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THE EFFECT OF HOURS OF WORK ON SOCIAL INTERACTION

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ABSTRACT

Over time, increases in hours of work per capita have created the intuitively plausible notion that there is less time available to pursue social interactions. The specific question addressed in this paper is the effect of hours of work on social interaction. This is a difficult empirical question since omitted factors could increase both hours of work and social interaction. The approach taken in this paper utilizes an exogenous decline in hours of work in France due to a new employment law. The results clearly show that the employment law reduced hours of work but there is no evidence that the extra hours went to increased social interactions. Although hours of work are not an important determinant of social interaction, human capital is found to be important. The effect of human capital, as measured by education and age, is positive for membership groups but negative for visiting relatives and friends. Also, contrary to expectations, there are no important differences in the determinants of social interaction by gender, marital status or parent status. Finally, a comparison between France and the US show that the response to human capital and other variables are much the same in both nations.

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1. Introduction

Certain types of social interaction have been declining over the past 30 years. This decline has attracted interest in both the academic literature and in the popular press. Robert Putnam (1993, 1995) was one of the first to write about the decline of social interaction in the US. Putnam (2000) provides considerable documentation for the decline of certain groups such as Masons and League of Women Voters. In addition, a recent study by McPherson, Smith-Lovin and Brashears (2006) documents the decline in the number of close friends over the past 20 years. Highlights from this study were reported in articles in the Washington Post (Mallaby, 2006), the Los Angeles Times (Rodriquez, 2006) and the New York Times (Hulbert, 2006).

Social interaction has appeared in the economics literature primarily as a proxy for social capital in empirical studies. Social capital is generally defined as something similar to friendship or trust and is a stock concept. Social interaction is part of the process which creates social capital. This paper is focused on social interaction rather than social capital. In this paper, social interaction is defined to include engagement in either organized membership groups such as a sports club or in visiting with friends or family. Social interaction will exclude engagement between individuals living in the same household and will be limited to non-commercial activities. It does include interaction with work associates outside of the workplace.

In prior studies economists have modeled social interaction as either investment or as consumption. This choice has only a minimal effect on the empirical specification since many of the included variables are the same. However, the choice does affect the interpretation of these variables. In an investment model, the independent variables are interpreted as measures of returns on investment and the ability to capture these returns. In a consumption model, these variables are interpreted as measures of price and income. Investment may have been a more important motive for social interaction in the past. The need to maintain social networks as an investment has declined as markets have become more efficient and as incomes have increased. Specifically, markets for various types of personal services, other employment and insurance have become larger and more efficient than they were in the past. Increased income also allows for increased purchases of services and insurance. The increased efficiency in the labor market has

improved an individual's chance of finding employment without relying on friends or relatives. These changes have reduced the investment motives for social interaction.

Understanding the determinants of social interaction is important regardless of whether it is consumption or investment. This paper assumes that social interaction is consumption and is the consequence of utility maximizing behavior by individuals who face economic constraints. Individuals derive utility directly from social interaction and may also derive utility through altruistic channels which involve social interaction. Although it is assumed that social interaction is a utility maximizing behavior, it can result in externalities in the form of increased social capital for individuals and for the community. Grier and Tullock (1989) and La Porta et al. (1997) have argued that social capital has positive effects on the efficiency of economic institutions and is a benefit to society. Also, Kawachi et al. (1996) and Cohen (2004) argue that social interaction has positive effects on both the mental and physical health of individuals.

As noted above, some forms of social interactions have been declining. This may be the result of gradual but significant changes in the constraints faced by individuals in choosing their optimal social interactions. This paper empirically investigates which of these constraints are important determinants of social interaction. The specific question investigated in this paper is whether changes in hours of work have affected the level of social interaction. The increase in female labor force participation has increased hours of work per capita which may have had an affect on social interaction. The intuitive argument is that longer hours of work will reduce time available for other activities and thus reduce social interaction. However, Putnam (1996) argues that individuals who work long hours are more inclined to civic engagement. This could occur if there were an important unobserved third factor such as ambition. An individual who is ambitious may choose to work long hours, to participate in civic organizations and meet with friends and neighbors more than a less ambitious individual. Hours of work and social interaction would then both be a function of an unobserved third factor which would bias the regression estimates. Costa and Kahn (2003) find that increased female labor force participation has a negative effect on membership in community groups. However, Rupasingha, Goetz and Freshwater (2006) find that female labor force participation has a positive effect on membership in community groups. Putnam uses data from the General Social Surveys to

show that employed individuals belong to more civic groups than those outside of the labor force. These inconsistent results suggest that unobserved factors might be causal on both hours of work and social interaction, i.e., third factor endogeneity.

To estimate the effect of hours of work on social interaction requires that this third factor endogeneity be controlled. One method for controlling third factor endogeneity is to examine social interaction before and after an exogenous shock in hours of work. Unfortunately, changes in hours of work are typically endogenous, such as in the case of job changers. However, a recent change in the law governing hours of work in France represents such an exogenous shock. A French law enacted in 1998 reduced the legal number of hours worked per week from 39 to 35. The main objective of this law was to create employment by sharing the available work. If it can be convincingly shown that this law reduced hours of work and increased social interaction, it would be evidence that hours of work affect social interaction.

2. Prior Studies

The prior studies of interest include studies of legal changes in the maximum hours of work per week on the actual hours of work per week and on non-work time activities in France. Also of interest are studies which include the effect of labor force participation on social interaction outcomes. No prior study has considered third factor endogeneity of hours of work and social interaction.

The French studies include Crepon and Kramarz (2002) who investigate the effects of the 1982 reduction of weekly working hours in France. In 1981 the minimum wage was increased by 5 percent and the workweek was then reduced from 40 to 39 hours. At the same time, stable monthly earnings for minimum-wage earners were mandated. They find that workers employed 40 hours and above in March 1981 were more likely to lose their jobs between 1981 and 1982 than workers employed 36 to 39 hours in same month. They estimate the impact of this one-hour reduction was a reduction in employment. Minimum-wage workers were most affected by the changes.

Fagnani and Letablier (2004) study the effect of the 1998, 35 hour work law on family balance. They examine the effect of the law on daily life for parents with a young child under six years old. Six out of ten

respondents reported a positive impact of the work law on their family time. However, the results depended on whether the respondent worked standard hours or an irregular schedule. It is also correlated to the negotiation process in the workplace. The work law was perceived as negative by those who work an irregular schedule.

Estrade, Méda and Orain (2001) analyzed a survey which was conducted by the French Ministry of Work and Social Affairs at the end of 2000, and included 1,618 full-time employees working in large companies that had implemented the law for at least one year. The results from the survey indicate that 25 percent of the respondents took part more often in membership activities after the law was put into effect. Also, 16.6 percent of the respondents reported an increase in visiting with friends or neighbors.

Prouteau and Wolff (2002) investigate the factors associated with memberships in social groups in France using the Time Use Surveys. They show that association activities are higher for those who work part time or who benefit from flexible working hours. Employees working in the public sector are more likely to take part in membership groups than employees working in the private sector. Furthermore, they highlight that people having more membership activities are also likely to have more social contacts.

Estevao and Sa (2006) used data from the French Survey of Employment and used the timing difference by firm size to set up a difference in difference specification. They find that the law increased dual-job holdings and that some workers were replaced by cheaper, unemployed individuals as relative hourly wages increased in large firms. Employment of persons directly affected by the law declined, although the net effect on aggregate employment was not significant. They showed that average hours per worker in firms of more than 20 fell from 39.5 in 1998 to 37.5 in 2002. In small firms, average hours per worker fell from 40.8 in 1998 to 38.5 in 2002. They find no significant shift from large firms to small firms due to the law.

The US studies include Costa and Kahn (2003) who examined the effects of demographics and heterogeneity on memberships and visiting. The data they use are from the Current Population Survey, the General Social Survey (GSS) and the Americans' Use of Time Survey. They conclude that the increase in

wage inequality has contributed to the decline in social interaction. They also examine the effect of female labor force participation on social interaction and conclude that it has a negative effect.

Rupasingha, Goetz and Freshwater (2006) study social capital in the US. They assume that social capital provides utility and uses a model of household production. The model is implemented with county level data for two time periods. Ethnic homogeneity, income inequality, attachment to place, education, age, and female labor force participation are included as regressors. Increases in education increased memberships. They find that female labor force participation is positively related to membership in community groups. This suggests that as hours per capita increase for women, their membership in community groups increases.

Saffer (forthcoming) uses a model of household production to derive the demand for social interaction. The model shows that the demand for social interaction is a function of wages, employment, education and income and demographic variables. The theory is tested with data from the General Social Survey from 1974 to 2004. The results show that social interaction can be explained as the consequence of utility maximizing behavior by individuals. Increases in education generally increase memberships but reduce visiting with relatives and friends. Increases in employment decreased visiting with friends and relatives but had a positive effect on memberships.

3. The Empirical Model

The theory of household production developed by Becker (1965) provides the basis of the empirical model of social interaction. This theory emphasizes the role of time in consumption and that time is a limited resource. Becker redefined the goods that consumers derive utility from, called Z goods, as goods that are produced by consumers with inputs of their own time and with inputs of market goods. These Z goods enter the utility function, which is otherwise a conventional utility function.

Is social interaction a Z good? Arrow (2000) argues that the psychological reward from friendship is an important motivation for social interaction. That is, social interaction provides utility, which makes it a good. Social interaction is produced with time and market goods by households or individuals. Social

activities take time and depending on the activity, market goods, such as membership fees or providing refreshments, are also needed. Social interaction thus fulfills the definition of a Z good since it yields utility and is produced by individuals with time and market goods. A straightforward application of Becker's Z good production theory can be used to derive a demand for social interaction (SI).

The theory assumes an SI production function which is optimized with respect to a cost constraint. The price of SI, is Π_{si} and Z_o is a vector of other Z goods which includes both time intensive and market goods intensive Z goods. Π_o is a vector of prices for these other Z goods. Which goods get produced, and in what quantities, is determined by utility maximization. Given the consumer's utility map, the prices of the Z goods and full income, (F) the utility maximizing levels of all Z goods are determined. The theoretical demand for SI can be derived from this optimization problem:

$$(1) SI = SI(\Pi_{si}, \Pi_o, F, \text{Taste}).$$

The demand for SI, like any other good, depends on its own price, the price of other Z goods (Z_o), full income and taste. As the own price of SI rises the quantity demanded of SI will fall. As the price of the other good, Π_o , rises the demand for SI will rise or fall depending on whether SI is a complement or substitute for Z_o . As full income rises, the demand for SI will rise or fall depending on whether SI is a normal or inferior good.

The empirical demand function can be specified by replacing the prices in equation (1) with their empirical proxies and with a set of additional control variables. The prices of the Z goods are equal to the price of time over the marginal product of time which also equals the price of market goods over the marginal product of market goods. The wage is usually assumed to be the proxy for the price of time in Z production. However, since the focus of this paper is on hours of work, hours of work are used in place of the wage as a proxy for the price of time. This replacement is justified by assuming that the price of non-working time is a function of the supply and demand for this type of time. As hours of work increase, the supply of non-working hours decreases which will increase the price of time. Holding demand for non-work time fixed, as hours of work increase, the price of time increases. Zero hours of work is interpreted as a low opportunity cost of time. The marginal product of time and the marginal product of market goods are usually

assumed to be positive functions of education. The prices of market goods are assumed to be a function of regional fixed effects variables.

The empirical SI function also includes other control variables. Variables for children and marriage can also be included. In the spirit of Becker's theory of time allocation, children and marriage can be viewed as Z goods. Children or child development requires time and market goods and children can be assumed to directly yield utility. Similarly, marriage requires time specifically spent on the marriage relationship and market goods that might not be otherwise purchased and can be assumed to yield utility. The level of a substitute or complementary Z good can act as a proxy for its price. Children and marriage may be substitutes with social interaction or complementary with social interaction. For example, substitution will occur if parents do not see friends as much due to their child responsibilities. However, children may be complementary with some social activities so that an increase in children at home could have a positive effect on social interaction. An increase in the level of a substitute will have a negative effect on the dependent variable, and an increase in the level of a complement will have a positive effect on the dependent variable. The empirical demand function is:

(2) $SI = SI(\text{hours of work, education, family income, children, married, gender, age, community size, occupation fixed effects, industry fixed effects and region fixed effects variables})$.

A problem with this empirical specification is that the proxies for the price of Z goods are not specific to any particular Z good. Thus, an increase in hours of work raises the price of time for all Z production which is equal to an increase in the price of all Z goods. However, the increase in the price of each Z good is proportional to its time intensiveness. An increase in the price of time will increase the price of SI relative to the price of less time intensive goods.¹ If SI is assumed to be relatively time intensive then a decrease in hours of work should have a positive effect on social interaction.

A similar problem exists for education as an empirical proxy for the price of SI. The effect of education is more complex since an increase in education increases both the marginal product of time and the marginal product of market goods in all Z production. Social interactions are assumed to be relatively

¹ A change in the price of time creates a substitution effect and a potential scale effect. The input mix in Z production changes but the scale of production is dependent on the utility maximizing level of Z.

time intensive goods but education can increase the marginal product of time by either more or less than it increases the marginal product of market goods.² If education increases the marginal product of time more than the marginal product of market goods then an increase in education would lower the price of SI relative to the price of less time intensive Z goods. In this case education has a positive effect on the quantity demanded of SI. However, if education increases the marginal product of market goods more than the marginal product of time, then an increase in education would increase the price of SI relative to the price of less time intensive Z goods. In this case education has a negative effect on quantity demanded of SI.

4. The Data

The data are from the Continuous Survey of Household Living Conditions (EPCV).³ The EPCV data were collected every year since 1996 by INSEE and is a national random sample of 8,000 addresses.⁴ Only one individual in each household is interviewed resulting in approximately 6,000 interviews per year. Data on hours of work were not collected until 1998. Over 48,000 observations are currently available in the EPCV. The sample used in this paper is restricted to individuals who are 18 to 65 years old.

The EPCV contains both social interaction variables and economic variables and is a national random sample. There are 16 empirical dependent variables measuring social interaction. There are eight dependent variables measuring membership in organizations. The memberships are: 1) Humanitarian (i.e. service to community), 2) Sport Groups, 3) Union Groups, 4) Parents Groups, 5) Literary, Art, Discussion or Study Groups, 6) Church Groups, 7) Elderly Associations, 8) Total Number of Memberships. There are also eight visiting variables measuring the number of times per year the individual visits with: 9) Mother, 10) Father, 11) Children, 12) Grandchildren, 13) Other relatives, 14) Neighborhood friend, 15) Other friends (excluding work colleagues) 16) Work Colleagues. The visiting variables are all continuous except for

² Education could also increase the marginal products of time and market goods by the same amount. In this case, the effect of the change in education depends on the magnitude of the effect on marginal product relative to other Z goods.

³ EPCV stands for Enquête Permanente sur les Conditions de Vie des Ménages (Continuing survey of household conditions).

⁴ Institut National de la Statistique et des Études Économiques (French National Institute of Statistics and Economic Studies).

visiting colleagues which is continuous. Participation in Sports Groups is likely to be a good proxy for an active lifestyle and thus also a measure of health.

The price of SI is a function of the opportunity cost of time, the price of the market goods used in production of SI, the marginal product of time and the marginal product of the market goods. Hours of work are an empirical measure of the opportunity cost of time. If an individual does not work, hours of work are zero which is a valid value and a measure of the opportunity cost of time. The marginal products of time and market goods are assumed to be a positive function of education. In France, the education system provides both a professional track and a technical track which are not the same. Therefore, the education is coded as four dichotomous variables. The real price of market goods is assumed to be controlled by cross sectional and time fixed effects variables.

Full income is labor income plus other income. Other income can be spouse's income or income from such sources as government transfers and earnings from assets. With the wage held constant in the regression, full income can increase as spouse's income or as non-labor income increases. Empirically, total real family income is used to measure full income. The monetary variables in the French data are reported in Euros. There is no a priori expectation for the effect of income on SI. Some forms of SI could be normal while others could inferior.

Additional independent variables include a child and a marriage variable. The child variable is defined as equal to one for households that have children under 18 living at home. Marriage is a dichotomous variable equal to one for individuals who are married or living as a married couple.

There are several additional variables which are included in the regressions. There are data to define a dichotomous variable for male and a continuous variable for age. The data sets contain information to construct a dichotomous variable equal to one if an individual lives in a rural area. Dichotomous variables can also be defined if an individual is a civil servant or self-employed. These variables are needed since these categories of labor were exempted from the employment laws. Race is not included in the French data. The data contain information on place of birth which is used to construct a dichotomous born in France variable. There are also three community sizes dichotomous variables. These are defined for

communities of less than 20,000 people, 20,000 to 100,000 people and over 100,000 people. There is also a dichotomous variable for those who live in the Paris region. Finally, there are 12 industry, eight occupational and 22 geographic region fixed effects variables defined. The sample means are shown in table 1.

5. The Empirical Strategy

The empirical strategy relies on the French employment law of 1998 which required a reduction in hours of work for full time workers from 39 to 35 hours with no decline in income. The employment law consisted of three parts: 1) the first part covered firms with more than 20 employees, 2) the second part covered firms with 20 or less employees and 3) the third part covered civil servants. Firms of more than 20 employees were required to conform to the law by January 2000 and firms with 20 or less employees were required to conform by January 2002.⁵ The law which covered civil servants also took effect in January 2002. Civil servants are therefore included with workers in firms of 20 or less employees since both laws took effect on the same date. These new laws allowed individuals to work more than 35 hours if they received overtime pay and allowed averaging hours per week over a year. The self-employed were exempted.

The data in table 2 part A show the percent of individuals in five categories of hours worked per week. These data include only individuals who have positive hours of work. The data show that after the deadline dates there was a significant decline in the number of workers working 39 hours and a significant increase in the number of workers working 35 hours. The change occurs in large firms in 2000 and in small firms and civil service in 2002 which corresponds to the legal deadlines for compliance. The number of workers in the other categories is relatively constant.

The employment laws are modeled as a difference-in-difference specification. Two treatment groups can be defined based on the deadline for compliance by large firms and for compliance by small firms and civil service. Workers who are affected by the law (36 or more hours per week) are considered in

⁵ The law included incentives for companies that reduced hours of work before the mandatory enforcement date.

one of two treatment groups. Those who are unaffected by the law are considered the control group. The first treatment group are workers in large firms. From 2000 to 2001, workers in small firms are part of the control group for workers in large firms. Also, workers who work 35 or less hours, who are civil servants or self-employed are part of this control group. The second treatment group are workers in small firms and civil servants. From 2002 to 2003, workers in large firms are part of the control group for workers in small firms. Again, workers who work 35 or less hours or who are self-employed are part of the control group. For both groups, the first difference is the change due to the employment law and the second difference is between individuals who were affected by the law and those who were not affected by the law.

The first empirical question is whether these laws actually reduced hours of work. To address this question a difference-in-difference model with hours of work as the dependent variable is estimated. This equation is simply a reduced form of the labor supply and demand functions. The second empirical question is whether the laws increased social interaction.

Let,

L= individual works in a firm of more than 20 employees

S = individual works in a firm of 20 or less employees or is a civil servant

X = independent variables from equation (2).

$$(3) HW = \alpha_1 L + \alpha_2 \text{post1999} + \alpha_3 L * \text{post1999} + \alpha_4 S + \alpha_5 \text{post2001} + \alpha_6 S * \text{post2001} + \alpha_7 X$$

$$(4) SI = \beta_1 L + \beta_2 \text{post1999} + \beta_3 L * \text{post1999} + \beta_4 S + \beta_5 \text{post2001} + \beta_6 S * \text{post2001} + \beta_7 X$$

Equation (3) measures the effect of the employment laws on hours of work. Equation (4) measures the effect of these laws on social interaction. If the laws reduced hours of work, those individual who are directly affected may increase their social interaction. The partial effect of the law in the post period on hours of work is α_3 for large firms and α_6 for small firms. The partial effect of the law in the post period on social interaction is β_3 for large firms and β_6 for small firms.

There are several concerns with this DD model. It should be noted that equation (4) simply measures the effect of being in a particular type of employment after the implementation of the work law. Other events might have occurred at the same time that the law was implemented. However, the important issue in this paper is whether there is any change in hours of work following the implementation of the laws rather than assignment of causality. Another concern is that workers are free to switch between full time

and part time work and choose to take a second job or quit a second job. These phenomena might impact the effect of the employment laws on hours of work. The data in table 2A suggest that the laws did reduce hours of work. Another concern is with individuals in large firms who might switch to small firms in order to avoid the effect of the employment law. Since the law requires small firms to comply within two years, it seems doubtful that anyone would switch for a two year only advantage. Estevao and Sa (2006) found no significant shift from large firms to small firms due to the law. Also, workers in large firms are not likely to switch into the civil service since civil service employment requires passing a competitive exam and again the advantage would only last for two years.

Finally, there is a concern with a potential spill-over effect of the law into the control group. Assume that individuals in the treatment group interact with individuals in the control group. Individuals in the control group do not have a reduction in hours of work and do not have additional time to interact with the individuals in the treatment group. In this scenario, the measured effect of the treatment would then be biased towards zero. This potential problem is more likely to occur in visiting types of social interaction rather than membership types of social interaction. One way to check for this problem is to examine the time data for social interaction by treatment groups and the control groups. This data is presented in table 2B and 2C. These data show that the compliance dates for the employment laws had no effect on the treatment group and no effect on the control group. Only four social interaction variables are presented since none of the other categories of social interaction showed any discernable effect of the employment laws. A spill-over effect of the laws to the control groups thus appears unlikely.

6. Results

Table 3 presents the regression results for the 17 dependent variables. All equations include the same set of independent variables and both probit and OLS are used for estimation depending on whether the dependent variable is dichotomous or continuous. Marginal effects are reported for the probit specifications. All specifications include seven occupation, 11 industry and 21 region dichotomous variables which are not reported in the table. The first dependent variable is a continuous measure of hours of work

per week. The next seven dependent variables are dichotomous measures of membership in organizations. The next dependent variable is a continuous measure of the total number of memberships for an individual. Finally, the last eight dependent variables are continuous measures of visits per year to relatives and friends.

The first regression shows the effect of the employment laws on hours of work. For those in large firms, after 1999, there was a reduction of approximately two hours per week. For those in small firms, after 2001, there was a reduction of approximately 1.6 hours per week. The regression also shows that higher income, being male, being older and being French born all increase hours of work. The regression also shows that being married and having children reduces hours of work.

Although the law is found to decrease hours of work there is little evidence that these hours go to increased social interaction. The results in table 3 show that for individuals in large firms there is no increase in social interaction. For individuals in small firms there is an increase only in church membership and in visiting neighbors. The extra hours resulting from the law are going to activities other than social interaction which suggests that hours of work are not an important causal factor on social interaction.⁶

The results in table 3 also show the effect of education on social interaction. Education is a proxy for the price of Z goods. When education increase it lowers the price of Z goods in proportion to the time intensiveness of the good. Education is positive and significant for all membership activities excluding elderly groups. Education is negative and significant for most visiting activities. The positive effect of education on memberships and negative effect on visiting can be explained with the marginal products. Assume that all social interaction is time intensive. The relative magnitudes of the effect of education on the marginal products of time and market goods determine whether the coefficient is positive or negative. For time intensive goods, if education has a greater effect on the marginal product of time, the coefficient will be positive. If education has a greater effect on the marginal product of market goods then the coefficient will be negative. The results thus suggest that education has a greater effect on the marginal product of time in membership activities and a smaller effect on marginal product of time in visiting activities. This may be due

⁶ Since the partial effect of the law on social interaction is insignificant, the effect of hours of work on social interaction is zero.

to the fact that membership activities are more goal oriented than visiting activities. More educated individuals can apply their greater human capital to assist a membership organization in meeting their goals. Education lowers the relative price of membership activities but raises the relative price of visiting activities.

Family income is included as a proxy for income and is positive for memberships and negative for visiting. This indicates that memberships are normal Z goods while visiting tends to be inferior. The exceptions are grandchildren and other relatives which is insignificant and colleagues which is positive.

The regressions in table 3 also show the effects of demographics. Being married tends to reduce all social interactions which suggests that a spouse is a substitute for other social interactions. Children have a positive effect of membership in school and church groups. These activities are complementary with children. The other social interactions had mixed results. Age like education increases memberships and reduces visiting. Age may be acting as an indicator of human capital as is education. Males tend to have less of all social interactions. The urban variables show that individuals in larger communities and in Paris tend to be somewhat less social. The French born variable shows mixed effects.⁷

Additional regressions were estimated to further explore the effects of gender, marriage and children. These regressions allow all of the included independent variables to have different coefficients. The sociological literature argues that gender and marriage are important determinants of social interaction. McPherson and Smith-Lovin (1986) have noted that voluntary groups tend to be segregated by gender. Women are more likely to belong to small groups organized around social or religious activities. Men are more likely to belong to larger work-oriented groups. They have also argued that women keep kinship contacts alive through regular contact. Men are more likely to interact with more heterogeneous groups with the nuclear family as the primary basis of intimacy and support. Gerstel (1988) argues that married women maintain the relationships with their own and their husband's kin far more than married men do. Wives also maintain contact with friends and neighbors more than husbands. This literature suggests that separate estimation for males and females will reveal some significant differences.

⁷ Another set of regressions estimated with a subsample limited to employed individuals produced very similar results.

The additional regressions were based on subsamples of data for males, for females, for married, for non-married, for individuals with children and for individuals with no children. None of these regressions resulted in anything significantly different from the overall regressions in table 3. The results from these regressions are presented in table 4. In table 4, the dependent variable is listed in the first column and the subsample is listed in the first row. All equations include the same set of independent variables in table 3. However, to save space, only the results for the post-law variables are presented. The variables that are not presented are similar to those in table 3. These results suggest all groups are similar with respect to the marginal effects of the determinants of social interactions. Since these determinants may have different levels for each demographic group, the levels of social interactions can be different.

Table 4 also presents the results from a sample limited to employed individuals. Since the empirical models estimate the effect of the laws rather than hours of work directly there may a channel by which the laws affect social interaction other than by affecting hours of work. Individuals who were not directly affected might increase social interaction if their friends and relatives were more available for social activities. By limiting the sample to employed individuals any spillover to non-working individuals is eliminated. If there is a spillover effect then the regressions for the employed only should show smaller effects than found in the full sample. The hours regressions show that the laws reduced hours of work for all groups except for those individuals with no children who worked in small firms or who were civil servants. With a few exceptions, the social interaction variables are again unaffected by the employment laws. The variables which are not presented are also similar across all groups. This suggests that this channel by which the laws might affect social interaction is not relevant.

Are other channels by which the employment laws might affect social interaction? Suppose that the true effect of the laws on social interaction were positive. In order to estimate consistently insignificant law coefficients, there would have to be a channel by which the laws could have a significant negative effect on social interaction. But there is no plausible channel by which the laws could reduce social interactions. Therefore it is reasonable to conclude that the lack of a significant effect of the laws on social interaction indicates that there is no effect of hours of work on social interaction.

7. Comparison France and the US

There are very similar data from the US which makes it possible to compare results from this study with a prior study of social interaction in the US. Saffer (forthcoming) estimates a similar model with US data from the General Social Survey (GSS). The GSS is funded by the National Science Foundation and is part of a program of social indicator research, replicating questionnaire items and wording in order to facilitate time-trend studies. The GSS data include over 40,000 observations. The EPCV data and the GSS data are limited to persons 18 to 65 years of age. The EPCV data are from 1996 to 2003 and GSS data are from 1974 to 2004.

Table 5 compares the regression results from this study with those of Saffer (forthcoming). Table 5 presents 10 pairs of regressions which used similar dependent variables in both studies and includes the results for education, income and demographics. The comparisons between the two studies are limited to sign and significance of the coefficients. This is due to the inclusion of different variables in regressions for each nation and the different metric for education and income.⁸ In table 5, when the results differ between the US and France they are highlighted in bold for easy recognition. For both countries, education is an important determinant of social interaction with a positive effect on memberships and a negative effect on visiting. Also, age follows the same pattern of increasing memberships but reducing visiting in both nations. Income increase memberships but generally reduces neighborhood visiting. Being married reduces social interaction in both nations and males tend to have less social interaction except for visiting friends and neighbors. As can be seen in the table, 44 out of 50 pairs of coefficients are the same in sign and significance. These data suggest that there many similarities in the determination of social interaction in the two nations.

8. Conclusions

Increases in hours of work per capita over the years has created an intuitively plausible notion that there is not enough time left for social interaction. The specific question addressed in this paper is the effect

⁸ The Education variable is continuous and the Professional and University variables are dichotomous. Income is measured in euros in France and in dollars in the US.

of hours of work on social interaction. Intuitively, an increase in hours of work might be assumed to reduce social interaction. However, there is evidence that individuals who work longer hours also have higher levels of social interaction. This effect is attributed to third factor endogeneity. Measuring the effect of hours of work on social interaction is thus a difficult empirical problem. The approach taken in this paper utilizes an exogenous decline in hours of work in France due to a new employment law. The results show that the law reduced hours of work in France. However, there is no evidence that the extra hours went to increased social interactions. There are no significant differences in the marginal effects of the included variables by gender, marital status or parent status. These results suggest that hours of work are not an important determinant of social interaction. Since the French and US results are quite similar, where they can be compared, it suggests that this effect may also be true in the US.

The results also indicate that Human Capital, as measured by education and age, is an important determinant of social interaction. The effect of education and age is positive for membership groups but negative for visiting. Time series data show that memberships have remained fairly stable while visiting has declined. The increases in education over time could explain the decline in visiting.

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Table 1
Means

Variable Name	Variable Definition	Mean Value
Hours	Hours of work per week (includes non-workers)	22.4543
Large	Dichotomous variable equal to one for individuals who work in firms with more than 20 employees	0.2197
Small	Dichotomous variable equal to one for individuals who work in firms with 20 or fewer employees and for civil servants	0.2307
Post1999	Dichotomous variable equal to one for years 2000, 2001 and 2002	0.8298
Post2001	Dichotomous variable equal to one for years 2002	0.4970
L*post1999	Large firm and years 2000, 2001 and 2002	0.1845
S*post2001	Small firm and civil servant and year 2002	0.1168
Bacc	High school degree	0.1127
Professional	Professional school degree	0.3594
University	University degree	0.2663
Income	Total Family Income (1,000s of euros)	8.1917
Male	Individual is Male	0.4680
Age	Self-reported Age	41.0373
France born	Individual was Born in France	0.8846
Urban20	Individual lives in a community of less than 20,000	0.1609
Urban20-100	Individual lives in a community of 20,000 to 100,000	0.1413
Urban100	Individual lives in a community of more than 100,000	0.3080
Paris	Individual lives in Paris	0.1640
Married	Individual is married or living together	0.6401
Male married	Individual is Male and Married	0.3103
children	Number of children ever born	1.4809
Humanitarian	Membership in Humanitarian Group	0.0448
Sport	Membership in Sport Group	0.2017
Union	Individual in Union Organization	0.0757
School	Membership in School Service Group	0.0420
Literary	Membership in Literary, Art, Discussion or Study Group	0.0845
Church	Membership in Church Affiliated Group	0.0274
Elderly	Membership in Elderly Group	0.0319
Total Memberships	Total Number of Memberships	0.7348
Mother	Number of Times per Year Visits Mother	87.5638
Father	Number of Times per Year Visits Father	74.5887
Children	Number of Times per Year Visits Children	114.663
Grandchildren	Number of Times per Year Visits Grandchildren	119.334
Other Relatives	Number of Times per Year Visits Other Relatives	59.4491
Neighbors	Number of Times per Year Visits Neighbors	104.966
Friends	Number of Times per Year Visits Friends	104.5261
Colleagues	Number of Times per Year Visits Colleagues	0.3469

Table 2 Part A Hours of Work

Hours of Work per Week	Large Firms					Small Firms and Civil Service				
	1999	2000*	2001	2002	2003	1999	2000	2001	2002*	2003
Less than 35	0.22	0.20	0.20	0.17	0.20	0.38	0.42	0.40	0.38	0.38
35	0.11	0.27	0.35	0.36	0.33	0.05	0.10	0.13	0.25	0.24
36 to 38	0.07	0.07	0.09	0.12	0.11	0.05	0.06	0.05	0.07	0.08
39	0.34	0.18	0.12	0.10	0.09	0.27	0.20	0.20	0.09	0.08
More than 39	0.27	0.27	0.24	0.24	0.26	0.24	0.22	0.21	0.21	0.23

Table 2 Part B Social Interaction for Large Firms and the Control Group

Social Interaction	Large Firms					Large Firm Control Group				
	1999	2000*	2001	2002	2003	1999	2000*	2001	2002	2003
Total Memberships	.6500	.6743	.6046	.6820	.6474	.7641	.7690	.7771	.7451	.7541
Mother	78.71	79.60	74.74	74.86	75.87	92.45	91.93	91.08	94.47	89.62
Friends	81.81	83.07	87.81	83.03	72.00	111.38	111.88	119.28	111.51	107.48
Colleagues	.3601	.3257	.3535	.3510	.3813	.3092	.3365	.3547	.3448	.3567

Table 2 Part C Social Interaction for Small Firms and Civil Service and the Control Group

Social Interaction	Small Firms and Civil Service					Small Firm and Civil Service Control Group				
	1999	2000	2001	2002*	2003	1999	2000	2001	2002*	2003
Total Memberships	.8222	.7752	.7437	.7674	.7735	.7157	.7408	.7376	.7191	.7172
Mother	81.59	78.11	77.29	77.60	79.67	91.82	92.49	89.97	93.92	88.43
Friends	84.32	88.95	95.49	88.50	84.97	111.41	109.51	117.12	110.16	104.03
Colleagues	.3117	.3414	.3677	.3549	.3799	.3328	.3286	.3478	.3426	.3569

* Deadline for implementation of the 35 hour work law. Data from EP

Table 3
Hours of Work and Social Interaction Regressions

Variables	Hours	Humanitarian	Sport	Union	School	Literary	Church	Elderly	Total memberships
Large	21.0302 (.3742)***	-0.0149 (.0067)**	0.0074 (.0165)	-0.0080 (.0076)	-0.0037 (.0055)	-0.0241 (.0099)**	-0.0020 (.0055)	-0.0003 (.0030)	-0.1351 (.0448)***
Post1999	0.2683 (.1195)	-0.0005 (.0037)	-0.0104 (.0090)	-0.0032 (.0047)	0.0016 (.0030)	-0.0106 (.0059)*	-0.0038 (.0029)	-0.0012 (.0012)	-0.0477 (.0233)**
L_post1999	-1.9607 (.3755)***	0.0067 (.0094)	-0.0067 (.0162)	-0.0034 (.0081)	-0.0031 (.0057)	0.0163 (.0130)	-0.0015 (.0057)	0.0002 (.0031)	0.0270 (.0452)
Small	20.8106 (.2342)***	0.0038 (.0045)	0.0060 (.0102)	-0.0069 (.0045)	-0.0055 (.0030)*	0.0001 (.0064)	-0.0028 (.00232)	0.0002 (.0019)	-0.0412 (.0275)
Post2001	0.2569 (.1502)*	-0.0040 (.0029)	0.0015 (.0067)	-0.0038 (.0035)	-0.0010 (.0023)	0.0063 (.00543)	-0.0056 (.0022)*	-0.0007 (.0009)	-0.0222 (.0178)
S_post2001	-1.5428 (.2766)***	-0.0065 (.0046)*	-0.0064 (.0119)	0.0044 (.0062)	-0.0026 (.0039)	-0.0129 (.0070)*	0.0014 (.0045)	-0.0026 (.0017)	-0.02285 (.0330)
bacc	0.1278 (.2241)	0.0297 (.0068)***	0.0785 (.0120)***	0.0395 (.0080)***	0.0364 (.0068)***	0.0664 (.0098)***	0.0063 (.0040)*	-0.0026 (.0011)**	0.3210 (.0267)***
Professional	0.1156 (.1645)	0.0109 (.0038)***	0.0464 (.0081)***	0.0253 (.0047)***	0.0169 (.0035)***	0.0281 (.0057)***	0.0012 (.0026)	-0.0007 (.0009)	0.1833 (.0195)***
University	0.4577 (.2145)**	0.0544 (.0066)***	0.0872 (.0108)***	0.0515 (.0070)***	0.0383 (.0058)***	0.1040 (.0091)***	0.0295 (.0048)***	-0.0015 (.0012)	0.6216 (.0255)***
Income	0.2545 (.0311)***	0.0028 (.0006)***	0.0173 (.0014)***	0.0069 (.0008)***	0.0022 (.0005)***	0.0030 (.0009)***	0.0013 (.0005)***	-0.0003 (.0002)	0.0516 (.0036)***
Male	0.2164 (.2211)	-0.0098 (.0041)**	0.0483 (.0100)**	0.0175 (.0052)***	-0.0227 (.0050)***	-0.0145 (.0060)**	-0.0109 (.0035)***	0.0042 (.0016)***	0.0570 (.0264)**
Age	0.0110 (.0066)*	0.0013 (.0001)***	-0.0017 (.0003)***	0.0017 (.0002)***	-0.0010 (.0001)***	0.0019 (.0002)***	0.0007 (.0001)***	0.0008 (.0001)***	0.0107 (.0008)***
France_born	0.3302 (.1964)*	-0.0039 (.0040)	0.0624 (.0079)***	0.0062 (.0044)	-0.0010 (.0031)	0.0018 (.0056)	-0.0103 (.0035)***	0.0038 (.0009)***	0.0853 (.0233)***
Urban20	0.1560 (.1965)	0.0054 (.0043)	0.0016 (.0086)	0.0103 (.0050)*	-0.0052 (.0025)*	-0.0106 (.0052)*	-0.0052 (.0024)*	-0.0030 (.0008)***	-0.0222 (.0233)
Urban20-100	-0.1189 (.2042)	0.0046 (.0044)	-0.0152 (.0087)*	0.0143 (.0055)***	-0.0016 (.0029)	-0.0036 (.0057)	-0.0043 (.0026)	-0.0044 (.0008)***	-0.0041 (.0243)
Urban100	0.1976 (.1836)	0.0008 (.0036)	-0.0152 (.0078)*	0.0046 (.0043)	-0.0124 (.0023)***	-0.0119 (.0049)**	-0.0096 (.0022)***	-0.0074 (.0010)***	-0.0656 (.0218)**
Paris	0.1000 (.4211)	0.0336 (.0156)***	-0.0610 (.0155)***	0.0380 (.0162)***	-0.0069 (.0053)	-0.0238 (.0093)**	0.0021 (.0071)	0.0024 (.0024)	-0.0482 (.0505)
Married	0.0308 (.1950)	-0.0194 (.0043)***	-0.0256 (.0093)***	-0.0204 (.0054)***	0.0096 (.0028)***	-0.0245 (.0060)***	-0.0054 (.0029)*	-0.0003 (.0013)	-0.1475 (.0233)***
Male-married	-0.3231 (.2630)	0.0004 (.0050)	0.0118 (.0119)	0.0120 (.0064)*	0.0042 (.0057)	0.0050 (.0075)	-0.0012 (.0041)	0.0059 (.0024)***	0.0827 (.0303)***
Children	0.1852 (.0523)***	0.0007 (.0010)	-0.0011 (.0025)	-0.0002 (.0013)	0.0157 (.0008)***	-0.0039 (.0015)**	0.0032 (.0007)***	0.00004 (.0003)	0.0248 (.0062)***
R-square	0.8081	0.0982	0.0633	0.1556	0.0163	0.0798	0.0839	0.3548	0.1480
Sample size	20,833	21,899	21,900	21,900	21,900	21,900	21,900	21,900	21,900

Table 3 continued

Variables	Mother	Father	Children	Grandchildren	Other relatives	Neighbors	Friends	Colleagues
Large	-15.0397 (7.7411)*	-16.2983 (8.2561)**	-21.7332 (12.7981)*	-32.0423 (22.5989)	1.0961 (4.8540)	-16.2511 (12.5011)	-12.2232 (5.9326)**	0.0762 (.0226)***
Post1999	-0.0731 (4.2896)	4.9333 (4.7223)	2.3466 (5.5060)	-0.7588 (8.1112)	4.3205 (2.5309)*	8.2148 (6.5129)	2.6848 (3.0921)	0.0262 (.0136)*
L_post1999	-0.0732 (7.8523)	0.4461 (8.3940)	8.8126 (12.8228)	24.2978 (22.7407)	-8.7746 (4.8944)*	14.0894 (12.6057)	3.1204 (5.9829)	-0.0374 (.0223)*
Small	-14.1139 (4.7604)***	-5.0134 (5.1710)	-9.1195 (7.4249)	-4.5598 (13.0752)	-1.9685 (2.9861)	-11.8369 (7.6843)	-5.2896 (3.6486)	0.0145 (.0135)
Post2001	-0.6184 (3.2476)	-0.4336 (3.5900)	-6.0857 (4.2125)	-7.4810 (6.2007)	-0.7801 (1.9296)	-17.7100 (4.9606)***	-5.4632 (2.3563)**	0.0079 (.0105)
S_post2001	0.5753 (5.7468)	-7.1336 (6.2476)	5.0695 (8.7681)	8.1229 (15.4096)	-1.6316 (3.5853)	14.8686 (9.2210)	1.5728 (4.3791)	-0.0063 (.0168)
Bacc	-7.5884 (4.8923)	-4.9946 (5.5411)	-39.8310 (6.4281)***	-43.4068 (10.443)***	-10.3416 (2.8948)***	-15.4756 (7.4477)**	-2.3617 (3.5372)	0.0505 (.0160)***
Professional	4.7494 (3.7251)	4.8498 (4.3798)	-18.4865 (4.2919)***	-20.5489 (6.3313)***	-3.6371 (2.1216)*	-7.9966 (5.4537)	-5.3949 (2.5896)**	0.0210 (.0118)*
University	-22.04029 (4.7033)***	-10.4926 (5.2429)**	-51.9850 (6.4587)***	-52.4894 (10.5619)***	-22.5208 (2.7651)***	-29.1130 (7.1057)***	-5.0245 (3.3748)	0.0297 (.0149)**
Income	-2.0649 (.7081)***	-2.6341 (.7827)***	-1.8807 (.9005)**	-1.3653 (1.3587)	0.3193 (0.3960)	-3.2259 (1.0175)***	-1.2581 (.4831)***	0.0141 (.0022)***
Male	-24.5515 (5.0031)***	-15.6230 (5.2786)***	-25.5256 (7.2394)***	-49.5413 (12.9240)***	-5.6436 (2.8621)**	21.7435 (7.3620)***	36.3818 (3.4966)***	0.0109 (.0146)
Age	-0.4831 (.1547)***	-0.3281 (.1852)*	0.8565 (.2891)***	-1.2348 (.6142)**	-1.3595 (.0856)***	0.0730 (.2197)	-2.15384 (.0143)***	-0.0048 (.0005)***
France_born	38.2216 (4.2348)***	31.3668 (4.7844)***	-1.4693 (5.4752)	-1.5024 (8.3872)	5.9374 (2.5217)**	-3.7291 (6.4873)	-5.0042 (3.0815)	0.0175 (.0135)
Urban20	4.1957 (4.2098)	-12.0090 (4.6997)**	-2.3485 (5.4064)	-4.7387 (8.0824)	1.4583 (2.5254)	-27.5590 (6.4964)***	-6.7192 (3.0840)**	0.0094 (.0131)
Urban20-100	-8.5013 (4.3895)**	-14.9784 (4.8557)***	-9.5499 (5.8116)	-8.4522 (8.8179)	-2.6066 (2.6343)	-35.8369 (6.7773)***	2.8921 (3.2186)	0.0297 (.0138)**
Urban100	-14.7772 (3.9394)***	-22.4208 (4.3798)***	-3.1603 (5.2390)**	-7.7408 (7.9258)	-8.5853 (2.3638)***	-34.2109 (6.0801)***	2.1564 (2.8861)	0.0006 (.0121)
Paris	-8.4243 (8.9272)	-26.2660 (10.065)***	-27.2881 (12.7823)**	-24.0141 (19.4226)	-7.3439 (5.4768)	-78.2942 (14.0927)***	-14.1568 (6.6918)**	0.0071 (.0273)
Married	-8.4597 (4.3890)*	6.2403 (4.8005)	8.4802 (5.8373)	1.2431 (8.3430)	-16.6338 (2.5274)***	9.9433 (6.4949)	-38.2046 (3.0852)***	-0.0690 (.0138)***
Male-married	-2.7731 (5.8062)	-6.3738 (6.2187)	10.0390 (8.1539)	48.3354 (14.2010)***	1.6515 (3.3933)	-24.7971 (8.7249)***	-23.4579 (4.1433)***	0.0352 (.0173)**
children	-6.9923 (1.1959)***	-5.6875 (1.4203)***	7.9904 (1.4481)***	4.0682 (2.0247)	-2.9458 (.6768)***	6.1018 (1.7386)***	0.4665 (.8255)	0.0020 (.0039)
R-square	0.0701	0.0663	0.0628	0.0675	0.0669	0.0285	0.0807	0.0292
Sample_size	14,566	10,709	7,628	4,033	21,771	21,870	21,862	15,448

* significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent. All regression include 11 industry, 7 occupation and 21 region dichotomous variables.

Table 4
Demographic Specific Results for the Law Change on Hours of Work and Social Interaction

		Male	Female	Married	Single	Children	No children	Employed
Hours	L_post1999	-2.3313 (.5728)***	-1.8234 (.4950)***	-1.7566 (.4725)***	-2.4574 (.6166)***	-1.9026 (.4574)***	-1.8849 (.6686)***	-2.3209 (.4618)***
	S_post2001	-1.7022 (.4451)***	-1.2999 (.3312)***	-1.6178 (.3474)***	-1.3803 (.4554)***	-1.6509 (.3327)***	-1.1036 (.5043)**	-2.0983 (.3411)***
Humanitarian	L_post1999	0.0078 (.0106)	0.0001 (.0146)	0.0009 (.0099)	0.0160 (.0194)	0.0141 (.0138)	-0.0022 (.0108)	0.0071 (.0091)
	S_post2001	-0.0048 (.0055)	-0.0086 (.0070)	0.0034 (.0066)	-0.0225 (.0063)***	-0.0051 (.0058)	-0.0089 (.0062)	-0.0094 (.0045)*
Sport	L_post1999	-0.0024 (.0238)	-0.0257 (.0216)	-0.0081 (.0203)	0.0001 (.0269)	0.0004 (.0198)	-0.0186 (.0297)	-0.0128 (.0190)
	S_post2001	-0.0333 (.0173)*	0.0201 (.0168)	-0.0033 (.0150)	-0.0051 (.0097)	0.0039 (.0145)	-0.0192 (.0223)	-0.0073 (.0141)
Union	L_post1999	-0.0095 (.0146)	0.0002 (.0095)	-0.0106 (.0096)	0.0092 (.0158)	-0.0160 (.0084)*	0.0444 (.0233)**	-0.0012 (.0132)
	S_post2001	0.0014 (.0118)	0.0035 (.0062)	0.0136 (.0089)*	-0.0111 (.0081)	0.0065 (.0078)	0.0004 (.0105)	0.0103 (.0100)
School	L_post1999	0.0013 (.0065)	-0.0105 (.0092)	-0.0009 (.0096)	-0.0009 (.0136)	-0.0033 (.0094)	-0.0007 (.0011)	-0.0042 (.0071)
	S_post2001	-0.0022 (.0040)	-0.0037 (.0069)	-0.0037 (.0060)	-0.0008 (.0123)	-0.0042 (.0063)	0.0007 (.0027)	-0.0045 (.0048)
Literary	L_post1999	-0.0022 (.0143)	0.0315 (.0244)	0.0065 (.01347)	0.0403 (.0257)**	0.0112 (.0158)	0.0320 (.0227)	0.0088 (.0129)
	S_post2001	-0.0158 (.0090)	-0.0097 (.0103)	-0.0102 (.0084)	-0.0145 (.0128)	-0.0109 (.0082)	-0.0018 (.0129)	-0.0121 (.0077)
Church	L_post1999	-0.0052 (.0043)	0.0118 (.0161)	-0.0029 (.0065)	0.0005 (.0100)	-0.0042 (.0066)	0.0042 (.1601)	-0.0015 (.0051)
	S_post2001	-0.0001 (.0045)	0.0032 (.0080)	0.0020 (.0055)	0.0008 (.0071)	-0.0012 (.0055)	0.0032 (.1194)	-0.0001 (.0040)
Elderly	L_post1999	0.0009 (.0054)	0.0007 (.0050)	-0.0002 (.0039)	0.0023 (.0057)	-0.0012 (.0034)	0.0022 (.0054)	0.00002 (.0017)
	S_post2001	0.0023 (.0048)	-0.0046 (.0010)**	-0.0031 (.0023)	-0.0012 (.0015)	-0.0033 (.0020)	-0.0006 (.0023)	-0.0010 (.0394)
Total membership	L_post1999	-0.0182 (.0612)	0.0169 (.0696)	0.0241 (.0552)	0.0380 (.0789)	-0.0072 (.0561)	0.1134 (.0758)	0.0149 (.0480)
	S_post2001	-0.0628 (.0476)	0.0069 (.0461)	0.0249 (.0403)	-0.1362 (.0580)**	-0.0115 (.0404)	-0.0678 (.0572)	-0.0449 (.0354)
Mother	L_post1999	-4.6160 (8.6232)	6.9187 (13.7654)	4.7081 (8.3614)	-15.6693 (17.7246)	1.8151 (8.7589)	-0.6624 (16.9538)	-0.3928 (8.2243)
	S_post2001	0.8501 (6.6740)	3.5344 (9.1664)	9.8779 (6.1076)	-22.5572 (13.0239)	4.0779 (6.3310)	-7.8726 (12.7534)	-0.0414 (6.0466)
Father	L_post1999	-7.4568 (9.4389)	15.4801 (14.3094)	-2.2121 (8.9636)	-2.6452 (18.3919)	0.5469 (9.3539)	0.0383 (17.0126)	-1.0891 (9.0731)
	S_post2001	-0.5043 (7.3357)	-11.9773 (9.8982)	0.0834 (6.5915)	-25.0082 (13.9704)*	-3.9526 (6.8958)	-14.1279 (12.8893)	-8.6554 (6.7627)
Children	L_post1999	21.3239 (15.2090)	-18.0318 (23.3312)	9.2125 (15.8412)	6.6415 (21.6086)	8.8125 (12.8228)		6.8779 (12.5361)
	S_post2001	5.5218 (11.6546)	5.8858 (13.1432)	4.9334 (10.7365)	5.2526 (15.0201)	5.0695 (8.7681)		2.0097 (8.7791)
Grandchildren	L_post1999	31.1549 (27.5962)	10.2990 (35.2880)	25.8717 (26.2163)	4.5118 (49.6302)	24.2196 (22.7439)		29.4851 (23.2008)
	S_post2001	14.8342 (20.7566)	1.7727 (21.9700)	1.6442 (18.6524)	32.7055 (28.5957)	7.9468 (15.4127)		3.4401 (15.9523)
Other relatives	L_post1999	-4.1675 (6.5742)	-16.0008 (7.6164)**	-7.6018 (5.2324)	-9.9639 (10.312)	-9.6303 (5.5478)*	-6.0236 (10.1117)	-8.4071 (5.0331)*
	S_post2001	-2.5279 (5.1153)	-1.1671 (4.8862)	-0.5643 (3.8200)	-5.4064 (7.5980)	-4.2374 (4.0029)	2.6738 (7.6308)	-2.4586 (3.7136)
Neighbors	L_post1999	10.5697 (22.3761)	17.6880 (11.3690)	14.4797 (8.6034)*	8.4571 (33.8967)	16.8356 (17.2177)	9.5175 (12.4032)	13.6963 (15.3000)
	S_post2001	20.9620 (17.3896)	9.8357 (7.5338)	5.1059 (6.2730)	33.9371 (24.9337)	16.4952 (12.3969)	9.3030 (9.3574)	12.6047 (11.2764)
Friends	L_post1999	8.7421 (8.4796)	-3.6841 (8.8310)	-0.6962 (6.2779)	11.4816 (12.8641)	6.4578 (6.6798)	-5.3454 (12.7401)	5.0496 (5.9180)
	S_post2001	0.2212 (6.5937)	3.3980 (5.8545)	-1.2133 (4.5828)	10.7669 (9.4600)	-0.0625 (4.8162)	4.8357 (9.6059)	5.0229 (4.3640)
Colleagues	L_post1999	-0.0344 (.0306)	-0.0457 (.0333)	-0.0282 (.0273)	-0.0523 (.0397)	-0.0316 (.0271)	-0.0345 (.0408)	-0.0381 (.0224)*
	S_post2001	-0.0074 (.0236)	0.0172 (.0241)	0.0239 (.0206)	-0.0347 (.0297)	0.0024 (.0200)	0.0173 (.0317)	0.0063 (.0169)

Standard errors are in parentheses. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent. All regression include all variables from table 3 and 11 industry, 7 occupation and 21 region dichotomous variables also.

Table 5
Comparison of Education and Demographic Coefficients from the EPCV and GSS data

	France	US	France	US	France	US	France	US	France	US
Variables	Humanitarian	Service	Sport	Sport	School	School	Literary	Literary	Church	Church Group
Education		0.0156 (20.05)***		0.0154 (13.87)***		0.0222 (23.80)***		0.0200 (27.40)***		0.0250 (18.48)***
Professional	0.0109 (.0038)***		0.0464 (.0081)***		0.0169 (.0035)***		0.0281 (.0057)***		0.0012 (.0026)	
University	0.0544 (.0066)***		0.0872 (.0108)***		0.0383 (.0058)***		0.1040 (.0091)***		0.0295 (.0048)***	
Income	0.0028 (.0006)***	7.17e-1 (8.53)***	0.0173 (.0014)***	1.45e-6 (12.04)***	0.0022 (.0005)***	6.76e-7 (6.96)	0.0030 (.0009)***	3.83e-7 (5.13)***	0.0013 (.0005)***	5.85e-7 (3.54)***
Male	-0.0098 (.0041)**	-0.0029 (-0.70)	0.0483 (.0100)***	0.1021 (17.04)***	-0.0227 (.0050)***	-0.0696 (-14.31)***	-0.0145 (.0060)**	-0.0429 (-11.16)***	-0.0109 (.0035)***	-0.1144 (-15.18)***
Age	0.0013 (.0001)***	0.0013 (9.49)***	-0.0017 (.0003)***	-0.0035 (-16.96)***	-0.0010 (.0001)***	-0.0029 (-16.33)***	0.0019 (.0002)***	0.0006 (5.06)***	0.0007 (.0001)***	0.0053 (21.58)***
Married	6.2403 (4.8005)	0.0057 (1.23)	-0.0256 (.0093)***	-0.0133 (-2.07)***	0.0096 (.0028)***	0.0285 (5.52)***	-0.0245 (.0060)***	-0.0325 (-7.68)***	-0.0054 (.0029)*	0.0805 (10.01)***

Table 5 continued

	France	US	France	US	France	US	France	US	France	US
Variables	Total Memberships	Total Memberships	Mother	Parents	Other relatives	Other Relatives	Neighbors	Neighborhood Friend	Friends	Other Friend
Education		0.2070 (43.51)***		-4.4382 (-10.90)***		-2.9497 (-12.82)***		-1.3764 (-6.75)***		-0.6427 (-4.15)***
Professional	0.1833 (.0195)***		4.7494 (3.7251)		-3.6371 (2.1216)*		-7.9966 (5.4537)		-5.3949 (2.5896)**	
University	0.6216 (.0255)***		-22.04029 (4.7033)***		-22.5208 (2.7651)***		-29.1130 (7.1057)***		-5.0245 (3.3748)	
Income	0.0516 (.0036)***	9.03e-06 (15.31)***	-2.0649 (.7081)***	0.0002 (4.86)***	0.3193 (0.3960)	-0.00003 (-1.23)	-3.2259 (1.0175)***	-0.0001 (-4.71)***	-1.2581 (.4831)***	0.00008 (4.30)***
Male	0.0570 (.0264)**	0.1477 (5.52)***	-24.5515 (5.0031)***	-3.8136 (-1.82)**	-5.6436 (2.8621)**	-7.4435 (-5.87)***	21.7435 (7.3620)***	7.2992 (6.50)***	36.3818 (3.4966)***	7.7551 (8.87)***
Age	0.0107 (.0008)***	0.0121 (14.13)***	-0.4831 (.1547)***	-1.1077 (-12.72)***	-1.3595 (.0856)***	-0.6358 (-15.34)***	0.0730 (.2197)	-0.5349 (-14.57)***	-2.15384 (.0143)***	-0.7956 (-28.55)***
Married	-0.1475 (.0233)***	0.0260 (0.91)	-8.4597 (4.3890)*	-25.512 (-11.32)***	-16.6338 (2.5274)***	-9.1557 (-6.73)***	9.9433 (6.4949)	-25.3540 (-21.04)***	-38.2046 (3.0852)***	-26.1239 (-28.57)***

The bold values indicate a difference in sign between France and the US or a lack of significance for one of the countries. t values in parentheses for US data. Standard errors are in parentheses for the French data. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.