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The Knowledge Economy in the 21st Century

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Outline

- Economic frame for human capital investment to promote growth and equality
- Relevance of public funding to correct capital market imperfections
- Growing recognition of the significance and relevance of early childhood learning – family versus neighborhood
- Intergenerational mobility – education versus income in Denmark and the U.S.
- Knowledge society – STEM and study pressure

- Increasing share of time spent in voluntary work as profitable businesses become more productive.
- Deeply pluralistic society and diverse identities among knowledge workers.
- Rent seeking activity to protect human capital investments.
- Will organized interests in voluntary and non-voluntary sector care enough about the common good?

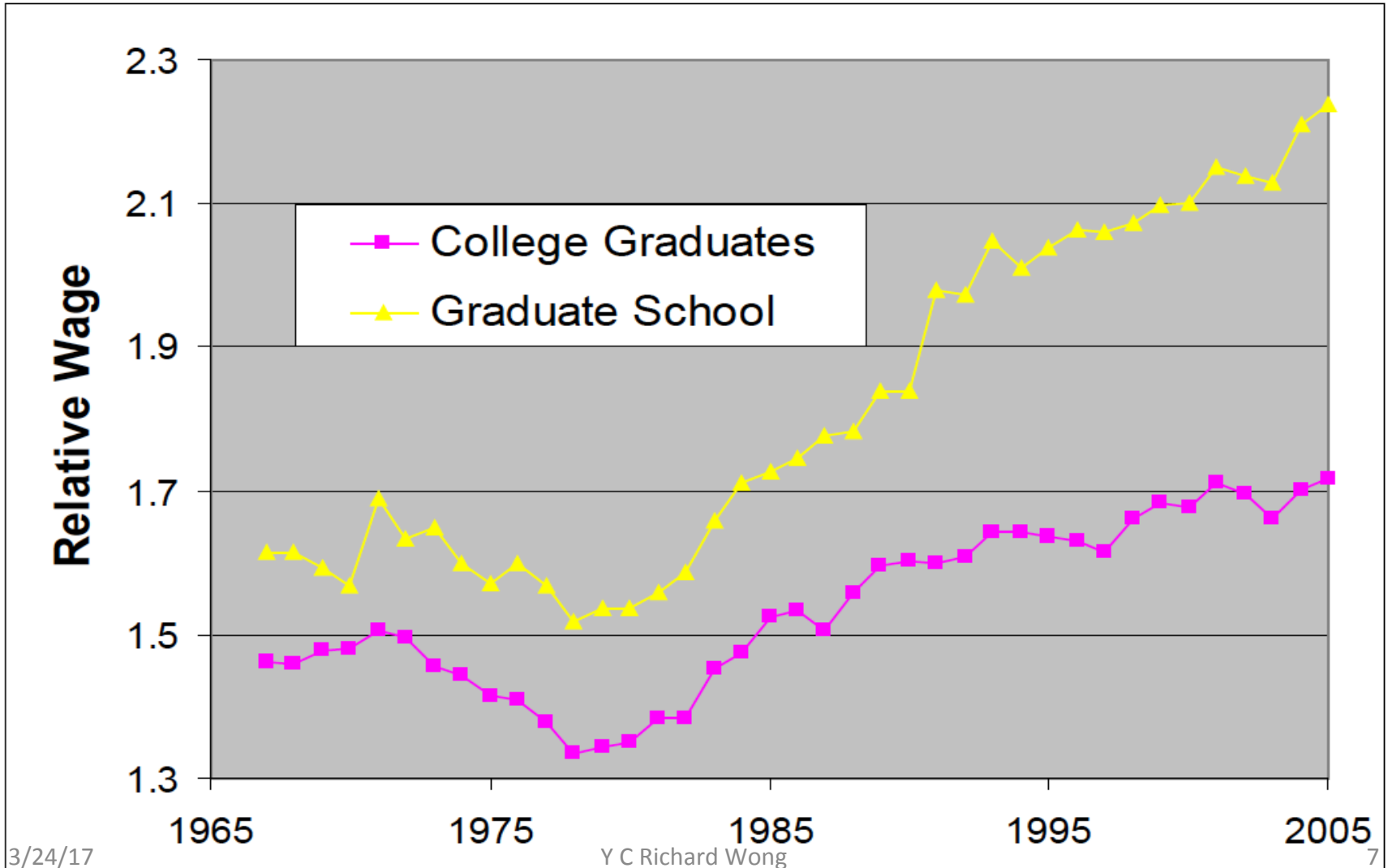
Nature of human capital

- Why human capital is unique? Embedded-ness
- Own time is necessary – cannot hire others to learn and learning takes time
- Learning makes future learning efficient – early learning important for effectiveness
- Learning incentives declines due to mortality

- Intergenerational mobility—role of family in early childhood (James Heckman) versus effects of neighborhood (Raj Chetty).
- Role of family—Charles Murray *Coming Apart*.
- Intergenerational mobility—measuring education or earnings and the case of Denmark versus the U.S.

- Human capital cannot be bequeathed
- Prohibition of indentured servitude means capital market imperfections matters greatly
- Family background and locations (countries, urban-rural divide, local neighborhoods) appear to matter
- Institutions matter – private property rights, markets

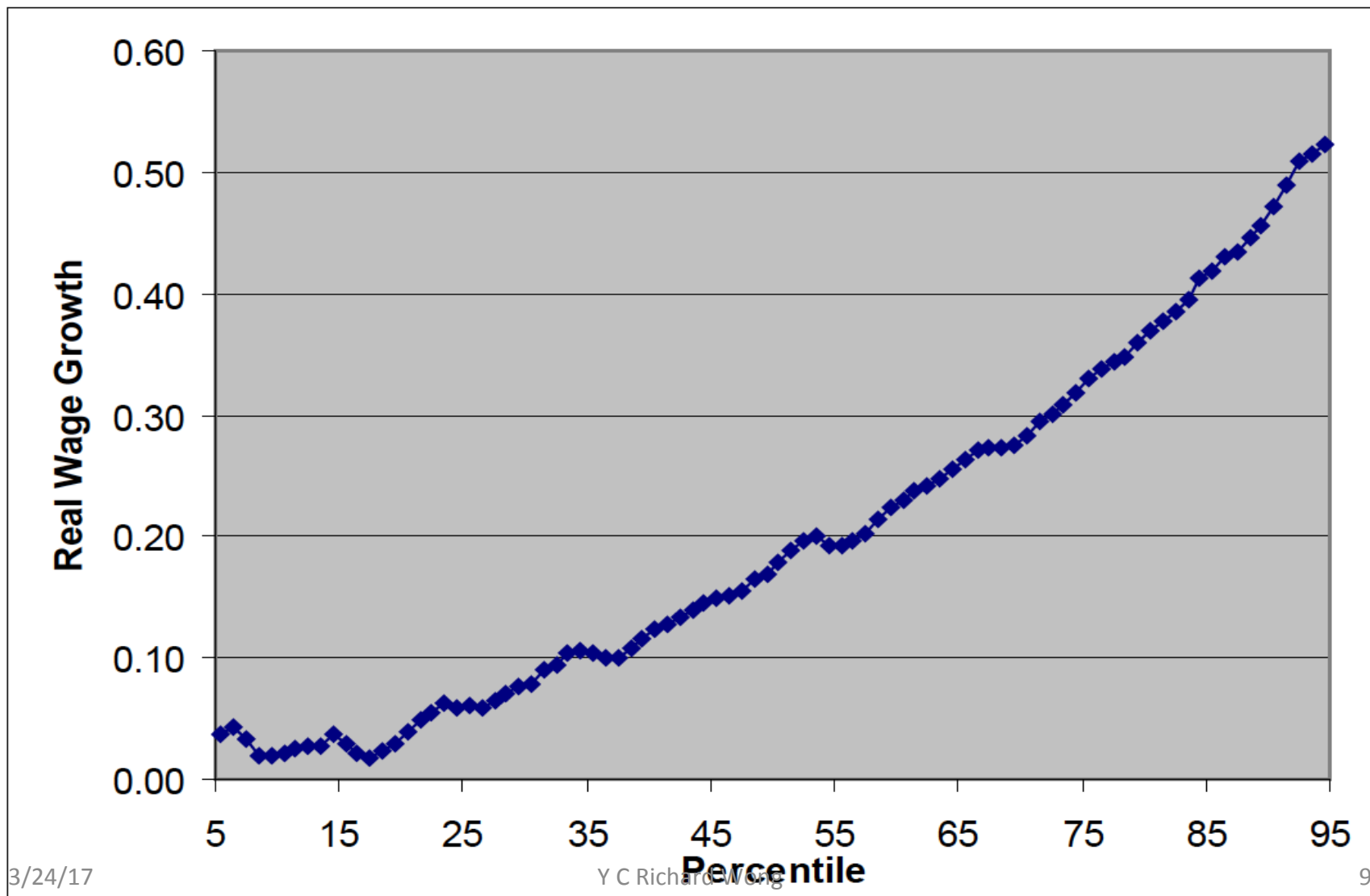
US Education Wage Premiums



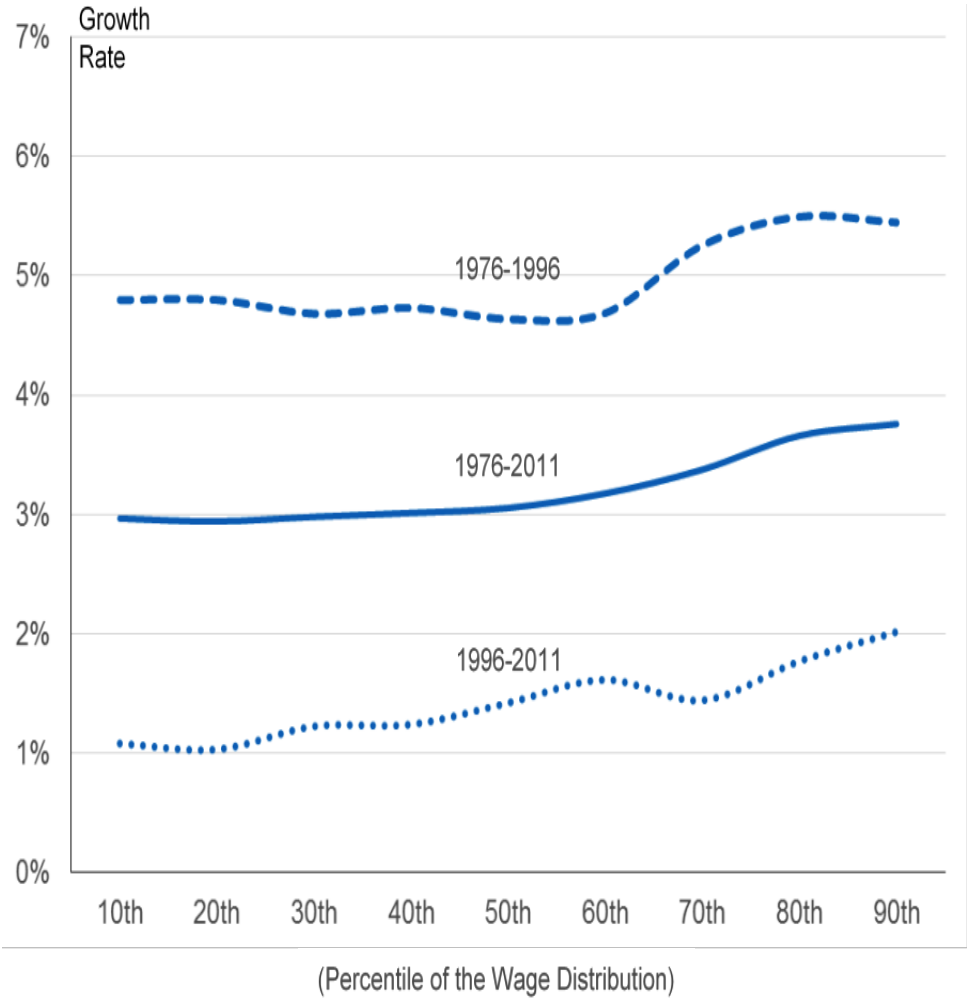
HK Rates of Return to Schooling

	Average years of schooling	Percentage w/ tertiary education	Percentage w/ degree education	Average Rate of return %	Marginal Rate of return %		
					S=6	S=12	S=16
1976	5.4	3.1	2.3	8.8	6.6	2.6	16.6
1981	6.1	2.6	2.5	8.3	5.8	2.5	17.0
1986	6.6	3.9	3.3	9.9	6.2	4.5	20.0
1991	7.1	4.5	4.4	10.5	5.7	5.2	21.5
1996	7.7	4.1	8.2	11.5	5.6	4.8	21.0
2001	8.1	5.8	10.5	12.7	5.4	5.9	23.0
2006	8.7	6.8	13.2	12.7	5.5	4.3	20.1
2011	9.2	8.5	16.0	14.8	5.3	5.8	22.7

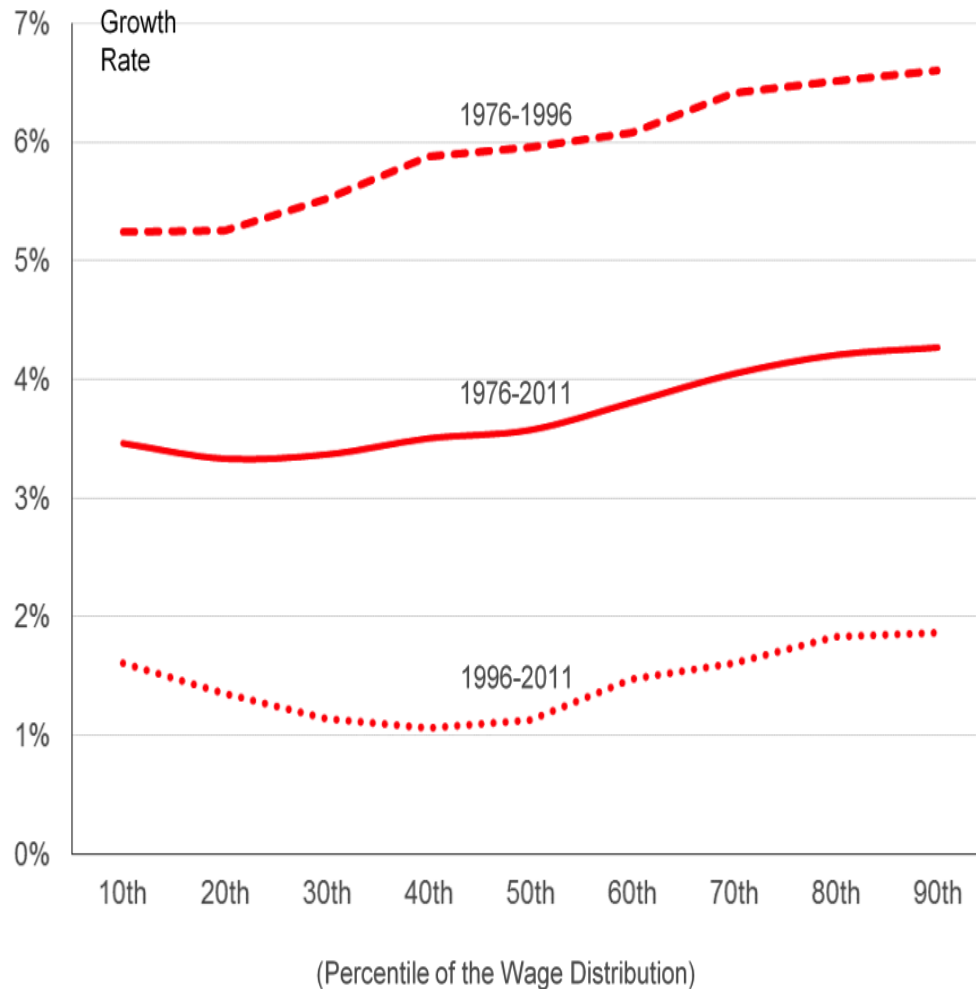
US Wage growth by percentile 1968-2004



Men's Annual Wage Growth by Percentile 1976-2011



Women's Annual Wage Growth by Percentile 1976-2011



Explaining Changes In Education Returns Using Supply and Demand

- Growth in the university premium can be explained by a very simple model.
- Demand grows steadily over time.
- Fluctuations in supply cause education premiums to rise or fall.
- If supply grows faster than demand -- premium falls.
- If demand grows faster than supply -- premium rises.
- Effect is magnified if we have biased technological progress in favor of more educated workers.

- Underinvestment in education, especially secondary education, but also degree level professional and associate professional education in Hong Kong.
- Problem exacerbated by the rapid influx of low education immigrants have exacerbated wage inequality (20% of residents arrived since 1978).
- Low upward mobility of university graduates have been the result of accelerated stop-go approach to the expansion of university education.

The Knowledge Economy

- Knowledge will be key resource of the next society, and knowledge workers its dominant ones
- Its characteristics are:
 - Borderlessness—knowledge travels effortlessly
 - Upward mobility—available to those with formal education
 - Potential for both failure and success—anyone can acquire knowledge but not everyone can win

- Knowledge society will be highly competitive for organizations and individuals
- Every organization has to be globally competitive even if it serves a local market because customers will have access to knowledge worldwide
- Knowledge technologists will become the dominant social, and perhaps political force
- The fastest growing workforce is knowledge workers, and is making up half the workforce in the rich countries.

- The new workforce are capitalists because knowledge is their capital or human capital.
- As a group they are capitalists being majority shareholders of mutual funds and pensions.
- Effective knowledge used at work is specialized.
- Works in partnership with others through an organization and see themselves in relation to others as juniors-seniors rather than bosses-subordinates.
- Historically there were men's work and women's work, but knowledge work is unisex.

- High knowledge workers—doctors, lawyers, scientists, clerics and teachers—have been around, but increasingly knowledge technologists work with their hands using a lot of knowledge acquired through formal education (not apprenticeships).
- They will dominate the workforce and identify themselves as professionals even when a large part of their time is doing manual work with their hands.

- Knowledge is non-hierarchical and so they see themselves as professionals not as subordinates, and expects to be treated as such.
- These workers need formal education and continuing education because knowledge rapidly obsolesces.
- These workers identify with their knowledge, are highly mobile within their profession even when their skills are highly specialized.

- Money is important to the knowledge worker, but as professionals they do not see it as a substitute for performance and achievement, and consider their job as a life.
- Upward mobility in a knowledge society has unlimited opportunities if formal education is accessible to all.
- Impediments to such mobility is viewed as a form of discrimination. And success brings not just monetary rewards but social standing.

- The price of upward mobility in the knowledge society is competitive stress, even at the learning stage, and could create hostility to learning.
- Gaining a formal education qualifies a person to enter the ranks of a knowledge worker, but does not guarantee success.
- Plutocracy is a possible danger as rich parents can better prepare their children for such competition.

Challenges of the Knowledge Economy in a New Pluralistic Society

- Agriculture has declined since industrialization.
- Manufacturing has and will continue to decline.
- Knowledge intensive products—health care and education—will and continue to rise.
- Decline of farming led to widespread protectionism of agriculture. And so will the decline of manufacturing, especially through subsidies, quotas, and regulations.

- The challenges of the new society will be even greater than the new economy.
- Knowledge workers will have more discretionary time on their hands.
- They have also invested heavily in human capital skills and are keen to protect their investments.
- They have a strong professional identity and will be keen and able to protect their interests from market forces.

- Knowledge professionals may plateau in mid-life after reaching their maximum achievements.
- If these workers fail to develop a non-competitive life and community of their own, and some serious outside interest, they are in trouble.
- Outside interest will give them opportunity for personal contribution and achievement outside work for pay and in voluntary work.
- All these will shape the new pluralistic society.

Secular Trends in Time Use: Average Hourly Division of the Day of the Average Male Household Head on a 365-Day Year

	Ca. 1880	Ca. 1995	Ca. 2040
Sleep	8.0	8.0	8.0
Meals and essential hygiene	2.0	2.0	2.0
Chores	2.0	2.0	2.0
Travel to and from work	1.0	1.0	0.5
Work	8.5	4.7	3.8
Illness	0.7	0.5	0.5
Sub-total	22.2	18.2	16.8
Residual for leisure activities	1.8	5.8	7.2

R W Fogel, *The Fourth Great Awakening and the Future of Egalitarianism*, Chicago, 2000

Estimated Trends in the Lifetime Distribution of Discretionary Time

	1880	1995	2040
Lifetime discretionary hours	225,900 (100%)	298,500 (100%)	321,900 (100%)
Lifetime earn work hours	182,100 (80.6%)	122,400 (41.0%)	75,900 (23.6%)
Lifetime voluntary work hours	43,800 (19.4%)	176,100 (59.0%)	246,000 (76.4%)

R W Fogel, 2000

Long-Term Trend in the Structure of Expanded Consumption and the Implied Income Elasticities in Several Consumption Categories

	Distribution of Expanded Consumption (%)		Long term income Elasticities
	1875	1995	
Food	49	5	0.2
Clothing	12	2	0.3
Shelter	13	6	0.7
Health care	1	9	1.6
Education	1	5	1.6
Other	6	7	1.1
Leisure	18	68	1.5

Expanded consumption is the sum of dollar expenditures and imputed value of time.
R W Fogel, 2000

- In the rich countries, growth of older generation, shrinking of younger generation.
- It is not possible to save existing pensions system, people would have to work until their mid-70s.
- How to create new employment patterns to attract and hold the older workforce becomes important.

- Many above age 50 will become part-time workers and self-employed, many employment laws and regulations would not apply, and organizations have to learn how to manage such people
- In every rich country, but also in China and Brazil, the birth rate will be below replacement rate.
- Immigration will become an important and highly divisive issue, and cut across all traditional political alignments.

Level and composition of global inequality in the 19th century and year 2000 (Theil Index)



- As new family formation ceases to be the driver of domestic markets, the homogeneous mass market of the past may split into two:
 - a middle-aged mass market, and
 - a small youth market.

The New Pluralism

- All rich societies has become more pluralist.
- It is splintering into numerous more or less autonomous institutions, each requiring its own leadership and management, each having its own specific interest.
- Many will be powerful lobbies and rent seekers responsible for political gridlock in democracies.
- Earlier pluralist societies destroyed themselves because no one took care of the common good.

- To avoid this the leaders of all institutions have to learn to be leaders beyond the walls; to learn to be leaders in the community.
- It is more than “social responsibility” defined as doing no harm to others in the pursuit of one’s own interest.
- New pluralism requires “civic responsibility”: giving to the community in the pursuit of own interest.

- This means power, even political power, will be possessed by pluralistic communities.
- Modern social and political theory preaches that there can be only one power in society: a centralized government.
- Society had come to believe that government could and should take care of every problem and every challenge in the community—a thesis 50 years ago was almost universally accepted.

- Trend towards a total monopoly of power by one institutions—the government—dominated in the first half of the 20th century.
- The first new non-government institution was the large business enterprise, made possible by transportation and information technologies.
- It is due to the great productivity of the for profit business enterprise under capitalism that we owe our prosperity, our health, long life, and plenty of free time and our freedom to make choices.

Historical GDP per capita



- Modern society is rapidly increasing pluralism and reversing a trend of the past centuries.
- Single-cause interest groups are dominating the political process and are subordinating the common good to their own values, their own aggrandizement and power.
- The task centered autonomous institutions is the only one that performs in the past 150 years. Whenever an institution goes beyond a narrow focus, it ceases to perform.

- The strength of the modern pluralist organization is that it is a single-purpose institution. A strength that has to be preserved.
- Balancing the common good and the special purpose of the institution is the question that has to be answered if the new pluralism is not going to destroy the community.
- Leadership beyond the walls requires financial, performance, and personal dimensions.

- Multinationals were held together by ownership and had considerable autonomy in different territories.
- Multinationals of the future will be held together and controlled more by strategy, where alliances, joint ventures, minority stakes, know-how agreements and contracts will increasingly be the building blocks of a confederation.

- It will need a new kind of top management.
- The type able to operate in a pluralistic world.
- Top management may not be an extension of operating management, but a distinct and separate organ that stands for the company, balancing conflicting demands on it: short-term, long-term, and from its various constituencies.

- Moises Naim's *The End of Power* has a subtitle that says: From boardrooms to battlefields and churches to states, why being in charge isn't what it used to be.
- The knowledge economy is reconfiguring the world, and a more pluralistic society is changing the way power can be exercised.