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WORK AND TELEVISION

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ABSTRACT

Work and Television*

Nowadays, people in OECD countries spend about as much time watching television as earning a living. In this Paper I report a puzzling fact about those time uses: television viewing and work hours are positively correlated across countries. A simple model based on complementarities in the organization of free time is then developed that explains such a pattern as resulting from multiple equilibria. All equilibria can be inversely Pareto-ranked by their amount of television viewing. Arguments are offered to explain why some countries may have settled in a Pareto-inferior equilibrium.

JEL Classification: D10, H00 and J20
Keywords: relational goods, television viewing and work hours

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1 Introduction

The starting point of most investigations on labor supply is a model in which agents allocate their time endowment choosing between market-based activities (work) and leisure. No attempt is usually made to discern the various activities people undertake during their free time. However, having a closer look at the ways in which people spend their free time seems worthwhile precisely because of its implications for labor supply. Individual decisions about the allocation of free time shape the possibilities of joint forms of leisure available to others and thereby affect the opportunity costs of working. Hence, there may be changes in labor supply that merely result from a reorganization of free-time activities, and those changes will be unexplained unless one distinguishes between various uses of free time.

In the current paper I focus on the most time-consuming form of leisure in contemporary societies: television viewing. Despite its enormous importance for resource allocation, economists have only devoted scant attention to the determinants - and even less attention to the consequences - of television viewing. A purpose of this paper is thus to stimulate research on what may be regarded as a prominent economic issue.

I begin reporting some international evidence on television viewing during the period 1994-1997 in a sample of OECD countries. According to those figures, people devote about as much of their lifetime to watching TV as to working.

The evidence I report reveals the following striking fact: hours of work and hours of television viewing are positively correlated across countries. The positive cross-country correlation between television viewing and working time is surprising since the longer one of those activities is, the shorter is the available time for the other one. Thus, one would rather expect to see a negative correlation between TV watching and work time. Indeed, Gronau and Hamermesh (2001), Juster and Stafford (1991),

and Robinson and Godbey (1997) report evidence which tends to indicate a negative correlation at the individual level. By way of an example: according to a time-diary study, in the United States individuals with a more than 60 hour workweek reported half as much television viewing as those not employed [Robinson and Godbey (1997)].

The second part of the paper tries to shed some light on the puzzling positive cross-country correlation between television and working time, along with a possible negative correlation across individuals within each country. A simple model of time allocation is developed, in which agents' time can be used for work, television viewing, and socially enjoyed leisure. The latter refers to activities performed together with others, like personalized interactions with friends or participation in the life of clubs or community associations, religious bodies, political parties, unions and various civic organizations. According to time-diary studies, socializing within and outside the family is the second most time-consuming activity that people undertake in their free time.

When people experience social leisure, socalled *relational goods* are consumed by them.[1] The distinctive trait of relational goods is that an agent's consumption increases with the amount of time the agent devotes to socializing as well as with the socializing effort expended by other agents.

Two types of external effects may be distinguished. First, there is an externality in the formation of an agent's social network, i.e. the group of persons with whom actual socializing takes place. Building a social network gives rise to positive externalities in quite the same fashion as job search does in labor markets with mobility costs (e.g. Diamond [1981]). All networks are subject to a risk of termination, e.g. because an agent moves to a different location. With imperfect information flows, building a network requires that an agent spends some time in collecting the nec-

[1]The terminology is due to Uhlaner (1989). See also the illuminating discussion by Gui (1996).

essary information. The agent has to spend some time in order to meet potential interactants, screen them, and being screened by them. The probability of a successful match clearly increases with the time the agent devotes to searching for partners. However, the quality of the match will also be higher, the more time the remaining agents devote to search.[2]

A second type of externality concerns the individually exerted efforts by members of a given social network to improve their skills as interactants. Such skills are in part relation-specific, i.e. not valuable outside a given social network. The involved external effects are similar to those generated by individual effort decisions in a work team. An agent's benefit from being in a social network increases with the time the agent invests in preparing for high-quality interactions[3], and at the same time, the agent benefits from the investment in interaction skills made by other members of the network.

The model in the current paper captures in a reduced form the externalities induced by the provision of relational goods. If these externalities are sufficiently strong, a concern for socially enjoyed leisure gives rise to multiple equilibria.[4] Equilibria with little socializing but long hours of work and television viewing coexist with equilibria in which there is much socializing along with short hours of work and television viewing. This analytical framework thus rationalizes the empirically observed cross-

[2]Spending an entire evening in a bar will not improve one's social contacts if nobody else turns up.

[3]Examples may range from contributing a dish to a neighborhood dinner to empathizing by imaging yourself in a friend's shoes.

[4]It is very difficult to find empirical measures of a concern for socially enjoyed leisure. There is however a small literature on efforts to coordinate leisure. Hamermesh (2001) shows that spouses' work schedules in the United States are more synchronized than would occur randomly. Burda and Weil (2001) put forward social leisure as a possible rationale for legal restrictions on shop-opening hours.

country correlation between television viewing and working time as stemming from the selection of different equilibria in a situation in which several ones exist.[5]

In my model equilibria can be Pareto ranked by their amount of socializing, and the equilibria with longer hours of work and television viewing can be seen as the result of a coordination failure. Given that everybody else is working long hours, it does not pay for an agent to invest time in creating and cultivating social ties. However, if socializing efforts generate sufficient complementarities, the agent would cut work hours if the others do the same.

In the final Section of the paper some open issues are discussed. A first digression concerns the forces that might have led to the selection of a Pareto-dominated equilibrium in some countries. Second, policy implications in terms of mandatory reductions of working time and progressive labor income taxation are discussed. Finally, I examine some empirical investigations based on time diaries and relate their results on a negative correlation between TV watching and work time to the results presented here.

2 Empirical evidence

I collected internationally comparable data on both television viewing and working hours for a sample of eleven countries: Finland, France, Germany, Italy, Japan, Norway, Spain, Sweden, Switzerland, UK, USA. The period covered by the data is 1994-1997, except for Italy and Japan, for both of which one year is missing.

[5]There is a parallel between this interpretation of cross-country evidence and Putnam's (2000, ch.15) interpretation of the 1965-2000 decline of social connctedness and civic engagement in the USA. He estimates that 25 percent of the decline is attributable to the rise of television viewing and 10 percent to increased time devoted to work, following the emergence of two-career families. He attributes most of the remaining decline to generational change.

Data about television viewing are obtained from IP (1998), a publication that draws from international media rating services. It delivers average daily viewing time per individual in minutes for a number of years and countries. Viewing data are collected and processed with the help of an electronic device, the "people meter", deployed in representatively sampled households. In each country the sample consists of several thousands persons. By requiring viewers to actively report when they are viewing, the people meter considerably improved the accuracy of the viewing estimates as compared to the previously used "Nielsen audimeter". Estimates by the people meter are likely to reflect the time spent on television viewing as a primary activity, i.e. as an activity receiving the major attention of the individual rather than simply having the set on.

The first column in Table 1 reports the data on television viewing time, converted into average annual hours for the period 1994-1997. I only use data on adults' viewing time. The television viewing time of children is about 25-30% shorter than that of adults. The United States are the country with the longest television viewing time, the average adult spending there 1,462 hours each year watching television. The country with the shortest time of television viewing is Norway with 878 annually hours of television per individual.

The statistical indicator of the time spent on work is average annual hours actually worked per person in employment. This variable is reported for various countries and years by OECD (2000). Averages for the period 1994-1997 appear in the second column of Table 1. The eleven countries mentioned before constitute the intersection between the set of countries in the IP (1998) source and the set of countries in the OECD (2000) source. All years available for this set of countries have been used.

On average over all countries, annual work hours are estimated at 1687. By contrast, the average number of hours spent watching television is 1155, i.e. about 30% less than the working hours figure.

Table 1. Average annual hours spent watching TV and working, 1994-1997.

Country	TV-viewing hours per adult	Work hours per person in employment	Work hours per adult
Finland	929	1725	1043
France	1166	1616	878
Germany	1148	1563	903
Italy	1340	1637	761
Japan	1324	1885	1116
Norway	878	1413	850
Spain	1334	1813	903
Sweden	893	1600	981
Switzerland	882	1608	1036
UK	1387	1738	1065
USA	1462	1954	1264
Average	1155	1687	987

Figure 1 exhibits a scatter plot of the data used to compute the first two columns of Table 1. Two remarkable features emerge. First, patterns of television viewing and working hours are quite different across different countries. Second, those patterns are rather stable in each country over the various years.

What about the statistical correlation between television viewing time and working time? The country averages of TV-viewing hours per adult and work hours per person in employment exhibit a coefficient of correlation of 0.715. The existence of a positive correlation is confirmed by computing a regression line based on all annual observations. Column (1) in Table 2 reports results from estimating a television viewing time equation by OLS. The coefficient on the working time variable exhibits

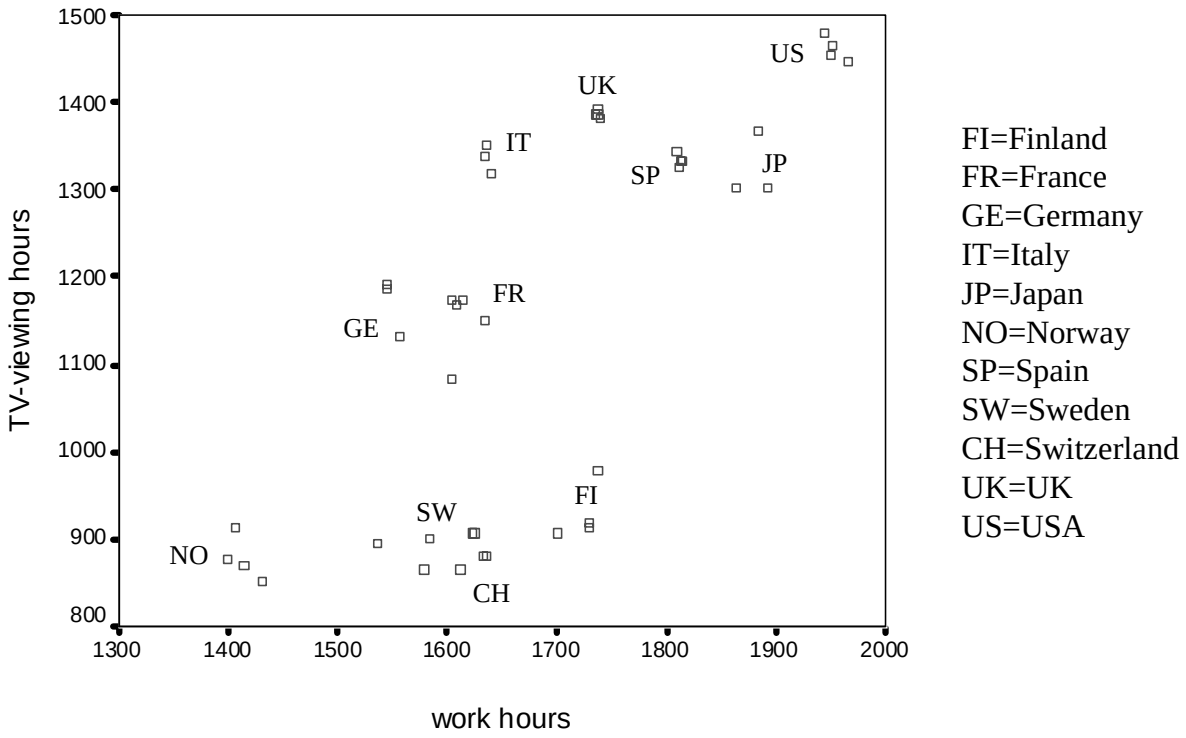

Figure 1: Annual hours spent on TV and at work, 1994-1997

a positive sign and is strongly statistically significant.[6]

Table 2. OLS estimates for TV viewing time. Standard errors in parentheses

	Coefficient (1)	Coefficient (2)
Work per employed	1.049	
	(0.162)	
Work per adult		0.457
		(0.249)
Constant	-614.152	700.088
	(273.998)	(247.411)
R^2	0.511	0.078
N. Obs.	42	42

The working time variable utilized so far refers to hours spent at work by those who are employed. By contrast, the television viewing variable refers to the viewing behavior of the overall adult population. Countries generally differ by the portion of their adult population that is employed. It is therefore interesting to see whether the positive correlation between television and working time still manifests itself when working hours are averaged on the overall adult population.

A meaningful approach to measure the number of hours the average adult in a given country desires to work is to compute:

$$workhours \times part \times age,$$

[6]When a trend term is added to the equation, the coefficient on the working time variable keeps being positive and significant, whereas the coefficient on the trend term is not statistically significant.

where *workhours* is the formerly reported variable portraying the average annual hours per person in employment, *part* is the labor force participation ratio for persons aged 15-64 years and *age* is the fraction of the population aged 15-64 in the population aged 15 or more.[7]

Average working time desired by the adult population of the various countries is reported in the third column of Table 1. The average over all countries is 987 working hours per adult, which is 168 hours less than the average time devoted to viewing television. The coefficient of correlation between the country averages of this working time variable and the country averages of television viewing time is 0.253. Column (2) of Table 2 reports results from OLS estimations that employ the new working time variable. The coefficient on the working time variable exhibits a positive sign and is statistically significant at conventional levels.

I now turn to a possible explanation of the observed positive correlation between work hours and television viewing time.

3 A simple model with multiple equilibria

3.1 Assumptions

The model economy is populated by a unitary-mass continuum of households $i \in [0, 1]$. Preferences are heterogeneous across households and belong to the logarithmic class:

$$U(i) = \alpha(i) \ln c(i) + \beta(i) \ln z(i) + \gamma(i) \ln x(i) \tag{1}$$

where $c(i)$, $z(i)$, and $x(i)$ are the amounts of the three goods that household i consumes and the idiosyncratic taste parameters $\alpha(i)$, $\beta(i)$, and $\gamma(i)$ are all strictly positive.

[7] Variable *part* is reported by OECD (2000). Variable *age* is recovered from Eurostat (1998/99).

Good c, used as the numéraire, does not require time in order to be consumed. Good z is television viewing. It requires one unit of agent's time for each unity of the good the agent consumes. While z is referred to as television, it may capture any form of solitary leisure. Good x represents the amount of relational good consumed by the household.

The relational good $x(i)$ is produced by the socializing efforts exerted by the household, $s(i)$, and by the average socializing effort in the population, S according to:

$$x(i) = s(i)^{g(S)}, \tag{2}$$

where the continuous and strictly increasing function $g(S)$ satisfies $g > 1$. One unit of socializing effort requires one unit of time.[8]

Households' behavior is subject to two constraints. The household's budget constraint is

$$c(i) = w(i)l(i), \tag{3}$$

where $w(i)$ is the exogenous hourly wage and $l(i)$ is the endogenous labor supply of the agent.[9]

The time constraint is

$$l(i) + z(i) + s(i) = t, \tag{4}$$

[8]To the extent agents use some of their own time to produce the relational good, I have adopted a household production model à la Becker (1965). Differently from Becker's path-breaking model, there is here a production externality: a household's consumption increases with the time inputs delivered by all other households.

[9]One can easily extend the model to encompass positive, possibly nonlinear, prices for television viewing and the socializing activity. I omit them to spare on notation. Those prices would not alter the results to be presented here, concerning the multiplicity of equilibria and their ranking in terms of efficiency.

where t is total time available. Without loss of generality I normalize total available time to unity.

Informally, an equilibrium is defined as a set of individual decisions about l, c, z, s, and a social characteristic S, such that the two following requirements are met. First, the choices of work hours, numéraire consumption, television viewing and socializing efforts by any agent maximize his utility function (1) subject to the constraints (2), (3) and (4), taking S as given. Second, S equals the average of the individually chosen socializing efforts.

3.2 Results

I first establish the following fact:

Proposition 1 *An equilibrium always exists.*

Proof. Using (1), (2), (3) and (4), the individual optimization problem can be written as:

$$\max \alpha(i) \ln c(i) + \beta(i) \ln z(i) + \gamma(i) g(S) \ln s(i) \tag{5}$$

subject to:

$$c(i) + w(i)z(i) + w(i)s(i) = w(i) \tag{6}$$

For given S, a household's optimal choices are:

$$c^*(i) = \frac{\alpha(i)w(i)}{\alpha(i) + \beta(i) + \gamma(i)g(S)} \tag{7}$$

$$z^*(i) = \frac{\beta(i)}{\alpha(i) + \beta(i) + \gamma(i)g(S)} \tag{8}$$

$$s^*(i) = \frac{\gamma(i)g(S)}{\alpha(i) + \beta(i) + \gamma(i)g(S)} \tag{9}$$

Define $S^* \in [0,1]$ as the average socializing effort in equilibrium. By equation (9) an equilibrium exists if and only if S^* satisfies:

$$S^* = \int_0^1 \frac{\gamma(i)g(S^*)}{\alpha(i)+\beta(i)+\gamma(i)g(S^*)}di \equiv G(S^*). \tag{10}$$

Since $G : [0,1] \to [0,1]$ is continuous, the existence of S^* follows from Brower's fixed-point theorem. Q.E.D.

The set of the equilibrium points is therefore determined by equation (10). Given S^*, individual behavior is uniquely determined by (7), (8), (9), and

$$l^*(i) = 1 - z^*(i) - s^*(i). \tag{11}$$

Proposition 2 *Multiple equilibria are possible. Equilibria with longer working time also display longer television viewing.*

Proof. Since function $G(.)$ is strictly increasing, multiple equilibria may arise, as shown by way of an example. Suppose that agents have identical tastes $\alpha(i) = 15$, $\beta(i) = 15$, $\gamma(i) = 1$, $\forall i$, and $g(S)$ is the quadratic function

$$g(S) = 150S^2 + S + 1. \tag{12}$$

Finding the equilibria of the models boils down to determining the roots of a cubic equation ensuing from (10):

$$150S^3 - 149S^2 + 30S - 1 = 0. \tag{13}$$

There are three equilibria: $S_1^* \approx 0.04$, $S_2^* \approx 0.22$ and $S_3^* \approx 0.73$. It can be shown that the equilibria S_1^* and S_3^* are stable, whereas S_2^* is an unstable equilibrium.

Substituting (8) and (9) into (11) one can compute equilibrium work hours as:

$$l^*(i) = \frac{\alpha(i)}{\alpha(i)+\beta(i)+\gamma(i)g(S)}. \tag{14}$$

Since $g(S)$ is strictly increasing, equilibria with more socializing have less time spent at work. By (8), equilibria with more socializing also have less television viewing. Hence, equilibria with longer work hours also display longer television viewing. Q.E.D.

The reason for equilibrium multiplicity is simple: the incentive to look for social contacts is strong when socializing efforts by others are intense and it is weak when socializing efforts by others are modest. Multiple equilibria are possible if these complementarities are strong enough. Equilibria with more socializing display less of both television viewing and working. Therefore television and work are positively correlated across equilibria.

Proposition 3 *Whenever there are two equilibria with different average working time, the one with shorter average working time Pareto-dominates the other one.*

Proof. Take two different equilibria S_1^* and S_2^*, with $S_2^* > S_1^*$. Since the utility function of each agent (5) increases with S, the value of the maximized utility function is larger under S_2^* than under S_1^*. By this fact and the previous Proposition, the equilibrium yielding the higher utility is the one with the shorter working time. Q.E.D.

The current model puts no restriction on the correlation between television viewing and working time across agents. At a given equilibrium, television viewing and working time may - but need not - be negatively correlated across agents. The following Proposition provides an example of that.

Proposition 4 *Assume $\alpha(i) = \alpha$ and $\gamma(i) = \gamma$, $\forall i$. If $\beta(i) \neq \beta(j)$ for some i and $j \in [0, 1]$, television viewing and working time are negatively correlated across agents.*

Proof. The result immediately follows from equations (8) and (14). Q.E.D.

4 Concluding discussion

There are several respects in which the results presented in this paper could be extended and should be qualified. I conclude by reviewing some issues related to the selection of a Pareto-dominated equilibrium, the policy implications of relational goods, and the correlation of working and television viewing time at the individual level.

4.1 Selecting a television and work equilibrium

The above model portrays equilibria with long work hours and television viewing as a coordination failure based on complementarities in socializing efforts. As any other model of coordination failure, the current one may be criticized on the following ground: with gains from coordination, people should eventually manage to find a way of coordinating complementary activities.

In what follows three interrelated possible reasons for the selection of a Pareto-dominated equilibrium are offered. Admittedly, these are just conjectures, indicating paths for future research on an important issue.

First, the initial equilibrium selection might have led to an inferior equilibrium. At the early stages of television diffusion (roughly, in the 1950s in the United States and in the 1960s in the other countries), people worked longer hours than nowadays. The introduction of the television technology increased the marginal utility that could be derived from free time and made a reduction of working time desirable. In the process of reducing working time, it is natural to think that the economy got stuck in the first new equilibrium it encountered, i.e. the one with the longest hours of work.

Second, a decentralized move towards a Pareto-superior equilibrium might have failed because it required the coordination of a very large number of agents. In modern societies, the environment to which peolpe are exposed is enormously large. Coordination to an equilibirum with a larger consumption of relational goods is thus

severely limited by the transaction costs and free-riding incentives that are associated with large groups.

Third, the selection of a "television and work equilibrium" might be seen as a social situation orchestrated by the capitalists. The equilibrium preferred by the capitalists is the one with the largest labor supply, since this is the one which induces the highest remuneration of capital.[10] Capitalists might have successfully opposed trade unions and labor parties when they tried to promote a reduction of working time.[11] This might explain the observed differences between a country like the United States, in which the balance of power is in favor of capital, and countries in which the balance of power is more in favor of labor, like the Scandinavian ones (see Table 1).

[10]Suppose, without loss of generality, that agents are identical. Immerse the model of Section 3 in a competitive model economy with a constant-returns-to-scale technology: $Y = F(K, L) \equiv Lf(k)$, where $f(k)$ is a strictly increasing and concave function of capital intensity. Capital K is exclusively owned by capitalists. Labor L is offered by workers alone.

If the consumption of relational goods is segregated by ownership class, workers' choices of time allocation are as computed in the model of Section 3. Since the mass of workers is normalized to unity, aggregate labor supply is given by:

$$L = \frac{\alpha}{\alpha + \beta + \gamma g(S)}$$

With competitive factor markets, capital earns its marginal product:

$$r = F_K(K, L) = f'(k)$$

An increase in labor supply benefits capitalists because it intensifies the relative scarcity of capital:

$$F_{KL}(K, L) = -\frac{kf''(k)}{L} > 0.$$

[11]Schor (1991) discusses at some length the strategies adopted by business in the United States to oppose reductions of the workweek.

4.2 Policy implications

The current model suggests some unorthodox approaches to labor market policy. The case for a mandatory reduction of work hours has already been mentioned. Such a policy might be viewed as a device to prevent agents from being trapped in a Pareto-dominated equilibrium.

Legal restrictions on the duration of working time are difficult to enforce for a number of jobs, the duration of which is hard to monitor, like those of managers and the self-employed. However, if social ties are not fully compartmentalized across professional groups, the reduction of work hours for a large subgroup of the population might entail a bandwagon effect: since a larger pool of potential social contacts is available, those who are not subject to legal restrictions on work hours may now *choose* to reduce their working time.

In the current model, because of the externalities associated with socializing efforts, even in the best equilibrium there is too little socializing and underconsumption of relational goods. While a subsidy for socializing efforts may restore efficiency, such a measure is not viable on practical grounds. A feasible approach is instead to indirectly tax competing uses of time, in particular working time by means of a properly designed tax on labor income.

Under plausible conditions, a larger degree of progressivity in the taxation of labor income leads to a reduction of labor supply. In that case, time for socializing can expand. The incentive costs of a progressive tax schedule might be substantially lower than in conventional welfare analyses if one takes its beneficial impact on the consumption of relational goods into account.

4.3 Links with time-diary studies

As pointed out by Gronau and Hamermesh (2001), Juster and Stafford (1991), and Robinson and Godbey (1997), individual data tend to exhibit a negative correlation between time spent on TV and at work. I now stress the differences in the data sources used by those studies and the current paper; then I deal with the negative correlation between television viewing and working time at the individual level.

The data evaluated in the studies mentioned above were collected from time diaries. Such data usually rely on the respondents recollecting the last 24 hours and then listing when they began each new activity, choosing from responses coded in a number of categories. In the current paper I instead used the OECD statistics on work hours; the data on television viewing came from media rating services that record viewing time by means of an electronic device called the people meter.

The obvious advantage of time-budget surveys is to provide the researcher with a complete allocation of each respondent's time to a large number of uses, among which are television viewing and working. However, there are also some drawbacks. A major problem is that of periodicity. Difficulties in data collection limit the observation period of time-use surveys to one or a few days. Working and television viewing time during such a short period may not be very representative of working and television viewing time during the whole year. Furthermore, one has to worry about systematic misreporting of some activities, among which may be television viewing. While they only provide aggregate information, the data sources I use in the current paper are less likely to be affected by severe problems of periodicity and misreporting.

As shown by Proposition 4, in the model of this paper a negative correlation between television viewing and working time can occur across agents at a given equilibrium alongside a positive correlation across equilibria. The example considered in that Proposition uses preferences heterogeneity to derive a negative correlation

between television viewing and working time across agents. The same type of correlation could be obtained with identical preferences - but different wages - in slightly modified versions of the model. If agents have some nonwage income or if there is a strictly positive price for television viewing, a negative correlation between television viewing and working time can occur.

Due to paucity of econometric investigations, little is known on the determinants of individual viewing behavior. Time-budget surveys usually contain no direct observations on wage rates and have, if any, very weak income data. Since most efforts are channeled to the collection of the time diaries, relatively little is done to provide detailed information on the respondents. Keeping this in mind, regressions of television viewing time on personal characteristics show that the schooling level has a remarkable negative effect on viewing time. Since education is often positively correlated with work hours, differences across individuals with respect to their educational attainment might induce a negative correlation between television viewing and working time at the individual level.

REFERENCES

Becker, G.S., 1965, A theory of the allocation of time, *Economic Journal* 75, 493-517.

Burda, M. and Ph. Weil, 2001, Blue laws, mimeo, Humboldt-Universität zu Berlin.

Diamond, P.A., 1981, Mobility costs, frictional unemployment, and efficiency, *Journal of Political Economy* 89, 798-812.

Eurostat, 1998/99, *Yearbook*, Brussel.

Gronau, R. and D. Hamermesh, 2001, The demand for variety: A household production perspective, *NBER Working Paper* 8509.

Gui, B., 1996, On relational goods: Strategic implications of investment in relationships, *International Journal of Social Economics* 23, 260-278.

Hamermesh, D., 2001, Timing, togetherness and time windfalls, mimeo, University of Texas.

IP, 1998, *European Key Facts - Television 1998*, Cologne.

Juster, F. T. and F. P. Stafford, 1991, The allocation of time: Empirical findings, behavioral models, and problems of measurement, *Journal of Economic Literature* XXIX, 471-522.

OECD, 2000, *Employment Outlook*, Paris.

Putnam, R. D., 2000, *Bowling Alone*, New York, Simon & Schuster.

Robinson, J. and G. Godbey, 1997, *Time for Life*, University Park, Pennsylvania State University.

Schor, J., 1991, *The Overworked American*, New York, Basic Books.

Uhlaner, C. J., 1989, "Relational goods " and participation: Incorporating sociability into a theory of rational action, *Public Choice* 62, 253-285.