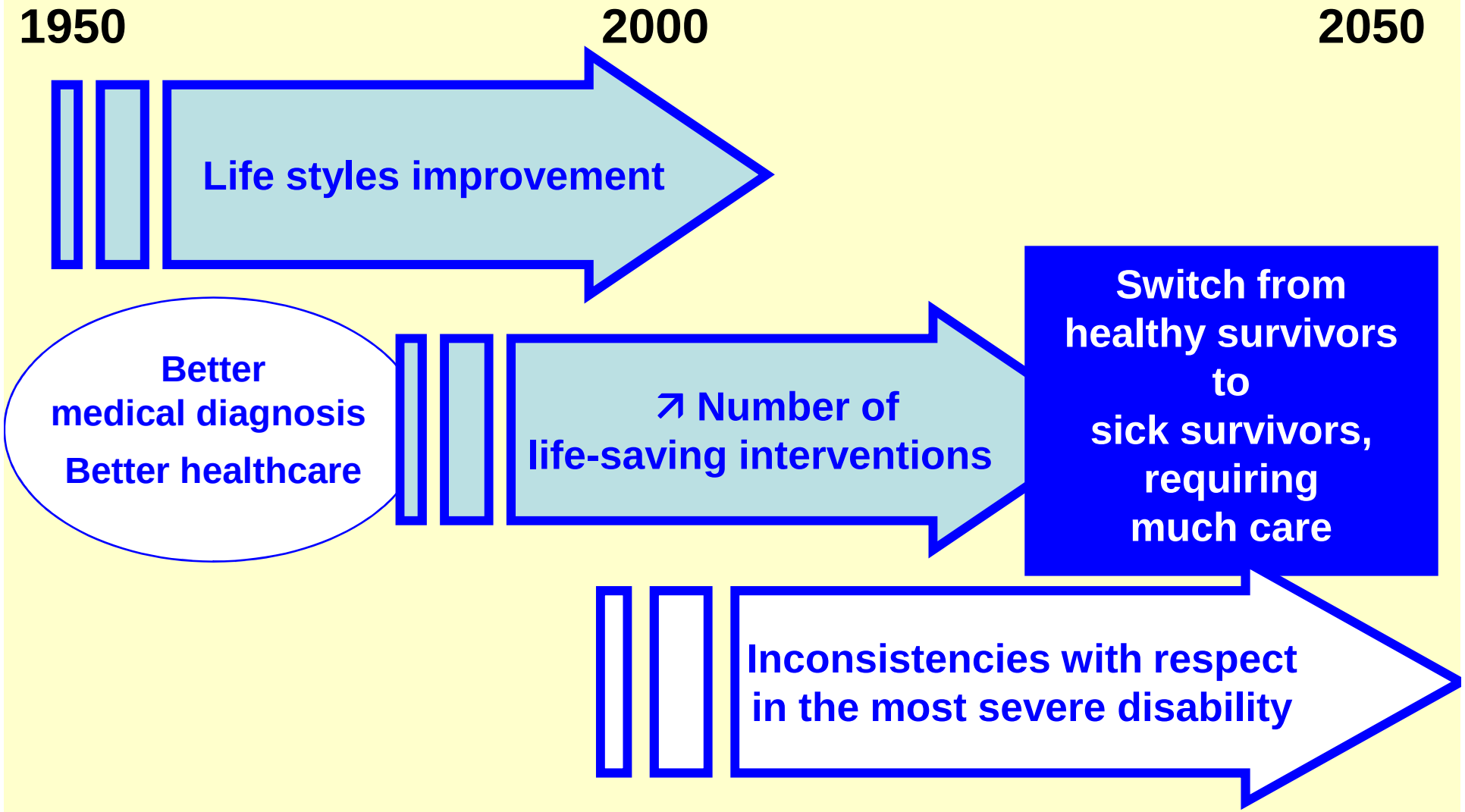
REVES Meeting 2010 - La Havana - Cuba

Alternation of compression and expansion of disability: geriatric perspectives

Jean-Pierre MICHEL – Geneva – Switzerland

The challenge of geriatric care



FREEDMAN VA et al Demography 2004; 41: 417-41

ROSÉN M et al Scandinav J Public Health 2005; 33: 151-5

Inconsistencies with respect to the most severe disability

Age adjusted decline in the prevalence of ADL disability

National Long Term Care Survey (NLTCS)

MANTON KG et al Proceed Nat Acad Sciences 2001; 98: 6354-59

No significant change in ADL disability

National Health Interview Survey (NHIS)

CRIMMINS EM et al J Gerontol 1997 52B: S59-71

SHOENI RF et al J Gerontol 2001; 56B: S206-18

Medicare Current Beneficiary Survey (MCBS)

WAIDMANN T et al J Gerontol 2000; B55; S298-307

Increase in ADL disability for men and women

Supplements on Aging to the NHIS

CRIMMINS EM et al Demographic Res 2000; 39

LIAO Y et al J Am Geriatr Soc 2001; 49:443-9

Resolving inconsistencies in trends in old-age disabilities

Discussion of the survey quality:

CONCEPTS & MEASUREMENTS
as well as
DATA ANALYSIS

FREEDMAN V , CRIMMINS E, SCHOENI R. PILLMAN C et al
Demography 2004; 41: 417-41

2002 & 2004

2004

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GENERAL THEORY OF AGEING

ROBINE JM et MICHEL JP J Gerontol 2004; 59: M590-7

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1. Criteria for evaluating surveys
2. Causes of survey inconsistencies

Criteria for evaluating surveys of recent trends in self-reported disability and functioning among older US adults

FREEDMANN VA et al Jama 2002; 288: 3137-46

Concepts, survey design
Design
Population coverage & sample size
Width in time frame
Frequency of measurements
Comparability of interview methods
Quality of outcome measures
Loss to follow-up
Proxy
Missing data

FREEDMAN VA, SOLDO BJ
Forcasting disability: workshop summary
National Academiy Press; Washington 1994

WALDMANN T, MANTON KG
International evidence on disability trends
US department of health and human services
Washington 1998

FREEDMANN VA et al
Jama 2002; 288: 3137-46

Criteria for evaluating surveys of recent trends in self-reported disability and functioning among older US adults

FREEDMANN VA et al Jama 2002; 288: 3137-46

Criteria	Good	Fair	Poor
Design	Independent repeat cross-sections	Panel design with aged in cohort	Other
Population coverage	National including institutionalized	National, non institutionalized	Non National, non institutionalized
Width in time frame	≥ 8 years	6 to 7 years	≤ 5 years
Frequency of measurements	Annual or ≥ 5	Every 2 years or 3 to 4 times	> Every 2 years or 2 times
Comparability of interview methods	Identical	Change in mode	Change in disability or function questions
Quality of outcome measures	Detailed self-reports	Global self-reports	
Loss to follow-up	Not applicable	> 5 to 10%	> 10%
Proxy	< 10%	10 to 20%	> 20%
Missing data	< 5%	5 to 10%	> 10%
Sample size	Large enough to detect change 1 to 2% per y.	Large enough to detect change 3 to 4% per y.	Not large enough

Summary of US Study Evaluations (N=8)

- **GOOD (N = 2)**

National Long Term Care Survey (NLTCS) 1982-94 and 1982-99

MANTON KG et al Proc Natl Acad Sci U S A 1997;94:2593-8 & Proceed Nat Acad Sciences 2001; 98: 6354-59

National Health Interview Survey (NHIS)

CRIMMINS EM et al J Gerontol 1997; 52B: S59-71 & SHOENI RF et al J Gerontol 2001; 56B: S206-18

- **FAIR and GOOD (N = 1)**

1986 and 1993 National Mortality Followback Surveys

LIAO Y et al JAMA 2000;283:512-8

- **FAIR (N = 4)**

1993 Asset and Health Dynamics of the Oldest Old study and 1998 Health and Retirement Survey (HRS)

FREEDMAN VA et al J Gerontol B Psychol Sci Soc Sci 2001;56:S100-11 & J Gerontol B Psychol Sci Soc Sci 2002;57:S126-31.

Supplements on Aging to the NHIS (SOAs) 1984

CRIMMINS EM et al Demographic Res 2000; 39

National Health Interview Survey (NHIS) on Aging 1984 and 1994

LIAO Y et al J Am Geriatr Soc 2001;49:443-9

1992-1996 Medicare Current Beneficiary Survey (MCBS)

WAIDMANN T et al J Gerontol B Psychol Sci Soc Sci 2000;55:S298-307

- **POOR (N = 1)**

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↗ in the survival rates of the sick persons

⇒ expansion of morbidity

POPULATION AGEING

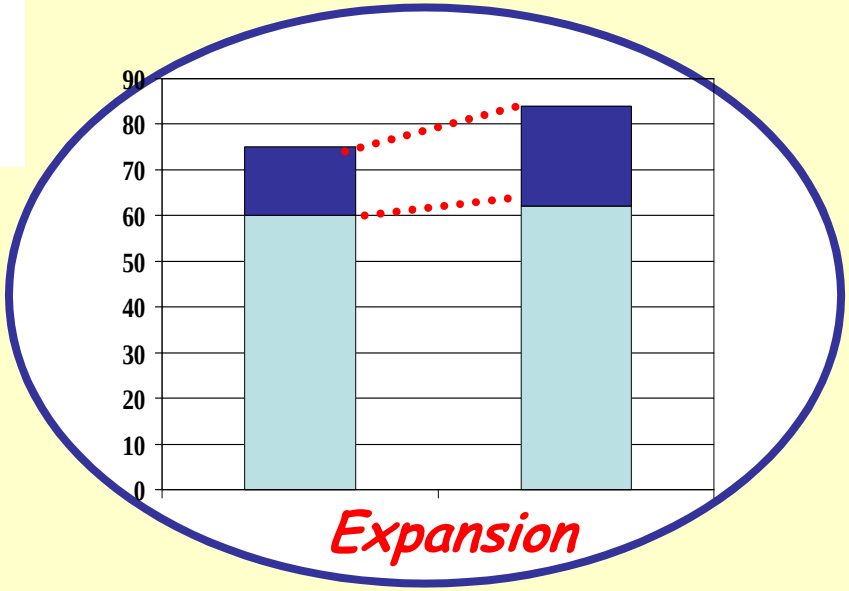
Hypothesis 2004

ROBINE JM et MICHEL JP J Gerontol 2004; 59: M590-7

POPULATION AGEING

↗ in the survival rates of the sick persons

⇒ *expansion of morbidity*



Hypothesis 2004

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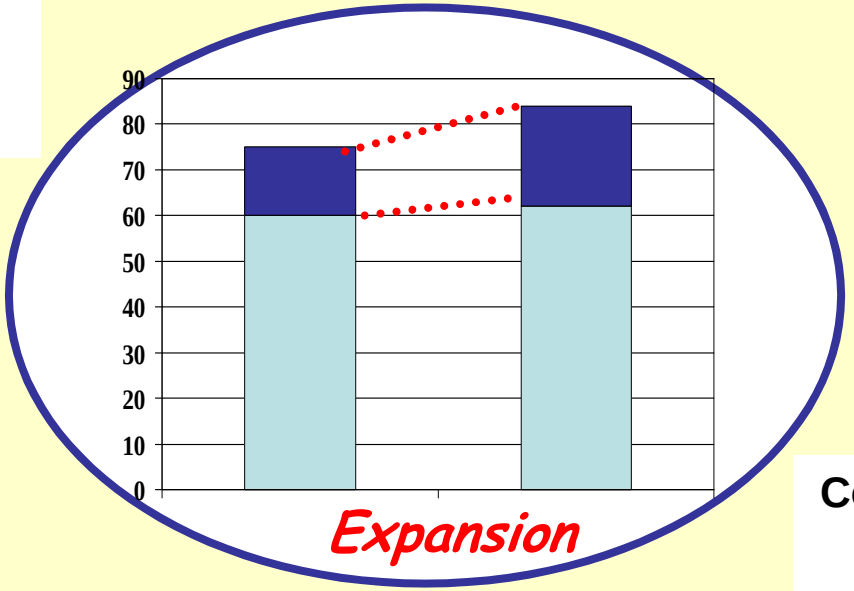

POPULATION AGEING

Control of the progression of chronic diseases

⇒ *equilibrium between mortality & disability*

Hypothesis 2004

ROBINE JM et MICHEL JP J Gerontol 2004; 59: M590-7

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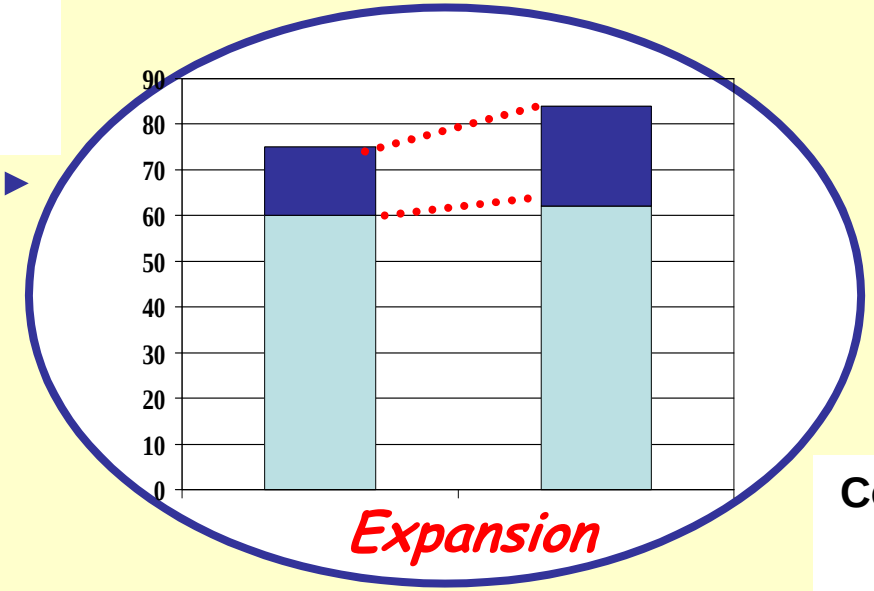

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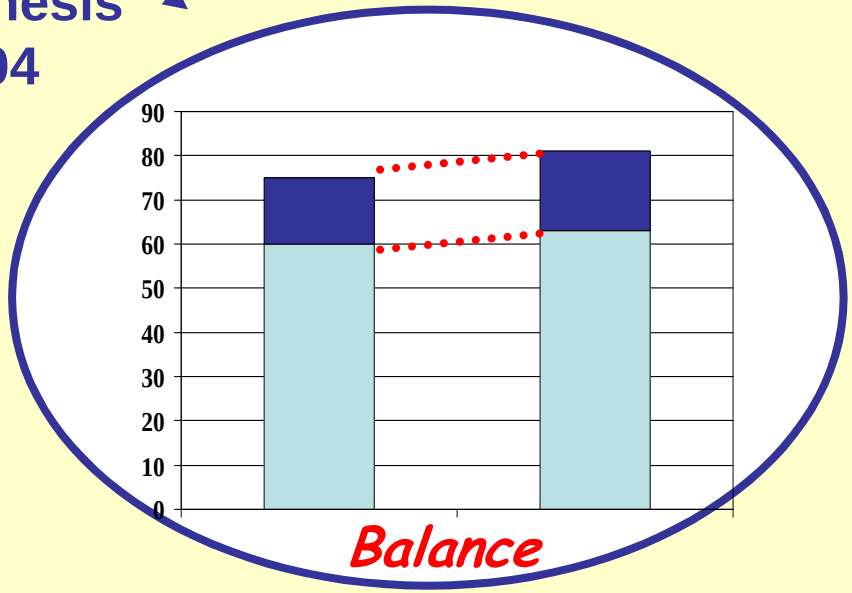

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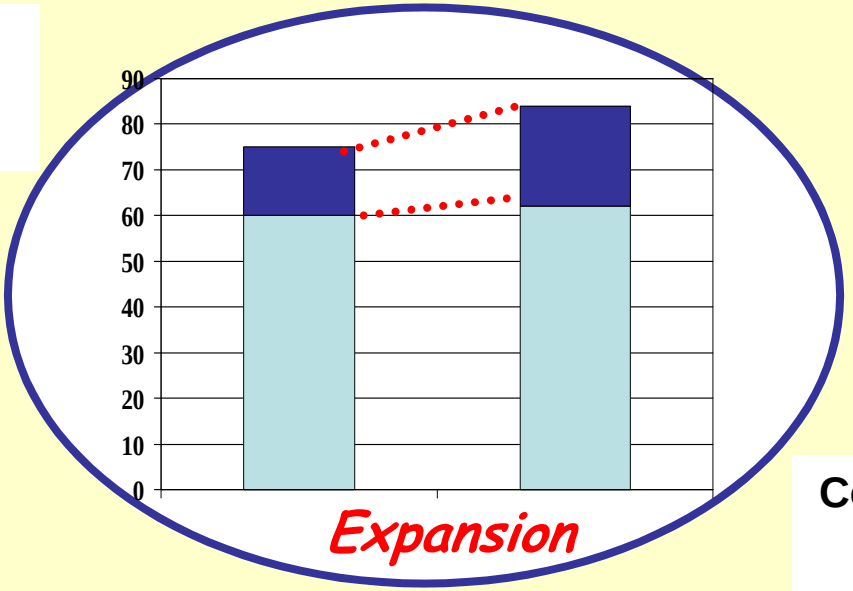

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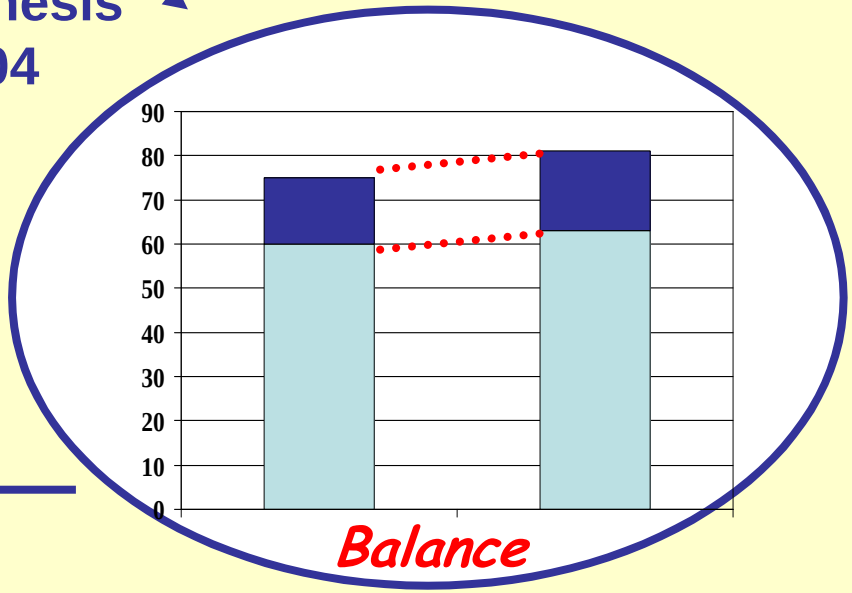

↗ of the health status and health behaviors of the new cohorts of old people ⇒ *The compression of morbidity*

POPULATION AGEING

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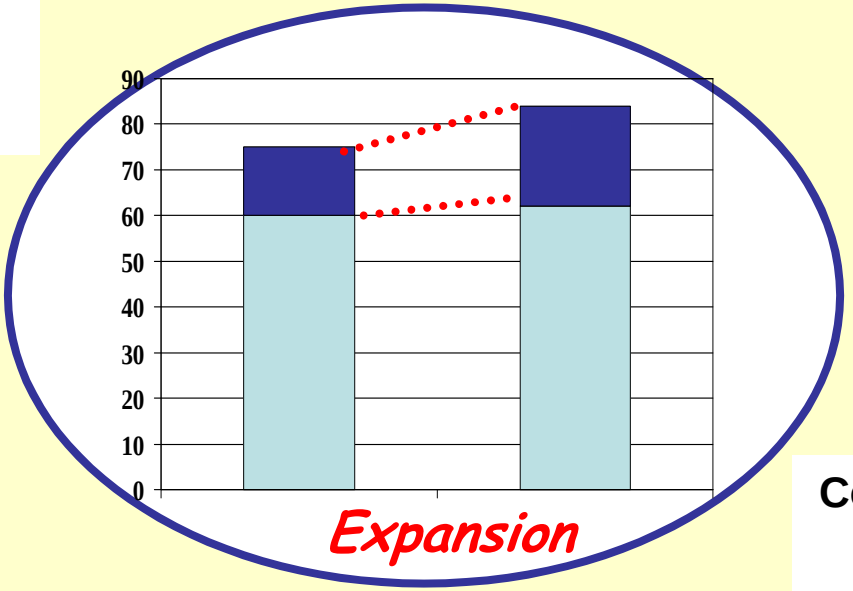

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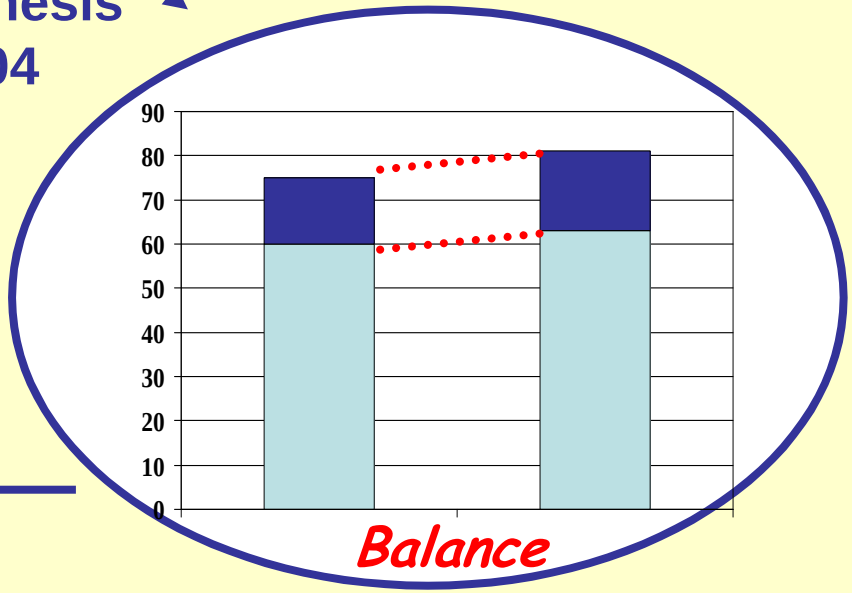

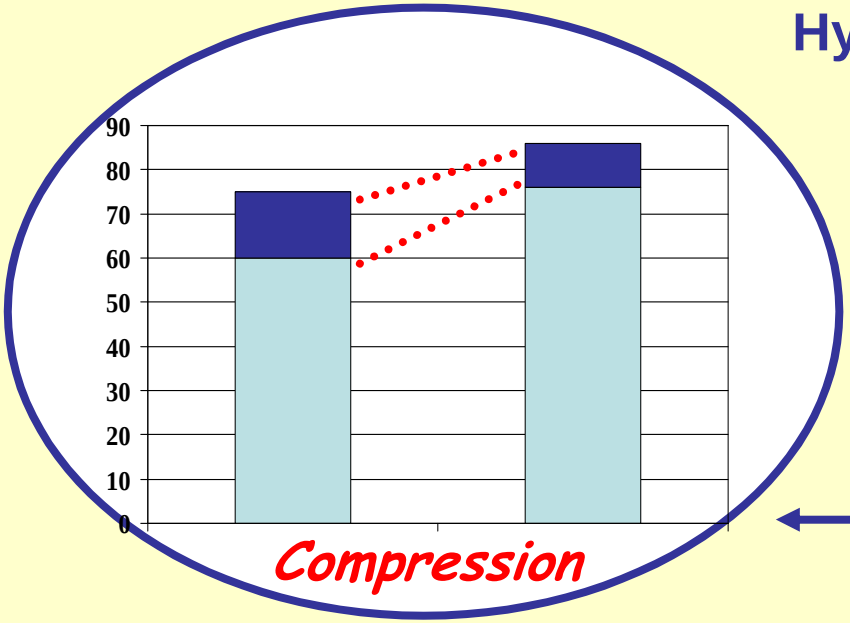

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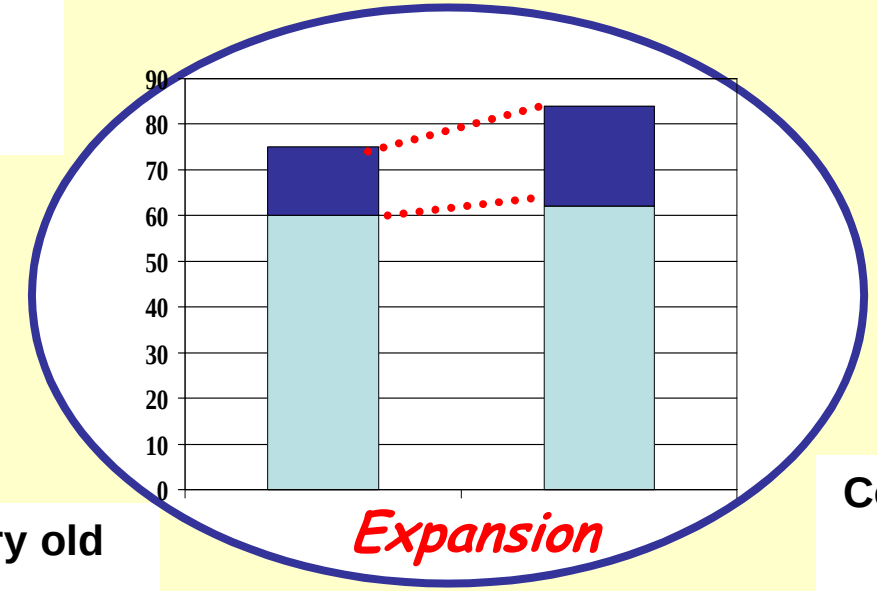
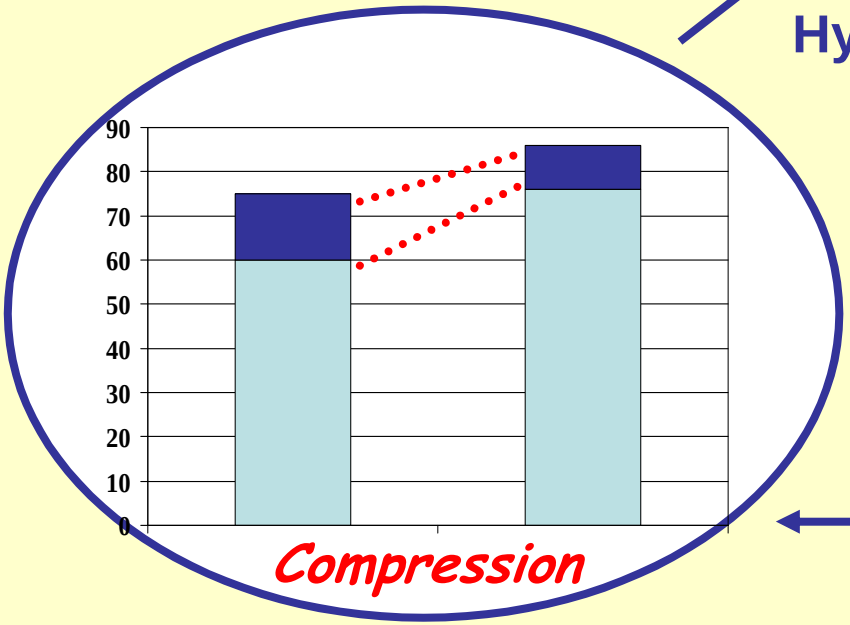
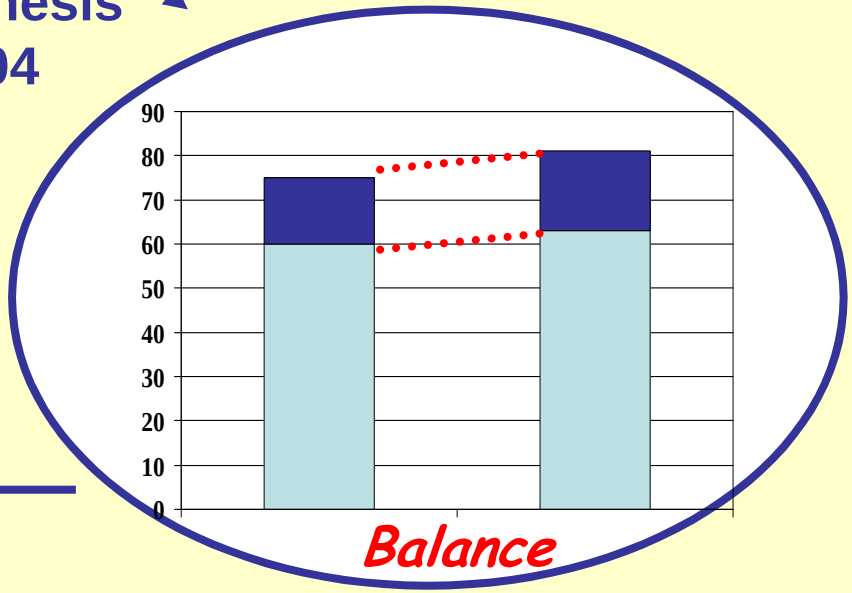


Control of the progression of chronic diseases
⇒ *equilibrium between mortality & disability*

An emergence of the very old and frail populations
⇒ *A new expansion of morbidity*

Hypothesis 2004





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2010:
Do the results of the published repeated cross sectional studies confirm or invalid this theory?

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ROBINE JM et MICHEL JP J Gerontol 2004; 59: M590-7

Recent repeated cross sectional surveys of LE, HLE & DFLE

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*** Self report HLE**

Criteria for evaluating surveys of recent trends in self-reported disability and functioning among older US adults

FREEDMANN VA et al Jama 2002; 288: 3137-46

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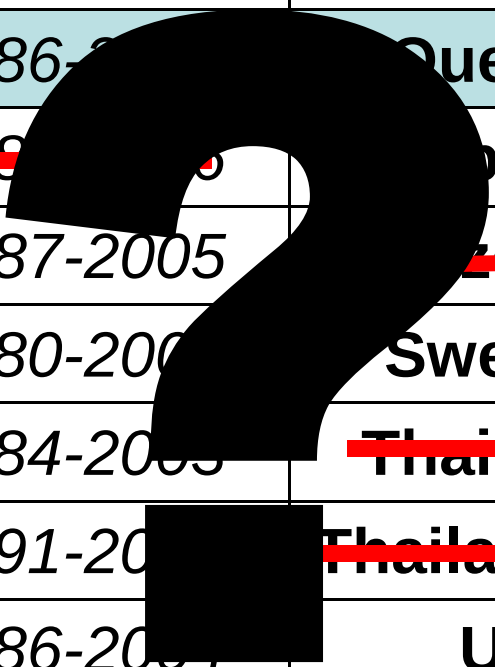

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Trends in old-age disabilities & perceived health

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Compression **Balance** **Pandemic** **Changes of trends**

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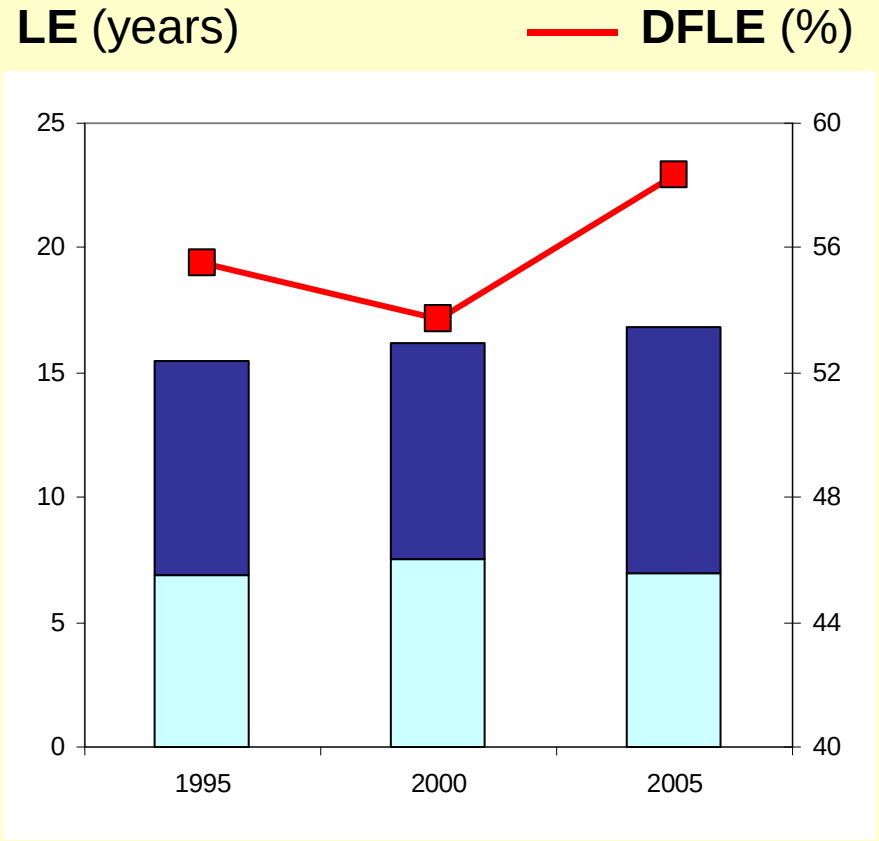
Belgium: Changes in trends



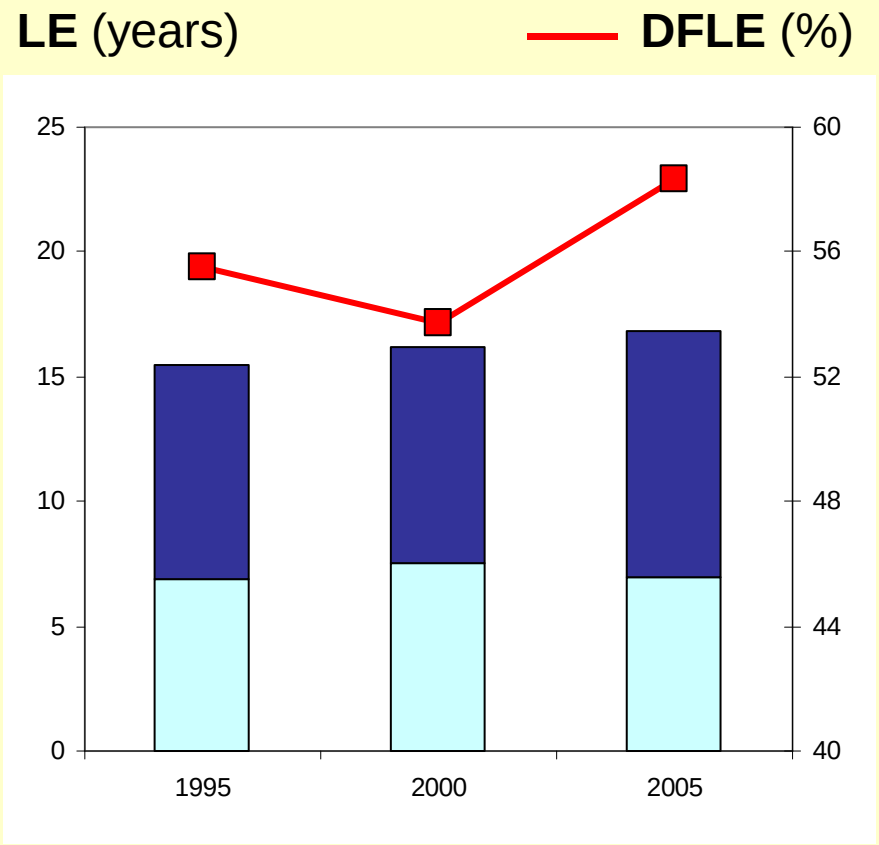
Men aged over 65 y.

Disability Free LE

LE with disability

VAN OYEN H et al Eur J Ageing 2008; 5: 137-46

Belgium: Changes in trends



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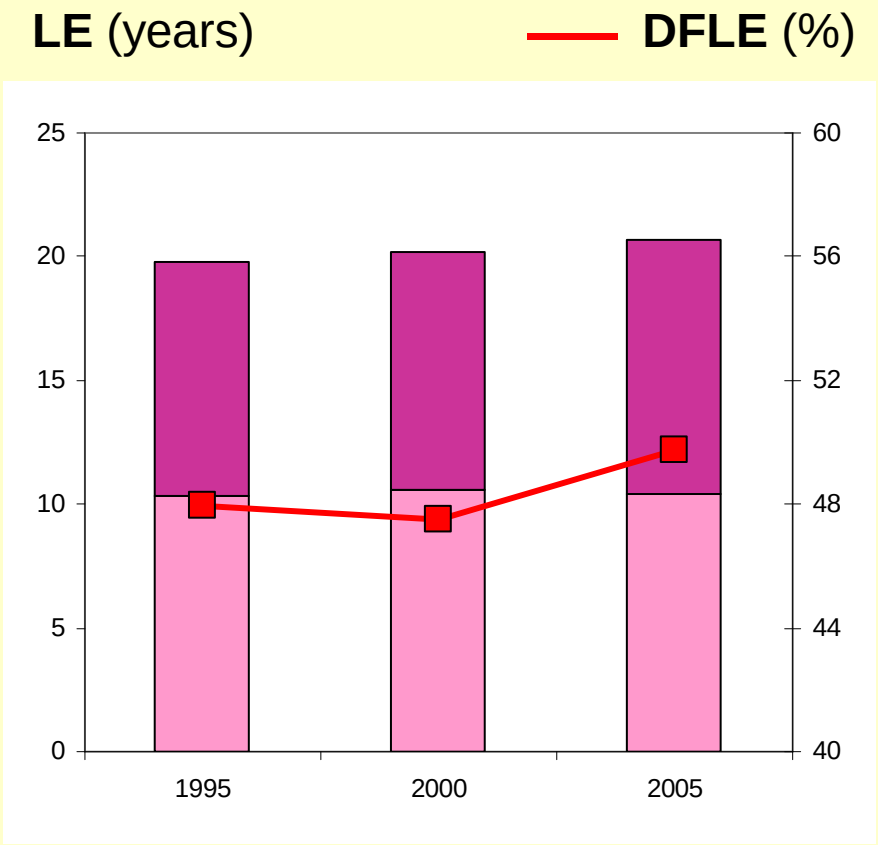

Women aged over 65 y.

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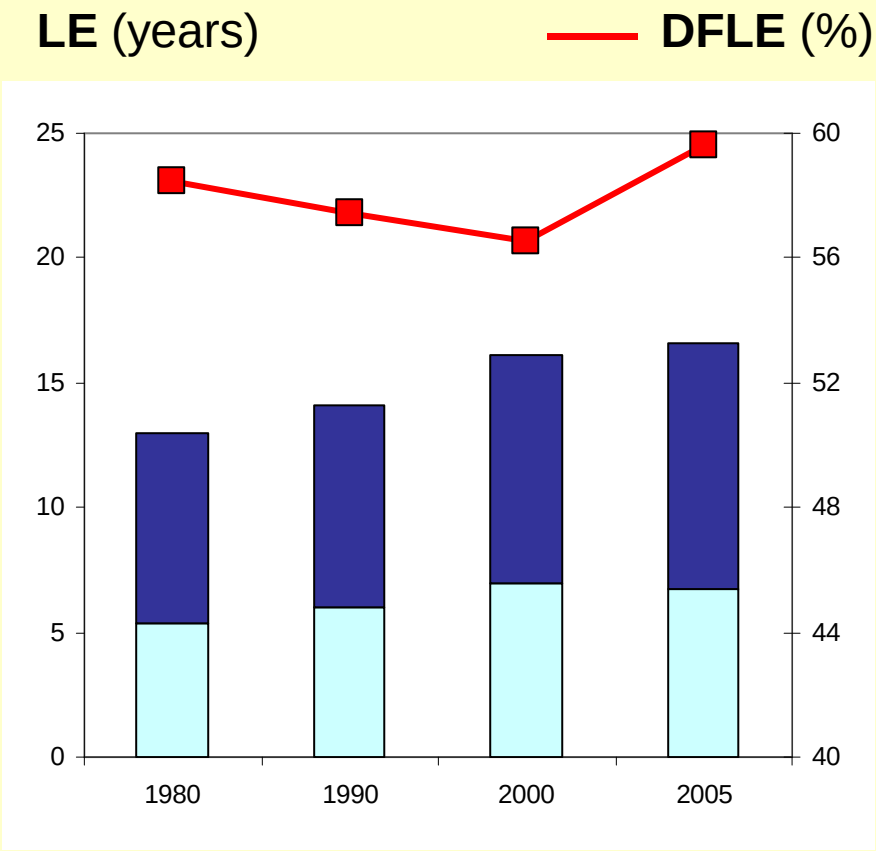
LE with disability

VAN OYEN H et al Eur J Ageing 2008; 5: 137-46

UK: Changes in trends



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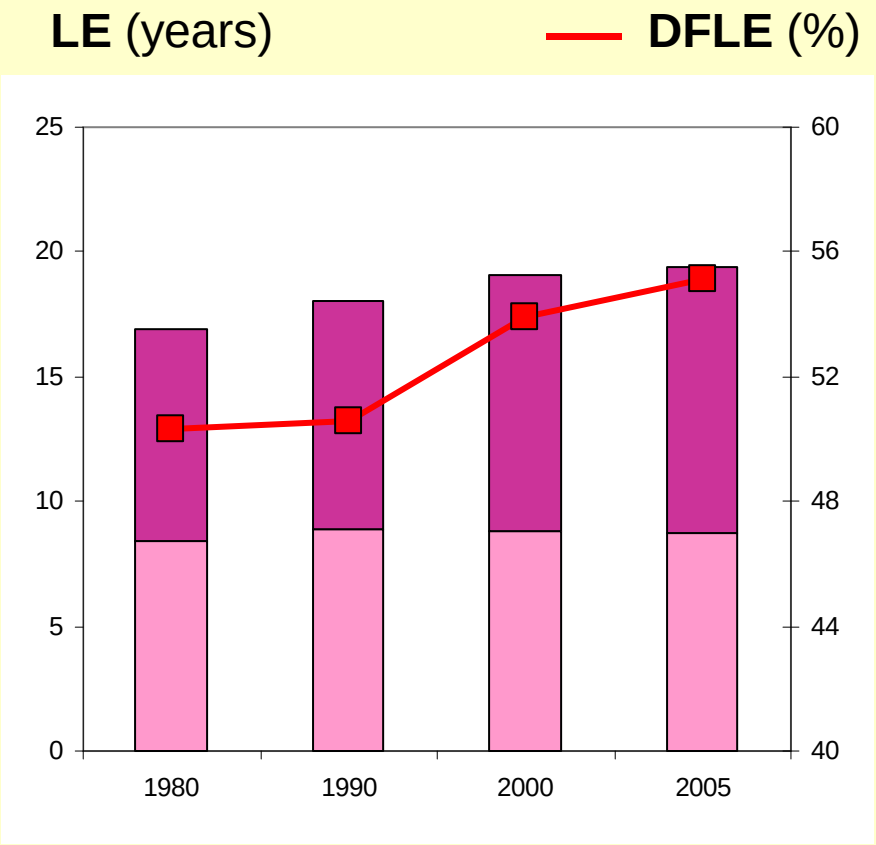

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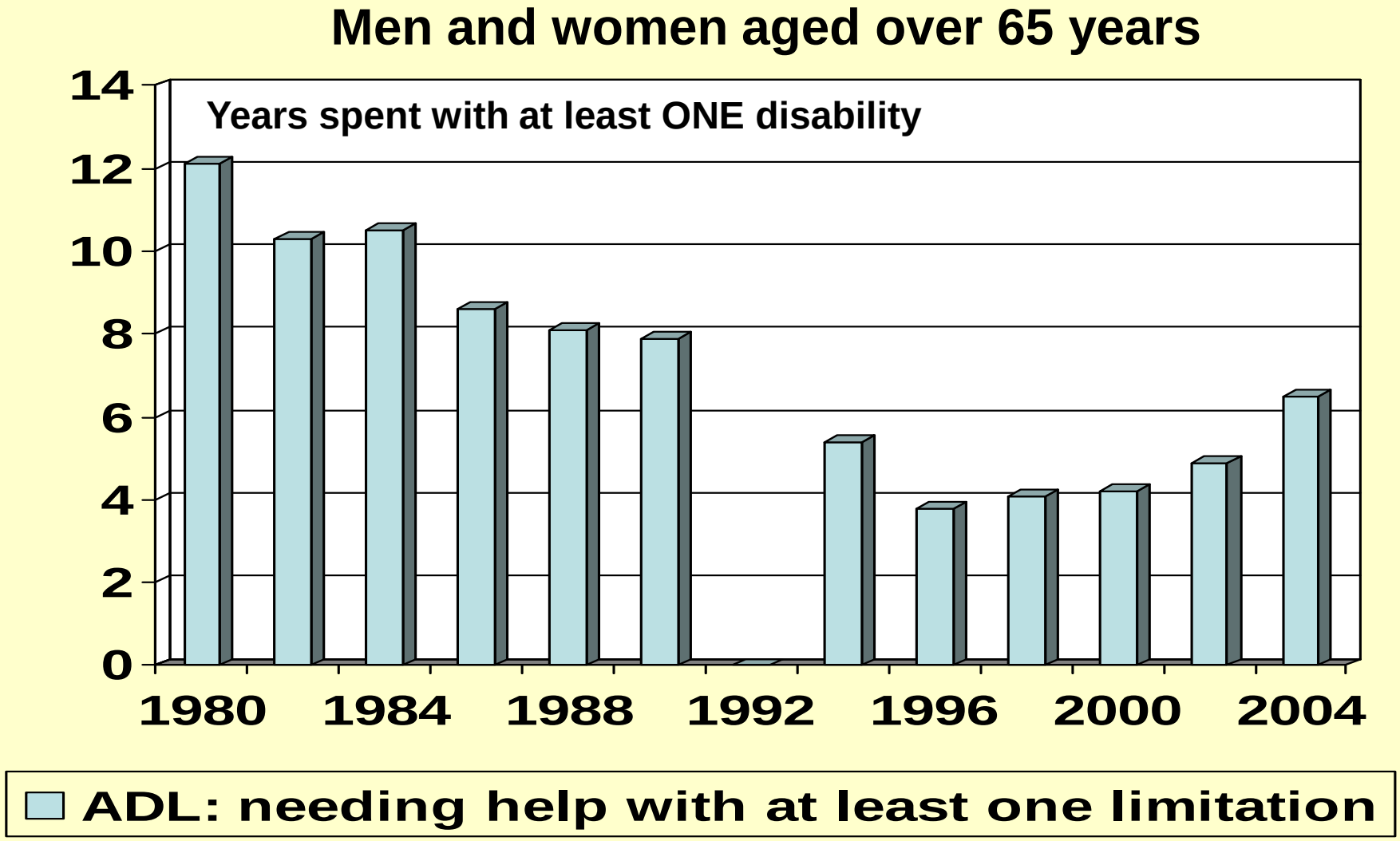
Disability Free LE

LE with disability

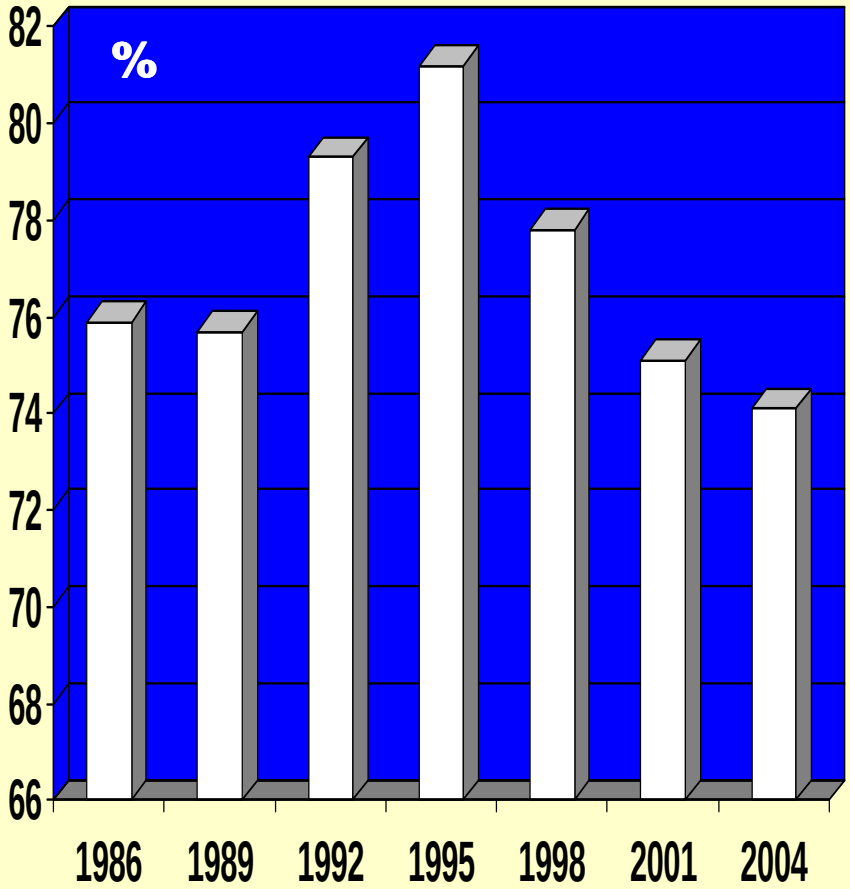
Health Statistics Quaterly 2006; 29 (Spring) 59-62 & 2008; 37 (Spring): 48-51

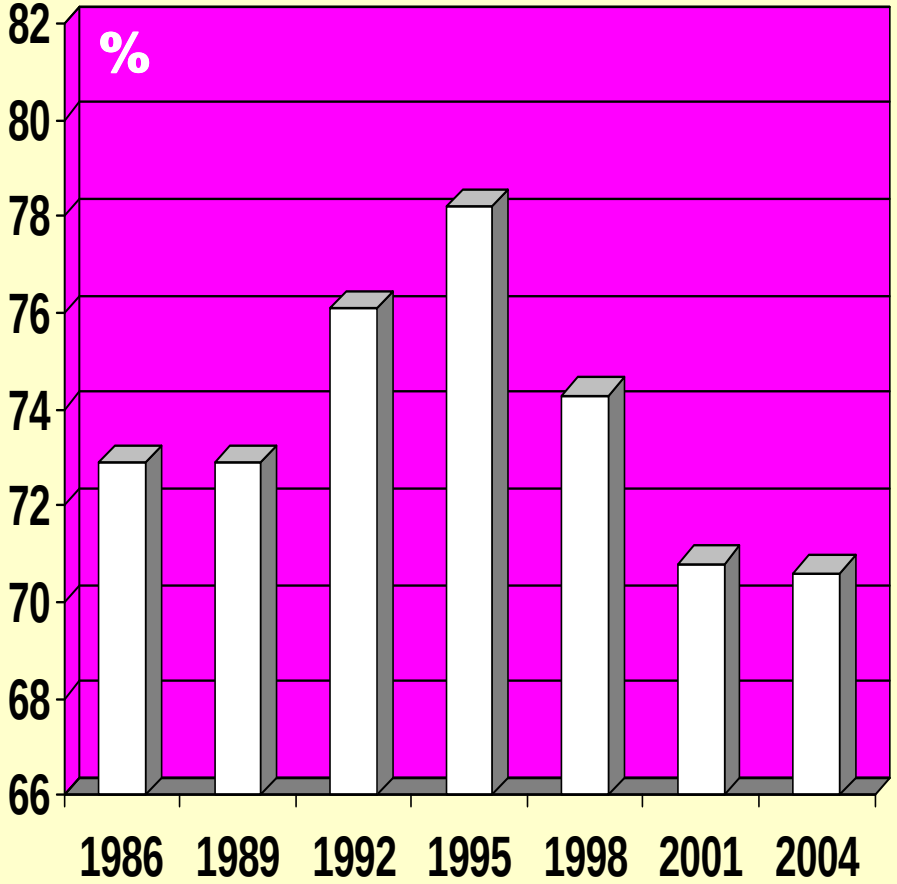
SWEDEN: Changes in trends



PARKER MG et al Eur J Ageing 2008; 5: 299-309

Japan: Proportion (%) in good or average health (HLE)





Men aged over 65 y.

Women aged over 65 y.

YONG V & SAITO Y Demographic Res 2009; 20: 467-94

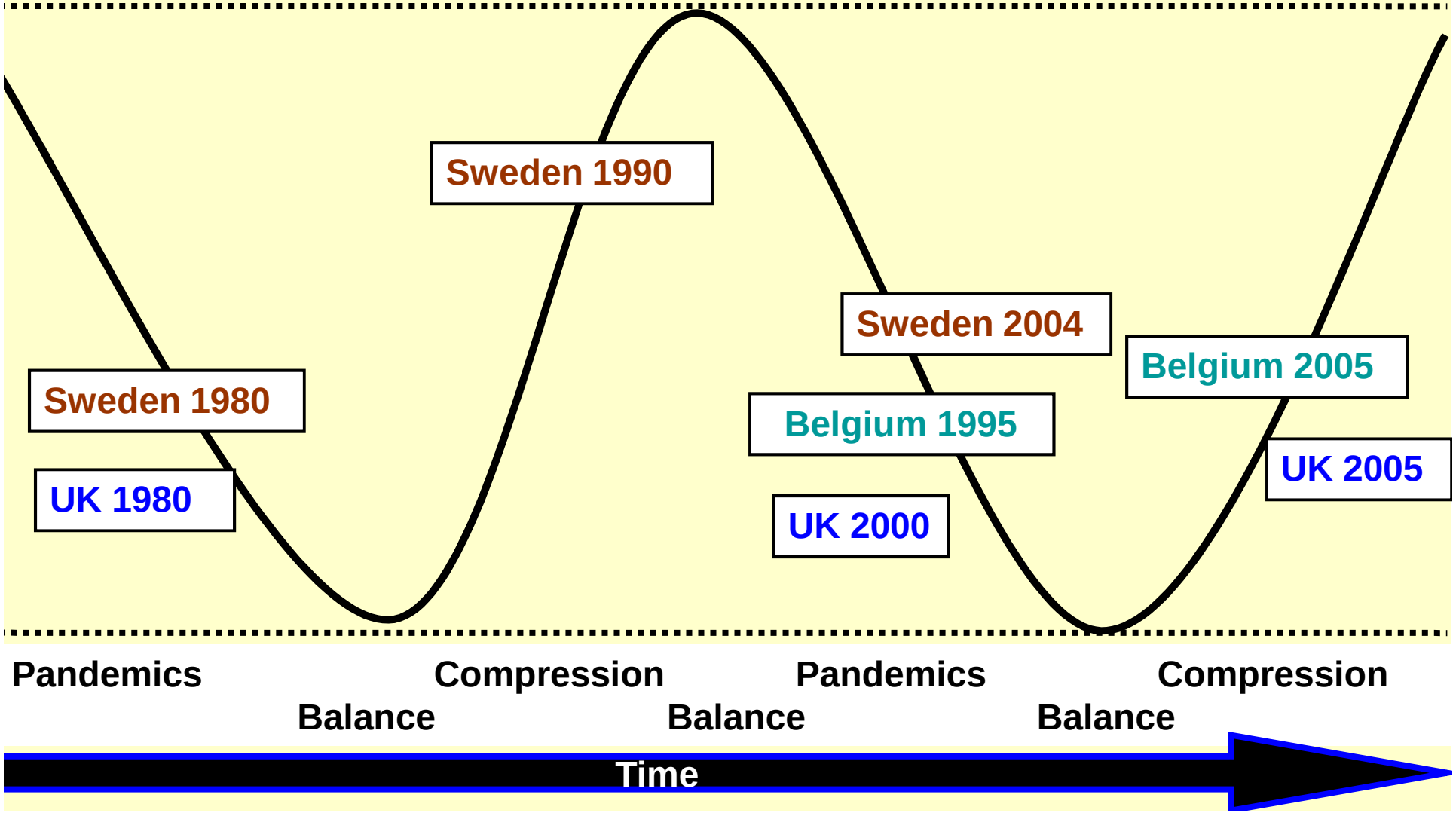
General theory of ageing
Ratio DFLE /LE

80s	90s	00s	2005
-	Belgium	-	Belgium
Sweden	Sweden	Sweden	Sweden
UK	UK	UK	UK

Compression Balance Pandemic Changes of trends

General theory of ageing

Ratio DFLE /LE



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Compression **Balance** **Pandemic** **Changes of trends**

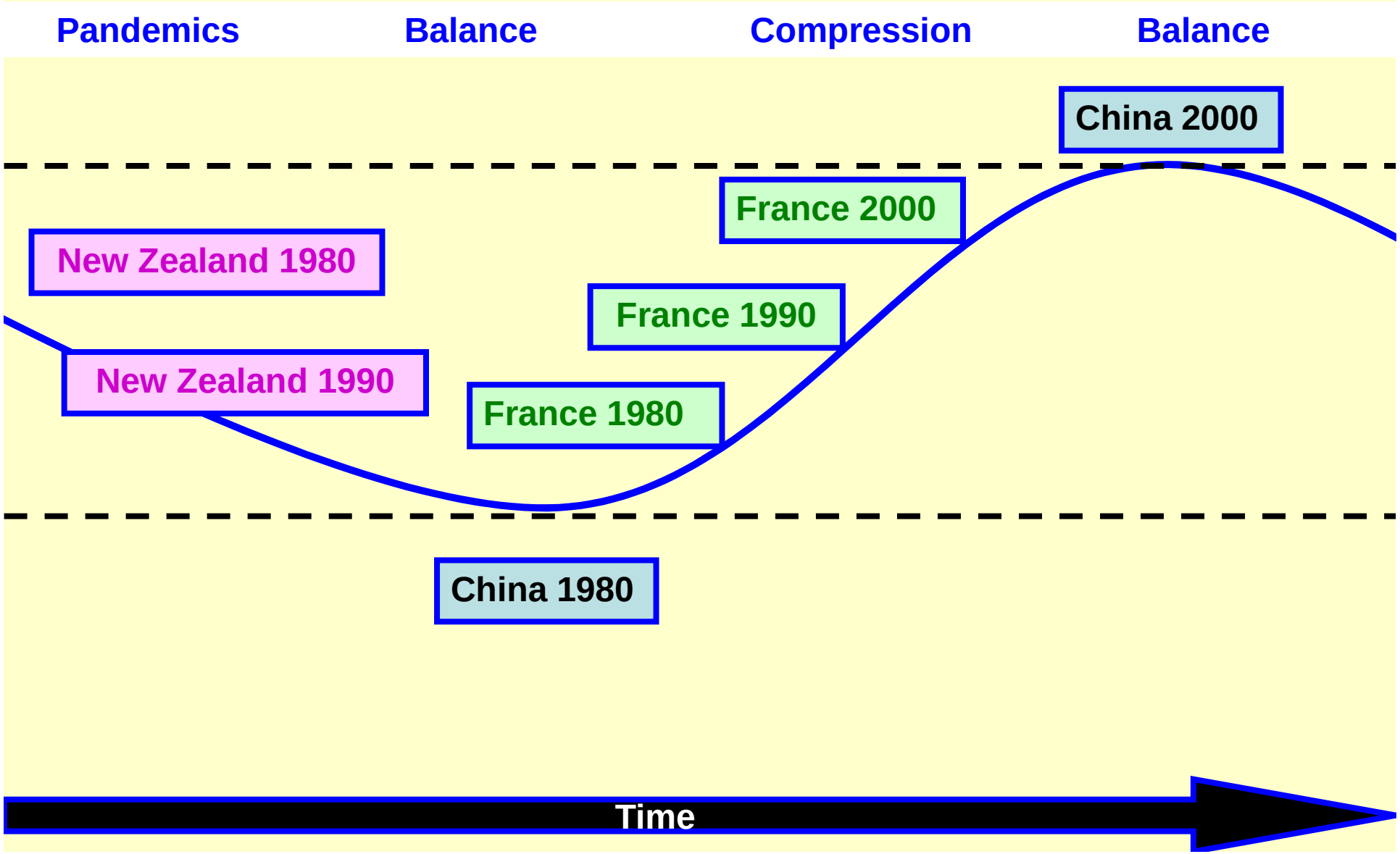
General theory of ageing
Ratio DFLE /LE

80s	90s	00s	2005
China	-	China	?
France	France	France	?
New Zealand	New Zealand	-	?

Compression Balance Pandemic Changes of trends

General theory of ageing

Ratio DFLE /LE



General theory of ageing
Ratio DFLE /LE

80s	90s	00s	2005
-	Belgium	-	Belgium
China	-	China	?
France	France	France	?
New Zealand	New Zealand	-	?
Sweden	Sweden	Sweden	Sweden
UK	UK	UK	UK

Compression Balance Pandemic Changes of trends

General theory of ageing

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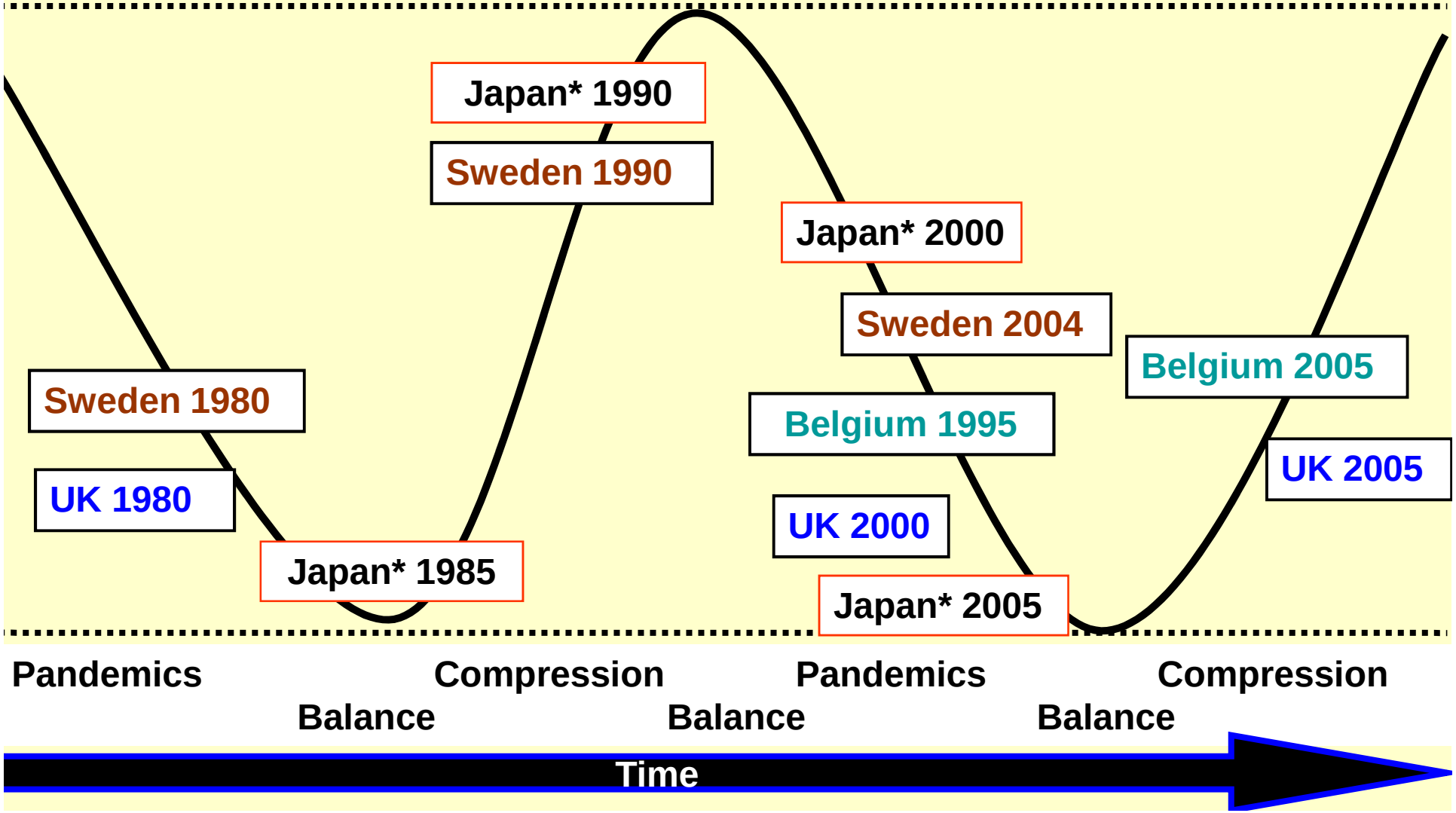

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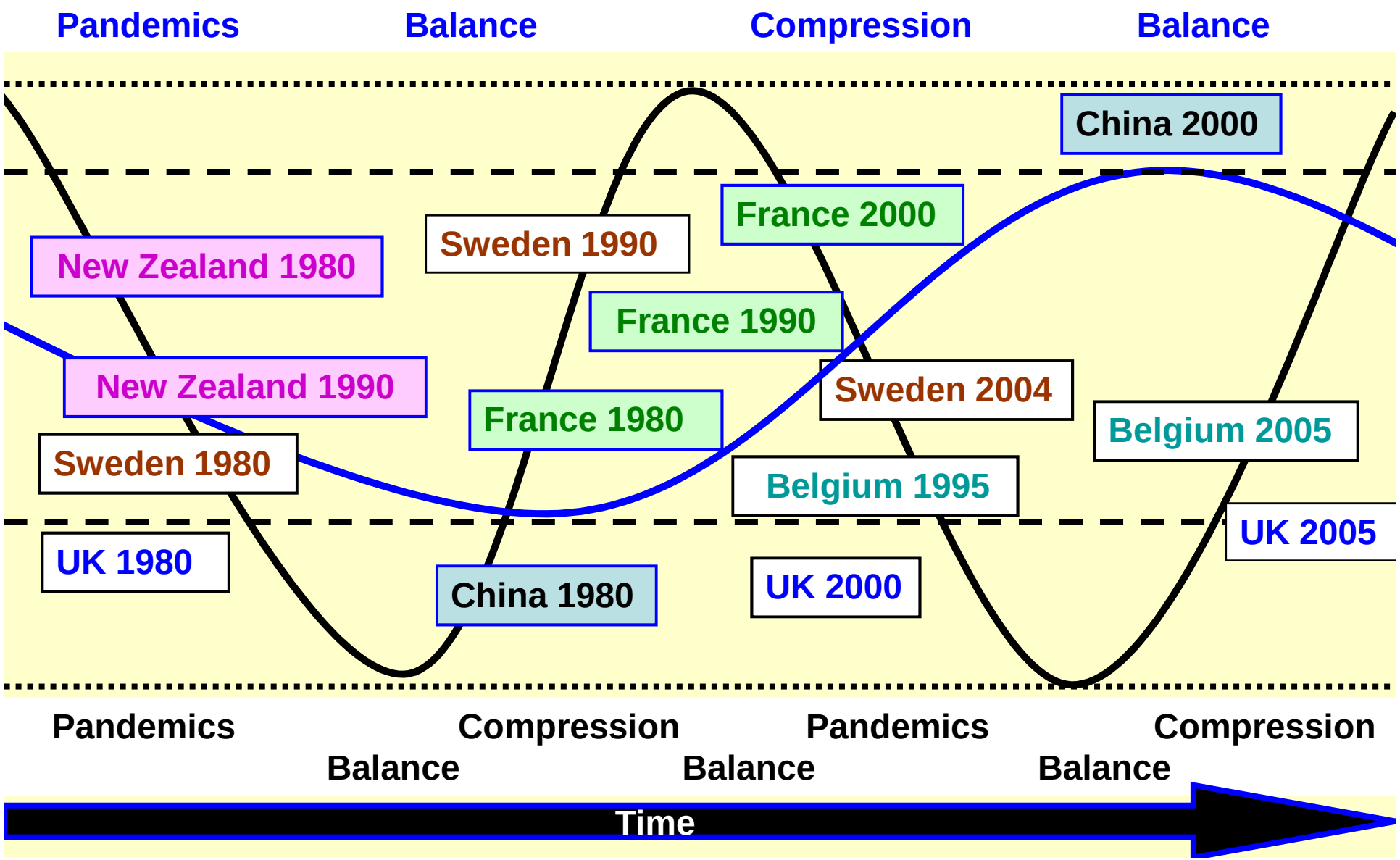
Ratio DFLE /LE



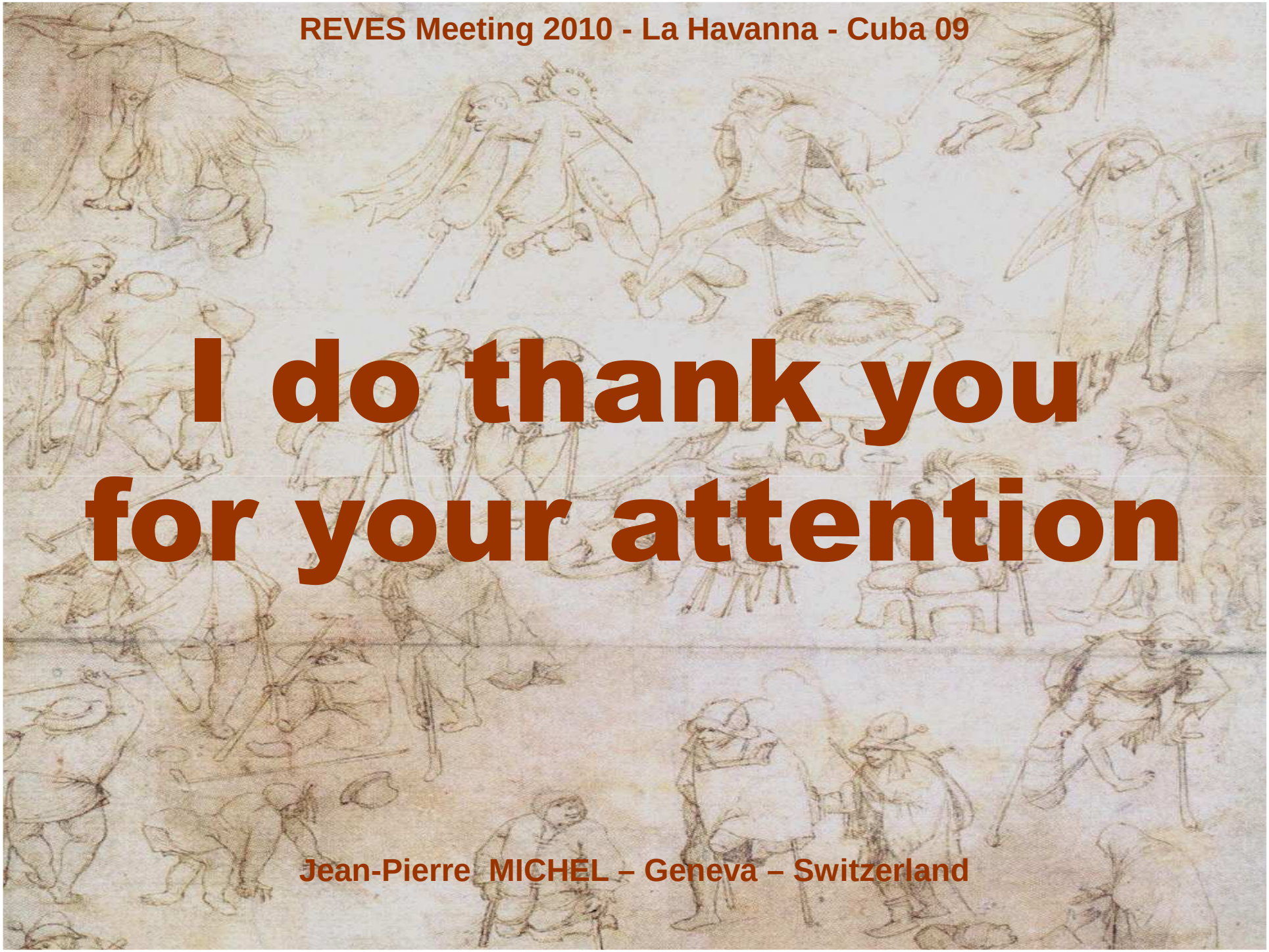
Resolving inconsistencies in trends in old-age disabilities

Elaboration of a concept based on the survey results

GENERAL THEORY OF AGEING

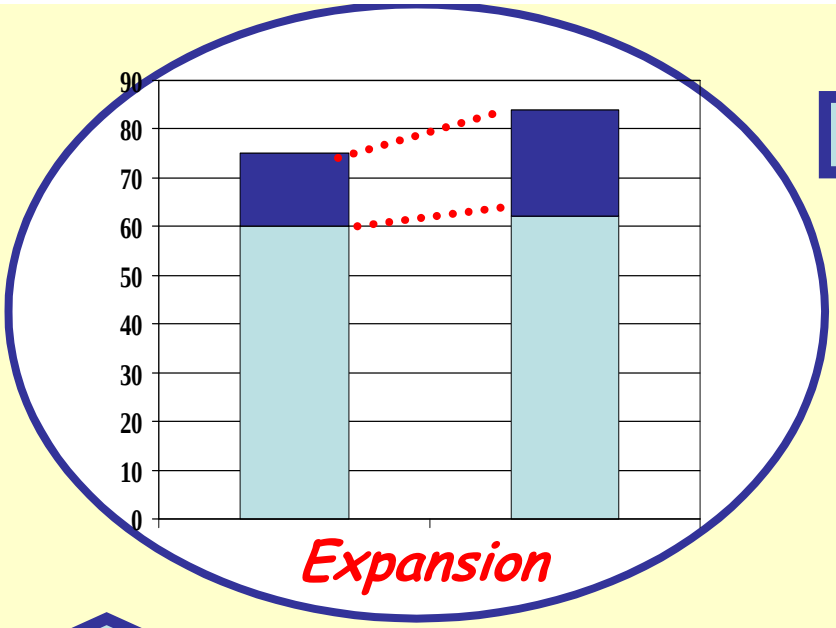
ROBIN[illegible] MICH[illegible] Gerontol 2004; 59: M590-7

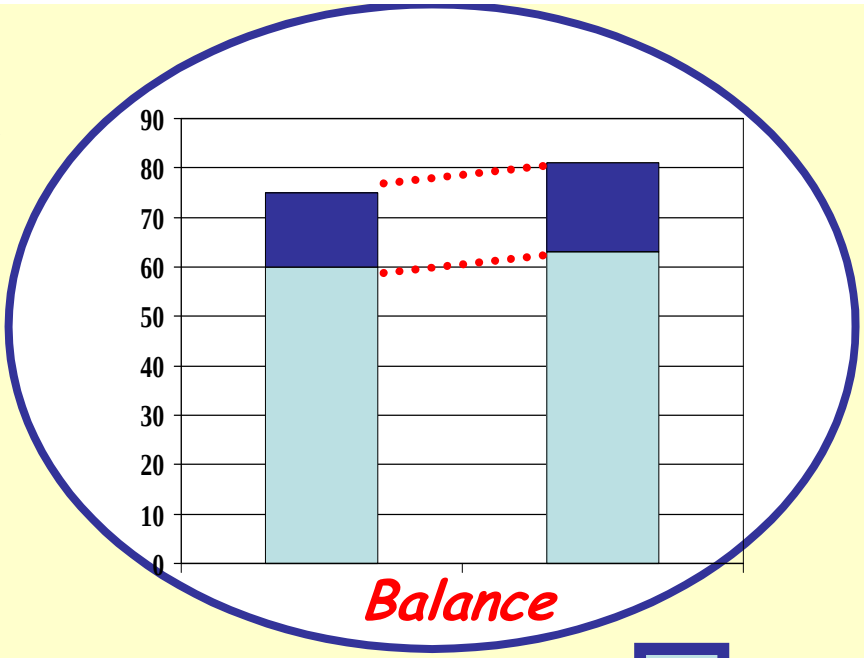
More time of observation
&
high quality of repeated surveys
are needed to
valid this
proposed theory



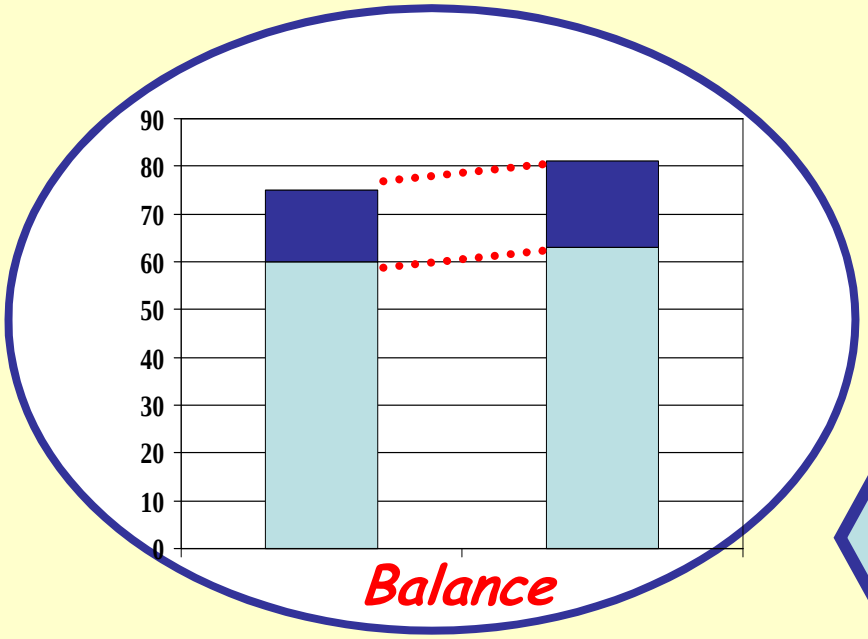
I do thank you for your attention

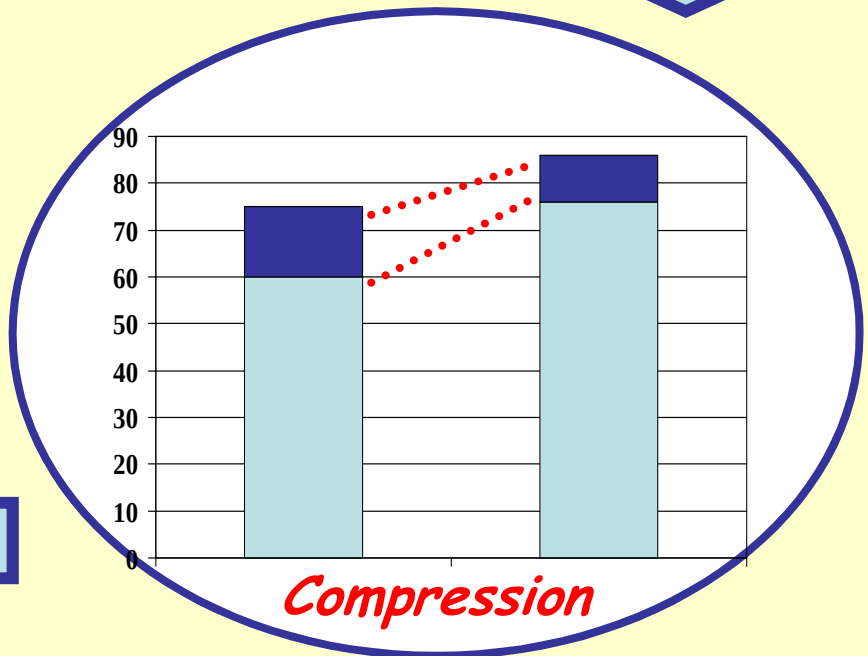
Jean-Pierre MICHEL – Geneva – Switzerland

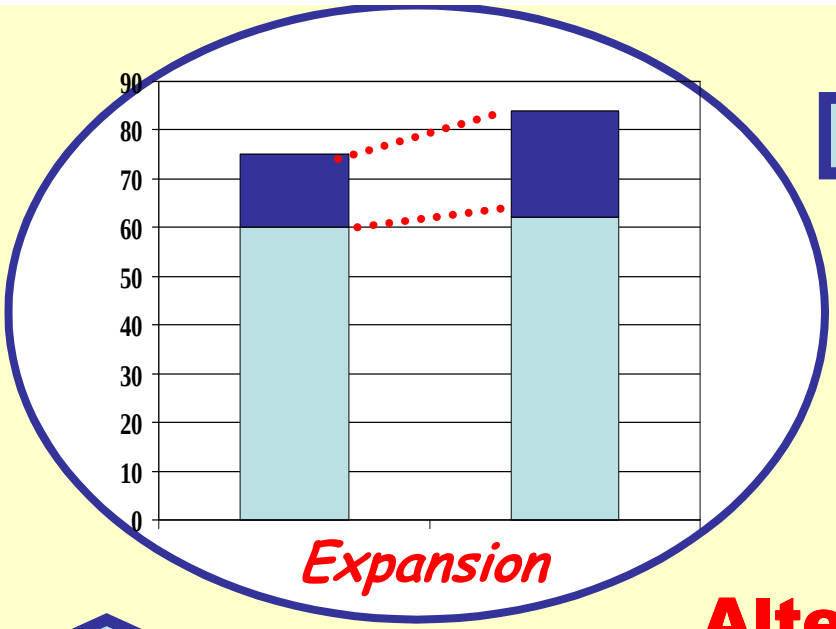


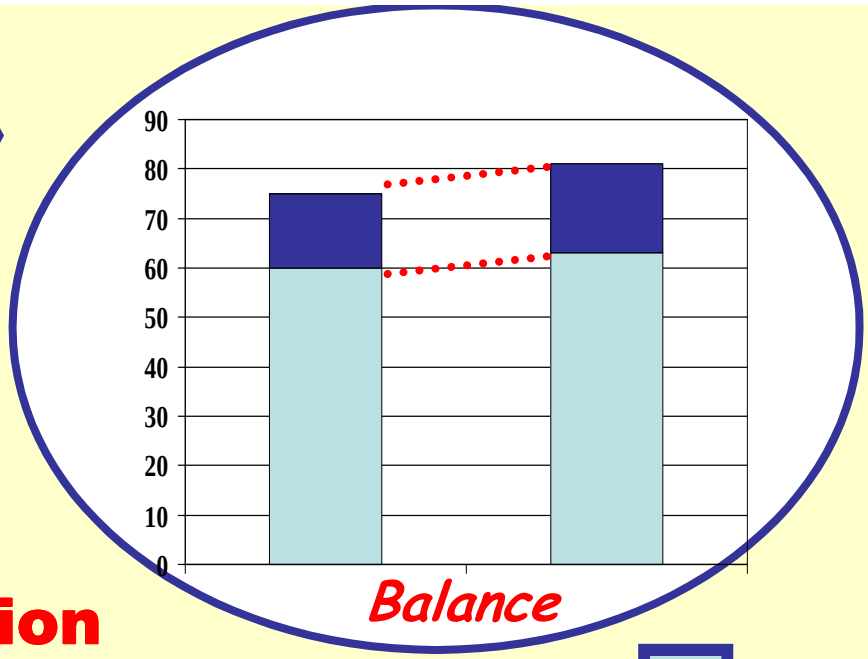


GENERAL THEORY of AGEING



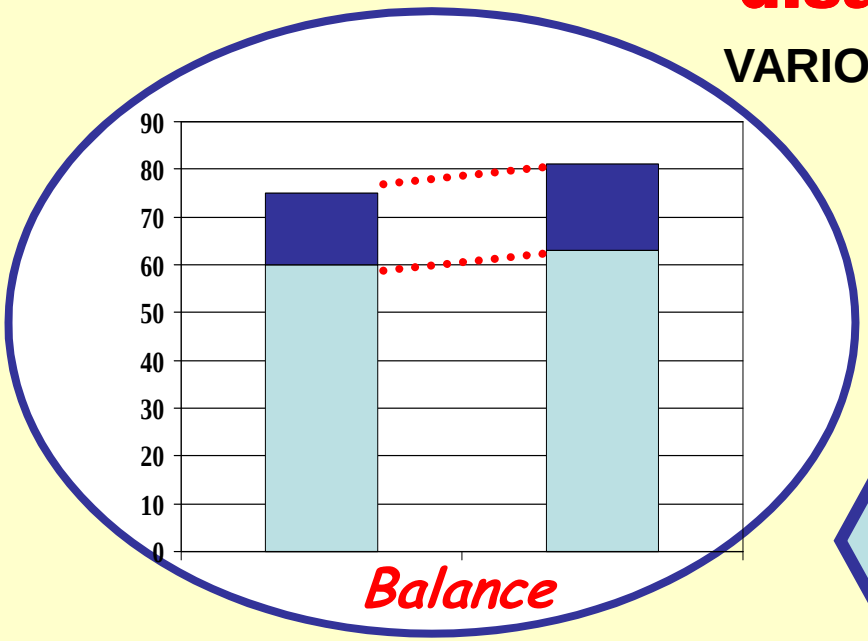


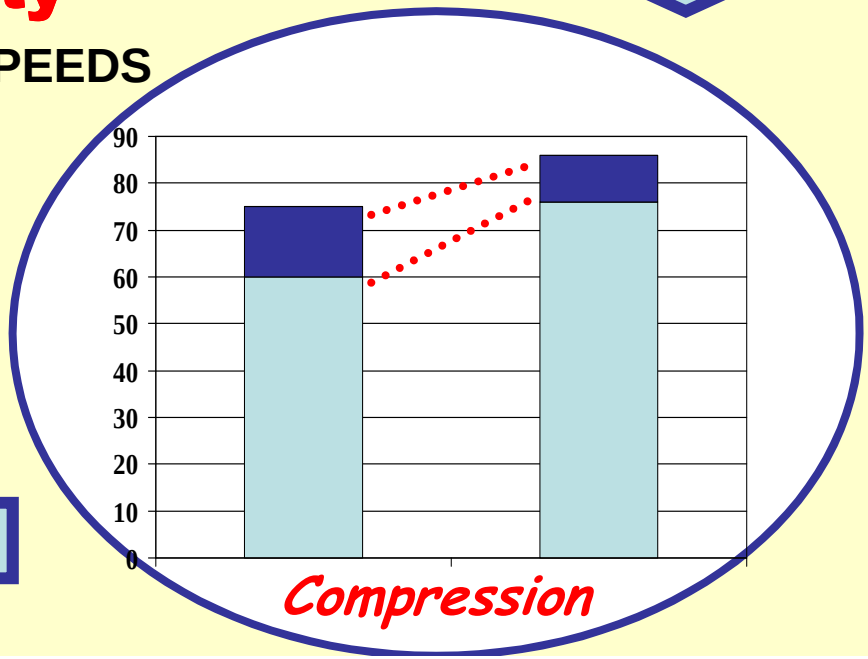


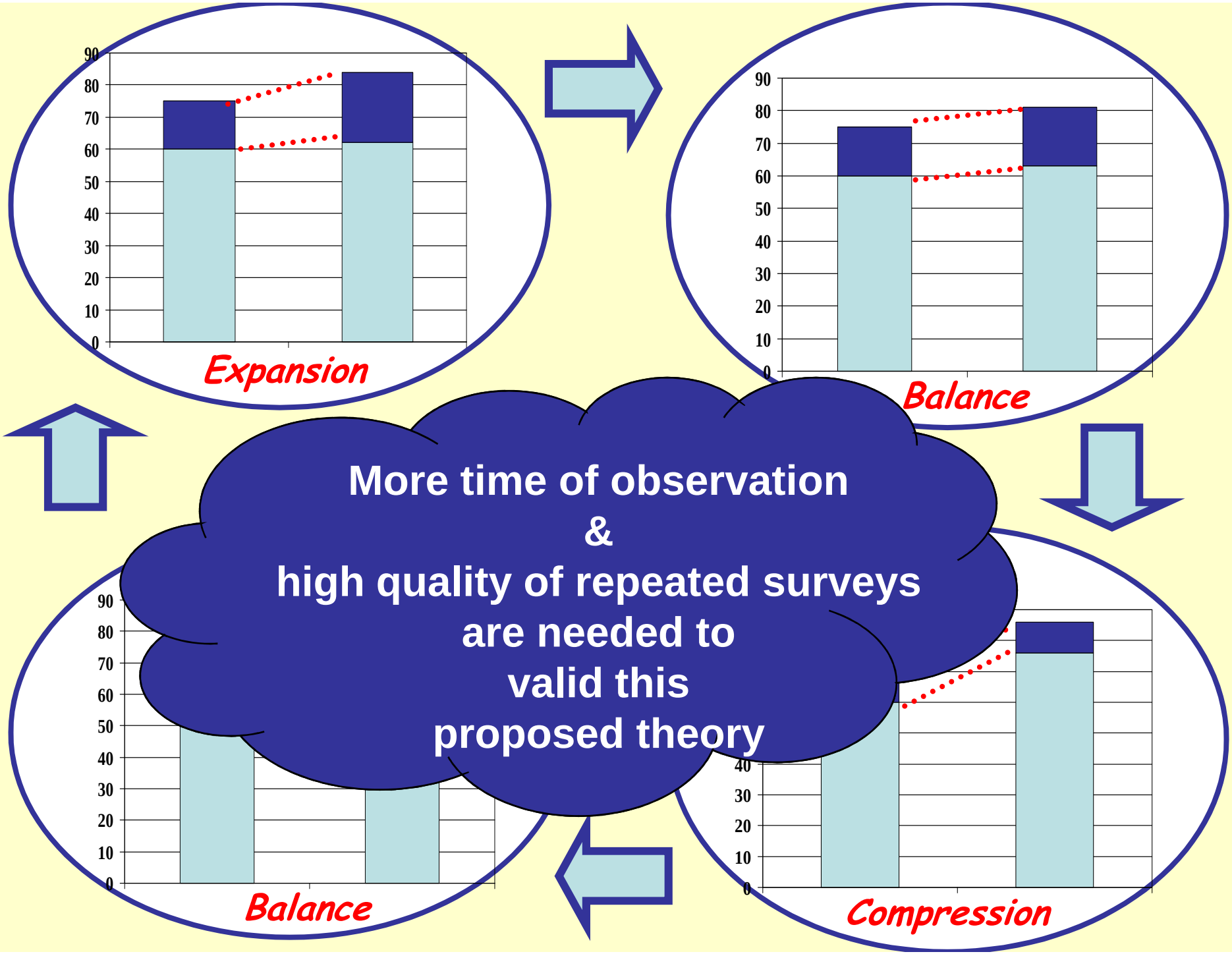


Alternation of expansion and compression of disability

VARIOUS SPEEDS






Expansion
Balance
More time of observation
&
high quality of repeated surveys
are needed to
valid this
proposed theory
Balance
Compression

DISABILITY definition

Disability is a social concept,
representing the interaction of an
individual's physical, cognitive, and psychological capacity
and
the demand of a given social and environmental context

Underlying capacity to complete certain task or activities

In a specific environment without technical or human assistance	In the person's usual circumstances, when technology and/or personal assistance are used

POPE AM et al Disability in America : Towards a National agenda for prevention National Acad Press Washington 1991
ALBRECHT GL et al In: Handbook of disability studies Thousand Oaks Eds CA 2001
FREEDMAN VA et al Demography 2004; 41: 417-41

Differences in disability wording

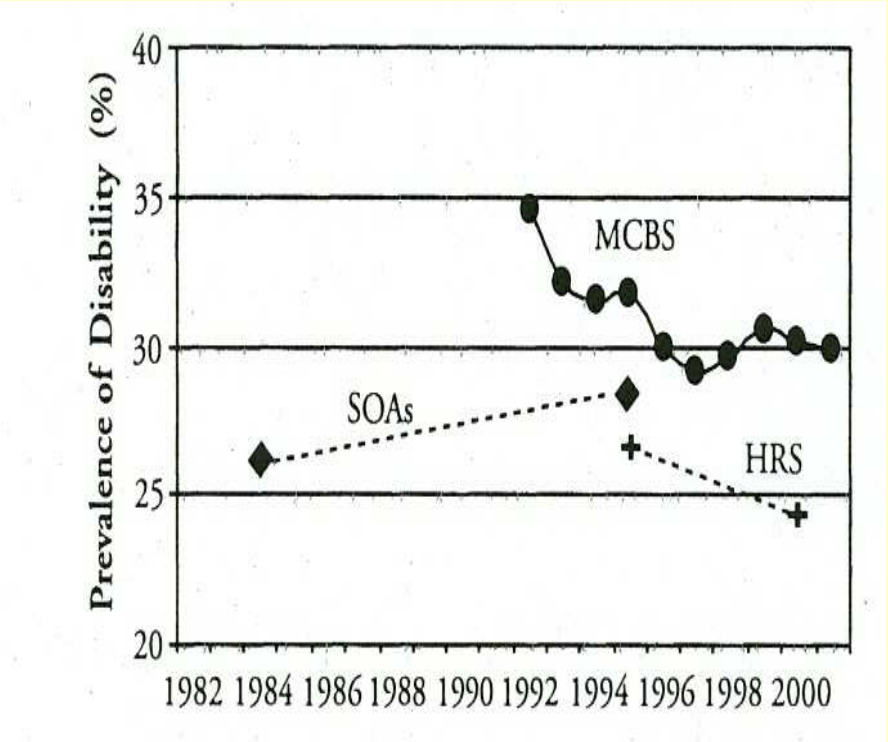
Health Retirement Study (HRS)
Medicare Current Beneficiary Survey (MCBS)
National Health Interview Survey (NHIS)
National Long Term Care Survey (NLTCS)
Supplements on Ageing (SOAs)

Has difficulty?
Needs help from another person?
Has difficulty or a problem and gets help?
Has difficulty or a problem and gets help or uses equipment?

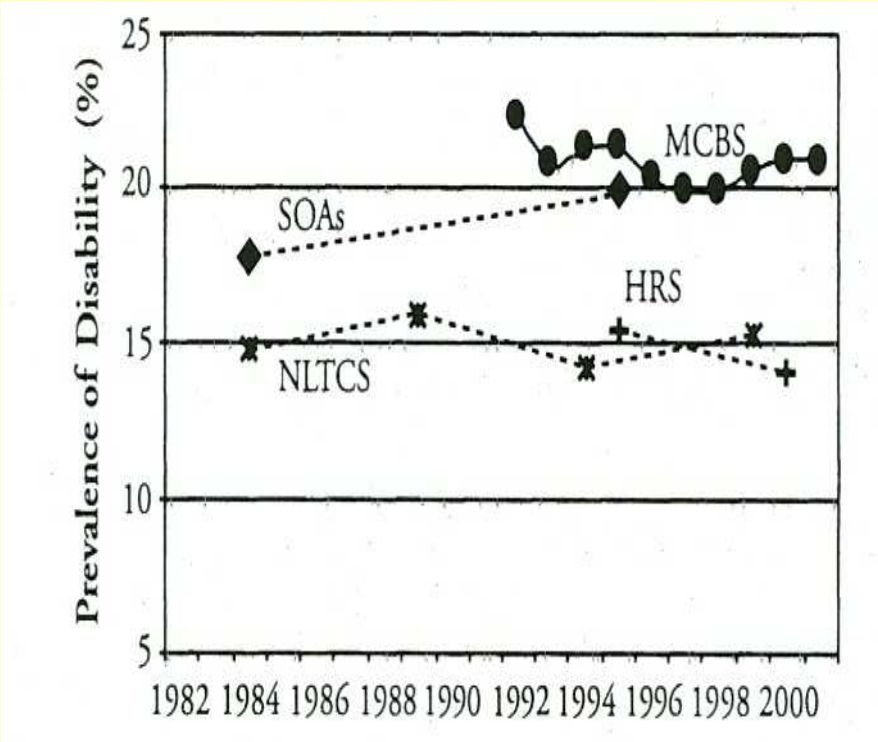
FREEDMAN VA et al Demography 2004; 41: 417-41

Percentage of community-based population aged over 70 reporting disability using various definitions

Difficulty with 1 or more of 6 ADLs



Receiving help with 1 or more of 4 ADLs



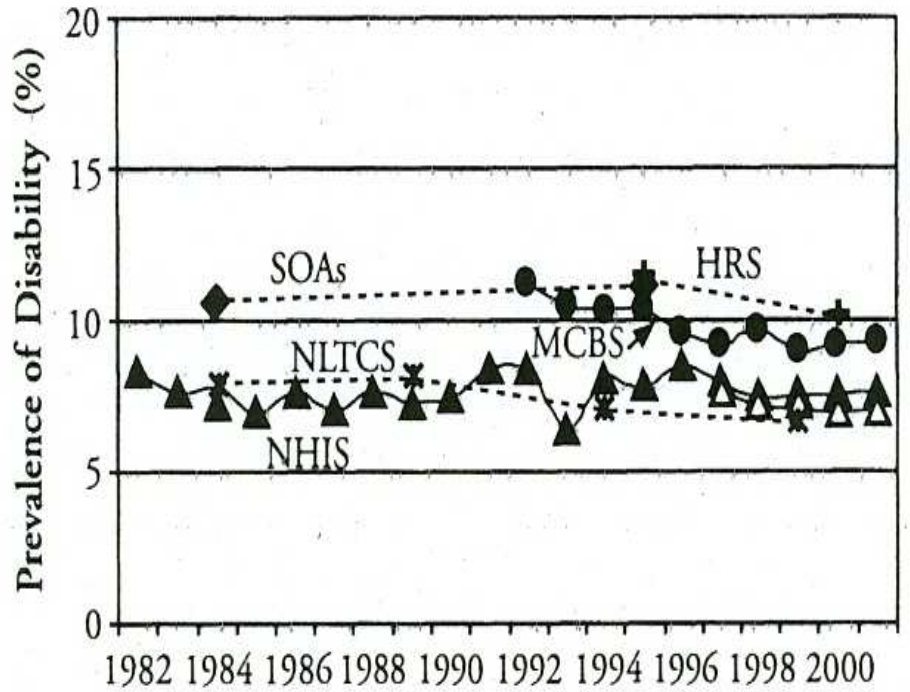
SOAs: Supplements on Ageing – **HRS:** Health Retirement Study – **MCBS:** Medicare Current Beneficiary Survey

NLTCS: National Long Term Care Survey

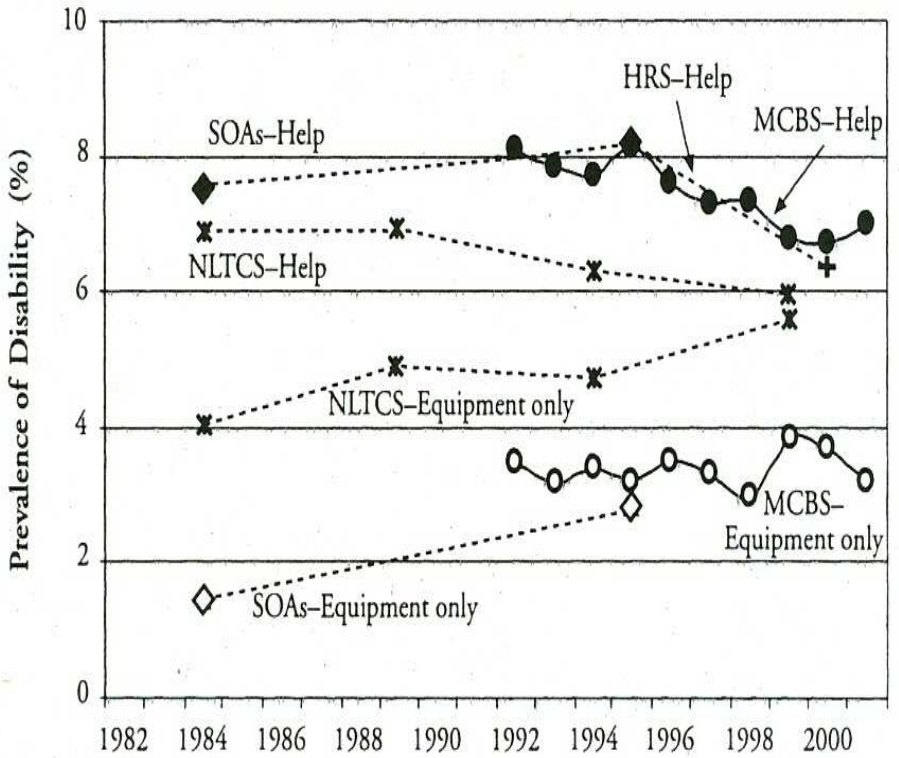
FREEDMAN VA et al Demography 2004; 41: 417-41

Percentage of community-based population aged over 70 reporting disability using various definitions

Receiving help with bathing vs. using equipment without help



Receiving help with walking vs. using equipment without help

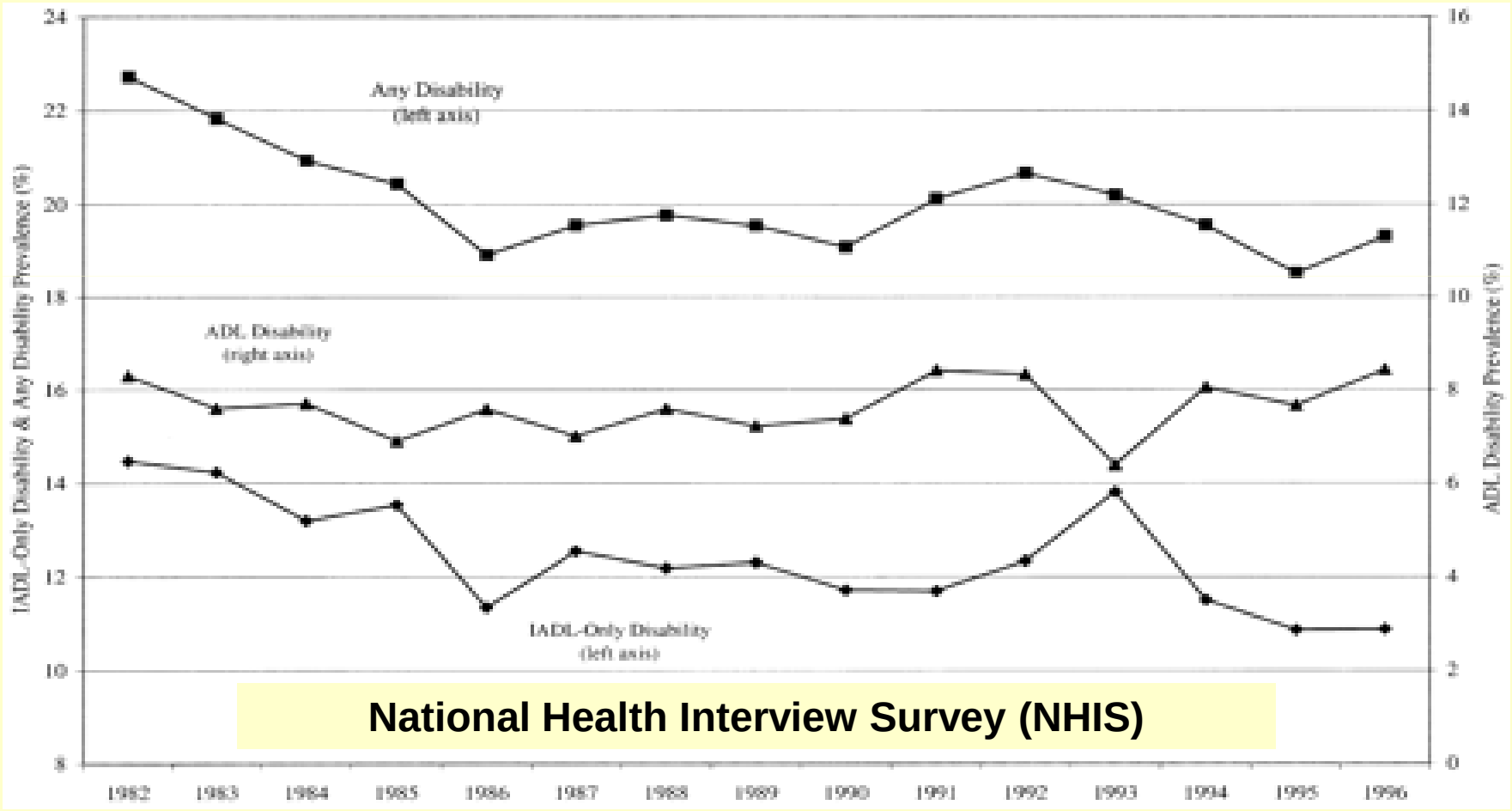


SOAs: Supplements on Ageing – HRS: Health Retirement Study – MCBS: Medicare Current Beneficiary Survey
NLTCS: National Long Term Care Survey

FREEDMAN VA et al Demography 2004; 41: 417-41

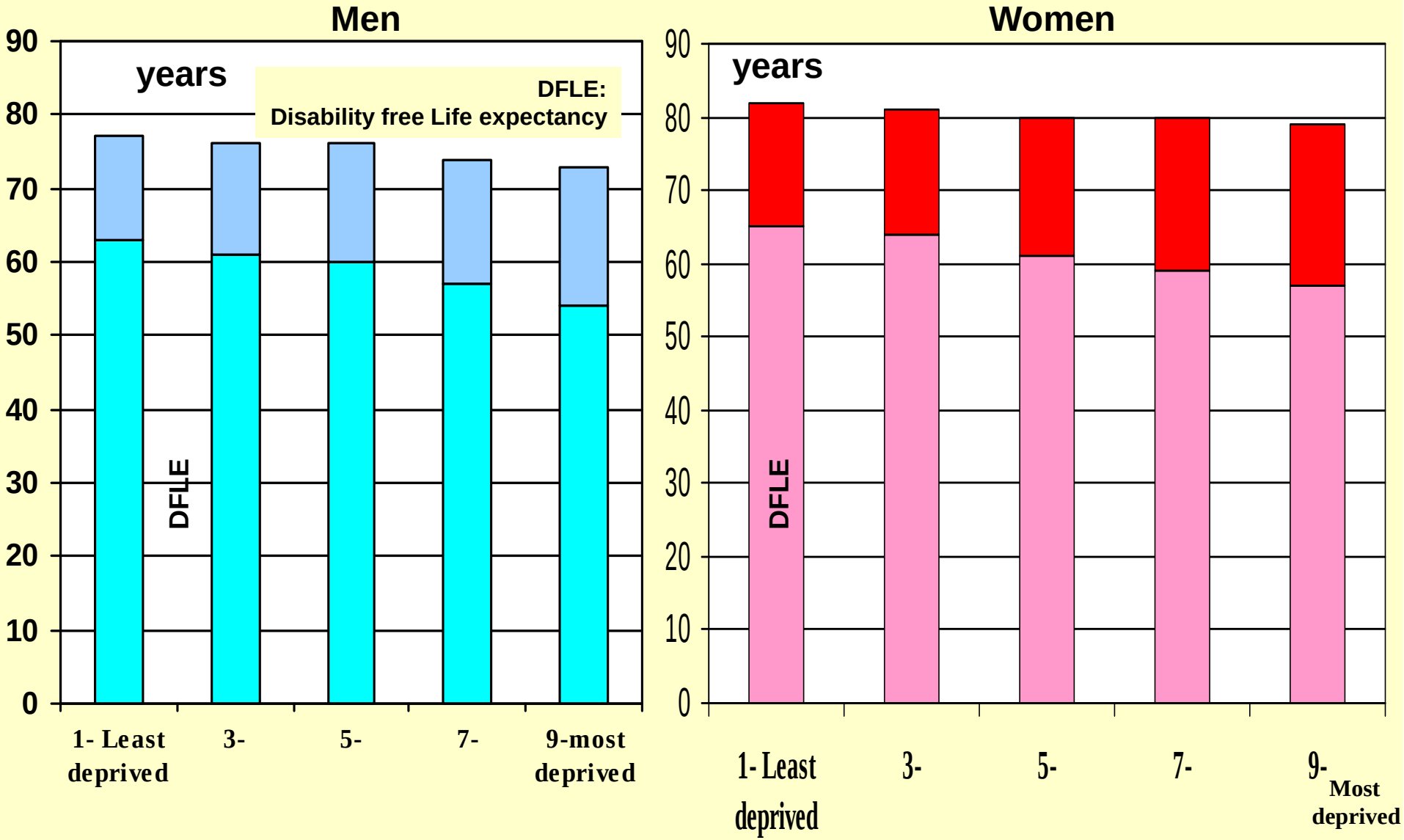
Educational disparities and DFLE

Between 1982 and 1996, the prevalence of any disability declined only for those with 13 or more years of education



SCHOENI R et al J Gerontol B Psychol Sci Soc Sci 2001; 56: S206-18

DFLE and LE with Disability in England: Measuring inequalities



WOOD R et al J Epidemiol Community Health 2006; 60: 1089-92

Bibliography of HLE & DLFE surveys used for this lecture

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China	Lai D	2009
Denmark	Brønnum-Hansen H	2005
France	Cambois E et al	2008
Germany	Rainer U et al	2006
Italy	Yong V et al	2009
Japan	Burgio A et al	2009

Lithuania	Kalediene R et al	2004
Netherlands	Perenboom RJM	2005
New Zealand	Davis P et al	1999
Quebec	Institut National	2007
Spain	Gomez Redondo	2006
Sweden	Parker MG et al	2008
Switzerland	Wanner P et al	2005
UK	Health statistic	2005
USA	Manton KG	2008
USA	Yang Y et al	2008