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Karlsson, Tobias; Stanfors, Maria

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Total number of authors:
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LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

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Abstract

Attracting membership while stifling freeriding and heterogeneous preferences among potential members is critical for trade union success. Women are generally seen as less inclined to join trade unions, particularly at the onset of the labor movement. We highlight a previously neglected explanation for this: the importance of risk and gender differences in assessment hereof. We study matched employer-employee data from two industries around the year 1900 where union membership was associated with different levels of risk: the Swedish cigar and printing industries. We find that the gender gap in membership was larger in the high-risk environment (cigar) and smaller in the low-risk environment (printing). Women were not hard to organize but avoided risks and uncertain returns.

Keywords: trade unions, risk aversion, gender, 19th century, 20th century, Sweden

JEL classifications: J51, N33, N63

INTRODUCTION

"To be, or not to be…"[1]. Not only was this a burning question for a young Prince of Denmark but also for many industrial workers concerning union membership. With industrialization increasingly many workers came to exchange their time and effort for wages and, in concert with the development of capitalist labor markets, trade unions became a force influencing their wages and working conditions (Webb and Webb 1894).

Trade unions have by bargaining for higher wages, fair working conditions, reduced working hours, and employment protection (Freeman and Medoff 1984) made a significant impact on labor markets and societies over more than a century. The critical issues have been to stifle free riding and address the heterogeneous preferences and interests of potential members. Membership is not compulsory and the public good character of union services allows for free-rider behavior, which makes the question of why do people join a union a relevant one. However, the success of trade unionism has varied over time and space. Women are generally thought to be less inclined to unionize, particularly when it comes to joining the early trade unions (Geary 1989, pp. 7-8; Goldin 1990, p. 192; Holloway 2005, p. 60), with possible implications for societal development in a wide range of areas. Women's under-representation in trade unions arguably contributed to greater earnings differentials and occupational segregation (Burnette 2008), and was used as an argument for the introduction of gender-biased protective labor legislation (Wikander et al. 1995).

In this paper we investigate whether women were less inclined to join the early trade unions and, if so, for which reasons. Our study extends on the literature on union membership in the past in two ways. First, we estimate determinants of union membership on nationally representative data including important and previously not explored controls. Second, we add a gender dimension to the story and, to the best of our knowledge, our study is the first serious attempt to analyze historical gender differences in union membership quantitatively, taking into consideration individual as well as firm-specific factors for both members and non-members.[2] For this purpose we used matched worker-firm data from two gender-mixed

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[1] This is the opening phrase of the famous monologue in the 'Nunnery Scene' of William Shakespeare's play *Hamlet* (Act III, Scene i).

[2] The only historical study based on individual-level data that we are aware of is Maddox & Eichengreen (1989) investigating the impact of unions in the 1890 New Hampshire shoe industry. It should be noted that this study does not really investigate the gender dimension, probably because the number of women in the sample is limited. In contrast to lacking historical studies, there are more of micro-studies of more recent times that include both men and women (e.g., Kornhauser 1961; Moore 1986; Schnabel 2003).

industries around the turn of the last century, drawn from large-scale national statistical surveys. Our sample covers close to 3,000 individual workers in over 100 firms. The data allow us to examine information on men and women holding the same jobs. Such data are rare but important for understanding gender gaps.

Explanations for the historical as well as the modern-day gender gap in unionization typically involve the same main elements as in other gender differences in labor market outcomes: women having less of experience, education, and training, occupational sorting, but also discrimination. Women's weaker labor market attachment, their exclusion from established systems of skill formation, sorting into lower-status occupations with less coverage, and their exposition to discrimination on the part of male-chauvinist union leaders and members are reasons often referred to when explaining the apparent absence of women in early trade unions. Inspired by recent advances in economic psychology, we would like to highlight a previously neglected perspective in the discussion: the importance of risk and how the assessment hereof influence the decision to join a union. For this purpose, we study two industries where union membership was associated with different levels of risk; the Swedish cigar and printing industries around the year 1900 with the cigar industry representing a high-risk environment and the printing industry a low-risk environment with regard to union membership. Both industries were gender-mixed and did not exclude women through requirements of strength and the use of advanced machinery. Women could work for substantial periods of time in both the cigar industry and in compositing where they could have skilled jobs and work alongside men, and they could become union members on the same official basis as men. A further twist to the comparison is that, according to contemporary notions, the Tobacco Workers' Union had a more welcoming attitude towards women than did the Typographers' Union, which was considered gender-biased in favor of men.

Our results confirm that there was a gender gap in union membership in both industries. The raw gender gap is considerably reduced when controlling for individuals characteristics and unobserved heterogeneity at the firm level. Women were, however, much less likely to be members of the Tobacco Workers' Union, net of controls, while the gender gap in union membership among compositors was largely explained by individual- and firm-specific factors. Gender differences in unionization where particularly large at tobacco factories with low levels of union density. To put our results into perspective, we also investigated membership in mutual aid societies, showing that there were no differences between men and women in this respect, even though these organizations – like trade unions –

commonly were founded and led by men. If anything, women were more likely to join mutual aid societies and thus they were not generally hard to organize, but rather they avoided organizations that were associated with greater risk and uncertain rewards.

We proceed as follows. Next section sets out the competing explanations for union membership differentials focusing on gender and risk. We then explain our case of study and puts it in the context of Swedish industrialization and union growth. We present the data source and descriptive statistics about the workers analyzed. The section that follows assesses the existence and extent of the gap in union membership for cigar workers and compositors and addresses the question as to whether women were hard to organize. To conclude we discuss the results in the context of the setting in which workers and firms found themselves. In the final section we also discuss the implications of our results.

UNION MEMBERSHIP, GENDER AND RISK

Labor economists have often approached the determinants of union membership within a demand and supply framework (Berkowitz 1954; Ashenfelter and Pencavel 1969; Pencavel 1971; Hirsch and Addison 1986) where union membership is considered a flow of services (of private and collective goods character) to a utility-maximizing worker. The demand for union services is thought to be negatively related to the price of membership; other things equal, the higher the price (the membership fee), the fewer the workers who join the union. But also income, expected wage gains compared to non-membership, and non-pecuniary benefits from a unionized work environment (such as better working conditions) and preferences factor into the decision. The supply of union services is likewise thought to be related to membership fees and the costs of providing its services.

The cost-benefit analysis of the union membership determination does not take the free rider problem – with several of the benefits accruing to all workers, not only union members – into consideration. According to Olson (1965) unions offering selective material incentives, such as strike pay, may be a reason why an individual would join a union.[3] In addition to this, Booth (1985) suggested that there is a 'reputation' component of compliance with social custom of union membership, and not free riding, which makes individuals derive utility from being union members. According to the social custom approach, individuals are influenced by

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[3] Another reason would be 'closed shop' and coercion (Olson 1965, p. 75). Closed shops are rarely found today. It should be noted that closed shops were not applicable in the context we study (and neither was union vote), which suggests that selective incentives were more important already from the start of the union movement.

their social context, e.g., their living and working conditions, in that workers may be more willing to join a union if others are doing so.[4]

A number of individual characteristics (such as age, gender, family status, and experience) have been found to be related to union membership together with industry and occupation (see Schnabel 2003 for a review). It is a well-established fact that women, like young workers, have been less likely to be union members. This may in part be related to preferences but also to occupational sorting with women and youth being under-represented in occupations and firms that are not covered. The workplace is thus of importance for union membership with the degrees of employer resistance and of a union-friendly climate being important. The competitive pressure in the economy is also of importance for union membership with competition in product markets affecting the price elasticities of product demand and hence the wage elasticities of labor demand.[5] In contexts with high competition in product markets and fluid labor markets, there are obvious rewards of union membership. At a given point in time, however, some industries tend to be more unionized than others; manufacturing being an example with supposedly more homogenous preferences and thus higher levels of unionization than elsewhere.

The demand-supply framework has been criticized for being overly simplistic and neglecting non-economic factors. From a gender perspective, a number of questions may be raised. Is union membership associated with the same costs and benefits for men and women? Do union leaders put equal weight on defending the interests of men and women? Do men and women differ in their preferences towards union membership?

Many of the benefits of union membership, such as the prospect of achieving better pay or working conditions, are likely to be of long-term nature whereas the direct costs are to be paid upon admission and for each subsequent period. Consequently, workers with a stable labor market attachment have stronger incentives to become members than workers with a weaker (i.e., interrupted or short-term) labor market attachment. The male breadwinner ideal, which characterized many societies from the mid-nineteenth century, directed married women to unpaid work in the household. Participation in the labor market was limited to a brief period before marriage and weakened women's incentives and opportunities to organize and

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[4] According to Booth and Chatterji (1993) the open shop is only viable when union membership has reached a minimum critical density and wages are sufficiently high to support this. Our case of study fits within this description.

[5] This section draws heavily on standard economic reasoning on what unions do and what affects union membership (see for example Freeman and Medoff 1984 and Hirsch and Addison 1986).

fight for improved wages and working conditions. This is the most common explanation for the gender gap in union membership (Kessler-Harris 1975, p. 102; 1976, p. 7; Schnabel 2003, p. 27).

It may also be that men and women faced different indirect benefits and costs. For example, the reputation and social stigma associated with non-membership may have been greater for male workers than for female. The belief that women were more amenable may have encouraged employers to hire women for some jobs in order to forestall unionization. If this belief was widespread and if these employers were more hostile towards labor organizations than were other employers, such practices would have led to a gender gap in union density, even if the inclination of women to unite was similar to men's.

The fact that most unions in historical settings were led by men may also have made less attractive the benefits expected by women of membership. In some cases these suspicions were well-founded. Many early trade unions were exclusively male organizations; some were openly hostile towards women in the labor market (Hartmann 1976; Cockburn 1983; Rose 1988). Even when women were allowed to enter trade unions and enjoy the same formal rights, leadership usually remained in the hands of men and it is likely that women had little influence on the organizations' policies (Qvist 1974). One could say that many unions had gender-biased goal functions in terms of the demand and supply framework. These unions attached less importance to women's wages, hours, working conditions and employment protection, or even (directly or indirectly) tried to exclude women from certain trades (Hartmann 1976; Rose 1988). Whether this characterization of early trade unions is fair has been a matter of debate. Ruth Milkman (1990) modifies the image of trade unions as a vehicle for male interests, and argues that it is hard to distinguish the exclusion by male unionists of women from their exclusion of unskilled workers in general. Further, Ilene DeVault (2004) argues that there was variability in exclusion/inclusion of women across unions in the United States, even within the same trades and industries, providing different opportunities for women in relation to men across the nation.

When looking at the decisions made by men and women to join trade unions in the past, uncertainty is a striking feature. In pre-modern societies the freedom of association was not universally recognized. Collective actions of workers, even in the form of simple gatherings, were often prohibited or restricted. Even after the freedom of association had been formally achieved, many employers openly denied workers union membership. Joining a union could be punished by the loss of one's job and housing. There was also uncertainty concerning the solidity of trade unions. Many early unions lacked strike funds and had to raise membership

fees in cases of conflict. The early days of unionization in particular saw some unions disappearing after a brief period of success.

In modern-day settings, women tend to be more risk-averse than men (Byrnes, Miller & Schafer 1999; Eckel & Grossman 2008; Croson & Gneezy 2009; Bertrand 2011; Dohmen et al. 2011), with implications for such factors as earnings and occupational choice (DeLaire & Levy 2004; Bonin et al. 2007). It is still an unresolved question as to whether the gender difference in risk aversion is due to nature or nurture, but it may be related to available options in the labor market. To some extent, risk aversion may be the result of women having fewer alternative jobs to choose from.

In contrast to union membership in present-day contexts (Goerke & Pannenberg 2011, 2012), we may assume that unions in the past primarily attracted workers with relatively low levels of risk aversion. These workers were ready to enter organizations that offered high but uncertain future rewards and were prepared to sacrifice earnings and job stability in the short term. Given that gender differences in risk aversion appeared much the same around 1900, we may expect to see fewer women among the rank and file of early trade unions. However, we may also observe behavioral differences between workers of various occupations. The relations between unions and employers, and the level of conflict between them, varied between industries as did the membership packages offered by the unions. In the following section we take a closer look at the Tobacco Workers' Union and the Typographers' Union, paying particular attention to how the membership packages offered by these organizations were related to gender and risk.

THE TRADE UNION OF SWEDISH CIGAR WORKERS AND TYPOGRAPHERS

Swedish industrialization began towards the end of the nineteenth century; it lagged behind continental North Western Europe but was ahead of Southern Europe (Crafts 1985). Like the United States, Sweden benefited from favorable resource endowments and from latecomers' advantages with respect to technological and organizational advances made elsewhere, though American industrialization was compressed into a shorter period of time and the United States became the world's industrial leader with many progressive features around 1900 (Schön 2011). In Sweden, by 1900, about 20 percent of the total labor force was employed in manufacturing. Unions were gaining strength, but the country still lagged behind others such as Denmark, Germany, and the United States when it comes to the share union members per

100 non-agricultural workers (Friedman 2008). 19 percent of women of working age were employed in the formal economy, principally in domestic service and textile production. Female employment was on a par with the United States, but below the British rate (Richards 1974; Mitchell 1981). In this context of industrialization and union growth, our case of study are the trade unions of Swedish typographers and cigar workers at the turn of last century. The two unions share some similarities. For example, both were founded at an early stage of the union movement (the Typographers' Union in 1886 and the Tobacco Workers' Union in 1889) by skilled workers belonging to the dominant occupation of each industry. They also exhibit differences, the most fundamental being the gender composition of the pools of their potential members and the degree of employer resistance with compositing being male-dominated and the union being clearly gender-biased in favor of men.

Workers in the printing trade were regarded as part of the 'labor aristocracy' and were, in Sweden and elsewhere, among the very first to form trade unions (Wessel 1937; Björklund 1965; Ekdahl 1983). In 1886, a network of local unions was linked together by a national federation, the Typographers' Union. Around the turn of the century, the Typographers' Union had 58 locals and counted almost 3,000 members. In 1907, the union density of Swedish typographers was estimated at 86 percent, which was a very high level compared to other occupational groups within the country and typographers in other European countries (cf. Friedman 2008). Locals of Swedish tobacco workers formed a federation in 1890 (Lindbom and Kuhm 1940). The organization was open on a formal basis to all occupational categories within the tobacco industry. In 1898 there were 13 locals with 1,457 members in total, which suggests an overall union density of about 32 percent. However, there were great differences between the occupational groups, with cigar makers making up the group with the highest density (70 percent). In practice, the Tobacco Workers' Union can be seen as an organization for core group of workers in the industry, the cigar makers.

Unionization among Swedish typographers and cigar workers took place against the background of technological change, although of a different magnitude.[6] Two important objectives of the Typographers' Union and its locals were to regulate the use of new technology, with typesetting machines such as the Linotype becoming more common, and protect the skills of union members. While the technological developments in the printing industry can be labelled mechanization, technological changes in the cigar industry took the

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[6] As regards technological change in the printing industry, see: Zeitlin (1979), Cockburn (1981), and Ekdahl (1983). For the tobacco industry, see: Baer (1933), Cooper (1987), and Prus (1990).

form of introduction of more effective tools, primarily wooden molds. The introduction of molds rationalized and standardized cigar production, and allowed employers to increase the division of labor and cut training periods, which was in turn associated with a feminization of the workforce. As soon as the federation came into being, women constituted about 50 percent of the workforce in the tobacco industry, and their numerical dominance was even greater in cigar manufacturing. The typographers did not experience the same dramatic gender shift, although mechanization brought about increased specialization and the use of unskilled labor. Women entered the trade, but they remained a minority.[7]

Both the Typographers' Union and the Tobacco Workers' Union were formally open to women, but their attitudes towards women appear to have differed. The Typographers' Union was known for its hostility towards women. Women were not welcome as members in the early associations of typographers, and male typographers supposedly "showed little interest and even resentment towards the participation of women" even after the founding of the federation, whose original statutes explicitly mentioned that members could be of either sex (Lindbom 1938, p. 330). The Tobacco Workers' Union has been described as "women-friendly" (Lindbom 1938, p. 332), and when the local in Stockholm was about to hold its constituting meeting in 1884, an appeal was in fact made to "all female workers in the tobacco trade" which emphasized that a union could not be successful without their participation (Lindbom and Kuhm 1940, p. 47).

Wage standardization was a central goal for both the Typographers' Union and the Tobacco Workers' Union, and the organizations officially paid allegiance to the idea of equal pay for equal work. The underlying motives for this policy and the extent to which it was actually put into practice are unclear.[8] However, at least during the early years, the Tobacco Workers' Union leadership actively tried to raise the lowest piece rates, which would have benefited women in particular. The Union's demand for minimum rates of pay was in fact what triggered a serious conflict with the Cigar Manufacturer's Association in 1896 (see below).

To summarize, we are investigating two trade unions, of which one can be described as reluctant to admit women and the other as being welcoming. But much may be hidden behind official rhetoric, and seemingly gender-neutral rules may have different implications for men

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[7] The printing industry was segregated with women dominating book binding and men dominating other occupations, such as compositing.

[8] For a general discussion on trade unions and women's wages, see Lewenhak (1977, pp. 89-91) and Kessler-Harris (1975, p. 102).

and women respectively. In the following section we look more closely at the potential costs and benefits of membership in the two unions and how that impacted union membership from a gender perspective.

COSTS AND BENEFITS OF UNION MEMBERSHIP

Membership in an early trade union was associated with a number of costs and benefits of both a direct and indirect nature. Full members of the Typographers' Union paid weekly fees equivalent to 2.5 percent of a typical male compositor's earnings and 3 percent of a typical female compositor's. Full membership of the Tobacco Workers' Union amounted to 1.3 percent of the weekly earnings of an average male cigar maker and 1.8 percent of a female. Under extraordinary circumstances, such as strikes and lockouts, periodic fees could increase dramatically.

A major and direct benefit of membership in both organizations was access to travel funds, a benefit primarily intended to help unemployed members. This was probably more attractive to men than women. Unemployment support was part of the membership package in the Typographers' Union, and was sometimes offered by locals of the Tobacco Workers' Union. In the same way that the periodic membership fees were flat for skilled workers in both unions, paid travel expenses and other benefits were unrelated to earnings. This meant that women, while paying on average a higher share of their earnings, also received relatively more in benefits when experiencing unemployment. A typical male compositor would, for example, receive unemployment support equivalent to 50 percent of his earnings. For a typical female compositor, the same benefit would amount to 63 percent of her ordinary earnings. Where it was made available, unemployment benefit could be even more generous for cigar workers and the equivalent of 80 percent and over 100 percent respectively for male and female cigar makers.[9] Overall, the range of social benefits offered by the Typographers' Union was broader than that offered by the Tobacco Workers' Union. For example, the Typographers' Union administered a mutual aid society and a fund for the aged or long-term

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[9] These calculations are based on benefits and average earnings for the year 1898 and are conditional upon the worker in question having been a union member for at least one year. Since the support provided was intended for male and female workers equally, the different percentages reflect a raw earnings gap between men and women. The support paid to unemployed members was not defined in the national statutes at the outset; it was up to each local to decide. There was additional support for workers – male and female – with under-age children and for male family providers who sought employment at other locations during an ongoing conflict.

sick. Membership was voluntary in the former and compulsory, although highly subsidized, in the latter.

Membership in an early trade union could also be associated with indirect costs and benefits. Among the indirect costs, one stands out: the increased risk of employer retaliation. This was particularly relevant for the cigar workers. There were no major battles concerning the freedom of association in the printing industry. Indeed, the early organizations of typographers accepted employers and foremen as members and occasionally even allowed them to become members of the board (Ekdahl 1983, pp. 151-157). Foremen remained in the organization until 1908 when they formed their own union. The early history of the Tobacco Workers' Union was, by contrast, characterized by conflict with employers (Lindbom & Kuhm 1940, pp. 51-52 and Chapter 6).

Of particular significance was the great showdown between the parties in 1896. The conflict began as a strike for minimum wages for cigar makers at a factory in Gothenburg. The Cigar Manufacturers' Association responded to the strike by closing down 14 factories around the country. More than 1,000 workers were affected by the lockout. This was clearly a battle for the right to organize. Representatives of the Cigar Manufacturers' Association publicly demanded that their workers sign contracts where they promised not to join the Union. The Union received great support from other parts of the labor movement, which by that time had considerably gained in strength in Sweden. After 1896 only a few employers continued to openly deny tobacco workers their rights to organize. Still, there remained employer-hostility towards union agitation in some factories (Lindbom 1934, pp. 134-135).

There were also indirect benefits of union membership; for example, in the form of comradeship and access to social networks. By the same token, staying outside the union could be associated with substantial costs in the form of social exclusion, particularly in times of industrial conflict. It is likely that the indirect benefits of membership (costs of non-membership) were gendered so that men experienced greater benefits of social inclusion (greater costs of exclusion). It is, furthermore, likely that such differences were more pronounced among compositors than among cigar workers, since the former had a long tradition of organization, pre-dating the formation of trade unions.

To sum up, the direct costs of union membership represented a heavier burden for women than for men. However, the application of flat rates of fees and benefits also meant that women could receive support that represented a greater share of their earnings in times of unemployment. A complicating feature of the decision to join a union was that it could increase the risk of becoming unemployed, particularly for cigar workers. When it comes to

the reputation' component of compliance with social custom of union membership, it likely was more important for men than women given the former groups' stronger work orientation and longer time horizon. Despite being feisty and favoring men, the Typographers' Union had an inclusive strategy with the goal to bring about a critical mass of members, whereas the more welcoming attitude on behalf of the Tobacco Workers' Union was balanced by more conflict. This leaves us with ambiguous expectations on the size of the gender gap in union membership in the cigar industry and in compositing and the roots thereof.

DATA AND SAMPLE CHARACTERISTICS

The data exploited were originally collected by the Swedish Board of Commerce (*Kommerskollegium*), which instigated large-scale statistical surveys of a number of industries of which the tobacco industry (in 1898) and the printing industry (in 1902/03) were two.[10] The industries were surveyed in their entirety with one set of questions for employers, and another for employees. Employers supplied information on the number of employees, wage sums, machinery, working hours, employment contracts and regulations, fringe benefits (which were trivial), experiences of strikes and lock-outs. Workers were asked about the date and location of birth, parents' occupation, civil status, number of children, health status, present occupation, year of entering the industry as well as when they began their present occupation, year when employment at the present factory began, weekly income, and whether they were union members or subscribers to a benefit society.

The data serve our research purpose well. First, we matched workers to firms and then we restricted the data. Since the Tobacco Workers' Union was in practice an organization for cigar workers at the time of the survey, we have excluded workers in other branches of the tobacco industry. The printing industry had separate unions for compositors, bookbinders, and lithographers; occupational groups that were distinctly different from each other. In this paper we focus our attention on the compositors; a core group of workers which was in terms of employment the most important one in the printing industry. Further, we restricted our analysis to adult workers (aged 16 and over) for whom we have data on all variables of interest. We excluded workers who spent less than one year in the occupation, foremen, and workers in establishments that employed fewer than 10 individuals, and only employed individuals of one sex (i.e., were not gender-mixed). After imposing these restrictions, our

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[10] Other contemporary surveys were made on bakeries, mechanical engineering, and the glass industry.

sample consists of 1,955 cigar workers and 851 compositors. The share of women among cigar workers was 66 percent, and among the compositors it was 30 percent.

Summary statistics for the sample regarding variables used in the regression analysis are displayed in Table 1. Cigar workers were on average older than the compositors and the male workers were on average older than the women. The average male cigar worker was 36 and the compositor 30 while the average female cigar worker was 31 and her colleague in the printing industry 28. A reflection of the higher age of male cigar workers is that these were more often married with under-age children and had gained more experience, both in this occupation and at the firm, than was the case for male compositors and female colleagues. Though the standard female worker was single without dependent children, women in the cigar industry were more often married and mothers than were female workers in the printing industry. There was a substantial group of unmarried mothers in the cigar industry, which was not the case in the printing industry. This may to some extent be explained by the existence of more flexible work schedules at cigar factories than at printing-houses, but also by the lower skill demands in parts (i.e., preparation work and bunch making) of the cigar making trade and the existence of fair pay based on productivity (for bunch makers, rollers, and sorters) (Burnette & Stanfors 2012; Stanfors et al. 2014). With regard to the number of years in the occupation and at the firm, there were no big differences between women in the two industries. Among our samples, the raw gender gap in earnings was bigger in the cigar industry than in the printing industry. Generally it was around 30 percent (Burnette 2015). Among the cigar workers sampled, women earned 64 percent of that earned by the men. Among compositors, the equivalent share was 77 percent. This reflects more variation in skill among cigar workers (among which both skilled and unskilled are to be found) while the workers in the printing industry were either already skilled or in training (apprentices). In the cigar industry most men (86 percent) were cigar makers, whereas women were more evenly spread out among the occupational groups, including significant numbers making up the semi-skilled bunch makers and unskilled preparation workers. In the printing industry, most men and women worked by hand but men were more often machine compositors and women more often apprentices (with apprentices making up a remarkably large share, 26 percent, of women in compositing).

Table 1 about here

As for workplace characteristics, as mentioned above, both cigar factories and printing houses were mainly located in urban areas, but employment in cigar production was concentrated in the big cities to a greater extent than was the production of printed matter. As seen in Table 1, the concentration of female employment in the cigar industry in the big cities was particularly pronounced. Cigar factories were generally larger workplaces than printing shops. Consequently, there was also a concentration of female cigar workers in relatively large workplaces. While the average woman in the cigar industry was found at a factory with over 150 workers, the average female compositor was employed at a workplace with just over 50 workers (i.e., a rather large printing firm).

Seen from this perspective, and given that the Tobacco Workers' Union was known to be more 'women-friendly' than the Typographers' Union, it is surprising to see that the raw gender gap in union membership was in fact larger among cigar workers than among compositors. The differential between male and female cigar workers exceeded 40 percentage points, whereas among the compositors it was about 20 percentage points. In the next section we try to find out to what extent these differences can be explained by demographic, job-related and workplace-related factors.

DETERMINANTS OF UNION MEMBERSHIP

In essence, the decision to join a union is a reflection of commitment to the job and being forward-looking. As discussed above, there are a number of factors affecting demand and supply as regards union services. Many of these variables are not directly observable, and it is a challenge to find good proxies for the expected benefits and costs of being a union member and of providing union services. While risk preferences are sometimes included in modern-day surveys, such questions were not directly asked in the early statistical surveys we are using for analysis. Our empirical strategy has been instead to compare examples of union membership in settings associated with different degrees of risk, while controlling for individual and firm-level characteristics, the latter being a unique aspect of the data, and of importance for the topic investigated given the salience of the employer and the workplace in the union membership decision.

We start by investigating the role of individual characteristics for being a union member. Gender, age, experience, tenure (and their squared terms), civil status, the presence of dependent children at home, occupation, workplace location and size are theoretically motivated independent variables whereas birth location, wage form (when applicable, i.e., for

cigar makers), and being an apprentice were introduced as controls. Among the individual characteristics, age is theoretically linked to the demand for union services with older workers having stronger incentives to organize than those who are young and try out different jobs before getting established in the labor market.[11] We expected age to have a stronger and different impact in the case of women, because they typically had a shorter career span. Also experience of the present occupation and tenure with the present employer may have affected the decision to take union membership. Experience captures a range of effects, such as occupational identity and exposure to union agitation whereas tenure captures workplace identity and, possibly, loyalty to the employer. While workplace identity may be positively correlated with the demand for union services, loyalty to the employer may have the opposite effect. Civil status and the presence of dependent children clearly defined men's and women's economic roles in the past. Breadwinning responsibilities proxies a need for income, but may also capture differences in risk aversion, and has been used as a proxy for risk preferences in studies of modern populations, where it has been shown that single men and women with children tend to shy away from risky jobs (DeLeire & Levy 2004; Grazier & Sloane 2008). In relation to our study, the same groups would have been expected to show less inclination to become union members. An alternative interpretation would be that these groups lived under more precarious economic circumstances and that they simply could not afford union membership. In the context we study most variation in family status was found among female cigar workers with very few unmarried mothers among the female typographers, and unmarried male workers with dependent children at home being very rare. Modern-day studies have suggested that workers with a high degree of risk aversion prefer jobs with time wages over jobs with performance-related pay (Dohmen & Falk 2011). If this is true, we could have expected to find higher levels of union membership among workers on piece-rates. However, whether one worked on piece rates or not was highly dependent on occupation and industry. While piece rates typically applied to some occupations in the cigar industry (e.g., rollers and sorters), time-based wages were the universal norm in the printing industry. There are, however, no indications of significant gender differences in the likelihood of working for piece rates in the cigar industry (Stanfors et al. 2014); on the contrary it was a strategy for women with children to earn more by working harder yet shorter hours combining work and family responsibilities in the self-same industry (Burnette & Stanfors 2012).

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[11] In a non-linear way because at a certain point the short-term costs of union membership cannot be recaptured during the remaining part of their working life.

The existence of occupational specialties reflecting status and skill differences differed between the two unions studied. In the case of the cigar workers, we distinguished between cigar makers, bunch makers, sorters, and apprentices. In the case of the compositors, we distinguished between compositors working by hand or by machine, and apprentices. As mentioned above, both industries were at the time of the surveys undergoing technological change, and we expected union membership to have been more common among those workers who represented an artisan tradition than those who were less skilled.

The relationship between earnings and union membership is frequently discussed in the literature on this subject (Schnabel 2003). On the one hand, it is likely that earnings were positively related to membership, particularly if flat-rate fees were applied, and on the other hand, membership may also have caused earnings to rise (Freeman and Medoff 1984). In this paper, we have chosen to exclude earnings from the presentation of our findings.[12] Because women on average earned less than men, the exclusion of earnings may have led to an overestimation of the male-female gap in unionization.

We also have information on the characteristics of each workplace, including workplace location and workplace size, which are common to all individuals in any one factory. Workplace location indicates whether the factory was situated in one of the big cities (Stockholm, Gothenburg, Malmoe) or somewhere else, and it was intended to capture differences in the supply of union services. Workplace size is also a categorical variable, where workplaces were categorized according to the number of blue-collar workers. This variable serves partly as a proxy for the trade union's costs of organizing members and partly to account for the less personal employer-employee relationships existing in large workplaces, incentivizing people to unionize, with the higher likelihood of being union members to apply to workers in large factories.

We applied linear probability models to analyze the determinants of union membership (for a general discussion on the advantages of linear probability models, see Mood 2006, and for application to union membership, see Bain and Elias 1985). First we estimated pooled models (including both men and women) where we were particularly interested in the male-

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[12] We have also made estimations where weekly earnings are included in the model as an explanatory variable. These estimations, which may be obtained from the authors upon request, suggest that earnings were positively associated with union membership, but that the effect tailed off at high-income levels. The effects were similar for cigar workers and compositors. In the case of cigar workers, we observed that the effect of earnings on union membership was stronger among men than among women.

female differences in terms of the likelihood of becoming a member, using various model specifications.[13] Then we estimated regressions for workplaces with various levels of union density. Finally, as a check of robustness, we ran all regressions with two alternative sample restrictions: (1) excluding workplaces with no union members and (2) excluding workers under 25 and over 50, focusing on workers in prime working ages. Results from these estimations show no major deviations from the other estimates are found in the Appendix.

On average female cigar workers were 42 percent less likely to be union members than were male cigar workers. This gap was smaller for compositors, only 20 percent, but nevertheless quite big. When we considered individual characteristics (see results from pooled regressions, Model 1 in Tables 2 and 3), the gender gap was slightly adjusted to 36 percent among cigar workers and 19 percent among compositors. It should be noted that age generally mattered little for the decision to join a union. Occupational specialty (added in Model 2 in Tables 2 and 3) was clearly more important for union membership among cigar workers than among compositors. Among the former, occupational specialty was equally important as were individual characteristics, adjusting the gender gap to 30 percent, whereas among the latter it only affected the gap marginally.[14] Factory location and size (Model 3 in Tables 2 and 3) did not contribute to a better explanation of gender differences in union membership, but rather indicated that men and women sorted into somewhat different workplaces regarding urbanity and size irrespective of whether they were in the cigar trade or in compositing.

However, workplaces differ in many more respects than just their location and size with some of these differences not being observable in our data. Recruitment policies, qualitative aspects of workplace dynamics, and attitudes among workers and employers towards union membership were fundamental factors operating at the level of the workplace that affected the individual's decision to join or leave a union. In order to take unobservable heterogeneity

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[13] In addition to the model specifications shown below, we tested gender differences in the determinants of union membership through interactions between sex and other variables (such as age, marital status and kids at home). Overall, we found that men and women were affected similarly by these factors in their decision to join the join, with a few exceptions. For cigar workers, only occupational specialty (with women crowding in the lower skill segment) and payment type were significant, modifying the impact for women. For compositors, we found a statistically significant negative impact of having kids at home for women. Results may be obtained upon request from the authors.

[14] It should, however, be noted that cigar workers were more varied as a group than were compositors. While the former included four occupational specialties ranging from unskilled preparation workers to skilled rollers and sorters, the latter group was homogeneous and basically only faced distinctions as to what machine type they were working with.

across firms into account, we estimated models with firm fixed effects (Model 4 in Tables 2 and 3). This implies that we are comparing workers in the same firm. The workplace clearly mattered for union membership. For cigar workers, the within-firm gender difference in terms of the likelihood of becoming a union member was smaller, 18 percent, than the between-firm estimate, net of observable individual characteristics. For compositors, the same applied with the within-firm gender difference being even smaller (and not statistically significant), around 5 percent.

Table 2 about here

Table 3 about here

As noted in the introduction, the male-female gap in union membership was bigger among cigar workers than among compositors, even though the Cigar Workers' Union had more opportunities and stronger incentives to recruit women. The relatively low likelihood of union membership among female cigar workers remained the same after controlling for observable individual characteristics and unobservable firm characteristics. How could it be that so few women were attracted by the Tobacco Workers' Union and that so many women entered the Typographers' Union despite its male-chauvinist nature?

We believe the most important explanation is that the risk environment differed between the two industries. In the tobacco industry, there were still employers who denied their workers the right to organize, whereas the freedom of association was hardly questioned in the printing industry, possibly because the links between the Typographers' Union and the socialist movement were weaker, and possibly because compositors were hard to replace in the production process. In any case, the risks associated with union membership were greater for cigar workers than for compositors. However, there may also have been considerable differences in the risks associated with union membership within the tobacco industry. All else equal, we assume that the risks were related to the overall level of union density in a workplace. In a situation where very few comrades belonged to a particular union, the risk of membership was likely to be greater than in a workplace where almost all the workers were organized. And if women were more risk-averse, we would expect greater gender differences in low-density workplaces. To check if this was the case, we divided our sample of cigar workers into four sub-samples according to union density at the firm level and estimated separate regressions for each, including observable individual characteristics and unobservable firm characteristics. The results of this exercise are summarized in Table 4. In

line with our expectations, being a woman was most negatively associated with union membership in workplaces where less than 25 percent of the workers were organized. Over that threshold, gender differences in membership were less pronounced, and at workplaces with high union density, i.e., where at least two-thirds were members we even see a trend whereby women had a higher likelihood of assuming union membership. Consequently, while women may have been relatively cautious in the initial and most risky stage of unionization at the workplace level, they could still be attracted by the benefits of membership once the organization had gained a certain momentum at the firm.

Table 4 about here

Our results put the gender gap in union membership into perspective. Yet, trade unions were not the only forms of labor organizations that gained importance in connection with industrialization and urbanization. During the same period, mutual aid societies spread far and wide (Gosden 1961; Edebalk 1996; Emery & Emery 1999; Cordery 2003; Gottlieb 2007; Guinnane & Streb 2011)[15]. In Sweden, mutual aid societies most often took the guise of sickness benefit or funeral funds. If membership in some early trade unions could be described as risky investment, membership in mutual aid societies was clearly an investment that was intended to reduce the risks associated with sickness or death. As a further test of the importance of risk aversion as a factor in the decision to join a work-related organization, we investigated the likelihood of membership in a mutual aid society among workers in the cigar and printing industries. Using the same samples as in previous analyses, we expected to find a more even distribution of men and women in these organizations. We did not distinguish between different types of societies, nor did we consider whether the individual subscribed to more than one society. We controlled for the same variables as in the above analyses of union membership. The main result, presented in Table 5, is that there were no big differences between men and women regarding the likelihood of subscribing to a mutual aid society (and neither were they statistically significant). Indeed, in the case of compositors, the probability of women subscribing was somewhat higher than that of men. The original, yet insignificant, gender gaps in membership was partly due to income differentials between men and women

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[15] The gender dimension of mutual aid societies has been less investigated than the general development patterns of early social insurance and its implications for male workers (for exceptions, see Clawson (1989) and Eriksson & Andersson (2015)).

(compare Models 1 and 2). Women were, irrespective of trade, more likely to join mutual aid societies, net of income. Among cigar workers, income differentials were associated with men and women sorting into different paying firms while the income effects was more uniform across typesetting firms (compare Models 1 and 2 with 3 and 4). These results put the claim that women were hard to organize into perspective.

Table 5 about here

CONCLUSIONS

It is a generally held belief that it has been hard historically to organize women in trade unions. The most common explanations for the relative absence of women in this sphere are their shorter career spans, their exclusion from certain trades, and their experiences of discrimination on the part of male unionists. It is argued that, since most women only spent relatively brief periods in gainful employment, it did not pay off to join a movement whose goals and returns were of a fairly long-term nature. Many early unions were founded with the intention of protecting the occupational status of skilled workers, among which women were underrepresented or totally excluded due to the formal requirements of training. In addition, it has been argued that trade unions were typically founded by men and primarily served to protect the interests of the same. Our analysis of union membership among Swedish cigar workers and typographers respectively in the late nineteenth and early twentieth centuries suggests that the standard explanations are insufficient.

In the cigar-making industry, women were well-established at the time covered by our investigation and there were substantial numbers of women who were married with children, suggesting that they planned to remain in their trade for some time. Women constituted the majority of the workforce, and therefore the Tobacco Workers' Union could not ignore their interests – if unions benefit from numbers regarding membership, it would actually have benefited from safeguarding the interests of female cigar workers. In the printing industry, the numerical strength of women was weaker and the Typographers' Union attitude towards having them as members could best be described as ambivalent. In the light of previous literature, we would have expected to find more unionized women among cigar workers than among compositors. However, we do not. In relative terms, the male-female gap in union membership was higher in the cigar industry than in the printing industry. When we

controlled for a range of individual and firm-level characteristics, we even found that the gender difference was insignificant in the latter industry.

We suggest that previous claims about gender and union membership, notably women's lower representation in these organizations, need to be revised. They partly relates to lack of data since commonly only raw numbers exist and sometimes statistics only denote union members *per se* and provide no information on the risk population. We started out by observing sizeable gender gaps in union membership in both the cigar industry and among compositors. Thanks to unique data covering industries in their entirety, surveying both workers and the firms where they were employed, encompassing both union members and non-members, we were able to estimate standardized gender gaps. The more observables we controlled for, the smaller the gaps. We were also able to control for unobservable heterogeneity at the firm level, i.e., policies and practices with respect to management and work organization, which previously has been neglected. We were thereby able to uncover the role of the workplace for men's and women's decision to join the union. Our results put previous claims into perspective and shows that some associations do not hold up for closer scrutiny. To some extent established wisdom is a statistical artefact. If we only look at raw numbers we find that there were significantly fewer women than men in the Typographer's' Union and that their share (25%) was much smaller than the share of women in the Tobacco Workers' Union which fits with the claim that women were excluded from unions in male-dominated trades and also fits with the contemporary description of the Typographer's' Union being biased in favor of men. But as shown in the analysis above, these historical claims are based on simple associations in limited data materials.

We suggest that the missing pieces of the puzzle are risk preferences and risk environments. At the time covered by our investigation, the Tobacco Workers' Union had recently fought a huge battle with employers concerning the freedom of association, whereas the Typographers' Union was accepted by employers. For a cigar worker, union membership was associated with increased risks, and for a compositor it meant access to a wider safety net. Consequently, individuals with higher risk aversion would have avoided union membership in the cigar industry to a greater extent than in the printing industry. It is a fairly well-established fact that women in today's world are more risk-averse than men. The results presented in this paper indicate that such differences existed 100 years ago as well, which may serve as an encouragement for further research on how risk preferences have affected outcomes in various spheres of life.

Modern-day studies of risk aversion have found not only general gender differences but also differences depending on the type of decision made. For example, women's risk aversion tends to be most pronounced on issues concerning investments and savings and less pronounced with regard to occupational choice. Furthermore, the way such decisions have been reached has turned out to be of great importance (Tversky and Kahneman 1981). Experiments have showed that risk preferences may show substantial inconsistencies, depending on the context. As regards the history of early trade unions and collective action, the decision taken as to whether to join a trade union may, for example, have been very different under ordinary circumstances compared to that taken during a time of conflict. A woman worker who declined to join a union when approached by a male union official on a normal working day, may, for example, have reconsidered her decision if she saw the same man being harassed by the factory foreman, even though the latter situation was associated with a higher level of risk. Risk aversion is not the only aspect where men and women may differ in terms of preferences. Different attitudes towards competition has received considerable attention in modern research (Booth 2009; Bertrand 2010; Croson & Sneezy 2009). Yet, from a historical perspective, we have to be cautious assuming that women were not only less risk averse but also less competitive. Previous studies on manufacturing workers at the turn of the last century show that women were not shying away from competition. There were equally as likely as men to work for piece rates in that it rendered them a fair pay (Stanfors et al. 2014). And women worked hard, expending more effort on the job, when they had breadwinner responsibilities (Burnette & Stanfors 2012). It is a challenge for future research to understand the historical importance of the framing of men's and women's behavior in the labor market and elsewhere.

REFERENCES

Ashenfelter, Orley, and John H. Pencavel. "American Trade Union Growth: 1900-1960." *Quarterly Journal of Economics* 83, no. 3 (1969): 434-48.

Baer, Willis, N. *The Economic Development of the Cigar Industry in the United States*. Lancaster, PA: Art Printing Company, (1933).

Bain, George S., and Elias, Peter. Trade Union Membership in Great Britain: An Individual-Level Analysis. *British Journal of Industrial Relations* 23, no. 1 (1985): 71-92.

Berkowitz, Monroe. "The Economics of Trade Union Organization and Administration." *Industrial and Labor Relations Review* 7, no 4 (1954): 575-92.

Bertrand, Marianne. "New Perspectives on Gender." In *Handbook of Labor Economics, Volume 4b,* edited by Orley Aschenfelter and David Card. Amsterdam: Elsevier, 2010.

Björklund, Bertil (1965). *Svenska typografförbundet: studier rörande Sveriges äldsta fackförbund*. Stockholm: Tidens förlag.

Bonin, Holger, Thomas Dohmen, Armin Falk, David Huffman, and Uwe Sunde. "Cross-Sectional Earnings Risk and Occupational Sorting: The Role of Risk Attitudes." *Labour Economics* 14, no. 6 (2007): 926-37.

Booth, Alison L. "The Free Rider Problem and a Social Custom Model of Trade Union Membership." *Quarterly Journal of Economics* 100, no. 1 (1985): 253-61.

Booth, Alison L. "Gender and Competition." *Labour Economics* 16, no. 6 (2009): 599-606.

Booth, Alison L., and Monojit Chatterji. "Union Membership and Wage Bargaining When Membership Is Not Compulsory." *Economic Journal* 105, no. 1 (1993): 345-60.

Burnette, Joyce. *Gender, Work and Wages in Industrial Revolution Britain*. Cambridge, UK: Cambridge University Press, 2008.

Burnette, Joyce. "The paradox of progress: the emergence of wage discrimination." *European Review of Economic History* 19, no. 2 (2015): 128-48.

Burnette, Joyce, and Maria Stanfors. "Was there a family gap in late nineteenth century manufacturing? Evidence from Sweden." *History of the Family* 17, no. 1 (2012): 31-50.

Byrnes, James P., David, C. Miller, and William, D. Schafer. "Gender Differences in Risk Taking: A Meta-Analysis." *Psychological Bulletin* 125, no. 3 (1999): 367-83.

Clawson, Mary Ann. *Constructing Brotherhood: Class, Gender and Fraternalism*. Princeton: Princeton University Press, 1989.

Cockburn, Cynthia. The Material of Male Power. *Feminist Review* 9, (1981): 41-58.

Cockburn, Cynthia. *Brothers: Male Dominance and Technological Change*. London: Pluto, 1983.

Cooper, Patricia, A. *Once a Cigar Maker: Men, Women and Work Culture in American Cigar Factories, 1900-1919*. Urbana, IL: University of Illinois Press, 1987.

Cordery, Simon. *Friendly Societies*, *1750–1914.* London: Palgrave Macmillan, 2003.

Crafts, Nicholas F. R. *British Economic Growth during the Industrial Revolution.* Oxford: Clarendon Press, 1985.

Croson, Rachel, and Uri Gneezy. "Gender Differences in Preferences." *Journal of Economic Literature* 47, no. 2 (2009): 448-74.

DeLeire, Thomas, and Helen Levy. "Worker Sorting and the Risk of Death on the Job." *Journal of Labor Economics* 19, no. 4 (2004): 837-78.

DeVault, Ileen A. *United Apart: Gender, and the Rise of Craft Unionism, 1887-1903*. Ithaca, NY: Cornell University Press, 2004.

Dohmen, Thomas, and Armin Falk. "Performance Pay and Multidimensional Sorting: Productivity, Preferences and Gender." *American Economic Review* 101, no 2 (2011): 556-90.

Dohmen, Thomas, Armin Falk, David Huffman, Uwe Sunde, Jürgen Schupp Gert G. Wagner. "Individual Risk Attitudes: Measurement, Determinants, and Behavioral Consequences." *Journal of the European Economic Association* 9, no. 3 (2011): 522-50.

Eckel. Catherine C., and Philip J. Grossman. "Differences in the Economic Decision of Men and Women: Experimental Evidence." In *Handbook of Experimental Economics Results, Volume 1*, edited by C. Plott, and V. Smith. New York: Elsevier, 2008.

Edebalk, Per Gunnar. *Välfärdsstaten träder fram, Svensk socialförsäkring 1884-1915*. Lund: Arkiv, 1996.

Eichengreen, Barry. "The Impact of Late Nineteenth-Century Unions on Labor Earnings and Hours: Iowa in 1894." *Industrial and Labor Relations Review* 40, no. 4 (1987): 501-515.

Ekdahl, Lars. *Arbete mot kapital: typografer och ny teknik - studier av Stockholms tryckeriindustri under det industriella genombrottet*. Lund: Arkiv, 1983.

Emery, George, and Herbert J.C. Emery. *A Young Man's Benefit: The Independent Order of Odd Fellows and Sickness Insurance in the United States and Canada, 1860–1929.* Montreal & Kingston: McGill-Queen's University Press, 1999.

Eriksson, Liselotte, and Lars Fredrik Andersson. "Efficiency and equity. Exploring gender exclusion and underwriting efficiency in Swedish social insurance 1901-1910." Paper presented at the workshop "Women in Changing Labor Markets" in Lund March, 2015.

Freeman, Richard B., and James L. Medoff. *What Do Unions Do?* New York: Basic Books, 1984.

Friedman, Gerald. "Labor Unions in the United States." *EH.Net Encyclopedia*, edited by R. Whaples. Accessed December 15 2015 at http://eh.net/encyclopedia/labor-unions-in-the-united-states/

Geary, Dick. "Introduction." In *Labour and Socialist Movements in Europe before 1914*, edited by D. Geary. London: Bloomsbury Academic, 1989.

Goerke Laszlo, and Markus Pannenberg. " Trade Union Membership and Dismissals." *Labour Economics* 18, no. 2 (2011): 810-21.

Goerke Laszlo, and Markus Pannenberg. "Risk Aversion and Trade-Union Membership." *Scandinavian Journal of Economics* 114, no. 2 (2012): 275-95.

Goldin, Claudia. *Understanding the Gender Gap: An Economic History of American Women*. New York: Oxford University Press, 1990.

Gosden, Peter Henry John Heather. *The Friendly Societies in England 1815-1875*. Manchester: Manchester University Press, 1961.

Gottlieb, Daniel. "Asymmetric Information in Late 19th Century Cooperative Insurance Societies." *Explorations in Economic History* 44, no. 2 (2007): 270-92.

Guinnane, Timothy W., and Jochen Streb. "Moral Hazard in a Mutual Health Insurance System: German Knappschaften, 1867–1914." *Journal of Economic History* 71, no. 1 (2011): 70-104.

Grazier, Suzanne, and Sloane, Peter, J. Accident Risk, Gender, Family Status and Occupational Choice in the UK. *Labour Economics* 15, no. 5 (2008): 938-57.

Hartmann, Heidi. Capitalism, Patriarchy, and Job Segregation by Sex. *Signs* 1, no. 3 (1976): 137-69.

Hirsch, Barry T., and John T. Addison. *The Economic Analysis of Unions: New Approaches and Evidence.* Boston: Allen & Unwin, 1986.

Holloway, Gerry. *Women and Work in Britain since 1840.* London: Routledge, 2005.

Kessler-Harris, Alice. "Where are the Organized Women Workers?" *Feminist Studies* 3, no. 1-2 (1975): 92-110.

Kessler-Harris, Alice. "Organizing the Unorganizable: Three Jewish Women and Their Union." *Labor History* 17, no. 1 (1976). pp. 5-23.

Kornhauser, Ruth. "Some Social Determinants and Consequences of Union Membership." *Labor History* 2, no. 1 (1961): 30-61.

Lewenhak, Sheila. *Women and Trade Unions: An Outline History of Women in the British Trade Union Movement*. London: St. Martin's Press, (1977).

Lindbom, Tage. *Tobaksarbetarnas Stockholmsavdelning 1884-1934.* Stockholm: Tidens förlag, 1934.

Lindbom, Tage. *Den svenska fackföreningsrörelsens uppkomst och tidiga historia 1872-1900*. Stockholm: Tidens förlag, 1938.

Lindbom, Tage, and Evert Kuhm. *Tobaksarbetarnas förbund i Sverige 1889-1939.* Stockholm: Svenska tobaksindustriarbetareförbundet, 1940.

Maddox, Steven, and Barry Eichengreen. "The Impact of Unions in the 1890s: The Case of the New Hampshire Show Industry." IRLE Working Paper No 17-89. Accessed February 22 2016 at http://irle.berkeley.edu/workingpapers/17-89.pdf

Milkman, Ruth. "Gender and Trade Unionism in Historical Perspective." In *Women, Politics, and Change,* edited by Louise A. Tilly and Patricia Gurin. New York: Russell Sage Foundation, 1990.

Mitchell, Brian R. *European historical statistics, 1750-1975.* London: MacMillan, 1981.

Mood, Carina. Logistic Regression: Why We Cannot Do What We Think We Can Do, and What We Can Do About It. *European Sociological Review* 26, no. 1 (2010): 67-82.

Moore, T.S. "Are Women 'Hard to Organize'?" *Work and Occupations* 13, no. 1 (1986): 97-111.

Olson, Mancur. *The Logic of Collective Action.* Cambridge, MA: Harvard University Press.

Pencavel, John. The Demand for Union Services: An Exercise." *Industrial and Labor Relations Review* 24, no. 2 (1971): 180-90.

Prus, Mark J. Mechanization and the Gender-Based Division of Labour in the US Cigar Industry. *Cambridge Journal of Economics* 14, no. 1 (1990): 63-79.

Qvist, Gunnar. *Statistik och politik: Landsorganisationen och kvinnorna på arbetsmarknaden.* Stockholm: Prisma, 1974.

Richards, Eric. "Women in the British economy since about 1700: an interpretation." *History* 59, no. 197 (1974): 337–57.

Rose, Sonya.O. "Gender Antagonism and Class Conflict: Exclusionary Strategies of Male Trade Unionists in Nineteenth-Century Britain." *Social History* 13, no. 2 (1988): 191-208.

Schön, Lennart. *Sweden's Road to Modernity: An Economic History*. Stockholm: SNS, 2011.

Shakespeare, William. "The Tragedie of Hamlet, Prince of Denmarke." In *Mr. William Shakespeares Comedies, Histories, & Tragedies Published according to the True Originall Copies* [The "First Folio"], edited by I. Jaggard and E. Blount. London, 1623. Accessed December 15 2015 at the Internet Shakespeare Editions http://internetshakespeare.uvic.ca/Library/facsimile/book/Bran_F1/773/?zoom=1

Schnabel, Claus. "Determinants of Trade Union Membership." In *International Handbook of Trade Unions,* edited by J.T. Addison, and C. Schnabel. Cheltenham: Edward Elgar, 2003.

Stanfors, Maria, Tim, Leunig, Björn Eriksson, and Tobias Karlsson. "Gender, productivity and the nature of work and pay: evidence from the late nineteenth-century tobacco industry." *Economic History Review* 67, no. 1 (2014): 48-65.

Tversky, Amos, and Kahneman, Daniel. "The Framing of Decision and the Psychology of Choice." *Science* 211, no. 4481 (1981): 453-58.

Webb, Sidney, and Beatrice Webb. *History of Trade Unionism*. London: Longman and Co, 1920.

Wessel, Nils. *Svenska typografförbundet 1887-1936: ett svenskt fackförbunds historia*. Stockholm, 1937.

Wikander, Ulla, Kessler-Harris, Alice, and Jane Lewis, Jane. *Protecting Women: Labor Legislation in Europe, the United States, and Australia, 1890-1920*. Urbana, ILL: University of Illinois Press, 1995.

Zeitlin, Jonathan. Craft Control and the Division of Labour: Engineers and Compositors in Britain 1890-1930. *Cambridge Journal of Economics* 3, no. 3 (1979): 263-74.

Table 1. Summary statistics: shares (in percent) and means of variables used in analysis

	Cigar workers						Compositors					
	Men			Women			Men			Women		
	All	Non-members	Members	All	Non-members	Members	All	Non-members	Members	All	Non-members	Members
Union member	82			40			88			68		
Age (years)	36	37	36	31	30	32	30	27	31	28	27	29
	(14.00)	(17.96)	(13.00)	(12.26)	(12.99)	(10.98)	(11.35)	(13.67)	(10.95)	(9.69)	(11.27)	(8.79)
Married	46	45	46	20	16	26	39	25	41	11	15	9
Children at home	41	41	41	27	24	32	31	19	33	7	12	5
Born in the same location	41	59	37	59	60	57	38	51	36	59	67	55
Experience (years)	22	22	22	12	10	14	15	12	16	12	10	12
	(15.08)	(19.47)	(13.98)	(10.46)	(10.43)	(10.07)	(11.25)	(13.12)	(10.88)	(9.41)	(10.49)	(8.83)
Tenure (years)	8	12	7	6	6	6	6	4	6	6	6	6
	(10.99)	(16.02)	(9.39)	(7.44)	(8.07)	(6.39)	(7.05)	(6.42)	(7.12)	(7.02)	(8.01)	(6.54)
Preparation worker	3	16	0.2	26	33	12						
Bunch maker	3	8	1	14	14	15						
Cigar maker	86	66	91	48	38	64						
Sorter	8	10	8	12	14	9						

Machine compositor							9	4	10	1	1	1
Apprentice	8	8	8	6	5	6	16	44	12	26	48	15
Piece rates	94	76	98	86	81	93						
Weekly earnings (SEK)	14	12	15	9	9	10	22	14	24	17	12	19
	(4.62)	(4.94)	(4.32)	(3.26)	(3.17)	(3.10)	(9.93)	(9.57)	(9.34)	(7.39)	(7.07)	(6.58)
Factory in big city	63	72	61	78	72	86	58	42	60	59	45	65
Workplace size (number of workers)	118	134	115	155	181	116	86	68	88	53	53	53
	(108.14)	(122.48)	(104.62)	(130.97)	(139.98)	(105.04)	(108.35)	(91.02)	(110.39)	(70.35)	(82.33)	(64.26)
N	657	116	541	1,298	775	527	593	72	521	258	82	176

Note: Standard deviations in parentheses.

Source: Specialundersökningar Tobaksindustrien 1898, Statistiska avdelningen, HIII b:1 samt HIII b:1 aa vol 1*,* Kommerskollegiets arkiv, National Archives (*Riksarkivet*), Stockholm. *Undersökning av tryckerier mm 1903*, Avdelningen för arbetsstatstik, HII a:1 vol 1-6 samt HII a:2 vol 1-12*,* Kommerskollegiets arkiv, National Archives (*Riksarkivet*), Stockholm.

Table 2. The likelihood of membership in the Tobacco Workers' Union (OLS estimates)

	1	2	3	4
Woman	-0.356***	-0.304***	-0.310***	-0.184**
	(-15.48)	(-13.04)	(-13.23)	(-3.13)
Age	0.009	0.013*	0.011	0.006
	(-1.36)	(-2.04)	(-1.75)	(-0.98
Married	0.026	0.012	0.009	0.015
	(-0.91)	(-0.43)	(-0.33)	(-0.67)
Children at home	-0.038	-0.038	-0.035	-0.037
	(-1.34)	(-1.38)	(-1.25)	(-1.62)
Experience	0.031***	0.024***	0.024***	0.014**
	(-7.93)	(-6.04)	(-5.87)	(-2.72)
Tenure	-0.010**	-0.008**	-0.005	0.004
	(-3.28)	(-2.78)	(-1.75)	(-0.65)
Occupational speciality				
Preparation worker		-0.244***	-0.237***	-0.272***
		(-6.87)	(-6.68)	(-5.17)
Bunch maker		-0.063	-0.061	-0.023
		(-1.59)	(-1.52)	(-0.68)
Cigar maker		ref cat	ref cat	ref cat
Sorter		-0.170***	-0.165***	-0.189**
		(-5.00)	(-4.85)	(-2.95)
Apprentice		0.105*	0.099*	-0.027
		(-2.36)	(-2.28)	(-0.33)
Paid piece rates		0.085*	0.084*	0.075
		(-2.44)	(-2.41)	(-1.57)
Factory in big city			0.084***	
			(-3.93)	
Workplace size				
10-49			ref cat	
50-99			-0.113***	
			(-3.61)	
>=100			-0.128***	
			(-4.08)	
Firm fixed effect	No	No	No	Yes
Constant	0.536***	0.426***	0.508***	0.525***
	(-5.76)	(-4.35)	(-5.05)	(-5.09)
N	1,955	1,955	1,955	1,955

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, and the squared terms of age, experience and tenure. *$p < .10$, **$p < .05$, ***$p < .01$.

Source: See Table 1.

Table 3. The likelihood of membership in the Typographers' Union (OLS estimates)

	1	2	3	4
Woman	-0.192***	-0.178***	-0.168***	-0.050
	(-5.52)	(-5.17)	(-4.76)	(-1.52)
Age	0.033	0.018	0.017	0.019
	(-1.89)	(-1.07)	(-1.03)	(-1.30)
Married	-0.029	-0.032	-0.024	0.011
	(-0.66)	(-0.75)	(-0.57)	(-0.34)
Children at home	-0.065	-0.045	-0.047	-0.065*
	(-1.46)	(-1.02)	(-1.07)	(-2.23)
Experience	0.012	0.005	0.006	-0.002
	(-1.21)	(-0.48)	(-0.55)	(-0.22)
Tenure	0.008	0.008	0.009	0.010
	(-1.53)	(-1.60)	(-1.86)	(-1.41)
Machine compositor		0.015	0.012	0.018
		(-0.43)	(-0.35)	(-0.87)
Apprentice		-0.238***	-0.220***	-0.159**
		(-4.79)	(-4.37)	(-3.24)
Factory in big city			0.089**	
			(-3.03)	
Workplace size				
10-49			ref cat	
50-99			-0.085*	
			(-2.04)	
>=100			-0.016	
			(-0.52)	
Firm fixed effect	No	No	No	Yes
Constant	0.274	0.642**	0.616**	0.592**
	(-1.23)	(-2.87)	(-2.83)	(-2.95)
N	851	851	851	851

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, and the squared terms of age, experience and tenure. *$p < .10$, **$p < .05$, ***$p < .01$.

Source: See Table 1.

Table 4. The gender gap (i.e., the coefficient of being a woman) regarding the likelihood of being a member in the Tobacco Workers' Union at workplaces with different union density

Union density	Coefficient
<25 %	-0.308*
	(-2.65)
>=25<50	-0.060
	(-0.90)
>=50<75	-0.084*
	(-2.40)
>=75	0.174
	(-1.10)

Note: T-statistics in parentheses. The gender coefficient was obtained by estimating linear probability models with firm fixed effects on the likelihood of being a union member. The models also includes controls for age, experience, tenure (and their squared terms), whether the individual was married, had dependent children at home, whether he/she was born in the same location as the firm or had migrated married, occupation, wage form and apprenticeship status. *$p < .10$, **$p < .05$, ***$p < .01$.

Source: See Table 1.

Table 5. The likelihood of membership in a mutual aid society (OLS estimates) among cigar workers and compositors

	Cigar workers				Compositors			
	1	2	3	4	1	2	3	4
Woman	-0.028	0.066*	-0.055	0.024	0.073	0.122**	0.087	0.118*
	(-1.17)	(-2.57)	(-1.76)	(-0.71)	(-1.92)	(-3.24)	(-1.71)	(-2.37)
Age	0.034***	0.027***	0.032***	0.027**	0.029	0.013	0.026	0.011
	(-4.76)	(-3.89)	(-3.77)	(-3.03)	(-1.76)	(-0.88)	(-1.51)	(-0.71)
Married	0.074*	0.054	0.051	0.035	0.090	0.069	0.063	0.057
	(-2.53)	(-1.89)	(-1.53)	(-1.10)	(-1.53)	(-1.13)	(-1.22)	(-1.03)
Children at home	-0.030	-0.040	-0.038	-0.046	-0.009	-0.016	-0.030	-0.036
	(-1.07)	(-1.48)	(-1.23)	(-1.48)	(-0.16)	(-0.26)	(-0.53)	(-0.62)
Experience	0.006	0.001	0.004	0.001	0.004	-0.002	0.004	0.000
	(-1.31)	(-0.27)	(-0.88)	(-0.16)	(-0.42)	(-0.18)	(-0.46)	(-0.06)
Tenure	0.015***	0.013***	0.016*	0.014*	0.038***	0.031***	0.032***	0.026***
	(-4.99)	(-4.40)	(-2.69)	(-2.41)	(-6.16)	(-5.09)	(-4.43)	(-3.72)
Occupational specialty								
Preparation worker	-0.177***	-0.033	-0.201***	-0.084				
	(-4.94)	(-0.84)	(-3.74)	(-1.56)				
Bunch maker	-0.024	0.108**	-0.093*	0.013				
	(-0.61)	(-2.65)	(-2.09)	(-0.25)				
Cigar maker	ref cat	ref cat	ref cat	ref cat				
Sorter	-0.072*	-0.103**	-0.066	-0.093				
	(-2.00)	(-2.89)	(-1.23)	(-1.77)				
Machine compositor					0.048	-0.058	-0.039	-0.072
					(-0.89)	(-1.03)	(-0.73)	(-1.33)
Apprentice	-0.194***	-0.057	-0.195**	-0.083	-0.242***	-0.100	-0.227***	-0.082
	(-4.43)	(-1.25)	(-3.15)	(-1.30)	(-4.45)	(-1.56)	(-4.21)	(-1.36)
Factory in big city	0.045	0.031			-0.067	-0.108**		

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(-1.93)	(-1.34)			(-1.87)	(-3.02)		
Workplace size								
10-49	ref cat	ref cat			ref cat	ref cat		
50-99	0.092**	0.073*			0.112*	0.130**		
	(-2.80)	(-2.26)			(-2.31)	(-2.75)		
>=100	0.214***	0.194***			0.202***	0.209***		
	(-6.38)	(-5.89)			(-5.03)	(-5.30)		
Weekly earnings		0.067***		0.053***		0.028***		0.030***
		(-6.38)		(-4.14)		(-3.75)		(-3.78)
Firm fixed effects	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-0.267*	-0.751***	-0.015	-0.429**	-0.097	-0.214	-0.007	-0.169
	(-2.35)	(-6.19)	(-0.10)	(-2.81)	(-0.43)	(-1.05)	(-0.03)	(-0.76)
N	1,955	1,955	1,955	1,955	851	851	851	851

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, wage form (cigar workers only) and the squared terms of age, experience, tenure and income. *$p < .10$, **$p < .05$, ***$p < .01$.

Source: See Table 1.

APPENDIX

Table A1. The likelihood of membership in the Tobacco Workers' Union (OLS estimates), workplaces with no union members excluded

	1	2	3	4
Woman	-0.327***	-0.271***	-0.281***	-0.178**
	(-13.92)	(-11.43)	(-11.88)	(-2.85)
Age	0.009	0.0133*	0.010	0.005
	-1.39	-2.03	-1.49	-0.78
Married	0.015	0.005	-0.001	0.017
	-0.51	-0.16	(-0.03)	-0.7
Children at home	-0.029	-0.030	-0.027	-0.042
	(-0.98)	(-1.04)	(-0.96)	(-1.72)
Experience	0.029***	0.021***	0.021***	0.015*
	-6.9	-5.06	-4.86	-2.66
Tenure	-0.002	-0.0001	0.005	0.006
	(-0.44)	(-0.05)	-1.3	-1.22
Occupational specialty				
Preparation worker		-0.290***	-0.281***	-0.283***
		(-7.70)	(-7.53)	(-4.98)
Bunch maker		-0.067	-0.073	-0.015
		(-1.58)	(-1.72)	(-0.43)
Sorter		-0.193***	-0.188***	-0.192**
		(-5.39)	(-5.28)	(-2.82)
Apprentice		0.091*	0.078	-0.022
		-2.01	-1.78	(-0.26)
Paid piece rates		0.056	0.044	0.113*
		-1.42	-1.15	-2.32
Factory in big city			0.142***	
			-6.42	
Workplace size				
10-49			ref cat	
50-99			-0.086**	
			(-2.74)	
>=100			-0.143***	
			(-4.53)	
Firm fixed effect	No	No	No	Yes
Constant	0.526***	0.454***	0.540***	0.525***
	-5.31	-4.39	-5.11	-4.74
N	1,796	1,796	1,796	1,796

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, and the squared terms of age, experience and tenure. $*p < .10, **p < .05, ***p < .01$.

Source: See Table 1.

Table A2. The likelihood of membership in the Typographers' Union (OLS estimates), workplaces with no union members excluded

	1	2	3	4
Woman	-0.139***	-0.131***	-0.121***	-0.062
	(-4.06)	(-3.84)	(-3.48)	(-1.78)
Age	0.038**	0.026	0.026	0.024
	(-2.62)	(-1.84)	(-1.89)	(-1.46)
Married	-0.023	-0.027	-0.023	0.008
	(-0.58)	(-0.70)	(-0.57)	(-0.25)
Children at home	-0.056	-0.042	-0.046	-0.071*
	(-1.34)	(-1.01)	(-1.10)	(-2.43)
Experience	0.003	-0.002	-0.003	-0.004
	(-0.4)	(-0.28)	(-0.32)	(-0.40)
Tenure	0.009	0.010*	0.010*	0.011
	(-1.89)	(-1.98)	(-2.01)	(-1.5)
Machine compositor		0.029	0.026	0.016
		(-0.98	(-0.84)	(-0.8)
Apprentice		-0.198***	-0.196***	-0.177***
		(-4.01)	(-3.91)	(-3.56)
Big city			0.021	
			-0.81	
Workplace size				
10-49			ref cat	
50-99			-0.061	
			(-1.59)	
>=100			-0.005	
			(-0.15)	
Firm fixed effect	No	No	No	Yes
Constant	0.255	0.550**	0.538**	0.569*
	-1.33	-2.89	-2.83	-2.61
N	811	811	811	811

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, and the squared terms of age, experience and tenure. $*p < .10, **p < .05, ***p < .01$.

Source: See Table 1.

Table A3. The likelihood of membership in the Tobacco Workers' Union (OLS estimates), only workers aged 25-50

	1	2	3	4
Woman	-0.296***	-0.279***	-0.293***	-0.173*
	(-9.61)	(-9.07)	(-9.25)	(-2.13)
Age	0.008	0.012	0.010	0.0074
	(-0.29)	(-0.47)	(-0.40)	(-0.28)
Married	0.072*	0.058	0.053	0.058
	-2.08	(-1.73)	(-1.56)	(-1.71)
Children at home	-0.049	-0.055	-0.052	-0.070*
	(-1.45)	(-1.66)	(-1.60)	(-2.49)
Experience	0.042***	0.036***	0.036***	0.020*
	(-6.29)	(-5.02)	(-5.01)	(-2.02)
Tenure	-0.006	-0.005	-0.002	0.010
	(-1.09)	(-1.01)	(-0.45)	(-1.74)
Occupational specialty				
Preparation worker		-0.190**	-0.189**	-0.239***
		(-3.25)	(-3.24)	(-4.55)
Bunch maker		-0.002	-0.014	0.009
		(-0.03)	(-0.21)	(-0.19)
Sorter		-0.228***	-0.229***	-0.229**
		(-4.88)	(-4.87)	(-3.28)
Apprentice		-0.011	-0.006	-0.130
		(-0.09)	(-0.05)	(-0.51)
Paid piece rates		0.125*	0.120*	0.098
		(-2.03)	(-1.97)	(-1.53)
Factory in big city			0.103**	
			(-3.22)	
Workplace size				
10-49			ref cat	
50-99			-0.054	
			(-1.28)	
>=100			-0.089*	
			(-2.06)	
Constant	0.451	0.331	0.371	0.457
	(-1.01)	(-0.77)	(-0.86)	(-1.18)
N	984	984	984	984

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, and the squared terms of age, experience and tenure. $*p < .10$, $**p < .05$, $***p < .01$.

Source: See Table 1.

Table A4. The likelihood of membership in the Typographers' Union (OLS estimates), only workers aged 25-50

	1	2	3	4
Woman	-0.129**	-0.127**	-0.117*	-0.003
	(-2.82)	(-2.79)	(-2.50)	(-0.08)
Age	0.008	0.014	0.014	0.049
	(-0.21)	(-0.36)	(-0.36)	(-1.51)
Married	0.020	0.013	0.020	0.067
	(-0.45)	(-0.29)	(-0.46)	(-1.97)
Children at home	-0.075	-0.069	-0.073	-0.100**
	(-1.68)	(-1.57)	(-1.63)	(-3.47)
Experience	-0.005	-0.013	-0.014	-0.020
	(-0.37)	(-0.78)	(-0.84)	(-1.67)
Tenure	0.008	0.007	0.007	0.010
	(-1.22)	(-1.11)	(-1.13)	(-1.38)
Machine compositor		0.022	0.022	0.027
		(-0.65)	(-0.61)	(-1.12)
Apprentice		-0.249	-0.246	-0.122
		(-1.25)	(-1.28)	(-0.95)
Factory in big city			0.065	
			(-1.81)	
Workplace size				
10-49			ref cat	
50-99			-0.078	
			(-1.57)	
>=100			0.006	
			(-0.18)	
Firm fixed effect	No	No	No	Yes
Constant	1.037	1.001	0.973	0.328
	-1.87	-1.78	-1.73	-0.69
N	450	450	450	450

Note: T-statistics in parentheses. The models also includes controls for whether the individual was born in the same location as the firm or had migrated, and the squared terms of age, experience and tenure. $*p < .10, **p < .05, ***p < .01$.

Source: See Table 1.