

MAX PLANCK INSTITUTE  
FOR DEMOGRAPHIC  
RESEARCH

# Healthy lives: Health dynamics, mortality change, or structural change?

Tim Riffe, Neil Mehta, Daniel Schneider, Mikko Myrskylä

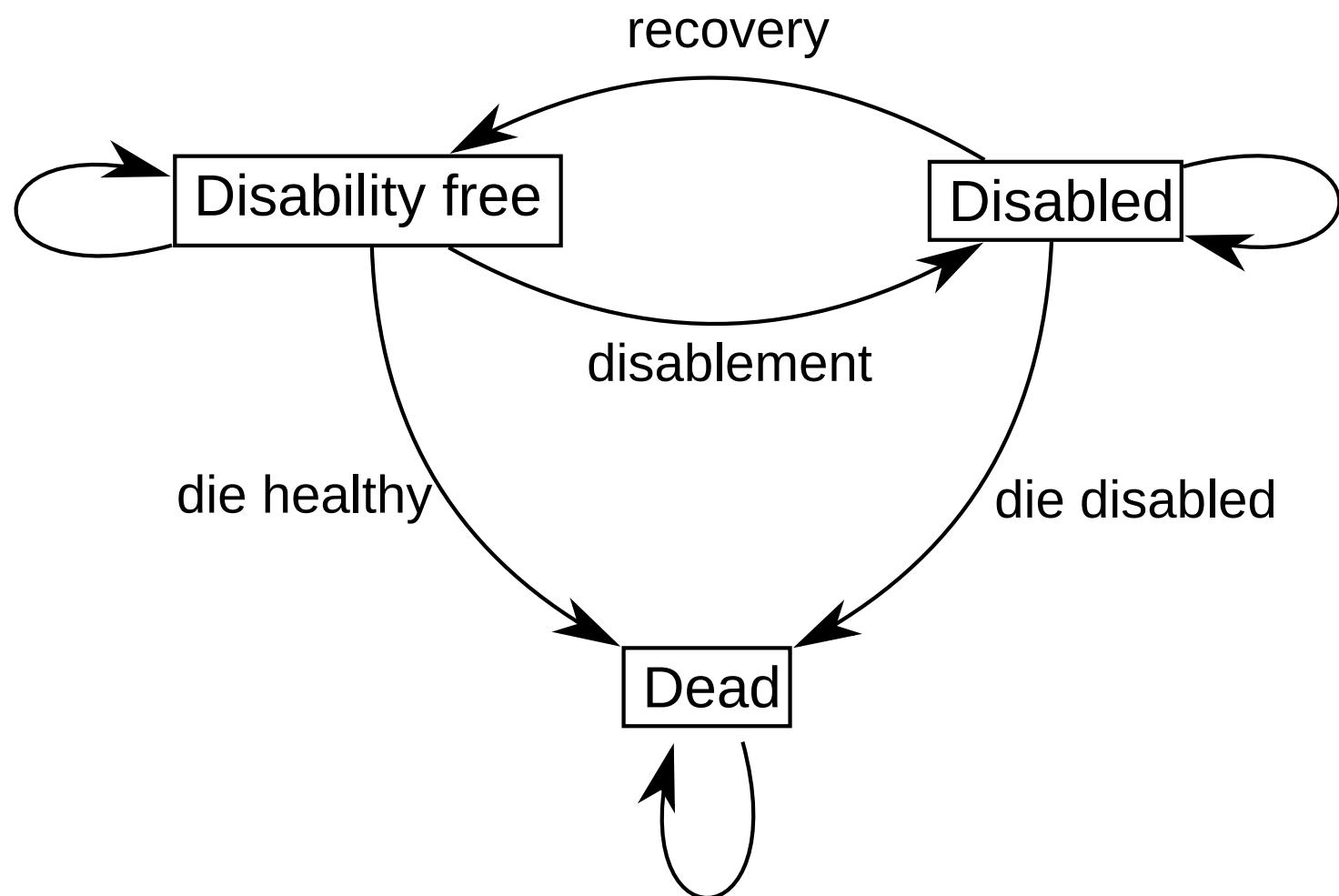
## Objective

How much of the change in life expectancy at age 50  
 $e(50)$  is due to changes in mortality, disability  
transitions, or population structure?

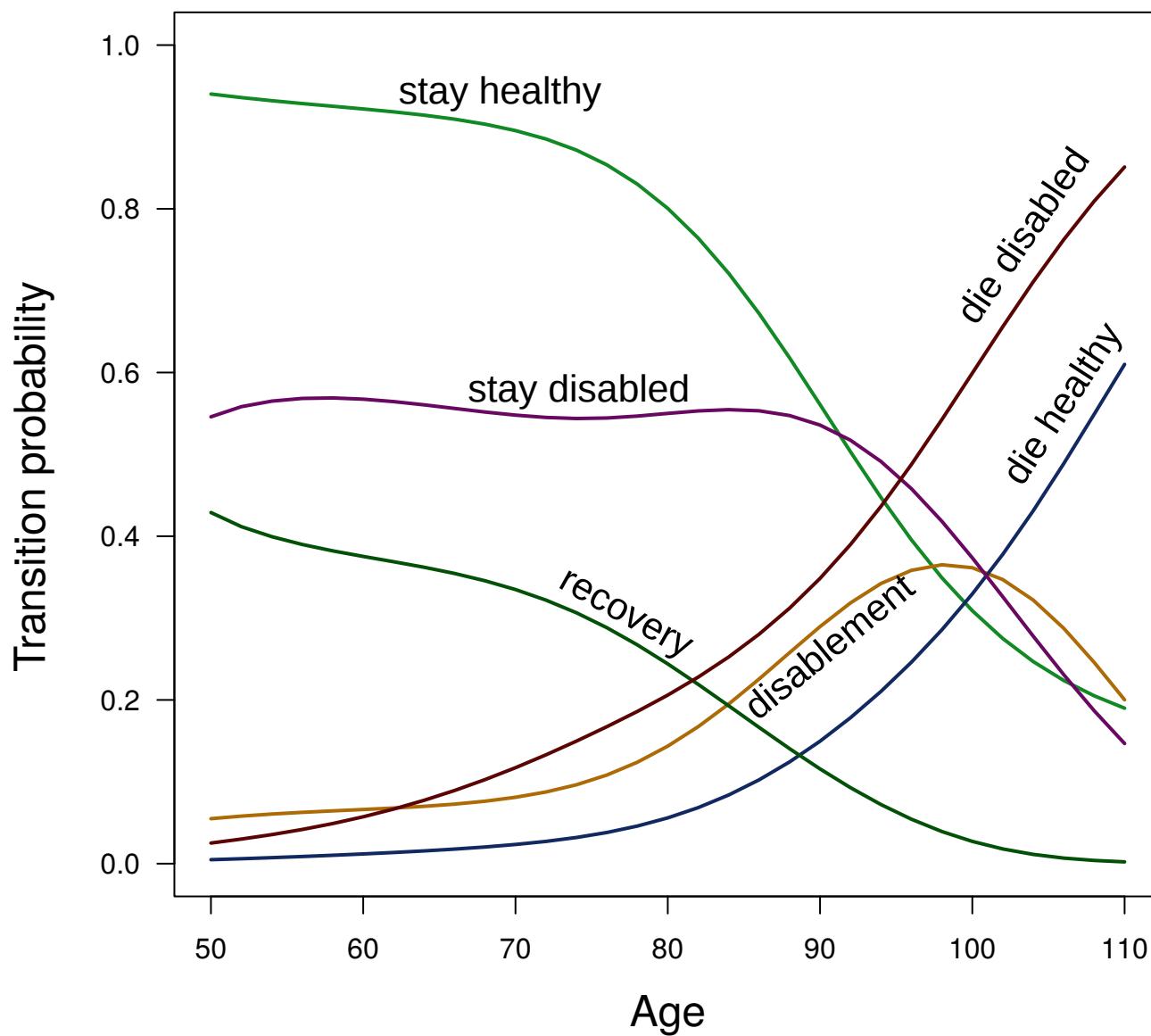
## Data & Methods

- ▶ HRS RAND version P.
- ▶ Transition probabilities: mlogit with age and time splines (3 knots).
- ▶ Controls for race/eth (4) and education (3).
- ▶ Age 50 population structure: education and disability status.
- ▶ 3-state Markov matrix models centered on years 1996, 2006, and 2014.
- ▶ Trend decomposition using Horiuchi et. al. (2007) method.

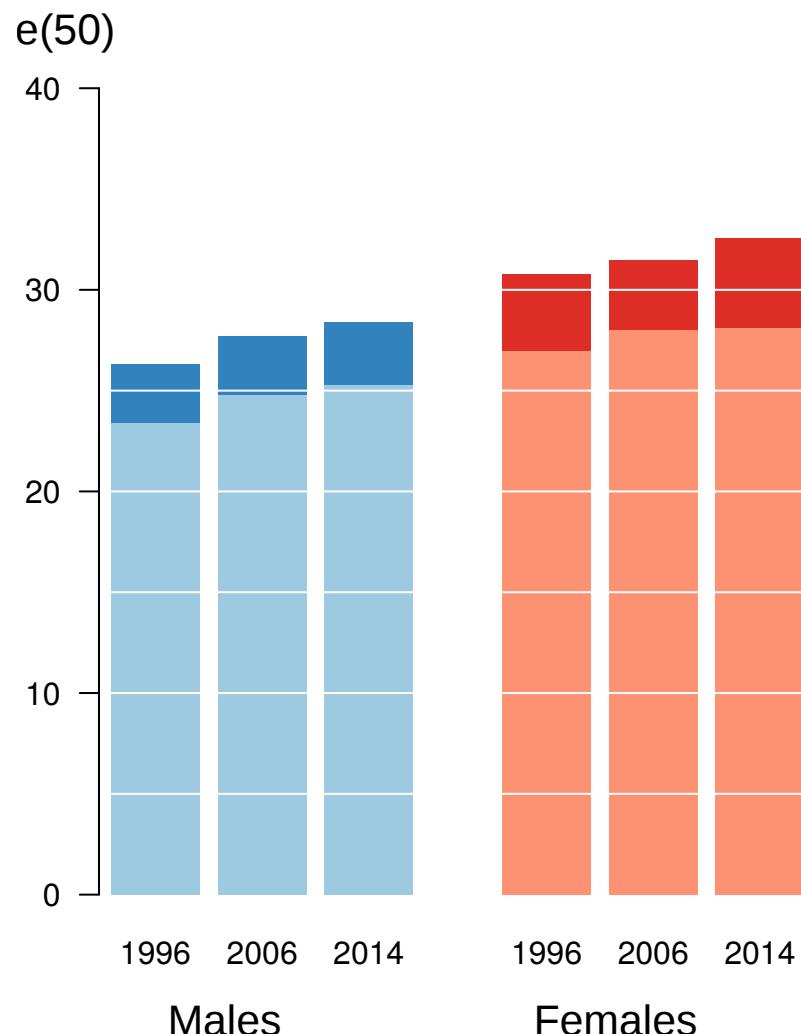
# State space



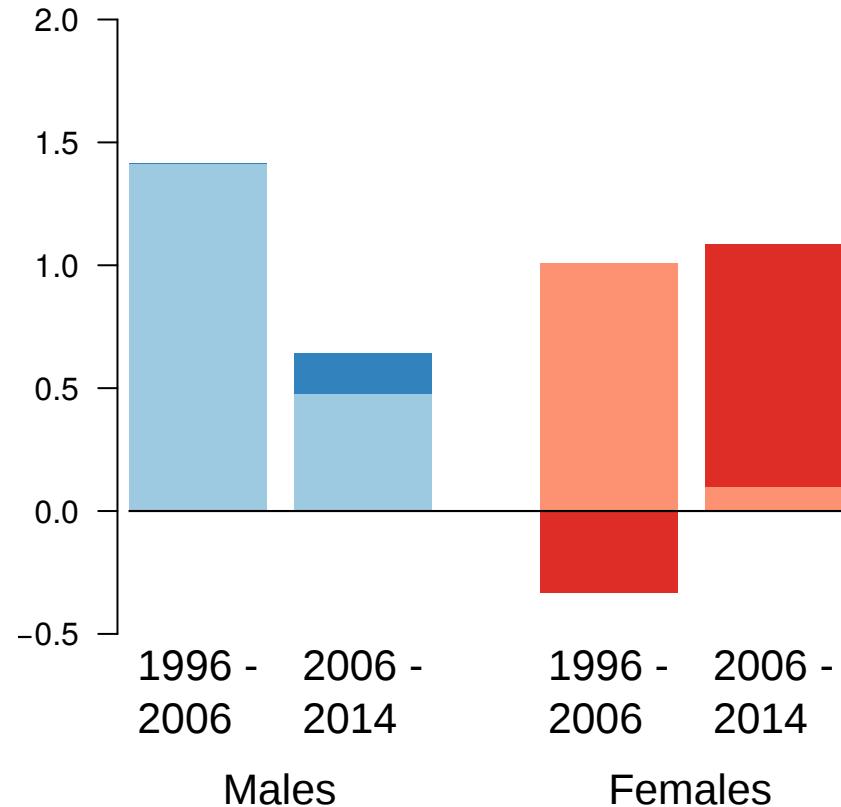
# Example transition probabilities



# Modelled expectancies at age 50



# Changes in expectancies



## Males 1996 to 2006

	DFLE	DLE	LE
Disablement	0.31	-0.18	0.13
DF Mortality	1.00	0.12	1.12
Recovery	-0.04	0.03	-0.01
Dis. Mortality	0.12	0.03	0.14
Age 50 Disab.	-0.03	0.01	-0.02
Age 50 Educ.	0.13	-0.03	0.09
Total	1.49	-0.03	1.46

## Males 2006 to 2014

	DFLE	DLE	LE
Disablement	0.15	-0.09	0.06
DF Mortality	0.52	0.06	0.58
Recovery	-0.26	0.13	-0.13
Dis. Mortality	0.09	0.03	0.12
Age 50 Disab.	-0.05	0.02	-0.04
Age 50 Educ.	0.09	-0.02	0.07
Total	0.54	0.12	0.67

## Females 1996 to 2006

	DFLE	DLE	LE
Disablement	0.59	-0.34	0.26
DF Mortality	0.76	0.09	0.85
Recovery	0.07	-0.01	0.06
Dis. Mortality	-0.39	-0.08	-0.47
Age 50 Disab.	-0.14	0.05	-0.09
Age 50 Educ.	0.09	-0.01	0.08
Total	0.99	-0.30	0.69

## Females 2006 to 2014

	DFLE	DLE	LE
Disablement	-0.00	-0.01	-0.02
DF Mortality	1.21	0.15	1.36
Recovery	-1.04	0.62	-0.42
Dis. Mortality	0.38	0.08	0.45
Age 50 Disab.	-0.29	0.10	-0.19
Age 50 Educ.	-0.14	0.05	-0.09
Total	0.12	0.98	1.10

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Thanks!

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