

A Missing Leg of Ageing Policy Ideas: Dependency Ratios, Technology and International Organizations

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Abstract

Demographic changes transform societies and challenge existing institutional solutions and policies across the world. Concerns are made about the future finance of pensions and health systems, scarcity of labour especially within the care sector, worries over ageism, and fears of undermining the generational contract. This development points towards a future where increasing work participation is needed in order to avoid or mitigate the burdens of an ageing society.

In addressing these challenges a new paradigm of ageing policy under the heading of *Active Ageing*, has entered the policy agenda and travelled across the world over the last decades. According to the WHO active ageing is defined as: “the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age” (World Health Organization, 2002: 12).

International organizations (IOs) endorse different ageing policies, but in common they have a focus on changing old age dependency ratios (OADR), which expresses the dependent elderly population as a proportion of the working age population, as a key concept constituting the basic cause for why political action is needed in many fields. Thus, this concept, applied to measure dependency enters as a central component of the policy ideas of IOs.

This paper first provides a critical account of the old age dependency ratio concept and the role it plays in framing the ageing discourse. Secondly, the paper analyses how this conceptual tool enters into the policy stories provided by two organisations active in this field in a European context: the OECD and the United Nations Economic Commission for Europe (UNECE). The OECD has a long history of providing policy ideas and recommendations to its member states, and increasingly over the two last decades this also includes social policy issues. The UNECE is the UN organization responsible for translating the Madrid plan of action on ageing (2002) into regional plans and assisting member states within the European region with their implementation.

A key argument of this paper is that the OADR concept as applied in different IOs policy ideas ignores technological advances and innovations, the effect being firstly that the ageing challenge is highly dramatized and secondly that the adhering discourses fails to include the potential of new technology. The paper analyse this point by focusing on robotics development and the service sector, more particularly the old age care sector.

Theoretically, the paper applies the role of ideas literature (Béland, 2005; Blyth, 1997, 2002; John L. Campbell, 1998; John L Campbell, 2002; Hall, 1993; Ney, 2006) to analyse the dependency ratio concept as a basic building block in the IOs policy ideas on ageing. Empirically, the paper draws on various policy documents from the two IOs stating their understanding and policy advice on the ageing issue.

Introduction: From the ‘work free society’ to the challenge of demographic ageing

In 1930 Keynes argued that the working week would be drastically reduced in the future, perhaps down to 15 hours a week (around 2030), because people would choose to have more leisure time when their material needs were covered. Economic growth would lead to the solving of the ‘economic problem’ according to Keynes (Keynes, 2008 [1930]: 23). There is no doubt that the forecasted economic growth by Keynes has become much of a reality within what he called the ‘progressive countries’, and at the same time there has been reductions of working time, but we are not close to a 15 hours week. Whereas Keynes imagined that as soon as the basic needs were covered people would spend more time on leisure activities, this has not become a reality, because what counts as such needs seems constantly to change and in addition many leisure activities requires goods to be produced and consumed and finally work itself may have become more rewarding in a non-economic sense than it was before (Friedman, 2008; Pecchi & Piga, 2008; Solow, 2008).

Today these tunes of the work free society is seldom heard, the current slogan is more like ‘work or perish’, although this is somewhat exaggerated within the rich OECD countries.¹ Dominating policy ideas today are different from those of Keynes prospect; the widely shared belief now is that we ought to enter a period of more work through our life course, and hence the globally travelling idea of ‘extending working life’. It is the ageing of society that is seen to cause this shift in thinking, from how to share work as an activity in short supply, to how to recruit workers that are seen to be in exceedingly short supply.

This leads to a future of increasing work participation, which is needed in order to adapt to and mitigate the burdens of an ageing society. Over the last decades a new paradigm of ageing policy; *Active Ageing*, has entered the policy agenda that seeks to address these challenges. According to the WHO active ageing is defined as: “the process of optimising opportunities for health, participation and security in order to enhance quality of life as people age” (World Health Organization, 2002: 12). At the

¹ There are voices calling for a shorter working day for instance the ‘6 hours working day’, but these seems to be a minority in contemporary debate. Still, developments has been towards shorter working week in the European context since the 1970s, whereas the US reveal a different trend with a constant or longer week (Stiglitz, 2008).

global level the Madrid International Plan of Action on Ageing adopted by the UN in 2002 signifies an attempt to implement the policy ideas on ageing, developed since the first world assembly on ageing in Vienna in 1982 put the issue on the world agenda.² International Organizations (IOs) promote slightly different versions of ageing policies. But in common they have a focus on changing dependency ratios as a key concept and driver for the need to reform social policies applied in the various policy stories they promote.

The first part of the paper briefly introduces the policy ideas literature as the theoretical framework informing the analysis of the dependency concept and the policy stories of the two IOs. Then a critical account of the old age dependency ratio concept (OADR) and the role it plays in framing the ageing discourse is given.³ It is argued that the dependency concept as applied in different IOs policy ideas ignores technological advances and innovations, hence the ageing challenge is highly dramatized and the adhering discourses fails to include the potential of new technology. The paper analyse this point by focusing on robotics development and the service sector, more particularly the old age care sector.

Next, the paper analyses the different policy ideas provided by two organisations relevant in the European context, UNECE (United Nations Economic Commission for Europe) and the OECD. The OECD has a long history of providing policy ideas and recommendations to its member states, and increasingly over the two last decades this also includes social policy issues and challenge of ageing societies. The UNECE is the UN organization responsible for translating the Madrid International Plan of Action on Ageing (2002) into regional plans and assisting member states within the European region with their implementation.

Finally, part four sums up and concludes the paper.

² Annex 1 of this paper provides a chronology of milestones of the ageing issue at the global level and the regional level of UNECE countries. Annex 2 provides a short list of acronyms and abbreviations used in this paper.

³ The old age dependency ratio expresses the dependent elderly population, for instance those in the age group 60+, as a proportion of the working age population, defined as those aged 15-59.

Policy ideas perspective: Policy stories and conceptual tools.

Central in this perspective is that policy ideas and discourses have a significant impact on political action and policy formation by linking understanding of political problems with prescriptions for courses of action to solve them (Béland, 2005; Fischer & Forester, 1993; Hall, 1993; Ney, 2006; Taylor-Gooby, 2005). In a wide sense policy ideas held by different policy actors are important “because they tell us how the social world is constructed, what is to be considered just and fair, why things go wrong, and what has to be done to correct what has been messed up, or is malfunctioning” (Ervik, Kildal, & Nilssen, 2009: 6). Thus, policy ideas contain both normative and cognitive aspects that analytical approaches grasp by differentiating between types of ideas and levels of ideas (John L Campbell, 2002).

Policy ideas or frames are often expressed in the form of policy stories within a specific policy area, i.e. they “outline a setting, provides heroes and villains, suggests a solution, and most importantly, is guided by moral” (Stone 1997 as quoted in (Ney, 2006: 75).⁴ Within policy stories we can identify certain conceptual tools that are applied to ‘carve out’ some essential aspect of the problem or issue under scrutiny, in this context the changing demographic landscape and the policy challenges this create. In this way they are important building blocks of the policy stories promoted.

The strength of the old age dependency ratio concept seen as a conceptual tool and constituting a key unit in policy stories lies in its simplicity and the clear imaginary it creates of the burden of ageing. (The next section will provide a figural illustration of this). Therefore the paper starts out with a critical account of this concept and some of the assumptions it rests on. Thus, this exercise could be seen as a form of limited frame reflection (Rein & Schön, 1993) or more precisely a conceptual tool reflection.⁵ The

⁴ In this way framing is a way of: “selecting, organizing, interpreting, and making sense of a complex reality to provide guideposts for knowing , analyzing, persuading and acting” (Rein & Schön, 1993: 146). Framing as applied here has a more extended application than what Campbell denotes as ‘frame’ in his account, which cover the normative level where “ideas as symbols and concepts help policy makers to legitimize policy solutions to the public” (John L Campbell, 2001: 166).

⁵ Frame reflection implies a policy discourse: “..in which participants would reflect on the frame conflicts implicit in their controversies and explore the potentials for their resolution” (Rein and Schön 1993: 150). In our context, a reflection on a key concept applied in describing the ageing challenge would represent a subset of such a frame-reflective discourse. However as understood here this critical reflection does not have to be performed only by active participants, but also as part of social scientific research.

importance of a critical scrutiny of such concepts is clear if we take notice of Daniel Beland's assertion that: "Policy ideas and ideological frames could be considered as weapons of mass persuasion" (Béland, 2005: 12). And as stressed by William Connolly: "... to adopt without revision the concepts prevailing in a policy is to accept terms of discourse loaded in favour of established practices" (Connolly, 1983: 2).

In analysing the policy stories of the two IOs, the intention is to identify the **policy problem**, the **mechanisms and explanations** for the policy problem and **policy solutions** inherent in these policy stories.

The policy ideas perspective and the literature referred to above involve far more than what has briefly been presented here, as it entails both ideas, institutions, actors and their interaction to explain how ideas impact on institutions and vice versa, i.e. an ideational perspective necessarily implies institutions and actors. The scope of this paper however deals mainly with the content of ideas in terms of their framing role, shaping the basic problem understanding, causal mechanisms and outlining policy prescriptions. A next step would be to look into how these policy stories are applied by actors in different institutional context and to analyse how and to what extent they influence adopted policies on ageing.

The demographic challenge: A technological critique of the old age dependency ratio concept

A familiar way to describe demographic challenges is to look at changing OADRs. In the European context the OADR was approximately one retiree for every five workers in 1950, in 2005 it was 1 to 3 and in 2050 it is estimated to be 1 to 1,4 workers (United Nations Department of Economic and Social Affairs, 2007). This development implies that there will be increased strain on public finances, in terms of pension and healthcare costs in the future.

There are several aspects of the dependency ratio concept that could be scrutinized in a critical account: for instance the problem with the head count approach, i.e. not varying the intensity dimension of dependency, setting all dependent population at zero output and similarly for the active population, disregarding variation and intensity on the input side.

Here I will focus on one single important aspect, technology, by asking how meaningful it is to compare dependency ratios over extended time periods. It is this

constellation of changing dependency ratios that installs the image and forecasts of an increasingly heavier burden of dependency. The reason for questioning the meaningfulness is that these dependency ratios do not take into account changes in productivity and technological improvements.

It is important here to distinguish between services and goods when discussing productivity. Do we have reason to fear a future in rich OECD countries where there is scarcity of goods? Probably not, within limits set by the scarcity of resources and environmental imperatives, labour productivity will continue to increase, and so there is reason to believe that an abundance of goods will be available. Thus within the world of goods, a continuing problem both within a narrow OECD context and in a global perspective will be the question of distribution of goods.

The other aspect concerns the question of labour productivity within the service sector. The traditional understanding point out that the production of services are labour intensive and that new technological progress that can improve productivity is less important within that sector. A familiar case would be to think of the hairdresser's tools for haircutting, not much has changed over the last 4-5 decades or more. This perspective on slow productivity growth within the service sector has been applied as one of several factors explaining welfare state change in terms of 'permanent austerity' (Pierson, 1998: 541-545) and the 'service economy trilemma' (Iversen & Wren, 1998). A basic premise with broad consensus among economists is that 'service production is inherently less conducive to productivity growth' (op.cit: 511). Thus addressing the cost-disease and service expansion Gösta Esping- Andersen states: "Many services, such as music concerts, psychotherapy or aged care, are capable of almost no productivity enhancement (at least not without a quality loss).." (Esping-Andersen, 1999: 111). This pessimistic view should be questioned since in some service sectors, technological change, for instance through the use of robots or humanoids may make a significant difference, in terms of increasing productivity.⁶ Consider for instance the use of robots and/or humanoids within the old age care sector, as mentioned by Esping Andersen in the above quote, which could help out with physically strenuous work tasks, relieving workers, creating more time for other undertakings, i.e. communication and social

interaction. There is no inherent reason why the combination of robotics and humans in this sector could not lead to both productivity gains and at the same time improve the quality of services.⁷ One of the countries most seriously facing the aging population challenge, Japan, is considering the development of technology within the aged care sector as one among several options to address the ageing challenge (Dethlefs & Martin, 2006; Robot Industry Policy Committee Japan, 2009). Dethlefs & Martin distinguish between three technology options; the first involves the use or adaptation of international standard technology (for instance innovative standards in wheel chairs⁸), the second implies investment and promotion of robotics; the third involves enterprising and support of barrier free technology (examples are light switches and eating implements designed for people with poor eyesight or limited dexterity (Dethlefs & Martin, 2006: 49). The second option involves development of non-industrial robots within the care sector. The authors present three examples of this second option; one used for walking rehabilitation program, the second concerns an interactive face robot that communicate both verbally and non-verbally and the third example is a robotics room where support can be offered to a patient who is bedridden and thus provides some independence despite physical disabilities⁹. It is this second option, i.e. the promotion of robotics that will be exemplified as technological innovations below.¹⁰

Lately there has been a strong growth in the use of industrial robots and also robots for domestic use and the prospects for further growth are substantial according to an

⁶ A humanoid robot is: “ a robot with its overall appearance based on that of the human body. A humanoid robot is an autonomous robot because it can adopt to change in its environment or itself and continue to reach its goal. This is the main difference between humanoids and other kinds of robots” (Wikipedia, 2008). The word robot was introduced by the Czech writer Karel Capek in his play from 1921 called Rossum’s Universal Robot. The word stems from “robota”, which means “forced labour ,drudgery” in Czech (op.cit).

⁷ How to measure productivity growth within the service sector is of course inherently much more difficult than in the manufacturing sector. For instance, in spite of the strong growth of ICT investments within service sectors, productivity growth seem to have stagnated. This situation is described as the productivity paradox: “You can see the computer age everywhere but in the productivity statistics” [Robert Solow as quoted in (NOU, 2000:1: 157).

⁸ An example of this is the stair climbing wheel chair (Cutler, 2006: 262)

⁹ The last example also brings us close to the smart housing technologies.

¹⁰ Why robotics? Examples from robotics is chosen to signify the potential of new technology and because the close resemblance of robots/humanoids and humans, this technology speaks directly to the image of OADR. Likewise the old age care sector illustrates in a transparent way the relation between dependent and active. It serves as an example that could be generalized to the whole service sector. For those sceptical of introducing service robots into the care sector, the labour saving effects of this new technology applied within other sectors could release more human resources to work within the old age sector. Thus, it is not the point to suggest that people will not choose to work for a longer period in the future. There are many good reasons why people as they grow older and if being able to keep up a good health condition would like to continue with some meaningful activities. To the contrary, new technology may enhance people’s chances to participate in the future labour market.

UN report (UNECE United Nations Economic Commission for Europe, 2004; United Nations, 2004, October 21). Worldwide growth was forecasted to be at an annual average rate at 7%. In 2004 there were over 600 000 household robots in use, and this is expected to grow to several millions in the next few years, according to the above report. The most familiar of these new devices are autonomous lawn movers and autonomous vacuum cleaners. The prospects for robots are positive because their relative prices are falling and at the same time their performance and variants are steadily increasing¹¹. The UN report foresees a future where service robots will make a substantial impact on our daily life:

‘In the long run service robots will be everyday tools for mankind. They will not only clean our floors, mow our lawns and guard our homes but they will also assist old and handicapped people with sophisticated equipment, carry out surgery, inspect pipes and sites that are hazardous to people, fight fire and bombs..’ (UNECE United Nations Economic Commission for Europe, 2004: 2).

Bill Gates and other observers to the EURON network believe that there will be a robot in every home by 2025, and compare the current state of play to the early days of the personal computer in the 1970s (ICT Results, 2008, October 1)¹². Engineers at MIT Humanoid Robotics Group have developed a robot called Domo that can adapt to situations to assist people with everyday chores, everyday life, and everyday work. The hope is that Domo will act as a human assistant (ScienceDaily, 2007). Foresights from Japanese experts predict that by 2017, there would be common use of houses with robots and other automated machines, that help old and disabled people with household tasks, including feeding, bathing, going to the toilet, leisure activities, and that can carry out these activities on their own. By 2018 they expected common use (one in each home) of domestic robots, able to clean, wash up, etc. And finally by 2027 they anticipate development of intelligent robots with the ability to see, hear and perform

¹¹ According to the UN report ‘prices of industrial robots, expressed in constant 1990 US dollars, have fallen from an index 100 to 59 in the period 1990-2003, without taking into account that robots installed in 2003 had a much higher performance than those installed in 1990. When taking into account quality changes, it was estimated that the index would have fallen to 25’ (UNECE United Nations Economic Commission for Europe, 2004: 7). Areas of strong growth were human robots, robots in public relations, laboratory robots, underwater systems, defense, rescue and security applications, professional cleaning robots and mobile platforms for multiple use. (op.cit: 11).

¹² EURON is the acronym for European Network of Robotic Research. Examples of robots developed within the network are ARMAR a robot working in the kitchen at tasks like opening the dishwasher door, filling it with dirty dishes, closing the door, before turning the machine on. ‘Justin’ is a type of social robot with enormous dexterity and is capable of making coffee (ICT Results, 2008, October 1).

other sensory functions, able to think, make decisions and act in ways similar to human beings (Pelàez & Kyriakou, 2008: 1180).¹³

What is the relevance of this for the dependency ratio concept? To describe the OADR in an intuitive way, an image often used is that of a number of active workers literally carrying an older inactive person.¹⁴ The picture then often show the situation some years ago, where 5 persons are carrying one old, and a future different picture where only 1 or 2 active persons carry one older person. A simple illustration of this is given in figure 1. The approximate OADR in the illustration is adopted from United Nations Department of Economic and Social Affairs (UNDESA) and covers Europe (2007: Table A.1, p. 155)¹⁵.

¹³ One of the goal of using industrial robots is to reduce the amount of work by humans on tasks that are considered to be Dull, Dangerous, Distant and Dirty jobs, i.e. the 4 Ds. Other types of robots are being constructed to deal with humans, for instance with care tasks. Clearly the use of robots together with workers and in relation with other humans as clients or patients raise, as other technologies do, risk factors, and questions of ethics and responsibility. And in contrast to the deliberately optimistic or 'kind' view on technology presented in this paper there are more dystopian version of this future, confer for instance Joy (2004).

¹⁴ A television program on Norwegian broadcasting station NRK: *Schrödingers katt*, (Schrödinger's cat) applied this image (confer: <http://www1.nrk.no/nett-tv/klipp/411841>). Under the heading: 'Europe's collective suicide' all the future worries of the ageing problematics were raised: 'In future half of the population could expect to live until 100 years. Too low childbirth to avoid population reduction in some European states, the limited impact of immigration and the need to work until 75 years of age'. Similar programs are sure to be found in other countries as well.

¹⁵ The correct OADR for these years are: 0,21 or 1: 4,72 rounded up to 1:5 for 1950, 1: 2,83:for 2005 and 1: 1,42 for 2050. In this last case the illustration is overstating the ratio, although for some European countries this will in fact be an accurate description of the situation. Thus OADR varies considerable between European countries.

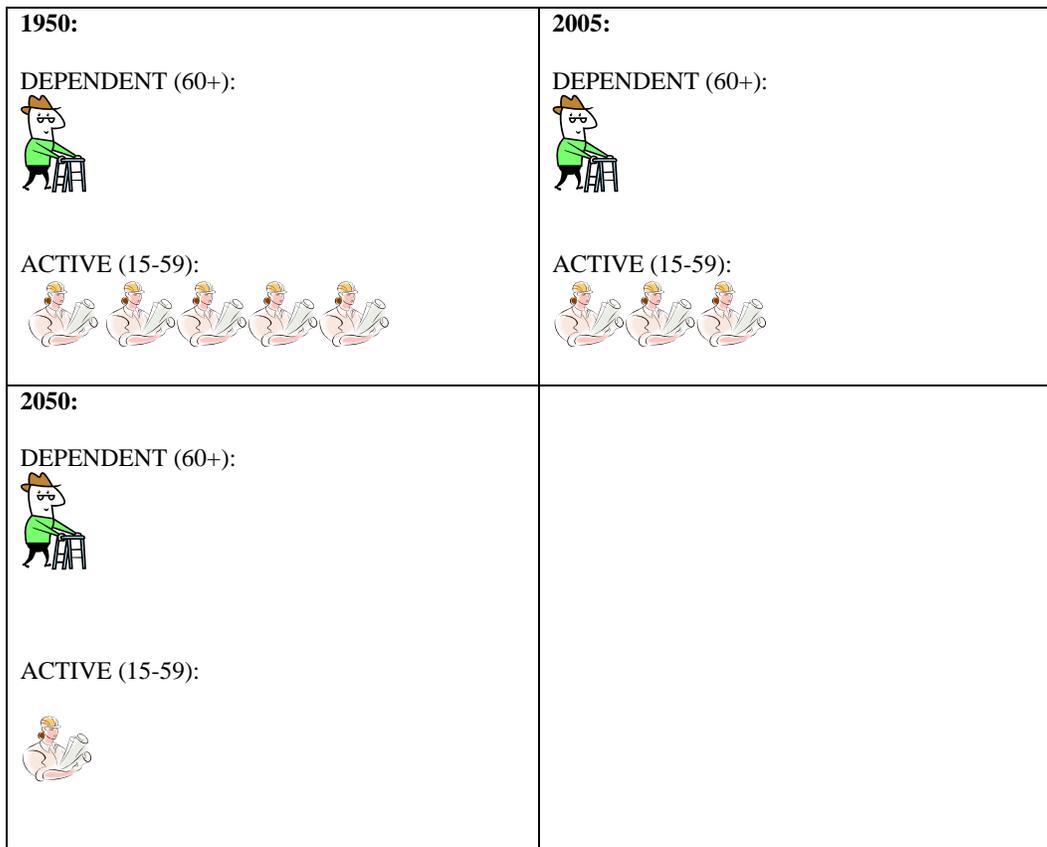


Figure 1: A simplified illustration of changing dependency ratios.

Taking into account, what have been said above, the task is to find out what's missing from the illustration above. Putting in a humanoid/robot in the second, the future is different, and looks less burdensome than in the original illustration:

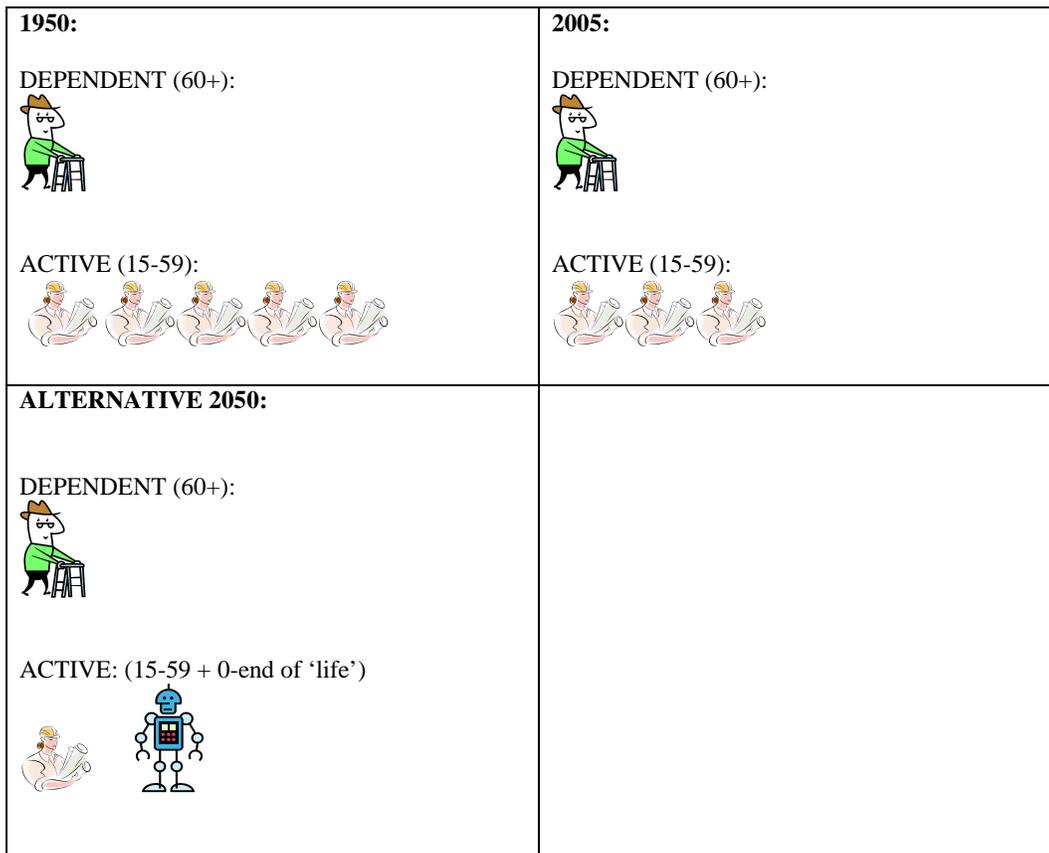


Figure 2: An alternative view on 2050 or: Bringing technology into the equation

Reflecting further on Figure 1 we see that something is missing, since productivity increases is not accounted for. Hence, the active persons in 1950 produced less output per capita than workers of today, and this probably holds for the future as well. The alternative Figure 2 picture is however also somewhat misleading with important implications in economic and financial terms. Since humanoids/robots are not humans they don't need leisure time and they don't become retired, they will effectively be working, i.e. be robots proper, through all their life, except for moments of recharging and periods of maintenance. This is suggested by inserting 0-end of 'life' in the above figure. In conclusion, the dependency ratio concept tends to ignore the importance of technological development and productivity growth and hence exaggerates the burden of ageing. The problem of focusing on productivity gains in purely financial economic terms, i.e. changes in GDP per capita outputs, is that the material or physical content of

productivity changes, that is, its qualitative dimension is hidden. This is why I have drawn attention to the OADR concept rather than the also often applied system dependency ratio¹⁶.

In the next part of this paper I will turn to the ageing policy ideas of two organizations within the European context, UNECE and OECD, in light of the technological critique of the OADR concept.

Ageing Policy Ideas of International Organizations

Before presenting the policy ideas of the regional organizations it is necessary to see how ageing policies are framed at the global UN level. At least for UNECE this is important, because of its role in promoting these global ideas at the regional level. What follows is not intended to give a full account of these organisations ageing policies, but to provide a condensed overview in the form of policy stories and some of its constituent parts: **Policy problem, mechanisms/explanations, policy solutions** and with specific attention to the technology aspect presented above.

UN/UNDESA: A society for all ages

The UN discourse on ageing at the global level emanates from a strong human rights commitment, in which key words are dignity, social rights, participation and inclusion of older people as expressed in the introductory chapter of the report on the Regional Dimensions of the Ageing situation:

“Human dignity has long been recognized as a key United Nations principle for older persons, and is at the core of all the major human rights texts.. In whatever mode society views the dignity of older persons – as a value, a principle or a right – it could and should be a true measure in progress in countering stigma, discrimination and prejudice, thus deepening the meaning of “a society for all ages” (Zelenev, 2008:16-17).¹⁷

¹⁶ The system dependency ratio measures the ratio of active, in monetary terms, contributors (i.e. social security or tax contributors) to benefit receivers, for instance in pension systems.

¹⁷ Sergei Zelenev is Chief of the Social Integration Branch of the Division for Social Policy and Development, Department of Economic and Social Affairs, United Nations Secretariat with responsibilities including the supervision of the Ageing programme.

The above report does not discuss the economic aspect of ageing, but reference is made to the World Economic and Social Survey for 2007, which focus on development in an ageing society. The report is informed by the Madrid International Plan and communicates with this throughout. The discussion of the economic consequences is broad and takes up a number of themes. Also here increasing total dependency ratios in developed countries, as a result of steadily increasing old age dependency ratios constitute the fundamental challenge, with impacts on several factors of economic growth. In addressing these problems the report discusses a whole range of measures to mitigate and adapt to ageing, which represent an inevitable process (Coleman, 2005; United Nations Department of Economic and Social Affairs, 2007: vii). Policies to offset slower labour force growth are discussed. Here the report considers migration, outsourcing, increases in fertility, enhanced labour-force participation. The finding is that although each of these may contribute in mitigating the effect of a smaller labour force, none of them can offset the projected increases in the dependency ratio. For instance the potential impact of increased labour participation on economic growth for some selected countries was calculated:

“...Increasing the labour force participation of those aged between 55-64 to the level of younger cohorts in the labour force would help to increase the annual rate of growth of GDP, but only by a small margin. The effect was largest for Germany where the GDP per capita would go up by 0.13 percentage points. For countries where differences in participation rates of younger and older workers were relatively small, boosting participation rates of older workers had negligible impact on the growth of GDP per capita” (United Nations Department of Economic and Social Affairs, 2007: 66).

Taking into account possible lower productivity of older workers, the calculation reveals that increasing the participation rates for older workers would result in lowering the rate of growth (op.cit. 67). This leads to the discussion of productivity enhancement as a way of mitigating the effects of ageing and increasing dependency ratios. Three important factors were discussed: the impact of ageing on productivity growth, the potential for increasing total productivity and discovery of policy measures that will enhance productivity. As concerns the first aspect, reviewing the literature, the report argues that as workers continue to age, the age profile of the workforce will move away from exhibiting a high share of “peak productivity” workers. This implies a stronger focus on policies to increase productivity growth. How much productivity growth would be

needed to overcome the impact of ageing? And how much would be needed in addition too sustain a certain increase in welfare? Calculations for Japan, reveal that:

“...assuming all other things being equal, labour productivity would need to grow by 2, 6 per cent per year in order to sustain a per capita growth of 2 per cent annually the next 50 years. More than 80 per cent of the required labour productivity growth would be needed to overcome the growth impact of population ageing. This holds to a lesser degree, for other countries with ageing populations like Italy and Germany, and also for the United States. The required productivity growth in all these cases seems, however, within reach by historical standards. Yet it is equally important to note that at 2 per cent per year, GDP per capita growth is slower than that achieved on average by these economies in the past” (op.cit: 68)

In order to reach such productivity growth UNDESA points to the importance of investing in: broad capital, including physical and human capital, research and development. Together this will stimulate development of new technology. The importance of technological developments is also discussed in connection with housing conditions and assistive technologies for older persons. In sum then in addition to the strong human rights focus the outlook is quite optimistic, productivity growth and technological development are important elements in addressing the ageing challenge.

From UN to UNECE: Into the iron cage of ageing

Moving to the regional level of ECE countries, the focus in terms of policy ideas and practice is narrowed as compared to the above perspective¹⁸. The fundamental basis in terms of cognitive framework is constituted by the demographic trends and coping capacity of countries. Rapid ageing constitute the fundamental challenge:

“The extent and nature of the challenge is such that even countries among the richest nations are seemingly unable to build sufficient capacity and political will to cope with the most acute ageing challenges, despite having known about those demographic challenges for decades and, for the most part, having the resources, including the knowledge and tools, available to solve them. Alarming, the absence of mainstreamed ageing policy and sustainable old-age security systems, as well as health care and long-term care for the elderly, have become serious concerns, as many countries have yet to come up with a clear and convincing perspective on possible solutions. That is a quite remarkable state for a region

¹⁸ The ECE countries include 56 countries on three continents Europe, North America and Asia. This implies a wide diversity between nations and contexts of ageing ranging from the US to Kazakhstan, from Russian federation to Israel. In this paper attention is devoted to the European countries.

whose core continent claims a special “European Social Model” as a major element of its collective identity” (Marin & Zaidi, 2008: 118).¹⁹

More specifically the ageing of the population leads to a future expected shrinking of the labour force that provides a challenge to the financial sustainability which has to be met by introducing lifetime indexing. According to the authors there is unanimity about this among the experts on factoring in life expectancy into the pension formula in order to rise the retirement age automatically: This is seen as necessary to secure financial sustainability and at the same time it is considered to be fair and assuring reinforcement of old age welfare. Marin and Zaidi points to the need of introducing new concepts such as prospective age and standardized median life expectancy in order to recalculate age not chronologically from birth, but biometrically from the end of life, being the years remaining until death. Implications in terms of policy ideas are explicitly made:

“Such a reframing would permit conceptualizing the paradox that ageing societies like the ones in the ECE region might nevertheless grow “younger” at the same time, if residual life expectancy at median age raises despite simultaneous increase in the median age.[...]. if a 73-year- old in 2050 would have as much remaining life as a 65- year old- today, how could freezing of eligibility and reference retirement ages be considered fair, meaningful or sustainable? Such logic is necessary in promoting changes in retirement age and other ageing- related policy reforms. Such changes in old-age dependency ratios and the corresponding adjustment of the retirement age would require a continuous upward adaptation of the legal, standard and conventional reference retirement age of up to several months per year” (op.cit: 124).

In this way these descriptive concepts are important also in terms of paving the way for certain normative judgments of existing retirement schemes, following from this description of reality and contributing in delegitimizing existing schemes on grounds of lacking sustainability and fairness. The changing old-age dependency ratio and the increasing time in retirement have challenged the financial sustainability of public pensions and made this a key area of regional priority within ageing policy. The basic policy story promoted could be summed up as follows:

Policy problem: Changing age composition, increased longevity and prospects of shrinking population put pressure on existing social policy systems. Without reform this will lead to demographically unsustainable societies in Europe.

Explanations/mechanisms: basic design of existing social security systems flawed in terms of taking into account demographic transitions. Thus changes in old age

¹⁹ Bernd Marin and Asghar Zaidi are responsible for the review and appraisal cycle of the UNECE Regional Implementation Strategy and the development of indicators of achievements. It is in this role as ‘ideational interpreters’ I regard them here as carving out the more concrete ideas of UNECE ageing policy ideas. For an overview of these ideas, in terms of ten agreed commitments, confer UNECE (2007: 9-32).

dependency ratios are not reflected in automatic adjustments of reference retirement age in conventional pension systems (PayAsYouGo and defined benefit). In addition, perverse incentives of existing systems create numerous pathways to early exit and hence reinforce the effects of increasing OADR.

Policy solution: Application of new concepts such as prospective age and standardized median life expectancy both as descriptive tools, as applied technical mechanisms in reform of pension systems, and as normative evaluative standards of generational fairness and ‘pension justice’. Hence policy options include making work pay through actuarial neutrality or even increasing pension rights with age and lifetime-indexing, increasing opportunities and choices for flexible retirement practices and repealing early retirement options and pathways (op.cit: 133). In sum, stated policy solutions imply transformation of social insurance schemes into OADR sensitive arrangements. I have coined this policy story ‘the iron cage of ageing’ because of the strong and deterministic role of ageing and increasing OADRs, in terms of forcing people to work longer, i.e. a sort of TINA of ageing policy.

OECD: Employment and social policies past their sell-date

The main concern for the OECD in formulating their ageing policy recommendations is the capacity of people to be productive and how to keep or enhance this capacity, as they grow older (OECD, 2000: 126). In their report they argue specifically for narrowing the focus, legitimated by the need for manageable international monitoring and sharing of experiences, towards the changing institution of retirement itself (Op.cit. p. 127). This would include financing and duration of retirement, the work-retirement transition as well as the health, social and economic well being of people of traditional retirement ages and their contribution to economy and society. The OECD has initiated a series of reviews of ageing and employment policies in most of its member countries where this constricted framework of active ageing is applied. The title of the final report ‘Live longer, Work longer’ brings out the key message of the OECD in this area (OECD, 2006). The organization pinpoints the mobilization of older people who are currently inactive as one of the most significant sources of additional labour supply. They present their perspective as a new agenda of reform which intends to offset the

negative effects of population ageing on public budgets and economic growth, promote choice for older workers and more fundamentally: ‘this new reform agenda is intended to convert the process of population and workforce ageing into an opportunity for society and older workers themselves’ (OECD, 2006: 9). The policy idea of the OECD, understood as involving description of the specific societal problem in question, explaining how it came about, and specifying how the problem can be fixed in terms of policy solutions, i.e. answering the question of what ought to be done, is neatly laid out on the back side cover of the report. Thus in terms of the basic problem: rapid population ageing implies that:

‘many employment and social policies, practices and attitudes that discourage work at an older age have passed their sell-by date and need to be overhauled. They not only deny older workers choice about when and how to retire but are costly for business, the economy and society. If nothing is done to promote better employment prospects for older workers, the number of retirees per worker in OECD countries will double over the next five decades. This will threaten living standards and put enormous pressure on the financing of social protection systems. To help meet these daunting challenges, work need to be made a more attractive and rewarding proposition for older workers. First, there must be strong financial incentives to carry on working and existing, subsidised pathways to early retirement have to be eliminated. Second, wage-setting and employment practices must be adapted to ensure that employers have stronger incentives to hire and retain older workers. Third, older workers must be given appropriate help and encouragement to improve their employability. Finally, a major shift in attitudes to working at an older age will be required on the part of both employers and older workers themselves’ (OECD, 2006: backside cover).

Analysing the policy story above we may identify the following key points: **Policy problem:** combination of population ageing and outdated employment and social policy, which in their present form reinforce the ageing challenge. This leads to unsustainable public budgets and without reforms existing policies force a drastic downsizing in social protection (op.cit 13).

Explanation/mechanisms: the incentive structure of social protection and employment policies provide individuals and firms with wrong cost and benefit signals leading to distorted choices resulting in exit from work of older workers.

Policy solution: strong financial incentives for workers and employers to continue to work and to retain older workers. In addition, measures to improve employability and change of attitudes are recommended to support this policy agenda.

The cognitive aspects of this policy story are rooted in the core of microeconomic thinking, i.e. a paradigm of rational economic actors and how they respond to incentive

structures provided by markets and governments. There are also important normative dimensions in terms of judging existing policies as unsustainable and in adhering to the idea of individual choice and pointing out that existing policies constrain individual choices.

There are strong parallels between the UNECE and the OECD policy stories, i.e. both of them are rooted in the demographic challenge as evidenced in increasing dependency ratios and as expressed in numerous ways and both invoking the language of economic incentives in explaining what is wrong and in providing solutions, i.e. inducing the correct incentives. Key areas of reform in terms of promoting active ageing are pensions and labour markets. In common they also tend to deemphasise the role of productivity growth and they ignore the role of technological transformations/innovation as one driver in confronting the ageing problem. In the case of OECD productivity gains because leading to higher incomes would transform into future higher pension claims and so would not provide a solution (OECD, 2006). And likewise the UNECE very briefly discuss productivity growth and stating that after 2017 productivity growth, will not be able to compensate for the decline in the working-age population. To this should be added that in the comprehensive (850 pages) edited volume by Marin and Zaidi (2007) entitled 'Mainstreaming Ageing. Indicators to Monitor Sustainable Policies' productivity is only shortly discussed in one of the chapters (Salomäki, 2007: 662-663). The collection of indicators for monitoring the implementation of sustainable policies contains a list of 105 main and sub-indicators, but none of these relate to technology at all (Marin, Fuchs, Lipszyc, Makovec, & Azidi, 2007: 755-779). In both cases there are no traces of what can be called the 'technological optimism' policy story.

Concluding discussion: A missing leg of regional ageing policy ideas

In this paper I have emphasised the importance of the OADR concept as a way of measuring the burden of ageing and as constituting an important justification within policy stories of IOs, for why social policy reform is needed. Given this centrality there is a need to scrutinize and contest this concept. Based on critique reasoning from a technological point of view some implications can be drawn:

A key argument of this paper is that the OADR concept as applied in different IOs policy ideas ignores technological innovations, the effect being that the ageing challenge is highly dramatized and secondly that the adhering policy ideas fails to include the potential of new technology as part of future looking ageing policies. Changes of OADR over considerable time periods, i.e. several decades, are applied to reveal the severity of the ageing challenge. However, in light of the technological critique the longer the time period the more misleading these comparisons of OADR will be. Thus the robot as signifying technology in Figure 2 could be applied historically as well, illustrating technological improvements and productivity changes over time, partly replacing the reduction in relative working population over time.

I have deliberately presented the bright side of technology and the reader could consider this as an alternative and explorative policy story with technology as the 'hero'. The point of putting up this optimistic technological picture is to stress that there are alternatives to the gloomy picture captured in phrases such as the 'demographic time bomb'. We also see that by bringing in these technological innovations, which are under way at present and in the not so distant future, the meaning of the traditional way of measuring old age dependency is contested, and the need to at least accompany such measures with a more thorough look into what productivity and technological innovations implies for the future. In this way technology could be seen as a way of reconnecting to the optimism of Keynes prediction and breaking out of the 'iron cage of ageing'.

Over the last two decades the personal computer has become part of life for more and more people on a daily basis in rich western countries and increasingly so also in the rest of the world. How important and how fast similar developments within the robotics field and other technological areas will materialize is difficult to say, but that it will play an increasing role is likely. In this respect we could think of technological innovations as alternative compensatory measures for each of the main policy options put on the ageing agenda: increasing birth rates, migration, working longer. The fourth option of increasing productivity and GDP growth was clearly peripheral in the two policy stories of the OECD and UNECE which strongly focused on reforming labour market and social policies to promote the 'working longer' strategy. In downplaying the role of increased productivity it is pointed out that this also leads to increasing wages and hence in its turn higher pension benefits, a larger increase in public expenditures and higher

taxes to fund the spending in the future (OECD, 2006: 19) . Thus, little comfort to find there. However, this financial perspective misses the real economy- and the qualitative dimension of productivity as encompassed by the example of robotics and humanoids technology. Going back to the illustration in figure 2 we know that robots are not earning pensions and so part of the increasing productivity is not accompanied by increasing pension burdens in the future.²⁰ The social policy implications of this critique is clear: Whereas the OADR as applied in the policy stories above constrict future choices to OADR sensitive social policies, the ‘technological optimism policy story’ opens up for a wider social policy space, in which traditional social policies including those with strong redistributive elements, is not defined as being past their sell date.

The deliberate presentation of the technological optimism policy story as made in this paper should not make us forget the problematic sides of new technology. For instance the parallel between the development of the personal computer and robots should also include the possibility that the future may bring about an equivalent to the digital divide in terms of a ‘robotics divide’, both inside states and between rich and poor countries. Thus, technological solutions do not remove the social and normative questions concerning redistribution and social rights. In addition, social science engaged in ageing policy and the wider welfare state research should start to address the qualitative aspects of technological change, as illustrated here by the use of robotics for instance in old age care, and how it may impact some of the basic assumptions for instance within the welfare retrenchment literature, as briefly discussed in this paper.

The overall conclusion analysing the ageing policy ideas of the two IOs and the OADR is that there is a technological leg of ageing policy that is missing from the current ageing discourse at the European regional level. At the global UN level however, elements of this technological ageing discourse was present as revealed in the UNDESA report, but all traces of this disappeared at the regional level and through the surveillance mechanisms and indicators for ‘Mainstreaming Ageing’. Further research is needed to understand how the initially broad and to some extent technologically sensitive ideas of ageing policy at the global level are transformed into much more narrow ideas of extending working life as these ideas travel from the global to the

²⁰ However a more capital intensive production would imply that capital income would grow and so accentuates the classical issues of the ‘control over the means of production’ (Marx), income distribution and redistribution.

regional level. In the case of UNECE, this is all the more paradoxical as this organisation is the one publishing the yearly 'World Robotics Survey'.

Annex 1: Chronology of UN Ageing Policy

Milestones

Table 1: Chronology of Milestones: ageing initiatives of UN organizations in a European context (preliminary, to be completed)

Year	Event	Int.org.	Outcome
1982	First World assembly on ageing, Vienna	UN	Vienna International plan on ageing
1995	World summit for social development Copenhagen	UN	Slogan: 'A society for all ages'
2002	Second world assembly on ageing, Madrid	UN	Madrid International Plan of Action on Ageing
2002	Berlin	UNECE	Regional Implementation Strategy (RIS)
2007	Leon		
2008	Geneva	UNECE	Working Group on ageing: adaption of work program on ageing
November 2009	Next meeting of the Working Group on Ageing	UNECE	

Annex 2: List of Acronyms and abbreviations

ECE: Economic Commission for Europe

OADR: Old Age Dependency Ratio

OECD: Organization for Economic Cooperation and Development

TINA: There Is No Alternative

UNECE: United Nations Economic Commission for Europe

UNDESA: United Nations Department for Economic and Social Affairs

WHO: World Health Organization

References

- Béland, D. (2005). Ideas and Social Policy: An Institutional Perspective. *Social Policy & Administration*, 39(1 (February)), 1-18.
- Blyth, M. (1997). Review: "Any More Bright Ideas?" The Ideational Turn of Comparative Political Economy. *Comparative Politics*, 29(2 (January)), 229-250.
- Blyth, M. (2002). *Great Transformations Economic Ideas and Institutional Change in the Twentieth Century*. Cambridge: Cambridge University Press.
- Campbell, J. L. (1998). Institutional analysis and the role of ideas in political economy. *Theory and Society*, 27, 377-409.
- Campbell, J. L. (2001). Institutional Analysis and the Role of Ideas in Political Economy. In J. L. Campbell & O. K. Pedersen (Eds.), *The Rise of Neoliberalism and Institutional Analysis*. Princeton and Oxford: Princeton University Press.
- Campbell, J. L. (2002). Ideas, Politics, and Public Policy. *Annual Review of Sociology*, 28(1), 21-38.
- Coleman, D. (2005). Facing the 21st century: new developments, continuing problems. In M. Macura, A. L. MacDonald & W. Haug (Eds.), *The New Demographic Regime. Population Challenges and Policy Responses* (pp. 11-38). New York and Geneva: United Nations Publications, (UNECE and UNFPA).
- Connolly, W. E. (1983). *The terms of political discourse* Oxford: Blackwell.
- Cutler, S. J. (2006). Technological Change and Aging. In R. H. Binstock & L. K. George (Eds.), *Handbook of Aging and the Social Sciences* (pp. 257-276). London: Academic Press.
- Dethlefs, N., & Martin, B. (2006). Japanese technology policy for aged care. *Science and Public Policy*, 33(1 (February)), 45-57.
- Ervik, R., Kildal, N., & Nilssen, E. (2009). Introduction In R. Ervik, N. Kildal & E. Nilssen (Eds.), *The Role of International Organizations in Social Policy: Ideas, Actors and Impact*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar.
- Esping-Andersen, G. (1999). *Social foundations of postindustrial economies*. Oxford: Oxford University Press.
- Fischer, F., & Forester, J. (1993). *The Argumentative turn in policy analysis and planning*. Durham: Duke University Press.
- Friedman, B. M. (2008). Economic Well-being in a Historical Context. In L. Pecchi & G. Piga (Eds.), *Revisiting Keynes Economic Possibilities for our Grandchildren* (pp. 125-134). Cambridge, Massachusetts. London, England: The MIT Press.
- Hall, P. A. (1993). Policy Paradigms, Social Learning, and the State. The Case of Economic Policymaking in Britain. *Comparative Politics*, 25(3 (April)), 275-296.
- ICT Results. (2008, October 1). Your Robotic Friend, The Humanoid Robot *ScienceDaily* Retrieved November 28, 2008, from <http://www.sciencedaily.com/releases/2008/09/080924085549.htm>
- Iversen, T., & Wren, A. (1998). Equality, Employment, and Budgetary Restraint: The Trilemma of the Service Economy. *World Politics*, 50(4), 507-546.
- Joy, B. (2004). Why the future doesn't need us. *Wired*, 8.
- Keynes, J. M. (2008 [1930]). Economic Possibilities for our Grandchildren. In L. Pecchi & G. Piga (Eds.), *Revisiting Keynes. Economic Possibilities for our Grandchildren* (pp. 17-26). Cambridge, Massachusetts and London, England: The MIT Press.
- Marin, B., Fuchs, M., Lipszyc, B., Makovec, M., & Azidi, A. (2007). List of Indicators to Monitor the Implementation of the Madrid International Plan of Ageing (MIPPA) through its U.N.-European Regional Implementation Strategy (RIS). In B. Marin & A. Zaidi (Eds.), *Mainstreaming Ageing. Indicators to Monitor Sustainable Policies* (pp. 755-779). Aldershot, England and Burlington, USA: Ashgate Publishing Company.

- Marin, B., & Zaidi, A. (2008). Ageing Trends and Policies in the European Region. In *Regional Dimension of the Ageing Situation* (pp. 118-147). New York: United Nations, Department of Economic and Social Affairs.
- Marin, B., & Zaidi, A. (Eds.). (2007). *Mainstreaming Ageing. Indicators to Monitor Sustainable Policies*. Aldershot and Burlington: Ashgate Publishing Limited.
- Ney, S. (2006). *Messy Issues, Policy Conflict and the Differentiated Polity: Analysing Contemporary Policy Responses to Complex, Uncertain and Transversal Policy Problems*. Unpublished Ph.D., University of Bergen, Bergen.
- NOU. (2000:1). *En strategi for sysselsetting og verdiskapning*. Oslo: Finansdepartementet.
- OECD. (2000). *Reforms for an Ageing Society*. Paris: OECD.
- OECD. (2006). *Live longer, Work longer*. Paris: OECD Publishing.
- Pecchi, L., & Piga, G. (2008). Economic Possibilities for our Grandchildren: A Twenty-first Century Perspective. In L. Pecchi & G. Piga (Eds.), *Revisiting Keynes. Economic Possibilities for our Grandchildren* (pp. 1-26). Cambridge, Massachusetts. London, England: The MIT Press.
- Pelàez, A. L., & Kyriakou, D. (2008). Robots, genes and bytes: technology development and social changes towards the year 2020. *Technological Forecasting and Social Change*, 75, 1176-1201.
- Pierson, P. (1998). Irresistible forces, immovable objects: post-industrial welfare states confront permanent austerity. *Journal of European Public Policy*, 5(4), 539 - 560.
- Rein, M., & Schön, D. (1993). Reframing Policy Discourse. In F. Fischer & J. Forester (Eds.), *The Argumentative Turn in Policy Analysis and Planning* (pp. 145-166). Durham: Duke University Press.
- Robot Industry Policy Committee Japan. (2009). Building a Safe and Secure Social System Incorporating the Coexistence of Humans and Robots, in the light of Japan's aging population and falling birthrate, Press Release, March 25, 2009. Tokyo: Ministry of Economy, Trade and Industry (METI).
- Salomäki, A. (2007). Long-term projections of the Impact of Ageing on Pension Expenditure, Public Finances and Economic Growth in the European Union. In B. Marin & A. Zaidi (Eds.), *Mainstreaming Ageing. Indicators to Monitor Sustainable Policies* (pp. 655-692). Aldershot and Burlington: Ashgate Publishing Company.
- ScienceDaily. (2007). Robots: The Next Generation Robots That Do The Chores. *ScienceDaily* Retrieved 28.11.2008, from http://www.sciencedaily.com/videos/2007/0808-robots_the_next_generation.htm
- Solow, R. (2008). Whose Grandchildren? In L. Pecchi & G. Piga (Eds.), *Revisiting Keynes. Economic Possibilities for our Grandchildren* (pp. 87-93). Cambridge, Massachusetts. London, England: The MIT Press.
- Stiglitz, J. E. (2008). Toward a General Theory of Consumerism: Reflections on Keynes's *Economic Possibilities for our Grandchildren*. In L. Pecchi & G. Piga (Eds.), *Revisiting Keynes. Economic Possibilities for our Grandchildren* (pp. 41-85). Cambridge, Massachusetts, London, England: The MIT Press.
- Taylor-Gooby, P. (Ed.). (2005). *Ideas and Welfare State Reform in Western Europe*. Houndsmills, Basingstoke, Hampshire and New York: Palgrave Macmillan.
- UNECE United Nations Economic Commission for Europe. (2004). 'UNECE issues its 2004 World Robotics Survey', Press Release. Geneva.
- UNECE United Nations Economic Commission for Europe. (2007). *Proceedings from the 2007 Ministerial Conference on Ageing* (No. Conference Report, 6-8. November 2007 León, Spain). León: UNECE.
- United Nations. (2004, October 21). Robots Are Taking An Increasing Number Of Jobs, New UN Report Says *ScienceDaily*. Retrieved November 28, 2008, from <http://www.sciencedaily.com/releases/2004/10/041021085857.htm>
- United Nations Department of Economic and Social Affairs. (2007). *World Economic and Social Survey 2007: Development in an Ageing World*. New York: United nations, Department of Economic and Social Affairs.

- Wikipedia. (2008). Humanoid robot. Retrieved 28.11. 2008, from http://en.wikipedia.org/wiki/Humanoid_robot
- World Health Organization. (2002). *Active Ageing. A Policy Framework*. Geneva: WHO.
- Zelenev, S. (2008). The Madrid Plan: A Comprehensive Agenda for an Ageing World. In *Regional Dimensions of the Ageing Situation* (pp. 1-18). New York: United Nations, Department of Economic and Social Affairs.