Systemic Gerobiology

- Cellular senescence

  ?? relevance to body aging

  telomere shortening
  protein crosslinks and oxidation
  DNA damage
  8-oxoguanine

- Builtin (evolution-selected) limits to life span?

  Programmed senescence
  Just what is selected in human evolution?

Homo sapiens
is already an uncommonly long-lived species

Specific syndromes of aging

- Cardiovascular disease
  cholesterol deposits

- Alzheimer's
  amyloid deposits

- Cancer
  cumulative mutation
  attrition of defense mechanisms

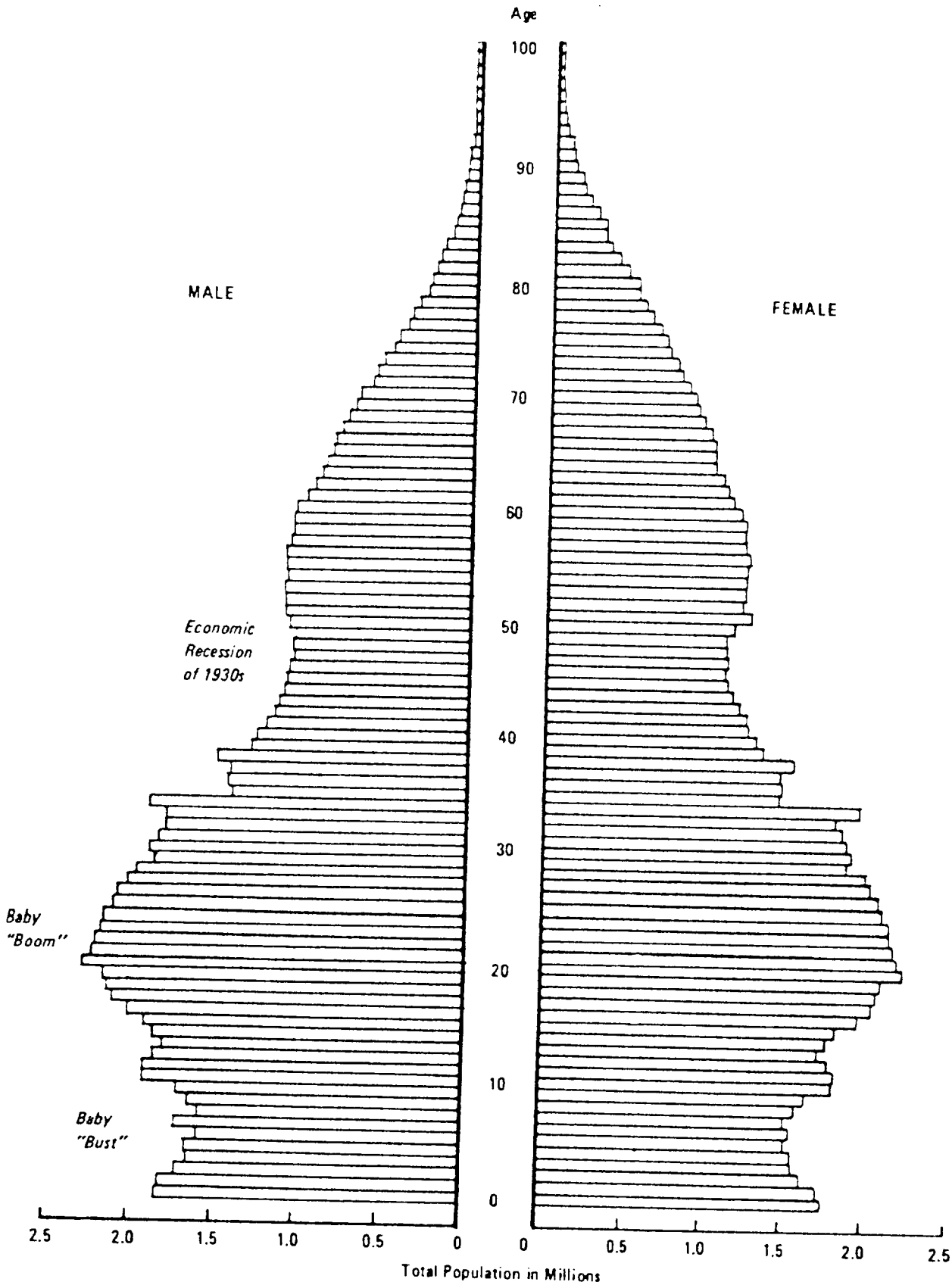
- Cataract and other diabetic pathology
  glucose adducts to proteins

- Menopause
  after atresia in fetus, 400-500 ova at birth
  depleted month by month

- Autoimmune disease
  cumulative break-through of autotolerance

- Emboli, strokes, aneurysms
  cumulative mechanical obstructions or tears

- Attrition of immune systems
  ???


Age
100
90
80
70
60
50
40
30
20
10
0
MALE
FEMALE
Economic Recession of 1930s
Baby "Boom"
Baby "Bust"
2.5
2.0
1.5
1.0
0.5
0
0
0.5
1.0
1.5
2.0
2.5
Total Population in Millions

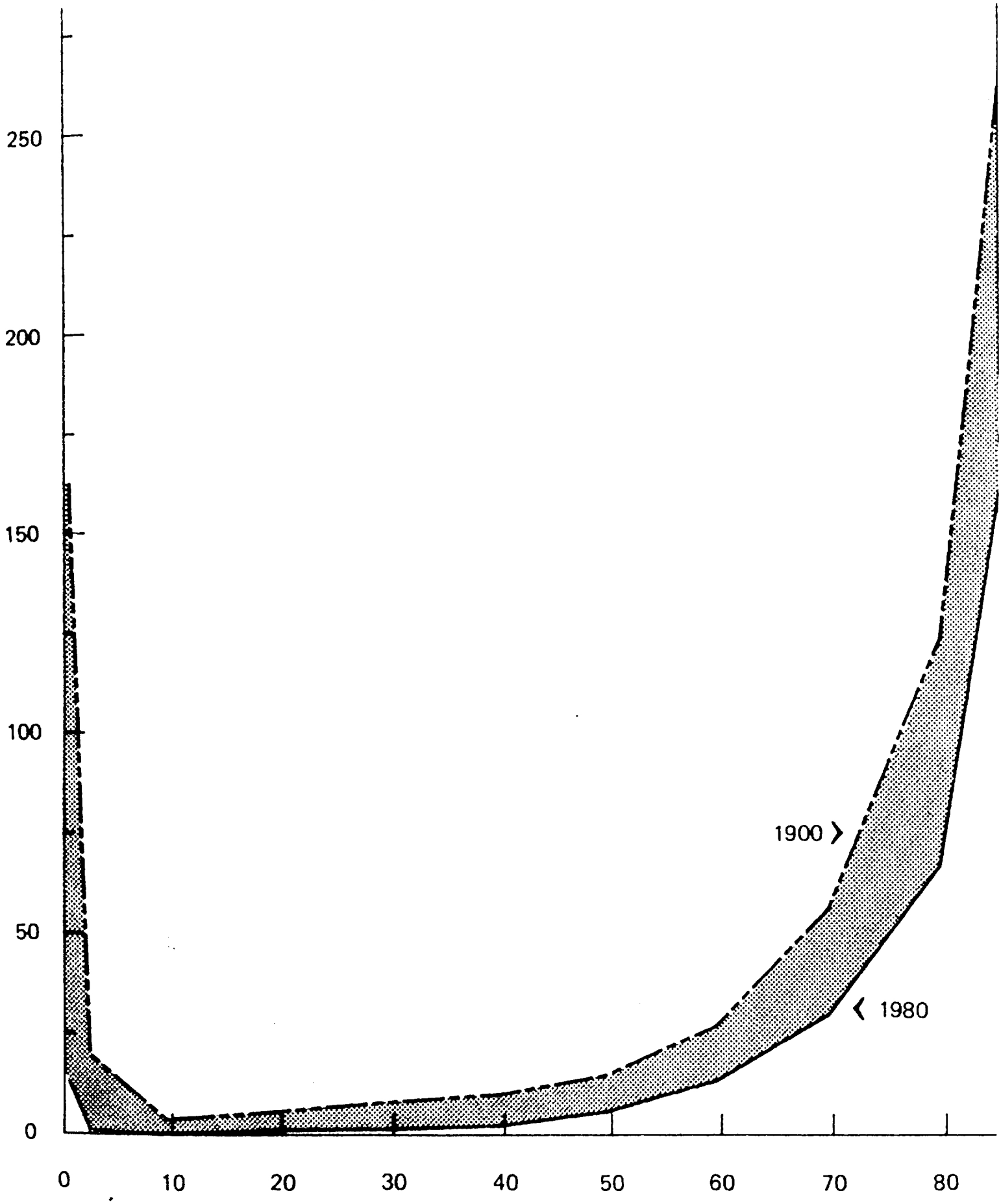


Figure 5-2. Change in Age-Specific Mortality Rates: United States, 1900 and 1980

BOGUE