

# Occupational Pas de Deux

The aging workforce

Threats in the  
environment



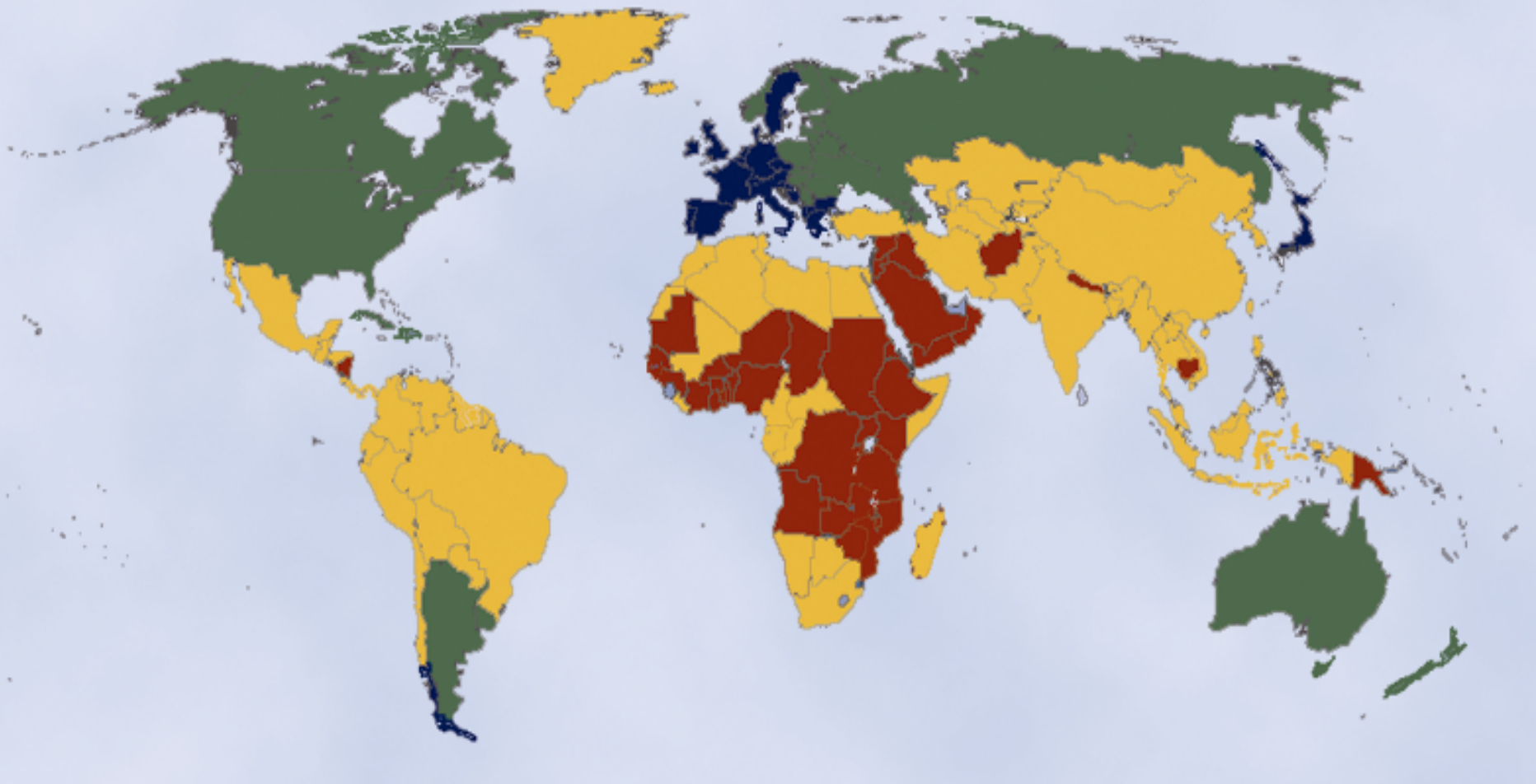


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# Objectives

- **Review the statistics on the aging workplace**
- **Describe implications for this trend**
- **Consider interventions to prevent injuries in this demographic**
- **Understand common environmental risks**
- **Dispel urban legends regarding environmental risks**

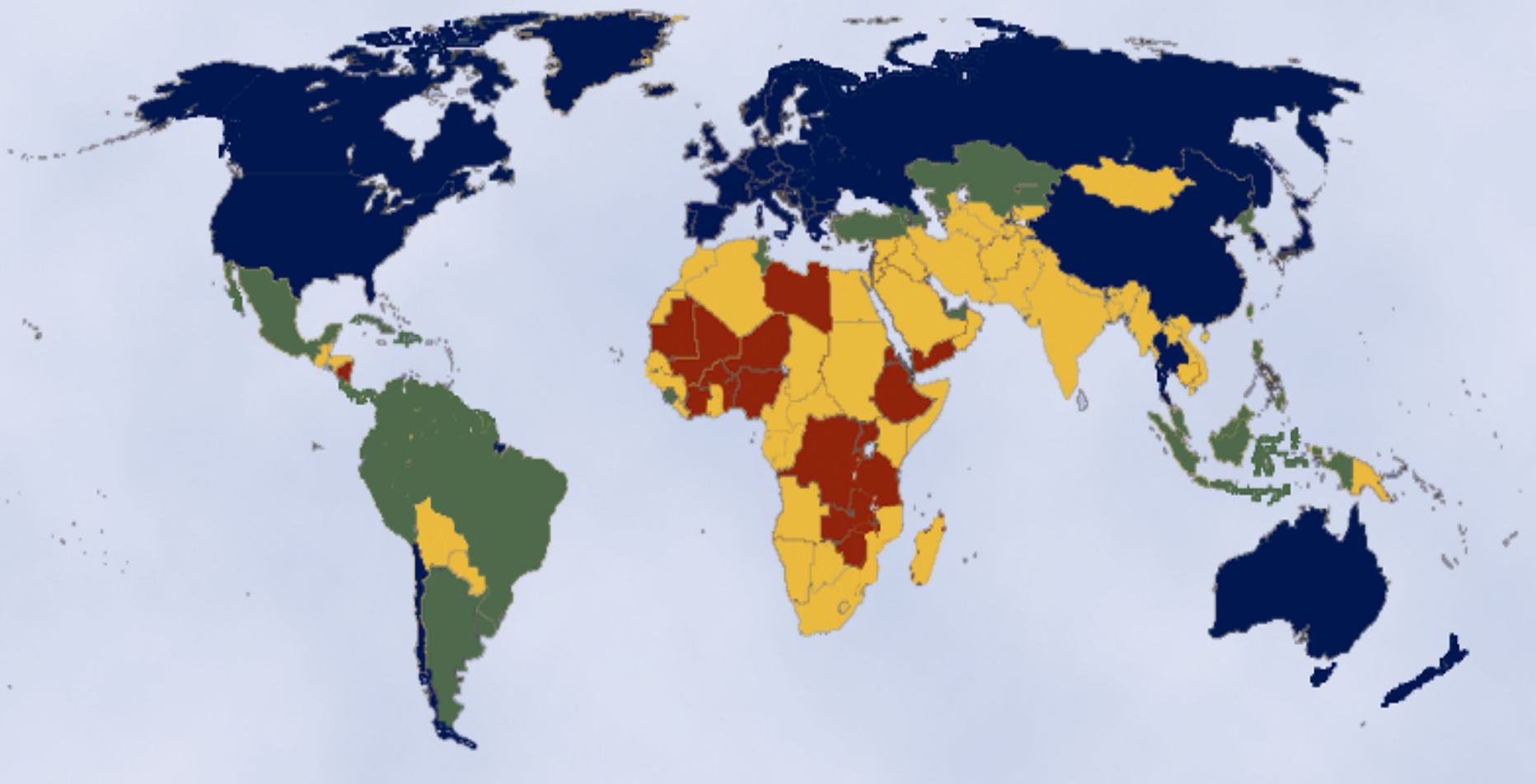




**Under 5%**      **5% to 12.4%**      **12.5% to 20%**      **Above 20%**

## Percent of Population Age 60+ in 2000

Source: U.S. Census Bureau

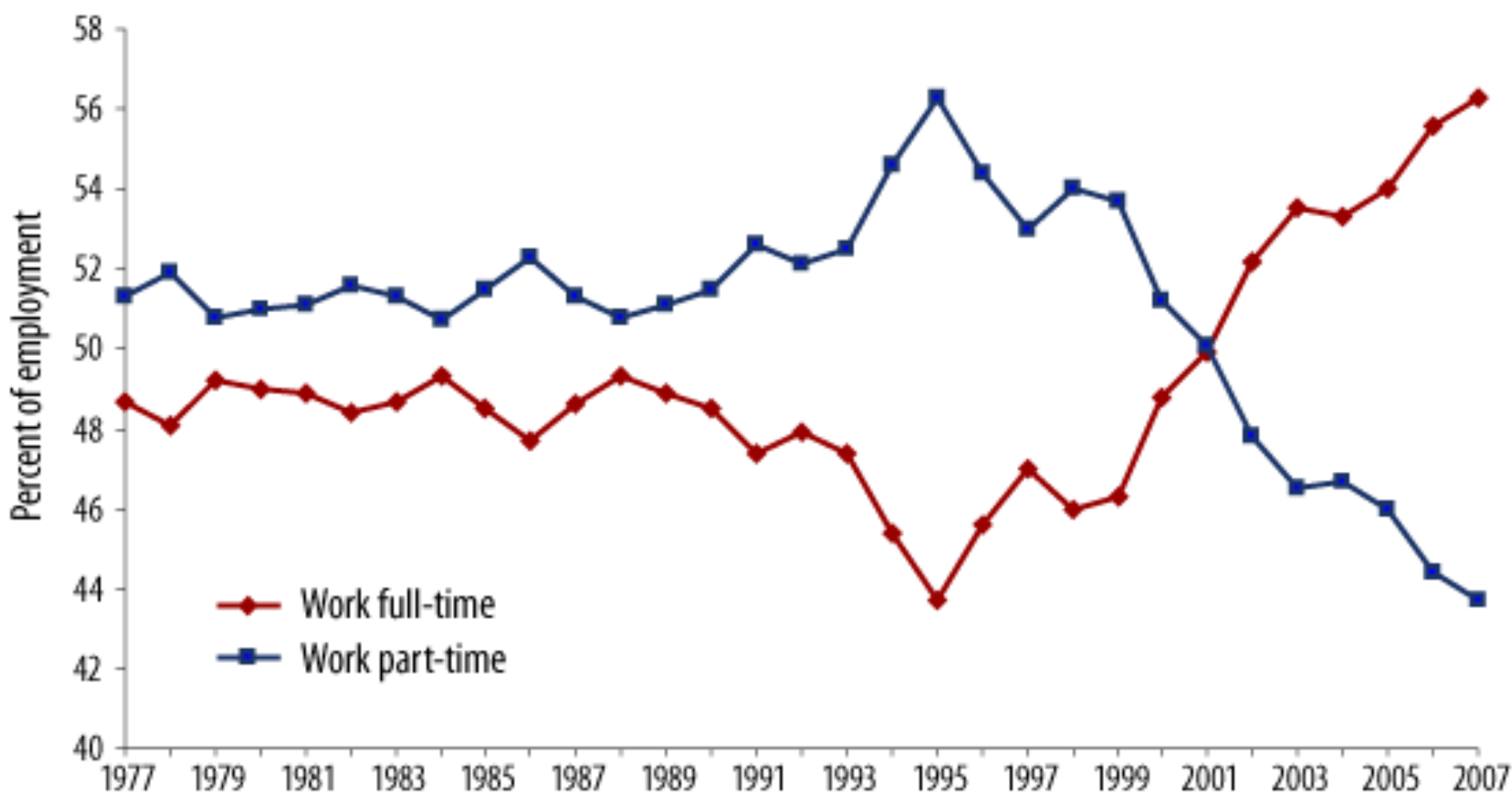


**Under 5%**      **5% to 12.4%**      **12.5% to 20%**      **Above 20%**

## Percent of Population Age 60+ in 2025

Source: U.S. Census Bureau

## Workers 65 and over by work schedule, 1977-2007



Source: U.S. Bureau of Labor Statistics

[www.bls.gov](http://www.bls.gov)

# The aging workforce

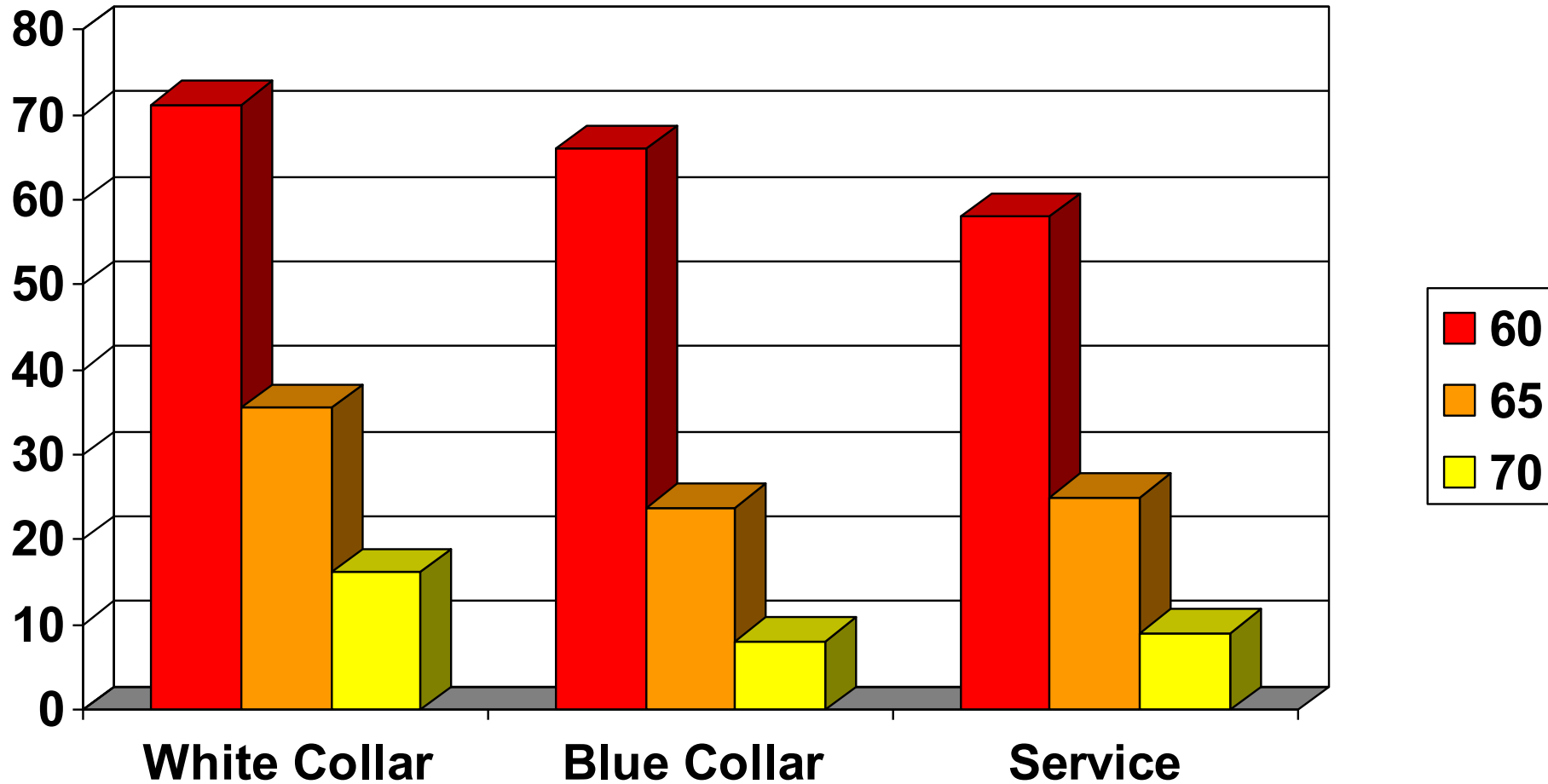
- The percentage of workers age 55 or older has risen and continues to rise, despite the recession.
- Simultaneously, there has been a decline in % working in all younger age groups
- Reasons:
  - Recoup investments lost during the recession
  - Savings and social security benefits not adequate
  - Need health insurance

# The aging workforce

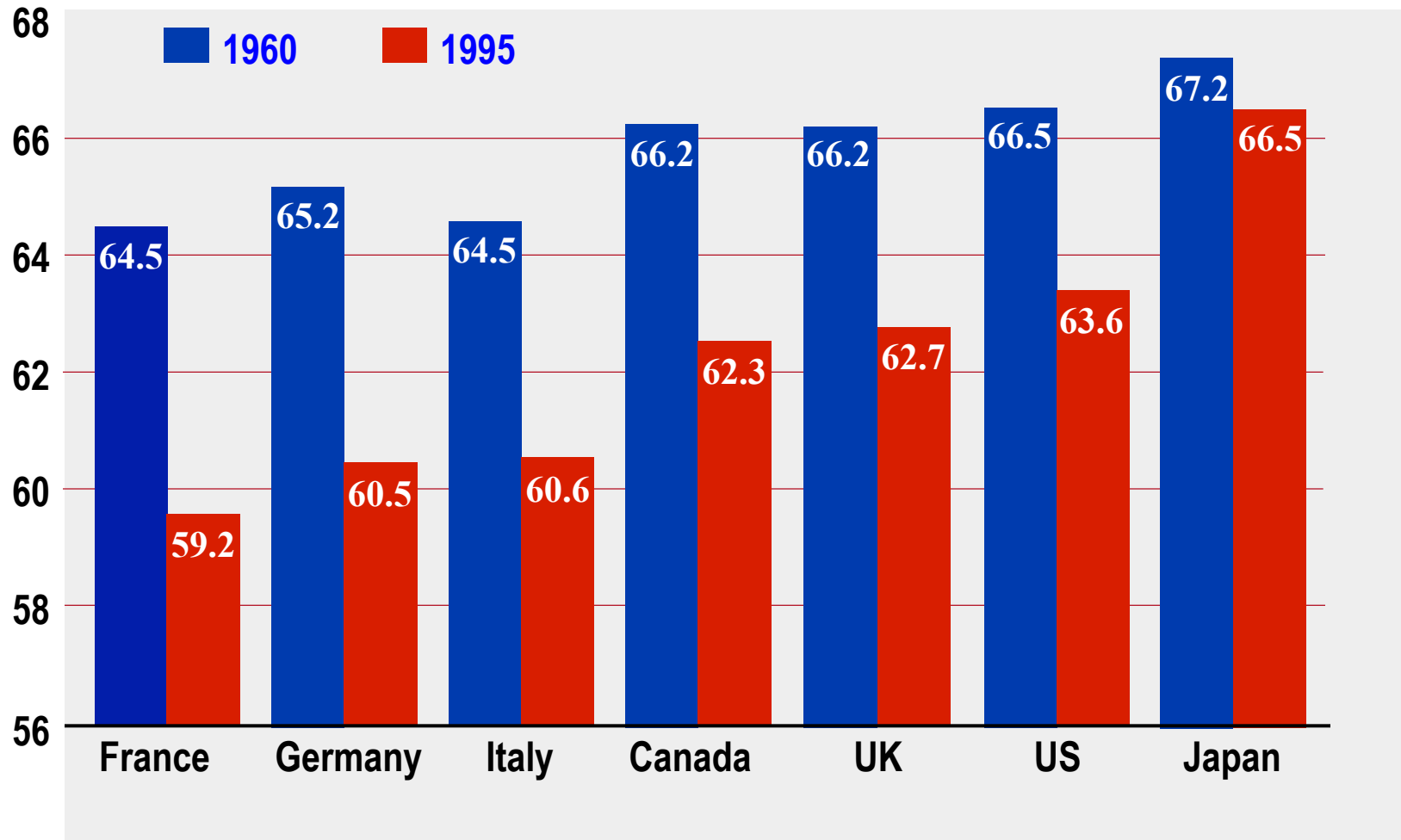
- Baby Boomers are delaying retirement due to the great recession
- Oldest industries: real estate, manufacturing, insurance, and health care
- Baby boomer retirement may leave big gap especially in these sectors



# Proportion of Elderly Employed by Age and Class



# Average Retirement Age of Males



Source: Center for Strategic and International Studies

# **Reinventing Retirement**

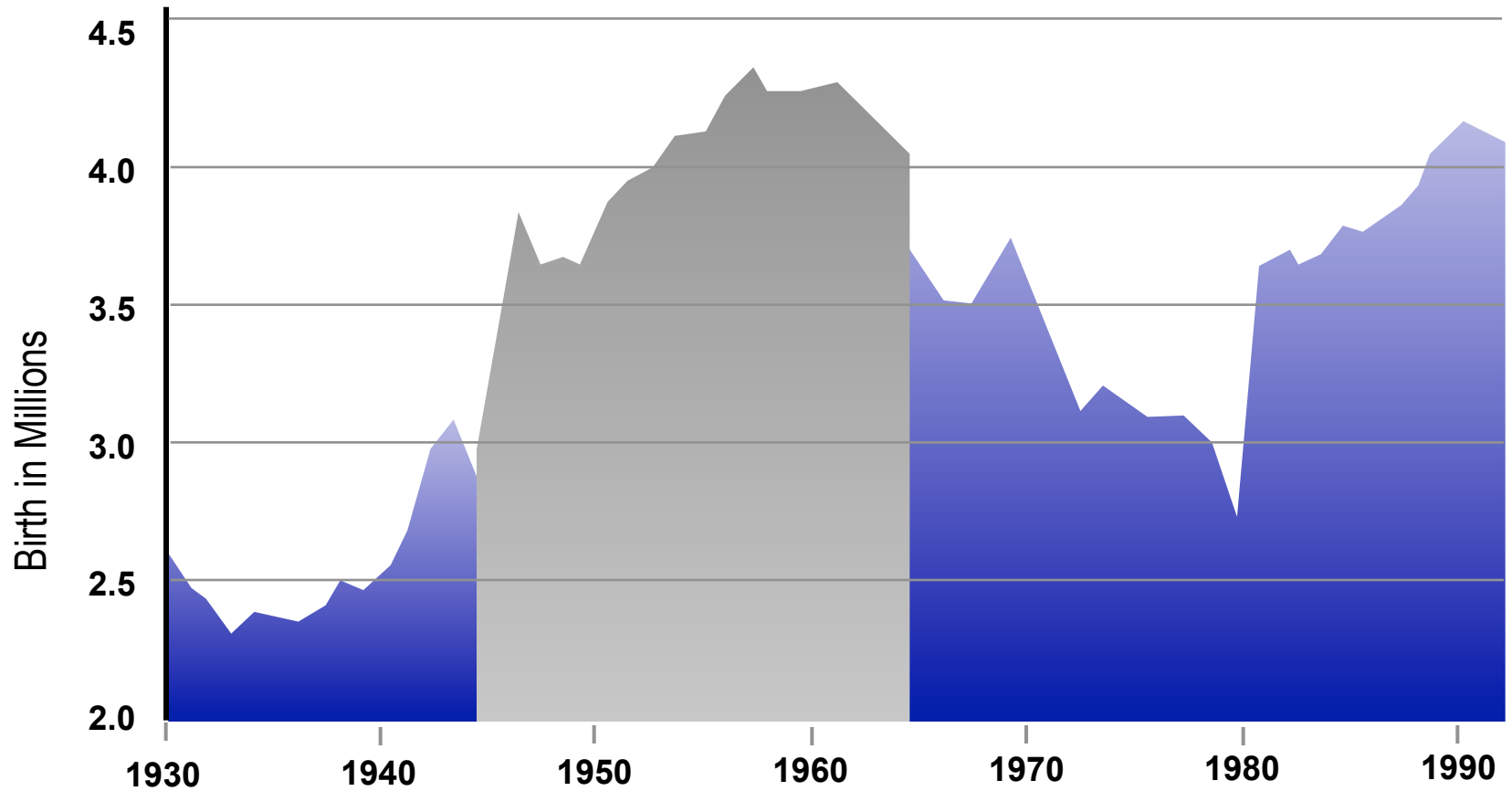
**Boomers much less likely to  
associate retirement = age of 65.**

**70% of workers who have not retired  
plan to work into their retirement  
years or never retire.**

**Almost half of workers 45-70  
envision working into their 70s**

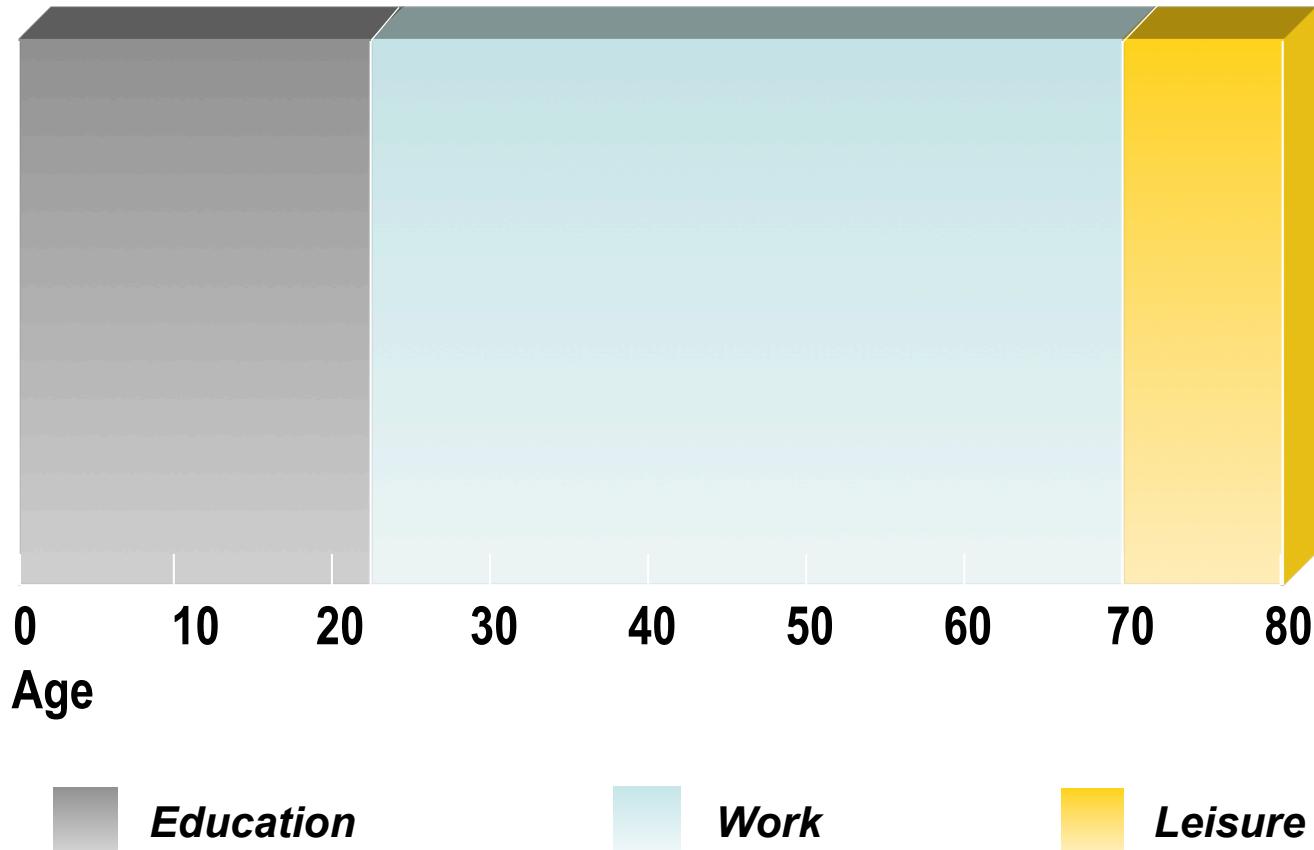
# The Baby Boom Pattern

## The Boom Years: 1946-1964



Source: U.S. Census Bureau International Data Base

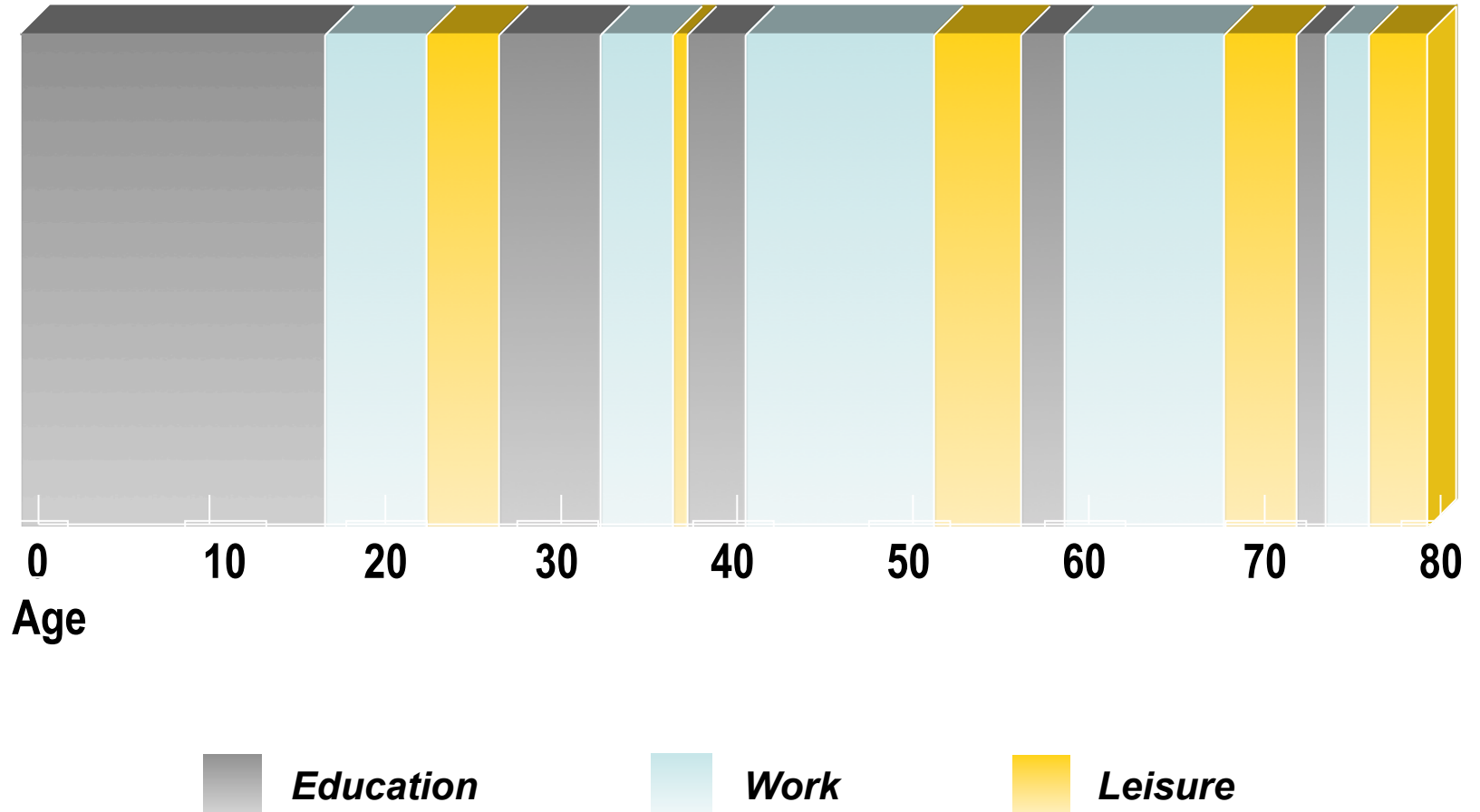
# Old Retirement Paradigm



Source: *Demography is De\$tiny*,  
The Concours Group and Age Wave, 2003

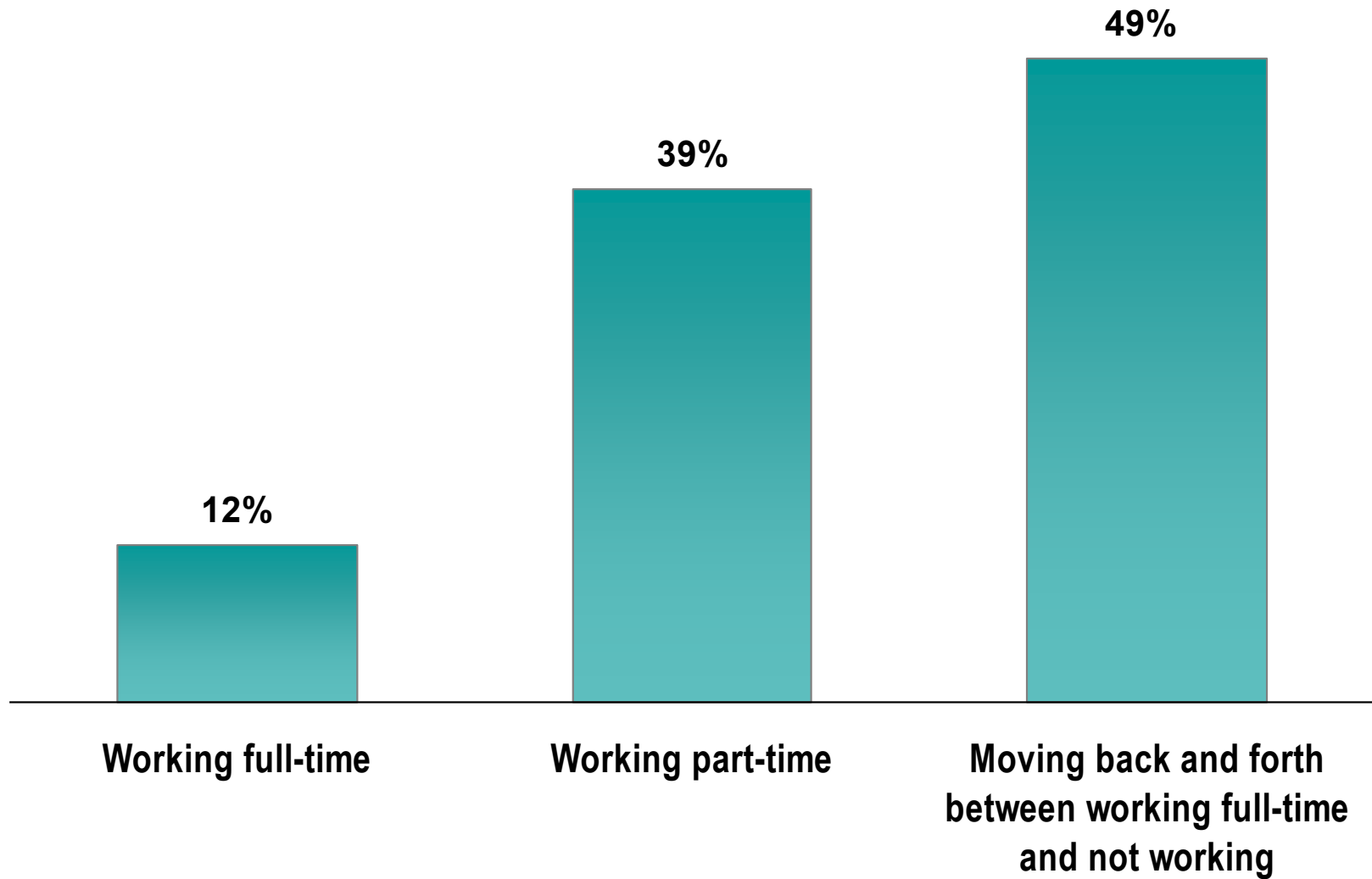


# New Retirement Paradigm



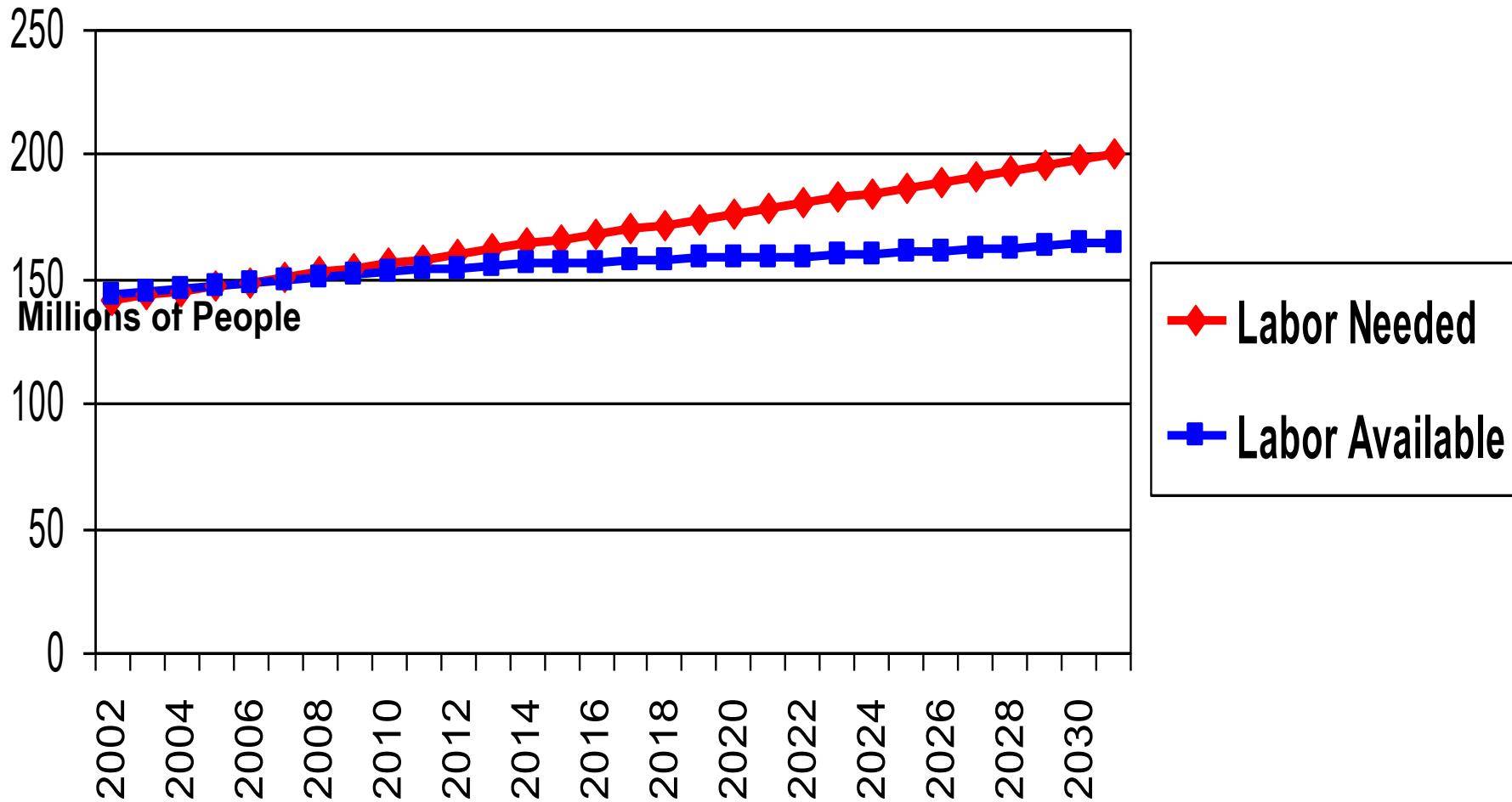
Source: *Demography is De\$tiny*,  
The Concours Group and Age Wave, 2003

# Reinventing Retirement



Source: *The New Employee/Employer Equation*, The Concours Group and Age Wave, 2004

# Growing Shortage of U.S. Workers



Source: Employment Policy Foundation analysis and projections of Census/BLS and BEA data.

# Four Generational Workforce

**Traditionalist**



**Born: 1928-1945**

**Boomer**



**Born: 1946-1964**

**Generation X**



**Born: 1965-1980**

**Generation Y  
Millennials**



**Born: 1980-2000**

**Four generations try to coexist  
in the 21<sup>st</sup> century workplace**

Source: Based in part on "Meeting the Challenges of Tomorrow's Workplace," CEO Magazine, 2005

# Generations:

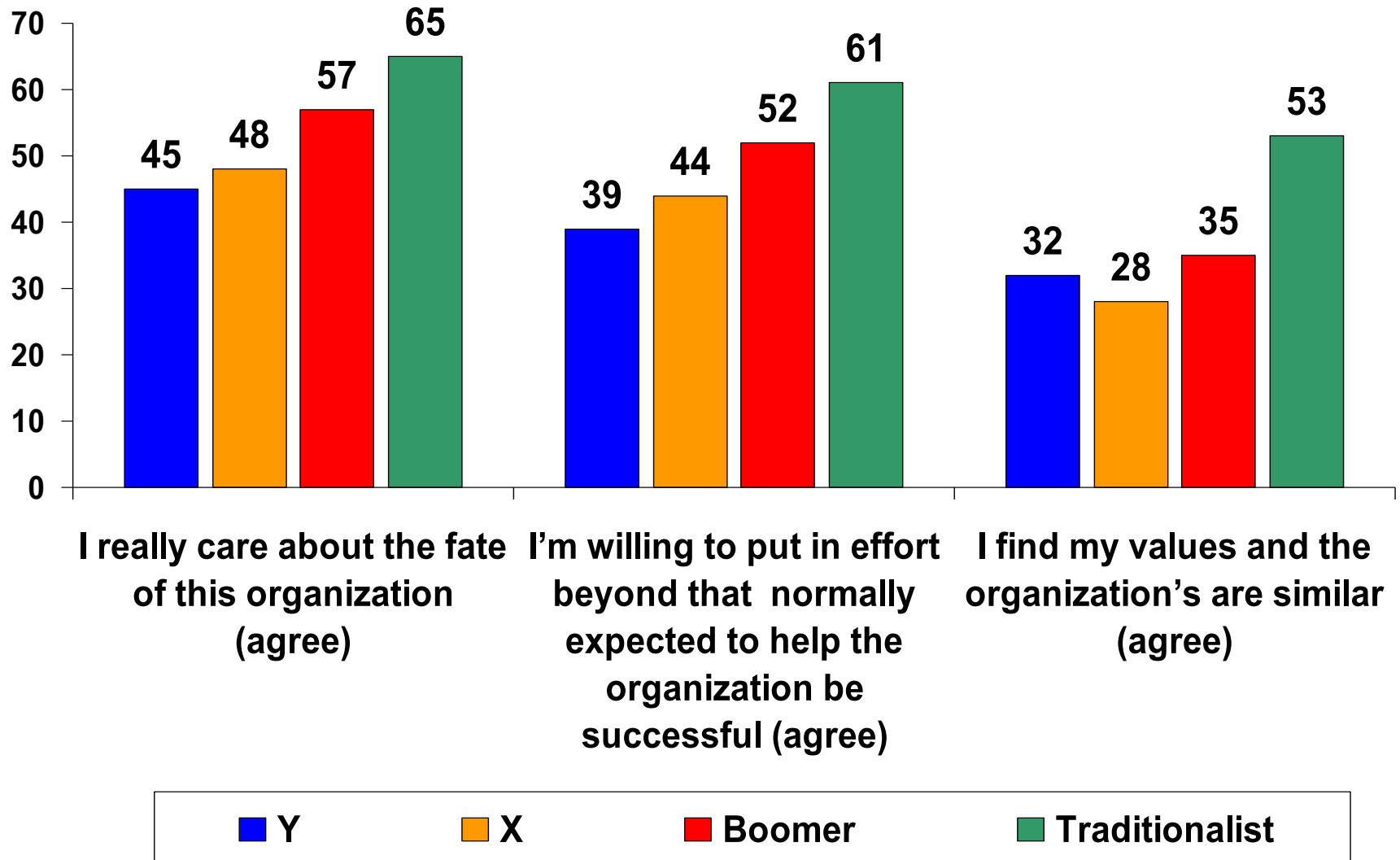
- **Traditionalists**
  - Logical, linear, conservative
- **Baby Boomers**
  - Personable; value education
- **Generation X**
  - Direct, straightforward, results-oriented
- **Generation Y/Millennials**
  - Positive, personal goal-oriented



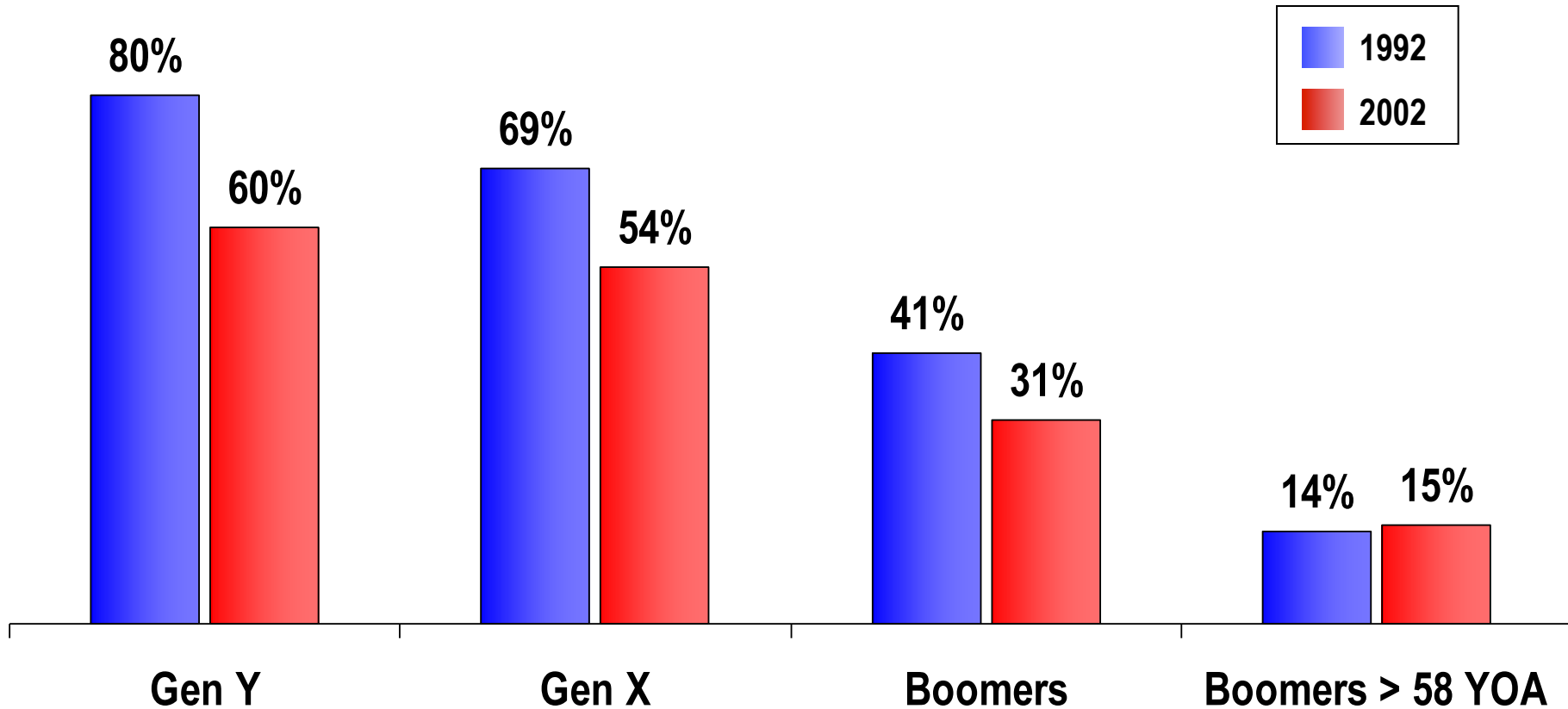
# Generational turns-offs

- **Traditionalists**
  - Profanity, slang, poor grammar, disrespect
- **Baby Boomers**
  - Brusqueness, one-upmanship
- **Generation X**
  - Using time poorly, corporate-speak
- **Generation Y/Millennials**
  - Cynicism, sarcasm, condescension

# Lower Alignment with the Organization

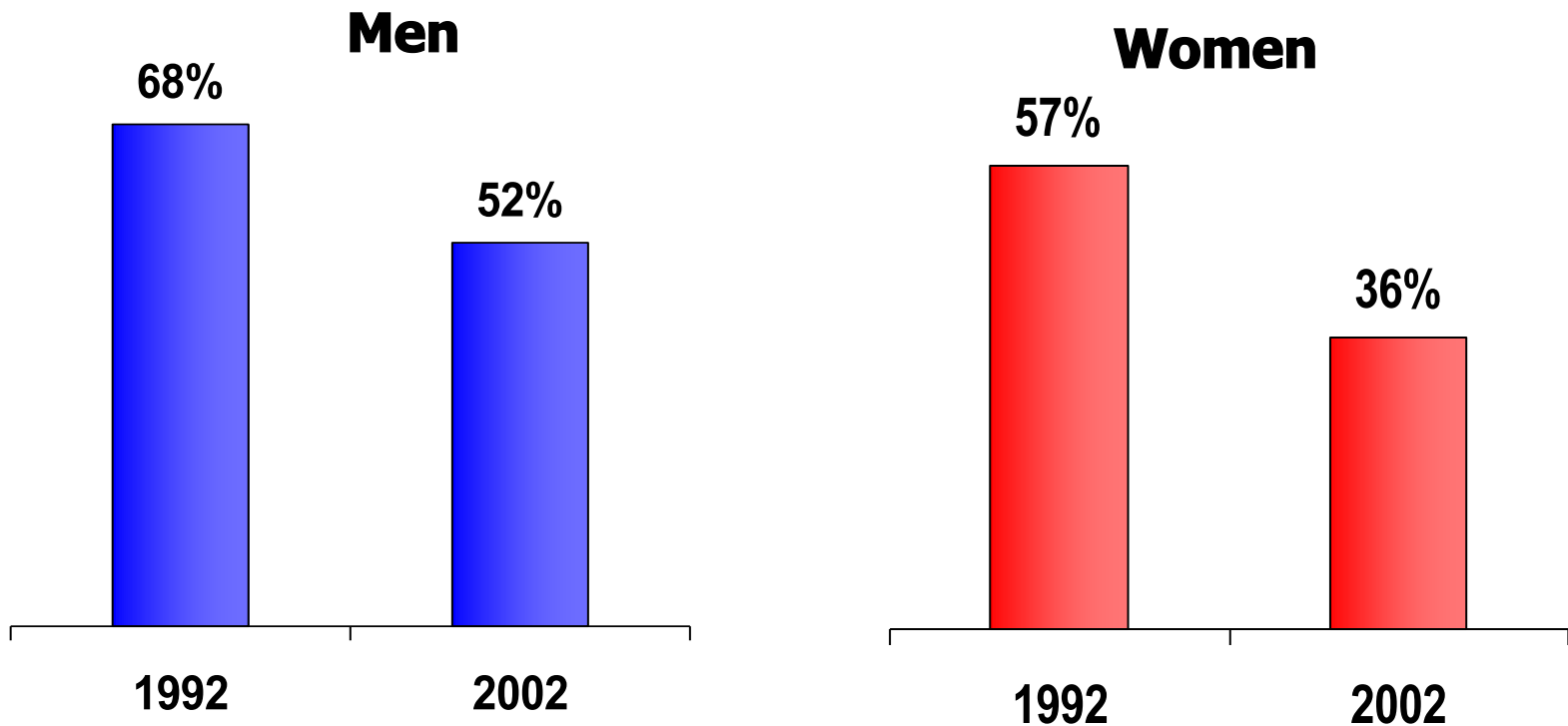


# Falling Desire for Jobs with Greater Responsibility



Source: *Generation & Gender in the Workplace*, An Issue Brief by Families and Work Institute

# Declining Desire for Jobs with Greater Responsibility By Gender



Source: *Generation & Gender in the Workplace*, An Issue Brief by Families and Work Institute

# Impact on Industry







# **Reluctance to hire elderly**

- **Concerns regarding higher salaries**
- **Unknown/dated skill set**
- **Health benefit costs**
- **Retirement expectations**
- **Just plain risky**
- **Limitations of aging process**

# **Aging Limitations?**

- Mental Capacity**
- Chronic Conditions**
- Physical Capacity**



# **Mental Capacity**

**Cognition speed—slower**

**Learning and recall slower, but  
equally successful in the end**

**Greater retention and more  
steadfast to task than younger  
workers**

**But is cognition more important  
than affability?**



# Chronic Conditions



# Physical Capacity

- **Physiology**

- **Maximal strength at 20-30 years**
- **O<sub>2</sub> uptake reduced to 70% (max) by 65 years**
- **Older adults work closer to capacity**

**BUT**



# **Older Workers:**

- **Loyal to the company**
- **Timely, low absenteeism**
- **Committed to doing quality work**
- **Someone you can count on in a crisis**
- **Get along well with co-workers**

# Older Workers

- **Decreased performance in hard work**
  - **Work *uncommonly* demands maximal effort**
- **Non-physical advantages are rarely measured**
- **Workers abilities matched to the job results in fewer injuries**

# **Accommodation**

- **Rotate work assignments so older employees are less exposed to repetitive tasks.**
- **Eliminate heavy lifts, long reaches and ladders.**
- **Improve lighting and color contrast**
- **Ultimately, make safety a priority.**

# **Accommodations**

- A well-designed workplace benefits everyone, not just elderly**
- Work stations and job tasks: match to the capacity of each worker**
- There should be no conflict between ergonomic principles vs. reasonable accommodations**

# **Injuries in Elderly**

- **When injured, older workers are slower to recover**
- **Medical costs rise with age**
- **BUT, age is less a factor in health care costs than the presence of risk factors smoking, obesity, lack of exercise, and diabetes!!**

# Wellness



- 26% reduction in health costs
- 30% reduction in workers' compensation and disability management claim costs
- \$5.93-to-\$1 savings-to-costs

*\*Partnership for Prevention ([www.prevent.org](http://www.prevent.org))*

# Future Workforce Challenges

- Lost knowledge can hurt financially
- Harder to find qualified employees
- Need to do more to retain workers
- Need formal programs to address retention and recruitment of 50+ workers
- Diverse workforce with diverse needs and diverse motivators









"What we are looking for is somebody about twenty five with forty years' experience."

# AARP Resources for Employers

Employer Resource Center [http://  
www.aarp.org/  
employerresourcecenter/](http://www.aarp.org/employerresourcecenter/)

Workforce Assessment Tool  
[http://  
www.aarpworkforceassessment.org](http://www.aarpworkforceassessment.org)

AARP SmartBrief  
Bi-weekly E-newsletter/Clipping  
Service

<http://www.smartbrief.com/aarp>

AARP Website  
<http://www.aarp.org>

# **AARP Workforce Assessment Tool**

<http://www.aarpworkforceassessment.org>

- Employee Age Demographic and Skill Shortage Projections
- Knowledge Retention
- Flexible Work Arrangements
- Training and Development Benefits
- Workplace Accommodations
- Positive Work Environment
- Recruitment

# **AARP Resources for Employers**

**“Prepare to Care Guide”**

**[www.aarp.org/foundation/preparetocare](http://www.aarp.org/foundation/preparetocare)**

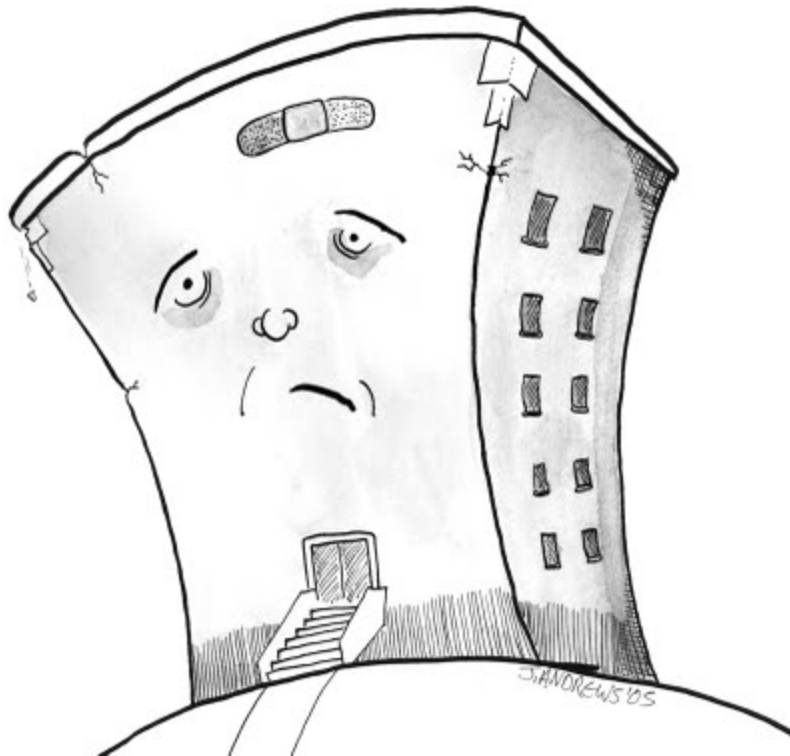
**“Healthy Behaviors”**

**[www.aarp.org/health](http://www.aarp.org/health)**



# Sick Building Syndrome

True or False?



# Sick Building Syndrome

- Headache, dizziness, nausea, tiredness, lack of concentration, and eye, nose, and throat irritation.

headache



sore throat



respiration problems



stinging eyes



- Symptoms disappear on weekends

# Sick Building Syndrome

- Building energy conservation measures in 70s lead to no air exchange with outside
- Air quality inside *is* < air quality outside
- Due to
  - Inadequate ventilation 52%
  - Contamination from inside building 16%
  - Contamination from outside building 10%
  - Microbial contamination 5%
  - Contamination from building fabric 4%
  - Unknown sources 13%





**But does it lead to illness?**

Hmmmm

# Indoor contaminants

## **Acetic Acid.**

Sources: X-ray development equipment, silicone caulking compounds.  
Acute health effects: Eye, respiratory and mucous membrane irritation.

## **Carbon Dioxide.**

Sources: Unvented gas and kerosene appliances, improperly vented devices,.  
Acute health effects: Difficulty concentrating, drowsiness, increased respiration rate.

## **Carbon Monoxide.**

Sources: Tobacco smoke, engine exhausts  
Acute health effects: Dizziness, headache, nausea, cyanosis, cardiovascular effects, and death.

## **Formaldehyde.**

Sources: Off-gassing from urea formaldehyde foam insulation, plywood, particle board, and paneling; carpeting and fabric; glues and adhesives  
Acute health effects: Hypersensitive or allergic reactions; skin rashes; eye, respiratory and mucous membrane irritation; odor annoyance.

## **Nitrogen Oxides.**

Sources: Combustion products from gas furnaces and appliances; tobacco smoke, welding, and gas- and diesel-engine exhausts.  
Acute health effects: Eye, respiratory and mucous membrane irritation.

# Indoor Contaminants

## Ozone

Sources: Copy machines, electrostatic air cleaners, electrical arcing, smog.

Acute health effects: Eye, respiratory tract, mucous membrane irritation; aggravation of chronic respiratory diseases.

## Radon.

Sources: Ground beneath buildings, building materials, and groundwater.

Acute health effects: No acute health effects are known but chronic exposure may lead to increased risk of lung cancer from alpha radiation.

## Volatile Organic Compounds (VOC's)

Sources: Paints, cleaning compounds, mothballs, glues, photocopiers, "spirit" duplicators, signature machines, silicone caulking materials, insecticides, herbicides, combustion products, asphalt, gasoline vapors, tobacco smoke, dried out floor drains, cosmetics and other personal products.

Acute health effects: Nausea; dizziness; eye, respiratory tract, and mucous membrane irritation; headache; fatigue.

## Inorganic Gases: ammonia, hydrogen sulfide, sulfur dioxide.

Sources: Microfilm equipment, window cleaners, acid drain cleaners, combustion products, tobacco smoke, blue-print equipment.

Acute health effects: Eye, respiratory tract, mucous membrane irritation; aggravation of chronic respiratory diseases.

# Indoor Contaminants

## **Asbestos.**

Sources: Insulation and other building materials such as floor tiles, dry wall compounds, reinforced plaster.

Acute health effects: No acute effects

## **Synthetic Fibers.**

Sources: Fibrous glass and mineral wool.

Acute health effects: Irritation to the eyes, skin and lungs; dermatitis.

## **Microorganisms**

Sources: Air handling system condensate, cooling towers, water damaged materials, high humidity indoor areas, damp organic material and porous wet surfaces, humidifiers, hot water systems, outdoor excavations, plants, animal excreta, animals and insects, food and food products.

Acute health effects: Allergic reactions such as hypersensitivity diseases and infections such as legionellosis are seen. Symptoms include chills, fever, muscle ache, chest tightness, headache, cough, sore throat, diarrhea, and nausea



Do a run-through



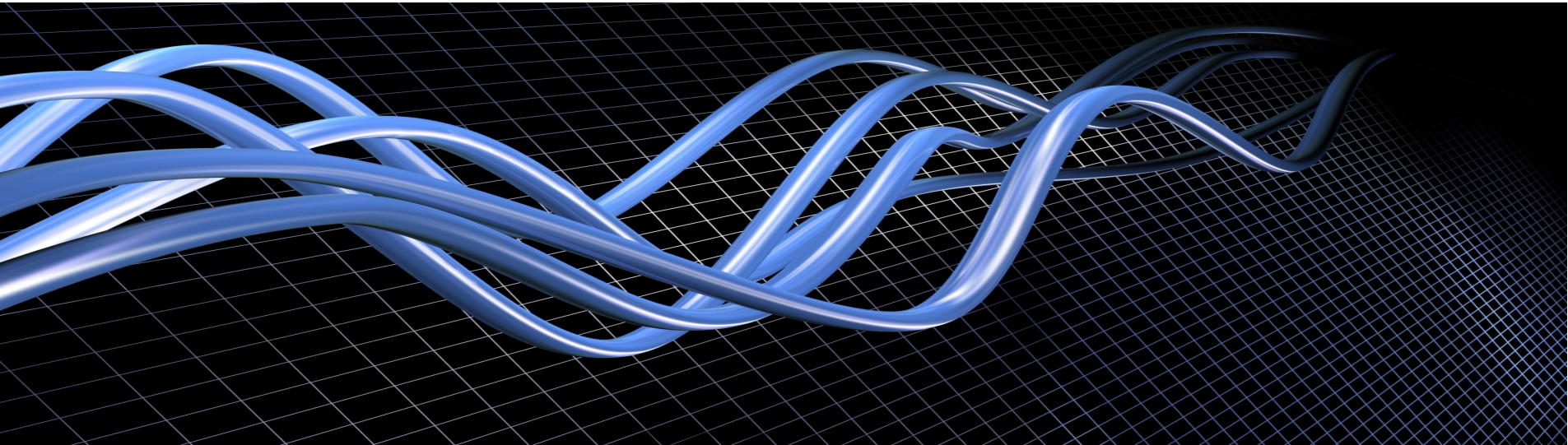
# HVAC

Operated and maintained properly

No water leaks

No biological contamination (Legionella)

Air flow



# Sampling

- Grab or screening samples
- Air velocity measuring instruments
- Screening samples for
  - formaldehyde
  - carbon dioxide
  - carbon monoxide
  - VOC's

# Its all in the semantics . . .

- **Sick Building Syndrome likely stress related**
- **“Building-related illness” has specific cause**





# Black Mold



**True or False?**





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# Molds and Fungi

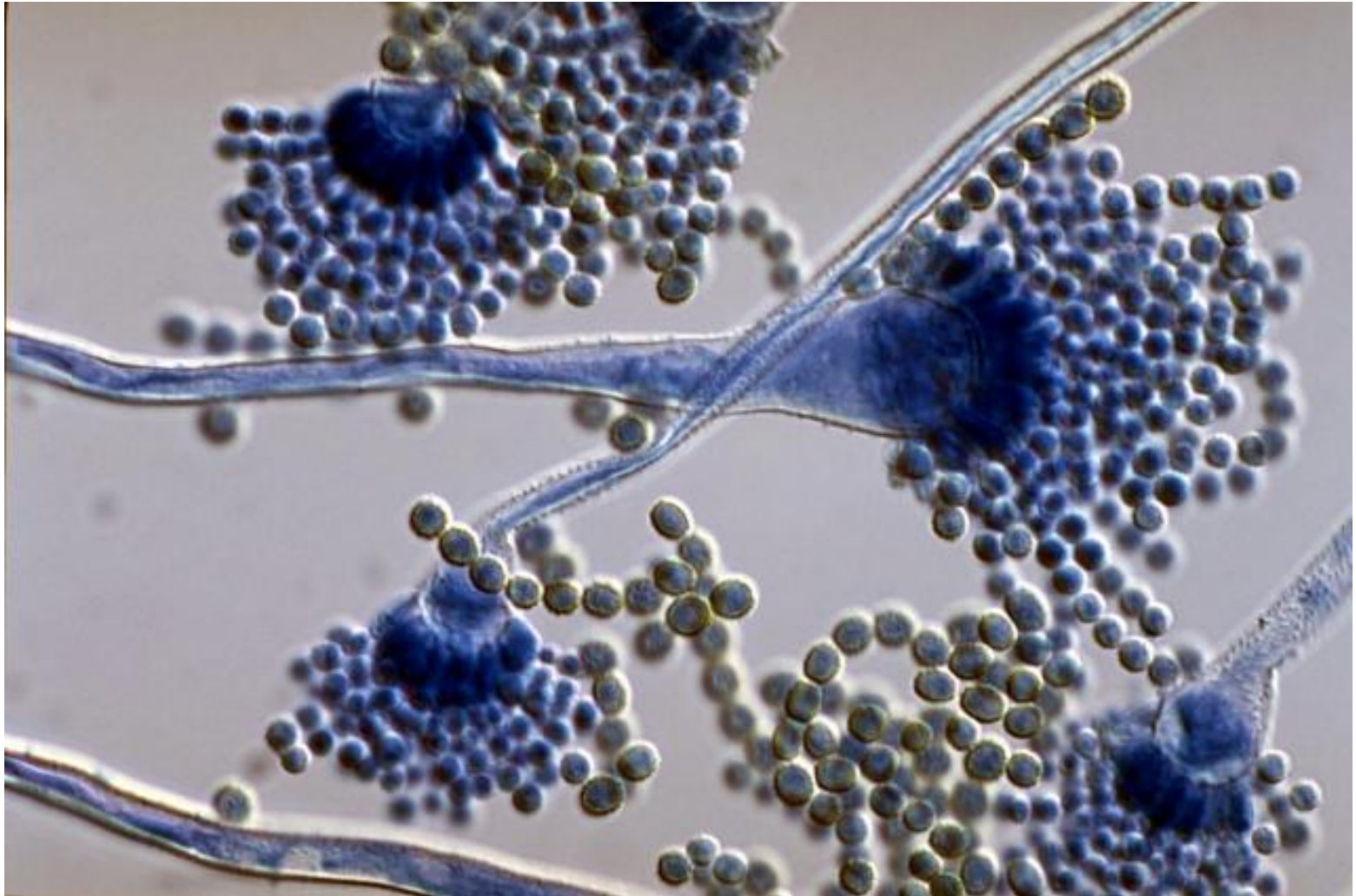
- **Make you sick through**
  - allergy
  - infection
  - **toxicity**
- **10% of the population is allergic to fungi/molds antigens**
- **5% would be expected to show clinical illness.**
- **Outdoor molds clinically important**

# Fungi--Tinea



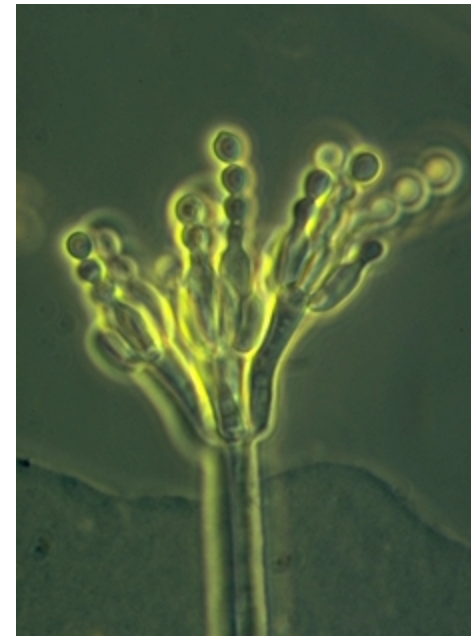


# Fungi--Aspergillus



# Mycotoxins

- Chemicals produced by some fungi/molds
- Penicillin is one!
- BUT ARE THEY DANGEROUS?



**Current scientific evidence  
does not support the  
existence of a causal  
relationship between inhaled  
mycotoxins in the home,  
school, or office  
environment and adverse  
human health effects**

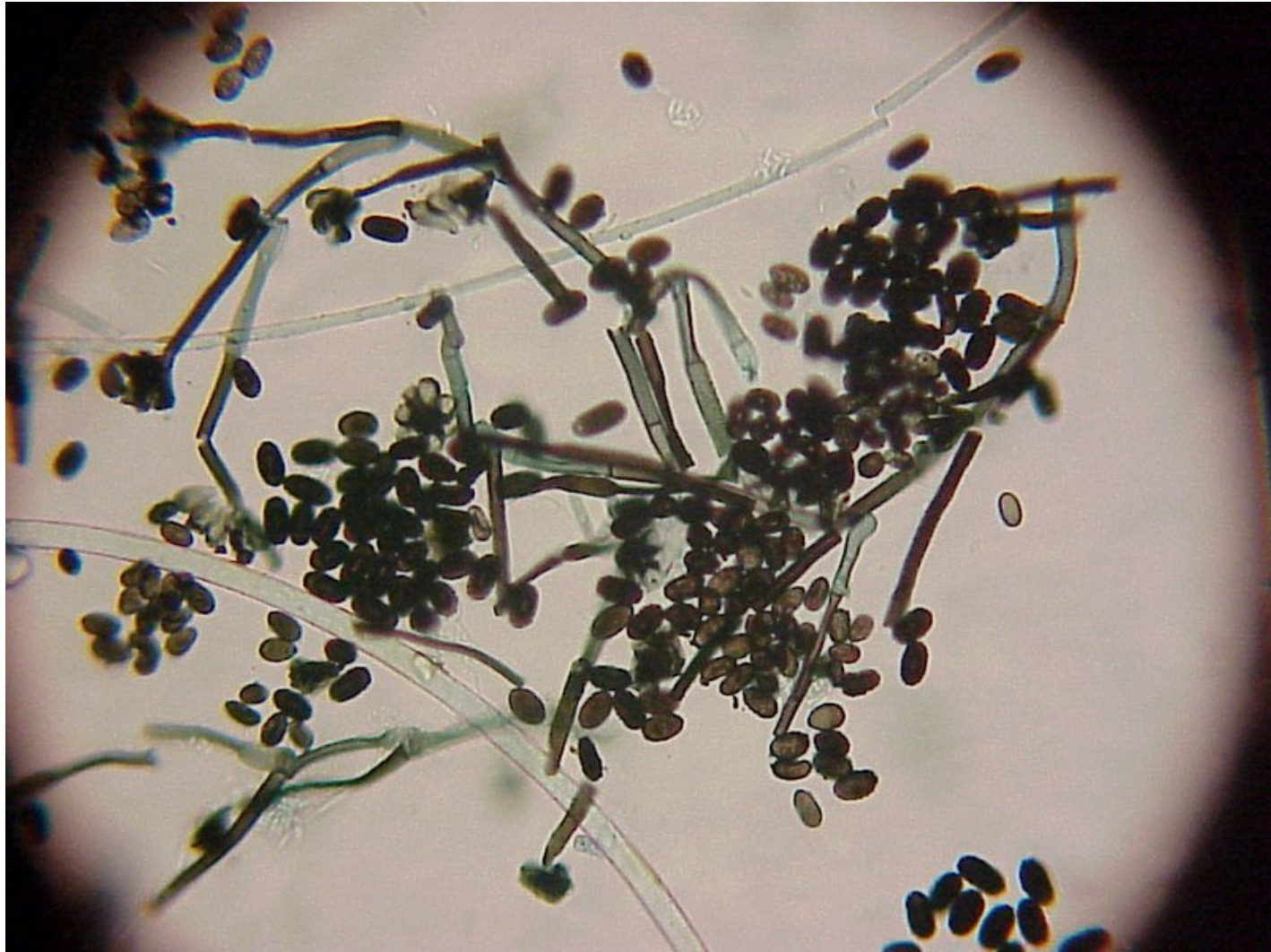
# **BUT**

- **Immunocompromised can become ill:**
  - **patients receiving chemotherapy**
  - **organ transplant patients**
  - **AIDS patients**
  - **uncontrolled diabetes.**



**Critical reviews of the literature have concluded that indoor airborne levels of microorganisms are only weakly correlated with human disease or building-related symptoms and that a causal relationship has not been established between these complaints and indoor exposures to *Stachybotrys chartarum***

**But where there is mold . . .**



# Night shift = MI

## True or false?



**1-855-LAKE OCC**

**Beginning November 2012**