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# Why Are There So Few Female Top Executives in Egalitarian Welfare States?

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**D**uring the twentieth century, dramatic changes occurred 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 women's share 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, women's share in positions of power in the political sphere has increased dramatically.

In contrast to these developments, female representation in some key sectors of the labor market has hardly changed in the past century. One particularly conspicuous area is top management of large firms. Female chief executive officers (CEOs) constitute, for instance, only 2.4 percent of all CEOs of the Fortune 500 (F500) companies in the United States and only 1 percent of all listed companies in Sweden (Renstig 2006; Catalyst 2007b). Why have women made broad and consistent advances into 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 occupants of a commanding height, many observers have interpreted the lack of

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female representation as a sign that women still suffer widespread discrimination in society (see, for example, Altonji and Blank 1999; Goldin and Rouse 2000; Black and Strahan 2001). Adding to this puzzle is another and, on the surface, surprising pattern: the fact (as we show) that female underrepresentation among managers is greater in Scandinavian countries, where gender equality has been promoted most heavily, than in Anglo-Saxon societies with their more laissez-faire attitude toward this issue (Hakim 2000, 2004; Mandel and Semyonov 2006).

What accounts for this difference? We examine whether differences in policies and institutions across countries can further our understanding of the patterns of differences, in particular the low share of women in top corporate positions. While considering institutional and policy differences, we 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 nonmonetary element and are influenced by norms and habits. We emphasize further that norms and habits are not set in stone and tend to be endogenous—that is, the consequences of policies and institutions (see, for example, Lindbeck, Nyberg, and Weibull 1999). We consider preferences and internal payoff structures as mutable and as affected by factors such as time allocation and the external payoff structure (Bowles 1998).

Our purpose here is thus twofold: (1) to identify pertinent institutions governing the structure of payoffs with regard to women's career choices and aspirations; and (2) to study the interaction and feedback of payoffs with the formation of norms and institutions—formal and informal—and to consider issues such as the path dependence of career progression. This inquiry involves an exploration of psychological mechanisms that may amplify these effects in a setting where preferences are treated as malleable and endogenous. We focus on data for Sweden and the United States, both because of the availability of data and because these two countries constitute the strongest contrasts in the exercise. They stand at opposite ends of the policy spectrum with regard to the degree of state involvement in the economy (Freeman, Topel, and Swedenborg 1997) and in the family (Mandel and Semyonov 2006).

Few studies examine the effects of path dependence on career progression. Shoba Arun, Thankom Arun, and Vani Borooah (2004) investigate how different kinds of career breaks affect women's subsequent working life. 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 the women in question return to the same type of job they had previously. William Sewell, Robert Hauser, and Wendy Wolf (1980) as well as Audrey Light and Manuelita Ureta (1995) argue that the first job's potential is an important determinant of subsequent career success. Furthermore, career planning can explain actual work behavior to some extent. Catherine Hakim (2004) finds that women who make the most realistic career plans and acquire the needed skills succeed best in the labor market and represent a rather inelastic labor supply, similar to that of men. James Albrecht and his colleagues (1999) as well as

Eva Meyersson Milgrom and Trond Petersen (2006) find that temporary career withdrawals (partial or complete) result in women's accumulating less experience, which lowers the likelihood of future promotion.

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 second section, we analyze the possible outcomes of different institutions and make 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 United States and Sweden. In the third section, we suggest a number of psychological mechanisms that, 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 reinforcing the behavioral effects the institutional setup induces. 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 of how outcomes are determined. We therefore relate the psychological mechanisms to the institutions in an attempt to explain the empirical evidence.

## The Facts

The Anglo-Saxon countries (here, the United States, the United Kingdom, Canada, and Australia) and the Scandinavian countries (here, Sweden, Denmark, Norway, and Finland) constitute reasonably distinct institutional settings, notwithstanding the substantial differences between countries within each of the groups. Among advanced nations, the Anglo-Saxon countries tend to have the smallest degree of government involvement in the economy, whereas the Scandinavian countries have the largest. Both groups, however, have high levels of female participation in the labor market compared to the rest of the world.

In Table 1, we summarize comparable indicators of women's career progression, together with some basic economic measures for these two country groups. As the table shows, both groups have about the same female participation in the labor market, with the Scandinavian countries showing a somewhat higher rate than the Anglo-Saxon countries. The groups also have high and similar incomes per capita, with important exceptions of especially high incomes in the United States and oil-rich Norway. A marked contrast is that Scandinavian countries have more than twice the share of female members in legislative bodies, whereas Anglo-Saxon countries have a higher share of females in managerial positions.

To an outside observer, it might 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 United States. Does this relative success occur because Swedish political careers are less time-consuming

Table 1  
Anglo-Saxon versus Scandinavian Gender Emancipation Indicators

| Country Group       | Female share                           |                                     | Female full-time       |                        | Female part-time       |                        | Population<br>2006 (millions) | GDP<br>per capita<br>2006 (PPP \$) | Public share<br>of economy<br>2006 (%) |
|---------------------|----------------------------------------|-------------------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------------|------------------------------------|----------------------------------------|
|                     | Female share<br>parliament<br>2007 (%) | managerial<br>positions<br>2007 (%) | employment<br>2006 (%) | employment<br>2006 (%) | employment<br>2006 (%) | employment<br>2006 (%) |                               |                                    |                                        |
| <b>Anglo-Saxon</b>  | <b>18.0</b>                            | <b>40.8</b>                         | <b>51.5</b>            | <b>15.0</b>            | <b>413.7</b>           | <b>41,500</b>          | <b>36.6</b>                   |                                    |                                        |
| 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                          |                                    |                                        |
| United Kingdom      | 19.5                                   | 34.0                                | 40.2                   | 25.4                   | 60.7                   | 34,400                 | 43.6                          |                                    |                                        |
| United States       | 16.8                                   | 42.7                                | 54.7                   | 11.8                   | 299.7                  | 44,000                 | 34.9                          |                                    |                                        |
| <b>Scandinavian</b> | <b>41.8</b>                            | <b>29.7</b>                         | <b>55.3</b>            | <b>15.9</b>            | <b>24.5</b>            | <b>38,000</b>          | <b>53.4</b>                   |                                    |                                        |
| 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                          |                                    |                                        |

*Note:* “Managerial positions” refers to International Standard Classification of Occupations 88, group 1—that is, 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 gross domestic product (GDP). PPP is purchasing power parity.

*Sources:* <http://www.ipu.org/wmn-e/classif.htm>; Organization for Economic Cooperation and Development (OECD) in Figures 2007 (data for 2006), OECD Labor Market Database, International Labor Organization (ILO, Laborsta), and Eurostat (Labor Force Survey [LFS]).

and less competitive? If not, the arguments put forward regarding institutional and psychological barriers to female Swedish business executives would be weakened. However, as documented by Lenita Freidenvall (2008) and Diane Sainsbury (2004), the explosive development of female representation in political positions in Sweden can be attributed largely 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 approximately a 50 percent female share of parliamentarians and a 40–50 percent share of female cabinet ministers since 1994.<sup>1</sup> This principle 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 of managers in the private sector (Statistics Sweden 2008, 106).

The relatively high share of female participation, as depicted in table 1, has evolved only during the past century. In the twentieth century, women achieved far-reaching changes in overall autonomy, including opportunities in the labor market. Claudia Goldin (2004) describes how in the United States in the twentieth 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 with regard to occupation, family formation, and economic independence changed. 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 in executive positions in the Swedish business community, whereas women's corresponding representation in the United States was 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). The table also includes public-sector executives in the figures, which tends to inflate the Swedish share. Even then, Sweden falls behind not only Anglo-Saxon countries, such as the United States and the United Kingdom, but also other large continental European countries, such as West Germany and France. Among the countries compared, Sweden clearly comes out at the bottom.

Despite Sweden's reputation for its ambitious policies of gender equality, recent data suggest that it is *not* a leading country with regard to female representation in managerial positions, either in the world or within the European Union (EU). Within the EU, France today has the highest share of women among managers (about 37 percent), and Austria has the lowest (27 percent), as Table 3 shows. Sweden holds an intermediate position, just below the EU average of 32.7 percent. Table 3 also includes politicians and managers in the public sector, an area of female representation in which Sweden has been the world leader. Nevertheless, Sweden

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1. See Freidenvall, Dahlerup, and Skjeie 2006 for an analysis of the mechanisms behind this development.

**Table 2**  
**Share of Women among Executives 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  |
| United Kingdom | 1979 | 18.8  |
| United States  | 1978 | 23.6  |

*Note:* “Executives” refers to intermediate executive positions and higher.

*Source:* Asplund 1984.

**Table 3**  
**Share of Women among Managers in the European Union and the**  
**United States, 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 | United States   | NA   | 42.7 |
| Netherlands | 21.1 | 28.0 | EU 15 (average) | 29.6 | 32.7 |

*Note:* “Managers” refers to International Standard Classification of Occupations 88 group 1—that is, legislators, senior officials, and managers.

*Sources:* Eurostat (LFS) and ILO (Laborsta).

significantly trails the corresponding U.S. figure of 42.7 percent by approximately 35 percent.

The foregoing comparisons were 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, finding suitable data becomes far more difficult. 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 figure is among the highest in the EU (the

EU 15);<sup>2</sup> higher figures are found only in Denmark, the United Kingdom, and Portugal. The corresponding U.S. figure is about 2.5; that is, it is more than twice as common to be a female CEO in the United States than it is in Sweden. Even then, of course, women are a minority in this sector in the United States, where they constitute only about 25 percent of all chief executives.<sup>3</sup>

Hence, when we focus on the top managers, the difference between the United States and Sweden seems to be even larger. In the evolution of women in corporate officer positions, the trend has been upward in most developed countries, including Sweden, where representation has increased sharply in recent years, in particular during the 1990s (Henrekson 2004, chap. 2). Since then, however, women's share 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 United States for the F500 companies was 16.4 percent in 2005 (Catalyst 2006), a somewhat higher figure. If the U.S. figure included all listed companies, the difference would probably be even larger.<sup>4</sup>

All data hitherto have shown that the Anglo-Saxon countries in general and the United States in particular have a higher share of women in leading positions than Sweden. However, one exception to this pattern must be pointed out. Particularly in Scandinavia, either laws mandate a certain percentage of women on corporate boards, or politicians continually threaten to pass such legislation. In Norway, for example, as of January 2008, at least 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 measured by official statistics. Table 5 shows the female share of corporate board members in Europe, the United States, and Canada. The Scandinavian countries in general and Norway in particular clearly have a much higher share of women on corporate boards.<sup>5</sup>

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 of which require the acquisition of highly specialized human capital. Such jobs tend to be characterized by nondivisibilities and nonconvex production

2. The EU 15 consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

3. The Swedish figure is taken from the Labor Force Survey (LFS), Eurostat, at <http://epp.eurostat.ec.europa.eu>, and the U.S. figure from the Bureau of Labor Statistics at <http://www.bls.gov>. There may be a slight difference in the definition of the categories compared.

4. The female CEO share among all firms is about ten times higher (25 percent) than the F500 share (2.4 percent) in the United States. Thus, focusing exclusively on the F500 share probably underestimates the U.S. female share. Unfortunately, we have not found any other comparable data concerning corporate officer positions.

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

**Table 4**  
**Women in Corporate Officer Positions in Swedish Listed Companies,**  
**1990, 2001, and 2005**

|                                                       | 1990 | 2001  | 2005  |
|-------------------------------------------------------|------|-------|-------|
| Number of women in corporate officer positions        | 20   | 178   | 246   |
| Total number of corporate officers                    | 733  | 1,674 | 1,996 |
| Share of female corporate officers (%)                | 2.7  | 10.6  | 12.3  |
| Number 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 U.S. F500 figures (%): 8.7 (1995), 15.7 (2002), and 16.4 (2005).

*Source:* Renstig 2006.

**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  | United States (2007) | 14.8 |
| Netherlands | 12.3 | EU 15                | 9.7  |
| Austria     | 9.2  |                      |      |

*Note:* The figures for the United States and Canada are based on the five hundred largest companies, whereas the EU figures are based on the three hundred largest companies.

*Sources:* Catalyst 2007a, 2008; European Professional Women's Network 2008.

functions over an extended interval (a boss working twelve hours a day cannot be replaced by two people working six hours).<sup>6</sup> Thus, female corporate board representation taken in isolation is likely to be misleading as a proxy for female executive career influence and opportunities.

6. See Rosen 1983 and Romer 1990 for persuasive arguments about the importance of indivisibilities and nonconvexities for productivity at the individual and aggregate levels.

## Policies and Institutions

It is often tempting to attribute cross-country differences to the nebulous and all-encompassing concept of “culture.” Although culture is certainly important, our aim is to explain as much as possible with reference to specific differences in policy and institutional setup.<sup>7</sup> In contrast to culture-based explanations, this approach can offer useful policy guidance. Moreover, in the present case, the assumption of cultural differences would require hair splitting, inasmuch as Anglo-Saxon and Scandinavian countries have very similar cultural attitudes with regard to women’s role in society (Inglehart and Norris 2003, chap. 2).

The numerous institutional factors that affect women’s career choice and career success cannot be mapped with theoretical or quantitative precision. Here, we try to achieve the best possible trade-off among the often ambiguous institutional factors that we deem sufficiently important for framing the questions posed. We focus mainly on the United States and Sweden. These two countries are the most clear-cut representatives of the two country groups, and much more space would be required to delve deeply into the institutional details of every country listed in table 1.

### *Parental Leave*

Key issues in the analysis of the share of women in top positions are *fertility* and the extent to which the institutional setup is conducive to combining career aspirations with childbearing and child rearing. Considerable empirical evidence suggests that the speeds of career progression for men and women begin to diverge after the birth of the first child (see, for example, Browning 1992; Flood and Gråsjö 1997). Susan Harkness and Jane Waldfogel (2003) find a “family gap” in women’s wages in the United States for all workers and in Sweden for full-time workers.<sup>8</sup>

During the first period of a child’s life, the caregiver is most often one of the parents, typically the mother. Women previously had to give up their careers completely or take long breaks after 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 them to take some time off while pregnant and in the period immediately after childbirth became increasingly obvious. Today, most countries have some kind of legislated rights for parental leave, albeit with considerable heterogeneity in length of time off and compensation levels, and in many cases the right is granted to the mother only.

In 1955, Sweden introduced three months of parental leave with some compensation. All rights originally accrued solely to the mother. During the 1960s, 1970s, and 1980s, the scheme became gender neutral and was gradually extended. Swedish parents today share 480 days, of which 60 are reserved for each. The compensation

7. Gurgand 2005 highlights the importance of institutions for understanding female labor supply.

8. The “family gap” implies that women with children have lower wages than women without children.

level is 80 percent (up to a cap) of the income level attained during the year preceding the child's birth. 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 (Swedish 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 as much as 25 percent work-time reductions until the youngest child turns eight.

In the United States, in contrast, no federal legislation concerning parental leave was approved until the Family Medical Leave Act (FMLA) was enacted in 1993. Some state-level legislation and occasional private agreements had existed previously. Private agreements were rare: only 3 percent of employers had agreements with their employees concerning paid parental leave when the FMLA was approved (Ruhm 1997). This statute provides for as many as twelve weeks of unpaid leave within a period of twelve months. It covers only workers who have worked at least 1,250 hours for the same employer during the previous twelve months. It covers all government workers independent of workplace size, but private employees only in establishments with at least fifty 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. Christopher 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 to 4 percent increase in the female labor supply, and a longer leave period (nine months) was associated with a corresponding increase of 4 percent. The introduction of paid parental leave (especially if compensation is calculated as a share of the income immediately before the child's birth) raises rates of return to work for women, 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 women tend to experience a smaller loss of human capital than they did when childbearing was associated with lengthy or even permanent interruptions in their labor-market participation. Moreover, generous systems are likely to give rise to high fertility rates by lowering the cost of children (Björklund 2006).

However, for career-oriented women the introduction of paid parental leave also has dramatic negative effects, 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, the employer bears great indirect costs. 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 an individual's sex as information about his or her qualities as a worker.<sup>9</sup> Thus, beyond a certain threshold, it is quite conceivable that the more generous the insurance, the more (statistical) discrimination occurs. As a consequence, women risk getting lower wages, less-attractive positions, 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 has negatively affected 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 attributed to both increased costs for the employer during longer spells of absence and an 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 greatest for those in positions where the learning period is long, the learning costs are high, the employer's loss in case of absence is great, and 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.<sup>10</sup>

### *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 subsidy has had an enormous effect on parental choice; practically all families in which both parents work or study use public child care (Armbruster, Andersson, and Nordenstam 2003). The reduction of the maximum fee also explains roughly half of the increase in fertility

9. Francine Blau and Lawrence Kahn (2000) discuss employers' possible reluctance to hire women because of the risk of not reaping the expected return owing to the greater probability that women will face more difficult trade-offs between the competing demands of professional and family duties. See also the discussions in Mandel and Semyonov 2006 and in Meyersson and Petersen 2006.

10. The expansion of parental leave entitlement in the United States, according to Klerman and Leibowitz (1997), has had little effect on female employment rates. As a European contrast, a German study by Mette Ejrnaes and Astrid 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 reentry wages or have detrimental effects on the career path (Lalive and Zweimüller 2008).

for households with children of preschool age in the early 2000s (Mörk, Sjögren, and Svaleryd 2009).

Although the rate of subsidization is very high, the flexibility is low. Child-care centers are open only on weekdays, normally close between 4:30 and 5:00 P.M., and are closed a substantial number of days per year for planning and vacation. If career-oriented women require services during more unconventional hours, which the public system does not provide, they must resort to private, unsubsidized alternatives or complements. 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 United States, the state has chosen to give incentives, including numerous and sometimes very generous tax reductions, to the provision of private child care. Direct subsidies are less and less common, and most often take 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.<sup>11</sup> The U.S. support schemes are thus more flexible in the sense that the service in question can be more easily tailored to a family's particular needs without its running the risk of becoming illegible for support.

The net effect is that the heavy subsidies to public child care encourage women's participation at lower and medium career levels of the labor market, but have a less pronounced or negligible impact on the top-earning women (through lack of more tailor-made systems).<sup>12</sup> Child care is not among the activities "outsourced" in the United States, and 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.<sup>13</sup>

### *Household Services and Personal Taxation*

It is reasonable to hypothesize that high personal taxes tend to have a more inhibiting effect on women than on 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 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 for which professionals have higher productivity, whereas women to a high degree perform

11. It is possible to receive up to \$5,000 worth of tax-free care paid by the employer (U.S. Internal Revenue Service 2004).

12. James Albrecht, Anders Björklund, and Susan Vroman (2003) claim that the Swedish day-care system and parental leave policy encourage women to participate in the labor force at the same time that the generous system may discourage strong career commitments.

13. See the American Time Use Survey at <http://www.bls.gov/news.release/atus.nr0.htm>.

those household tasks subject to, at most, only small productivity gains when performed by a professional.<sup>14</sup>

George Akerlof and Rachel 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 alteration was an important prerequisite for establishing the norm that women can work full time and participate in the labor market to the same extent as men. However, according to these authors, no corresponding change occurred in the perception of what men should do besides paid work. Thus, women still do most of the household work (Blau 1998; Hakim 2004). Tables 6 and 7 give an overview of the gender difference between paid and unpaid work in Sweden, the United States, and Europe.<sup>15</sup>

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 fourteen hours per day at her or his disposal to spend on work, breaks, work-related travel, and leisure.<sup>16</sup> Anita Göransson (2004) finds that top managerial positions in large Swedish firms demand ten to thirteen working hours per day. Thus, no more than approximately one to four hours remain in the day for work-related travel and household work. Insofar as unpaid household work is time-consuming, it may be of great interest to women—because 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.<sup>17</sup>

American women in the top 25 percent of the (total) income distribution tend to work more than Swedish women, roughly 2,000 hours per year, compared to 1,700 hours per year. This difference is similar to the difference between American and Swedish men in the corresponding categories, who work 2,400 and 2,000 hours per year, respectively. But this difference also explains why Swedish women may be at

14. This statement is true only 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 such as dry cleaning, take-away food, or restaurant services, where specialized capital equipment is used and there are likely to be economies of scale.

15. Bo 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 specialize more on market work to maximize family income. Thus, even if the spouses did not differ when they first entered the labor market, large differences can accumulate over time.

16. Out of twenty-four hours, approximately nine are spent on personal care such as sleeping, washing, dressing, and medical care, and approximately one hour is spent on meals (Gershuny 2000). F. Thomas Juster and Frank Stafford (1991) similarly find that these activities consume approximately ten hours per day in industrialized countries.

17. In general, wages and the amount of household work are inversely related (Hersch and Stratton 1997, 2000). Jens Bonke, Nabanita Datta Gupta, and Nina Smith (2005) find mixed results in their study of Denmark, a country very similar to Sweden in terms of compressed wage structure and high taxes. However, they also find the flexibility of housework to have a considerably larger penalizing effect on wages, especially for women and especially for those at the ninetieth percentile.

**Table 6**  
**Paid and Unpaid Work in Sweden, the United States, and Europe**  
**(Data for Most Recent Available Year) (%)**

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

\*Weighted average for Germany, the United Kingdom, France, Italy, Spain, Poland, Hungary, Estonia, Latvia, Lithuania, Sweden, Norway, Finland, Slovenia, and Belgium.

*Sources:* See table 7.

**Table 7**  
**Hours Spent per Year on Work, Home, and Children,**  
**2000–2001, 2005**

|                      | Work  | Home  | Children |
|----------------------|-------|-------|----------|
| <b>Women</b>         |       |       |          |
| Sweden (2000–2001)   | 1,050 | 1,180 | 180      |
| United States (2005) | 1,230 | 1,120 | 250      |
| <b>Men</b>           |       |       |          |
| Sweden (2000–2001)   | 1,530 | 810   | 100      |
| United States (2005) | 1,810 | 660   | 105      |

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

a disadvantage in job categories characterized by nondivisibilities and requiring high effort. High-earning Swedish women spend significantly more time in personal care and leisure than their American counterparts do. 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 per year work more than 2,600 hours per year and spend only about 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 employment for women who attain and keep top executive positions, and it 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 services to develop. However, the

most salient factor determining the extent to which 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):

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

$C^H$  = “do-it-yourself” cost in household production (forgone after-tax wages)

$C^M$  = cost of buying the service in the market from a professional supplier (forgone expenditures on other consumption goods)

$W^B$  = buyer’s pretax wage per unit of time

$W^P$  = pretax 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 hence the 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 and induces them to allocate more time to unpaid (and hence untaxed) household work and less time to a professional career.<sup>18</sup>

The Swedish tax factor was until recently in the interval from 2.7 to 4.0, whereas in the United States it is in the range from 1.3 to 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 four 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 in Sweden (Statistics Sweden 2007). Therefore, it has very rarely been economically rational for Swedish career-oriented women to buy substantial amounts of such professional household services.

More generally, the Swedish wage dispersion is extremely narrow in an international perspective, not only compared to the United States, but also compared to

18. Based on cross-country regressions, Steven Davis and Magnus 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). Conny Olovsson (2009) obtains similar results.

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 set in motion a self-reinforcing process, as described in the next section.<sup>19</sup>

Hence, the high Swedish tax factor (combined with a narrow wage dispersion) has encouraged people to perform more household tasks themselves rather than to rely on market provision. Therefore, although Swedish women have been induced to allocate their time so as to participate in the labor force, the incentives to work long hours and strive for a steep career progression have become 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 disadvantaged immigrant women). It has also been seen as offering an unfair means for men to escape demands for within-household equality—that is, for sharing the household work evenly (see, for example, Florin, Sommestad, and Wikander 1999).

All of these factors may help us to explain why the increased participation rate of women in the U.S. 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 by U.S. women of working age increased by 40 percent between 1975 and 1994. Measured in this way, female employment in the United States reached the level in Sweden as early as the 1970s (Jonung and Persson 1993). This difference developed despite the massive expansion in public-sector employment in Sweden, which increased the demand for female workers, because the expansion involved predominantly “female” occupations. Furthermore, the increased public-sector employment involved greater subsidies for child care and elderly care, work traditionally performed (predominantly) by women in the home.

Patricia Cortes and José Tessada (2008) show that highly educated women in the United States 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 twenty to thirty minutes at work each week for women with a professional degree, a master’s in business administration, or a Ph.D. At the same time, such women decreased the time they spent on household work and reported increased spending on such services.

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19. Albrecht, Björklund, and Vroman (2003) also state that the relatively high wages at the bottom of the wage distribution make it difficult for a 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, Sandra Black and her colleagues (Black and Strahan 2001; Black and Brainerd 2002) indicate that increased competition in a sector improves women’s wages owing to a decrease in firms’ ability to discriminate.

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

In table 8, the maximum tax factors—with and without tax deductions—for some countries are presented. As the table shows, Sweden has had the highest tax factor among the presented countries, without considering the tax deduction. With the tax deductions, Sweden now has almost the same tax factor as other Scandinavian countries and the United States. This equalization may influence the household service sector in Sweden in the future and make it easier for women to strive for management positions.

### *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. A partial alleviation of this effect may be achieved through prolongation of the professional career—that is, postponement of retirement.

In the United States, the average retirement age was sixty-four for both men and women in 1998 (U.S. 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 sixty-six, and legislation has been passed that will gradually raise

**Table 8**  
**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                                 |
| United Kingdom | 2.2        |                                     |
| United States  | 1.9        |                                     |

\* When applicable.

‡ Until 2004.

*Note:* Germany, the United Kingdom, and the United States do not have any tax subsidy system.

*Sources:* Henrekson 2004 and authors' calculations.

this age to sixty-seven by 2022. By 2008, the increase in benefits after age sixty-seven had become actuarially fair, giving strong incentives and opportunities to delay retirement (see, for example, Gruber and Wise 2007).

Evidence suggests that institutions and norms in Sweden have weakened incentives both for individuals and for (potential) employers to extend professional careers during the postwar period (see, for example, Bohlin and Gidehag 2002, and Ds 2002). The tendency to exit the labor market earlier is not a new phenomenon. A broad spectrum of factors intervenes to create this postwar effect: labor-market legislation, wage-setting institutions, in some cases a disproportionately large retirement undertaking for the last employer, a corporate tax code that favors preretirement bailouts of older workers, very high marginal effects (sometimes 100 percent) for those with low retirement benefits, and so forth. Attitudes have adjusted to incentives, so people now generally look unfavorably on the prospect of extending their career. The Swedish Ministry of Industry, Employment, and Communication reports in its inquiry on labor-market obstacles for older people from the beginning of the millennium that less than 10 percent want to work until age sixty-five (Ds 2002). On average, people would like to retire before age sixty. Moreover, in Sweden, as in many other European countries, disability programs and special unemployment programs work essentially as early retirement benefits. Comparing men who receive disability benefits at age sixty-four in the United States and in Sweden, the respective numbers are 7 and 37 percent (Gruber and Wise 1999).

During the postwar period, a clear norm seems to have evolved in Sweden governing what is regarded as an appropriate time path for an executive career. This norm is likely to be one factor that contributes to women's difficulties in recovering lost time and opportunities after having given birth and interrupted or temporarily diminished their career.<sup>20</sup> In reality, it has also become increasingly common for top-level executives to terminate their executive careers fairly young (typically around age fifty-five). Related to this process, a compensation system has evolved that consists of lifelong pensions with a high replacement rate. Thus, a 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 suit men better 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 an early retirement age and weak incentives to work after that age act as an impediment for women who have delayed their careers temporarily and would prefer to accelerate later.

However, the mandatory retirement age in Sweden was recently increased from sixty-five to sixty-seven, and the average effective retirement age has slowly increased in recent years; it was about sixty-three in 2004 (Swedish Social Insurance

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20. Meyersson Milgrom, Petersen, and Snartland 2001 shows that it is mainly during the age interval from thirty-five to forty-five that women's career progression is flatter. The lag that arises is rarely closed by women in a later phase. See also Albrecht et al. 1999.

Agency 2006). If these recent changes persist, they may facilitate higher-level employment for Swedish women in the future. A more open-minded view of the age at which 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 shows that the Scandinavian system tends to favor the average woman and 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 explain how 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 structure of payoffs, and preferences may evolve as a result of personal experience and hence may not be independent of institutions.<sup>21</sup>

In the executive occupational group, a great deal of "tournament" logic governs wage setting and promotion decisions; that is, many people compete, and only a few reach the higher, most remunerated levels. In tournaments, small initial differences and disadvantages may lead to large eventual differences in outcomes. For example, at each stage in a tournament, one person may progressively get the upper hand because he can devote more time to the assigned tasks. Analogously, given the evidence that women often perceive a greater conflict between work time and family time, even small differences in this dimension may lead to increasingly large differences the higher one rises in the hierarchy.

It is well known from extensive research in economics and psychology, including numerous laboratory experiments, that women are more risk averse and less favorably inclined toward competitive environments. For instance, from experimental studies, Muriel Niederle and Alexandra Yestrumskas (2008) conclude that women's risk aversion or greater uncertainty about their ability to perform may well explain why they seek challenges to a lesser extent than men do.<sup>22</sup>

Most women also tend to attach great importance to taking care of their relatives (Hakim 2004). Failure in this respect often produces feelings of insufficiency

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21. Hakim (2000) introduces preference theory, in which women can be divided into three dominating groups in terms of lifestyle: adaptive, work centered, and 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.

22. Other studies that find gender differences include Byrnes, Miller, and Schafer 1999; Gneezy, Niederle, and Rustichini 2003; Gneezy and Rustichini 2004; Niederle and Vesterlund 2007; Ricciardi 2008; Croson and Gneezy 2009. A recent study of biological differences (Apicella et al. 2008) finds 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. Compare Dreber, von Essen, and Ranehill 2009.

and guilt. Thus, if a successful career requires a great reduction in time spent with their children, this requirement is likely to impair their aspirations more. Women also seem sometimes to have difficulty in accepting that someone other than the children's father or possibly another relative can serve as a suitable replacement for themselves (Elvin-Nowak 1999).

However, we do not want or need to take a stand on whether men and women differ biologically so that they have different preferences for children and different attitudes toward risk or whether such differences are socially constructed. It suffices to note that economic policies and institutions influence behavior regardless of how the preferences were formed in the first place. The gender difference in risk preference 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 possibility should be taken into account.

An important consequence of path dependence may be illustrated by the fact that a large share of U.S. female executives remain childless because they wait too long before they try to get pregnant (Hewlett 2002).<sup>23</sup> According to Sylvia Hewlett (2002), 42 percent of the high-achieving women ages forty-one to fifty-five in the United States in the business sector do not have children. Only one-third of these women claim to be childless by choice. Among the highest-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. Monica Renstig and Magnus Henrekson (2004) find that only 12 percent of female Swedish executives ages forty-six to fifty-five are childless, and the corresponding figure for women ages thirty-six to forty-six 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 that 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), which highlights the importance of the design of 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. Several psychological mechanisms support this conjecture, and they are likely to be relevant in the context of women's career choice and career success.<sup>24</sup> The mechanisms that we deem most important and their expected effects are summarized in table 9.

When a great deal of time is invested in a certain activity, people learn to appreciate performing it; that is, some form of *adaptive preference formation* may

23. Moreover, many of them apparently put too much trust in the pharmaceutical industry to come up with cures for age-related infertility.

24. See Jonung and Ståhlberg 2009 and the references contained therein. In particular, gender differences in preferences and talents have been shown to change as a result of women's changing roles in society. See also Hyde 2005.

**Table 9**  
**Summary of Psychological Mechanisms Likely to Create Path**  
**Dependence in Career Progression**

| Mechanism                                                                                                                                                           | Effect                                                                                    | Potential impact on career path                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Adaptive preference formation:</b> 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; delay and obstruct potential career paths. Career advancement opportunities are rejected. |
| <b>Present-biased utility:</b> 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; delay and obstruct potential career paths. Career advancement opportunities are rejected. |
| <b>Exposure-revealed preferences:</b> Actual preferences revealed by exposure to activity in question. (Smith 2003)                                                 | Excess momentum: Adds momentum to current tendencies.                                     | Traditional household responsibilities are cemented; delay and obstruct potential career paths.                                                |
| <b>Reference-based utility:</b> Changes more important than states. (e.g., Kahneman, Knetsch, and Thaler 1991)                                                      | Loss aversion/status quo bias and/or inclination to push on along current path.           | Career advancement opportunities are rejected.                                                                                                 |
| <b>Representativeness bias and belief perseverance:</b> 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.        |

occur. This factor as well as a biological predisposition may explain why career-oriented women tend to shift focus somewhat from their 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 have preferences for this shift once they have tried it (Smith 2003). Just as some people learn to appreciate working as top executives, women, once they have given birth, might well receive intrinsic rewards from child rearing instead (*exposure-revealed preferences*). If they are

subject to *present-biased utility*, they overrate the importance of their current preferences relative to their future preferences. This tendency can give rise to dynamic inconsistency, causing people to allocate more time to certain activities than their previous plans called for.

All of these psychological mechanisms are likely to give rise to path dependence in occupational choice, time use, effort, and so forth. It is therefore important to understand how the institutional setup affects the career path a person chooses to follow and how this effect helps in explaining the evolution of the frequency of female executives (at various levels) in the business sector. We see how staying “on track” becomes important at each stage of the career. People may be inclined, however, to push on along current career paths because the aversion to losses is often greater than the valuation of forgone opportunities (*reference-based utility*). Experimentation with different careers may entail substantial opportunity costs. A fully rational agent may therefore refrain from experimentation and stay on a nonoptimal career track, perceiving the time and effort required to switch to the optimal track 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.<sup>25</sup> It is then possible that social truth becomes more a matter of convention than a 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 their success.<sup>26</sup>

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 low, this misjudgment will have real effects. Hence, when media exaggerate the obstacles for females who are considering a future executive career, this exaggeration provides a “signal” and a negative stereotype to women that they are likely to use as a mental heuristic that maps a subjective low probability of success. Such an understanding can and does obviously lead to significant and routine underperformance.

In at least one respect, therefore, the Scandinavian feminists’ interpretation of gender inequality in top positions as a result of severe discrimination and patriarchal

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

26. A 2005 survey by the Swedish white-collar trade union Tjänstemännens Centralorganisation (TCO, Swedish Confederation for Professional Employees) shows that 63 percent of all female students think that their education will pay off, whereas 76 percent of the male students think so. TCO argues that the difference is attributable to the students’ (expected) occupational choices: women choose traditional “female” sectors with lower salaries and probably fewer career opportunities (see TCO, Andréasson, and Mann 2005).

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 most men's identity. Nevertheless, the increasing ratio of female executives in most industrialized countries in the past few decades may have positive future effects. A more optimistic perception of the probability of success is no doubt almost certain to increase the relative number of career-oriented women.<sup>27</sup>

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

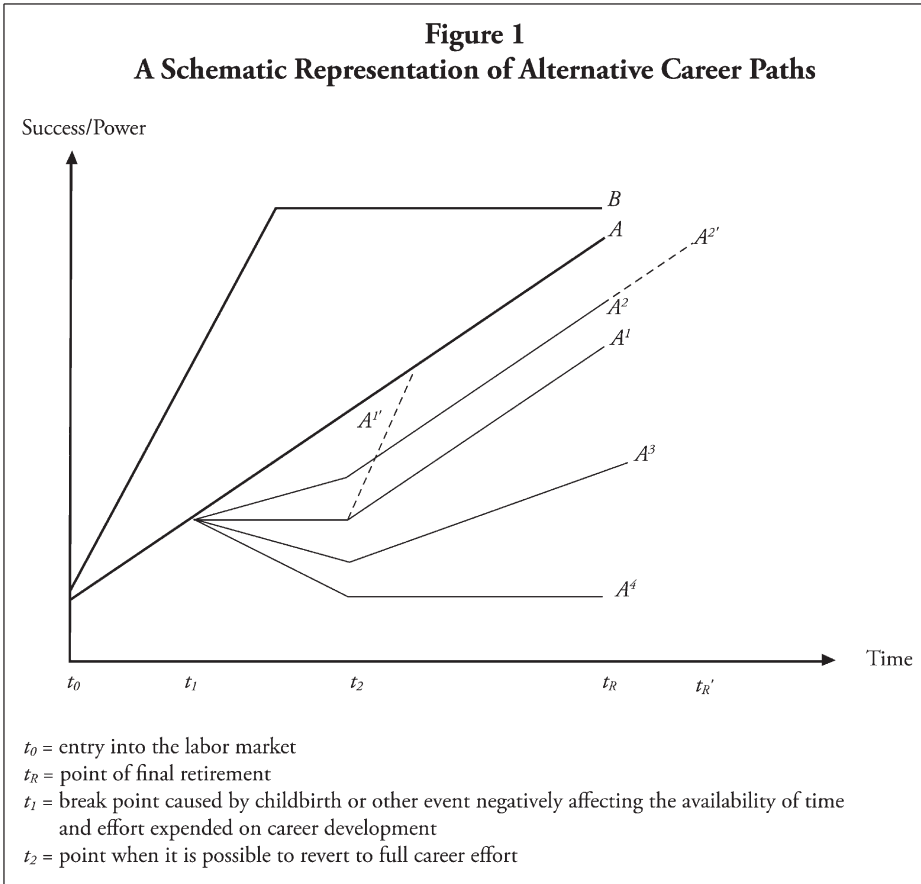
Referring to the figure, we can make several observations. First, depending on factors such as talent, motivation, and education, we can distinguish potential career paths between  $t_0$  and  $t_r$ —for example, *A* and *B*.<sup>28</sup> Now assume that at  $t_1$  something occurs that affects the individual's scope for expending time and effort on career development—say, childbirth. A number of things may happen:

- (a) the person permanently gives up his or her career (this choice used to be very common for women after childbirth);
- (b) the professional career is completely interrupted between  $t_1$  and  $t_2$  and then resumed (path  $A^1$ ),
- (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, as indicated by our preceding discussion, this set of alternatives is far from an exhaustive description of the potential career paths. Between  $t_1$  and  $t_2$ , the level of influence or power may actually *decline*, although one can easily imagine circumstances in which an individual forgoes only the progress that otherwise would have taken place. The individual may then potentially resume her career at pre- $t_1$  intensity at point  $t_2$ . Between  $t_1$  and  $t_2$ , the psychological mechanisms described earlier, interacting with the institutional setting, are also likely to affect preferences and perceptions. In the case of childbirth, the period between  $t_1$  and  $t_2$  is often extended as a

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 the United Kingdom. More working wives in Spain consider themselves to be the primary (co)earner and work centered.

28. Discrimination (whether statistical or preference based) may cause a difference, *ceteris paribus*, between men and women; for example, despite being identical to the woman in every other respect, a man may have a steeper career progression. To avoid excessive clutter, we have not included this effect in the figure.



result of successive births. Even if the woman resumes working full time, her career aspirations may as a result be much lower or stay flat. Hence, two other possibilities remain clear options:

- (a) the professional career evolves negatively between  $t_1$  and  $t_2$  and is then resumed at a lower pace (path  $A^3$ ), or
- (b) the professional career evolves negatively between  $t_1$  and  $t_2$  and is then resumed without progression (path  $A^4$ ).

In addition, (at least) two possible ways (career paths) 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):

- (a) at  $t_2$ , the professional career evolves more quickly (more steeply) than before  $t_1$  until the baseline case ( $A$ ) is caught up with ( $A^1$ )
- (b) 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 lags behind between  $t_1$  and  $t_2$ , the steeper the postinterruption career path must be or the longer one must postpone the final retirement age. Paths such as  $A^{1'}$ , 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.

An extensive and financially generous legislated parental leave scheme gives women incentives to scale down their long-term career aspirations and to allocate more time and effort to child care and household work. Therefore, more “negative” consequences (in terms of career progression) may occur 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.<sup>29</sup> Shirley Dex and her colleagues (2005) find that American women with high education have a greater tendency to return to work after childbirth than do their Swedish counterparts.<sup>30</sup> The same pattern is evident in general in the most recent cohorts. In 2002, Swedish women took 84 percent of total parental leave (Swedish National Social Insurance Board 2003).

As noted, a rational response by Swedish employers is to exercise statistical discrimination. They are likely to know that women take some 85 percent of total parental leave, that women may well choose to work less after childbirth, and that women are also far more likely than men to exercise a parent’s unconditional legal right to work part-time until the youngest child turns eight. As a result, the individual woman aiming for an executive career in Sweden is less likely to be offered a first job that puts her on a career track with great inherent potential (Sewell, Hauser, and Wolf 1980; Light and Ureta 1995).<sup>31</sup> In the United States, these effects are not present or are much weaker.

In short, several psychological mechanisms point toward 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 our valuation of opportunities forgone; our actions are determined by subjective rather than actual probabilities; and we are often unaware of our real preferences until we have tried a good or an action.<sup>32</sup> These mechanisms reinforce already existing differences in the patterns of ladder climbing for male and female executives and top-earning professionals—differences caused by direct mechanisms such as child-

29. See Mandel and Semyonov 2006, 1914–16, for a more thorough discussion of this effect.

30. When controlling only for cohort and education. However, the results are somewhat sensitive to the inclusion of other variables.

31. An ongoing discussion in Sweden concerns whether a completely individualized parental leave can decrease statistical discrimination.

32. Studies show that women who already have a power position are as likely as their male counterparts to want to keep or preserve their position (Catalyst 2004; Renstig and Henrekson 2004).

bearing patterns, preferences, and the gender division of labor. Avoiding the self-fulfilling prophecy that longer working hours and an increased career commitment diminish time with the children would reduce women's perceived opportunity cost.

## Conclusion

We have explored a set of policies and institutions that may help to explain a basic gender difference between the Scandinavian and Anglo-Saxon countries—namely, the degree of representation of women in executive positions in the corporate sector: Scandinavian women have high political representation, but few top business executives, whereas American women have comparatively low political representation but more top business positions. We have identified a number of relevant institutions that we claim to be important determinants of the structure of payoffs underlying a woman's 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 women's career prospects. We locate and point to some likely reinforcing interactions between psychological mechanisms and the institutional setup.

Our analysis highlights the crucial role of the opportunity cost of building a career. This analysis supports the view that the evolution of a market for services that are highly substitutable for household work is particularly important for career women. The emotional costs associated with a career might also be reduced if a changed career time profile were possible and if an increased career commitment did not necessarily require diminished time with one's offspring. Our analysis implies a straightforward commonsense 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 change is likely to be most efficient if more attention is paid to how key institutions interact with psychological mechanisms in detrimental ways, giving rise to a path-dependent downward spiral in women's career choices.

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