

MAX PLANCK INSTITUTE  
FOR DEMOGRAPHIC  
RESEARCH

# Prevalence and the variance of state occupancy time

Tim Riffe and Iván Williams

# Health inequality

# Health inequality

## Variance

# Question:

Question: In a Sullivan setting,  
can we know the variance of  
state occupancy time?

# Answer:

Answer: No, sorry.

Answer: No, sorry.  
But wait!

# Preliminary observations

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- ▶ life trajectories come first

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- ▶ life trajectories come first
- ▶ trajectories observed or generated

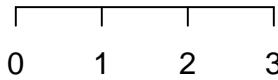
# Preliminary observations

- ▶ life trajectories come first
- ▶ trajectories observed or generated
- ▶ assumptions required to generate

# Preliminary observations

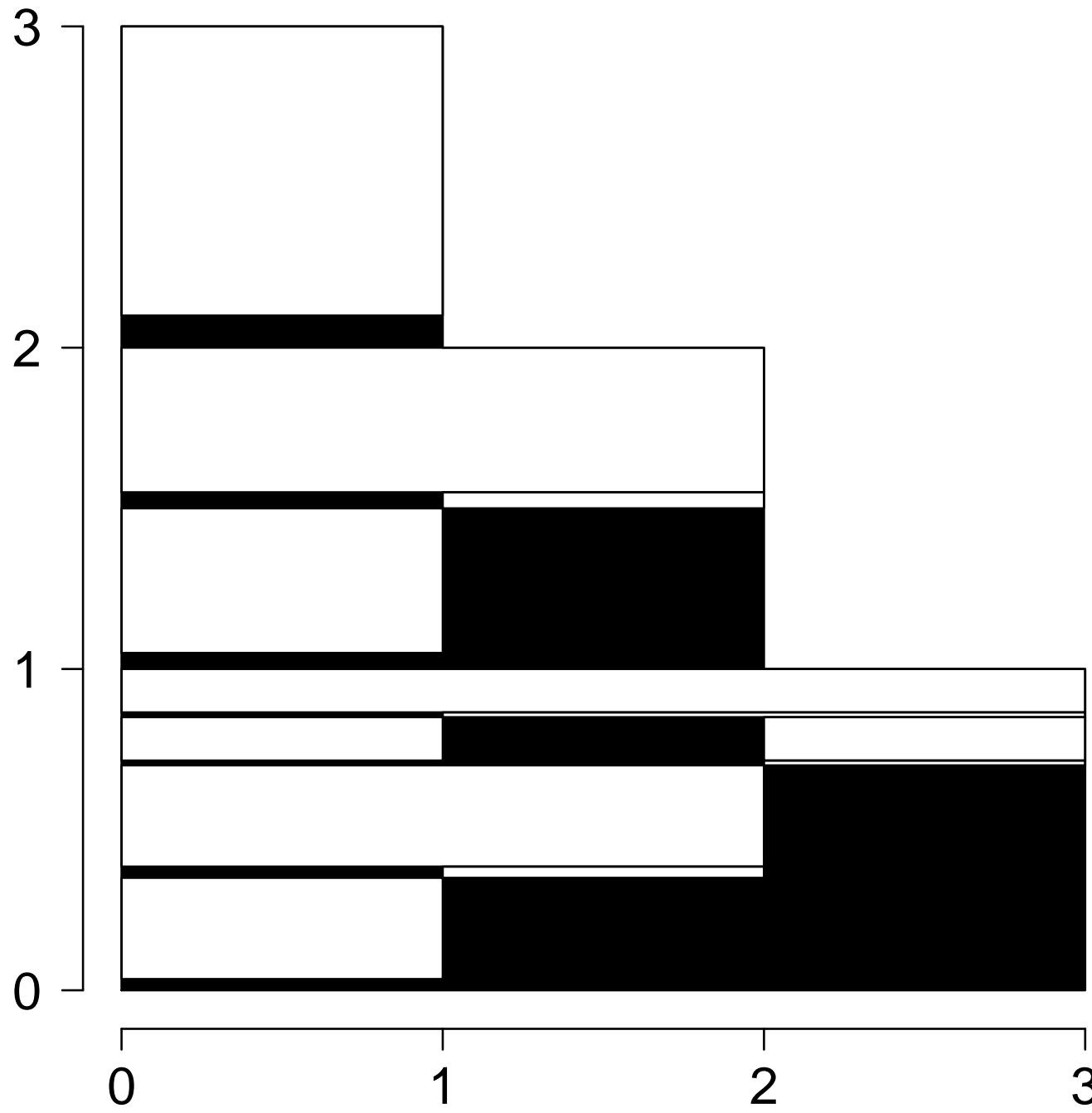
- ▶ life trajectories come first
- ▶ trajectories observed or generated
- ▶ assumptions required to generate
- ▶ we have some assumptions

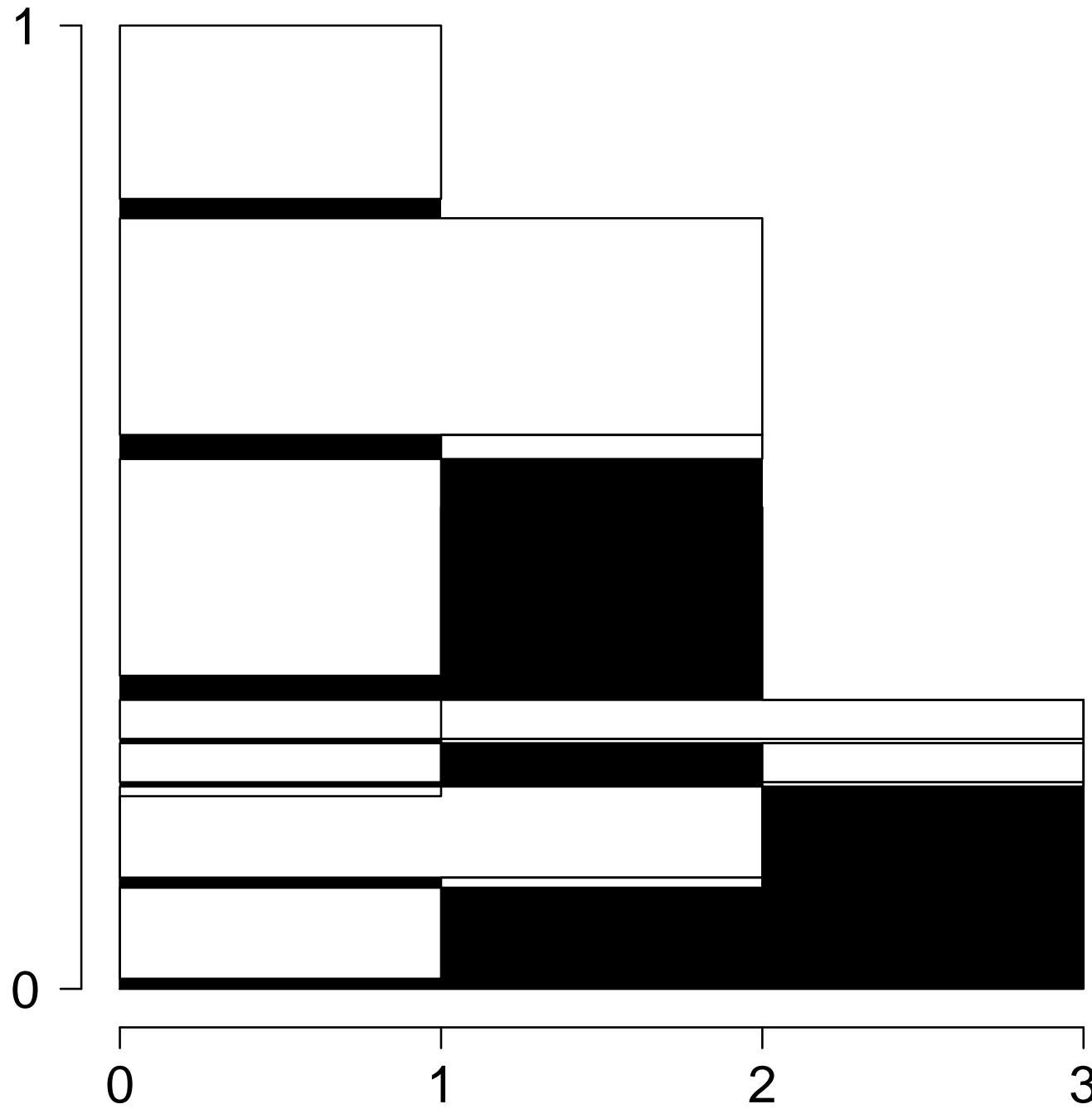
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2	1		
3	0	0	
4	1	0	
5	0	1	
6	1	1	
7	0	0	0
8	1	0	0
9	0	1	0
10	1	1	0
11	0	0	1
12	1	0	1
13	0	1	1
14	1	1	1



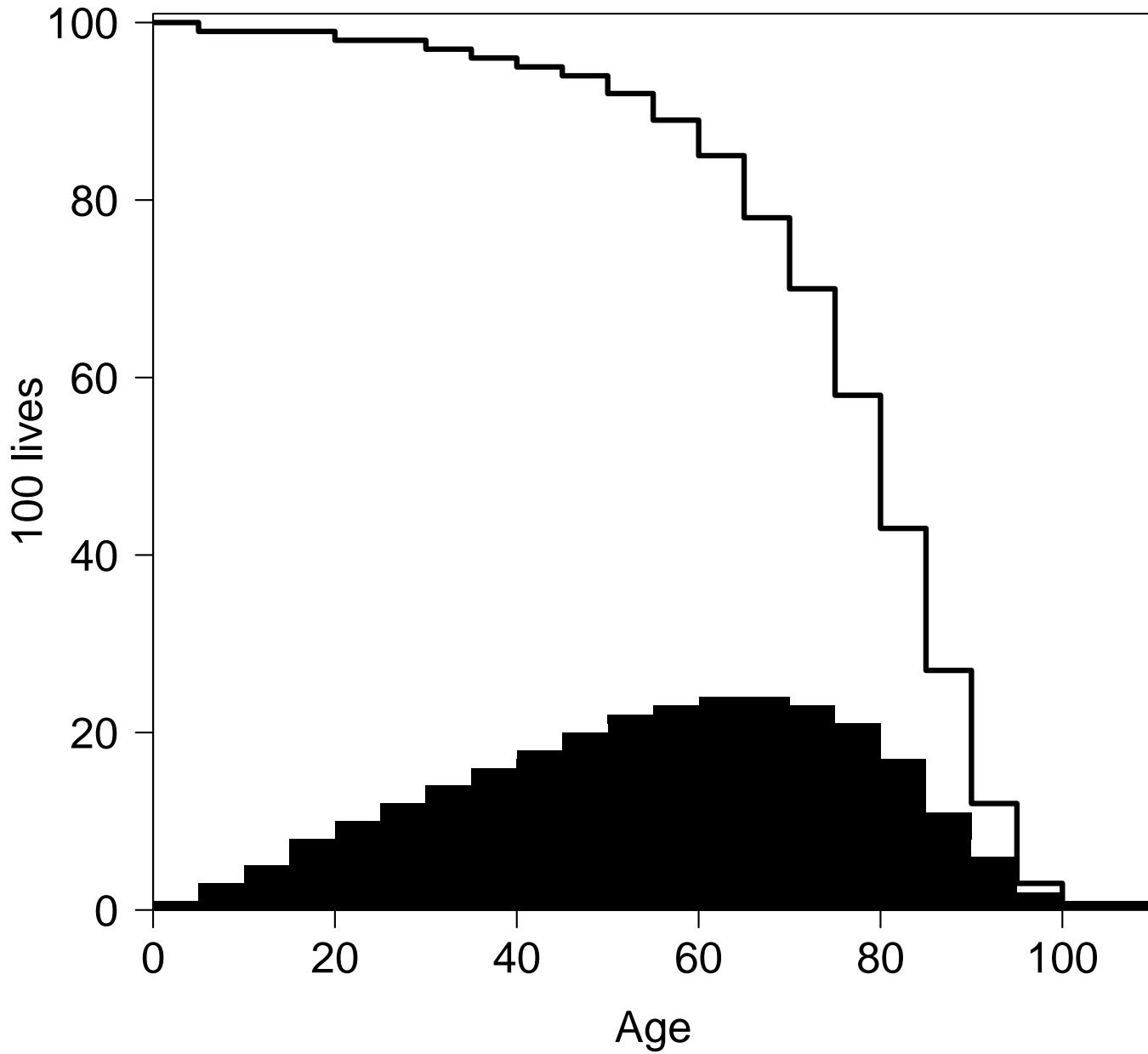
1	0.9		
2	0.1		
3	0.9	0.5	
4	0.1	0.5	
5	0.9	0.5	
6	0.1	0.5	
7	0.9	0.5	0.3
8	0.1	0.5	0.3
9	0.9	0.5	0.3
10	0.1	0.5	0.3
11	0.9	0.5	0.7
12	0.1	0.5	0.7
13	0.9	0.5	0.7
14	0.1	0.5	0.7

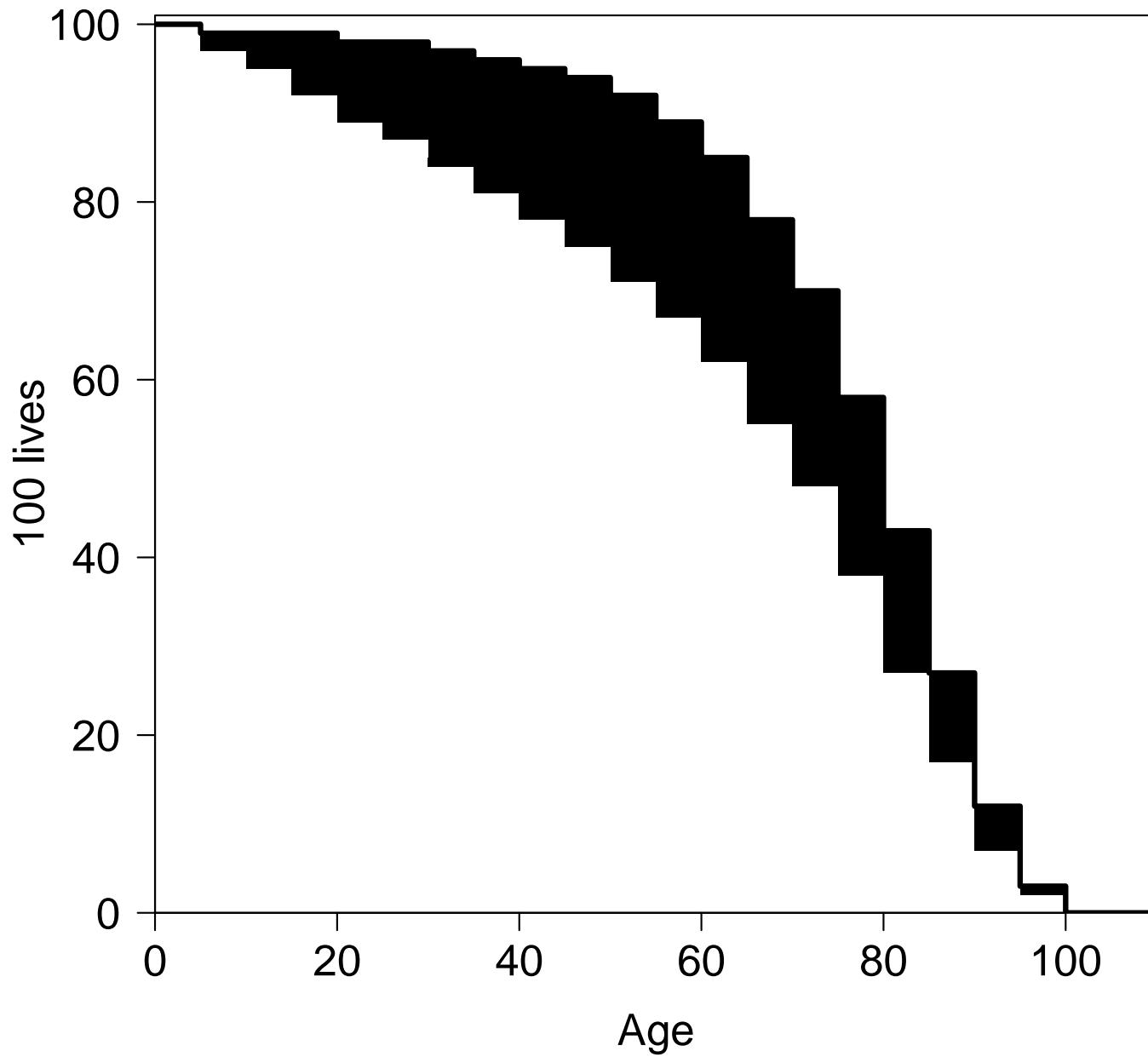


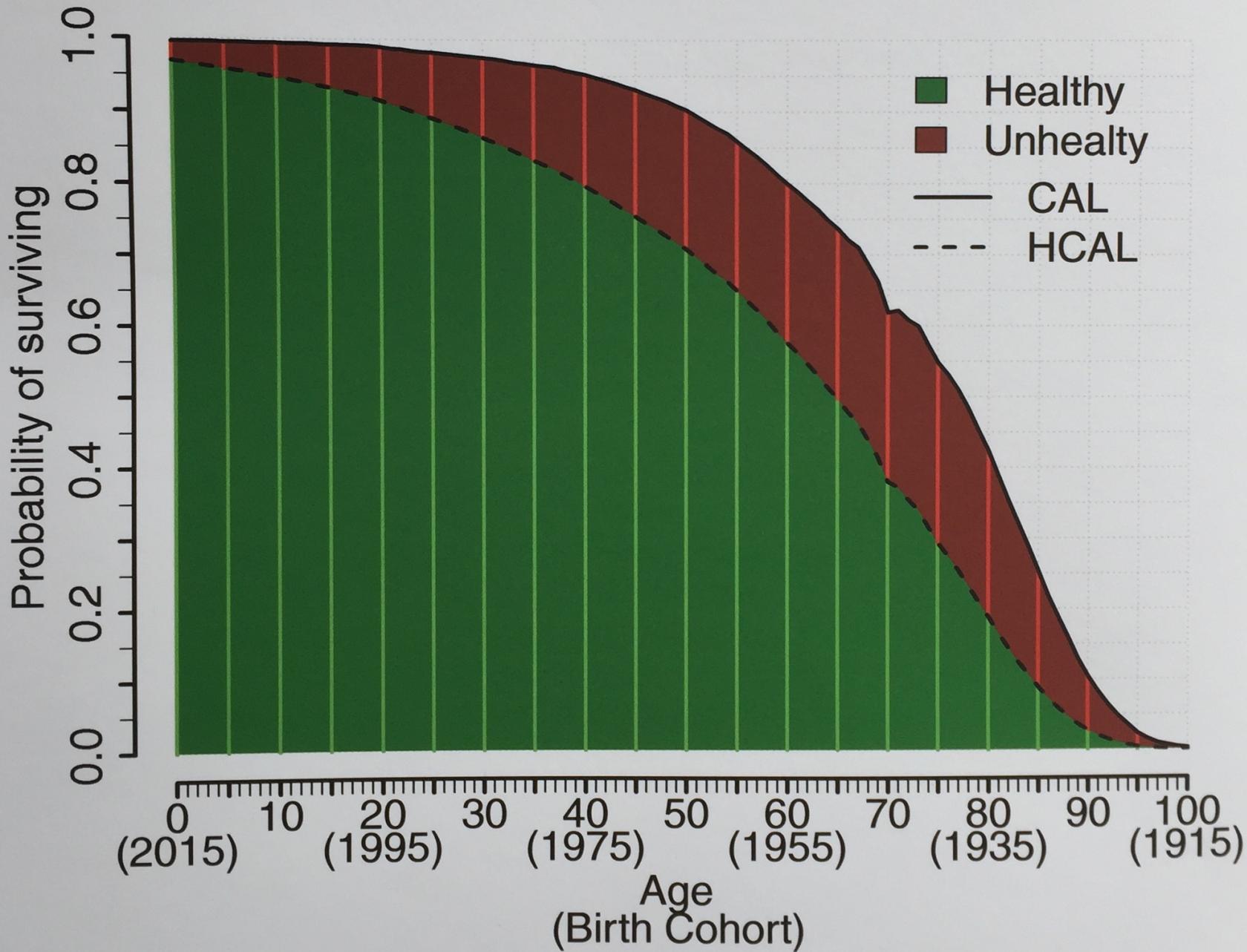


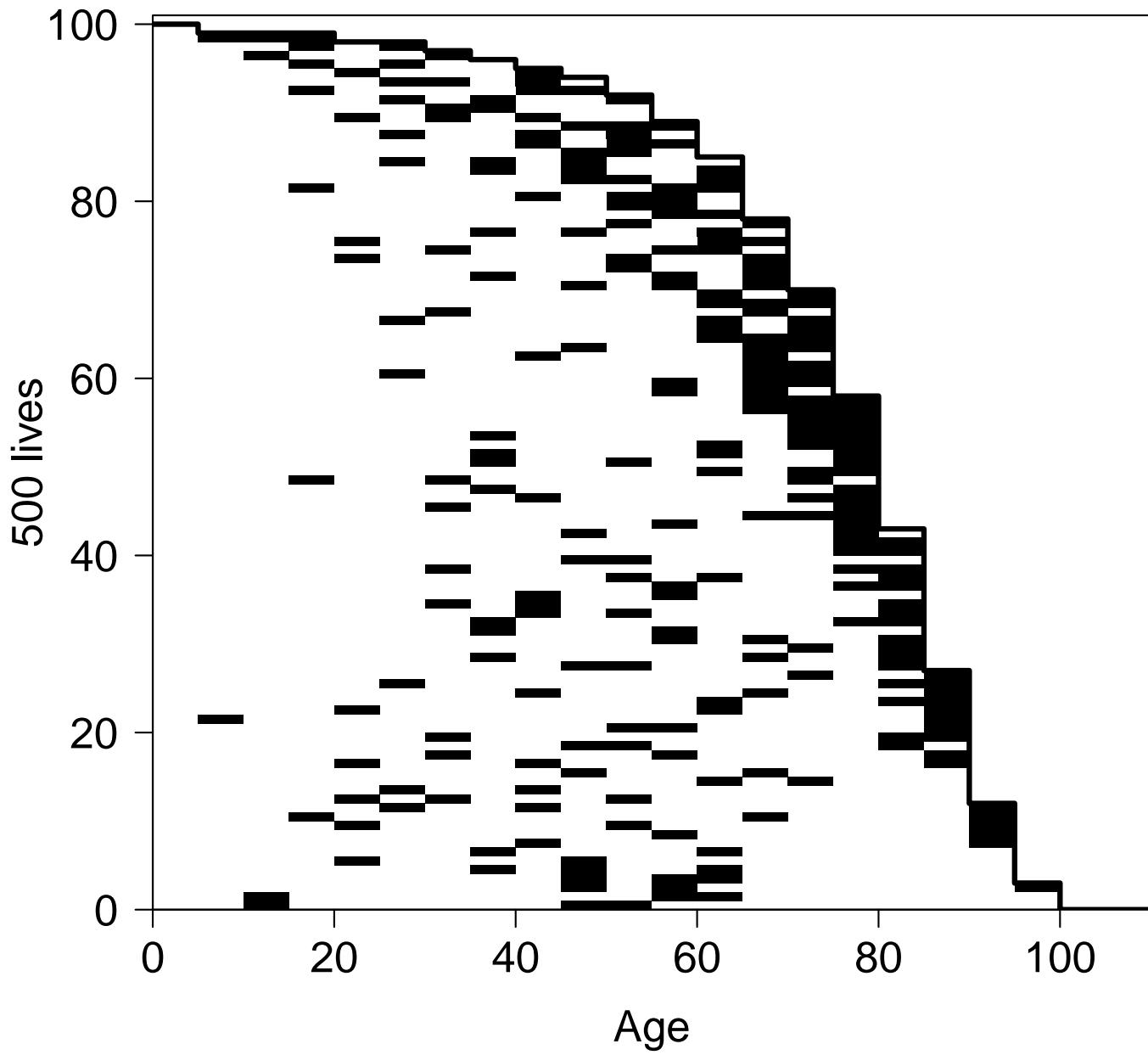


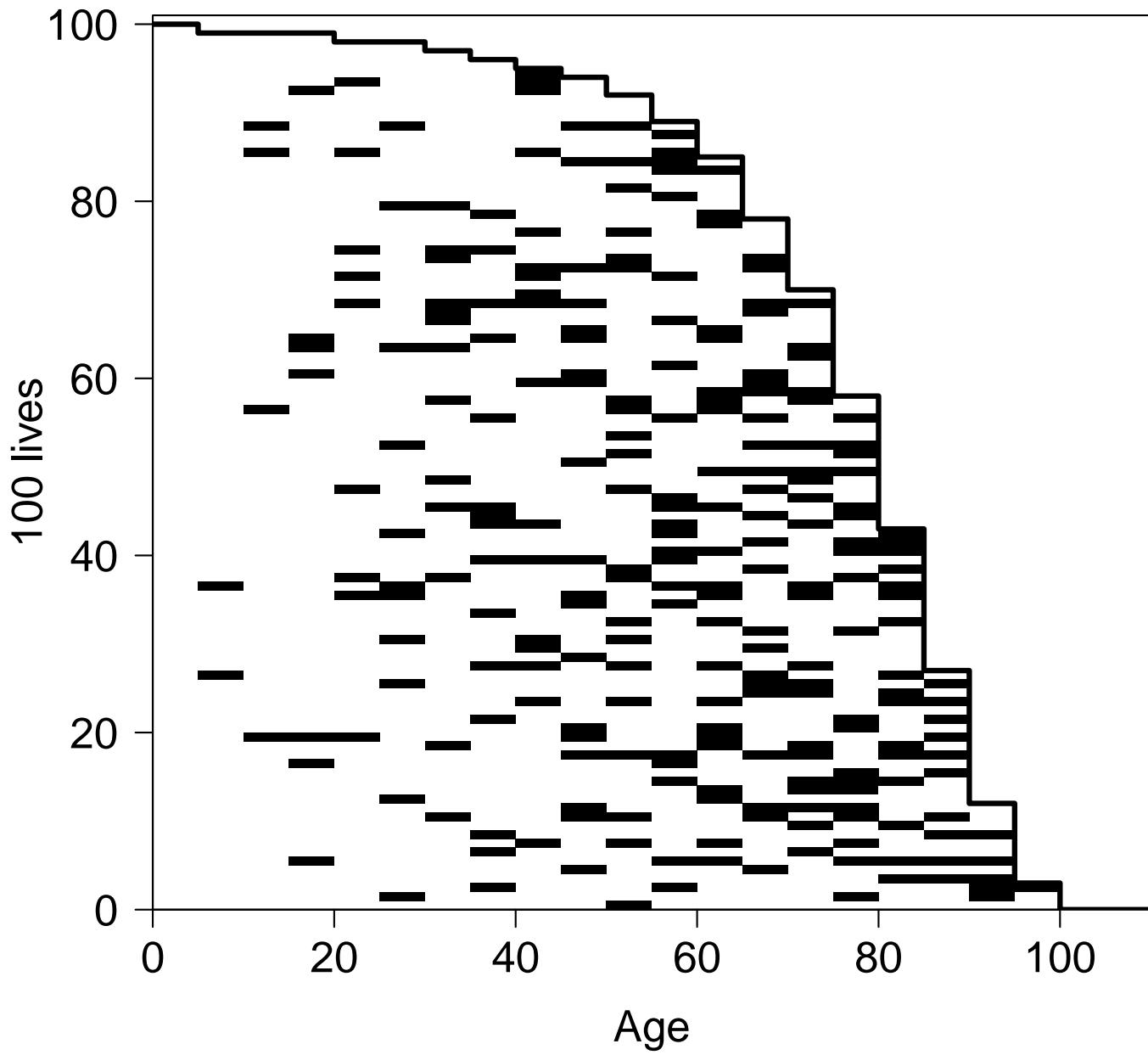
Many ways to combine  
survivorship and prevalence. . .

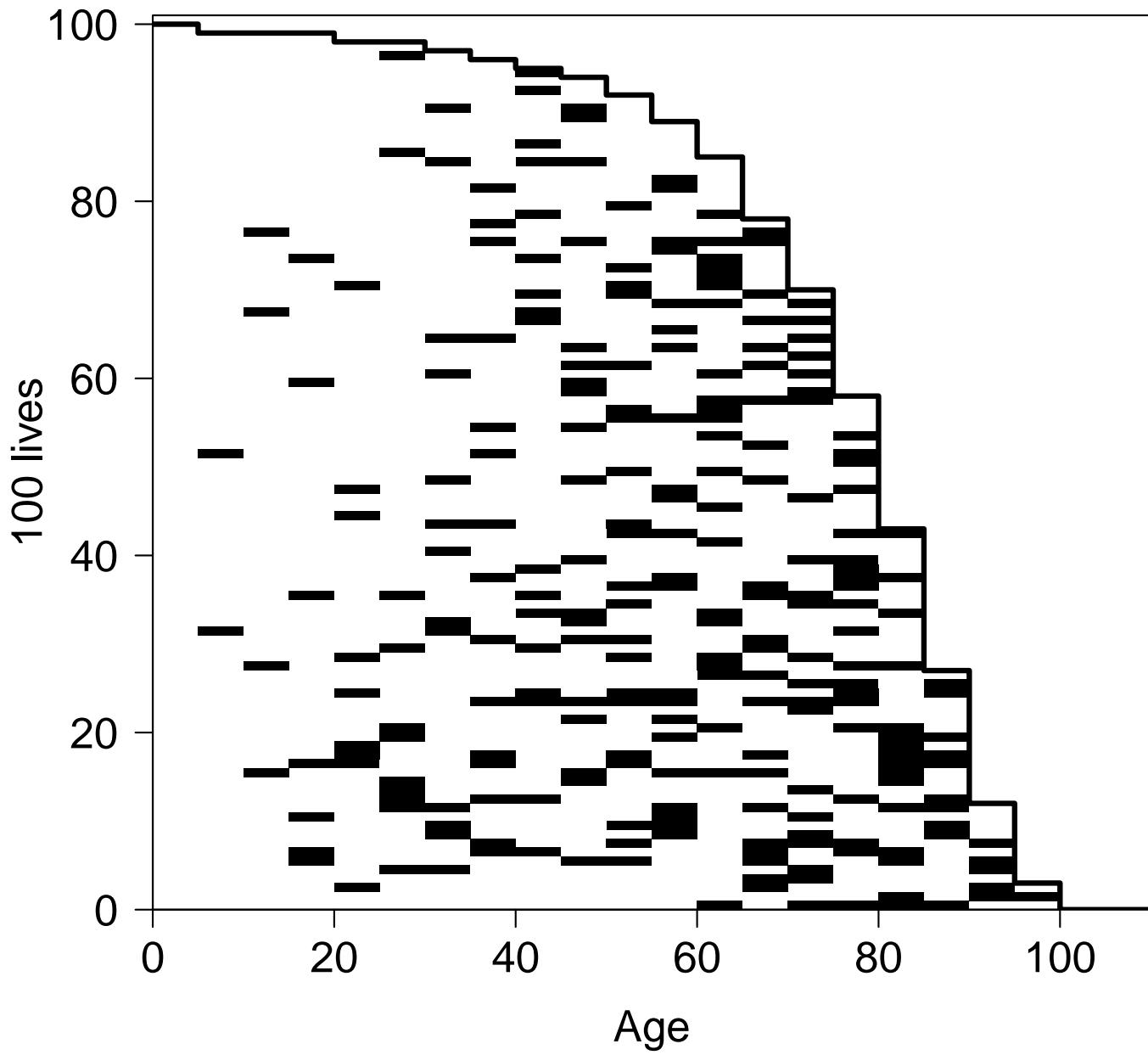


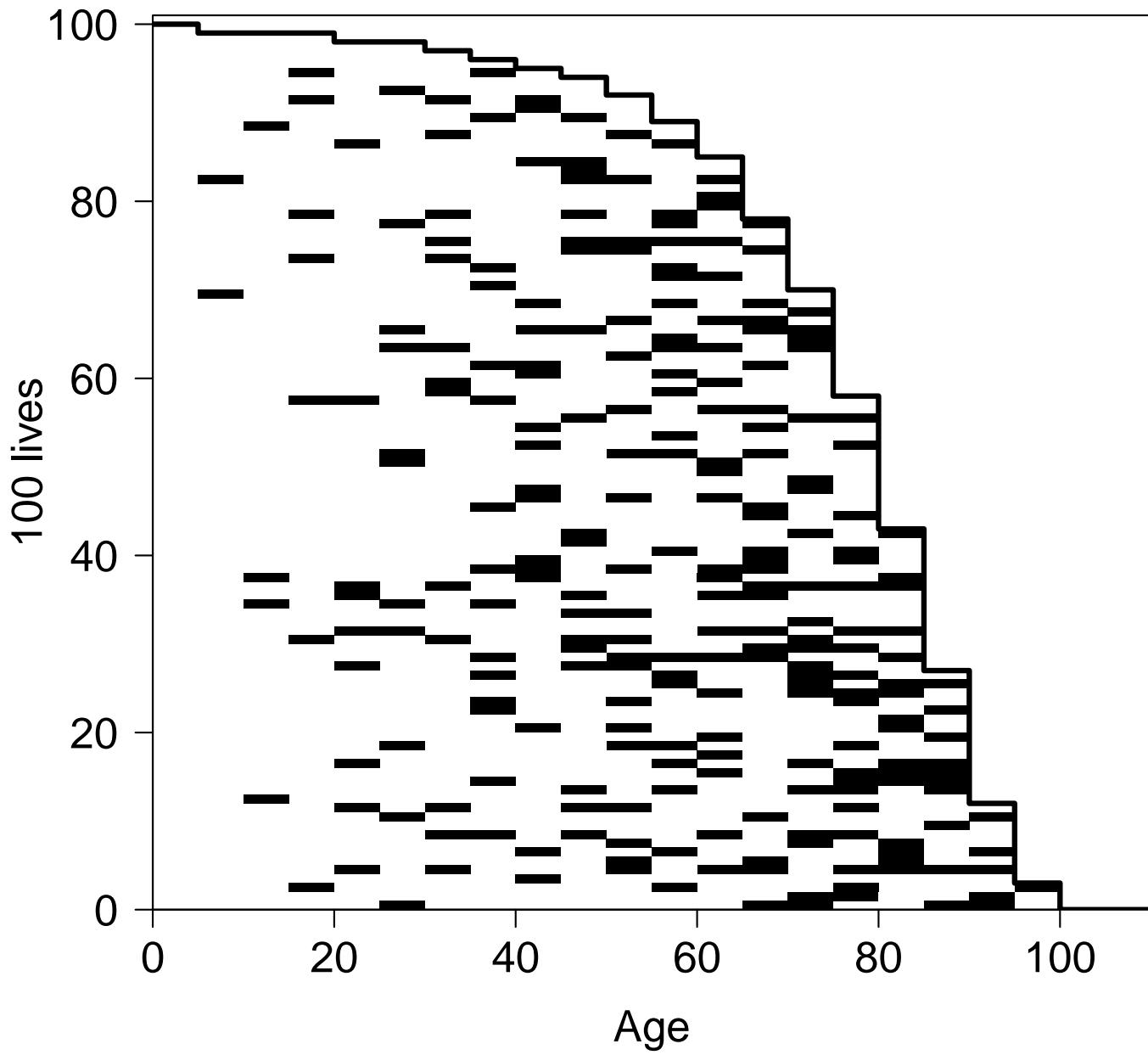






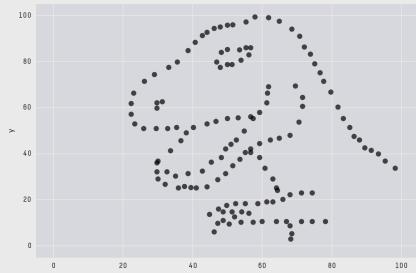






# *Anscombosaurus*

(HT Alberto Cairo)



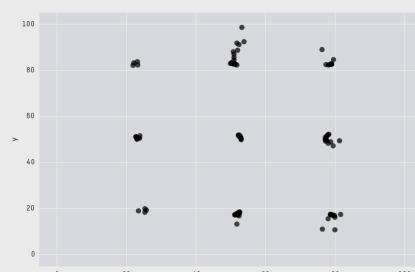
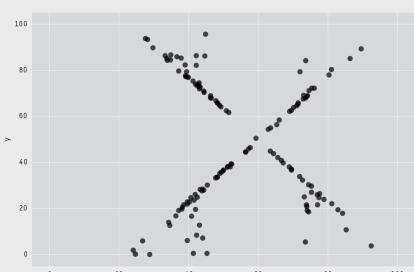
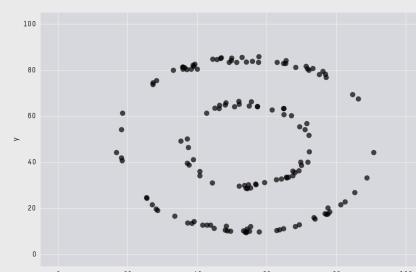
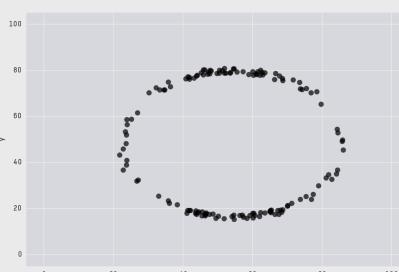
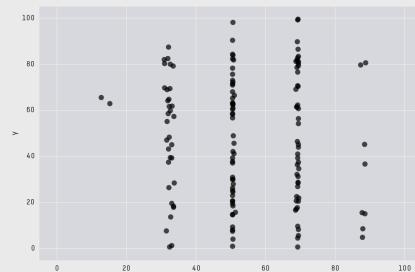
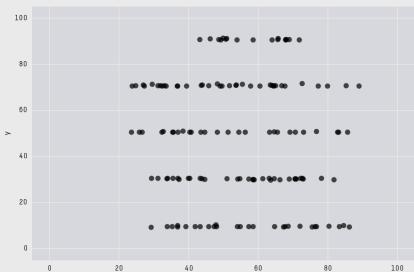
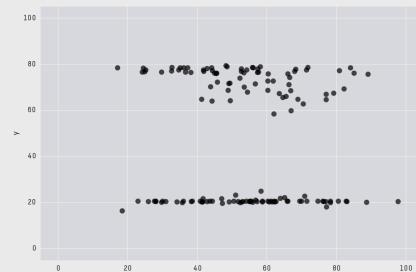
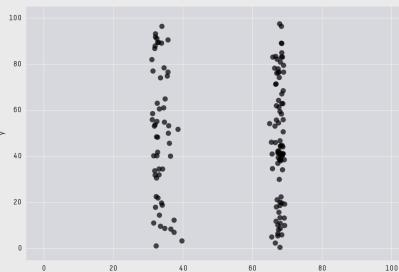
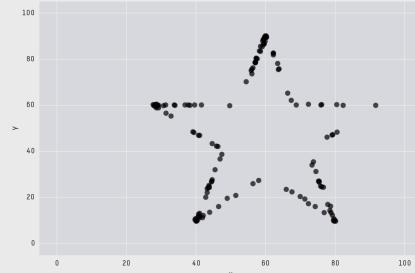
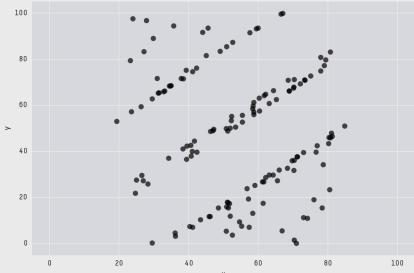
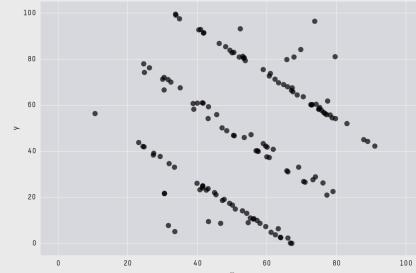
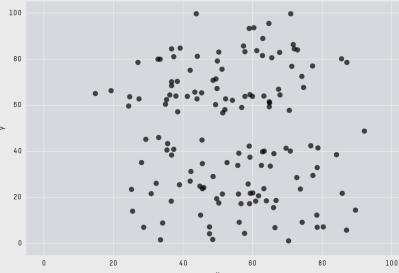
X Mean: 54.26

Y Mean: 47.83

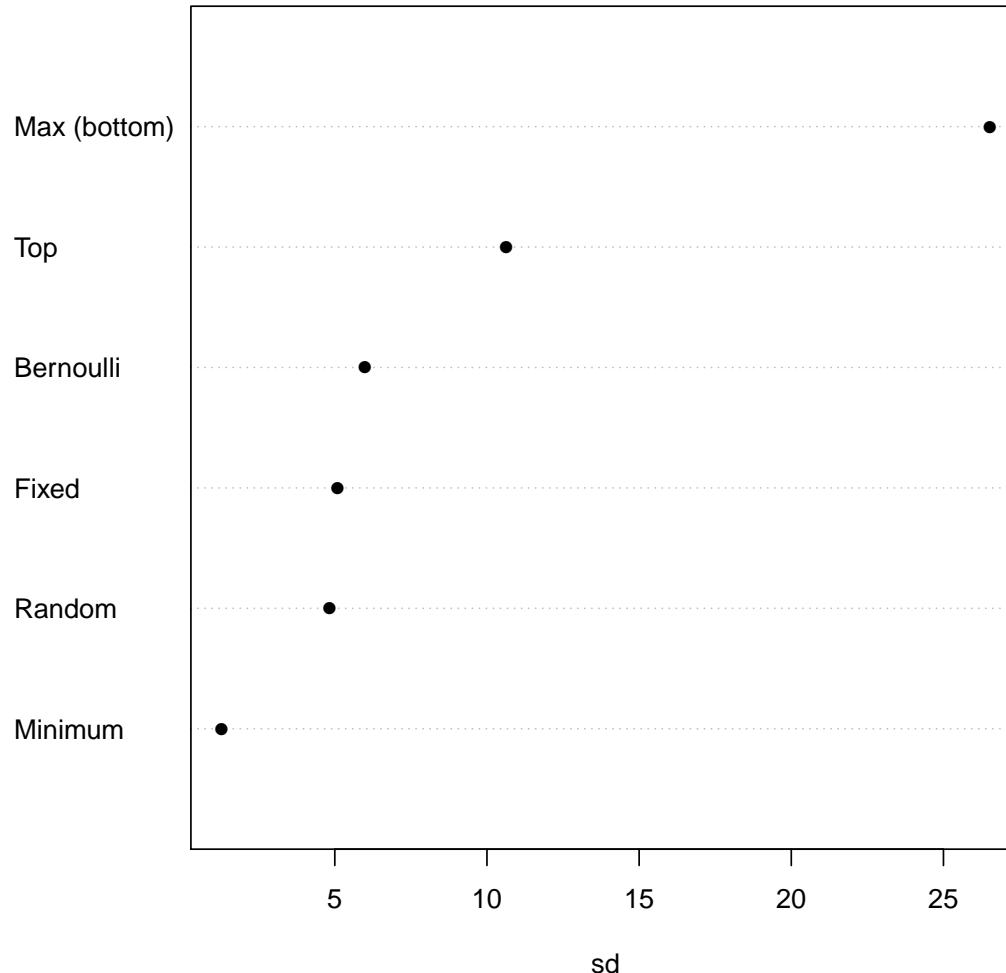
X SD : 16.76

Y SD : 26.93

Corr. : -0.06



# Variance scenarios- huge spread!



## Data & Methods

