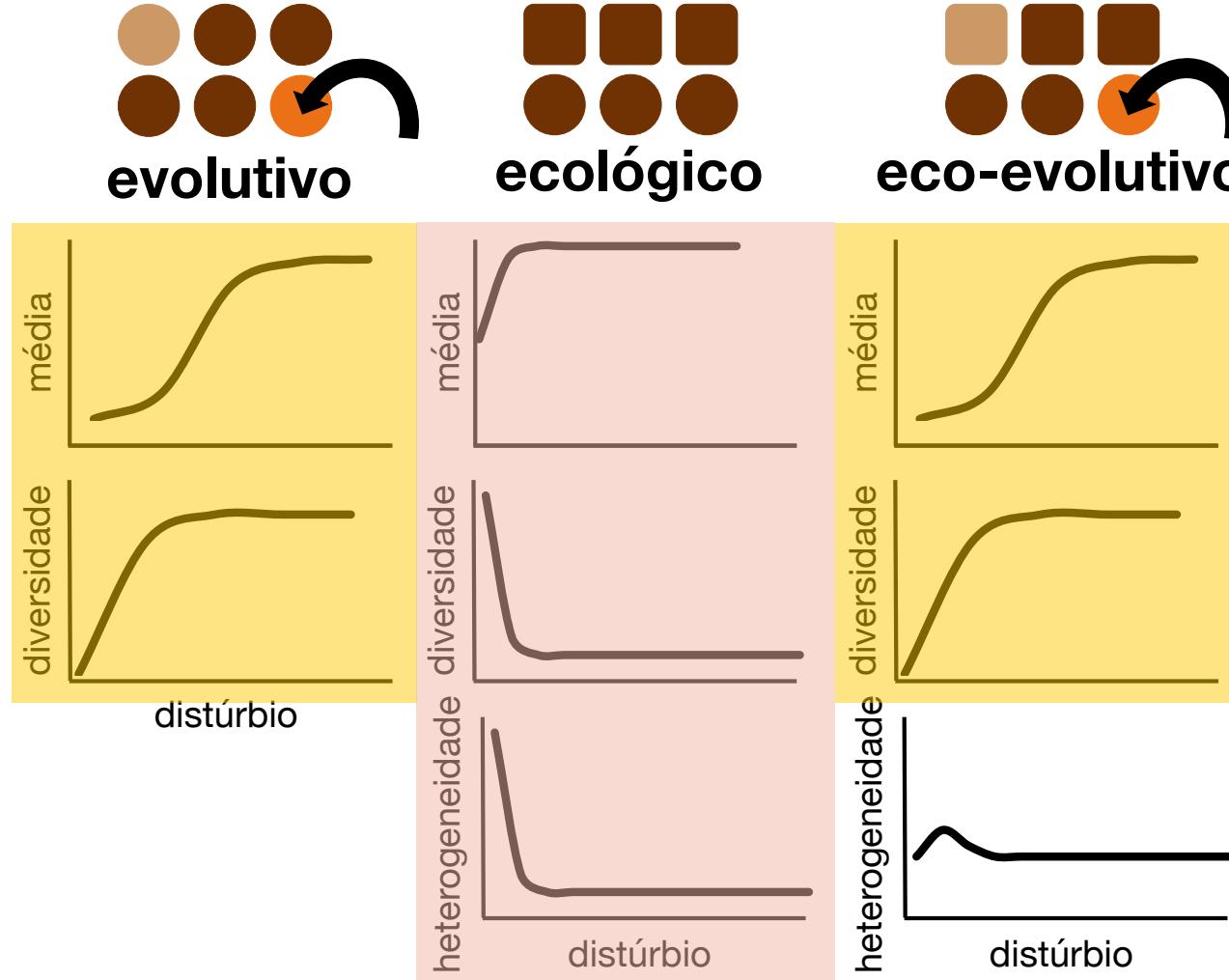
# cenários



# 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

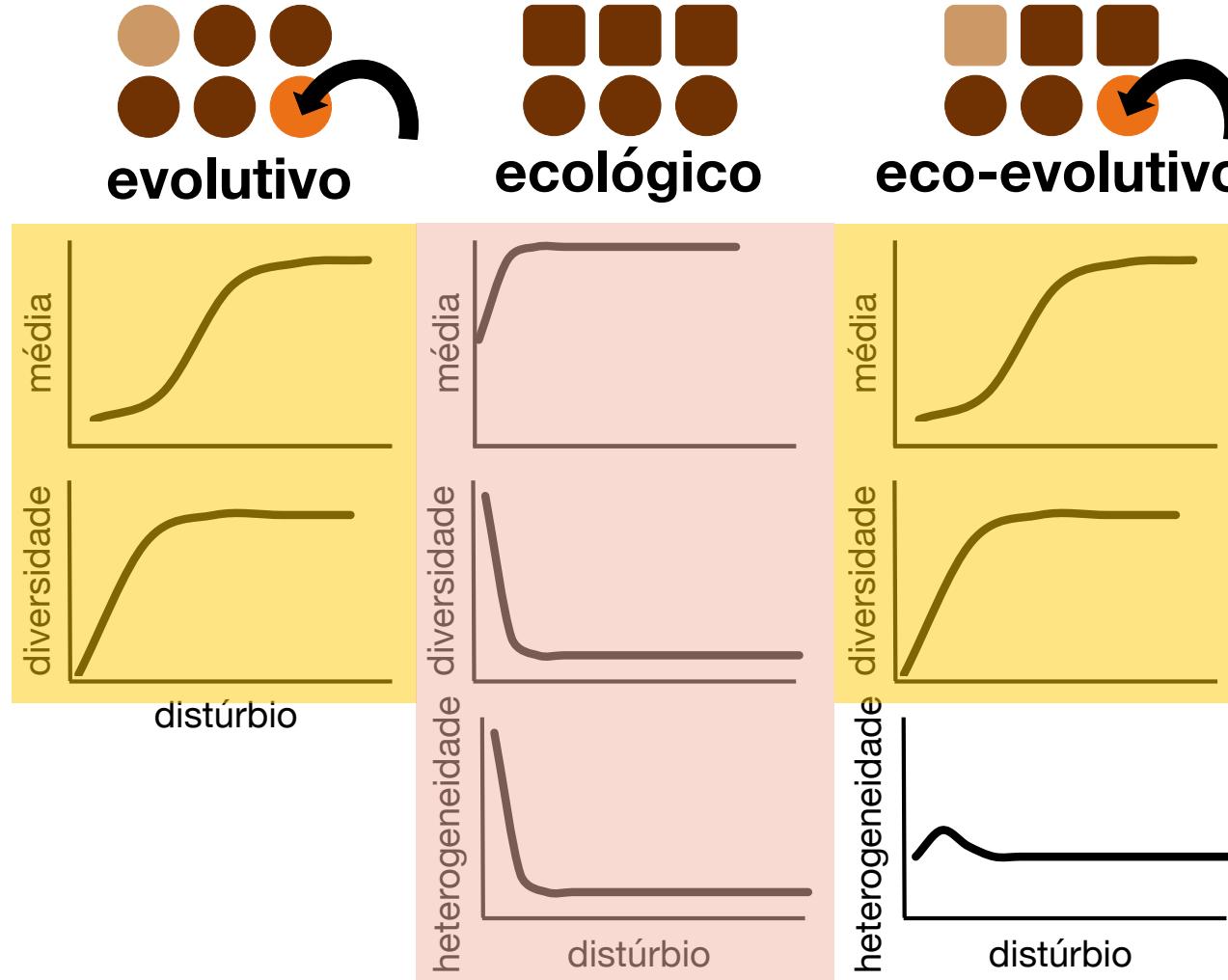
# cenários



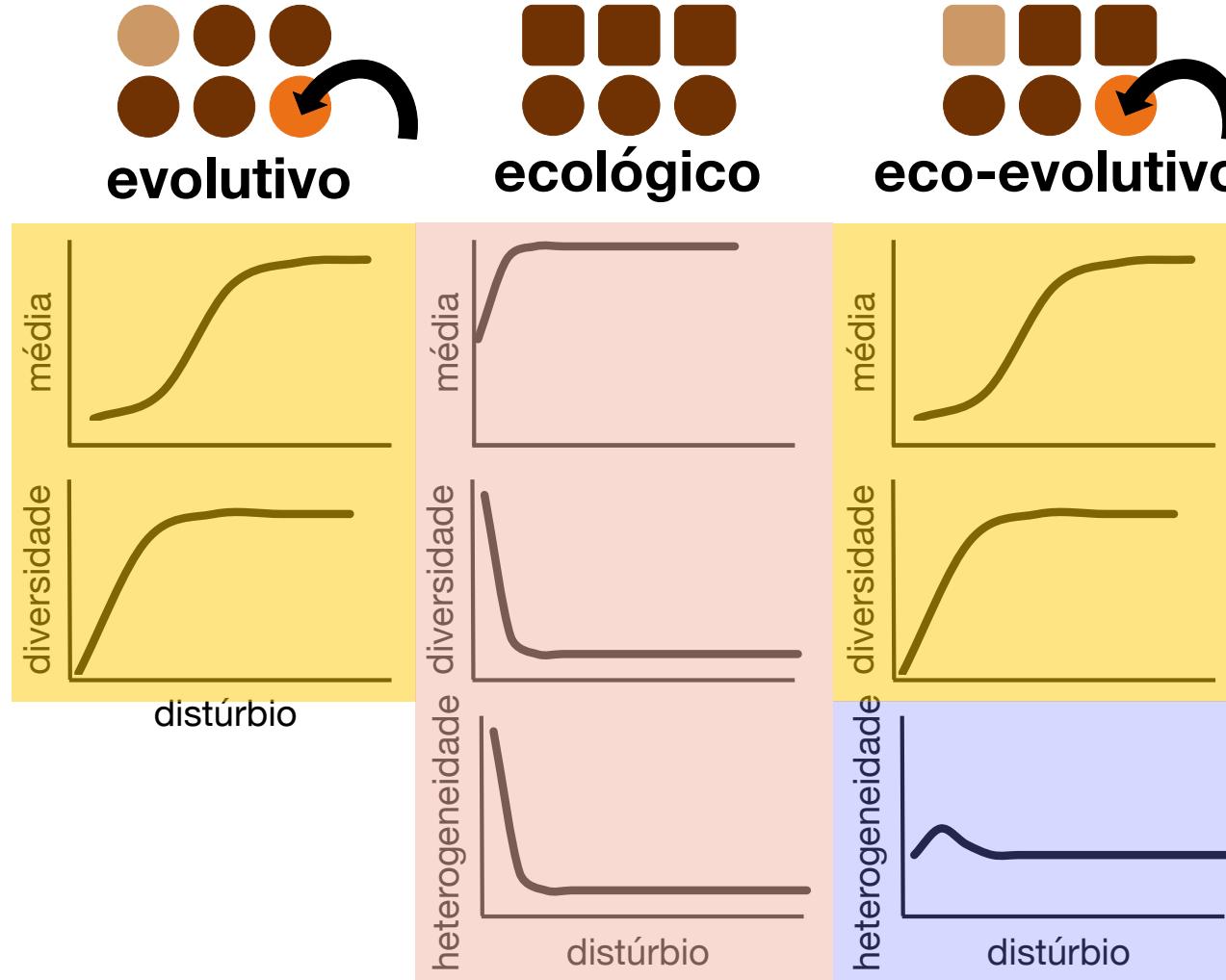
# mutação

- 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

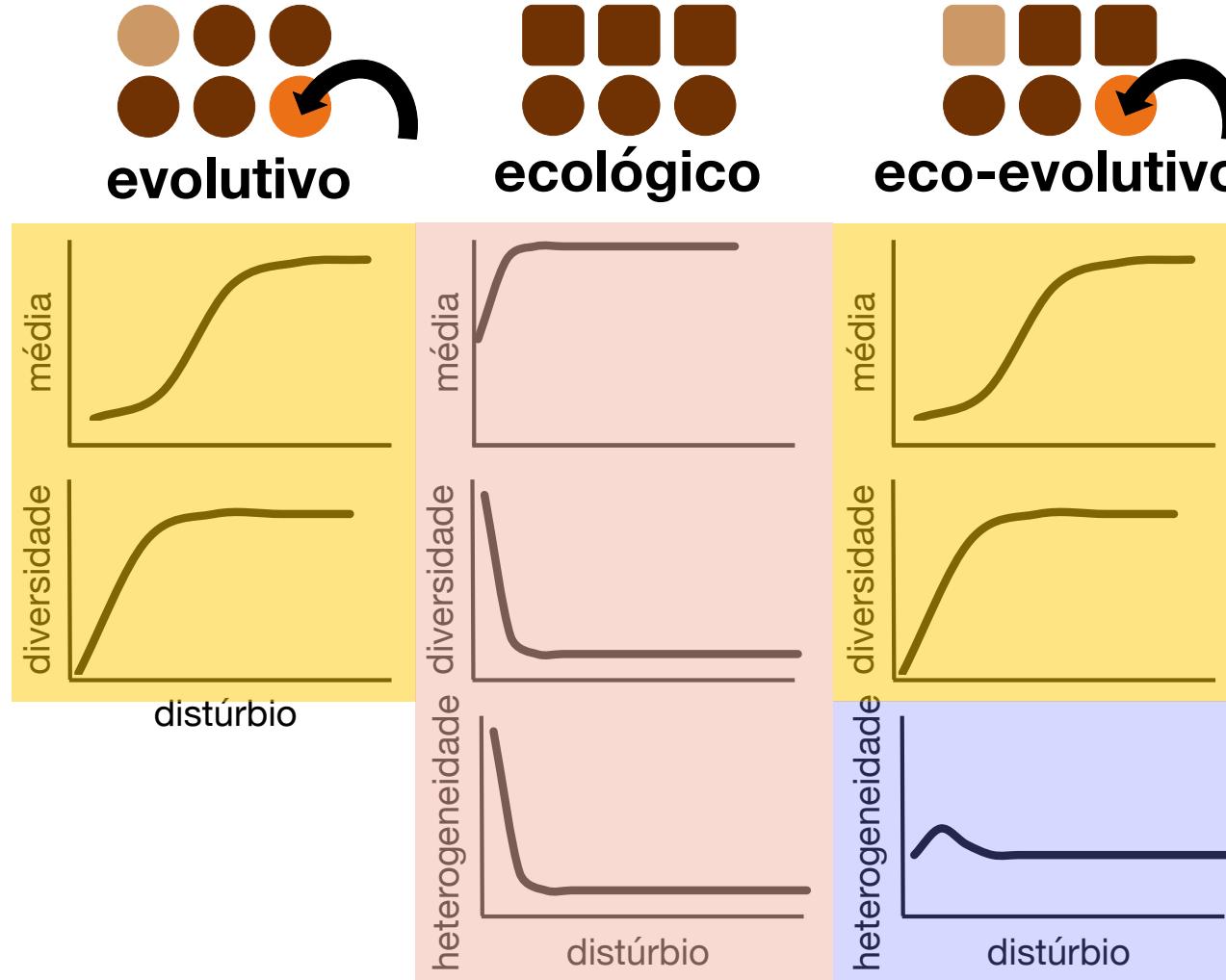
# cenários



# cenários

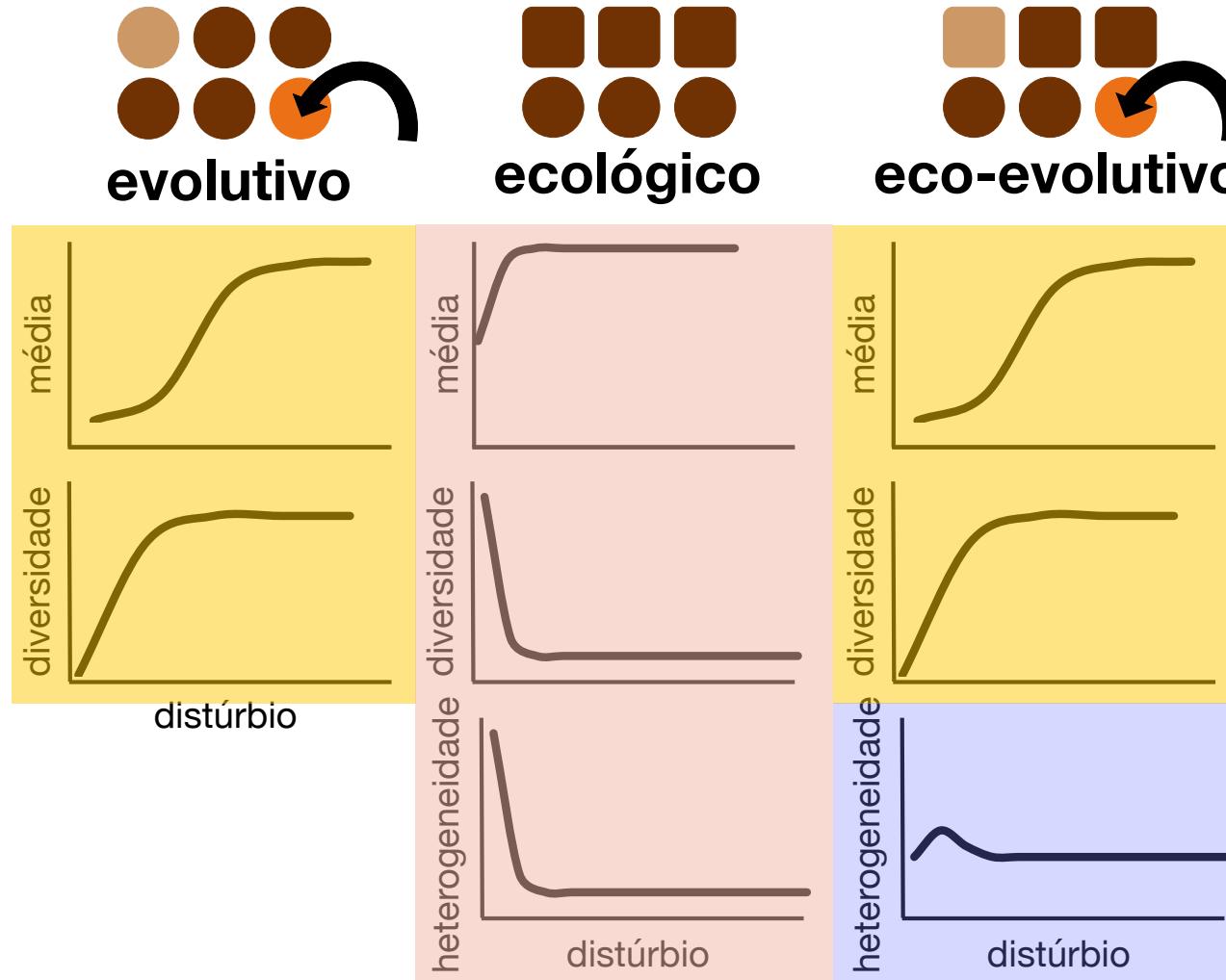


# cenários



# interação eco-evo

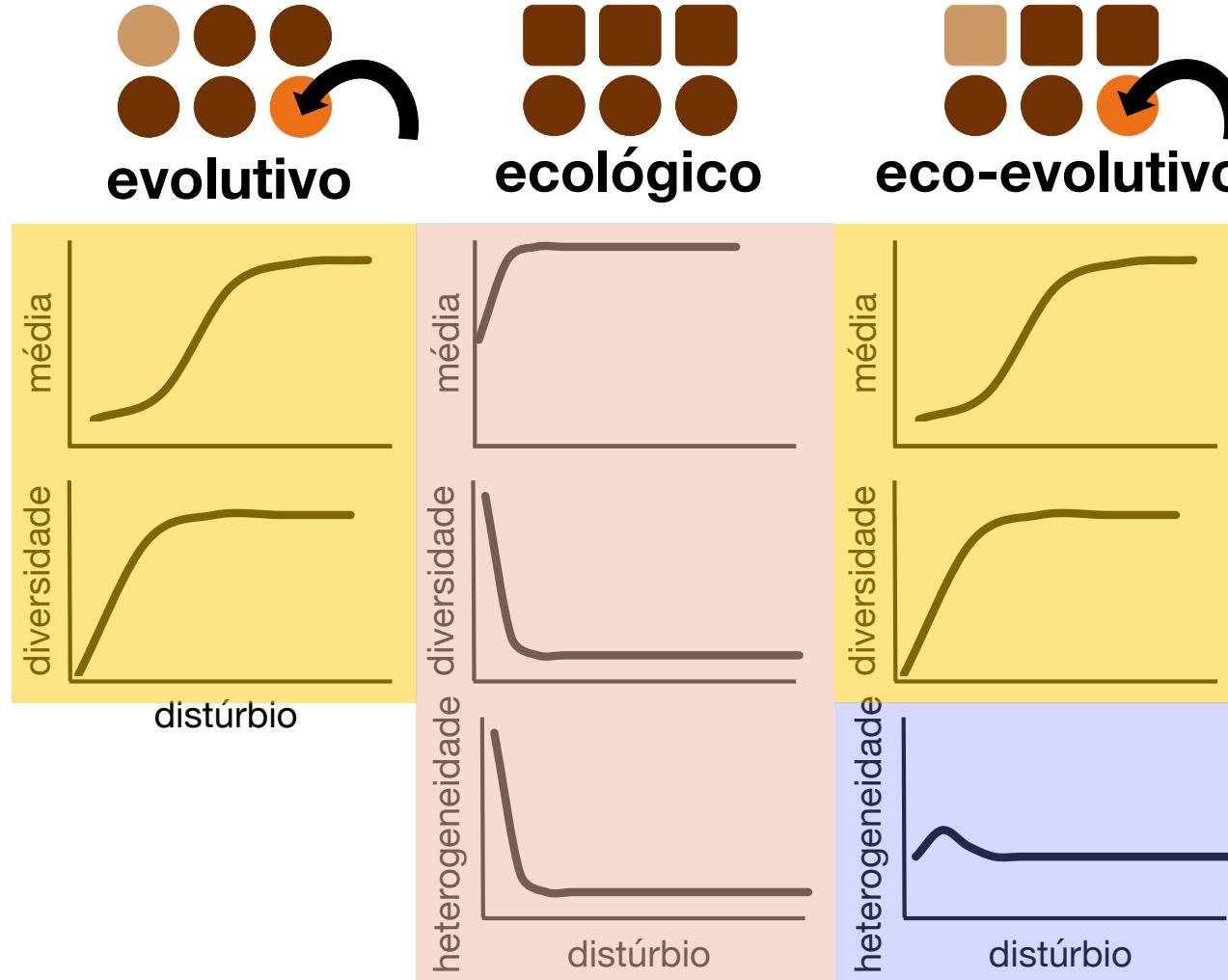
# cenários



# 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

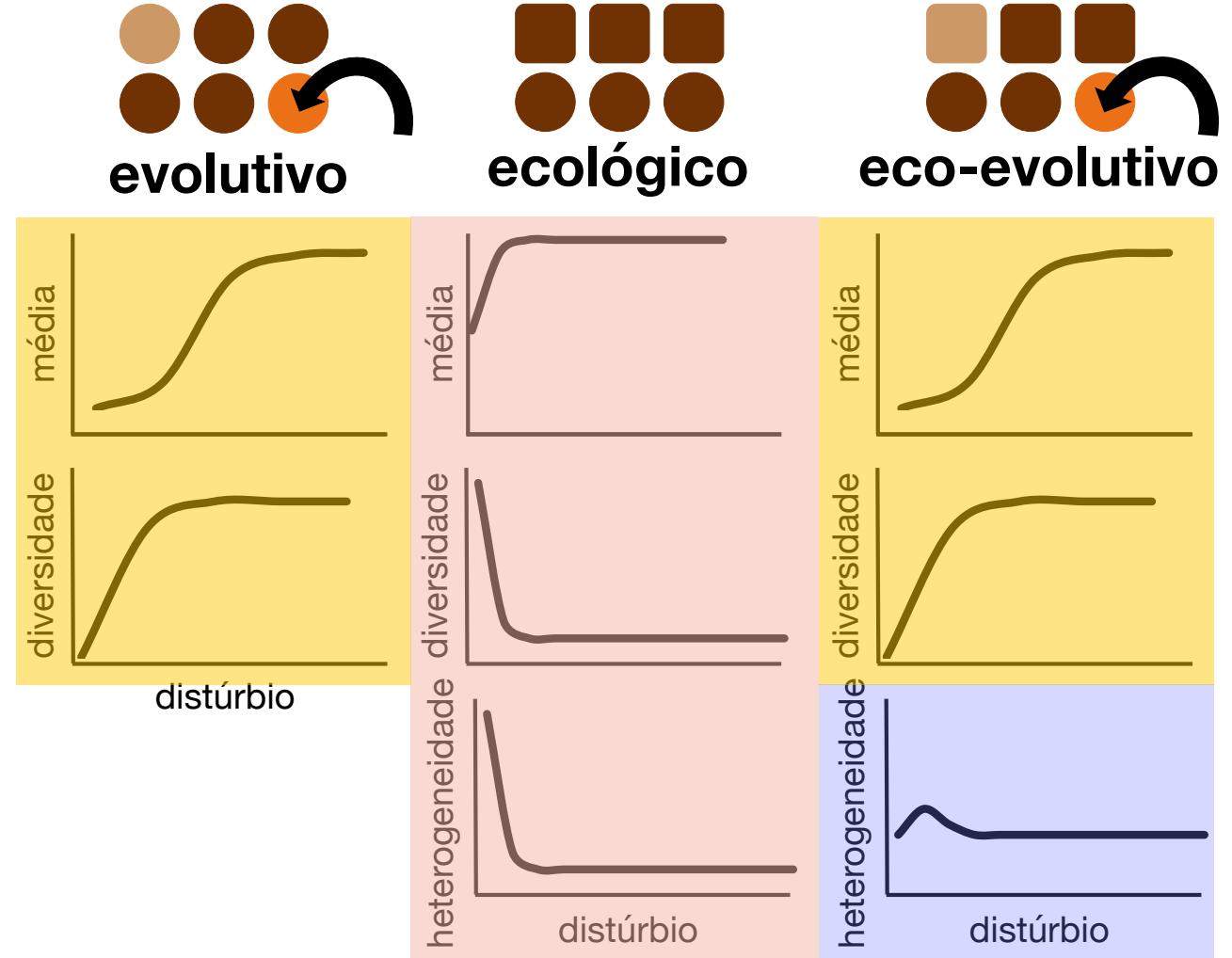
- desconsidera adaptação
- possíveis consequências:
  - gerar previsões erradas quanto à diversidade
  - relacionar padrões a processos equivocados

ainda assim...

## Ecologia

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

## cenários

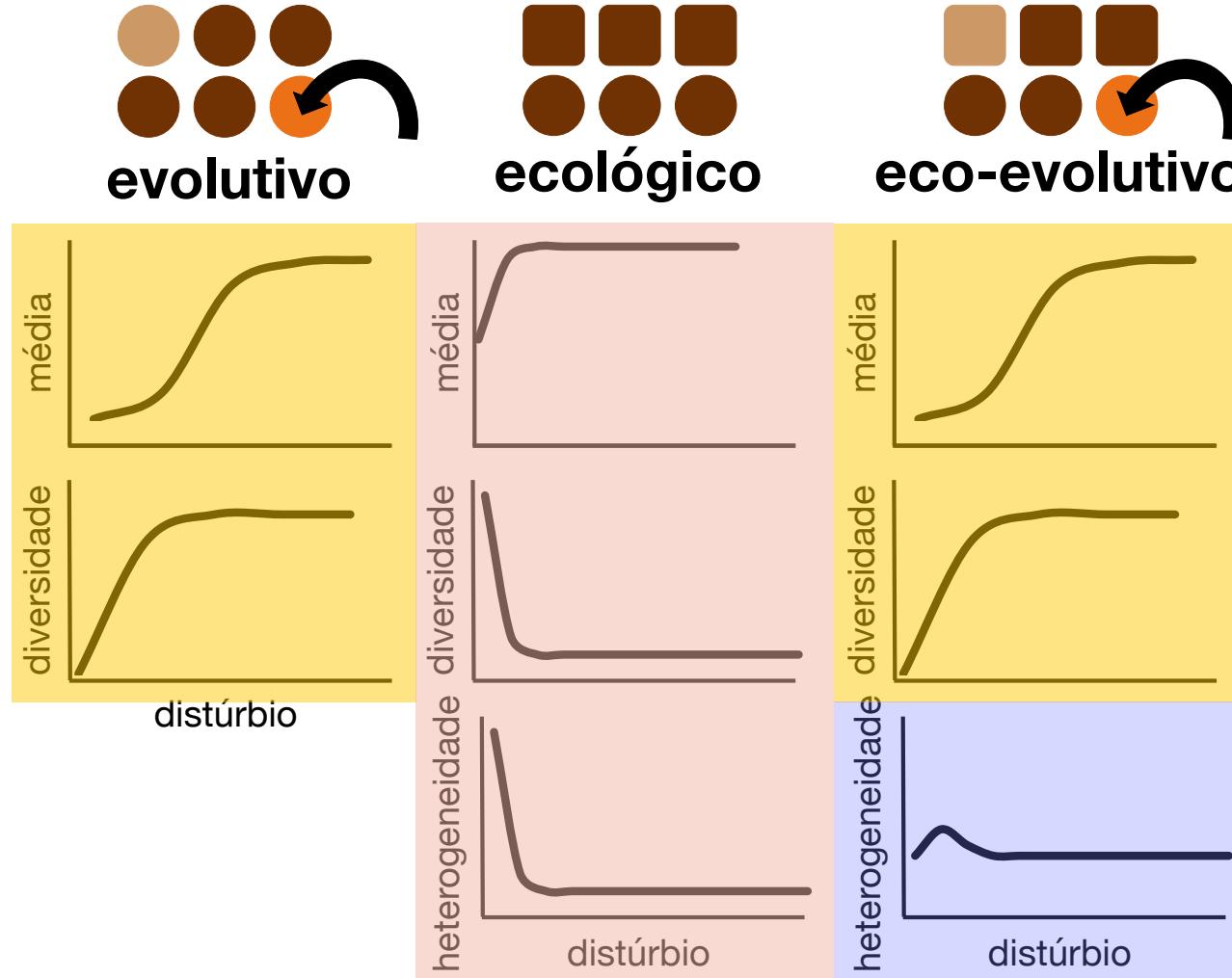


## Biologia Evolutiva

- desconsidera contexto multiespecífico
- possíveis consequências:
  - gerar previsões erradas quanto à estratégia média das populações
  - não acessar padrões que emergem em escalas maiores

ainda assim...

## cenários



## Biologia Evolutiva

- desconsidera contexto multiespecífico
- possíveis consequências:
  - gerar previsões erradas quanto à estratégia média das populações
  - não acessar padrões que emergem em escalas maiores

# conclusões

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

