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Why are there so few female top executives in egalitarian welfare states?*

by

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Abstract: We identify pertinent institutions governing the structure of payoffs with regard to female career progression. Drawing on recent insights in behavioral economics, we hypothesize that interactions between psychological mechanisms and the institutional setup may be important determinants of cross-country differences in the level and evolution of female representation in executive positions in the business sector. We test this proposition informally by exploring whether it can be used to account for some of the observed differences between the Anglo-Saxon and Scandinavian countries in this respect. Two particularly important conclusions emerge: (i) broad welfare state policy promotes high female labor force participation, but blunts incentives to pursue top executive positions in the business sector; and (ii) psychological mechanisms are likely to amplify the effects of policies and institutions.

Keywords: Career choice; Career incentives; Gender equality; Household production; Parental leave; Welfare state incentives.

JEL *Classification*: D13; D63; J16; J20; M52.

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The 20th century witnessed dramatic changes in the economic situation of women across developed economies in the West. Only two or three generations ago, most women were restricted to low-paying occupations with bleak career prospects. In recent years the share of women in higher-paying professions previously dominated by men has risen substantially. Today, women's labor force participation is comparable to men's; women have the same or higher levels of education and have largely bridged the pay gap for comparable work. In a parallel development the share of women holding positions of power in the political sphere has increased dramatically.

In contrast to these developments, female representations in some key sectors of the labor market have hardly changed in the last century. One particularly conspicuous area is top management of large firms. Female CEOs constitute, for instance, only 2.4 percent of all CEOs of the Fortune 500 companies in the US, and only 1 percent of all listed companies in Sweden (Catalyst 2007a, Renstig 2006). Why have there been broad and consistent advances for women in top positions in politics and the public sector, but not in this sector? Given the symbolic (and real) importance of CEOs and their top management teams as a commanding height, the lack of female representation has by many observers been interpreted as a signal that women are still widely discriminated against in society (see, e.g., Black and Strahan 2001, Goldin and Rouse 2000, and Altonji and Blank 1999). Adding to this puzzle is another – on the surface surprising – pattern, the fact (as will be shown) that female underrepresentation amongst managers is greater in Scandinavian countries, where gender equality has been promoted most heavily than in Anglo-Saxon societies with a more *laissez faire* attitude towards this issue (Hakim 2000, 2004, Mandel and Semyonov 2006).

Why is this the case? We examine whether differences in policies and institutions across countries can further our understanding of the patterns of differences, particularly the low share of women in top corporate positions. While addressing institutional and policy differences, we will also suggest a somewhat novel mechanism to explain the phenomenon, namely *psychologically induced path dependence in career trajectories*. Incentive structures include both a monetary and a non-monetary element, and are influenced by norms and habits. We emphasize further that norms and habits are not set in stone but also tend to be endogenous, i.e., the consequence of policies and institutions (see, e.g., Lindbeck *et al*. 1999). We consider preferences, and internal payoff structures, as mutable and affected both by factors such as time allocation and the external payoff structure (Bowles 1998).

The purpose of this paper is thus twofold: (i) to identify pertinent institutions governing the structure of payoffs with regard to female career choices and aspirations; (ii) to study the interaction and feedback of payoffs with the formation of norms and institutions – formal and informal – and consider issues such as the path dependence of career progression. This involves an exploration of psychological mechanisms that may amplify these effects, in a setting where preferences are treated as malleable and endogenous. We particularly focus on data from Sweden and the United States, both because of the availability of data and because they constitute the strongest contrasts in the exercise. These two countries are situated at opposite ends of the policy spectrum as regards the degree of state involvement in the economy (Freeman *et al*. 1997), and in the family (Mandel and Semyonov 2006).

There are a few studies examining the effects of path dependence on career progression. Arun *et al*. (2004) investigate how different kinds of career breaks affect the subsequent working lives of women. They find that long child-related breaks induce the largest income penalties, lead to a loss of status and seniority, and reduce the probability that women return to the same type of job as before. Light and Ureta (1995) and Sewell *et al*. (1980) argue that the potential of the first job is an important determinant of subsequent career success. Furthermore, career planning can to some extent explain actual work behavior. Hakim (2004) finds that women who make the most realistic career plans and acquire the needed skills succeed best in the labor market. These women were also found to represent a rather inelastic labor supply, similar to that of men. Meyersson Milgrom and Petersen (2006) and Albrecht *et al*. (1999) find that temporary career withdrawals (partial or complete) result in women accumulating less experience, which lowers the likelihood of future promotion.

The paper is organized as follows. We start by reviewing the empirical evidence of the current situation in Scandinavia and Anglo-Saxon countries. There exists no clear set of indicators of career progression, and we therefore present different measures where comparable data are available. In the next section the possible outcomes of different institutions are analyzed. This includes an exploratory empirical evaluation of the expected effects through a comparison of the situation and recent development in the two country groups, with special emphasis on the US and Sweden. In the third section we suggest a number of psychological mechanisms which, by inducing path dependence, are likely to be important for both the initial career choice and the subsequent evolution of career aspirations and performance, thereby reinforc-

ing the behavioral effects induced by the institutional setup. The main focus is on fertility. Both the extent of markets and the role of other institutions (or lack thereof) are important components of how agents interact, and consequently on how outcomes are determined. We therefore relate the psychological mechanisms to the institutions, in an attempt to explain the empirical evidence. Section 4 concludes.

The Facts

The Anglo-Saxon countries (here the US, the UK, Canada and Australia) and Scandinavia (here Sweden, Denmark, Norway and Finland) constitute reasonably distinct institutional settings, even if there are also substantial differences across countries within the two groups. The Anglo-Saxon countries tend to have the smallest degree of government involvement in the economy among advanced nations, with the Scandinavian countries having the largest. On the other hand both groups have high levels of female participation in the labor market compared to the rest of the world.

In *table 1*, we summarize comparable female indicators of career progression together with some basic economic measures between these groups. As can be seen in the table, both groups have about the same female participation in the labor market, with Scandinavia somewhat higher than the Anglo-Saxons. The groups also have high and similar incomes per capita, with important exceptions of especially high incomes in the US and oil-rich Norway. A marked contrast is that Scandinavian countries have more than double the share of female members of legislative bodies, while Anglo-Saxon countries have a higher share of females in managerial positions.

To an outside observer it may seem paradoxical that women in Sweden (and to a slightly lesser extent in other Nordic countries) are so successful in obtaining top political positions both in an absolute sense and relative to the U.S. Is that because Swedish political careers are less time consuming and less competitive? If not, the arguments put forward regarding institutional and psychological barriers to Swedish business executives would be weakened. However, as documented by Freidenvall (2008) and Sainsbury (2004) the explosive development of female representation on political positions can be largely attributed to the gendering of democracy, which resulted in the introduction of voluntary quotas in virtually all parties. Once entrenched this principle became a binding norm resulting in a close to 50 percent fe-

male share of parliamentarians and a 40–50 percent share of female Cabinet ministers since 1994.[1] This principle has then spread to management positions in the public sector, and by 2006 58 percent of all public sector managers were women, compared to a mere 23 percent in the private sector (Statistics Sweden 2008, 106).

Table 1 Anglo-Saxon versus Scandinavian gender emancipation indicators.

Country	Female share parliament 2007 %	Female share managerial positions 2007 %	Female full time employment 2006 %	Female part time employment 2006 %	Population 2006 million	GDP per capita 2006 PPP $	Public share of economy 2006 %
Anglo-Saxon	**18.0**	**40.8**	**51.5**	**15.0**	**413.7**	**41,500**	**36.6**
Australia	26.7	37.1	39.4	27.0	20.8	34,700	35.3
Canada	21.3	36.9	50.9	18.0	32.6	35,900	40.0
UK	19.5	34.0	40.2	25.4	60.7	34,400	43.6
US	16.8	42.7	54.7	11.8	299.7	44,000	34.9
Scandinavia	**41.8**	**29.7**	**55.3**	**15.9**	**24.5**	**38,000**	**53.4**
Sweden	47.0	31.6	57.3	13.3	9.1	34,100	56.6
Finland	41.5	28.6	57.7	10.1	5.3	33,300	50.5
Denmark	38.0	27.7	54.6	18.8	5.4	36,000	53.5
Norway	36.1	31.6	49.3	24.2	4.7	53,100	50.2

Source: http://www.ipu.org/wmn-e/classif.htm, OECD in Figures 2007 (data for 2006), OECD Labor Market Database, ILO (Laborsta) and Eurostat (LFS).
Note: "Managerial positions" refer to ISCO-88 group 1, i.e., legislators, senior officials and managers. Public share of the economy refers to the average value of public revenues and public expenditures as a share of GDP.

The relatively high share of female participation, as depicted in table 1, has evolved only during the last century. The 20th century entailed far-reaching changes in women's overall autonomy, including opportunities in the labor market. Goldin (2004) describes how in the US in the 20th century there were five different successive cohorts of college graduate women, each having different opportunities and responding to different institutional settings. Her analysis shows how women's preferences in terms of occupation, family formation and economic independence changed during this time period. Every consecutive cohort succeeded better than the previous one. Large changes also occurred in Western Europe including Sweden.

Until the 1970s, women were essentially unrepresented on executive positions in the Swedish business community, whereas the corresponding representation of women in the US was then

[1] See Freidenvall *et al*. (2006) for an analysis of the mechanisms behind this development.

already expanding. *Table 2* presents the share of women in intermediate and higher executive positions in the private sector for a few industrialized countries (governed by data availability). Table 2 also includes public sector executives in the figures, which tends to inflate the Swedish share. Sweden not only falls behind Anglo-Saxon countries such as the US and the UK but also other large continental European countries such as (West) Germany and France. Among the countries compared, Sweden clearly comes out at the bottom.

Table 2 Share of women on executive positions‡ in selected countries in the mid 1970s (%).

	Year	Share
France	1975	16.3
West Germany	1978	16.7
Norway	1978	14.2
Sweden	1975	11.2
UK	1979	18.8
US	1978	23.6

‡ Refers to intermediate executive positions and higher.
Source: Asplund (1984).

Despite Sweden's reputation for its ambitious policies of gender equality, recent data suggest that Sweden is *not* a leading country concerning female representation in managerial positions, neither in the world nor within the EU. Within the EU, France today has the highest share of women (about 37 percent) whereas Austria has the lowest (27 percent), as can be seen in *table 3*. Sweden holds an intermediate position just below the EU average at 32 percent. Table 3 also includes politicians and managers in the public sector, an area in terms of female representation where Sweden has been world leading. Still, Sweden significantly trails the corresponding US figure of 42.7 percent, which is approximately 35 percent higher.

The foregoing comparisons were all made using data on managers in a broad sense, which are comparable, up-to-date and easily available from international sources. If, however, we narrow our definition of managers to include solely chief executives and directors, it becomes far more difficult to find suitable data. Nevertheless, the available limited data show that in 2005 in Sweden the share of CEOs among men was 5.4 times higher than among women. This is one of the highest figures in the EU (EU-15); higher figures are found only in Denmark, the UK and Portugal. The corresponding US figure is about 2.5, i.e., it is more than twice as

common to be a female CEO in the US as in Sweden. Even then, of course, they are a minority – in the US only about 25 percent of all chief executives are women.[2]

Table 3 Share of women holding managerial positions in the EU and the US in 1997 and 2007 (%).

Country	1997	2007	Country	1997	2007
Belgium	30.2	33.8	Austria	28.2	26.7
Denmark	23.7	27.7	Portugal	32.8	31.5
Germany	26.6	28.9	Finland	22.7	28.6
Ireland	30.0	30.9	Sweden	27.0	31.6
Greece	22.0	27.9	United Kingdom	33.8	34.4
Spain	31.1	32.0	Norway	26.9	31.6
France	33.9	37.9	Switzerland	20.1	30.4
Italy	17.0	33.5	US	n.a.	42.7
Netherlands	21.1	28.0	EU 15 (average)	29.6	32.7

Source: Eurostat (LFS) and ILO (Laborsta).
Note: "Managerial positions" refer to ISCO-88 group 1, i.e., legislators, senior officials and managers.

Hence, when we focus on the top managers the difference between the US and Sweden seems to be even larger. When it comes to the evolution of women in corporate officer positions, the trend has been upward in most developed countries. This is also true for Sweden, where representation has increased sharply over the last few years, in particular during the 1990s (Henrekson 2004, ch. 2). Since then, however, the share of women in corporate officer positions in *listed* Swedish firms (see *table 4*) has remained relatively low, with a marginal rise from 10.6 percent in 2001 to 12.3 percent in 2005. The corresponding figure in the US for the *Fortune 500* companies (F500) was 16.4 percent in 2005 (Catalyst 2006), a somewhat higher figure. If the US figure were to include all listed companies the difference would probably be even larger.[3]

[2] The Swedish figure is taken from LFS, Eurostat and the US figure from the Bureau of Labor Statistics. There may be a slight difference in the definition of the categories compared.
[3] The female CEO share among all firms is about ten times higher (25 percent) than the F500 share (2.4 percent) in the US. Thus, focusing exclusively on the F500 share probably underestimates the US female share. Unfortunately, we have not found any other comparable data concerning corporate officer positions.

Table 4 Women on corporate officer positions in Swedish listed companies, 1990, 2001 and 2005.

	1990	2001	2005
No. of women on corporate officer positions	20	178	246
No. of corporate officers	733	1,674	1,996
Share of female corporate officers (%)	2.7	10.6	12.3
No. of companies with female corporate officers	17	108	151
Share of companies with female corporate officers (%)	10.1	43.2	55.7

Note: The share of female corporate officers can be compared with the US F500 figures: 8.7 (1995), 15.7 (2002) and 16.4 (2005).
Source: Renstig (2006).

All data have hitherto shown that the Anglo-Saxon countries in general and the US in particular have a higher share than Sweden of women in leading positions. However, there is one exception to this pattern which must be pointed out. Particularly in Scandinavia, there are either laws mandating a certain female percentage on corporate boards, or there are continual threats from politicians to pass such legislation. In Norway, for example, from January 2008 40 percent of all corporate board seats of state-owned or publicly listed companies must be held by women. This political pressure is distinctly evident in the distributions of gender measured by official statistics. *Table 5* reports the female share of corporate board members in Europe, the US and Canada. It is clear that the Scandinavian countries in general and Norway in particular have a much higher share of women on corporate boards.[4]

Table 5 Female share of corporate board members, 2008 (%).

Country		Country	
Belgium	7.0	Portugal	0.8
Denmark	18.1	Finland	25.7
Germany	7.8	Sweden	26.9
Ireland	10.1	United Kingdom	11.5
Greece	6.0	Norway	44.2
Spain	6.6	Switzerland	6.6
France	7.6	Canada 2007	13.0
Italy	2.1	US 2007	14.8
Netherlands	12.3	EU 15	9.7
Austria	9.2		

Note: The figures from US and Canada are based on the 500 largest companies whereas the EU figures are based on the 300 largest companies.
Source: Catalyst (2007b), Catalyst (2008) and European Professional Women's Network (2008).

[4] The female share of corporate board members was invariably below 5 percent through the 1990s. In the face of a threat of legislation, the share more than doubled in 2003 to 12 percent (Petrelius Karlberg 2003).

It should be stressed that patterns identified for CEOs and managers are also likely to emerge in many other occupations and areas such as finance, management, legal and technical consulting, portfolio management, and top-level academic positions, all requiring the acquisition of highly *specialized* human capital. Such jobs tend to be characterized by non-divisibilities and non-convex production functions over an extended interval (a boss working 12 hours a day cannot be replaced by two people working six hours).[5] Thus, female corporate board representation taken in isolation is likely to be misleading as a proxy for female executive career influence and opportunities.

Policies and Institutions

It is often tempting to attribute cross-country differences to the nebulous and all-encompassing concept of "culture". While culture is certainly important, our aim is to explain as much as possible through specific differences in policy and institutional setup.[6] In contrast to culture-based explanations, this approach can offer useful policy guidance. It is also justified by the fact that the assumption of cultural differences requires hair-splitting, inasmuch as Anglo-Saxon and Scandinavian countries have very similar cultural attitudes regarding the role of women (Inglehart and Norris 2003, ch. 2).

Undoubtedly, numerous institutional factors impacting on female career choice and career success cannot be mapped with theoretical or quantitative precision. Instead we do our best to achieve the best possible tradeoff among the often ambiguous institutional factors that we deem relevant enough for framing the questions posed. In what follows we mainly focus on the US vs. Sweden. These two countries are the most clear-cut representatives of the two groups, and it would also be too demanding in terms of space to delve deeply into the institutional details for every country in table 1.

Parental Leave

A key issue in the analysis of the share of women in top positions is *fertility*, and the extent to which the institutional setup is conducive to combining career aspirations with childbearing

[5] See Rosen (1983) and Romer (1990) for persuasive arguments regarding the importance of indivisibilities and non-convexities for productivity at the individual and aggregate level.
[6] The importance of institutions for the understanding of female labor supply is also highlighted by Gurgand (2005).

and childrearing. There is considerable empirical evidence suggesting that the speeds of career progression begin to diverge between men and women after the birth of the first child (see, for example, Browning 1992, and Flood and Gråsjö 1997). Harkness and Waldfogel (2003) find a "family gap" in women's wages in the US for all workers and in Sweden for full-time workers.[7]

During the first period of a child's life the caregiver is most often one of the parents, typically the mother. Previously, women had to either give up their careers completely, or take long breaks following the birth of their first child. When more and more women entered the labor force during and after World War II, the need to make it possible for women to take some time off while pregnant and then in the first period after childbirth became increasingly obvious. Today, most countries have some kind of legislated rights for parental leave, albeit with considerable heterogeneity with respect to length and compensation levels, and still in many cases the right is granted to the mother only.

Sweden in 1955 introduced three months of parental leave with some compensation. Originally, all rights accrued solely to the mother. During the 1960s, 70s and 80s, the scheme became gender-neutral and it was gradually extended. Today, Swedish parents share 480 days, of which 60 days are reserved for each. The compensation level is 80 percent (up to a cap) of the income level attained during the year preceding the birth of the child. Employers are prohibited from refusing a parent's claim to days off for parental leave. Women who work are guaranteed the possibility of returning to their job after having given birth. Generous systems also facilitate women's work when the child is older (Ministry of Industry, Employment and Communications 2001). The Swedish system is flexible in the sense that it enables parents to combine part-time leave with work. Legislation also offers opportunities for unpaid planned leave, and up to 25 percent work-time reductions until the youngest child turns eight.

In the US, on the contrary, there existed no federal legislation concerning parental leave until the Family Medical Leave Act (FMLA) was introduced in 1993. Previously, there had only been some state-level legislation and occasional private agreements. The latter was rare: only three percent of the employees had agreements with their employees concerning paid parental leave when FMLA was introduced (Ruhm 1997). FMLA provides up to 12 weeks of unpaid

[7] The "family gap" implies that women with children have lower wages than women without children.

leave within a period of 12 months. Furthermore, FMLA only covers workers who have worked at least 1,250 hours for the same employer during the last 12 months. It covers all government workers independent of workplace size, but only private employees in establishments with at least 50 employees.

A cursory glance at the empirical literature suggests that the introduction of the parental leave system has had solely positive effects on women's career opportunities and their labor supply. Ruhm (1998) confirms the proposed hypothesis in a cross-country comparison of nine developed countries, where the introduction of a short period (three months) of paid parental leave was found to be associated with a 3–4 percent increase of the female labor supply, and the corresponding increase was 4 percent for a longer period (nine months). The introduction of paid parental leave (especially if compensation is calculated as a share of the wage level immediately before the birth of the child) raises rates of women's return to work, especially during the prenatal years, which in turn boosts female labor force participation and the overall labor supply (Albrecht *et al.*1999). The positive effects of a paid parental leave system for women predominate – more women can and do continue to participate in the labor market. Consequently, in this circumstance they tend to experience a smaller loss of human capital than they did when having children was associated with lengthy or even permanent interruptions in their labor market participation. Generous systems are moreover likely to give rise to high fertility rates, since it lowers the cost of children (Björklund 2006).

However, for career-oriented women there are also dramatic negative effects of introducing paid parental leave, especially if the scheme is generous. In all countries, women take the larger part of the parental leave. Even when the parental leave benefit is paid by the state and thus is not a direct expense, there are great indirect costs for the employer. All women run the risk of paying these costs through statistical discrimination, regardless of whether they have children and regardless of whether they intend to use all rights to parental leave. They are discriminated against simply because employers making hiring decisions under uncertainty use the sex of an individual as information about his or her qualities.[8] Thus, beyond a certain threshold, it is quite conceivable that the more generous the insurance, the more (statistical) discrimination. As a consequence, women risk getting lower wages, less attractive positions

[8] Blau and Kahn (2000) discuss employers' possible reluctance to hiring women because of the risk of not reaping the expected return as a result of a greater probability that a woman will be facing more difficult tradeoffs between competing demands from professional and family duties. See also the discussion in Mandel and Semyonov (2006), and Meyersson and Petersen (2006).

and less opportunity for on-the-job learning and firm-specific training. Hakim (2004) concludes that the focus on family-friendly policies (to increase birth rates) in the Nordic countries have impacted negatively on gender equality in the labor market.

Ruhm (1998) shows that the total positive effects are greatest for paid parental schemes of shorter duration. When the right to leave is prolonged, the positive effect diminishes and the effect on women's wages ends up being negative. The latter effect can be due to both increased costs for the employer during longer spells of absence and increased supply of women in the labor market as a result of the scheme. Generous parental leave schemes induce women to take longer leaves than otherwise. Moreover, one would expect the effects of statistical discrimination to be the greatest for those positions where the learning period is long, the learning costs are high, the employer's loss in case of absence is great and the tasks cannot be postponed (Meyersson Milgrom and Petersen 2006). These characteristics are typical and perhaps even prototypical of most jobs with great career potential, notably executive or managerial positions.[9]

Child Care

Child care is another important factor that enables women to combine participation in the labor market with having children. The extent of the support is important, and so is the degree to which it is tailored to the needs of career couples or of the average household.

In Sweden, the rate of subsidization for public child care is exceptionally high (Rosen 1997). It has also increased substantially since the introduction of a price ceiling in 2002. For families with more than one child in public child care, the degree of subsidization (2008) invariably exceeds 90 percent. This has had an enormous impact on parental choice; practically all families where both parents work or study use public child care (Armbruster *et al*. 2003). The reduction of the maximum fee can also explain roughly half of the increase in fertility for households with children of pre-school age in the early 2000s (Mörk *et al*. 2009).

[9] The expansion in the parental leave entitlement in the US has, according to Ruhm (2004) had little effect on female employment rates. As a European contrast, a German study by Ejrnaes and Kunze (2006) shows that a longer maximum duration of parental leave in Germany has a negative effect on both employment and wage outcomes. Another European study based on Austrian conditions in the 1990s shows, however, that a prolonged duration of parental leave did not affect re-entry wages nor had detrimental effects on the career path (Lalive and Zweimüller 2007).

Although the rate of subsidization is very high the flexibility is low. Child care centers are only open on weekdays, normally close between 4.30 and 5 p.m., and they are closed for planning and vacation a substantial number of days per year. Career-oriented women may demand services during more unconventional hours, which are not provided by the public system, and hence must resort to private unsubsidized alternatives or complements. In those cases where publicly provided child care is subsidized relative to more tailored forms of child care, career-oriented women are likely to be disadvantaged.

In the US, the state has chosen to give incentives to the provision of private child care. This includes numerous and sometimes very generous tax reductions. Direct subsidies are less and less common, and mainly come in the form of refundable tax allowances. However, the support is generally reduced at higher family income levels. Examples of support schemes are those for child care, which recently have been raised, for care of family members and for employer-provided dependent care.[10] The US support schemes are thus more flexible in the sense that the service in question can be more easily tailored to the particular needs of a family without it running the risk of becoming illegible for support.

The net effect is that the heavy subsidies to public child care should encourage women's participation at lower and medium career levels, but the impact on the top-earning women is likely to be less pronounced or negligible (through lack of more tailor-made systems).[11] It can be interesting to note that care of children was not among the activities "outsourced" in the US and that high-earning women with kids spend a similar amount of time per child. The difference in average hours almost entirely reflects the mere fact that top-earning women have fewer children.[12]

Household Services and Personal Taxation

It is reasonable to hypothesize that high personal taxes tend to have a more inhibiting effect on women than men in terms of career advancement. For reasons largely related to the pattern of specialization that emerges after the birth of the first child, women tend to accumulate a

[10] It is possible to receive tax-free care for up to USD 5,000 paid by the employer (Internal Revenue Service 2004).
[11] *Cf.* Albrecht *et al.* (2003) who claim that the Swedish day-care system and parental leave policy encourage women to participate in the labor force at the same time as the generous system may discourage strong career commitments.
[12] See American Time Use Survey, http://www.bls.gov/news.release/atus.nr0.htm.

comparative advantage in performing some forms of household work (Becker 1985). Survey evidence also shows that women perceive that the distribution of total household work becomes less equal once the first child is born (Gershuny 2000; Hakim 2004). Men also tend to do unpaid work where professionals have higher productivity, while women to a high degree perform those household tasks where there are at most only small productivity gains when performed by a professional.[13]

Akerlof and Kranton (2000) describe the women's movement during the 1960s and 1970s as being very successful in altering our perceptions about what women were and were not expected to do. This was an important prerequisite for establishing the norm that women should work full time and participate in the labor market to the same extent as men. However, according to the authors, there was no corresponding change in the perception of what men should do besides paid work. Thus, women still do most of the household work (Hakim 2004; Blau 1998). *Table 6* gives an overview of the gender difference between paid and unpaid work in Sweden, the US and Europe.[14]

Attaining and maintaining a position from which power can be wielded requires – besides talent, competence and motivation – time or mental space. An individual has about 14 hours per day at her disposal to spend on work, breaks and work-related travels and leisure.[15] Göransson (2004) finds that top managerial positions in large Swedish firms demand 10–13 working hours per day. Thus, no more than approximately 1–4 hours is left for work-related travels and household work. Insofar as unpaid household work is time demanding, it can be of great interest for women – since they still perform the lion's share of household chores – that it is both possible and perceived to be economically rational to buy services, releasing time from household work in order to make it easier to combine family and career.[16]

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[13] This is only true as long as the service is performed in the household in the same way as the woman would have done. It does not include services like dry cleaning, take-away food or restaurant visits, where specialized capital equipment is used and where there are likely to be economies of scale.

[14] Rothstein (2005) suggests a self-reinforcing process in the division of household work and wage labor between married couples resulting from "asymmetric mate selection". Women tend to marry men who are a few years older and therefore have a stronger labor market position. As a result, it appears rational after childbirth that the husband specializes more on market work to maximize family income. Thus, even if there were no differences between the spouses at the age when they first entered the labor market, large differences can accumulate over time.

[15] Out of 24 hours, around nine are spent on personal care such as sleeping, washing, dressing and medical care, and about one hour is spent on meals (Gershuny 2000). Similarly, Juster and Stafford (1991) find that these factors correspond to approximately 10 hours per day in industrialized countries.

[16] There is in general a negative relation between wages and the level of household work (Hersch and Stratton 1997, 2000). Bonke *et al.* (2005) studying Denmark, a country very similar to Sweden in terms of compressed

Table 6 Paid and unpaid work in Sweden, the US and Europe, latest available year.

	Sweden	US	Europe*
Share market work all men–women	59–41	60–40	65–35
Share home production all men–women	40–60	36–64	32–68
Share market work married/cohabitant men–women	61–39	66–34	
Share home production married/cohabitant men–women	38–62	33–67	

*Weighted average for Germany, UK, France, Italy, Spain, Poland, Hungary, Estonia, Latvia, Lithuania, Sweden, Norway, Finland, Slovenia, and Belgium

Hours per year 20–74	Women	Work	Home	Children
Sweden 2000–01	Sweden	1,050	1,180	180
US 2005	US	1,230	1,120	250
	Men			
Sweden 2000–01	Sweden	1,530	810	100
US 2005	US	1,810	660	105

Sources: OECD in Figures 2007 (data for 2006), OECD Labor Market Database, AUTS 2005, and Eurostat Standardized Time Use Survey.

American women in the top 25 percent of the (total) income distribution tend to work more than Swedish women, roughly 2,000 hours p.a. compared to 1,700 hours p.a. This difference is similar to the difference between Swedish and American men in the corresponding categories, who work 2,000 and 2,400 hours p.a., respectively. But this can nevertheless explain why Swedish women may be at a disadvantage when it comes to job categories characterized by non-divisibilities and requiring high effort. High-earning Swedish women spend significantly more time in personal care and leisure than their American counterparts. However, about one third of the difference is explained by more hours worked in production of home services (not including care of children, on which Swedish women spend less time). American women earning more than 250,000 dollars per year work over 2,600 hours p.a., and spend only some 1,000 hours doing household work (compared to 1,500 hours for all working-age American women), including one third fewer hours spent on care of children.

Hence, the purchase of personal household services facilitates for women who attain and keep top executive positions, and is likely to be important. When such services are provided in the market, more time and effort can be allocated to the professional career. When the female labor market participation rate increases, one would expect a vibrant market for household

wage structure and high taxes, find mixed results. However, the authors find the flexibility of housework to have a considerably larger penalizing effect on wages, especially for women and especially those at the 90th quantile.

services to develop. However, the most salient factor determining to what extent a market for household services develops is the total tax burden on labor. When all cost is labor cost, it is profitable to buy the service in the market if (Davis and Henrekson 2005):

$$C^H > C^M \Leftrightarrow \frac{W^B}{W^P}\frac{H^B}{H^P} > \frac{(1+s)(1+m)}{1-t} \tag{1}$$

C^H = "do-it-yourself" cost in household production (foregone after-tax wages).
C^M = cost of buying the service in the market from a professional supplier (foregone expenditures on other consumption goods).
W^B = buyer's pre-tax wage per unit of time.
W^P = pre-tax wage of the professional supplier.
H^B = time required to accomplish the task by the buyer.
H^P = time required to accomplish the task by the professional.
t = marginal tax rate on the buyer's labor income.
s = payroll tax rate levied on employers.
m = valued-added tax (VAT) rate or sales tax rate.

Expression (1) states that market provision dominates when the professional's comparative advantage – his relative productivity times the relative wage – exceeds the tax factor, $\frac{(1+s)(1+m)}{(1-t)}$. Thus, the comparative advantage ratio determines task assignment and thus time allocation. However, taxes alter private choices by changing the threshold comparative advantage ratio at which market provision dominates. High taxes on labor make it unprofitable for people to buy household services. This induces agents to allocate more time to unpaid (and hence untaxed) household work, and less time to a professional career.[17]

The Swedish tax factor was until recently in the interval 2.7–4.0, whereas in the US it is in the range 1.3–1.9. The Swedish situation implied that to finance an hour of household work by purchasing it directly from a professional, the individual needed an hourly wage roughly 4 times higher than that of the employed worker. Such an hourly wage corresponds to a monthly salary that is actually higher than the average salary of CEOs of incorporated firms (Statistics Sweden 2007). Thus, it has very rarely been economically rational for Swedish career-oriented women to buy in any large measure such professional household services.

[17] Based on cross-country regressions Davis and Henrekson (2005) find that higher tax rates on labor income and consumption induce people to allocate less time in the labor market and more time to household work (the shadow economy also gets larger). Olovsson (2009) obtains similar results.

More generally, Swedish wage dispersion is extremely narrow from an international perspective, not only compared to the US but also compared to virtually all rich countries. A narrow wage dispersion, combined with progressive taxation reduces the incentives to trade preferences for monetary rewards. An example of such preferences, regardless of the source of the preference itself, is to break away from traditional gender patterns, and thereby start self-reinforcing processes as laid out in the next section.[18]

Hence, the high Swedish tax factor (combined with a narrow wage dispersion) encouraged people to perform more household tasks themselves rather than relying on market provision. Swedish women have therefore been induced to allocate their time so as to participate in the labor force, whereas the incentives to work long hours and strive for a steep career progression became weak (Jonung and Persson 1993).

The real effects of the high costs of household services have also been amplified by a widely held social norm against buying household services. The norms against such outsourcing have included ideas about "rich" women exploiting "poor" women (or underprivileged immigrant women). It has also been seen as offering an unfair means for men to escape demands for within-household equality, i.e. sharing the household work evenly (see, e.g., Florin *et al*. 1999).

All these factors may help us to explain why the increased participation rate of women in the US labor market in the 1960s, to a greater extent than in Sweden, paved the way for comprehensive marketization of household services, despite the more rapid increase in female participation rates in Sweden. The average number of hours worked for US women of working age increased by 40 percent between 1975 and 1994. Measured in this way, female employment in the US reached the level in Sweden already in the 1970s (Jonung and Persson 1993). This process occurred despite the massive expansion in public sector employment in Sweden, which increased the demand for female employment due to the fact that the expansion involved predominantly "female" occupations. Furthermore, the increased public sector em-

[18] Albrecht *et al.* (2003) also state that the relatively high wages at the bottom of the wage distribution makes it hard for career-oriented woman to hire professional household service providers. They also document that women's wages in Sweden fall behind men's wages more at the top of the wage distribution. Furthermore, Black and Strahan (2001) and Black and Brainerd (2002) find that increased competition in a sector improves female wages due to a decrease in firms' ability to discriminate.

ployment involved greater subsidies for child care and elderly care, work traditionally performed (predominantly) by women in the home.

Cortes and Tessada (2008) show that highly educated women in the US increased their labor supply when the price of household services went down as a result of low-skilled immigration. They find that the flow of low-skilled immigrants in the 1990s led to another 20 to 30 minutes at work each week for women with a professional degree, an MBA, or a PhD. At the same time, such women decreased the time they spent on household work and reported increased spending on such services.

The Swedish problem with expensive household services could be mitigated by specifically designed deductions and selective subsidies. Such systems are common in many other European countries, e.g., Denmark (until 2004), Finland and France. Since the 1st of July 2007 the Swedish government has followed these examples and introduced a tax reduction system which formally allows tax deductions with up to 50 percent of expenses for domestic household related services (up to a reasonably high cap).

In *table 7* the maximum tax factor – with and without tax deductions – for some countries are presented. As can be seen from the table, Sweden has had the highest tax factor among the presented countries without considering the tax deduction. With the tax deductions Sweden now has a tax factor at almost the same level as other Scandinavian countries and the US. This may influence the household service sector in the future and make it easier for women to strive for management positions.

Table 7 Maximum tax factor in selected countries.

	Tax factor	Tax factor after tax deductibility*
Denmark	3.4	1.7‡
Finland	3.6	1.4
France	3.2	1.6
Germany	2.6	
Sweden	4.0	2.0
UK	2.2	
US	1.9	

*when applicable; ‡until 2004.
Source: Henrekson (2004) and own calculations.

Note: Germany, the UK and the US do not have any tax subsidy system.

The Time Profile of Executive Careers

We have stressed that career interruptions or decelerations are likely to have long-term effects on eventual career success. Still, a partial alleviation of this effect may be achieved through a prolongation of the professional career, i.e., a postponement of the actual retirement age.

In the US the average retirement age was 64 for both men and women in 1998 (Social Security Administration 2004). The retirement age has been increasing for some time. Moreover, the share of older women working increases with the educational level (Hill 2002). The lowest age to receive full social security benefits is currently 65, but legislation has been passed that will gradually raise this age to 67 by 2022. The increase in benefits after age 65 is gradually becoming actuarially fair by 2008, which thus gives strong incentives and opportunities to delay retirement (see, for example, Gruber and Wise 2007).

In Sweden, evidence suggests that institutions and norms have weakened incentives both for individuals and for (potential) employers to extend their professional career during the postwar period (see, for example, Ds 2002:10, and Bohlin and Gidehag 2002). The tendency to exit the labor market earlier is not a new phenomenon. A broad spectrum of factors intervene to create this postwar effect: labor market legislation, wage-setting institutions, in some cases a disproportionally large retirement undertaking for the last employer, a corporate tax code that favors pre-retirement bailouts of older workers, very high marginal effects (sometimes 100 percent) for those with low retirement benefits etc. Attitudes have adjusted to incentives, so when asked it turns out that people generally look unfavorably upon the prospect of extending their career. The Ministry of Industry, Employment and Communication (Ds 2002:10) reports in their inquiry on labor market obstacles for older people from the beginning of the millennium that less than 10 percent want to work until age 65. On average, people would like to retire before turning 60. Moreover, in Sweden, as in many other European countries, disability programs and special unemployment programs work essentially as early retirement benefits. Comparing men on disability benefits aged 64 in the US and in Sweden, the respective numbers are 7 and 37 percent (Gruber and Wise 1999).

During the postwar period there seems to have evolved a clear norm in Sweden governing what is regarded as an appropriate time path of an executive career. This is likely to be one

reason contributing to women's difficulties to recover lost time and opportunities after having given birth and interrupted or temporarily downsized their career.[19] In reality, it has also become increasingly common that top-level executives terminate their executive careers fairly young (typically around age 55). Related to this process, a compensation system has evolved consisting of lifelong pensions with a high replacement rate. Thus, large part (or even the main part) of total top-level compensation is paid out *after* the executive career is finished.

This model of career evolution is likely to better suit men than women. Career-oriented women seem more reluctant to hand over the personal care of their kin especially their children, in order to boost their careers. Career paths characterized by a low retirement age and weak incentives to work after that age act as an impediment for women who have downsized their careers temporarily and would prefer to accelerate later.

However, the mandatory retirement age was recently increased from 65 to 67, and the average effective retirement age has actually slowly increased in Sweden in recent years and was in 2004 about 63 (Swedish Social Insurance Agency 2006). These recent changes may, if they persist, facilitate for Swedish women in the future. A more open-minded view of at what age an individual is best suited to be a top executive may increase their opportunities to find an optimal trajectory for their entire career.

The Psychological Dynamics of Career Aspirations and Career Success

The analysis in the previous section showed that the Scandinavian system tends to favor the average woman, while it has some negative effects for high-achieving women in the business sector. This is not to say that institutions alone are sufficient to explain the underrepresentation of women in either type of system. In this section we will see that the interaction of formal institutions with important psychological mechanisms may give rise to path dependence. Moreover, incentives depend on an individual's own preferences with respect to the external

[19] Meyersson Milgrom *et al.* (2001) show that it is mainly during the age interval 30–45 that women's career progression is flatter. The lagging behind which arises is rarely recovered by women in a later phase. See also Albrecht *et al.* (1999).

structure of payoffs, and preferences may evolve as a result of personal experience, and hence may not be independent of institutions.[20]

Among the executive occupational group there is a great deal of "tournament" logic governing wage-setting and promotion decisions, i.e., many people compete and only a few reach the higher, generously remunerated levels. In tournaments small initial differences and disadvantages may lead to large eventual differences in outcomes. For example, one person may progressively at each stage get the upper hand in a tournament because s/he is able to devote some more time to the assigned tasks. Analogously, given the evidence that women often perceive a greater conflict between work time and family time,[21] even small differences in this dimension may – the higher one gets in the hierarchy – lead to increasingly large differences.

It is well-known from extensive research in economics and psychology, including numerous laboratory experiments, that women are more risk averse and less favorable towards competitive environments. For instance, from experimental studies Niederle and Yestrumskas (2008) drew the conclusion that women's risk aversion or greater uncertainty in their ability to perform may well explain why they seek challenges to a lesser extent than men.[22]

Most women also tend to consider that it is of great importance to take care of their relatives (Hakim 2004). Failing in this respect often induces feelings of insufficiency and guilt. Thus, if a successful career requires a great reduction in time spent with your children, this is likely to impair women's aspirations more. Women also seem to sometimes have difficulties in accepting that someone other than the children's father or possibly another relative serves as a replacement (Elvin-Nowak 1999).

[20] Hakim (2000) introduces preference theory, in which women can be divided into three dominating groups in terms of lifestyle: adaptive, work centered or home centered. The theory identifies the heterogeneity of women as well as how they react to different social and economic environments. Each group's size is thus to some extent endogenous, influenced by the institutional context.
[21] As described in the previous section.
[22] Other examples finding gender differences include Byrnes *et al*. (1999), Gneezy *et al.* (2003), Gneezy and Rustichini (2004), Croson and Gneezy (2008), Niederle and Vesterlund (2007) and Ricciardi (2008). A recent study of biological differences is Apicella *et al.* (2008) who find that salivary testosterone and facial masculinity, where the latter is thought to be a proxy for pubertal androgen exposure, are significantly and positively correlated with risk taking in men.

However, we do not want or need to take a stand on the issue whether there are potential biological differences regarding issues like preferences for children and towards risk, or whether such differences are socially constructed. It is sufficient to note that economic policies and institutions influence behavior irrespective of how the preferences were formed in the first place. The gender gap in risk preferences plays a potentially important role in career success. The psychological mechanisms are likely to amplify the differences induced by policies and institutions. When designing institutions this should be taken into account.

An important consequence of path dependence could be illustrated by the fact that a large share of US female executives remain childless because they wait too long before they try to get pregnant (Hewlett 2002).[23] According to Hewlett (2002), 42 percent of the high-achieving women aged 41–55 in the US in the business sector do not have children. Only a third of these women claim to be childless by choice. Among the most high-achieving women, 49 percent are childless. The corresponding figures for American men are 25 percent and 19 percent, respectively. The situation looks different in Sweden. Renstig and Henrekson (2004) find that only 12 percent of female Swedish executives aged 46–55 are childless; while the corresponding figure for women aged 36–46 is 19 percent. The equivalent figures for male Swedish executives are 11 and 16 percent. Similarly, Göransson (2004) testifies that women top executives in Sweden have children to the same extent as men in comparable positions; a pattern which clearly distinguishes the Nordic countries from Anglo-Saxon and other countries.

Evidence suggests that default rules, framing effects and starting points produce or at least shape people's choices (Sunstein and Thaler 2003), highlighting the importance of the design of both legal and organizational rules. If preferences are mutable rather than stable, choices as well as institutional changes may have far greater effects in the long run. There are several psychological mechanisms supporting this conjecture, and they are likely to be relevant in the context of female career choice and career success. [24] The mechanisms that we deem most important and their expected effects are summarized in *table 8*.

[23] Moreover, many of them apparently put too much trust in the pharmaceutical industry to come up with cures to involuntary (age-related) childlessness.
[24] See Jonung and Ståhlberg (2009) and the references contained therein. In particular, it is noteworthy that gender differences in preferences and talents have been shown to change as a result of the changing roles of women in society. See also Hyde (2005).

When a great deal of time is invested in doing a certain activity, people learn to appreciate performing that activity, i.e., there may exist some form of *adaptive preference formation*. This, as well as a biological predisposition, may explain why career-oriented women tend to somewhat shift focus from career to the household after the birth of their first child. The psychological mechanisms presented tend to make this behavior "rational". Women may discover that they in fact have preferences for this shift, once having tried it (Smith 2003). Just as some people learn to appreciate working as top executives; once they have given birth, women might well get intrinsic rewards from child rearing instead (*exposure revealed preferences*). If they are subject to *present-biased utility*, the importance of their current preferences is overrated relative to their future preferences. This can give rise to dynamic inconsistency, making people allocate more time across activities according to current preferences than were called for by their previous plans.

Table 8 Summary of psychological mechanisms likely to create path dependence in career progression.

Mechanism	*Effect*	*Potential impact on career path*
Adaptive preference formation: Learn to appreciate what we do. Preferences are formed in response to circumstances. (Elster 1982, Leahy and Doughney 2006)	Adjust preferences in response to persistent gender inequalities. Positive reinforcement.	Traditional household responsibilities are cemented; delays and obstructs potential career paths. Career advancement opportunities are rejected.
Present-biased utility: Overrating of the present and melioration behavior. (Rabin 2002, O'Donoghue and Rabin 2002, Laibson 1998, Hernstein and Prelec 1992)	Excess inertia: Tend to get stuck in whatever we do.	Traditional household responsibilities are cemented; delays and obstructs potential career paths. Career advancement opportunities are rejected.
Exposure revealed preferences: Actual preferences revealed by exposure to activity in question. (Smith 2003)	Excess momentum: Adds momentum to current tendencies.	Traditional household responsibilities are cemented; delays and obstructs potential career paths.
Reference-based utility: Changes more important than states. (e.g., Kahneman *et al.* 1991)	Loss aversion/*status quo* bias and/or inclination to push on along current path.	Career advancement opportunities are rejected.
Representativeness bias and **belief perseverance:** Act based on perceived rather than actual probabilities. (Rabin 2002)	The media image of a phenomenon has real effects, role models important.	Discourage young women, by giving overly pessimistic view of career prospects, tending to view all setbacks as caused by discrimination.

All these psychological mechanisms are likely to give rise to path dependence in terms of occupational choice, time use, effort etc. It is thus very important to understand how the career path a person chooses to follow is affected by the institutional setup, and how this is relevant in explaining the evolution of the frequency of female executives (at various levels) in the business sector. It becomes important to stay "on track" at all stages in the career. There may, however, be an inclination to push on along current career paths as the aversion to losses is often greater than the valuation of foregone opportunities (*reference-based utility*). There can as well be substantial opportunity costs after experimenting with different career choices. A fully rational agent may therefore refrain from experimenting and stay on a non-optimal career track, since the time and effort required to switch to the optimal track would be perceived as too great and uncertain (Mullainathan and Thaler 2000).

Representativeness bias and *belief perseverance* can also cause problems if women believe their career prospects are poor and likely to remain so even when the environment is in fact improving. There is some evidence that women tend to underestimate their ability relative to men.[25] It is then of course possible that social truth becomes more a matter of convention than a true reflection of reality. A society may end up in a state where women underperform due to false beliefs and incorrect perceptions of the probabilities of success.[26]

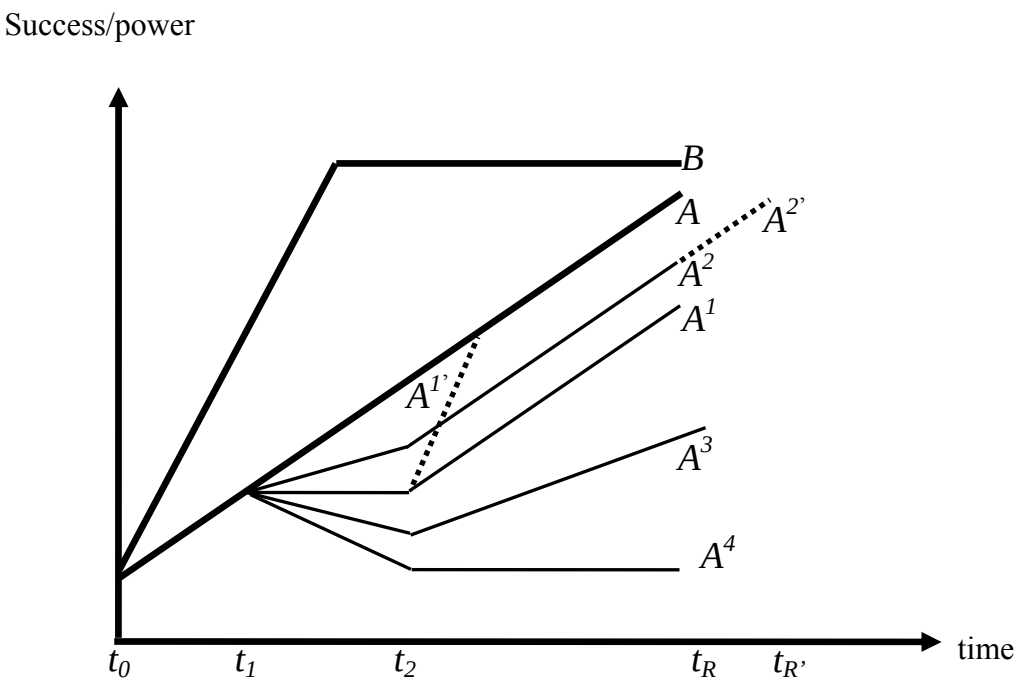
The subjective probability of career success is likely to be a key factor when an individual decides how much time and effort to expend on career progression. If the objective probability of success is high, but women perceive it to be small, this misjudgment will have real effects. Hence, when media exaggerate the obstacles for females considering a future executive career, this provides a "signal" and a negative stereotype to women, one likely to be used as a mental heuristic that maps a subjective low probability of success. This can and does obviously lead to significant and routine underperformance.

[25] Niederle and Vesterlund (2007) and Niederle and Yestrumskas (2008) find that men are substantially more overconfident about their relative performance and that that women compared to men seem to attribute positive outcomes more to luck than actual underlying ability. Hence, it seems reasonable to claim that women – on average – have lower expectations about their performance.

[26] A survey in 2005 from the Swedish white-collar trade union TCO shows that 63 percent of all female students think that their education will pay off, whereas the corresponding figure for male students is 76 percent. TCO argues that the difference is due to the occupational choice the students (are expected to) make, where females choose traditional "female" sectors with lower salaries and probably fewer career opportunities (TCO 2005).

At least in one respect, the Scandinavian feminists' focus on gender inequality in top positions as a result of severe discrimination and patriarchal structures may be counterproductive. The pessimistic view may be self-fulfilling, sapping potential female executives of enthusiasm and inspiration. A majority of women, even in countries with relatively high female employment rates, still consider themselves as secondary earners (Hakim 2004). Jobs are not a fundamental part of their identity, whereas employment plays a central role in shaping the identity of most men. On the other hand, the increasing ratio of female executives in most industrialized countries in the last few decades may have future positive effects. A more optimistic perception of the probability of success is no doubt almost certain to increase the relative number of career oriented women.[27]

Figure 1 A schematic representation of alternative career paths.



t_0 = entry on the labor market

t_R = point of final retirement

t_1 = break point caused by childbirth or other event impacting negatively on the availability of time and effort expended on career development

t_2 = point when possible to revert to full career effort

[27] Hakim (2004) finds that the significantly smaller female workforce in Spain is a great deal more self-selected than the larger female workforce in UK. A larger share of working wives in Spain considers themselves to be the primary (co-)earner and work centered.

Consequently, one utterly critical direct implication of path dependence is that we should expect a greater likelihood that a person who diverts downward from his/her career path will *not* revert to the previous path again, even when this was the original intention. *Figure 1* illustrates the dual importance of striving for continuity, and avoiding "derailment", in order to achieve high long-term career objectives.

From the figure above it is possible to make several observations. First, depending on factors such as talent, motivation and education it is possible to distinguish potential career paths between t_0 and t_R, e.g., A and B.[28] Now assume that at t_1 something occurs that impacts on the individual's scope for expending time and effort on career development, e.g., childbirth. A number of things may then happen:

a) the person permanently gives up his/her career (this used to be very common when it comes to childbirth);
b) the professional career is completely interrupted between t_1 and t_2 and then resumed (path A^1), or
c) the professional career is pursued at a lower intensity between t_1 and t_2, and is then resumed at the original pace (path A^2).

However, following the above discussion, this is far from an exhaustive description of the potential career paths. Between t_1 and t_2 the level of influence/power may actually *decline,* although one may easily imagine circumstances where an individual only foregoes the progress that otherwise would have taken place. The individual may hence potentially resume her career at pre-t_1 intensity at point t_2. Between t_1 and t_2 the psychological mechanisms described above, interacting with the institutional setting, are also likely to impact on preferences and perceptions. In the case of childbirth the period between t_1 and t_2 is often extended as a result of successive births. Even if the woman resumes working full time, career aspirations may as a result be much lower or stay flat. Hence, two other possibilities remain clear options:

d) the professional career evolves negatively between t_1 and t_2 and is then resumed at a lower pace (path A^3), or

[28] Discrimination (whether statistical or preference-based) may cause a difference, *ceteris paribus*, between men and women, e.g., that despite being identical in every other respect, a man may have a steeper career progression. To avoid excessive cluttering we have not included this effect in the figure.

e) the professional career evolves negatively between t_1 and t_2 and is then resumed without progression (path A^4).

There are in addition (at least) two possible ways (career paths) that can be used to catch up with what was forgone between t_1 and t_2 (these alternatives are shown as dotted lines in the figure):

f) at t_2 the professional career evolves faster (steeper) than before t_1 until the baseline case (A) is caught up with ($A^{1'}$), or
g) at t_R, the expected final retirement is postponed, and the career progression continues until a new retirement age, $t_{R'}$, is reached ($A^{2'}$).

The more the individual is lagging behind between t_1 and t_2, the steeper the post-interruption career path must be, or the longer one has to postpone the final retirement age. Paths like $A^{1'}$, where the woman rather quickly reverts to the original career path are likely to be rare, and the option of putting off the point of final retirement (path $A^{2'}$) is seldom considered.[29]

A legislated extensive and financially generous parental leave scheme gives women incentives to scale down their long-term career aspirations and allocate more time and effort to household work. Therefore, there might be more "negative" consequences (in terms of career progression) for women in countries where the state offers large subsidies to parental leave and grants employees unconditional statutory rights to stay home for an extended period, as in Sweden.[30] Dex *et al*. (2005) find that American women with high education have a greater tendency to return to work after childbirth than do their Swedish counterparts.[31] The same pattern is in general evident in the most recent cohorts. In 2002 Swedish women took 84 percent of total parental leave (National Social Insurance Board 2003).

As noted, a rational response by employers is to exercise statistical discrimination. Swedish employers reasonably know that women take some 85 percent of total parental leave, that there is a significant opportunity that they will work less after childbirth, and that they are also far more likely than a man to exercise a parent's unconditional legal right to work part-time

[29] *Cf*. footnote 18.
[30] See Mandel and Semyonov (2006, 1914−1916) for a more thorough discussion of this effect.
[31] When controlling only for cohort and education. However, the results are somewhat sensitive to the inclusion of other variables.

until the youngest child turns eight. As a result, the individual woman aiming for an executive career is less likely to be offered a first job that puts her on a career track with great inherent potential (Light and Ureta 1995; Sewell *et al*. 1980).[32] In the US these effects are not present, or much weaker.

In short, there are several psychological mechanisms pointing towards the great importance of path dependence in career choice and career success. We learn to appreciate what we do, we tend to overvalue the present compared to what would be rational according to a dynamic optimization plan; our aversion to losses is often greater than the valuation of opportunities foregone; our actions are determined by subjective rather than by actual probabilities; and we are often not aware of our real preferences until we have tried a good or an action.[33] These mechanisms are likely to reinforce already existing differences in the patterns of ladder climbing between male and female executives and top-earning professionals, caused by direct mechanisms such as child bearing patterns, preferences and gender division of labor. Avoiding the self-fulfilling prophecy that longer working hours and an increased career commitment diminishes time with the children would reduce the perceived opportunity cost for women.

Concluding Remarks

We have explored a set of policies and institutions that may help explain a basic gender difference between the Scandinavian and Anglo-Saxon countries, namely the degree of representation of women on executive positions in the corporate sector: In the former there is high political representation yet there are few top business executives, whereas in the latter the inverse holds – comparatively low political representation yet many top business executives. A number of relevant institutions were identified that we claim to be important determinants of the structure of payoffs underlying both female career choice and career progression. One conclusion is that broad-based welfare state policies impede women's representation in elite competitive positions. Furthermore, we incorporate insights from behavioral economics in explaining the dynamics of female career prospects. We locate and point to some likely reinforcing interactions between psychological mechanisms and the institutional setup.

[32] There is an ongoing discussion in Sweden whether a completely individualized parental leave can decrease statistical discrimination.
[33] Studies show that women who already have a power position are equally prone as their male counterparts to want to keep or preserve their position (Catalyst 2004; Renstig and Henrekson 2004).

Our analysis highlights the crucial role of the opportunity cost of making a career. This gives support to the view that what is particularly important for career women is the evolution of a market sector for services that are highly substitutable for household work. The emotional costs associated with a career could also be reduced if a changed time profile of the career was possible, and an increased career commitment did not necessarily require diminished time with one's offspring. Our analysis implies a straightforward common-sense generalization: the best way to assure an increased presence of women in top executive positions is to make career paths more compatible with child rearing. This is likely to be most efficient if one begins to pay attention to how key institutions interact with psychological mechanisms in detrimental ways – giving rise to a spiral of downward path dependence in female career choice.

References

Akerlof, George A., and Rachel Kranton. 2000. Economics and Identity. *Quarterly Journal of Economics* 115, no. 3: 715–753.

Albrecht, James W., Per-Anders Edin, Marianne Sundström, and Susan B. Vroman. 1999. Career Interruptions and Subsequent Earnings: A Reexamination Using Swedish Data. *Journal of Human Resources* 34, no. 2: 294–311.

Albrecht, James W., Anders Björklund, and Susan B. Vroman. 2003. Is there a Glass Ceiling in Sweden? *Journal of Labor Economics* 21, no. 1: 145–177.

Altonji, Joseph G., and Rebecca M. Blank. 1999. Race and Gender in the Labor Market. In *Handbook of Labor Economics*, volume 3c, 3144–3259, edited by Orley Ashenfelter and David Card. Amsterdam: Elsevier Science.

Apicella, Coren L., Anna Dreber, Benjamin Campbell, Peter B. Gray, Moshe Hoffman and Anthony C. Little. 2008. Testosterone and Financial Risk Preferences. *Evolution and Human Behavior* 29, no. 6: 384–390.

Armbruster, Ursula, Mats Andersson, and Ulla Nordenstam. 2003. *Uppföljning av reformen maxtaxa, allmän förskola m.m.* Stockholm: Skolverket.

Arun, Shoba V., Thankom G. Arun, and Vani K. Borooah. 2004. The Effect of Career Breaks on the Working Lives of Women. *Feminist Economics* 10, no. 1: 65–84.

Asplund, Gisèle. 1984. *Karriärens villkor. Män, kvinnor och ledarskap.* Stockholm: Trevi.

Becker, Gary S. 1985. Human Capital, Effort, and the Sexual Division of Labor. Part 2: Trends in Women's Work, Education, and Family Building. *Journal of Labor Economics* 3, no. 1: 33–58.

Björklund, Anders. 2006. Does Family Policy Affect Fertility? Lessons from Sweden. *Journal of Population Studies* 19, no 1: 3–24.

Black, Sandra E., and Elizabeth Brainerd. 2002. Importing Equality? The Impact of Globalization on Gender Discrimination. *Industrial and Labor Relations Review* 57, no. 4: 540–559.

Black, Sandra E., and Philip E. Strahan. 2001. The Division of Spoils: Rent-Sharing and Discrimination in a Regulated Industry. *American Economic Review* 91, no. 4: 814–831.

Blau, Francine D. 1998. Trends in the Well-Being of American Women, 1970–1995. *Journal of Economic Literature* 36, no. 1: 112–165.

Blau, Francine D., and Lawrence M. Kahn. 2000. Gender Differences in Pay. *Journal of Economic Perspectives* 14, no. 4: 75–99.

Bohlin, Nils, and Robert Gidehag. 2002. *Lönar det sig att jobba – en rapport om marginaleffekterna i pensionssystemet.* Stockholm: Pensionsforum.

Bonke Jens, Nabanita Datta Gupta, and Nina Smith. 2005. Timing and Flexibility of Housework and Men and Women's Wages. In *The Economics of Time Use*, 43–77, edited by Daniel Hamermesh and Gerard A. Pfann. Amsterdam: Elsevier.

Bowles, Samuel. 1998. Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions. *Journal of Economic Literature* 36, no. 1: 75–111.

Browning, Martin. 1992. Children and Household Economic Behavior. *Journal of Economic Literature* 30, no. 3: 1434–1475.

Byrnes, James, David C. Miller, and William D. Schafer. 1999. Gender Differences in Risk Taking: A Meta Analysis. *Psychological Bulletin* 125, no. 3: 367–383.

Catalyst. 2004. Women and Men in U.S. Corporate Leadership: Same Workplace, Different Realities? Available at: http://www.catalystwomen.org/bookstore/files/exe/wmicl4executivesummary.pdf.

Catalyst. 2006. *2005 Catalyst Census of Women Corporate Officers and Top Earners of the Fortune 500*. New York: Catalyst.

Catalyst. 2007a. *U.S. Women in Business*. Available at: http://www.catalyst.org/publication/132/us-women-in-business.

Catalyst. 2007b. 2007 *Catalyst Census of Women Board Directors of the Fortune 500*. New York: Catalyst.

Catalyst. 2008. 2007 *Catalyst Census of Women Board Directors of the FP500: Voices From the Boardroom*. New York: Catalyst.

Cortes, Patricia, and José Tessada. 2008. Cheap Maids and Nannies: How Low-skilled Immigration is Changing the Labor Supply of High-skilled American Women. Paper presented at IFN Stockholm Conference on Family, Children and Work, May 2008.

Croson, Rachel, and Uri Gneezy. 2008. Gender Differences in Preferences. *Journal of Economic Literature*, forthcoming.

Davis, Steven J., and Magnus Henrekson. 2005. Tax Effects on Work Activity, Industry Mix and Shadow Economy Size: Evidence from Rich-Country Comparisons. In *Labour Supply and Incentives to Work in Europe*, edited by Ramón Gómez-Salvador, Ana Lamo, Barbara Petrongolo, Melanie Ward and Etienne Wasmer, 44–104. Northampton, MA.: Edward Elgar.

Dex, Shirley, Siv Gustafsson, Andrew Jenkins, Heather Joshi, Eiko Kenjoh, and Mark R. Killingsworth. 2005. Mothers' Changing Labour Supply in Britain, the USA and Sweden. In *Labour Supply and Incentives to Work in Europe*, edited by Raul Gómez-Salvador, Ana Lamo, Barbara Petrongolo, Melanie Ward and Etienne Wasmer, 115–150. Northampton, MA.: Edward Elgar.

Ds. 2002:10. *Riv hindren för äldre i arbetslivet! En kartläggning och ett diskussionsunderlag från näringsdepartementets seniorgrupp.* Stockholm: Fritzes.

Ejrnaes, Mette, and Astrid Kunze. 2006. What is Driving the Family Gap in Women's Wages? Mimeo. Norwegian School of Economics and Business, Bergen, Norway.

Elster, Jon. 1982. Sour Grapes – Utilitarianism and the Genesis of Wants. In *Utilitarianism and Beyond,* edited by Amartya K. Sen and Bernard Williams. Cambridge: Cambridge University Press.

Elvin-Nowak, Ylva. 1999. The Meaning of Guilt: A Phenomenological Description of Employed Mother's Experiences of Guilt. *Scandinavian Journal of Psychology* 40, no. 1: 73–83.

European Professional Women's Network. 2008. *Third Biannual European PWN Board Women Monitor*. Available at: http://www.europeanpwn.net/files/3rd_bwm_2008_press_release_1.pdf.

Flood, Lennart, and Urban Gråsjö. 1997. Tid för barn, tid för arbete. En undersökning av svenska hushålls tidsanvändning. In *Familj, makt och jämställdhet,* SOU 1997:138, edited by Göran Ahrne and Inga Persson, 159–188. Stockholm: Fritzes.

Florin, Christina, Lena Sommestad, and Ulla Wikander 1999 (eds). *Kvinnor mot kvinnor – om systerskapets svårigheter* (Women against Women – On the Difficulties of Sisterhood). Stockholm: Norstedts.

Freeman, Richard B., Robert Topel, and Birgitta Swedenborg (eds). 1997. *The Welfare State in Transition*. Chicago: University of Chicago Press.

Freidenvall, Lenita. 2008. Sweden. Small Steps, Big Consequences. In *Electoral Gender Quota Systems and Their Implementation in Europe*, edited by Drude Dahlerup and Lenita Freidenvall. Directorate-General for Internal Policies, Policy Department C, Citizens' Rights and Constitutional Affairs. Brussels: European Parliament.

Freidenvall, Lenita, Drude Dahlerup, and Hege Skjeie. 2006. The Nordic Countries: An Incremental Model. In *Women, Quotas and Politics*, edited by Drude Dahlerup, 55–82. New York and London: Routledge.

Gershuny, Jonathan. 2000. *Changing Times: Work and Leisure in Postindustrial Society*. Oxford and New York: Oxford University Press.

Gneezy, Uri, Muriel Niederle, and Aldo Rustichini. 2003. Performance in Competitive Environments: Gender Differences. *Quarterly Journal of Economics* 118, no. 3: 1049–1074.

Gneezy, Uri, and Aldo Rustichini. 2004. Gender and Competition at a Young Age. *American Economic Review* 104, no. 2, 377−381.

Goldin, Claudia. 2004. The Long Road to the Fast Track: Career and Family. *ANNALS of the American Academy of Political and Social Science* 596, no. 1: 20–35.

Goldin, Claudia, and Cecilia Rouse. 2000. Orchestrating Impartiality. The Impact of "Blind" Auditions on Female Musicians. *American Economic Review* 90, no. 4: 715–741.

Gruber, Jonathan, and David A. Wise (eds), (1999), *Social Security and Retirement around the World.* Chicago: University of Chicago Press.

Gruber, Jonathan, and David A. Wise. 2007. Social Security Programs and Retirement Around the World: Fiscal Implications of Reform, Introduction and Summary. In *Social Security Programs and Retirement Around the World: Fiscal Implications of Reform*, edited by Jonathan Gruber and David A. Wise, 1–42. Chicago: University of Chicago Press.

Gurgand, Marc. 2005. Discussion of Dex *et al*., Mothers' Changing Labour Supply in Britain, the USA and Sweden. In *Labour Supply and Incentives to Work in Europe*, edited by Raúl Gómez-Salvador, Ana Lamo, Barbara Petrongolo, Melanie Ward and Etienne Wasmer, 151–152. Northampton, MA: Edward Elgar.

Göransson, Anita. 2004. *Kvinnor, män och karriärer. Visioner och verklighet i näringslivet*. Stockholm: SNS Förlag.

Hakim, Catherine. 2000. *Work-Lifestyle Choices in the 21st Century: Preference Theory*. Oxford: Oxford University Press.

Hakim, Catherine. 2004. *Key Issues in Women's Work: Female Diversity and the Polarisation of Women's Employment*, 2nd edition. London: Glasshouse Press.

Harkness, Susan, and Jane Waldfogel. 2003. The Family Gap in Pay: Evidence from Seven Industrialised Countries. *Research in Labor Economics* 22: 369–414.

Henrekson, Magnus. 2004. *Vägar till ökad jämställdhet i svenskt näringsliv*. Stockholm: SNS Förlag.

Hernstein, Richard J., and Drazen Prelec. 1992. Melioration. In *Choice over Time*, edited by George Lowenstein and Jon Elster, 235–263. New York: Russell Sage Foundation.

Hersch, Joni, and Leslie S. Stratton. 1997. Housework, Fixed Effects, and Wages of Married Workers. *Journal of Human Resources*, 32, no. 2: 285–307.

Hersch, Joni, and Leslie S. Stratton. 2000. Housework and Wages. *Journal of Human Resources* 37, no. 1: 217–229.

Hewlett, Sylvia A. 2002. Executive Women and the Myth of Having It All. *Harvard Business Review* 80, no. 4: 66–73.

Hill, Elizabeth T. 2002. The Labor Force Participation of Older Women: Retired? Working? Both? *Monthly Labor Review*, September: 39–48.

Hyde, Janet S. 2005. The Gender Similarities Hypothesis. *American Psychologist* 60, no. 6, 581–592.

Inglehart, Ronald, and Pippa Norris. 2003. *Rising Tides: Gender Equality and Cultural Change*. Cambridge and New York: Cambridge University Press.

Internal Revenue Service. 2004. *Forms and Publications – Publication 503 Child and Dependent Care Expenses.* Available at: http://www.irs.gov/publications/p503/ar02.html#d0e2259.

Jonung, Christina, and Ann-Charlotte Ståhlberg. 2009. Does Economics Have a Gender? *Econ Journal Watch* 6, no. 1: 60–72.

Jonung, Christina, and Inga Persson. 1993. Women and Market Work: The Misleading Tale of Participation Rates in International Comparisons. *Work, Employment & Society* 7, no. 2: 259–274.

Juster, F. Thomas, and Frank P. Stafford. 1991. The Allocation of Time: Empirical Findings, Behavioral Models, and Problems of Measurement. *Journal of Economic Literature* 29, no. 2: 471–522.

Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. 1991. Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias. *Journal of Economic Perspectives* 5, no. 1: 193–206.

Laibson, David. 1998. Life-cycle Consumption and Hyperbolic Discount Functions. *European Economic Review* 42, no. 3–5, 861−871.

Lalive, Rafael, and Josef Zweimüller. 2007. Estimating the Effect of Maximum Parental Leave Duration on Mothers' Subsequent Labor Market Careers. Paper presented at the IFN Stockholm Conference on Family, Children and Work, May 2008.

Le Grand, Carl, Richard Szulkin, and Michael Tåhlin. 2001. Lönestrukturens förändring i Sverige. In *Välfärd och arbete i arbetslöshetens årtionde,* SOU 2001:53*,* edited by Johan Fritzell, Michael Gähler and Olle Lundberg, 121–173. Stockholm: Fritzes.

Leahy, Mary, and James Doughney. 2006. Women, Work and Preference Formation: A Critique of Catherine Hakim's Preference Theory. *Journal of Business Systems, Governance and Ethics* 1, no. 1: 37–48.

Light, Audrey and Manuelita Ureta. 1995. Early-Career Work Experience and Gender Wage Differentials. *Journal of Labor Economics* 13, no. 1: 121–154.

Lindbeck, Assar, Sten Nyberg, and Jörgen W. Weibull. 1999. Social Norms and Economic Incentives in the Welfare State. *Quarterly Journal of Economics* 114, no. 1: 1–35.

Mandel, Hadas, and Moshe Semyonov. 2006. A Welfare State Paradox: State Intervention and Women's Employment Opportunities in 22 Countries. *American Journal of Sociology* 111, no. 6: 1910–1949.

Meyersson Milgrom, Eva M., and Trond Petersen. 2006. The Glass Ceiling in the United States and Sweden: Lessons from the Family-Friendly Corner of the World 1970 to 1990. In *The Declining Significance of Gender?*, edited by Francine D. Blau, Mary C. Brinton and David B. Grusky, 156–211. New York: Russell Sage Foundation.

Meyersson Milgrom, Eva M., Trond Petersen, and Vemund Snartland. 2001. Equal Pay for Equal Work? Evidence from Sweden and a Comparison with Norway and the U.S. *Scandinavian Journal of Economics* 103, no. 4: 559–583.

Ministry of Industry, Employment and Communications. 2001. *Parental Leave Act (SFS 1995:584).* Stockholm, Sweden.

Mullainathan, Sendhil, and Richard H. Thaler. 2000. Behavioral Economics. NBER Working Paper no. 7948.

Mörk, Eva, Anna Sjögren, and Helena Svaleryd. 2009. Cheaper Child Care, More Children. IFN Working Paper no. 782, Research Institute of Industrial Economics, Stockholm.

National Institute of Economic Research. 2007. *Lönebildningsrapporten 2007*. Stockholm: KI.

National Social Insurance Board. 2003. *Mamma, pappa, barn – tid och pengar. Socialförsäkringsboken 2003*. Stockholm: Riksförsäkringsverket.

Niederle, Muriel, and Alexandra H. Yestrumskas. 2008. Gender Differences in Seeking Challenges: The Role of Institutions. NBER Working Paper no. 13922.

Niederle, Muriel, and Lise Vesterlund. 2007. Do Woman Shy away from Competition? Do Men Compete too Much? *Quarterly Journal of Economics* 122, no. 3: 1067–1101.

O'Donoghue, Ted and Matthew Rabin. 2002. Addiction and Present-Biased Preferences. UCB Working Paper E02312.

Olovsson, Conny. 2009. Why Do Europeans Work so Little? *International Economic Review* 50, no. 1: 39–61.

Petrelius Karlberg, Pernilla. 2003. *Kvinnor i koncernstyrelser*. Stockholm: SNS Förlag.

Rabin, Matthew. 2002. A Perspective on Psychology and Economics. *European Economic Review* 46, no. 4–5: 657–685.

Renstig Monica. 2006. *Kvinnliga chefer i näringslivet 2006*. Stockholm: SNS Förlag.

Renstig, Monica, Roken Cilgin, and Anna Renström. 2004. *Kvinnliga chefer i näringslivet 2004 – Statistik och trendbarometer*. Stockholm: SNS Förlag.

Renstig, Monica, and Magnus Henrekson. 2004. Perceived Career Impediments – A Database. Stockholm: Women's Business Research Institute.

Ricciardi, Victor. 2008. The Financial Psychology of Worry and Women. SSRN Working Paper Series. Available at SSRN: http://ssrn.com/abstract=1093351.

Romer, Paul M. 1990. Are Nonconvexities Important for Understanding Growth? *American Economic Review* 80, no. 2: 97–103.

Rosen, Sherwin. 1983. Specialization and Human Capital. *Journal of Labor Economics* 1, no. 1: 43–49.

Rosen, Sherwin. 1997. Public Employment, Taxes, and the Welfare State in Sweden. In *The Welfare State in Transition: Reforming the Swedish Model,* edited by Richard B. Freeman, Robert Topel and Birgitta Swedenborg, 79–108. Chicago: University of Chicago Press.

Rothstein, Bo. 2005. Modern Patriarchy – The Causal Mechanism. A Theory of Asymmetric Mate Selection. Paper presented at the Annual Meeting of the American Political Science Association, Washington D.C. 2005

Ruhm, Christopher J. 1997. Policy Watch: The Family Medical Leave Act. *Journal of Economic Perspectives* 11, no. 3: 175–186.

Ruhm, Christopher J. 1998. The Economic Consequences of Parental Leave Mandates: Lessons from Europe. *Quarterly Journal of Economics* 113, no. 1: 285–317.

Sainsbury, Diane. 2004. Women's Political Representation in Sweden: Discursive Politics and Institutional Presence. *Scandinavian Political Studies* 27, no. 1: 65–87.

Sewell, William H., Robert M. Hauser, and Wendy C. Wolf. 1980. Sex, Schooling, and Occupational Status. *American Journal of Sociology* 86, no. 3: 551–583.

Smith, Vernon. 2003. Constructivist and Ecological Rationality in Economics. *American Economic Review* 93, no. 3: 465–490.

Social Security Administration. 2004. *Background.* Available at: http://www.ssa.gov/pubs/background.htm.

Statistics Sweden. 2007. *Lönestatistisk årsbok*. Stockholm: SCB.

Statistics Sweden. 2008. *Women and Men in Sweden 2008.* Stockholm: SCB.

Sunstein, Cass R. and Richard H. Thaler. 2003. Libertarian Paternalism Is Not an Oxymoron. *University of Chicago Law Review* 70, no. 4: 1159–1202.

TCO. 2005. Förväntningarna på arbetslivet, TCO granskar. Report No. 5-2005, Ulf Andréasson, Jessica Mann. Stockholm.