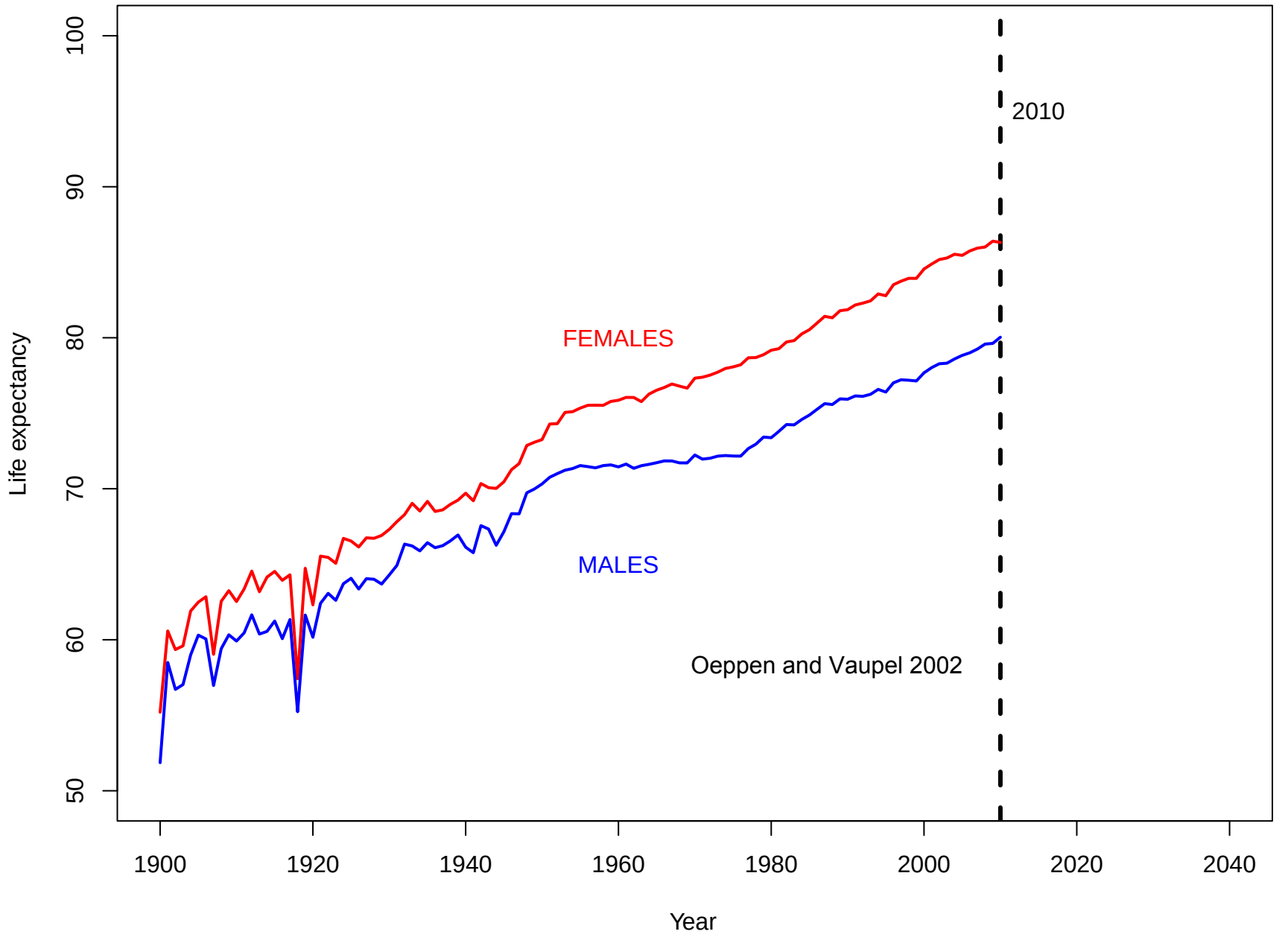
The Past and Future Rise of Human Longevity

Vladimir Canudas-Romo

Outline

- The Past:
  - –Maximum life expectancy
  - –Minimum death rates
- The Future:
  - – 3 perspectives
  - – Why the trends?

Maximum Life Expectancy 1900 to 2010



Maximum e_0 or Minimum m_x

High correlation between the components of the life table

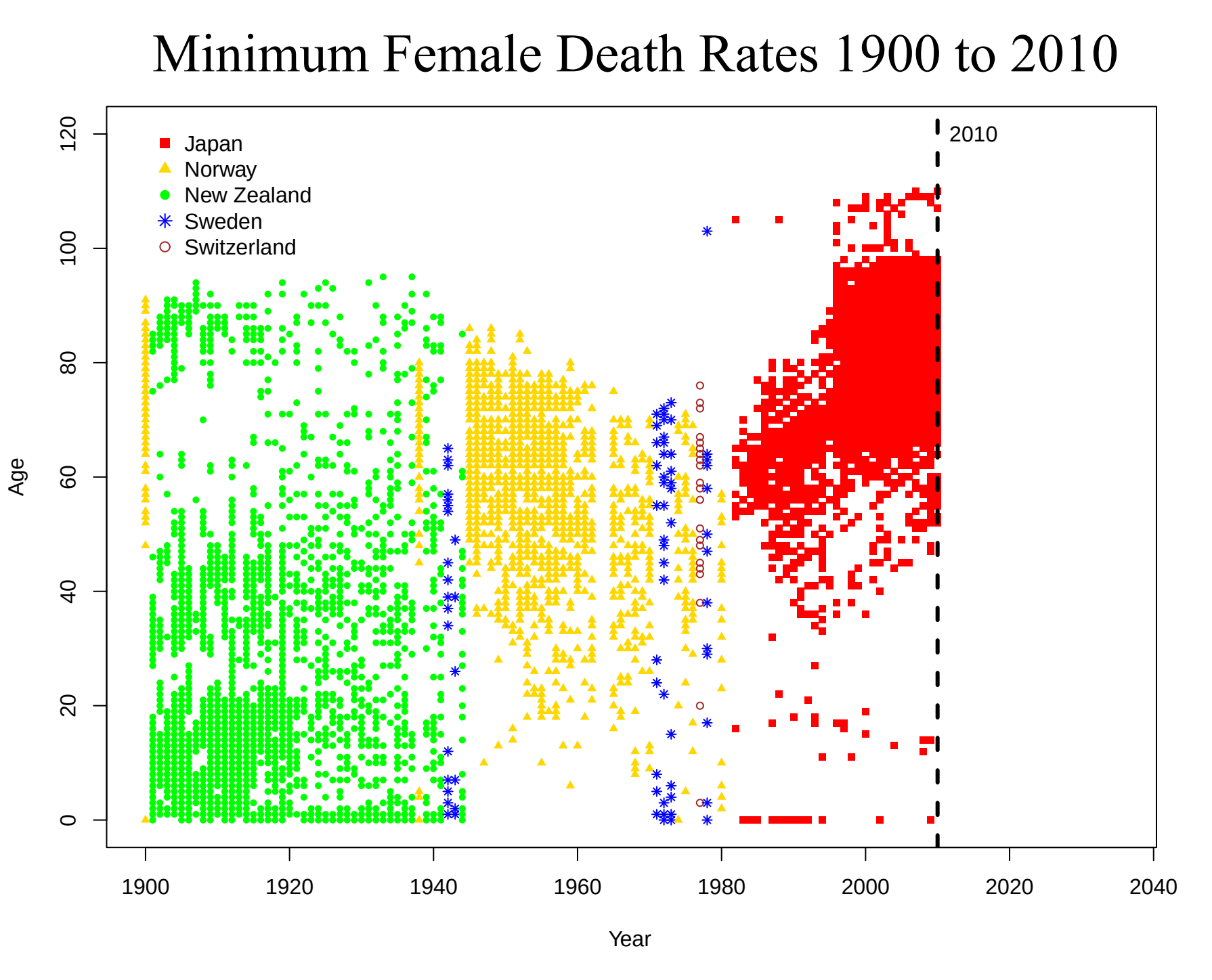
$$M(x,t) \longrightarrow e_0(t)$$

Maximum e_0 or Minimum m_x

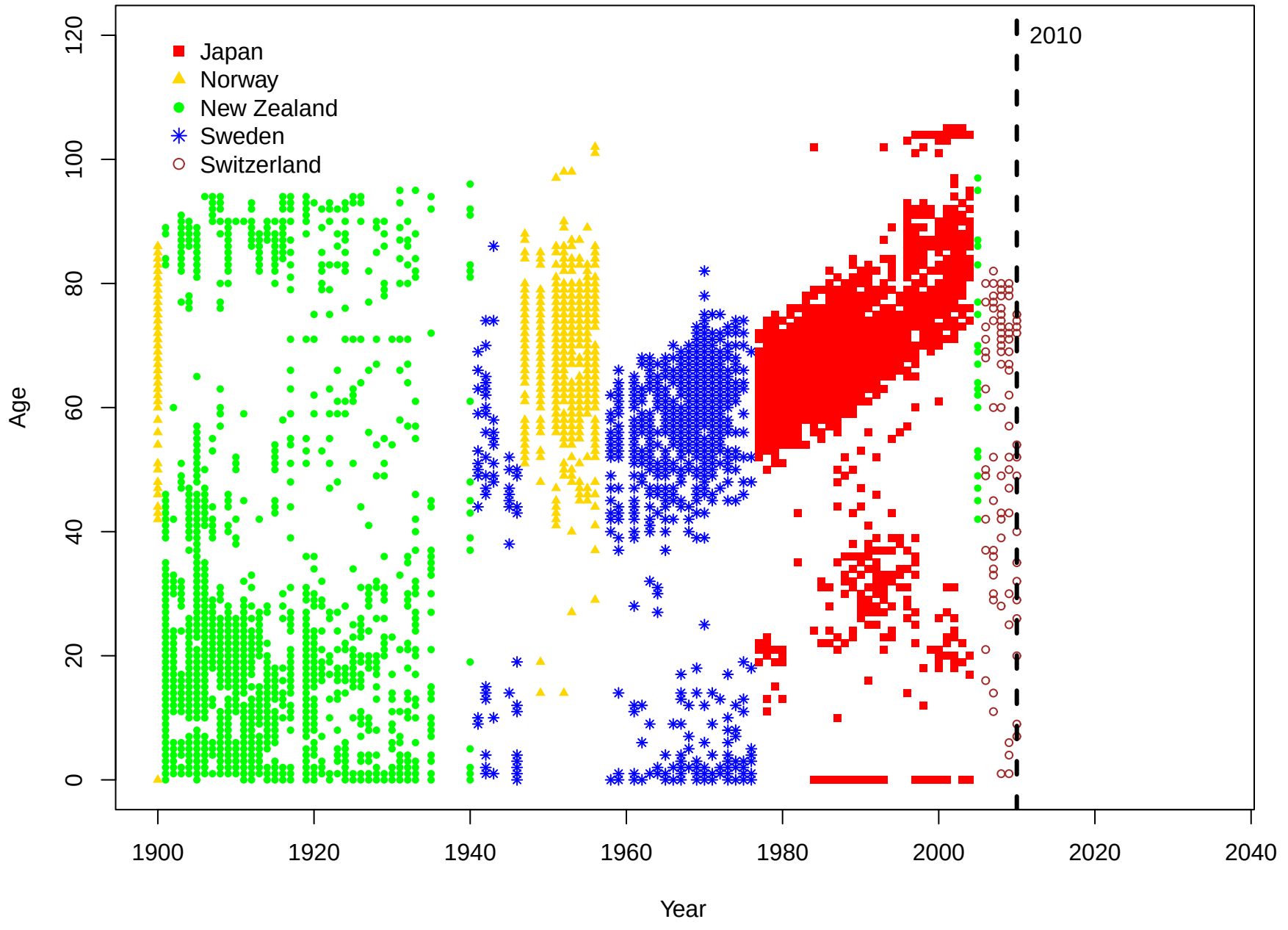
High correlation between the components of the life table

Minimum → Maximum

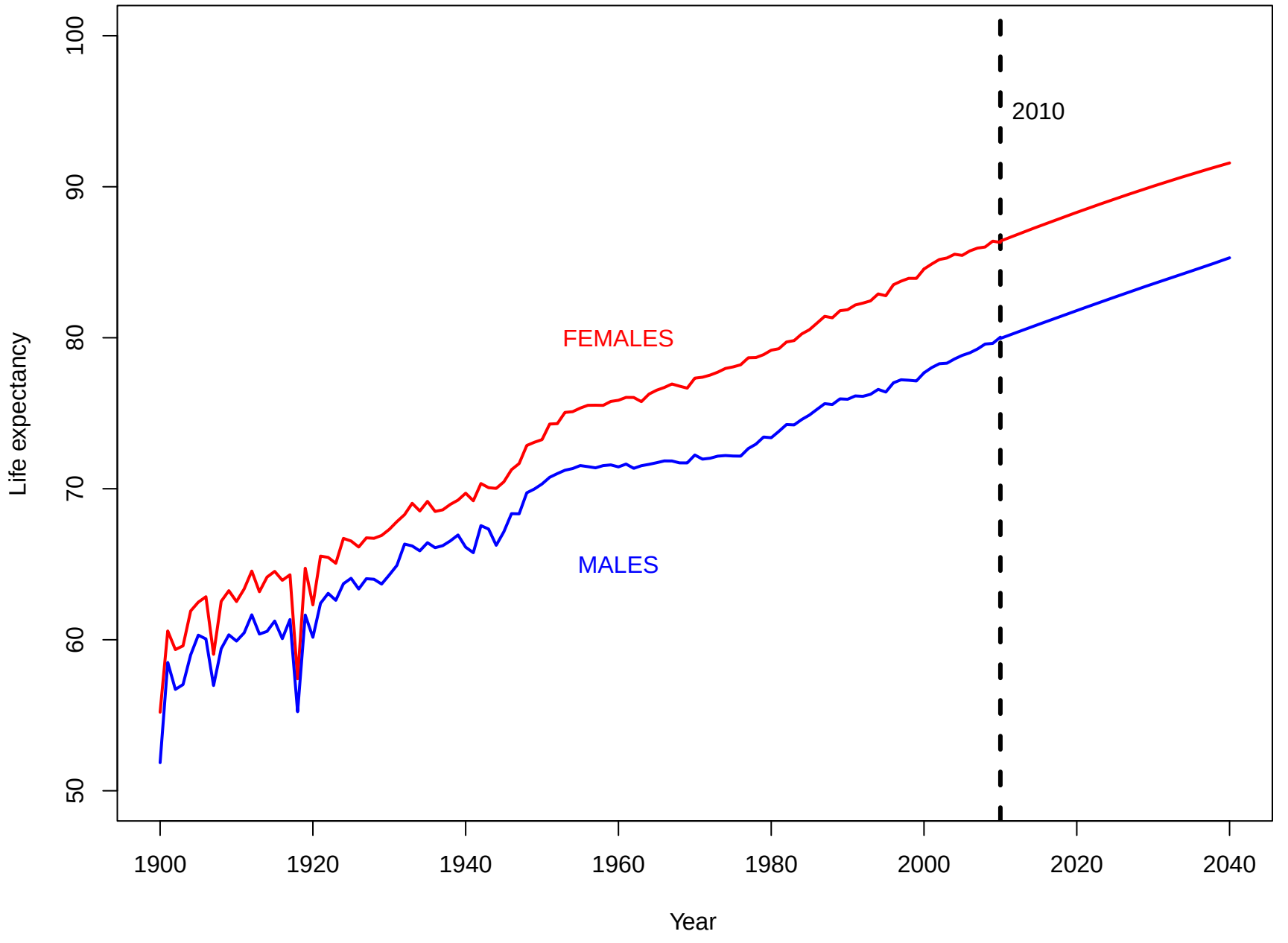
$M(x,t) \longrightarrow e_0(t)$

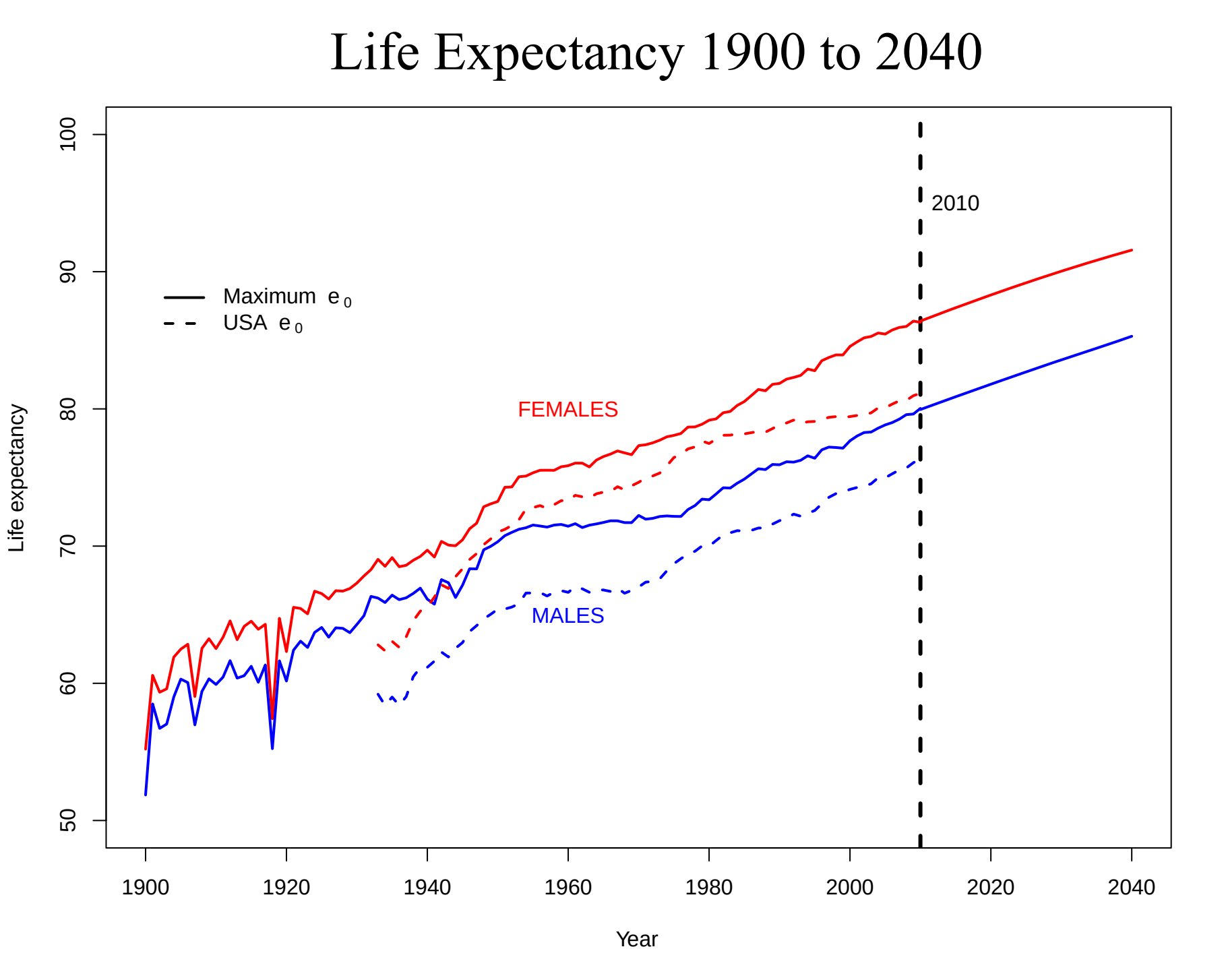

Minimum Female Death Rates 1900 to 2010
Japan
Norway
New Zealand
Sweden
Switzerland
2010
Age
Year
0
20
40
60
80
100
120
1900
1920
1940
1960
1980
2000
2020
2040

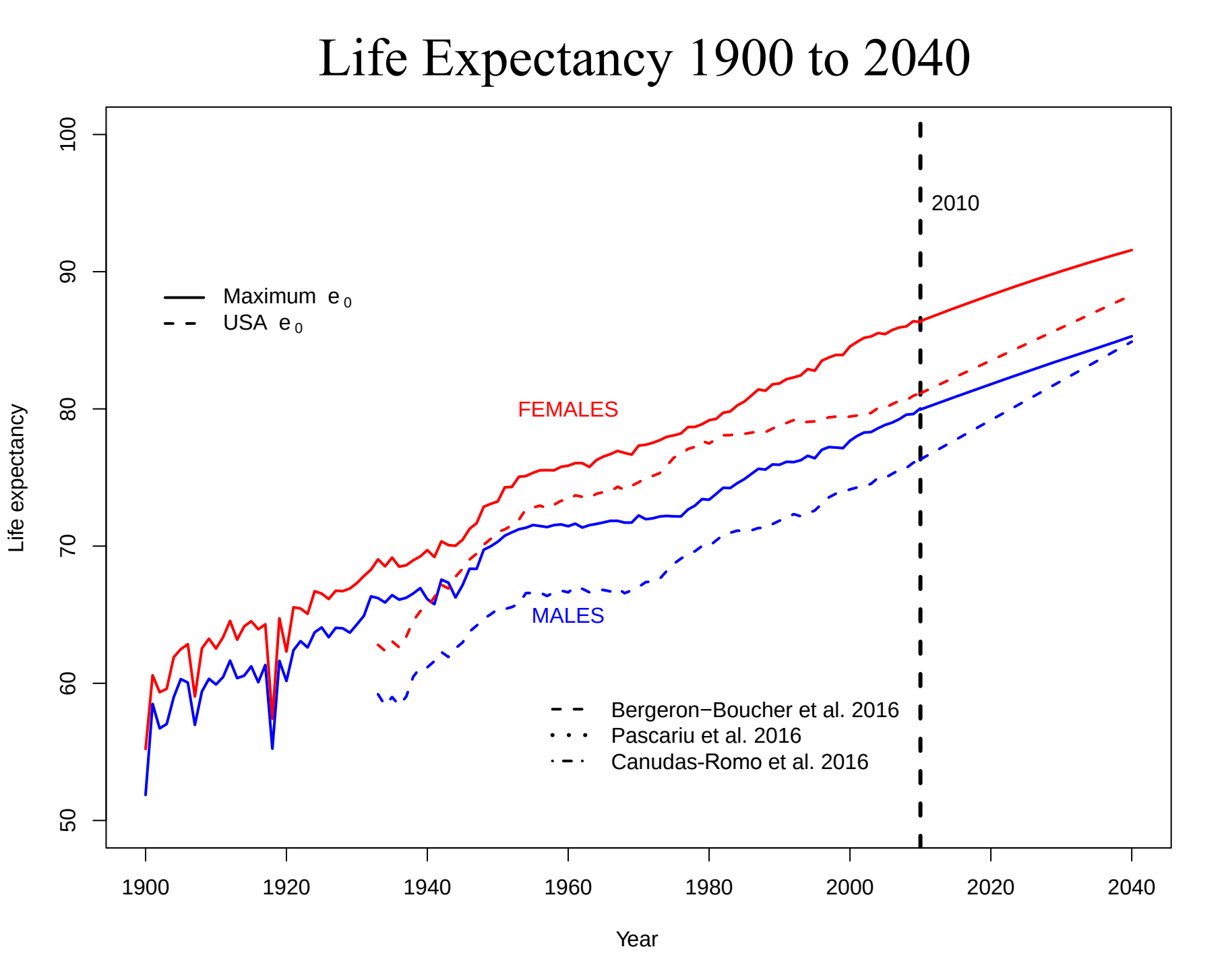
Minimum Male Death Rates 1900 to 2010



Maximum Life Expectancy 1900 to 2040




Life Expectancy 1900 to 2040
Maximum e 0
USA e 0
FEMALES
MALES
2010
Life expectancy
Year
50
60
70
80
90
100
1900
1920
1940
1960
1980
2000
2020
2040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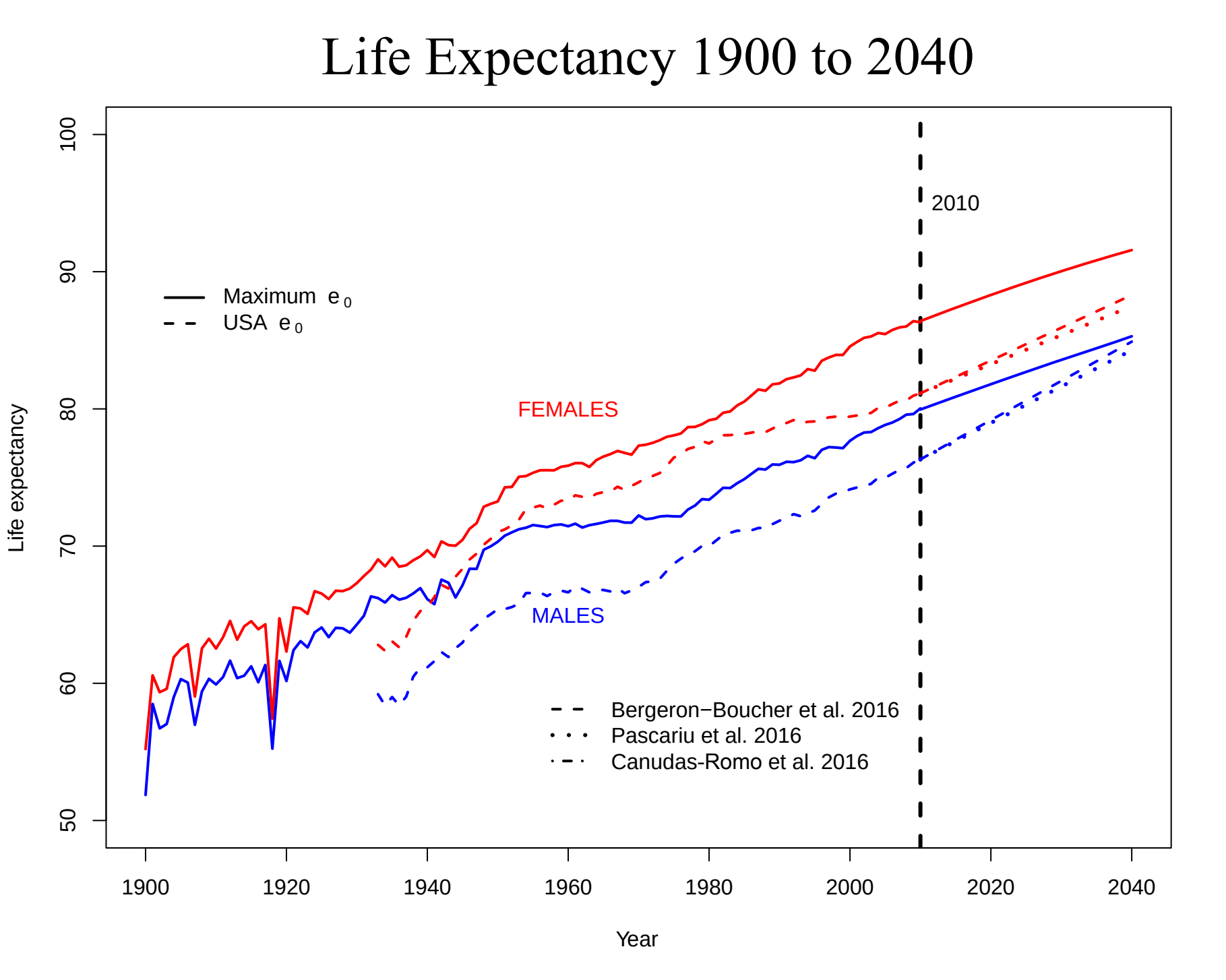
Bergeron−Boucher et al. 2016
Pascariu et al. 2016
Canudas-Romo et al. 2016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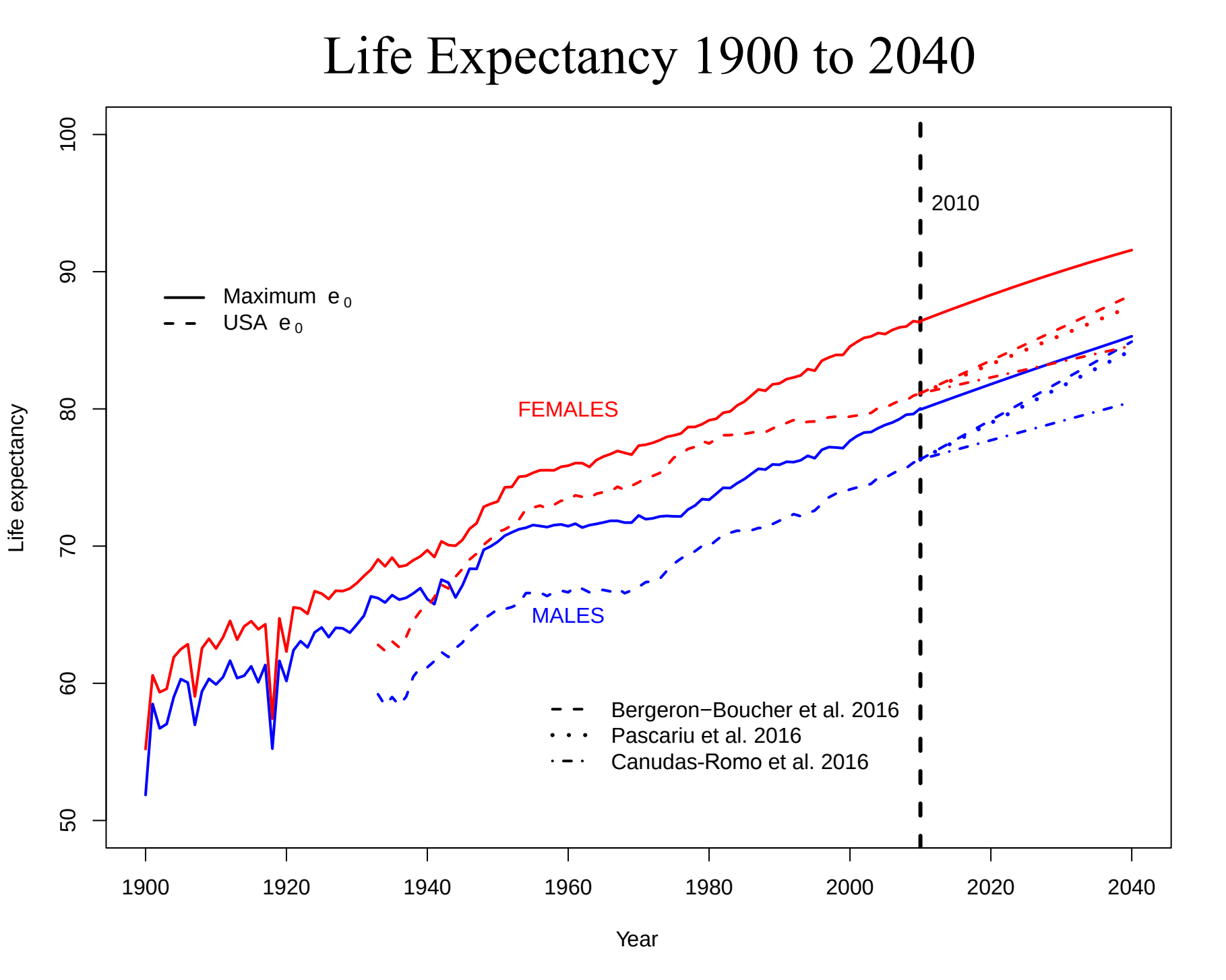
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Positive Trends for Ages 65+

	1965	2014
College	5%	25%
Poverty Rate		
Work Force		
Smoking 18+		

Source: CDC, US Census Bureau, Labour Statistics

Positive Trends for Ages 65+

	1965	2014
College	5%	25%
Poverty Rate	30%	10%
Work Force		
Smoking 18+		

Source: CDC, US Census Bureau, Labour Statistics

Positive Trends for Ages 65+

	1965	2014
College	5%	25%
Poverty Rate	30%	10%
Work Force	38% (1995)	48% (2011)
Smoking 18+		

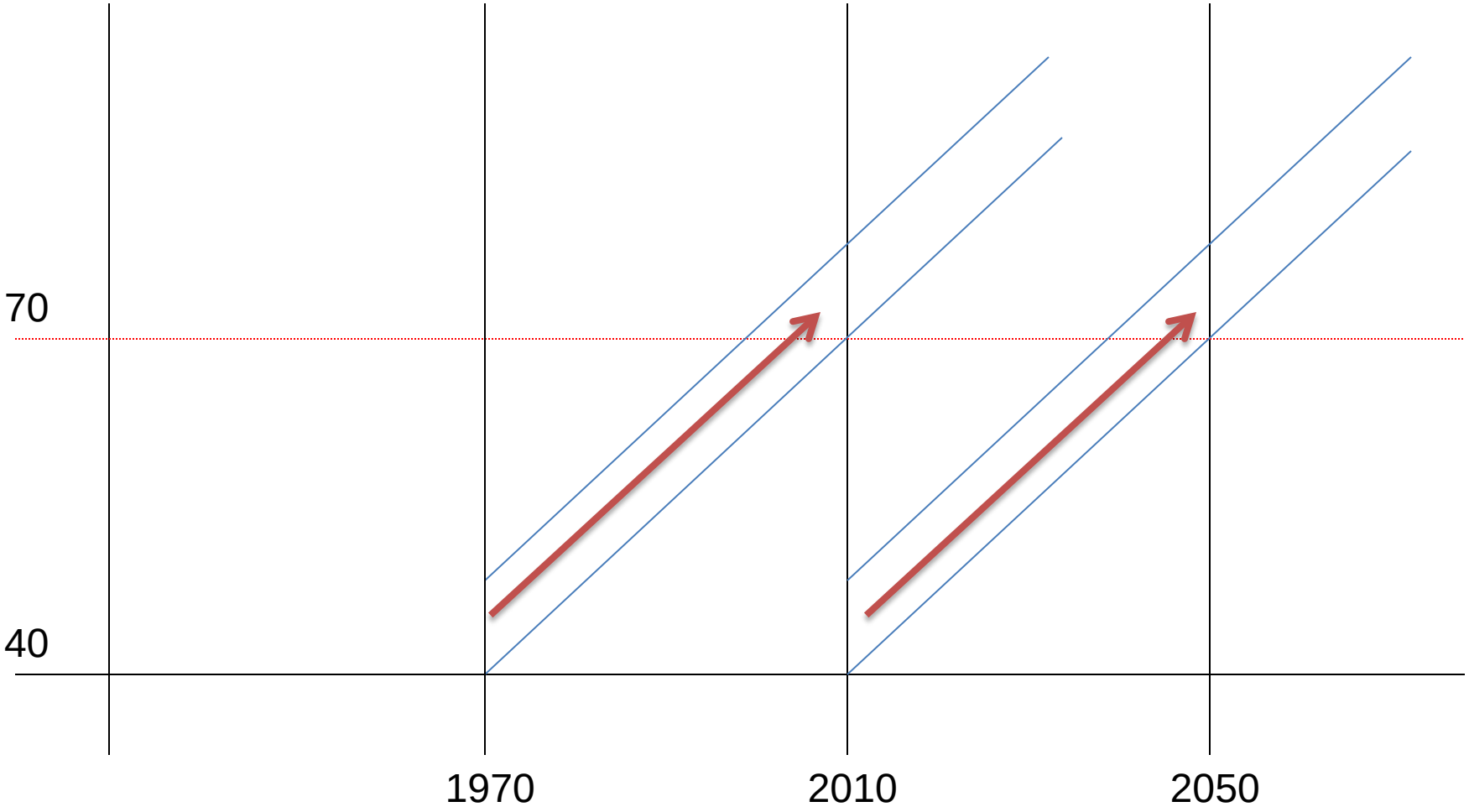
Source: CDC, US Census Bureau, Labour Statistics

Positive Trends for Ages 65+

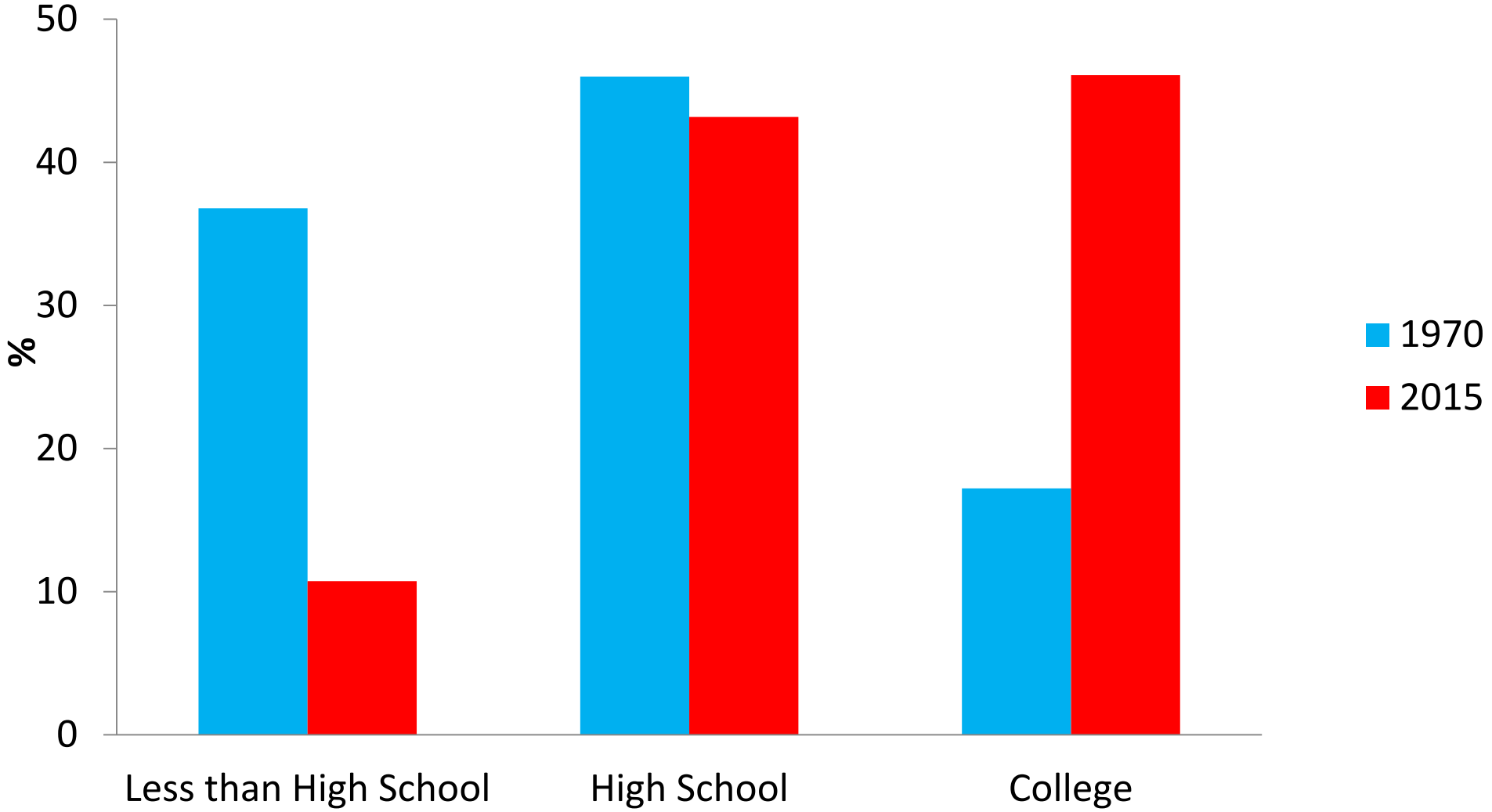
	1965	2014
College	5%	25%
Poverty Rate	30%	10%
Work Force	38% (1995)	48% (2011)
Smoking 18+	21% (2005)	17%

Source: CDC, US Census Bureau, Labour Statistics

Demographic Metabolism



USA Education Ages 40-50



Source: US Census

Summary

- The Past:
  - Maximum-e_0: uninterrupted increase
  - Minimum-m_x: vital in longevity transition
- The Future:
  - 3 models all showing an increase in US-e_0
  - New cohorts with higher education

Tak!