# GLOBAL HEALTH INEQUALITIES: ECONOMICS, ETHICS AND POLITICS

**FRANÇOIS BRIATTE**
**SCIENCES PO, 2010**

BASED ON A PREVIOUS COURSE
BY **FLORENCE JUSOT** (THANKS!)

# BACKGROUND OBSERVATIONS

- **Mortality** (death) and **morbidity** (illness) vary significantly between geographical regions.
  - **Life expectancy** and infant mortality
  - **Causes of death** and premature mortality
  - **Health status**
- Variations are also observable **within** populations in a given geographical region.
  - **Professional** groups
  - **Income** groups
  - **Age, gender, ethnicity** groups…
- Social factors related to **development** are the primary cause of health variations.
  - **Environmental factors**: water and air quality, nutrition…
  - **Health care** itself is only a secondary cause

# OUTLINE OF COURSE SESSIONS

- **Socio-economic inequalities**
  - Health, income and employment
  - Psycho-social determinants of health
  - Health system inequalities
- **Politics of health inequalities**
  - Ethical foundations of public health
  - Determinants of policy interventions

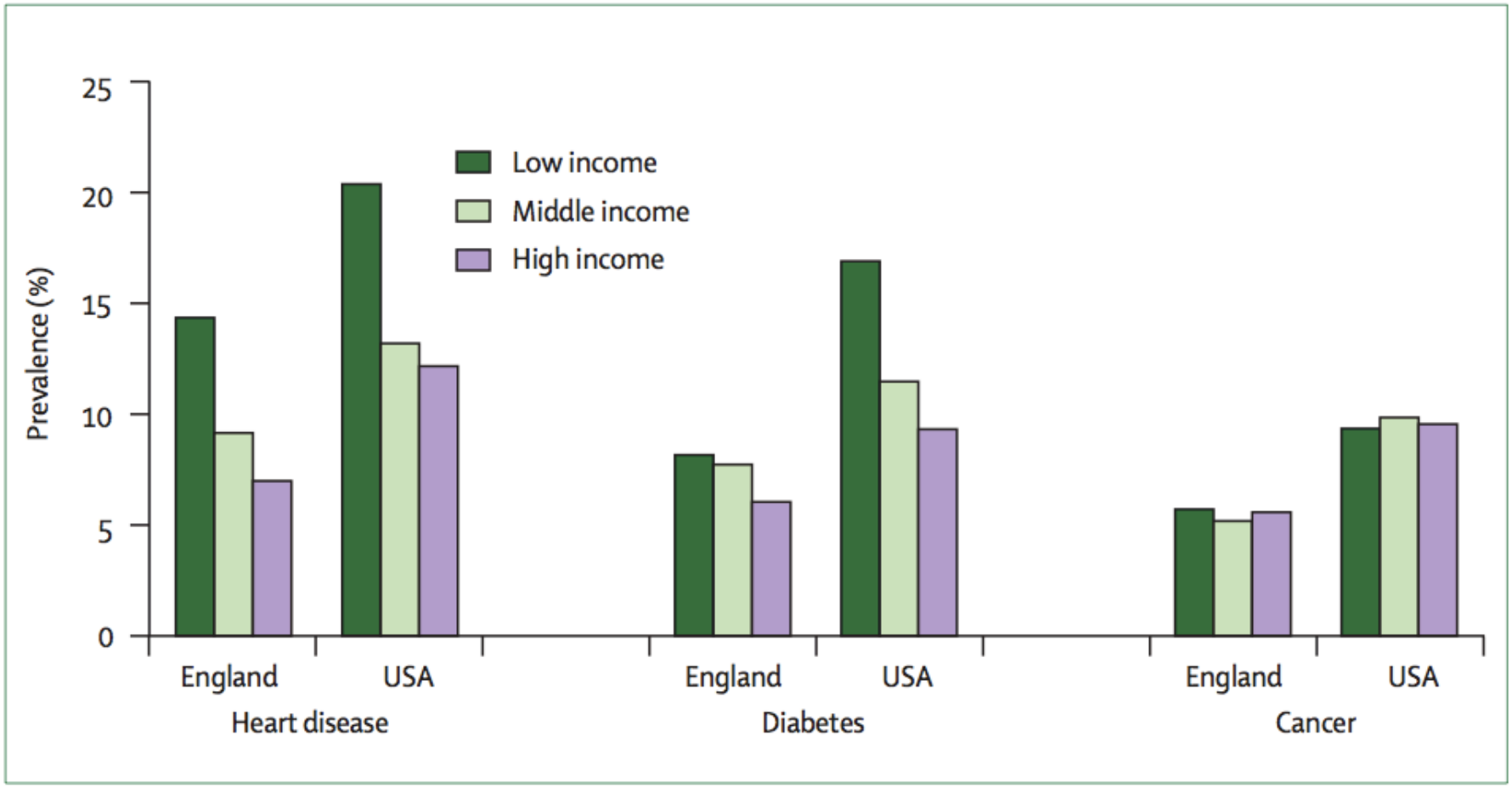
- **Course requirements**
  - Reading skills in epidemiology and economics
  - Comprehension skills in the social sciences
  - (**Experimental!**) Some form of interest in modeling

# SESSION OUTLINE

- Presentations
- Introduction to global health
- Defining and measuring health
  - Official definitions
  - Measurements issues
  - Measuring inequality
- Health inequalities
  - In France
  - In Europe
  - In developing countries
- Coursework instructions
- Presentation assignments

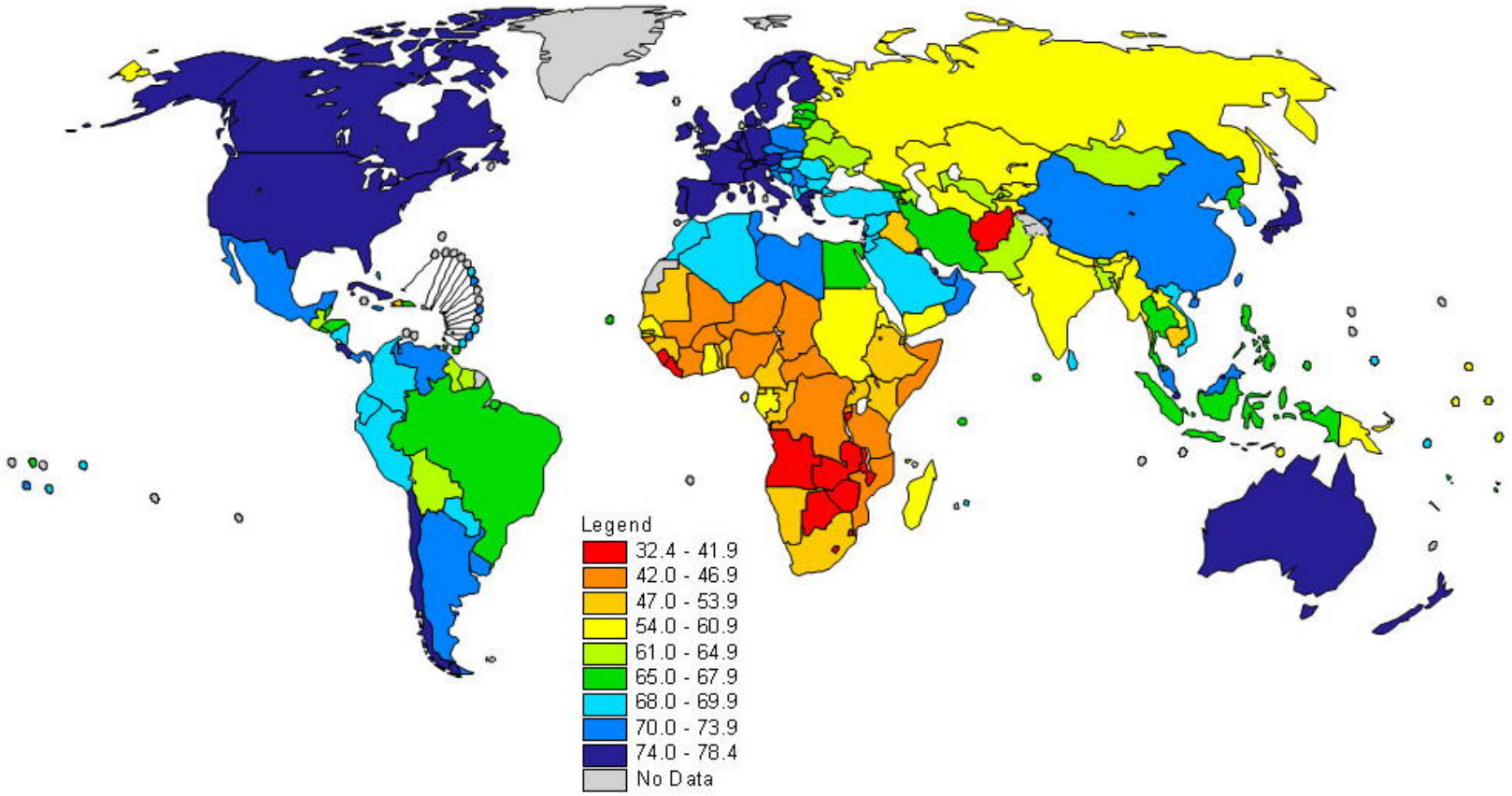
# DIFFERENCES IN DOCTOR-DIAGNOSED ILLNESS

## BETWEEN ENGLAND AND THE USA, 55–64-YEAR-OLDS



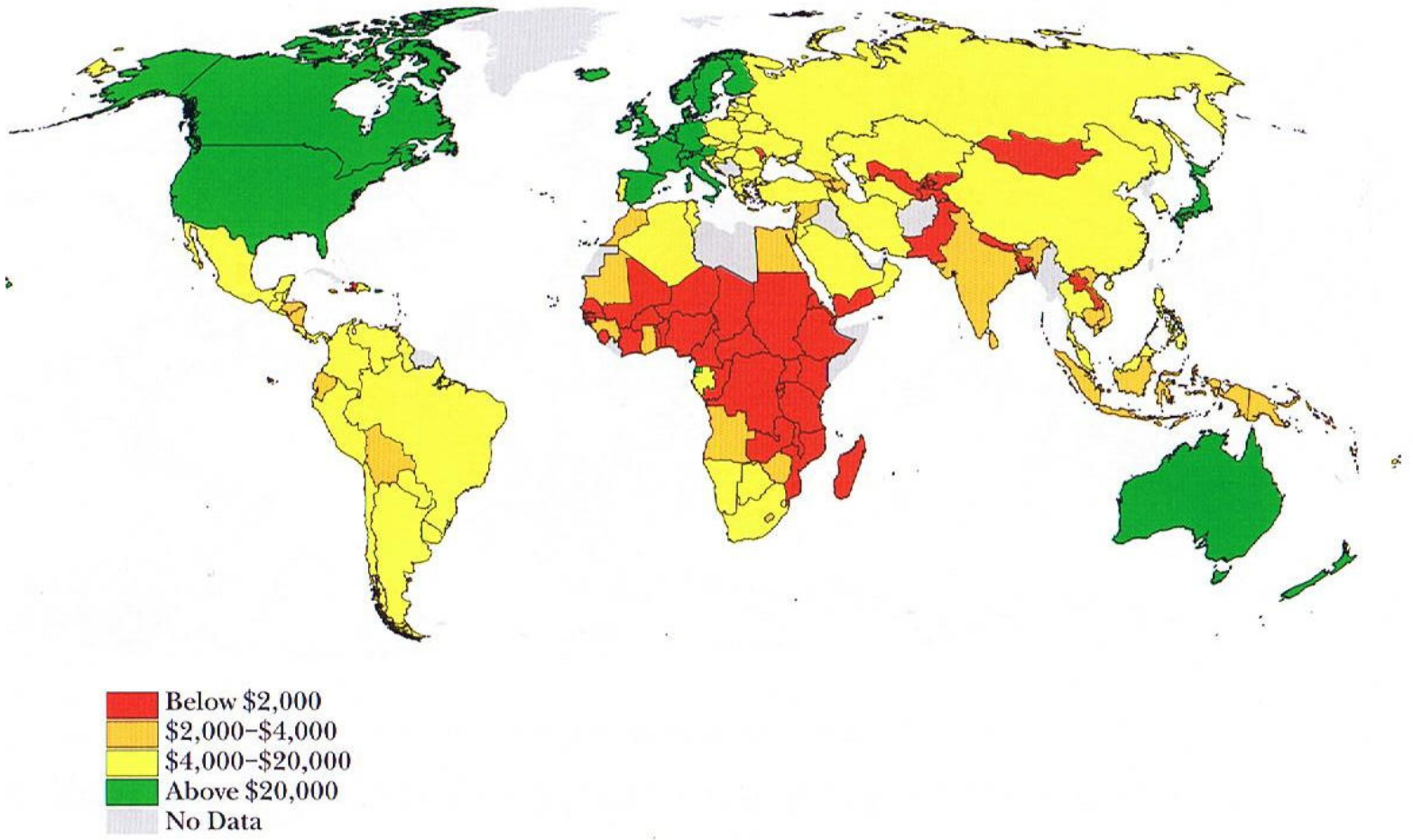

**SOURCE:** Banks et al. 2006 / Marmot 2008

# LIFE EXPECTANCY
## AT BIRTH, IN YEARS, MEN, 2003




**SOURCE:** WHO 2005 / Mackenbach, EUROTHINE: http://survey.erasmusmc.nl/eurothine/

# ECONOMIC DEVELOPMENT
## AVERAGE INCOME PER INHABITANT, USD, 2002




**SOURCE:** World Bank 2004 / Mackenbach, EUROTHINE: http://survey.erasmusmc.nl/eurothine/

# FROM VARIATION TO INEQUALITY

- WHO Constitution, 1946:

  "The **health of all peoples** is fundamental to the attainment of peace and security"

  "The **enjoyment of the highest attainable standard of health** is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.."

- WHO "Health for All" Principle, 1977:

  "To enable all of the world's citizens to enjoy by 2000 a level of health that would **allow them to lead a socially active and economically productive life**."

# WHO PRINCIPLES

- **Health for All** for the EUR WHO region, 1985 :
  - **Social and economic** inequalities should be reduced to help improve the health of populations
  - Health variations should decrease **between countries**
  - Health variations should decrease **within countries** (–20% within-country objective for 2000)
- WHO **Millennium Development Goals** (MDGs), 2000 :
  - Decrease **maternal deaths** at birth
  - Decrease **infantile mortality** (child deaths) until 2 years
  - Attempt to tackle the **HIV/AIDS** epidemic
  - Make **essential medicines** available to all
  - Improve health to **fight poverty**
- See also:
  - **Alma-Ata Declaration**, 1978 (primary care), Lalonde report...

# SCIENTIFIC CHALLENGES

- Conceptualisation and quantification :
  - How do we **define and measure** health?
  - How do we **measure** health inequalities?
- Explain causal relationships:
  - **Income**, poverty, and 'health capital' models
  - **Work**, employment/unemployment and health status
  - **Psycho-social** determinants, e.g. nutrition, stress
  - **Health care**: how can health systems contribute to reducing health inequalities within their treatment populations?

# POLICY STAKES

- How to design health policies?
  - What are the **ethical foundations** for policies that aim at tackling health inequalities?
- What can be learnt from existing policies?
  - How **efficient** are current initiatives? Do they **transfer** correctly from a national/regional context to another?

# DEFINING AND MEASURING HEALTH

# WHAT IS HEALTH?

- Standard WHO definition, 1946 :

  "Health is a state of **complete physical, mental and social well-being** and not merely the absence of disease or infirmity."

- Hard to measure, for it combines:
  - Physical health, expressed as a capacity
  - Mental health and social welfare/well-being
- Can we actually measure health?
  - Is health status **objective or subjective**?
  - What is disease? When does it **start/stop**?
  - **Who should we ask**? Individuals (patients) or physicians?

# MEASUREMENT PROXIES

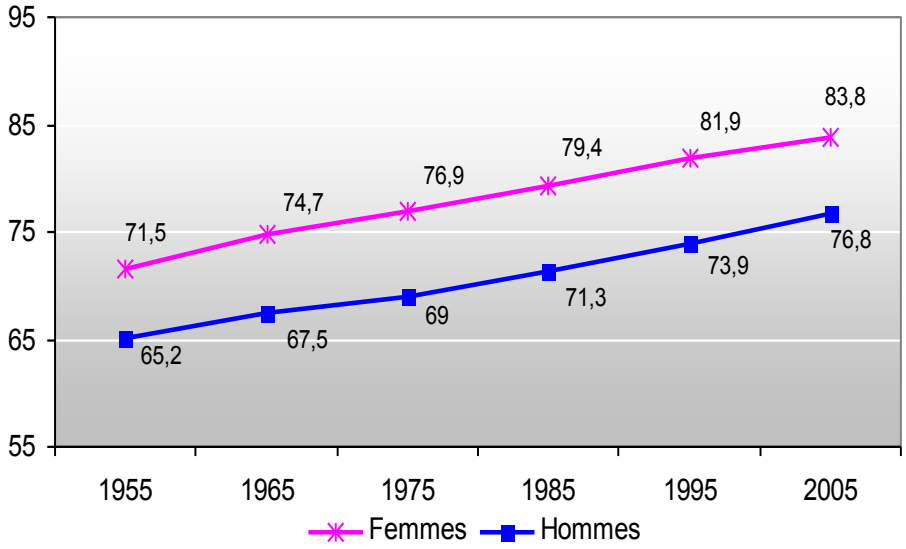
- Mortality indicators:
  - **Life expectancy:** at birth / at 35 / at 65
  - France ranks 4th in Europe**:**

    | | | | |
    |---|---|---|---|
    | At birth | Men: 77,2 | Women: 84,1 | (2006) |
    | At 65 | Men: 17,7 | Women: 22,1 | (2004) |

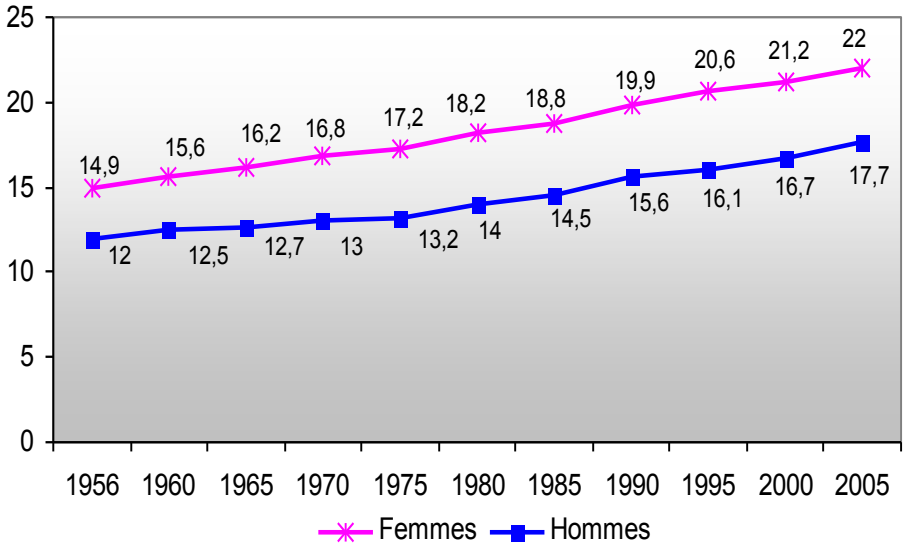
- Other indicators:
  - Infantile mortality < 12 months, mortality at 5, premature mortality (before 65)... (France ranks 1st in Europe)

# CHANGES IN LIFE EXPECTANCY
## FRANCE, 1955–2005

**Espérance de vie par âge et sexe à la naissance - Evolution entre 1955 et 2005.**




**Espérance de vie par âge et sexe à 65 ans - Evolution entre 1955 et 2005.**




**SOURCE:** INSEE

# MEASUREMENT OF HEALTH STATUS

Three models (Blaxter, 1989):

- Biological / Medical / Clinical
- Functional
- Subjective

# BIOLOGICAL MODEL

- **Morbidity** is relative to disease and is measured as a distance with a medical norm.
- What can be measured in a given population:
  - **Prevalence**: proportion of people affected by a disease in a given population at a given time period, e.g. number of people with diabetes in Indonesia, 2006
  - **Incidence**: proportion of new cases in a given population during a given time period, e.g. number of new cases of diabetes in Indonesia, 2006, usually expressed as a ratio (e.g. new cases for 100,000 people)
- Types of morbidity:
  - **Measured** (through surveys)
  - **Diagnosed or treated** (physician-driven)
  - **Self-declared** (patient-driven)
  - **Self-assessed** (personal estimation)

# FUNCTIONAL MODEL

- Morbidity is measured through the **consequences** of disease, and its subsequent negative effect on life functions
- **Restrictions in activity**:
  - Elementary, daily tasks (*Activity of Daily Living* ; Katz, 1963): eat, getting dressed, washing up, moving from bed to chair, using toilets and staying continent
  - Instrumental tasks (*Instrumental Activities of Daily Living* ; Lawton, 1969) : house cleaning, food preparation, working your accounts...
- **Functional limitations** (physical, sensory, mental):
  - Measures how individuals stay functional through their difficulties and the amount of assistance they require. Questionnaires build on measures of **capacity**, e.g. “Can you climb the staircase up and down at your house?”

# SUBJECTIVE MODEL

- **Perceived health**: how individuals self-assess their own health status outside of physician diagnostics
  - **Subjective measurement** that reflects norms and beliefs (both rational and irrational) on health and illness, yet the best predictor for mortality and doctor utilization.
  - **Life quality scaling** with regards to health: allows for measuring the effects of health on quality of life.
- Four dimensions:
  - **Physical** status
  - **Somatic** status (pain)
  - **Psychological** status (mental health)
  - **Social**, **cultural** and **environmental** factors (e.g. prestige, oppression, squalid and polluted vs. 'clean, comfortable')

# WHO EUROPE INDICATORS

- European-scale survey:
  - General **health status**
    *very good / good / average / bad / very bad*
  - **Chronic illness**
    *yes / no / do not know*
  - Health-induced **disability** in usual activities, over the last 6 months
    *severe disability / limited disability / none*
- Morta-morbidity combinations:
  - **Disability-free life expectancy**: number of years a person can live without any disability or severe disability, from birth or from a given age (often 35)
  - **Self-assessed good health life expectancy**

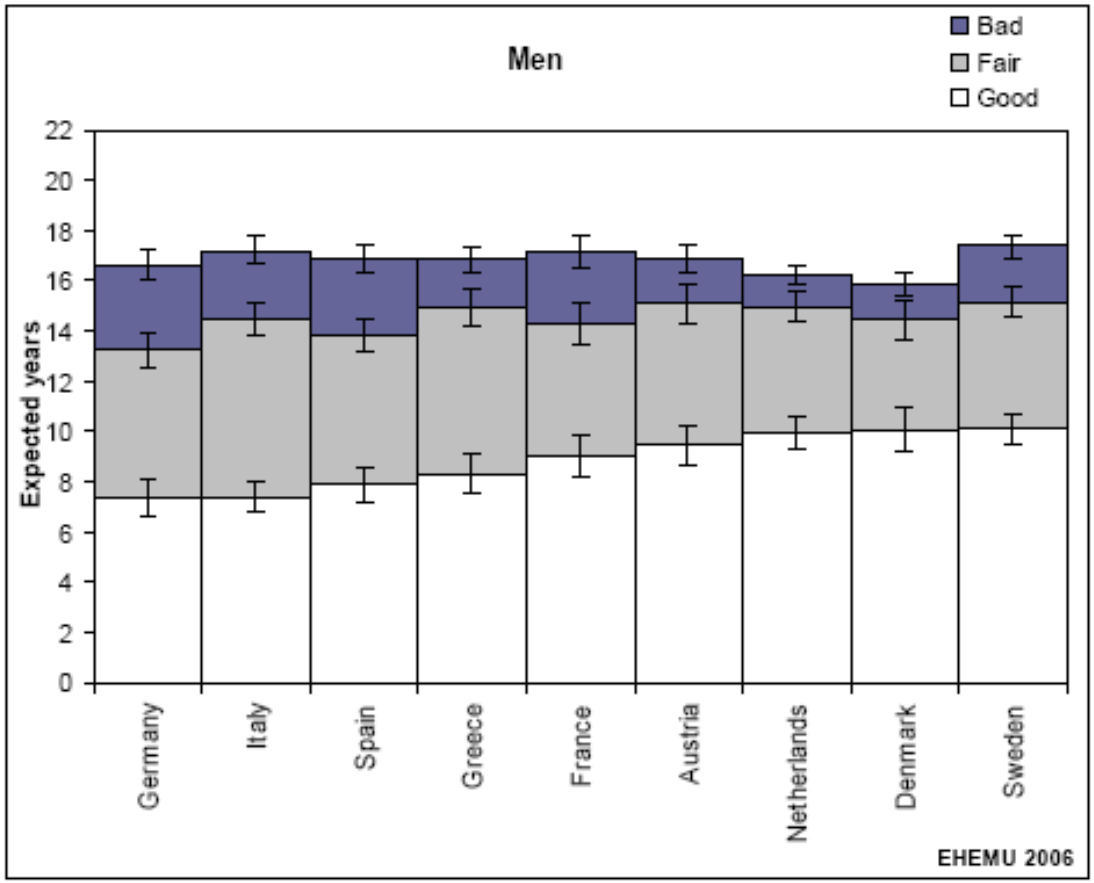
# HEALTH STATUS IN FRANCE
## EXPRESSED AS WHO EUROPE INDICATORS

**Réponse au minimodule européen, selon l'âge (ESPS 2006)**

| | Classes d'âge | | | |
|---|---|---|---|---|
| | 16 - 39 | 40 -64 | 65 et plus | Ensemble |
| Pourcentage de personnes déclarant... | | | | |
| • un état de santé « moyen », « mauvais » ou « très mauvais » | 8,8 | 26,4 | 56,8 | 25,8 |
| • souffrir d'une maladie chronique | 11,9 | 28,4 | 52,1 | 26,7 |
| • une limitation fonctionnelle | 6,4 | 18,0 | 41,7 | 18,3 |

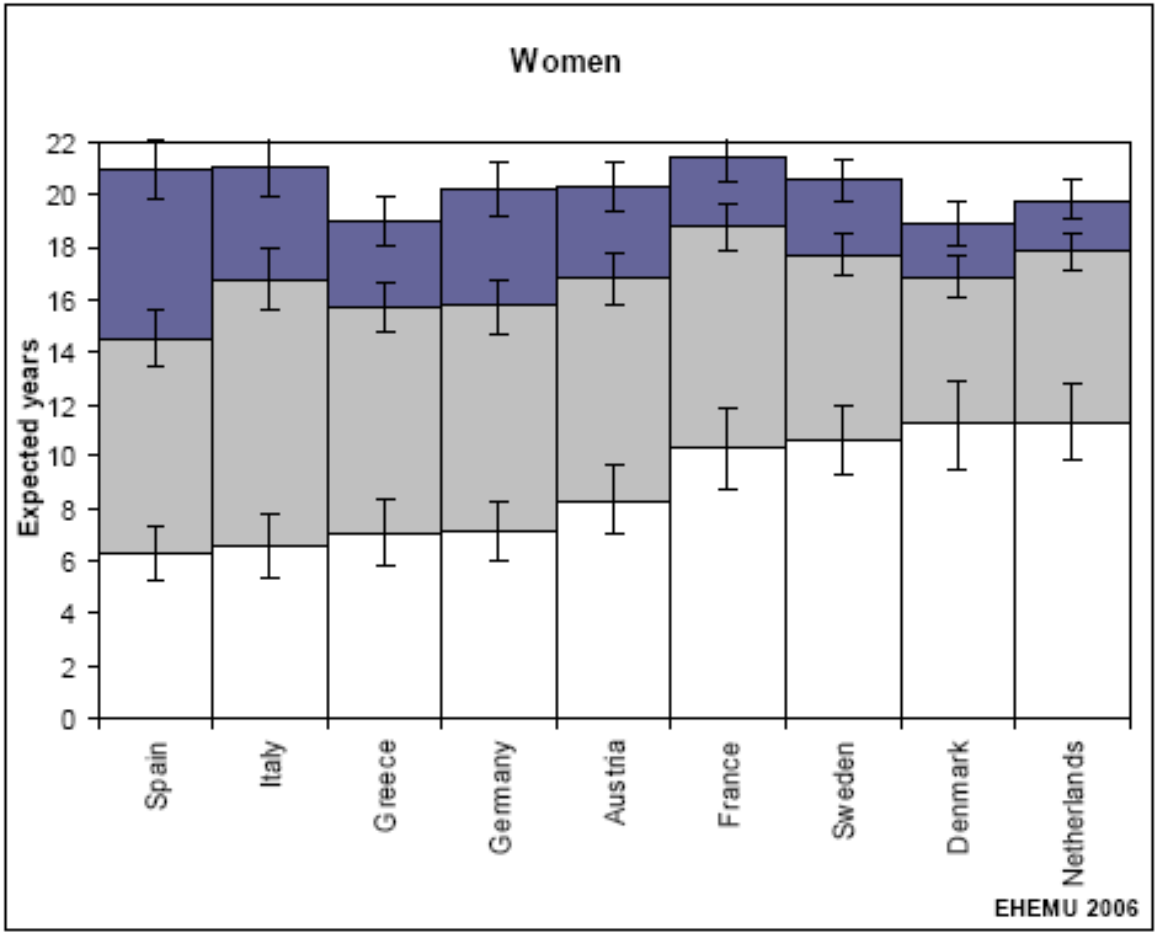
**SOURCE:** IRDES, Enquête Santé Protection Sociale (ESPS) 2006

# LIFE EXPECTANCY IN GOOD HEALTH
## EUROPEAN COMPARISON AMONG MEN




**SOURCE:** Eurostat / SHARE Survey, 2004

# LIFE EXPECTANCY IN GOOD HEALTH
## EUROPEAN COMPARISON AMONG WOMEN




**SOURCE:** Eurostat / Enquête SHARE 2004

# MEASUREMENT TOOLS

- Anthropometric measurements for **adult** populations:
  - **Body Mass Index** (weight/height as $m^2$)
    <18.5 : underweight; 18.5–25 : normal
    25–30: overweight ; >30 : obesity (morbid obesity > 35)
- Anthropometric measurements for **infant** populations:
  - **Underweight at birth**: < 2500 g; **underweight children**: % of children for which the age/weight ratio is below 2 (moderate) or 3 (severe), measured as a ratio to the population median
  - **Emaciation ratio** (moderate or severe) : % of children for which the age/weight ratio is below 2 (moderate) or 3 (severe), measured as a ratio to 2 times the population median
  - **Stunted children ratio** (moderate or severe) : growth retardation as a result of poor diets and/or recurrent infections
  - **Goitre ratio**: % of children aged 6 to 11 with palpable or visible goitre (thyroid gland, proxy for cerebral lesions and retardation)

# POPULATION–DISEASE TRANSITIONS

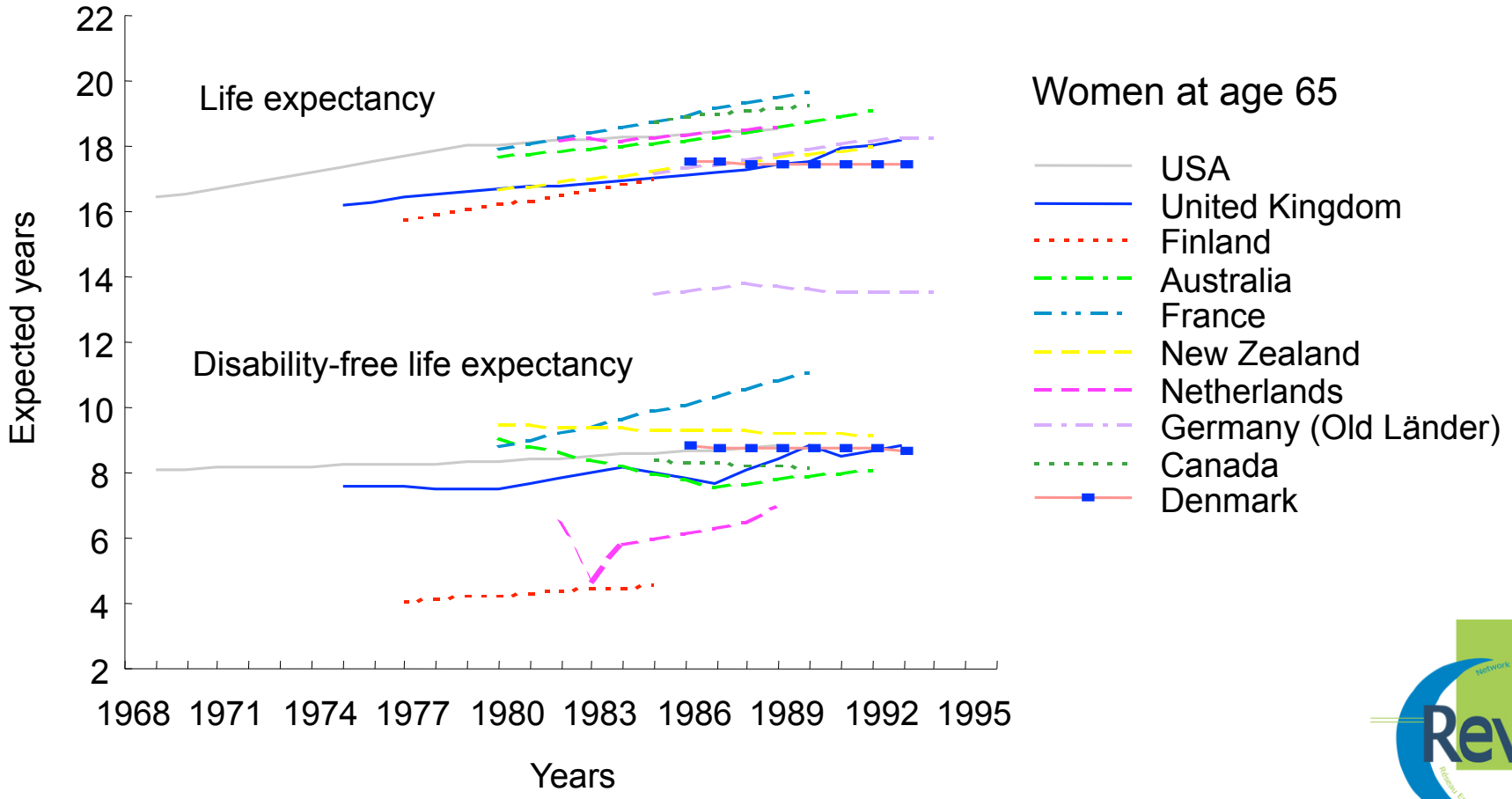
- **Demographic transitions** : traditional regimes of high birth and mortality rates reach a new equilibrium status at lower levels of both birth and mortality rates.
  - e.g. birth rates in Italy, 20th century
- **Epidemiological transitions**: lower mortality rates are also caused by changes in the causes of death, as infectious diseases become less prevalent, and chronic and degenerative diseases become more prevalent.
  - e.g. tuberculosis and syphilis in France, 19th–20th century
  - e.g. cardiovascular disease and cancer, in Europe and worldwide

# FUTURE CHANGES IN HEALTH STATUS

- **Morbidity compression** (Fries, 1980) : illness will develop at later stages of the life course, even when life expectancy stays stable; morbidity is thus concentrated on a shorter time span.
- **Morbidity aggravation** (Gruenberg and Kramer, 1980) : illness will appear at the same point in the life cycle, but survival periods will expand; more severe forms of illness are thus observable.
- **Dynamic equilibrium** (Manton, 1992) : chronic disease will develop more slowly; prevalence will increase, but the average severity of the disease will decrease overall.

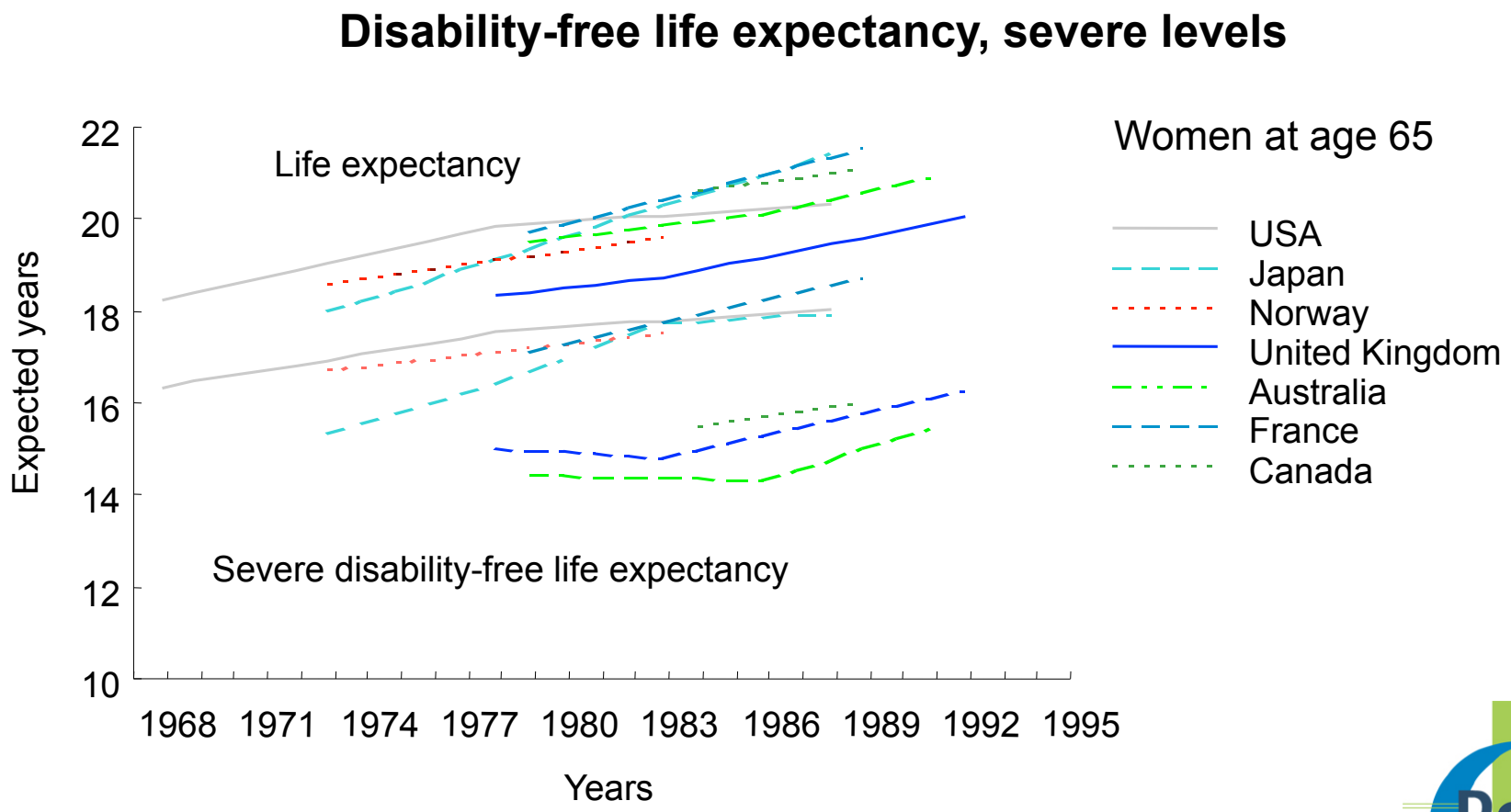
# DISABILITY-FREE LIFE EXPECTANCY
## FOR ALL LEVELS OF DISABILITY

**Disability-free life expectancy, all levels of severity combined**




**SOURCE:** REVES 1998

# DISABILITY-FREE LIFE EXPECTANCY
## FOR SEVERE LEVELS OF DISABILITY




**SOURCE:** REVES 1998

# DEFINING AND MEASURING HEALTH INEQUALITY

# SOCIAL INEQUALITIES IN HEALTH

- **Social inequalities in health** refer to systematic, regular variations in the health status of populations, measured between individuals in relation their socio-economic characteristics.
- **Bivariate approach** (as opposed to univariate): health inequalities are measured as a function of a pre-defined social property, such as class or occupation; straight differences in health status are not under examination.
  - e.g. variations in life expectancy between **manual and non-manual** workers (property: occupational status)
  - e.g. variations in accidental deaths between **men and women** (property: gender)
  - e.g. variations in incidence of diabetes between **Blacks and Whites** (property: race/ethnicity/ethnic group)

# MEASUREMENT STRATEGIES

- **Disparities in health status:** ratios or differences in health status between extremes (e.g. Q5/Q1 if working with quintiles) or between each group and the average populational figure.
- **Indicators:** same technique as income inequality measurement (e.g. Ecuity working group); allows for direct combinations of income and health into inequality measurements.

# MEASURING SOCIO-ECONOMIC STATUS (SES)

- **Occupational and social class**
  - Multi-dimensional by nature: work conditions, wealth, professional prestige, educational attainment (diploma), work-related or class-related lifestyles (e.g. smoking, alcohol consumption, nutrition)
- **Income**
  - Used as a proxy for wealth; measures the amount of resources an individual can invest in goods such as food, health, and education
  - Overall national wealth (e.g. GDP) can be used as an aggregate to measure cross-national variation
- **Education**
  - Determines professional attainment and future work status
  - Determines health behaviour, e.g. doctor utilization
- **Age and gender**
  - Probes for biological differences
  - Probes for inequalities as socio-cultural constructs

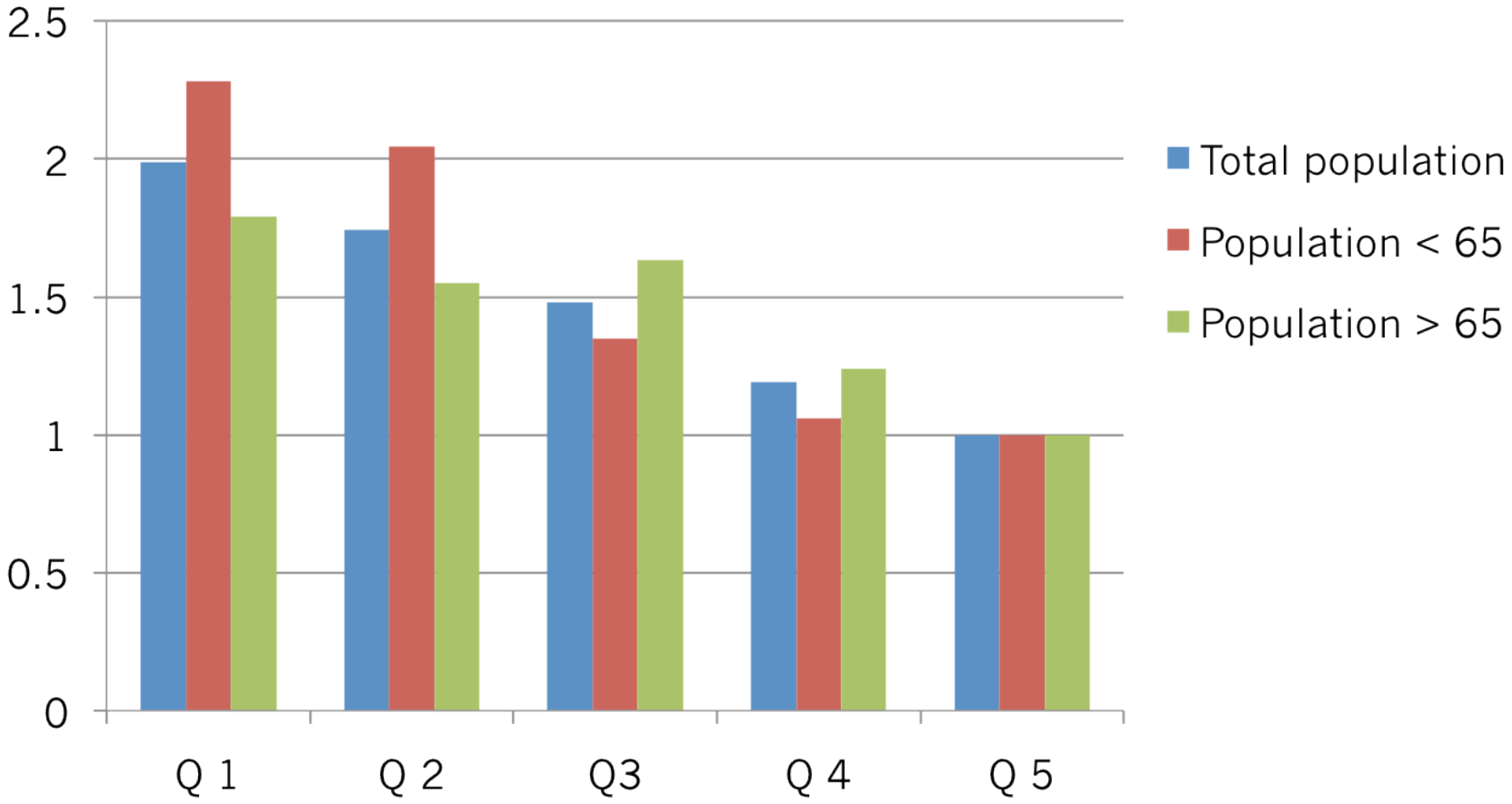
# HEALTH INEQUALITY IN FRANCE

# FRENCH MORTALITY GRADIENT
## AS OBSERVED THROUGH SOCIO-PROFESSIONAL STATUS

| Profession et Catégorie Sociale (Homme) | Espérance de vie à 35 ans 1976-84 | Espérance de vie à 35 ans 1983-91 | Espérance de vie à 35 ans 1991-99 |
|---|---|---|---|
| Cadre | 41.5 | 43.5 | 46.0 |
| Prof Intermédiaire | 40.5 | 41.5 | 43.0 |
| Agriculteur | 40.5 | 41.5 | 43.5 |
| Indépendant | 39.5 | 41.0 | 43.0 |
| Employé | 37.0 | 38.5 | 40.0 |
| Ouvrier | 35.5 | 37.5 | 39.0 |
| Inactif | 27.5 | 27.5 | 28.5 |
| Ensemble | 38.0 | 39.0 | 41.0 |

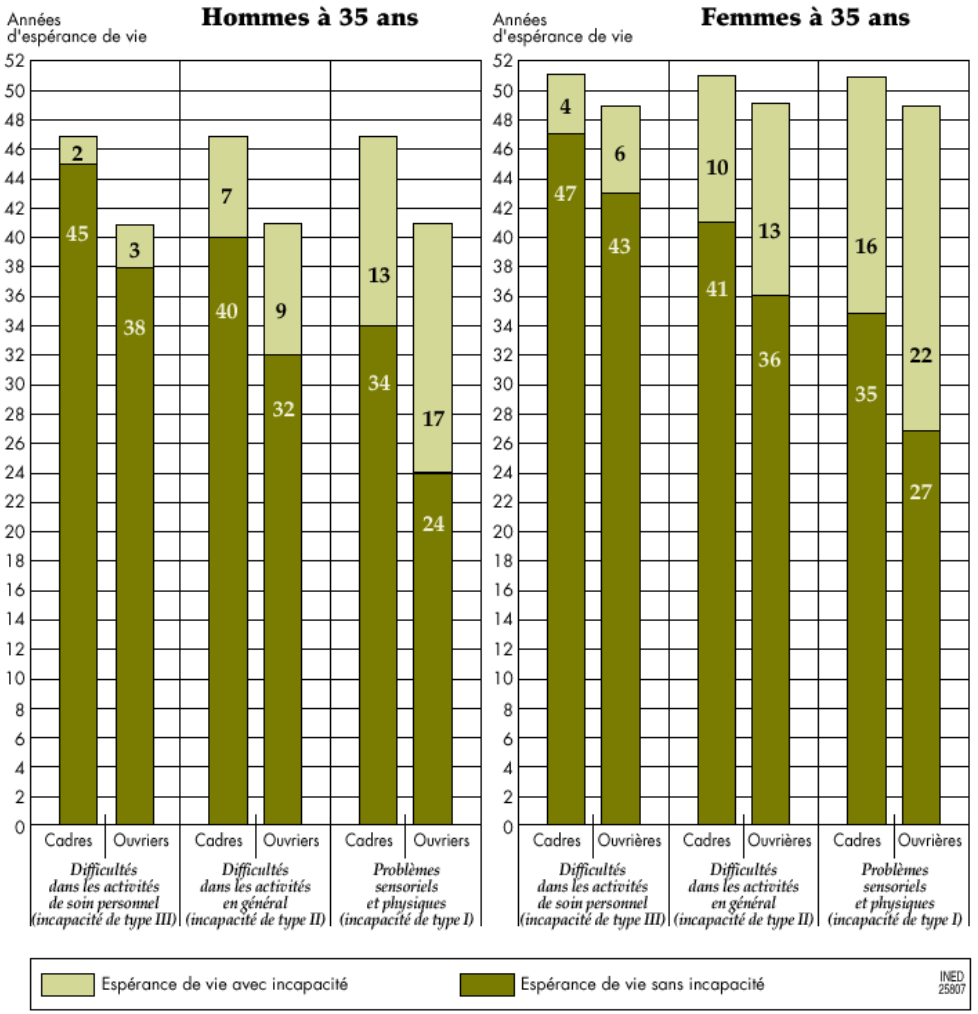
**SOURCE:** Monteil and Robert-Bobbée, 2005

# FRENCH MORTALITY GRADIENT
## AS OBSERVED THROUGH INCOME GROUPS




**SOURCE:** Jusot 2008

# DISABILITY-FREE LIFE EXPECTANCY AT 35




**SOURCE:** Cambois, Laborde and Robine, 2008

# MORTALITY AND EDUCATIONAL ATTAINMENT

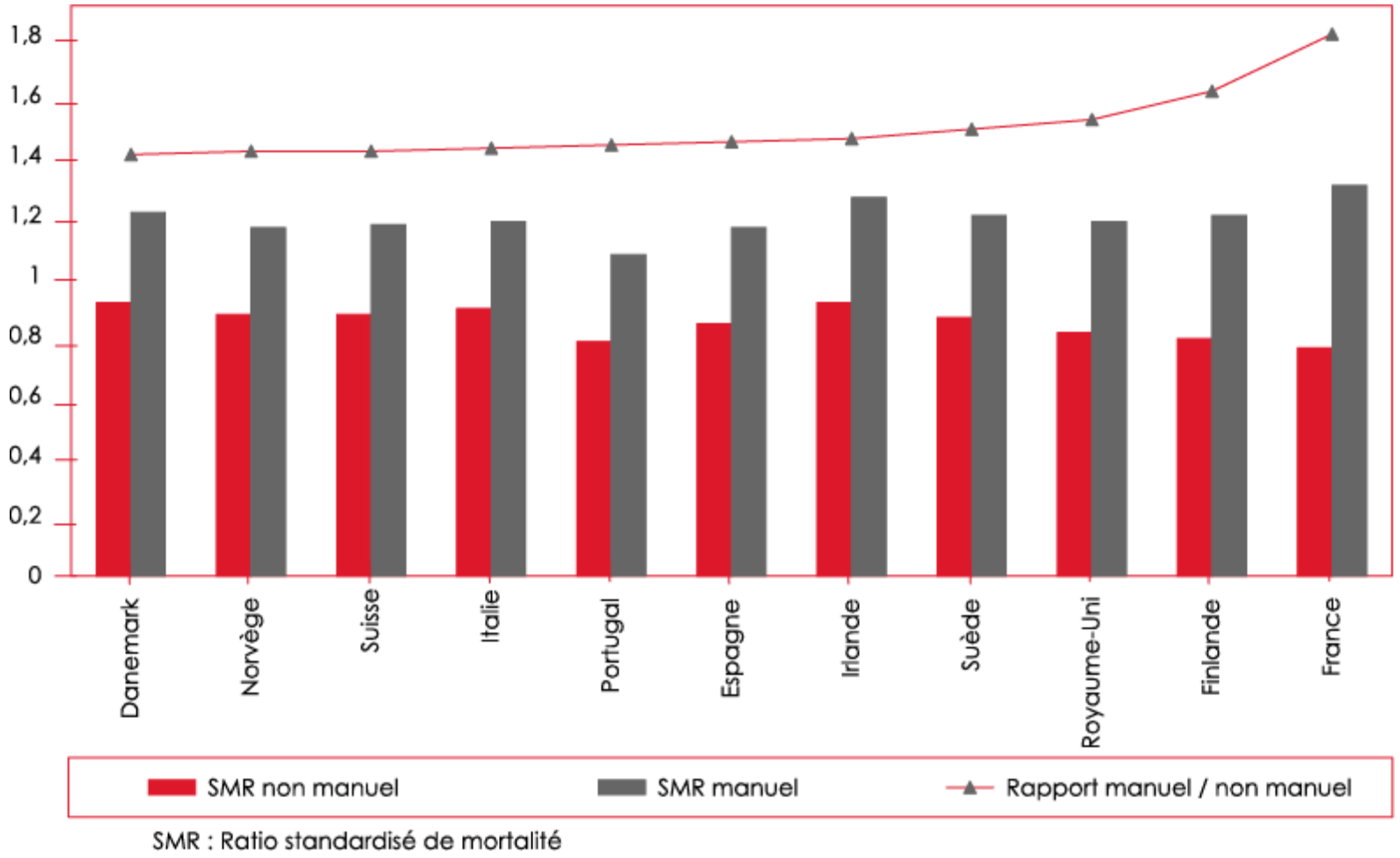
| Niveau de diplôme | 1968-1974 (hommes) | 1975-1981 (hommes) | 1982-1988 (hommes) | 1990-1996 (hommes) |
|---|---|---|---|---|
| Aucun | 1.76 | 2.20 | 2.12 | 2.27 |
| CEP | 1.45 | 1.69 | 1.74 | 1.70 |
| Diplôme prof. | 1.14 | 1.34 | 1.34 | 1.43 |
| Bac et plus | 1 | 1 | 1 | 1 |

| Niveau de diplôme | 1968-1974 (femmes) | 1975-1981 (femmes) | 1982-1988 (femmes) | 1990-1996 (femmes) |
|---|---|---|---|---|
| Aucun | 1.60 | 1.72 | 1.86 | 2.203 |
| CEP | 1.23 | 1.26 | 1.30 | 1.36 |
| Diplôme prof. | 1.09 | 1.13 | 1.20 | 1.22 |
| Bac et plus | 1 | 1 | 1 | 1 |

**SOURCE:** Menvielle *et al.* 2007

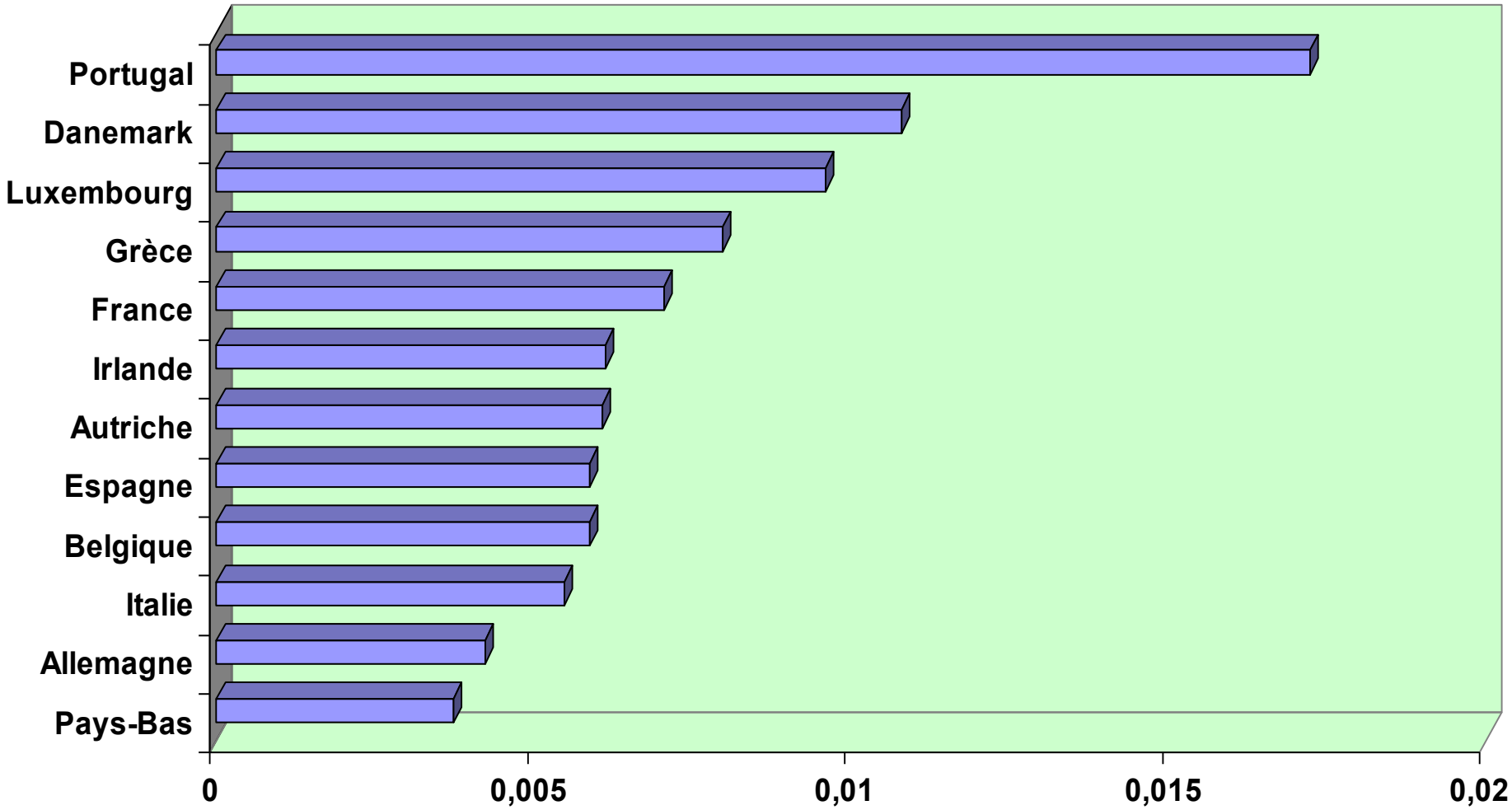
# HEALTH INEQUALITY IN EUROPE

# VARIATIONS IN PREMATURE MORTALITY
## BETWEEN MANUAL AND NON-MANUAL WORKERS




**SOURCE:** Kunst and Makenbach 2000

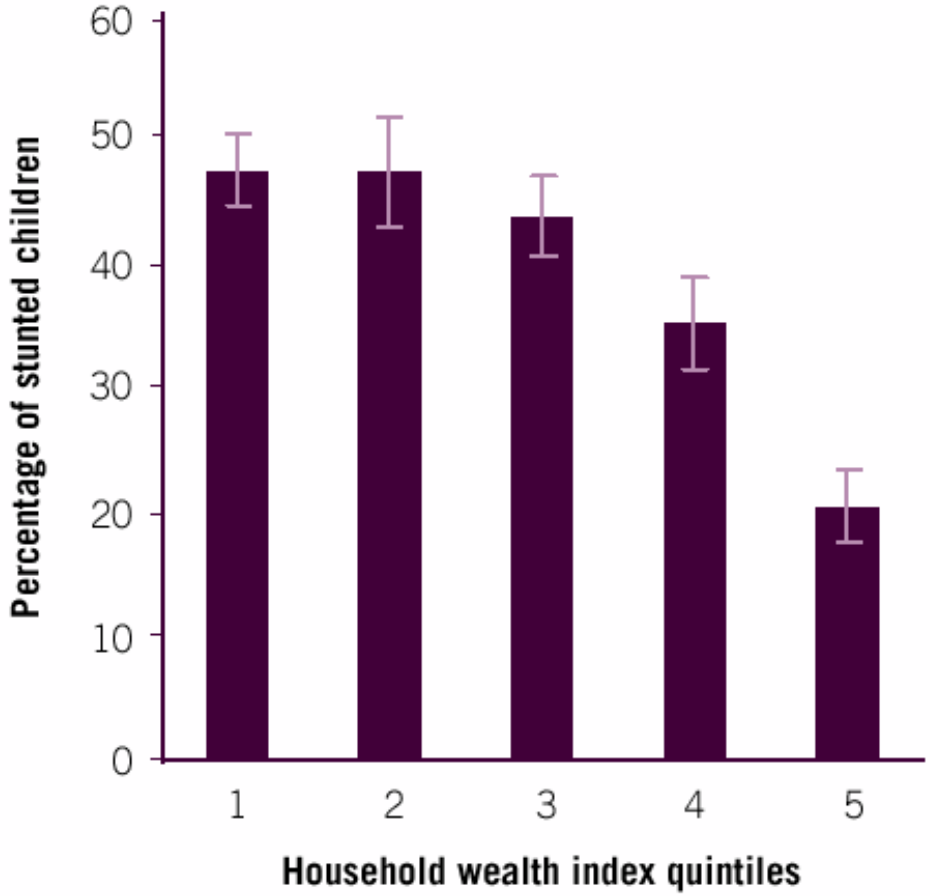
# INEQUALITIES IN SELF-ASSESSED HEALTH
## SHOWN AS CONCENTRATION INDEXES




**SOURCE:** van Doorslaer and Koolman, 2004

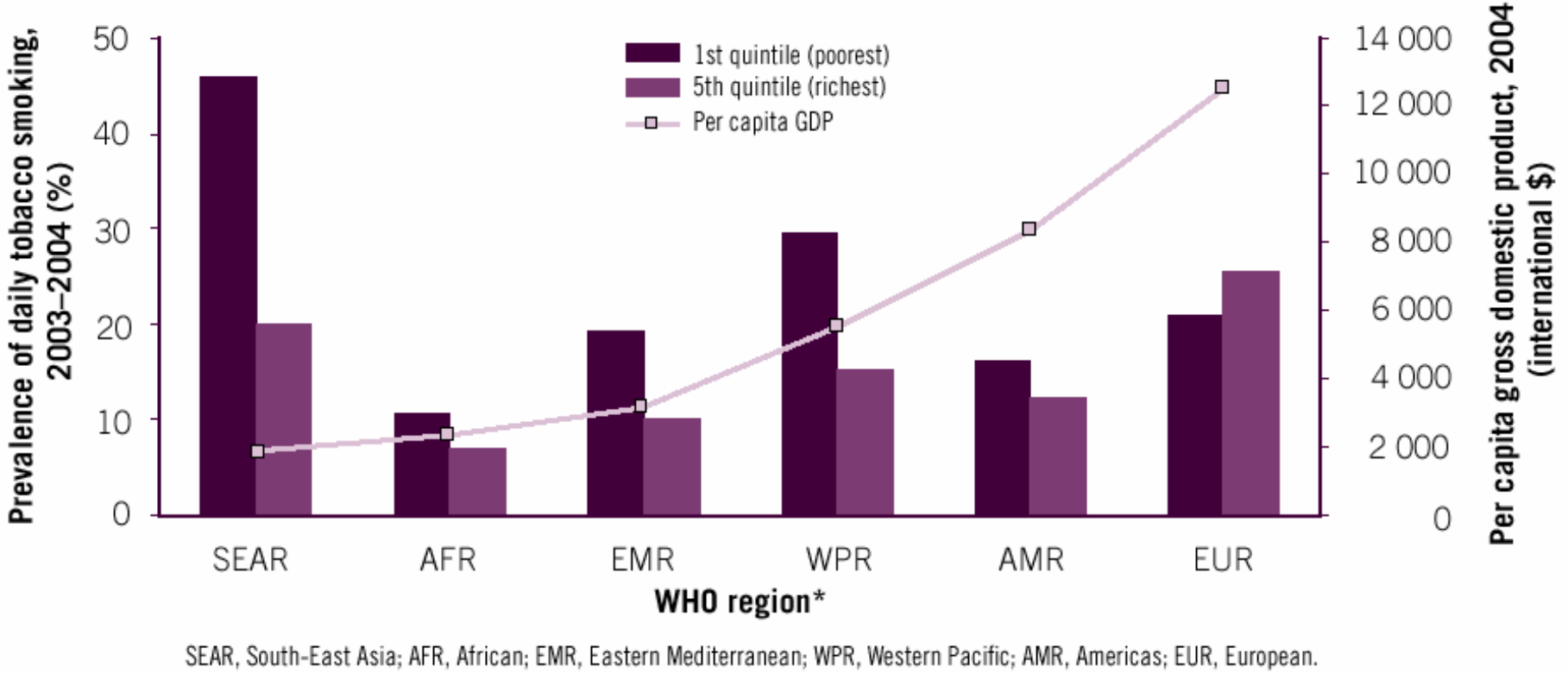
# HEALTH INEQUALITY IN DEVELOPING COUNTRIES

# STUNTED CHILDREN IN MOZAMBIQUE
## MEASURED BY INCOME GROUPS, 1999–2003




**SOURCE:** WHS 2007

# DAILY TOBACCO CONSUMPTION
## ADULTS OVER 18, BY INCOME QUINTILE, 2003–2004




SEAR, South-East Asia; AFR, African; EMR, Eastern Mediterranean; WPR, Western Pacific; AMR, Americas; EUR, European.

**SOURCE:** WHS 2007

# THANK YOU FOR YOUR ATTENTION

# POVERTY, INCOME AND EMPLOYMENT

**SESSION 1**

# TOPIC / OUTLINE

- **Session topic**
  - Anecdotal evidence: “Since I lost my job, I cannot go to the doctor, I feel depressed, and I have not yet found another way to earn money to take care of myself.”
  - Scientific steps: model the interactions between health, health care, income and employment; decompose each interaction; test in multiple empirical settings.
- **Session outline**
  - Modelling health as capital
  - Health and income inequality
  - Health and employment

# HEALTH CAPITAL

## WITH SOME (LIGHT) FORMALIZATION

# HEALTH AS (HUMAN) CAPITAL

- Economists consider health and education as **human capital** (Gary Becker), defined as the sum-total of work and welfare capacities.
  - individuals are born with a given 'physiological stock' depending on genes and antenatal factors
  - physiological stocks depreciate over the individuals' life courses, and varies positively or negatively with lifestyle behaviour
  - typical variation factors include nutrition, 'rational' addictions (smoking and drinking), physical activity, psychological stress

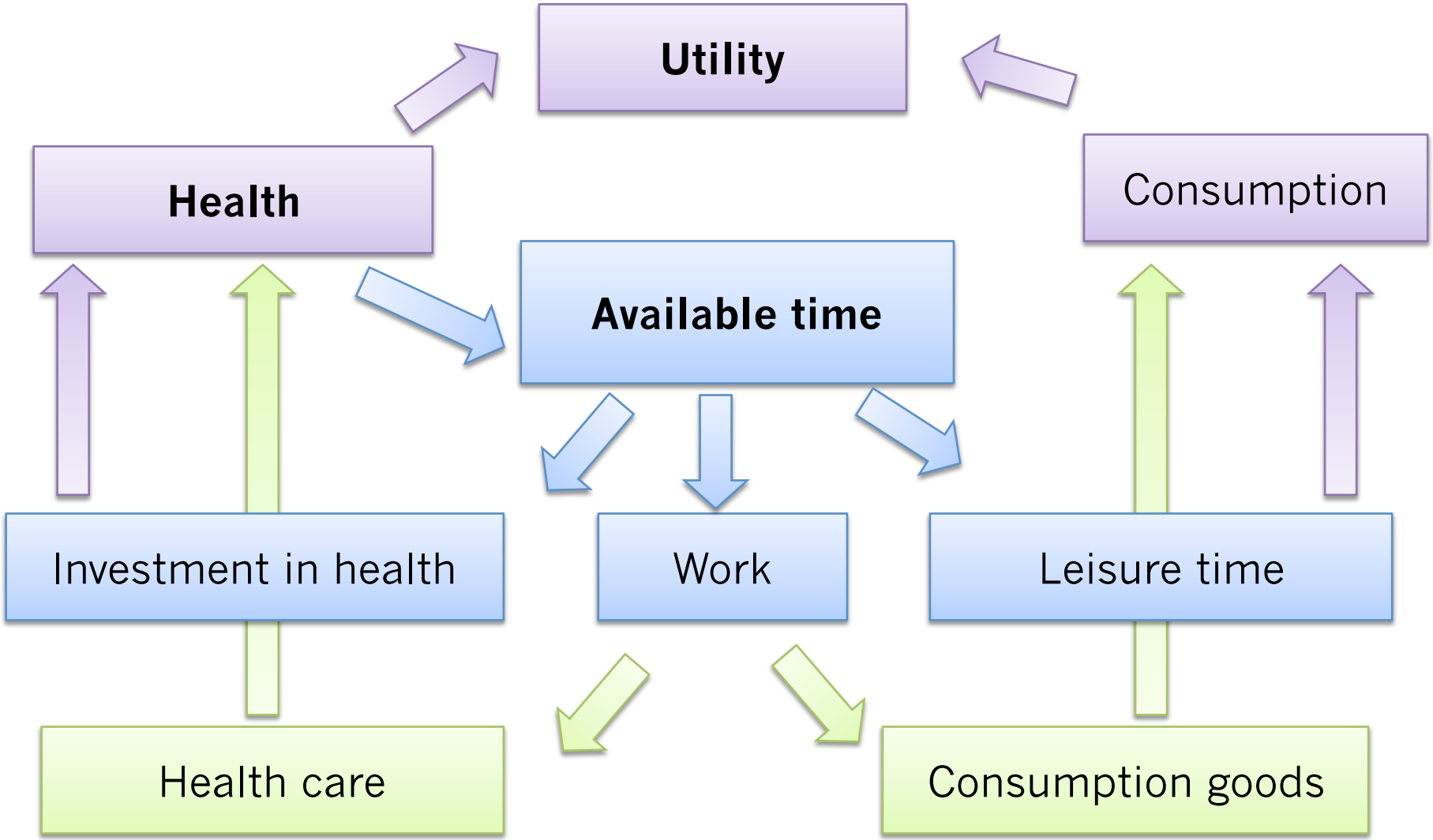
# MODELLING THE DEMAND FOR HEALTH

- In the 1970s, applications of the human capital model to health (Michael **Grossman**) derive the demand for health care from the demand for health:
  - health care is the indirect investment of individuals into health
  - tradeoffs exist between health and other goods
  - health is produced from medical goods by rational ~~idiots~~ agents

# MODELLING THE INDIVIDUAL UTILITY FUNCTION

- Health intervenes at several points in calculations of an individual's **utility** function:
  - directly: health affects quality of life (Bentham argument: individuals will pursue the 'relief of pain' for its own sake)
  - indirectly: health is time-intensive and determines the available time for market and non-market activities
  - empirical findings: increased obesity correlates with higher 'time prices' among adults; correlations of health outcomes and work hours are empirically more disputable

# CAUSAL PATHS IN THE GROSSMAN MODEL



# FORMALIZATION OF HEALTH AS CAPITAL

- Individuals are born with initial health capital $H_0$
- Intertemporal utility for a given agent depends on
  - health state at each period: $H_t$
  - consumption of medical goods: $B_t$

$$U = U\left(H_{0,}...,H_{n,}B_0,...,B_n\right)$$

- Health capital variations:
  - health depreciates over time at a given rate $\delta$
  - individuals intervene on $H_t$ by investments in health care $I_t$

$$H_t = \left(1-\delta\right)H_{t-1} + I_t$$

# FORMALIZATION OF HEALTH INVESTMENTS

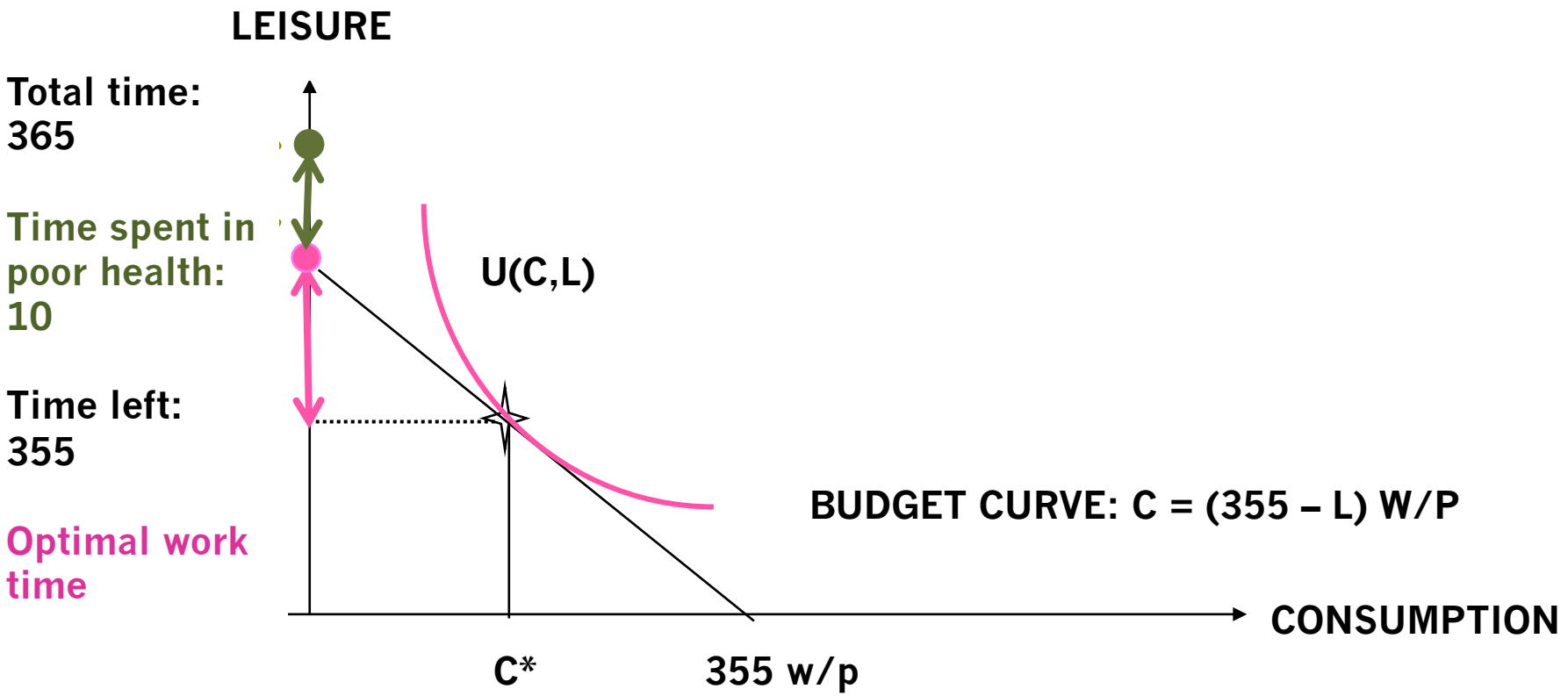
- Investment in health is a function of time investments in health care $\boldsymbol{M_t}$ and medical goods $\boldsymbol{TH_t}$
- Health care consumption is a function of welfare gains $\boldsymbol{X_t}$ and non-market time $\boldsymbol{TB_t}$
- Education $\boldsymbol{E_t}$ intervenes in both functions

$$I_t = I\left(M_t, TH_t, E_t\right) \qquad B_t = B\left(X_t, TB_t, E_t\right)$$

- Individuals can spend their time $\boldsymbol{T_t}$ on market activities $\boldsymbol{TW_t}$ and non-market activities $\boldsymbol{TB_t}$ or choose to invest in health care $\boldsymbol{TH_t}$
- Time spent in poor health $\boldsymbol{TD_t}$ is unavailable to agents

$$T_t = TW_t + TB_t + TH_t + TD_t = 365 \text{ days}$$

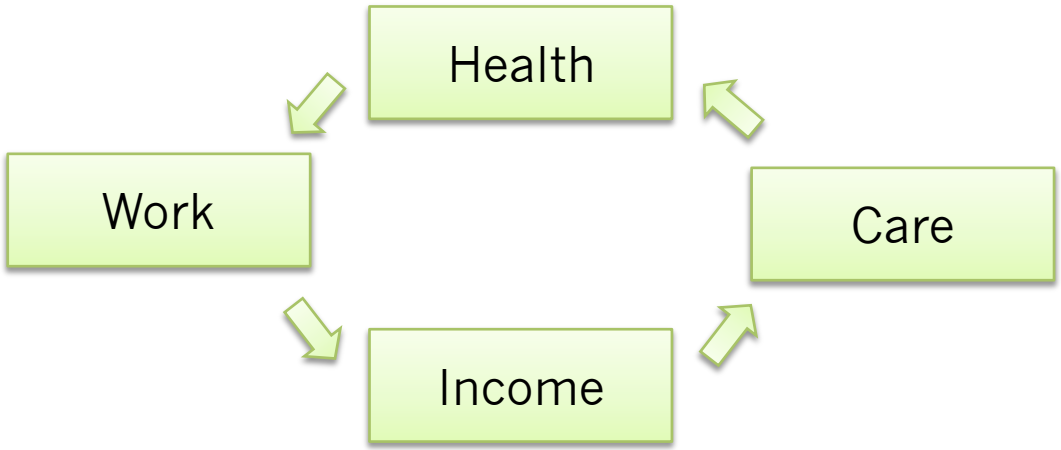
# TRADE-OFFS BETWEEN WORK AND LEISURE




Assuming an individual is in poor health 10 days per year, he is left with 355 days to assign to work and consumption activities. His trade-off is between income rates w/p and the decreasing marginal utility of work.

# IMPLICATIONS OF THE GROSSMAN MODEL

- An individual's demand for health, i.e. his investments in health, is a function of
  - his preferences (anticipation, risk aversion, attention to body)
  - his incentives (income-related)
  - the price of medical goods within the health care system
- Grossman's model implies a **positive correlation between health and income**, based upon a 'virtuous circle' type of causal path:

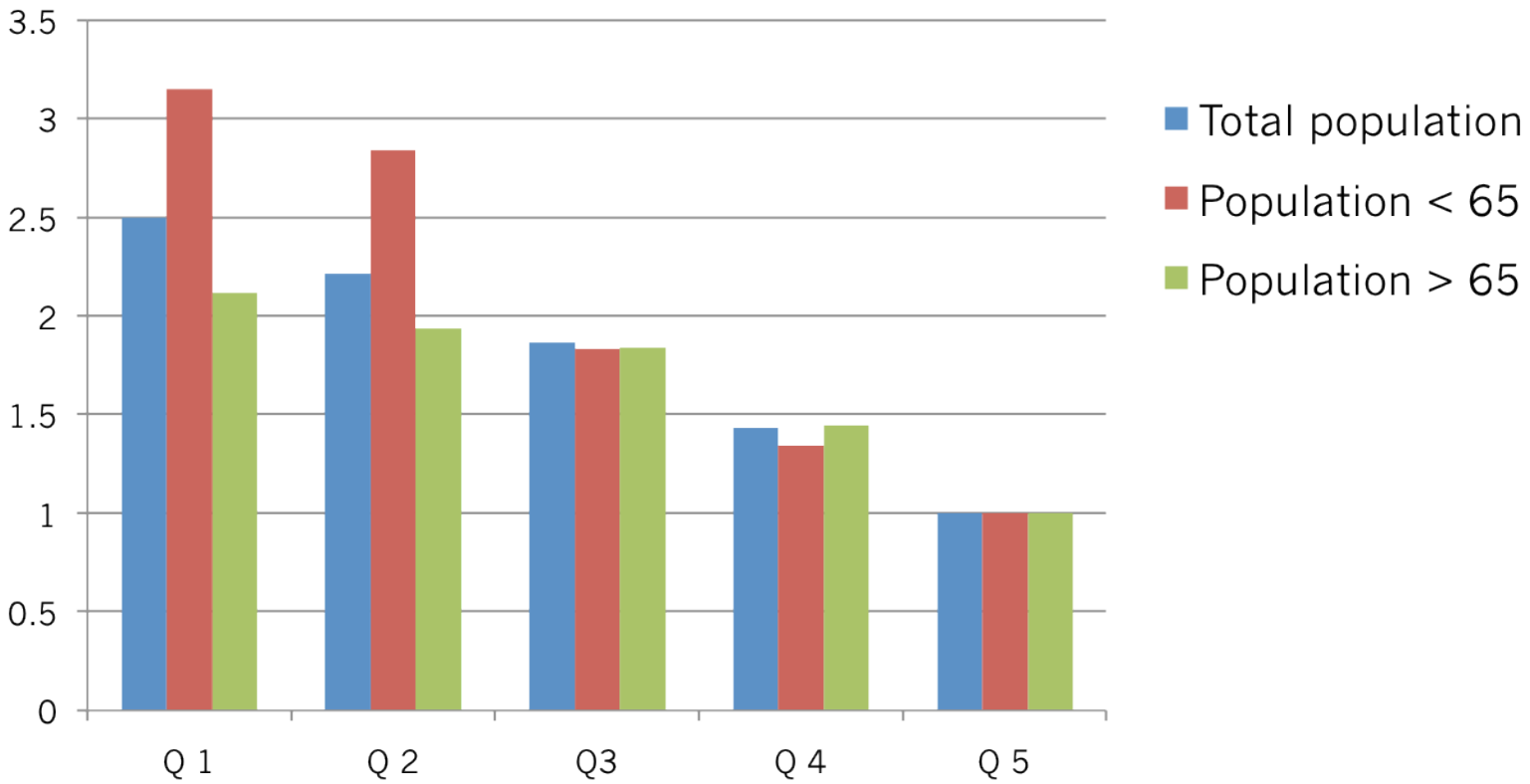


# HEALTH AND INCOME INEQUALITY

# HEALTH AND POVERTY

- Deprivation and **extreme deprivation** are the first factors of ill health to be taken into account.
  - Material conditions: housing, air/water
  - Nutrition
  - Danger in the workplace
- Social inequalities do not boil down, however, to **wealth** or **work** divisions (poor/wealthy, manual/non-manual)
  - Black Report, 1980s
  - Whitehall Study, 1990s
- Health inequalities are observable along a **social gradient**: the risk of ill health is inversely proportional to social hierarchies for all socio-economic positions
  - i.e. mortality risk function m(p) for social position p grows (almost strictly) positively for all values of p

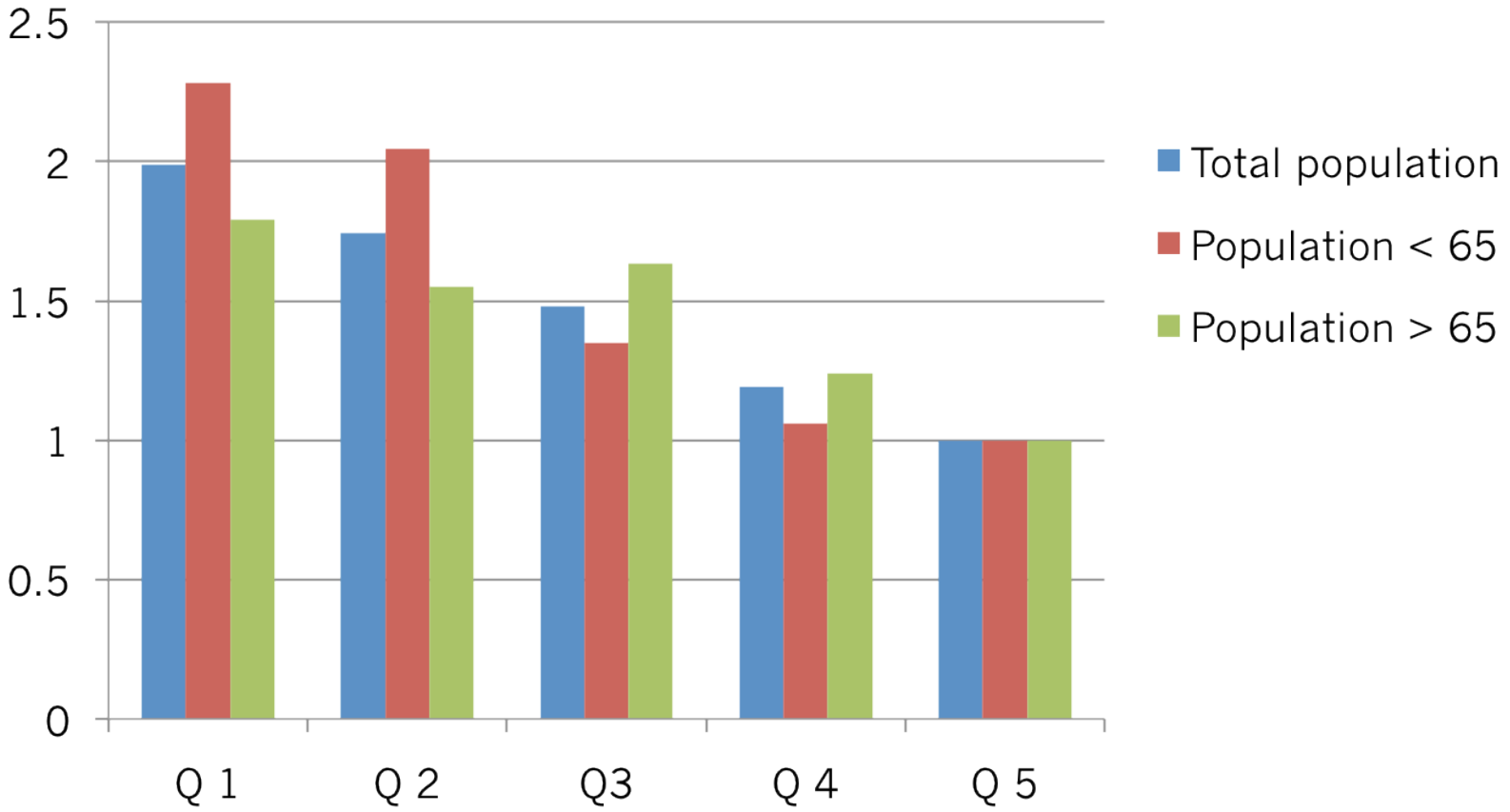
# INCOME AND MORTALITY IN FRANCE




Odds ratios for mortality associated with income quintiles, **before** controlling for occupational status

**SOURCE:** Jusot 2008

# PERSISTENT HEALTH INEQUALITIES



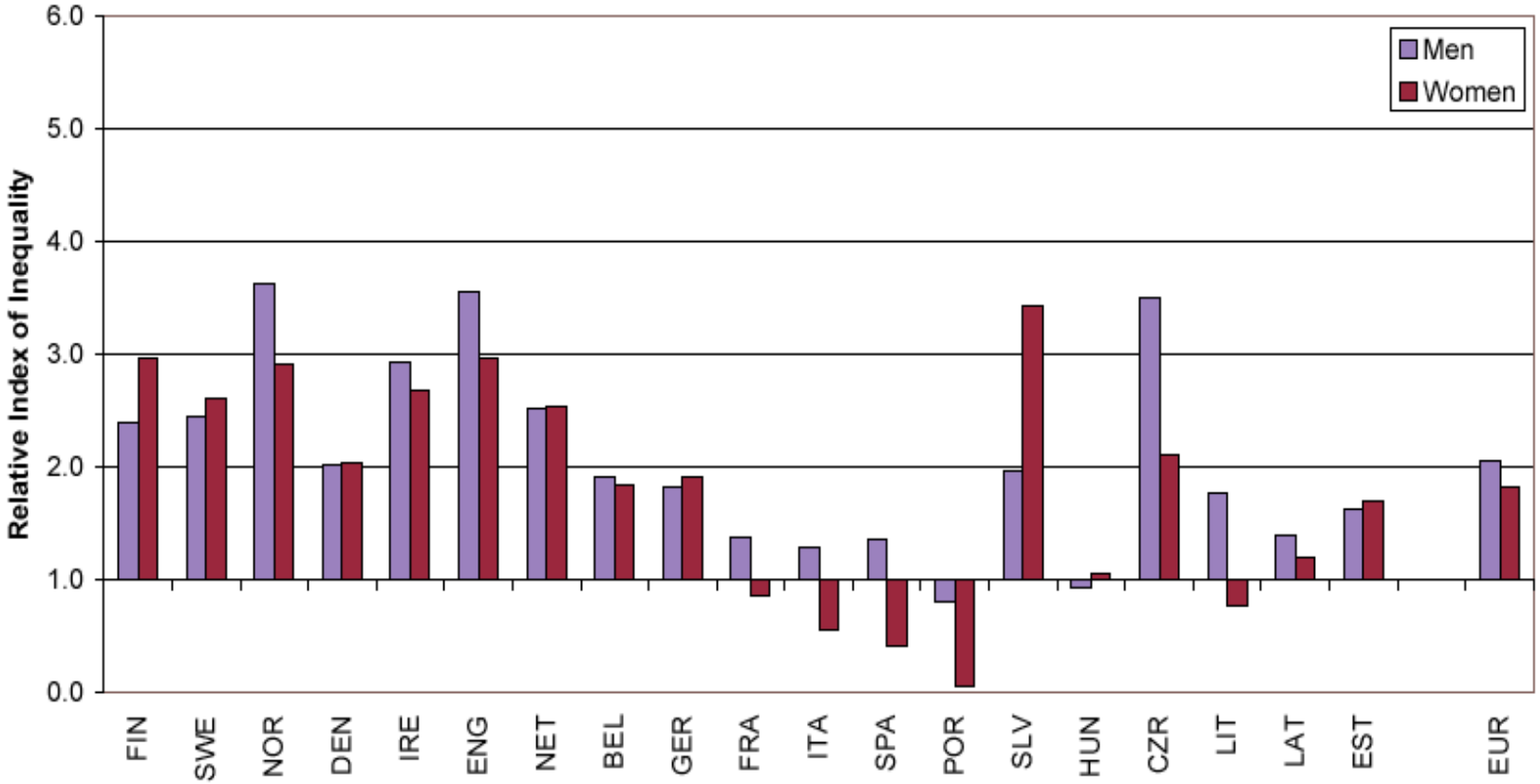

Odds ratios for mortality associated with income quintiles, **after** controlling for occupational status

**SOURCE:** Jusot 2008

# LIFESTYLE FACTORS

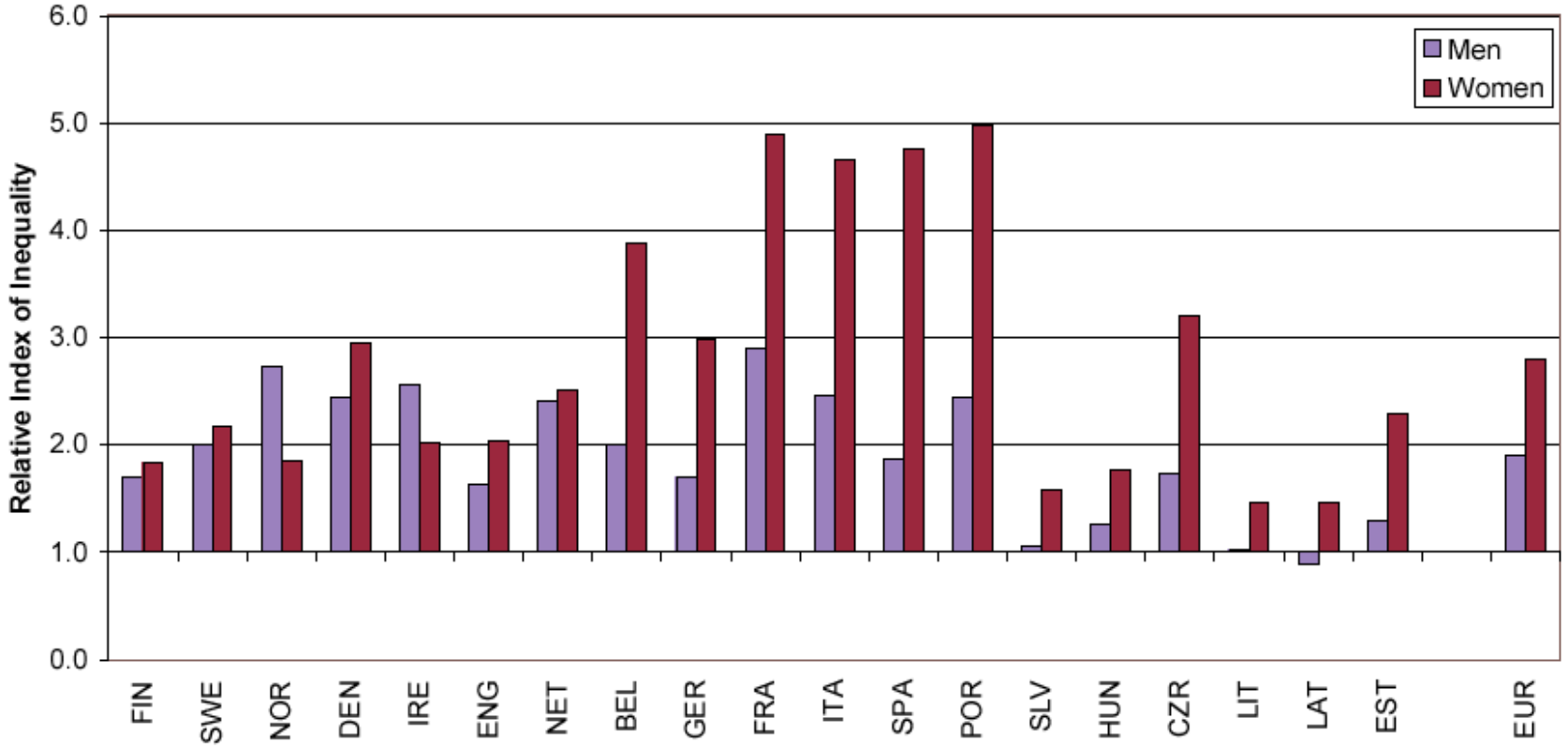
- **Tobacco** and **alcohol** consumption, **nutrition** and sedentariness/ **obesity** are understood as a lack of investment in health capital
- Lifestyles that induce a significant health risk are more prevalent among the **poorer** and **less educated**, and do not have the same consequences depending on social status
- Differences in lifestyles explain some variations in health inequalities between European countries, but require in turn to understand some related social factors:
  - Lack of information on associated health risks
  - Stronger preference for immediate gains (pleasure)
  - Lower risk aversion
  - Exposure to other risks (e.g. stress)
  - Social norms (e.g. ‘student life’ or ‘factory work’)

# INEQUALITIES IN SMOKING




**SOURCE:** Mackenbach / Eurothine Group 2007

# INEQUALITIES IN OBESITY



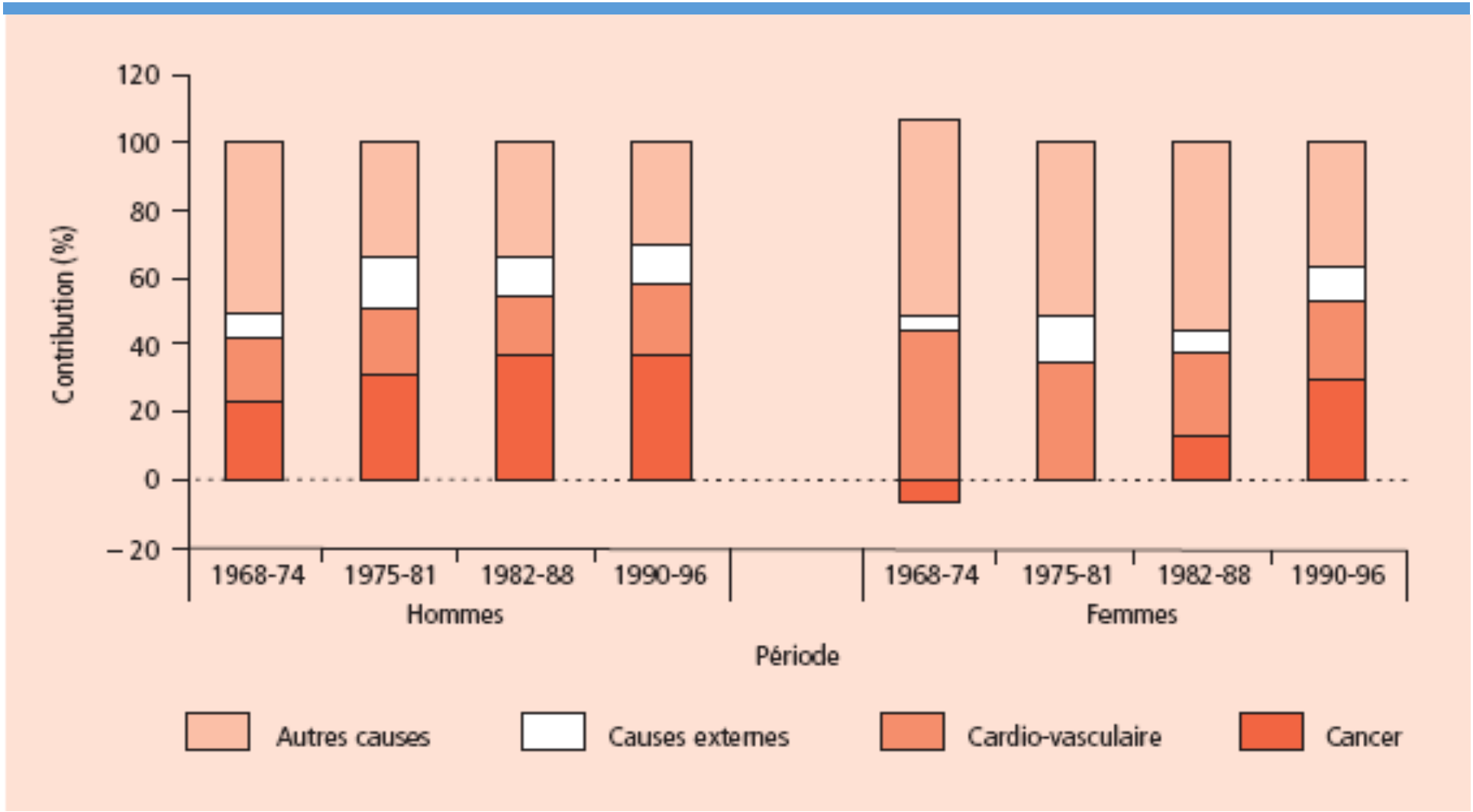

**SOURCE:** Mackenbach / EUROTHINE Group 2007

# INEQUALITIES IN CANCER INCIDENCE

- **Cancer incidence** varies with social status and geographical location.
  - Extremely visible in France (Nord-Pas-de-Calais)
- The most **destitute** social groups are at greater risk of developing carcinomas of the:
  - lung (manual/non-manual ratio = 2)
  - upper digestive and respiratory track ('VADS')
  - esophagus and cervix
- The most **privileged** social groups are at greater risk of developing carcinomas of the:
  - colon
  - breast
- **Survival rates** increase constantly with occupational status and education, regardless of tumor location.

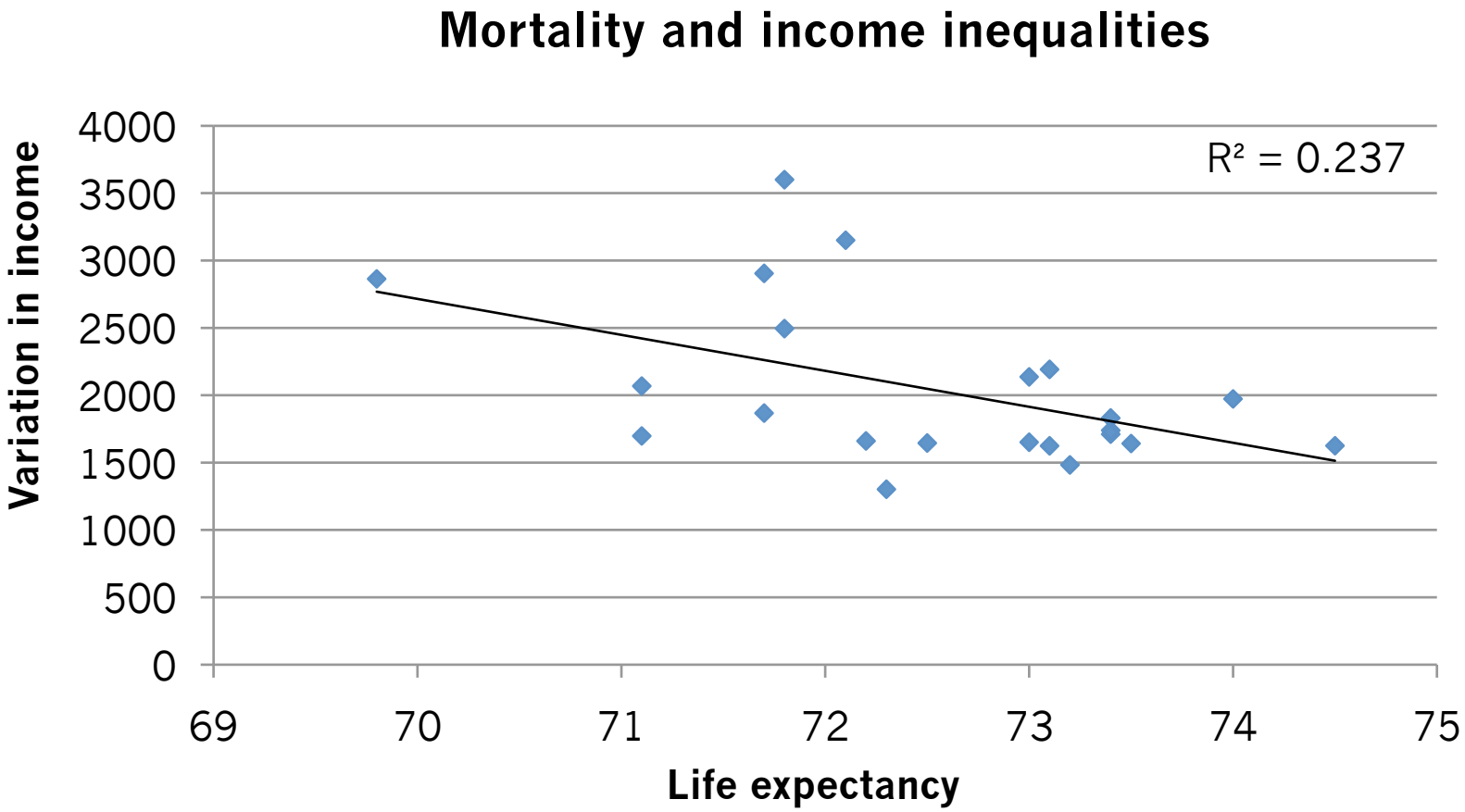
# CAUSES OF EXCESS MORTALITY

## IN FRANCE, BY DIPLOMA, MEN AND WOMEN, 30–64 Y/O, 1968–1996




**SOURCE:** INSEE

# EFFECTS OF INTRA-REGIONAL VARIATIONS
## IN FRANCE, 2003




**SOURCE:** Jusot 2003

# FROM INDIVIDUAL TO POPULATION HEALTH

- **Within and between countries**, multi-level analysis shows that population-level inequality affects individual-level health
  - In France, mortality increases by 20% in the most unequal regions and particularly affects the poorest social groups
  - Inequalities are measurable at several within-state levels, e.g. county-level, state-level and nation-level for the USA
  - Controlling for health care supply inequalities does not suppress variations, which show for all types of inequalities
- **Possible explanations**:
  - Absolute income hypothesis: variations are statistical artefacts caused by the shape of the health-income relationship (concavity)
  - Unequal income hypothesis: egalitarianism has positive effects on health that are absent in highly unequal societies
  - Confounding factors hypothesis: income inequality comes with unobserved correlates: national policies, health care, education

# HEALTH AND EMPLOYMENT

# EMPLOYMENT AND UNEMPLOYMENT

- **Employment** is a potential source of health issues
  - Exposure to toxic/carcinogenic agents (asbestos, chemicals)
  - Extremely high or low temperatures
  - Physically demanding tasks, such as weight lifting
  - Working times
  - Productivity-related constraints
- **Unemployed** people are yet in worse health:
  - employment has a protective effect on health, as it provides a source of income for the consumption of medical goods
  - reversely, job markets will discriminate against individuals with ill health and create a social exclusion feedback loop
  - unemployment has additional effects on educational attainment $E_t$ and on psychological well-being

# EFFECTS OF HEALTH ON EMPLOYMENT STATUS

- Health status can affect **employment utility** (work-leisure arbitration models)
  - Health has an empirically measurable effect on unemployment and on working hours
  - Health can also affect individual productivity (efficient wage modelling)
  - Less obvious effects of health might affect social mobility and income progression
- Health status selects individuals who enter or leave job markets, but the extent of that **selection effect** is unknown
  - Whitehall cohort: 20% approx.
  - More recent estimates: much more essential
  - In Europe, seniors who leave the job market do so principally in relation to health issues

# MORE GENERAL EFFECTS

- **Effects of HIV/AIDS on national growth** in African countries
  - Direct costs: medical care and medication
  - Indirect costs: limits on work supply and productivity
- Imperfections in current estimates
  - Limited scope: missing data
  - Limited foresight: 'instant estimates' miss the long-term effects of accumulating human capital

*Table 2: Reduction in GNP attributable to HIV/AIDS*

| Country | Average reduction in GNP (in annual growth points) | Period | Year | Sources/ authors |
|---|---|---|---|---|
| 30 sub-Saharan African countries | [0.8; 1.4] | 1990-2025 | 1992 | Over (1992) [9] |
| Cameroon | 2 | 1987-1991 | 1992 | Kambou *et al.* (1992) [4] |
| Zambia | [1; 2] | 1993-2000 | 1993 | Forgy (1993) [10] |
| Tanzania | [0.8; 1.4] | 1991-2010 | 1991 | Cuddington (1992) [11] |
| Kenya | 1.5 | 1996-2005 | 1996 | Hancock *et al.* (1996) [12] |
| Mozambique | 1 | 1997-2020 | 2001 | Wils *et al.* (2001) [13] |

*Source: estimations collected by Touzé and Ventelou [1] using the cited articles; the intervals relate to the size of the impact according to the scenarios studied. A similar but more extensive table appears in Barnett and Whiteside [14], p 286-7.*

# NEXT SESSION:
# PSYCHO-SOCIAL DETERMINANTS

**THANK YOU FOR YOUR ATTENTION**

# PSYCHO-SOCIAL DETERMINANTS

## SESSION 2

# TOPIC / OUTLINE

- **Session topic**
  - Effects of psychosocial environments
  - Focus on midlife (adulthood) and work environments
- **Session outline**
  - Life-course approaches
  - Social experiences and health vulnerability
  - Job tasks and the reward/effort imbalance

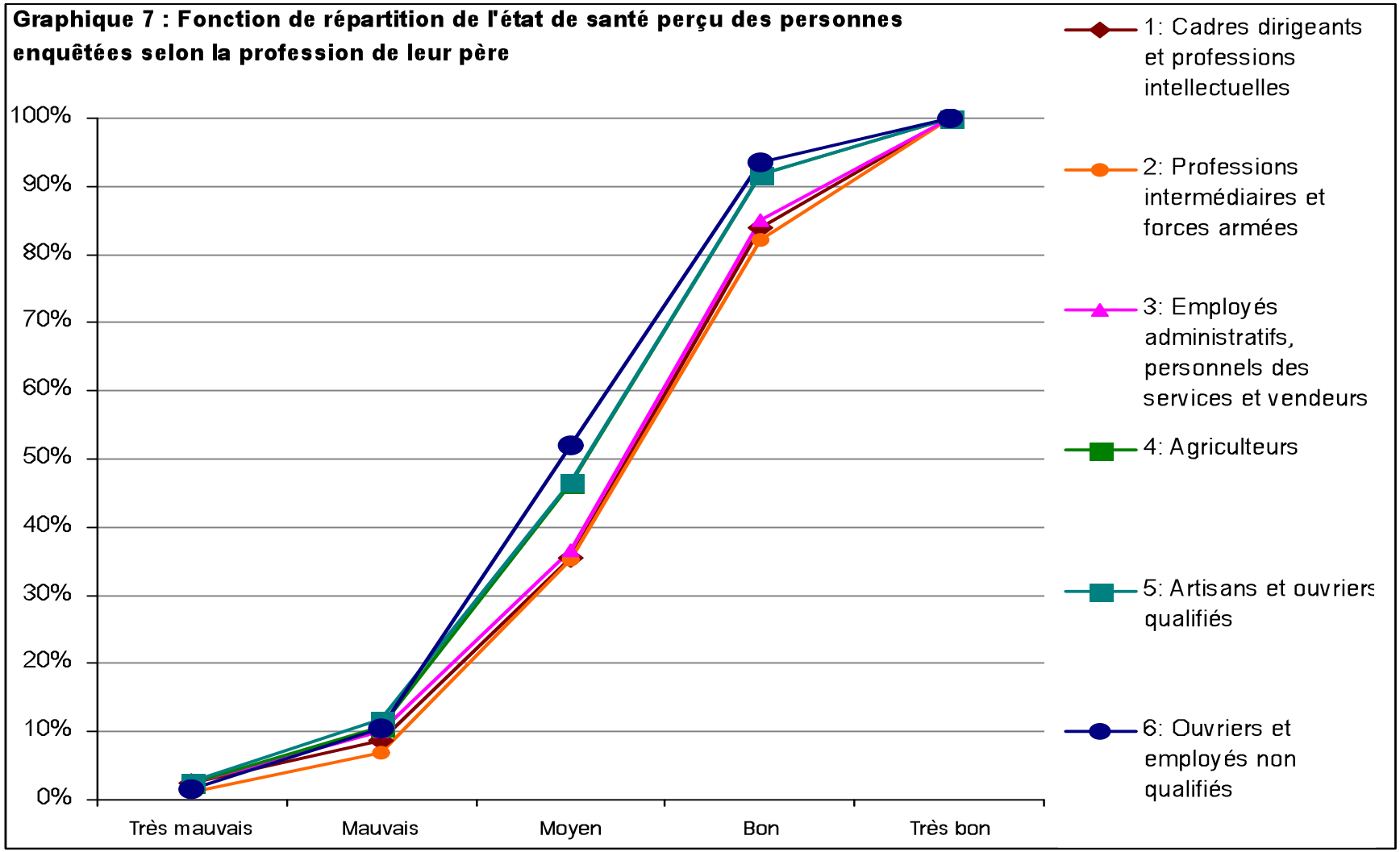
# LIFE COURSE PERSPECTIVES

- **Chronic disease epidemiology**
  - Childhood ++
  - Adulthood ++
  - Old age +
- **Building blocks**
  - Biological status as a marker of past social positions
  - Social experiences are written in one's physiology and pathology
  - Embodiment of disease: '**somatic capital**'
- **Dynamic approach**
  - Inequalities start appearing during childhood
  - Inequalities create negative or positive future predispositions
  - Inequalities are persistent across social groups: '**metabolic ghetto**'

# ELIGIBLE ENVIRONMENTS

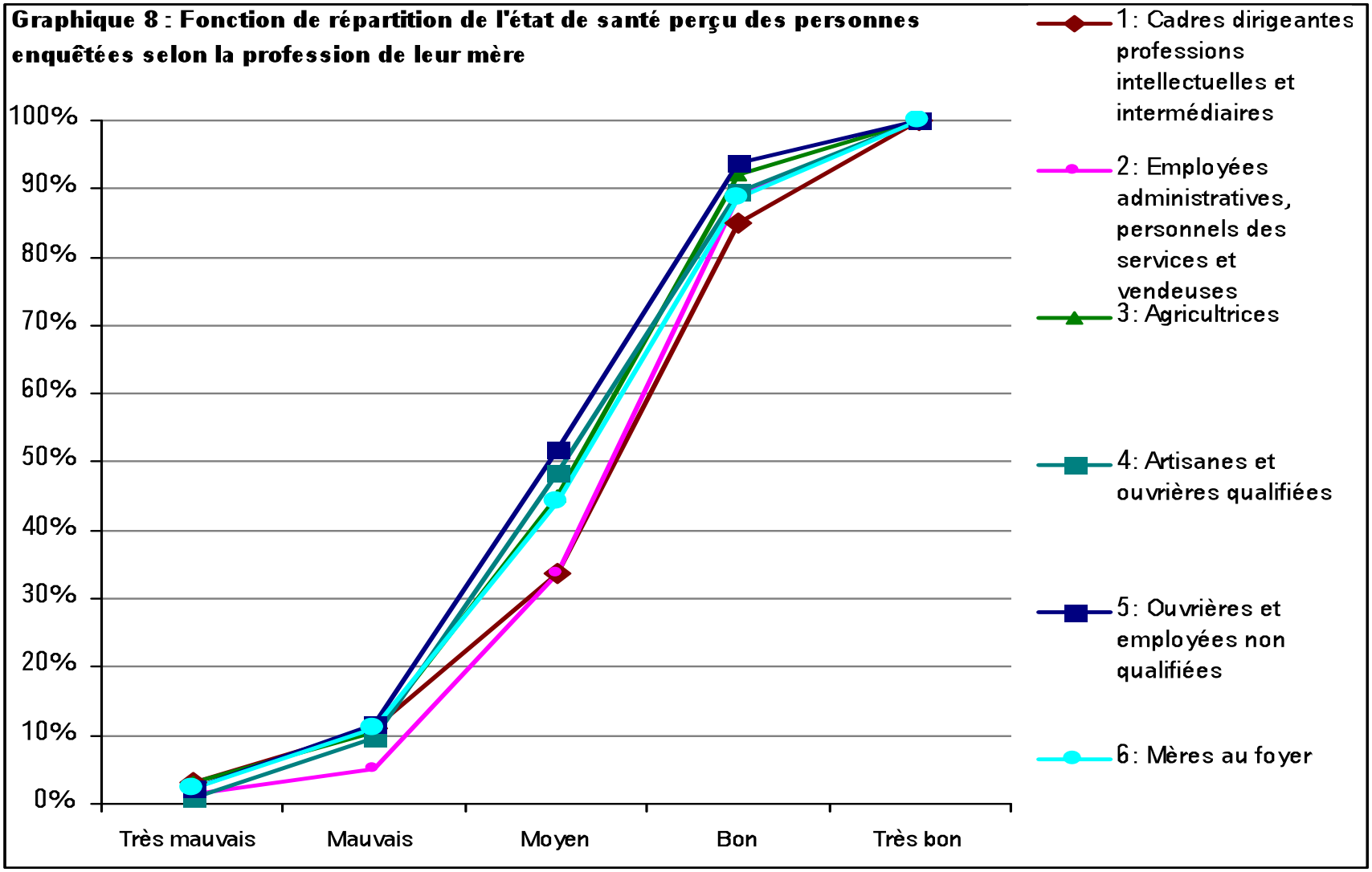
- **Family**
  - Early life deprivation
  - Parental relationship
- **Work**
  - Environmental hazard
  - Lack of exercise (Jerry Morris, 1953)
  - Cumulative stress development (Karasek, Marmot and Siegrist)
  - Health promotion at work
  - Working times
- **Peers**
  - Autonomy
  - Solidarity
  - Discrimination

# FAMILIAL ENVIRONMENT INEQUALITIES
## IN FRANCE, ACCORDING TO FATHER'S PROFESSION




**SOURCE:** Devaux et al. 2007

# FAMILIAL ENVIRONMENT INEQUALITIES
## IN FRANCE, ACCORDING TO MOTHER'S PROFESSION

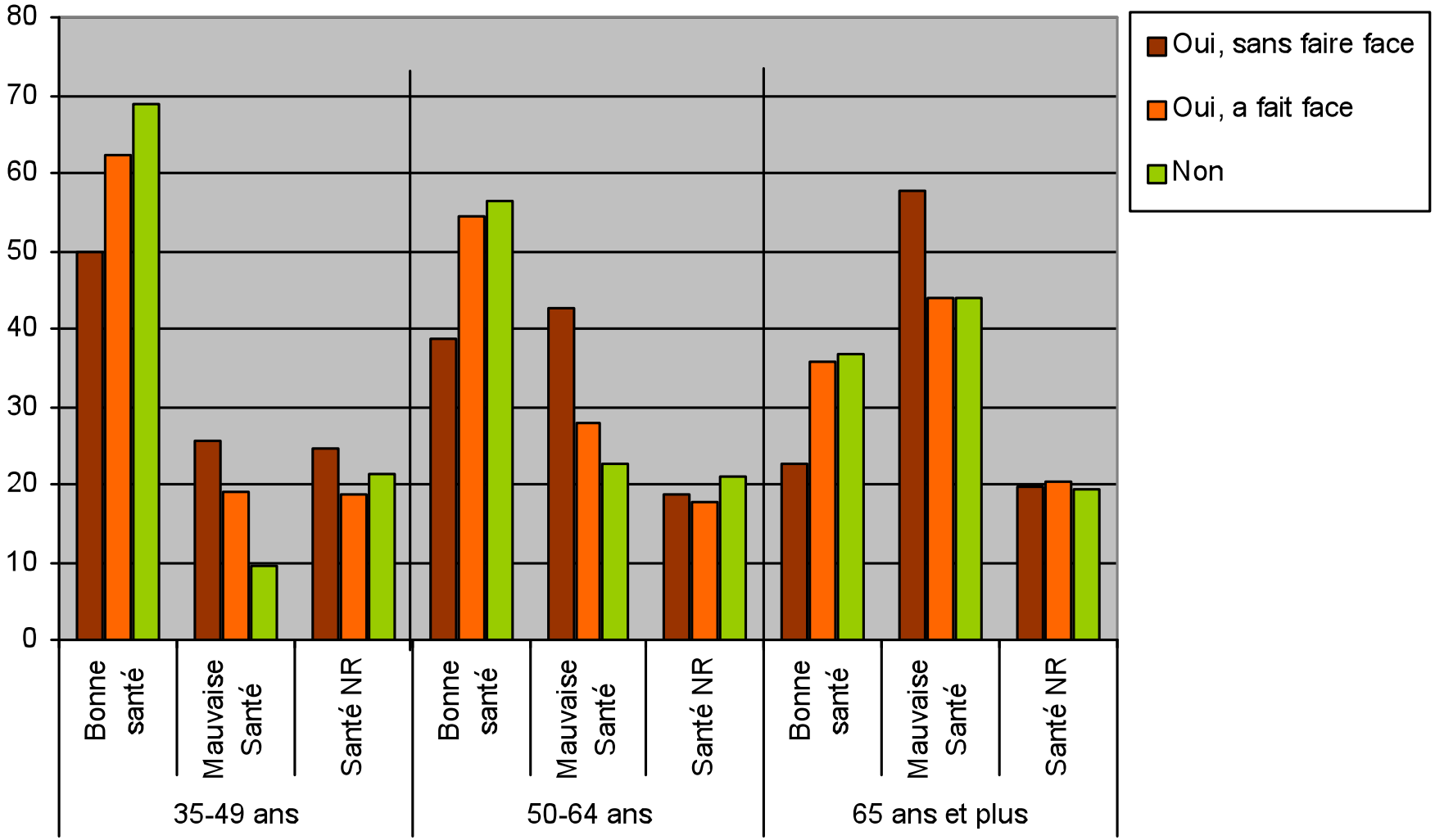



**SOURCE:** Devaux et al. 2007

# RECENT FINDINGS IN FRANCE

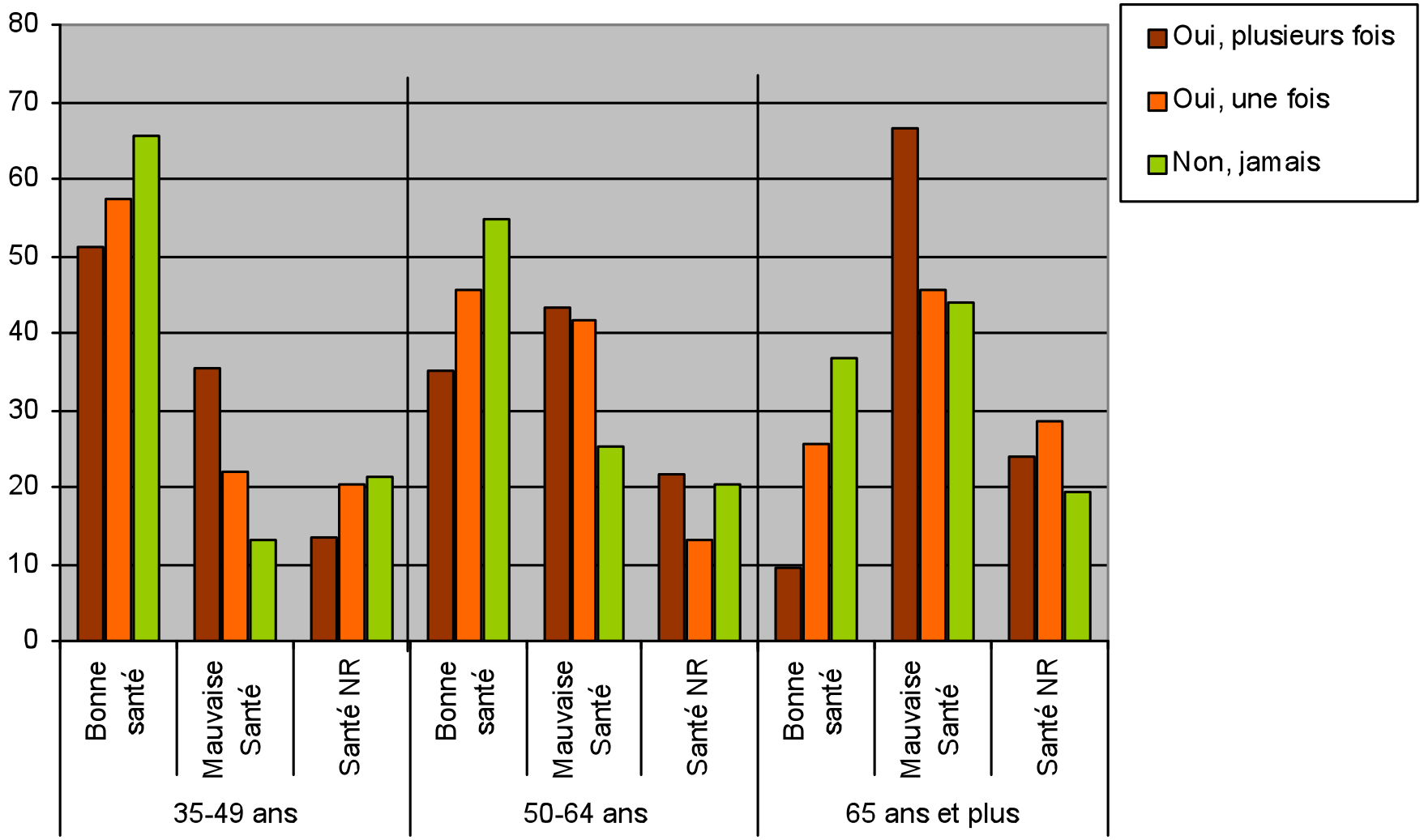
- **ESPS Survey** (Jusot and Cambois 2006)
  - Self-reported health
  - Self-administered questionnaire
  - N ≈ 17,000, 95% population coverage
- **Life-course questions**
  - "Have you ever faced problems to pay for **basic expenses** and been unable to cope with them?"
  - "Have you ever needed to be **hosted** by friends, family or associations due to financial difficulties to pay for **accommodation**?"
  - "Have you ever felt **isolated** for a long period, following a break in social or family tights due to migration, divorce, job loss, etc.?"

# EFFECT OF FINANCIAL HARDSHIP



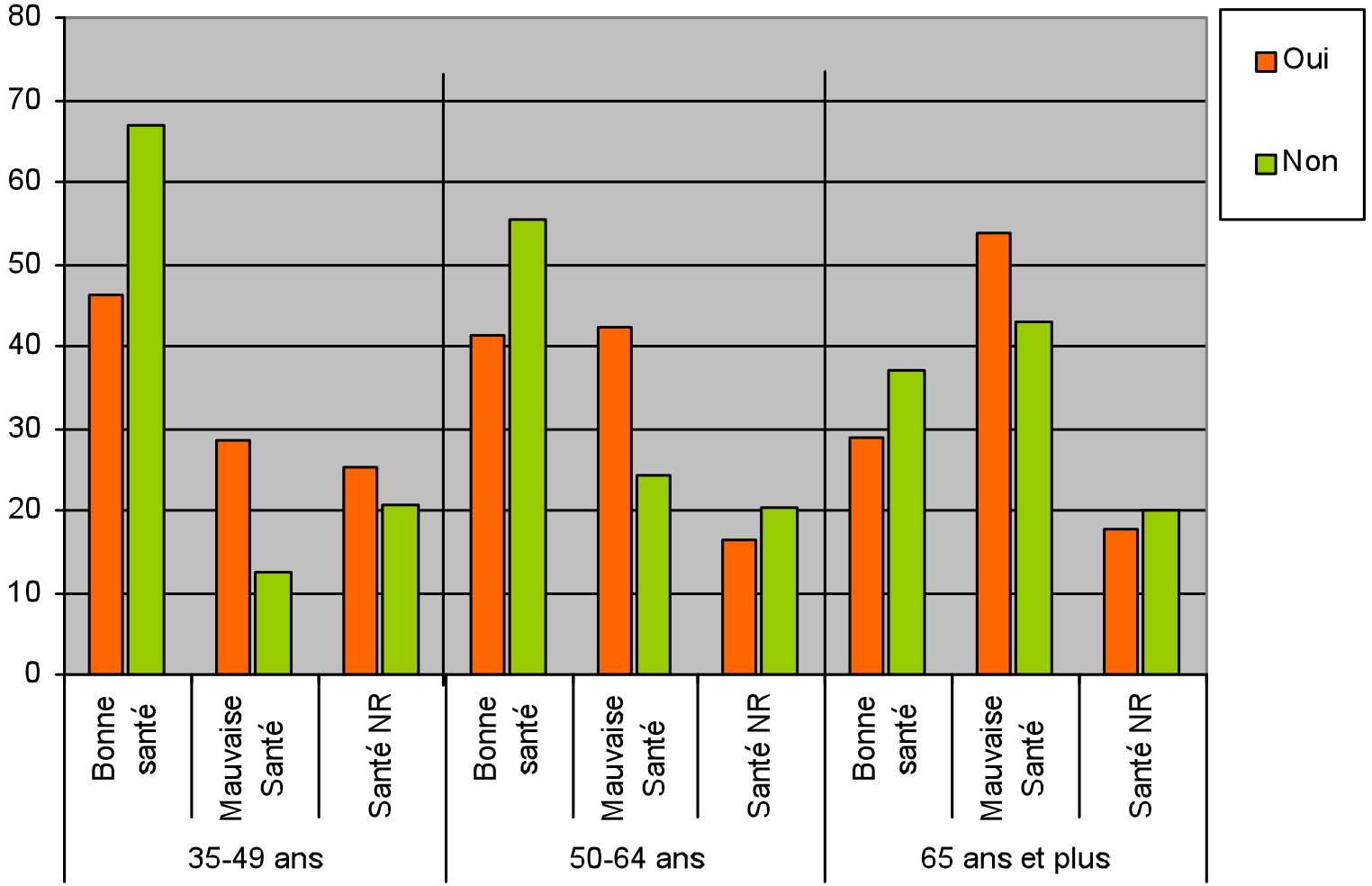

**SOURCE:** Cambois and Jusot 2006

# EFFECT OF ACCOMMODATION LOSS




**SOURCE:** Cambois and Jusot 2006

# EFFECT OF LONG-TERM ISOLATION




**SOURCE:** Cambois and Jusot 2006

# PSYCHOSOCIAL EXPLANATIONS

- **Social capital**
  - Unequal societies lower the impression of peer solidarity
  - Lack of perceived social support feeds into stress
  - Structural effects can be derived from welfare state regimes
- **Social hierarchy**
  - Self-assessment of individual position in society
  - Lack of autonomy and capability
  - Measurable impact on health status, self-rated and observed
- **Social support**
  - Financial support
  - Emotional reliance

# ELIGIBLE EFFECTS IN THE WORKPLACE

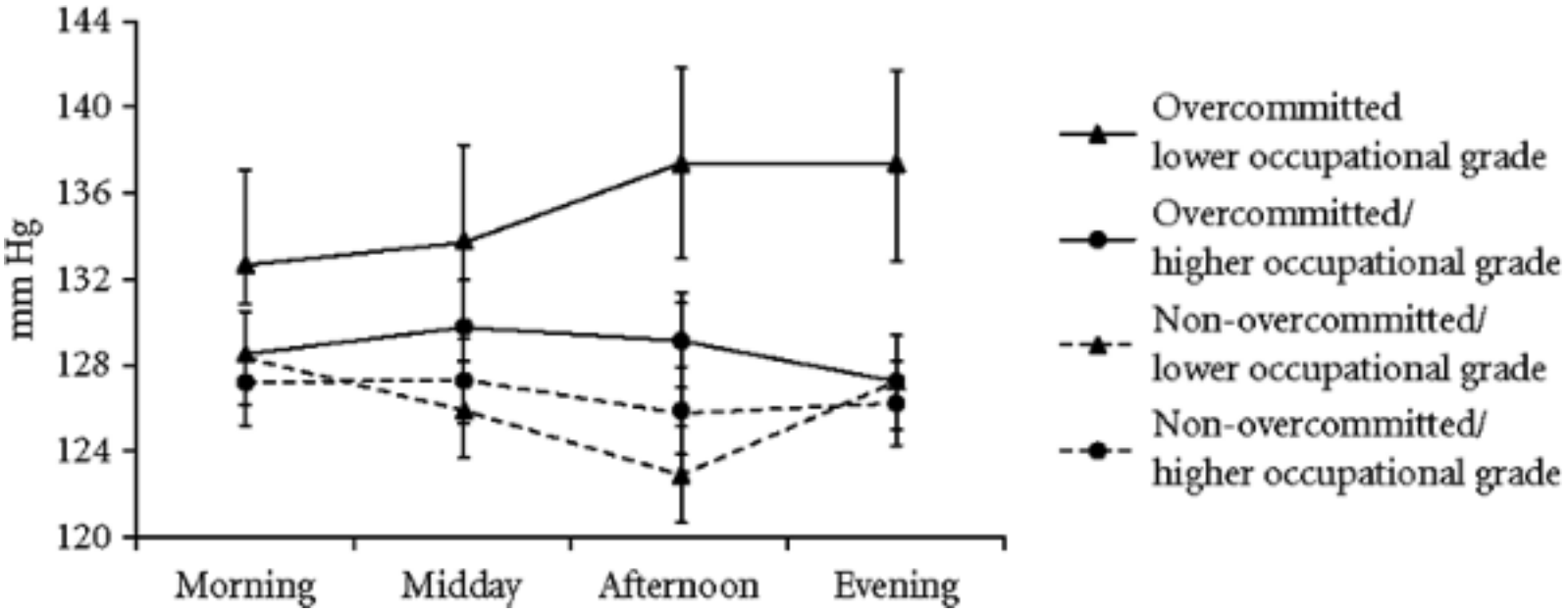
- **Manifest environmental exposure**
  - Substance-related hazards, e.g. carcinogens, carbon monoxide: **physicochemical** exposure
  - Activity-related hazards, e.g. accidents, physical effort: **occupational** exposure
- **Latent environmental exposure**
  - Task-related hazards, e.g. acute or cumulative stress: **psychosocial** exposure
  - Connected factors: housing and income, diet and sleep, lifestyle factors, e.g. smoking and drinking, ...

# MODELLING PSYCHOSOCIAL EFFECTS

- **Job tasks** (Karasek)
  - High and low demands: **pressure**
  - High and low control: **supervision**
- **Achievement** (Siegrist, Marmot)
  - High and low effort
  - High and low reward
- **Plausible conditions**
  - Low reciprocity in work contracts
  - Insufficient job prospects and security
  - High efforts and low rewards (effort/reward imbalance)
- **Plausible effects**
  - Low self-esteem
  - Excessive work-related commitment: overcommitment

# PSYCHOSOMATIC MEASUREMENTS
## FOR BRITISH MEN ACROSS OCCUPATIONAL GRADES

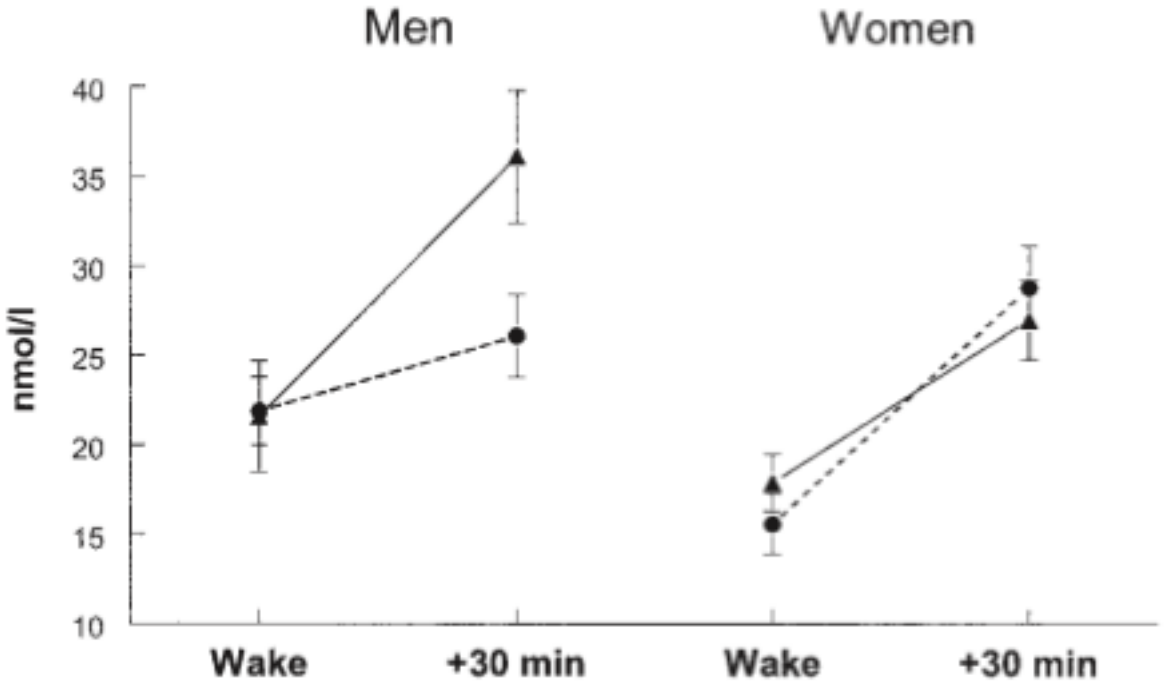
Mean systolic blood pressure averaged over daytime




**SOURCE:** Steptoe et al. 2004 / Whitehall II cohort

# EFFECTS OF OVERCOMMITMENT
## MEASURED FOR BRITISH MEN AND WOMEN

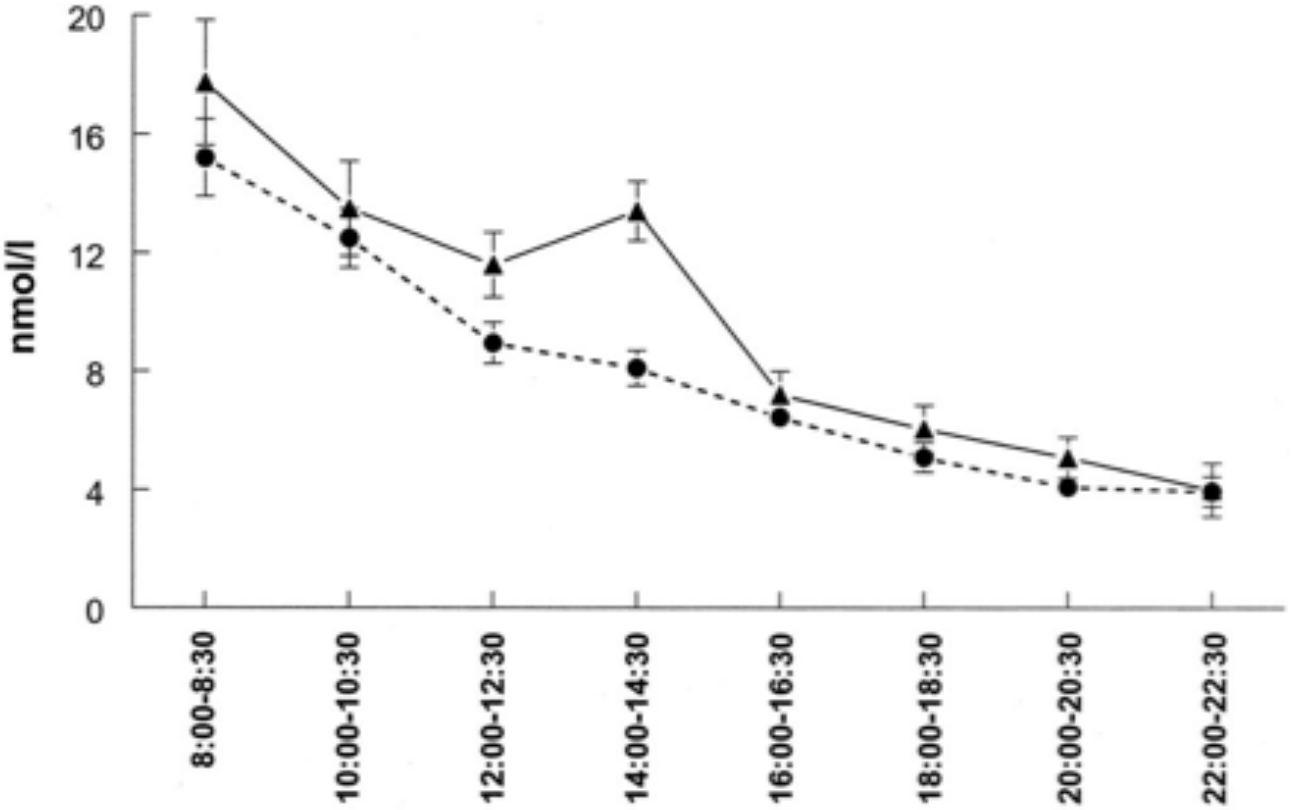
Mean salivary free cortisol on waking and 30 minutes later
for overcommitted (solid) and non-overcommitted (dashed) groups




**SOURCE:** Steptoe et al. 2004 / Whitehall II cohort

# EFFECTS OF OVERCOMMITMENT
## MEASURED FOR BRITISH MEN AND WOMEN

Mean salivary free cortisol over the working day
for overcommitted (solid) and non-overcommitted (dashed) groups




**SOURCE:** Steptoe et al. 2004 / Whitehall II cohort

# METHODOLOGICAL REMARKS

- **Controls**
  - Age and gender
  - Occupational status / grade
  - Smoking and drinking
- **Interactions**
  - e.g. (gender × grade × commitment × time) returns significant *F*/*p*

# NEXT SESSION:
# HEALTH SYSTEM INEQUALITIES

**THANK YOU FOR YOUR ATTENTION**

# HEALTH SYSTEM INEQUALITIES

**SESSION 3**

# HEALTH SYSTEMS MATTER

- Health systems are considered to be only marginally important in **improving health**
  - Social medicine / McKeown thesis (1979): health care amounts only to 10%–20% of life expectancy gains over the last century
- Health systems are considered to be only marginally important in **reducing health inequalities**
  - Health inequalities are persistent and even increasing in countries with free access to high quality health care
- This last statement suggests health systems have (largely) **unobserved effects** on the social gradient
  - Stabilising effects: no correction of current inequalities
  - Adverse effects: adding a new layer of inequalities

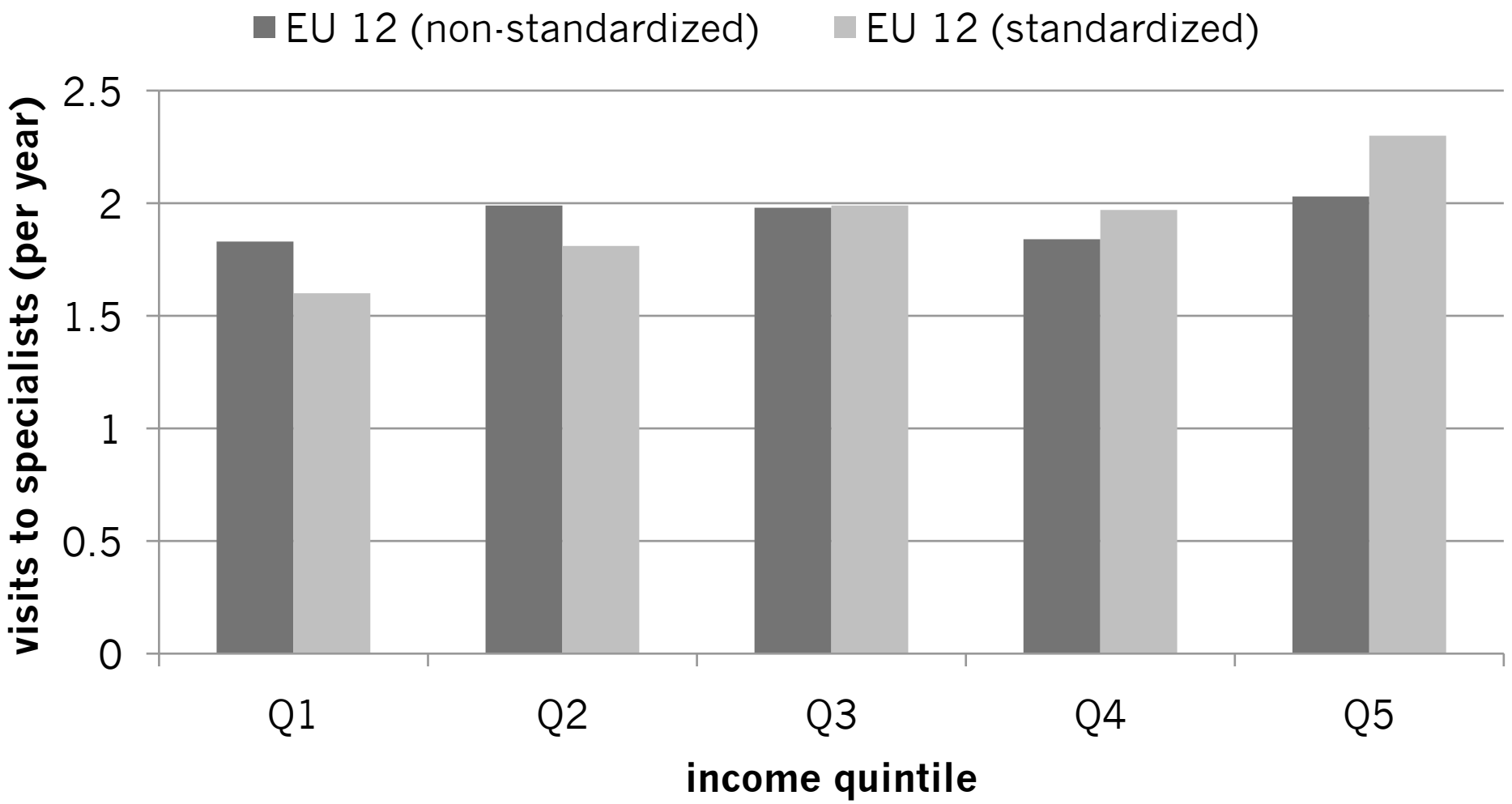
# SCIENTIFIC CHALLENGES

- Linking **insurance coverage and health**:
  - RAND Experiment (USA, 1970–80s): insurance coverage correlates with consumption but shows little effect on short-term health status
  - *Some* aspects of health are affected by insurance coverage, e.g. hypertension, and only for *some* (low) income levels
  - Health and Social Protection Survey (IRDES, 2000s): health care consumption has no effect on 4-year *morbidity*, but affects 4-year *disability*
- Linking **medical advances and health**:
  - Increases in US male life expectancy between 1950 and 2000 is attributable to lower risks of cardiovascular disease
  - An estimated 70% of gains in the 1984–1999 period are attributable to medical advances

# ACCESS TO HEALTH AND CONSUMPTION

- Egalitarian policies regarding **access to health** do not suppress inequalities in **health care**:
  - Ecuity research project shows significant social inequalities in health consumption, especially at specialist level
  - Eurothine research project: inequalities are observable in all European countries, i.e. in all health systems
  - Inequalities exist even in fully universal (Beveridgian/NHS-type) health systems
- The **structure** of health consumption is different along the social gradient, regardless of **health needs**:
  - Poorer and less educated groups show higher consumption rates of hospital care than ambulatory care
  - Within ambulatory care, consumption for these same groups is concentrated on GPs as opposed to specialists and dentists

# ACCESS TO SPECIALIST PHYSICIANS
## BY INCOME AND HEALTH STATUS



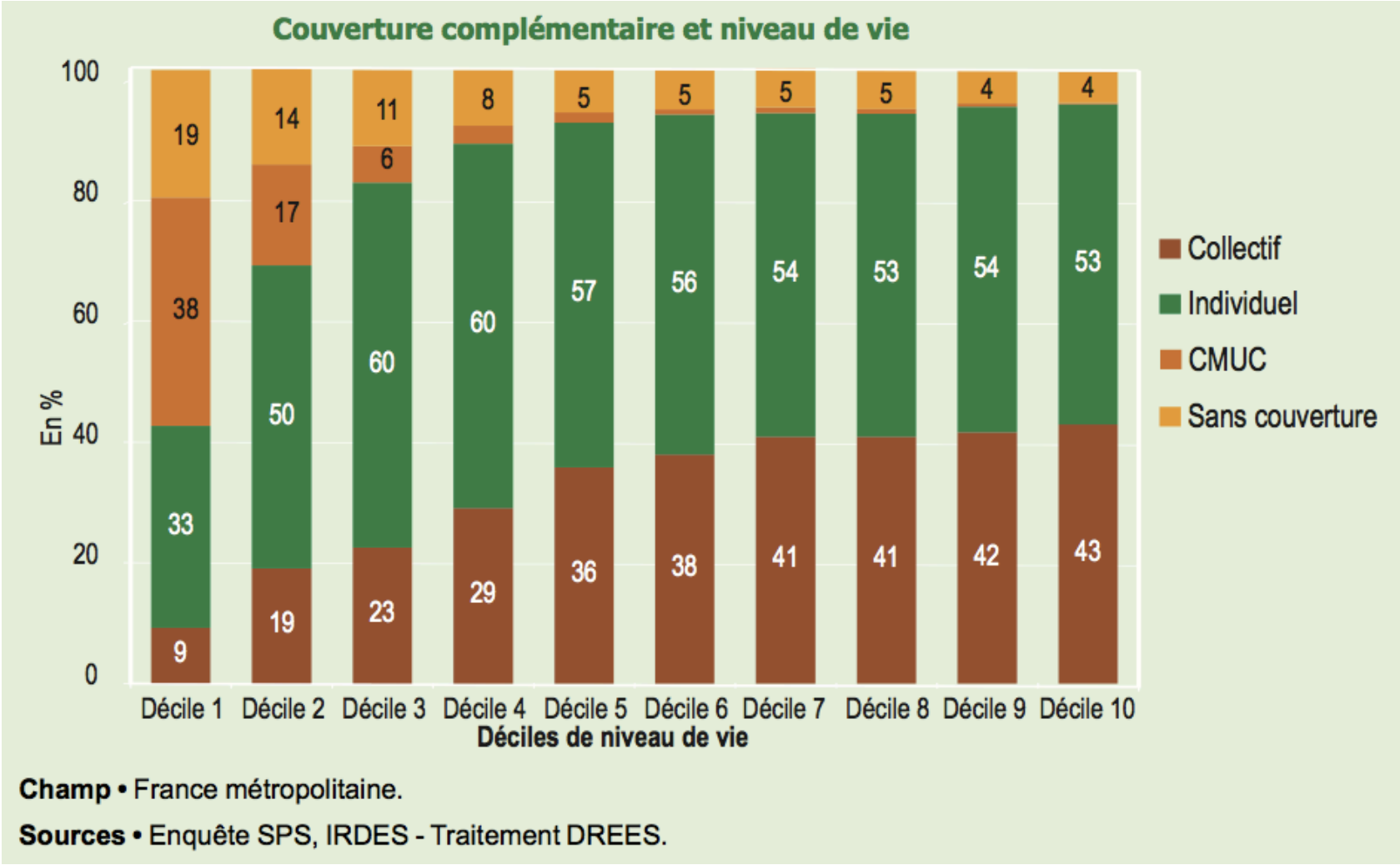

**SOURCE:** van Doorslaer and Koolman 2002

# UNEQUAL HEALTH COVERAGE IN FRANCE

- **Health expenses** are covered up to 75% by Social Security premiums (paid through payroll tax)
- Coverage for the remaining costs is provided through **complementary health insurance**:
  - free means-tested scheme since 2000 (CMUc)
  - employer-based schemes (40% of total population)
  - private investment schemes
- Some households do not invest in complementary insurance and later health care due to **financial constraints**:
  - Almost 8% of the population does not have complementary health insurance (14–19% in low-income groups)
  - 1 out of 7 respondents acknowledge cancelling his/her health consumption due to financial constraints
  - Non-consumption concerns optics, dental care and specialists, except for Norway, and especially in France, Hungary, and Latvia

# INCOME AND HEALTH INSURANCE COVERAGE

## COMPLEMENTARY INSURANCE AND INCOME

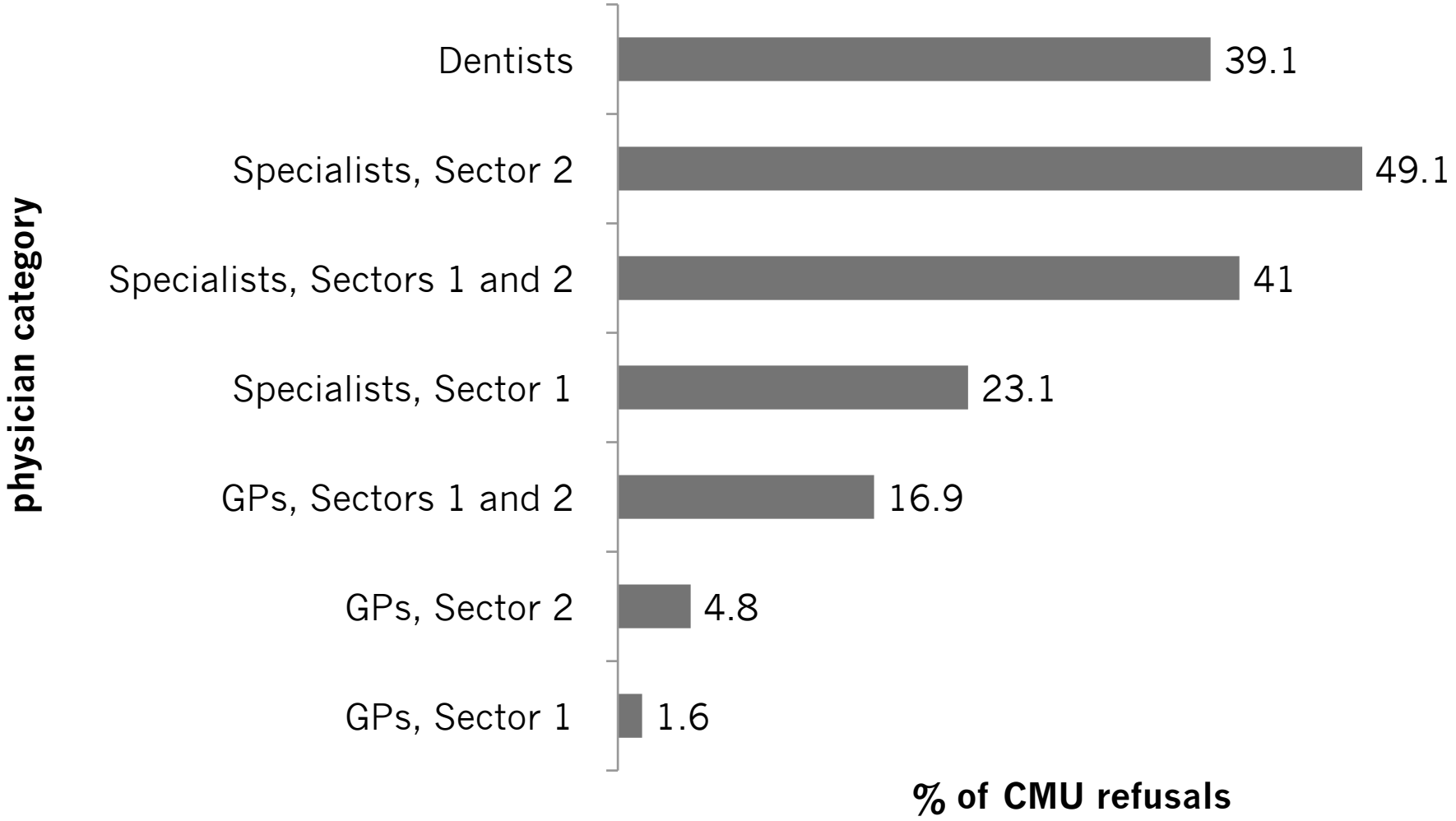



**SOURCE:** Arnould and Vidal 2008

# ADDITIONAL FACTORS & EXPLANATIONS

- Coverage does not fully explain **differences in consumption**:
  - Hospital v. ambulatory/preventive
  - Primary v. specialist physicians
  - Differences are resilient to improvement measures viz. financial and geographical inequalities
- **Potential explanations**, especially for lower-income groups:
  - Imperfect or incomplete information of health services
  - Psychological biases against treatment and/or prevention
  - Negative past experiences with physicians

# INSURANCE-INDUCED INEQUALITIES
## IN 6 FRENCH CITIES




**SOURCE:** Després and Naiditch 2006

# PHYSICIAN AVAILABILITY EFFECTS

- Supply-side factors are expected to play a role in health consumption, insofar as **low numbers of practitioners**
  - can directly result in an increase in tariffs
  - can add indirect time and transport costs
- Geographical inequalities are most likely to affect **less educated** people and those in **poor health** conditions
  - As a result, physician availability (health care supply) correlates with lower levels of health in low-income groups

# HEALTH SYSTEMS EFFECTS

- Inequalities in access to **primary care** are generally low, but increase in countries:
  - with low health expenditure (HEXP)
  - with high patient cost-sharing schemes
- Inequalities in access to **specialised care** are higher and significant, but decrease in countries:
  - with gate-keeping schemes (primary *then* specialist access)
  - with public taxation schemes (v. social health insurance)
  - with low cost-sharing measures

# POLICY IMPLICATIONS

- In **high-income** countries:
  - **Even residual differences** in health consumption might have increased effects on health inequalities due to **medical advances**
  - UK-based experiments show that inequalities in prevention and follow-up can be **reduced/reverted** through public policy
- In **low-income** countries:
  - Access to health services is naturally better than no access to health services at all
  - Consumption of health services is sensitive to initial design conditions: geographical location, funding scheme, etc.

# NEXT SESSION:
# ETHICAL FOUNDATIONS OF PUBLIC HEALTH

**THANK YOU FOR YOUR ATTENTION**

# ETHICAL FOUNDATIONS OF PUBLIC HEALTH

## SESSION 4

# QUESTIONS

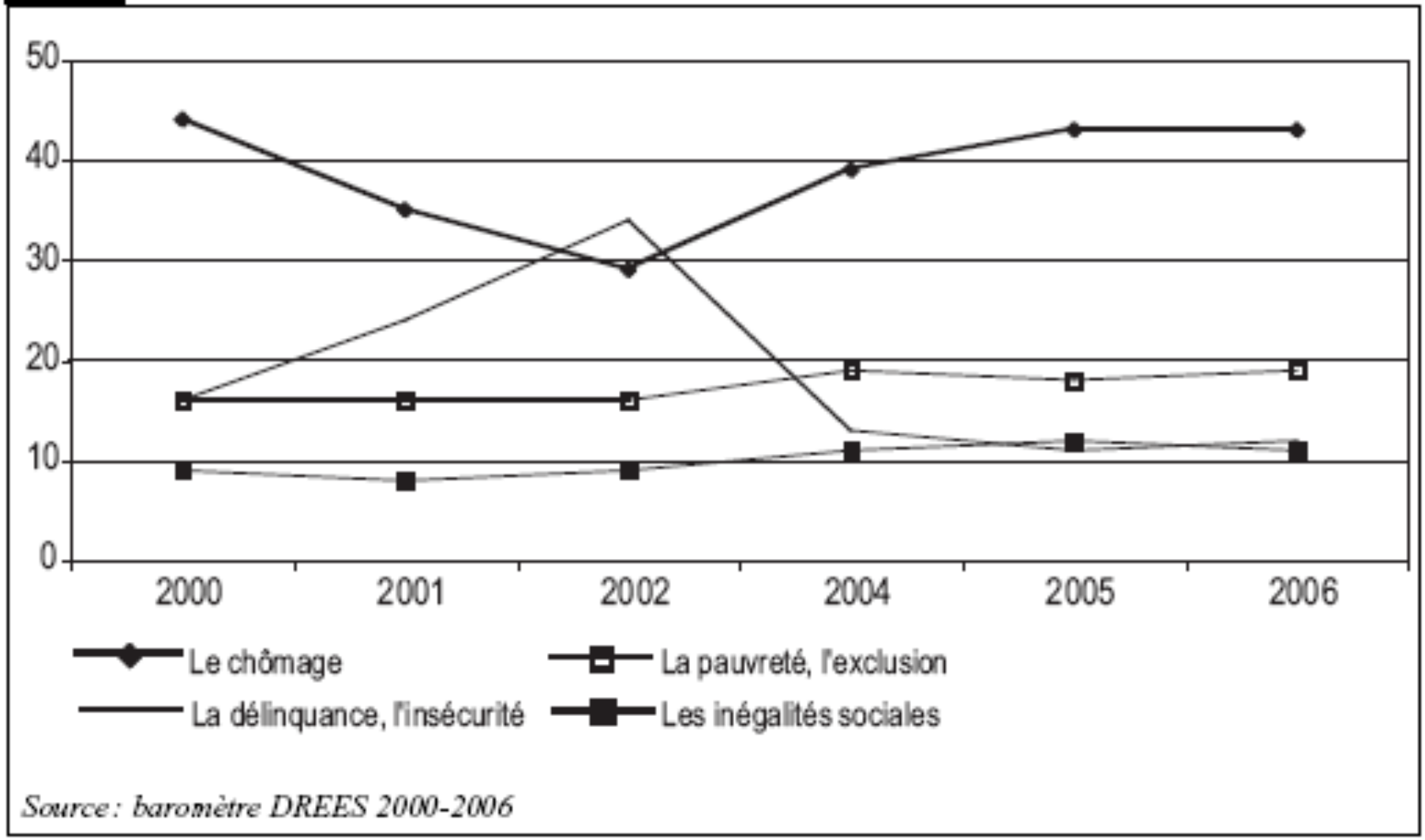
- Foundational statements
  - What is **human good**?
  - What influences **collective judgment**?
- Justice statements
  - What is an **unfair** situation?
  - How much **freedom** should fairness entail?
- Policy statements
  - Do we have a **national mandate** to act?
  - Shall we seek **international stewardship**?

**T • 01** les inégalités les plus répandues et les moins acceptables

| | Les inégalités les plus répandues | | | | |
|---|---|---|---|---|---|
| | 2000 | 2002 | 2004 | 2005 | 2006 |
| De revenus | 67 | 65 | 59 | 61 | 56 |
| De logement | 26 | 33 | 31 | 33 | 36 |
| Par rapport au fait d'avoir un emploi | 28 | 22 | 28 | 29 | 30 |
| Liées à l'origine ethnique | 16 | 17 | 20 | 22 | 22 |
| D'accès aux soins | 16 | 16 | 17 | 15 | 15 |

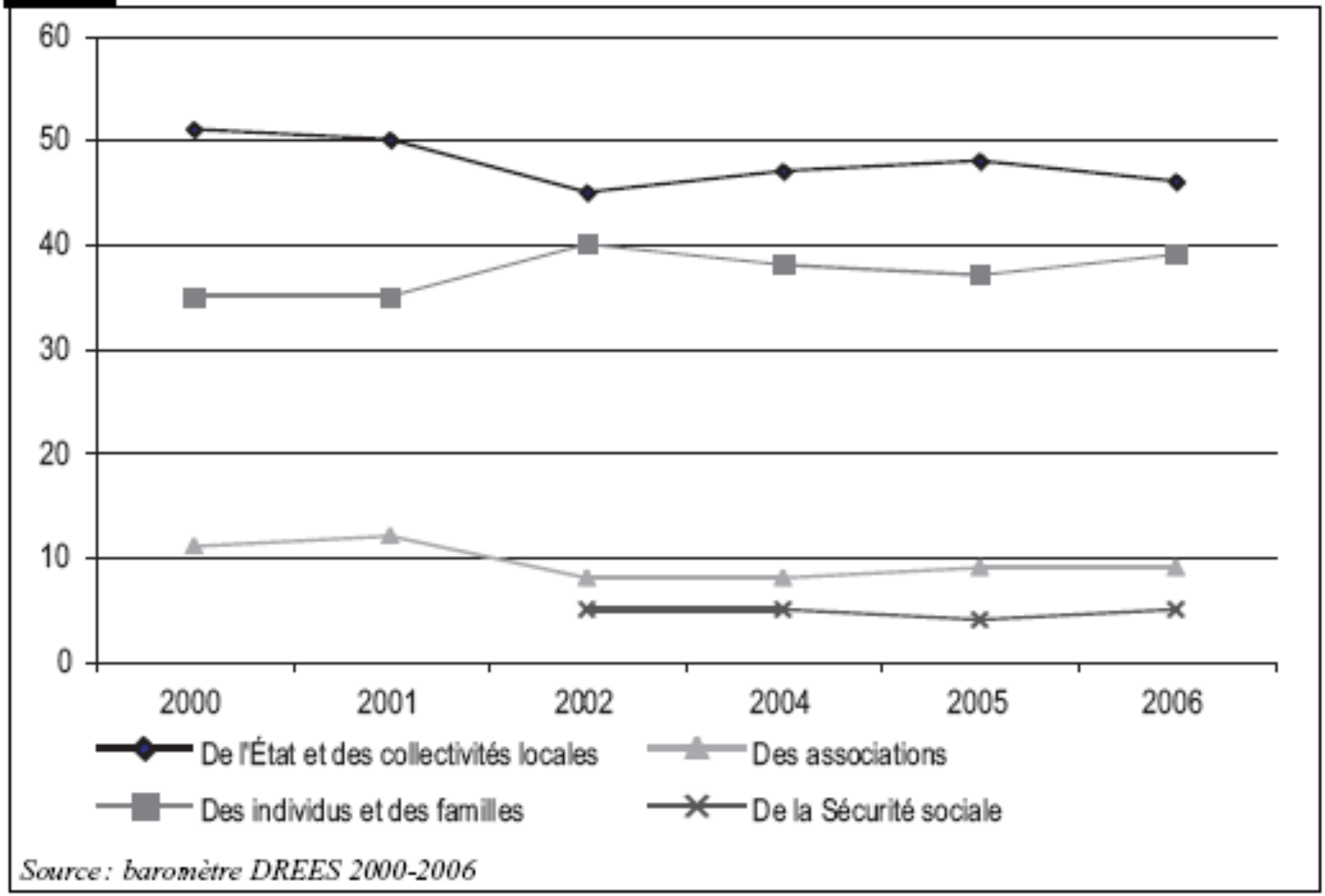
*Source : baromètre DREES, 2000-2006*

**G •01** selon vous, quels sont les problèmes dont il faut s'occuper en priorité ?




*Source : baromètre DREES 2000-2006*

**G •04** selon vous, en France, la solidarité, c'est l'affaire avant tout de…?




*Source : baromètre DREES 2000-2006*

# HUMAN GOOD AND RIGHT

- **Desire formation**
  - What is objectively good to humans?
    e.g. absence of addiction
  - Do we want people to provide subjective accounts of human good?
    e.g. heroin intake
  - Hybrid approach: autonomously formed judgments that identify objective sources of good
- **Additional biases**
  - Psychology of ethics: shame, stigma, disgust
  - Priorities in equality measures: income, health, housing...
  - Responsibility and human agency
  - Beliefs about welfare aversion

# RAWLSIAN APPROACH
## PRINCIPLES: PRIMARY GOODS, FAIRNESS, DIFFERENCE

- **Justice as fairness** (Rawls):
  - Identical 'indefeasible claim to a fully adequate scheme of equal basic liberties' for all individuals;
  - Social and economic inequalities are to satisfy two conditions:
    (1) attached to open positions under fair equality of opportunity
    (2) aimed at greatest benefit of the least-advantaged
- **Application** (Daniels):

  "Health inequalities between social groups count as unjust or unfair when they result from an unjust distribution of the socially controllable factors that affect population health and its distribution."
  - Assure equality of opportunity by supporting human capital
  - Make the worst off groups as well off as possible

# SEN APPROACH
## PRINCIPLES: CHOICE, CAPABILITY, EQUITY

- **Capability sets** (Sen): choice is preferable insofar as the presence of an alternative provides agents with a choice.

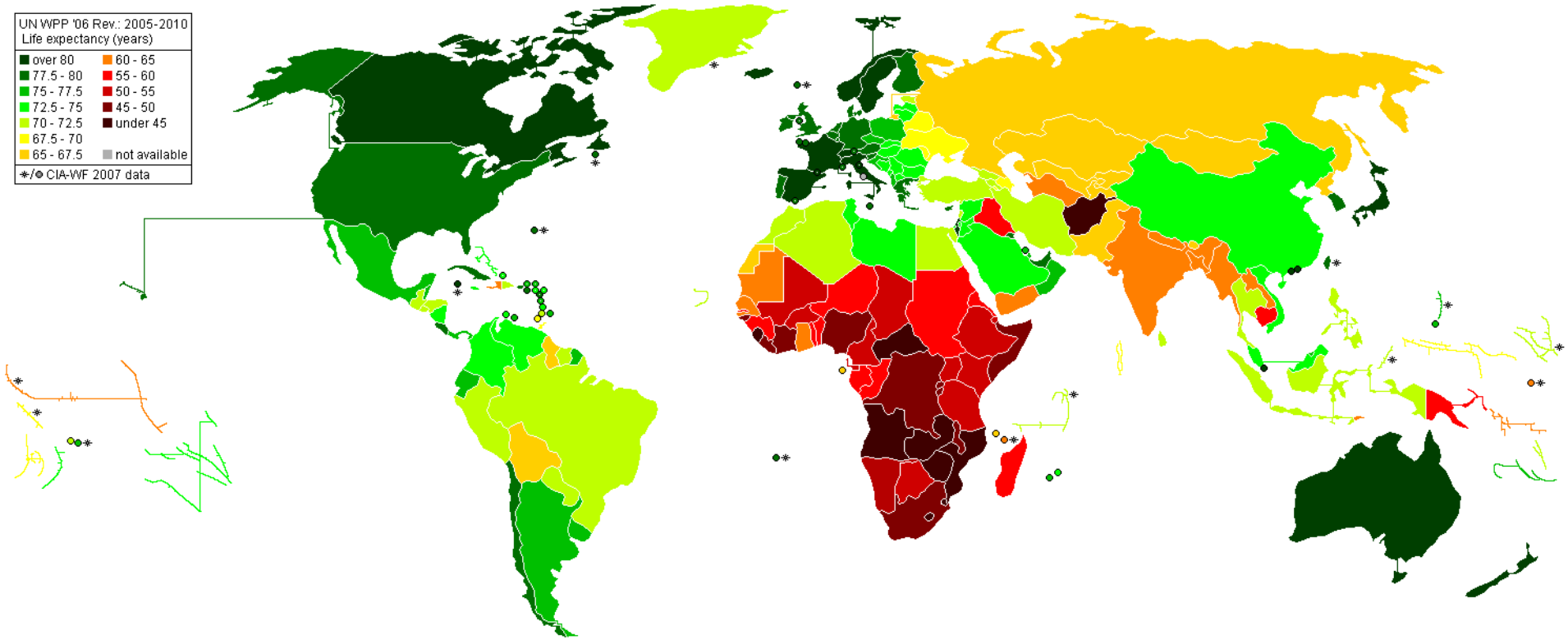
$$x \in \{x, y\} \succ x \in \{x\}$$

$$\Leftrightarrow not\ \ eating \in \{\underline{fasting}, eating\} \succ not\ \ eating \in \{\underline{starving}\}$$

- **Policy translation** (Ruger):
  - Human flourishing is the cardinal value
  - Ability to function is the standard of measurement
  - Health is valuable intrinsically as well as instrumentally

- **Current consensus** on health equity is enforced by recent WHO policy reports, e.g. CSDH 2009.

# INTERNATIONAL HEALTH INEQUALITIES
## LIFE EXPECTANCY, 2005–2009




**SOURCE:** UNDP/WHO/CIA, 2005–2009

# POLICY CHALLENGES

## ADAPTED FROM DANIELS (2008)

- **Principled intervention**: Is there an obligation of justice to reduce international health inequalities?
- **Opt-out clause identification**: Do those obligations hold regardless of how the inequalities came about?
- **Institutional mandate**: What organizations are to be held accountable for addressing international health inequalities?

# POLICY SOLUTIONS
## ADAPTED FROM DANIELS (2008)

- '**Health as a human right**' does not work:
  - International obligations to secure human rights fall primarily on nation-states, relegating international mandates to secondary roles
  - Required structural, legal and institutional changes go beyond the human rights and humanitarian assistance mandates
  - Right to health and health care is considered only as 'progressively realizable' by international organizations
- **Potential strategies** :
  - **Minimalist**: define an international obligation to avoid harm (instead of support aid) and a set of negative duties, e.g. medical brain drain, access to drugs
  - **Relational**: summon international rule-making bodies to solve interdependency conflicts, e.g. Britain hiring African nurses (relational, yet *contra* statist argument)

# POLICY SOLUTIONS

## ADAPTED FROM RUGER (2009)

- **Global health justice**:
  - General duty of assisting others in promoting health capabilities
  - Specific duties regarding responsibilities and health agency
- **Global health equilibrium**:
  - Global health institutions like the WHO should seek to turn provincial forms of consensus into a global one

# NEXT SESSION:
# POLITICS OF HEALTH INEQUALITIES

**THANK YOU FOR YOUR ATTENTION**

# POLITICS OF HEALTH INEQUALITIES

**SESSION 5**

# POLITICAL INTERVENTION

- **Macro-foundations**
  - Are health inequalities a just cause?
  - Do health inequalities fall into the state mandate?
  - Is there an international mandate for health inequalities?
- **Meso-foundations**
  - Can we identify effective strategies to tackle health inequalities?
  - Are these strategies implementable in the current economy?
  - Is the political regime receptive to (health) inequality?
- **Micro-foundations**
  - How does (health) inequality fit into office-seeking/keeping?
  - Which social groups are mobilized against health inequalities?
  - What kinds of policy responses can states articulate?

# ANALYTICAL DIMENSIONS

- **Structural factors**:
  - Political regime: authoritarian / democratic
  - Political systems: electoral competition, partisanship, veto points
  - Welfare states: residual/Beveridgian/Bismarckian
  - Health care states: consumption, professionals, technology
  - Varieties of capitalism: liberal/coordinated
  - Varieties of regulation: directive/regulatory
- **Process factors**:
  - Problematization: framing
  - Agenda-setting: attention, sponsorship
  - Coalitions: issue networks, veto players
  - Adoption settings: commitment, autonomy

# POLICY EFFECTIVENESS

- **Assuming health inequalities are a just cause:**
  - **upstream**, redistributive policies can help reducing inequalities in income and education
  - **intermediary** policies can help reducing unequal exposures to risk factors, in both occupational and lifestyle environments
  - **downstream** policies can help reducing inequalities in access to clinical and preventive care
- **Assuming health inequalities are elevated onto the agenda:**
  - **problem perspectives** need to match to some extent for governmental involvement to follow the scientific evidence
  - **credible commitment** needs to be matched by idiosyncratic acts and heightened attention within public opinions
  - **policy sustainability** comes in the form of autonomous, renewable programmes and strategies

# FRENCH CASE STUDY

- **Problem perspectives** do not match
  - 1992: government focus on access to health care
  - 1994: High Committee of Public Health tries to rectify bias
  - 1998: anti-exclusion law shows no bias modification
  - 2000: policy enactment is limited to universal access to health care
- **Credible commitment** stays limited
  - 1997: scientific programmes heighten focus on health inequalities
  - 1999: national conference on health fails to prioritize them
  - 2004: public health law adopts few indicators with little evaluation
  - 2005: EU priority fails to produce any effect on national policy
  - 2009: inequalities are part of discourse, not policy
- **Policy sustainability** remains fragmented
  - c. 2007: inequalities are spread across public health programmes
  - c. 2009: attention to inequalities is cyclical rather than systematic

# DUTCH CASE STUDY

- **Problem perspectives** match to some extent
  - 1995: population-level health inequalities are acknowledged
  - 2001: population targets are preferred over the health gradient
- **Credible commitment** is obvious
  - 1980–1986: political debate starts mentioning health inequalities
  - 1989–1995: research programmes develop
  - 1995–2001: local experiments are run and evaluated
- **Policy sustainability** has become institutionalized
  - 2001: quantified targets established for 2010
  - 2000s: school prevention, psychiatric networks

# SIC TRANSIT GLORIA MUNDI

**THANK YOU FOR YOUR ATTENTION**